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BT Red Hook, LLC

HUMAN HEALTH EXPOSURE ASSESSMENT

Red Hook 4

NYSDEC Brownfield Site No. C224214

44 and 62 Ferris Street and 219 Sullivan Street

Brooklyn, Kings County, New York

June 2018

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ACRONYMS AND ABBREVIATIONS

AESI	Atlantic Environmental Solutions, Inc.
Arcadis	Arcadis of New York, Inc.
ATSDR	Agency for Toxic Substances and Disease Registry
AWQS	Ambient Water Quality Standards
bgs	below ground surface
COPC	constituent of potential concern
DER	Division of Environmental Remediation
DNAPL	dense non-aqueous phase liquid
HHEA	Human Health Exposure Assessment
HSDB	Hazardous Substances Database
LNAPL	light non-aqueous phase liquid
µg/m^3	micrograms per cubic meter
NYCDEP	New York City Department of Environmental Protection
NYCRR	New York Codes, Rules, and Regulations
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PAH	polyaromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PID	photoionization detector
PPE	personal protective equipment
RIR	Remedial Investigation Report
SCO	Soil Cleanup Objective
SVOC	semi-volatile organic compound
TCE	trichloroethene
TOGS	Technical and Operational Guidance Series
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VISL	Vapor Intrusion Screening Level
VOC	volatile organic compound

1 INTRODUCTION

This Human Health Exposure Assessment (HHEA) was prepared on behalf of BT Red Hook, LLC. The HHEA is a qualitative assessment conducted in accordance with New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation (DER) requirements. The HHEA consists of an exposure assessment — an evaluation to determine the route, intensity, frequency, and duration of actual or potential exposures of humans to site-related contaminants (NYSDEC 2017). The HHEA characterizes the exposure setting including qualitative characterizations of the physical environment, the potentially exposed human populations, and associated exposure pathways at a site and surrounding areas. Potentially complete exposure pathways are defined for the constituents of potential concern (COPCs). In addition, contaminant fate and transport mechanisms are evaluated.

1.1 Site Location and Description

Red Hook 4 (NYSDEC Brownfield Cleanup Program Site No. C224214) is located along 44 and 62 Ferris Street and 219 Sullivan Street in Brooklyn, New York (collectively referred to as the “Site”). A site location map is provided as **Figure 1** and a site plan is provided as **Figure 2**, with block and lot boundaries shown on **Figure 2A**. The Site was most recently used as a large commercial parking lot for truck, trailer, and car parking. The entire Site is covered by impervious surfaces including pavement, asphalt, and/or concrete and is surrounded by a 6-foot-high fence and locked gates along Wolcott Street and Sullivan Street. There are no buildings or other structures located at the Site, which is currently vacant.

1.2 Site Background

A comprehensive background of the Site is included in the Remedial Investigation Report (RIR) prepared by Atlantic Environmental Solutions, Inc (AESI) in October 2017. Environmental concerns associated with the Site include the following:

- Historical use as an oil refinery on Lot 40
- Open NYSDEC Spill #0303688 (lube oil) and Spill #1311899 (hydraulic oil)
- A former truck scale on Lot 1 near the corner of Ferris and Wolcott Streets that is believed to contain hydraulic fluid
- Five former underground storage tanks (USTs) located on Lot 40, and a possible UST on Lot 40 near the Wolcott Street gate
- Historical use of fill throughout the Site

The RIR concludes that petroleum- and tar-related constituents are the primary impacts at the Site. In addition, elevated levels of metals are present but are attributed to fill materials. Based on data collected for the RIR, soil and groundwater concentrations of select volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals exceed the New York State (NYS) Soil Cleanup Objectives (SCOs) and the Ambient Water Quality Standards (AWQS) (NYSDEC 1998, 2006).

As previously noted, this HHEA was conducted in accordance with NYSDEC Technical Guidance (NYSDEC 2017). This report presents an evaluation of the data representing the various environmental media at the Site, an evaluation of the potential fate and transport of the constituents in the environmental media, and an evaluation of the potential for human exposure to the constituents at the Site.

2 DATA EVALUATED IN THE HUMAN HEALTH EXPOSURE ASSESSMENT

Other than two subsurface soil samples, A-RH4-DB1 (5-10') and A-RH4-DB2 (5-10'), collected by Arcadis of New York, Inc. (Arcadis) in June 2017 and presented in **Table 1**, surface and subsurface soil, groundwater, and soil vapor data presented in this HHEA were previously provided to NYSDEC in the AESI RIR (AESI 2017). Data summary tables from the AESI RIR are presented in **Appendix A**.

To reflect current site conditions, the data evaluated in this HHEA represent the soil and groundwater samples collected in 2017. The 2017 samples were analyzed for metals, VOCs, SVOCs, polychlorinated biphenyls (PCBs), pesticides, and herbicides. Soil and groundwater data presented in the RIR were compared to 6 New York Codes, Rules and Regulations (NYCRR) Part 375 SCOs and Technical and Operational Guidance Series (TOGS) 1.1.1 Standards for Class GA groundwater (AESI 2017).

Laboratory reports containing analytical data for soil vapor samples collected by AESI in May 2017 are presented in the RIR (AESI 2017) but are not discussed or evaluated in the RIR. Accordingly, the May and June 2017 soil vapor data are evaluated in this HHEA and are presented in **Table 2**.

The following subsections briefly discuss the analytical data representing each medium as well as the results relative to risk-based screening levels used to identify COPCs—defined as chemical constituents that exceed conservative screening levels protective of human health. The discussion includes the results of the comparisons presented in the 2017 RIR. Although the risk-based screening levels presented in the 2017 RIR have not changed, additional screening levels and guidance documents were consulted to evaluate groundwater and soil vapor for the purposes of this HHEA and are also discussed below.

2.1 Soil

The Residential and Restricted Residential SCOs (6 NYCRR Part 375 Table 375-6.8b) are presented along with the analytical soil data (surface and subsurface samples collected in May and June 2017) in RIR Tables 1 and 2 in **Appendix A**. Data for soil samples collected in February 2017 are presented in **Appendix A** Tables 2A, 2B, and 2C and compared against the Commercial SCOs. Locations of soil borings and monitoring wells are shown on **Figure 3**. Note that monitoring well IDs ("MW…") as shown on **Figure 3** correspond numerically with soil sample IDs ("EB…") shown in **Appendix A** tables (e.g., MW-5 corresponds with EB05). The Restricted Residential SCOs are risk-based soil levels protective of potential exposures by adult and child residents via incidental ingestion, inhalation of particulates and vapors, and dermal contact with soils. The Restricted Residential SCOs are also protective of potential exposures associated with active recreational land uses, which are defined as general public uses with a reasonable potential for soil contact (NYSDEC and New York State Department of Health [NYSDOH] 2006). The Residential SCOs are risk-based soil levels similar to the Restricted Residential SCOs in that they include the same exposure scenarios, but also include a vegetable consumption pathway. The Residential SCOs are considered protective of a single-family residence, which is an unlikely future land use at the Site (NYSDEC and NYSDOH 2006). Given that this scenario is highly unlikely at the Site, the Residential SCO comparisons used in the RIR are not appropriate risk-based screening levels and are overly conservative, and therefore are not considered in this HHEA.

Soil at the Site lies beneath pavement or asphalt and is therefore inaccessible. In addition to the Restricted Resident SCOs, Commercial SCOs are risk-based soil levels protective of potential exposures by adult workers and child visitors via incidental ingestion, inhalation of particulates and vapors, and dermal contact with soils. The Commercial SCOs are also protective of passive recreational land uses, which are defined as the general public uses but with a limited potential for soil contact (NYSDEC and NYSDOH 2006). In addition to the Restricted Resident SCOs, the Commercial SCOs are used in this HHEA to evaluate subsurface soil data.

2.1.1 Surface Soil

For the purposes of this HHEA, surface soil is defined as 0 to 2 feet below ground surface (bgs). However, the term “surface” is misleading in that soil samples were collected from beneath the impervious surface materials (asphalt and cement) currently present across the Site. The surface soil dataset presented in the **Appendix A** RIR tables includes 13 samples collected in 2017. The soil sampling locations are presented on **Figure 3**. Although **Appendix A** Table 1 includes both the SCOs protective of restricted residential and residential land use, only the Restricted Residential SCOs are used in this HHEA as described in Section 2.1. The Restricted Residential SCOs are used to identify COPCs in surface soil under a future residential use scenario. Given that future land use is most likely to be consistent with current commercial land use, Commercial SCOs are also used to identify COPCs in surface soil under a future commercial use scenario when the soil is accessible.

PCBs, pesticides, and herbicides were not detected in the surface soil samples analyzed, and VOCs were not detected at concentrations exceeding the Commercial SCOs. Detected concentrations of the following metals and polyaromatic hydrocarbons (PAHs) exceed the Commercial SCOs:

Analytes in Surface Soil Exceeding Commercial SCOs:	
arsenic	barium
copper	lead
mercury	benzo(a)pyrene
benzo(k)fluoranthene	dibenz(a,h)anthracene

Based on the assumption of future commercial land use involving accessible soil at the Site and exceedances of Commercial SCOs, the surface soil COPCs for a commercial use scenario include arsenic, barium, copper, lead, mercury, and the PAHs benzo(a)pyrene, benzo(k)fluoranthene, and dibenz(a,h)anthracene.

VOCs were not detected at concentrations exceeding the Restricted Residential SCOs. Detected concentrations of the following metals and PAHs exceed the Restricted Residential SCOs:

Analytes in Surface Soil Exceeding Restricted Residential SCOs:	
arsenic	barium
copper	lead
mercury	benzo(a)anthracene
benzo(a)pyrene	benzo(b)fluoranthene
benzo(k)fluoranthene	chrysene
dibenz(a,h)anthracene	indeno(1,2,3-cd)pyrene

Based on a conservative assumption of future residential land use at the Site and exceedances of Restricted Residential SCOs, the surface soil COPCs for a residential use scenario include arsenic, barium, copper, lead, mercury, and the PAHs benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene.

The RIR (AESI 2017) states that contamination (e.g., PAHs and metals) consistent with historical fill has been identified in shallow soils across the Site. The layer of historical fill may extend to 10 to 15 feet bgs. The fill material was originally placed on the Site to raise the elevation prior to development. Contamination consistent with fill material has also been identified in groundwater sitewide (AESI 2017). Therefore, it is likely the COPCs (particularly arsenic, lead, and PAHs) identified in surface soil beneath the paved surface are related to the historical fill used at the Site and surrounding areas.

2.1.2 Subsurface Soil

For purposes of the HHEA, it is assumed that future development of the Site, and therefore potential exposure to soils, would not occur at depths greater than 15 feet bgs. Therefore, subsurface soils are defined as soil at depths ranging from 2 to15 feet bgs. As previously noted for surface soil, soil samples were collected from beneath the existing impervious material (asphalt or concrete) covering the entire Site.

Data for a total of 32 subsurface soil samples (representing sample depth intervals of 2 to 15 feet bgs) are presented in RIR Tables 1, 2, 2A, 2B, and 2C in **Appendix A** and are evaluated in this HHEA. In addition to the data presented in the RIR, data for two subsurface soil samples collected by Arcadis in June 2017 are included in this HHEA (**Table 1**). Soil sample locations are shown on **Figure 3**. The RIR subsurface soil samples were collected in 2017 and analyzed for metals, VOCs, SVOCs (including PAHs), PCBs, pesticides, and herbicides. The detected levels of these analytes in subsurface soil were compared to SCOs protective of restricted residential land use as previously described. These SCOs were deemed to be conservatively appropriate based on current and potential future land use at or in the vicinity of the Site. Future land use is most likely to be consistent with current land use, which is commercial. For this HHEA, subsurface soil data are compared to both Restricted Residential and Commercial SCOs.

PCBs, pesticides, and herbicides were not detected in subsurface soil samples collected from 2 to 15 feet bgs. Results for the soil samples collected by Arcadis in 2017 did not exceed the Commercial or Restricted Residential SCOs (**Table 1**). Detected concentrations of the following metals and PAHs exceed the Commercial SCOs:

Analytes in Subsurface Soil Exceeding Commercial SCOs:

arsenic	lead
mercury	nickel
acenaphthylene	benzo(a)anthracene
benzo(a)pyrene	benzo(k)fluoranthene
chrysene	dibenzo(a,h)anthracene
fluoranthene	indeno(1,2.3-cd)pyrene
naphthalene	phenanthrene
pyrene	

Based on the assumption of future commercial land use involving intrusive activities and accessible subsurface soil at the Site and exceedances of Commercial SCOs, the subsurface soil COPCs for a commercial use scenario include arsenic, lead, mercury, and the PAHs acenaphthylene, benzo(a)anthracene, benzo(a)pyrene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene. As noted previously, it is likely the COPCs (particularly arsenic, lead, and PAHs) identified in subsurface soil beneath the paved surface are related to the historical fill used at the Site and surrounding areas.

Detected concentrations of the following metals and PAHs exceed the Restricted Residential SCOs:

Analytes in Subsurface Soil Exceeding Restricted Residential SCOs:	
arsenic	cadmium
lead	manganese
mercury	nickel
acenaphthene	acenaphthylene
anthracene	benzo(a)anthracene
benzo(a)pyrene	benzo(b)fluoranthene
benzo(k)fluoranthene	chrysene
dibenzo(a,h)anthracene	dibenzofuran
fluoranthene	fluorene
indeno(1,2,3-cd)pyrene	naphthalene
phenanthrene	pyrene
benzene	dibenzofuran

Based on Restricted Residential SCO exceedances, the subsurface soil COPCs are arsenic, cadmium, lead, manganese, mercury, nickel, dibenzofuran (pesticide), benzene (VOC), and the PAHs acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene. As noted previously, it is likely the COPCs (particularly arsenic, lead, and PAHs) identified in subsurface soil beneath the paved surface are related to the historical fill used at the Site and surrounding areas.

2.2 Groundwater

NYSDEC TOGS 1.1.1 Class GA Ambient Water Quality Standards and guidance values (NYSDEC 1998) were compared to groundwater data as presented in Table 3 of the 2017 RIR (**Appendix A**). The Class GA Standards are promulgated standards protective of drinking water sources. The guidance values are used for constituents that lack promulgated standards. The use of these values as risk-based screening levels in this HHEA is not appropriate given that groundwater on the Site is not used as a potable source under either the current or future use scenarios; therefore, these values are not used to identify groundwater COPCs in this HHEA.

Although no building currently exists at the Site, the United States Environmental Protection Agency (USEPA) residential Vapor Intrusion Screening Levels (VISLs; USEPA 2018) may be appropriate to evaluate the potential for vapor migration to indoor air in a future building (commercial or residential). The groundwater VISLs were obtained from USEPA's online VISL Calculator and are protective of indoor air

in a commercial building and a residential building. For each analyte, the groundwater VISL represents the lower of a risk-based screening level protective of noncarcinogenic health effects at a target hazard limit of 0.1 and/or a screening level protective of cancer risks at a one in one million (1E-06) target cancer risk limit. As discussed below, the evaluation consists of comparing the USEPA VISLs protective of future commercial and residential buildings to the groundwater data presented in RIR Table 3 in **Appendix A**.

Based on gauging and groundwater contour data prepared by Arcadis, groundwater intercepted by shallow-screened wells flows toward the south and is generally encountered at a depth of 3 to 6 feet bgs. Groundwater in the deeper-screened wells is indicated to flow toward the northeast. Bedrock has not been encountered at any depth, with borings completed at the Site at depths up to 95 feet bgs.

The RIR includes the analytical laboratory reports for each groundwater sample and presents the full set of analytical data representing groundwater at the Site (Tables 3 and 3B in **Appendix A**). Groundwater samples were analyzed for VOCs, SVOCs (including PAHs), PCBs, pesticides, and herbicides. To identify the COPCs in groundwater, risk-based groundwater levels protective of the vapor intrusion indoor air pathway were compared to the detected groundwater analytes. As previously discussed, USEPA groundwater VISLs protective of indoor air in a commercial building and residential building (USEPA 2018) are used to identify COPCs under a future worker scenario and a future residential scenario, respectively.

Under a future residential use scenario whereby a residential building is constructed and occupied at the Site, the following groundwater analytes are identified as COPCs:

Analytes in Groundwater Exceeding Residential VISLs:

1,1'-biphenyl	benzene
benzo(a)anthracene	chloroform
ethylbenzene	naphthalene
styrene	toluene
vinyl chloride	total xylenes

Under a future commercial use scenario whereby a commercial building is constructed and occupied at the Site, the following groundwater analytes are identified as COPCs:

Analytes in Groundwater Exceeding Commercial VISLs:

1,1'-biphenyl	benzene
ethylbenzene	naphthalene
toluene	vinyl chloride
total xylenes	

Based on this conservative evaluation, the following volatile compounds are groundwater COPCs at the Site: 1,1-biphenyl, benzene, chloroform, ethylbenzene, styrene, toluene, total xylenes, vinyl chloride, benzo(a)anthracene, and naphthalene. Although vinyl chloride was detected in groundwater at a level about the commercial and residential VISL COPC, it is based on a single detection in a groundwater sample collected in June 2017 from MW-11D, a deep monitoring well. Vinyl chloride was not detected in a paired groundwater sample collected at the same time from MW-11S reflecting a shallower groundwater depth interval. Furthermore, vinyl chloride was not detected above laboratory reporting limits in any soil vapor sample collected in June 2017 at the Site (AESI, 2017). Therefore, based on this evaluation, it is

unlikely that vinyl chloride would be present in indoor air from a groundwater source at this Site. As noted for soil, the presence of PAHs is likely related to use of historical fill at the Site (AESI 2017).

2.3 Light and/or Dense non-Aqueous Phase Liquid (LNAPL/DNAPL)

Information provided in the RIR (AESI 2017) indicates that several areas at the Site have been impacted historically with LNAPL and DNAPL. The information includes the following:

- Characterization activities conducted by AESI in 2014 identified petroleum contamination as evidenced by staining, odors, and elevated photoionization detector (PID) readings in the following areas of the Site: the corner of Ferris and Sullivan Streets (associated with petroleum spills); an area associated with a former truck scale presumably containing hydraulic oil along the corner of Ferris and Wolcott Streets; and an area in the northeastern portion of the Site associated with five former USTs that were previously removed from the Site. Qualitative fingerprint analyses of subsequent soil samples collected from the areas of elevated PID readings indicated chemical signatures resembling diesel range petroleum #2 heating, motor, and lubricating oil.
- LNAPL, reported to be hydraulic oil was observed in 2017 at depths of 7 to 10 feet bgs in soil borings SB17-A and SB17-A1 in the northwestern portion of the Site.
- During a June 3, 2017 gauging event, AESI observed non-aqueous phase liquid on the water level indicator probe at monitoring wells MW-4 (LNAPL), MW-14 (DNAPL), and MW-15 (DNAPL), although no measurable product thickness was noted.
- During a June 16, 2017 gauging event, AESI observed LNAPL in MW-4 at a thickness of 0.15 feet, DNAPL in MW-14 at a thickness of 0.45 feet, and DNAPL in MW-15 at a thickness of 0.32 feet. Monitoring well MW-15 was reportedly located at the extreme southeast corner of the Site at the EB-15 location shown on **Figure 3** but was later reported as destroyed.

Groundwater samples collected from monitoring well MW-4, with noted LNAPL, did not contain VOC or SVOC impacts consistent with petroleum discharges.

Borings conducted by Arcadis in 2017 indicated that DNAPL impacts were present at depths of 50 to 75 feet bgs over the southeast section of the Site. The DNAPL thicknesses are consistent with measurements obtained by Arcadis in June 2017. Forensic analyses of DNAPL collected by Arcadis in 2017 indicated that the DNAPL resembles petroleum tar**. Figure 4** shows borings and monitoring wells with free-phase DNAPL or LNAPL as observed by Arcadis and AESI. During a gauging event on April 27, 2018, Arcadis measured DNAPL in monitoring well MW-10D at a thickness of 20.01 feet and in monitoring well MW-14 at a thickness of 9.09 feet. LNAPL was measured in monitoring wells MW-Q3, MW-4, and MW-17 at a thickness of 0.50 feet, 0.03 feet, and 0.01 feet, respectively. LNAPL was also observed in monitoring well MW-3, but the thickness could not be adequately measured due to the viscosity of the LNAPL. LNAPL is present in the northern and north-central portion of the Site, with additional impacts found near the southeastern border of the Site along Sullivan Street. Based on well gauging and borings conducted by Arcadis and others, LNAPL impacts are present at depths of 5 to 20 feet bgs. Forensic analyses of LNAPL collected from monitoring well MW-4 by Arcadis in 2017 indicated that LNAPL resembled weathered crude or Bunker C oil. An LNAPL-impacted soil sample from boring A-RH4-DB12 (**Figure 3** and **4**) was analyzed and found to be similar to weathered diesel and mineral oil.

2.4 Soil Vapor

As previously noted, soil gas data are included in an appendix of the RIR (AEIS 2017). For evaluating the soil gas data in this HHEA, it was assumed a future building could be constructed at the Site for either commercial/industrial use or restricted residential use. USEPA has developed soil gas VISLs protective of commercial and residential exposures. In addition, NYSDOH has prepared a soil vapor/indoor air decision matrix for eight volatile compounds (NYSDOH 2017). Although the decision matrix requires a comparison of both sub-slab vapor (soil gas) and indoor air thresholds, the existing dataset for the Site includes only soil gas sampling results (given there is no building currently at the Site). Thus, the decision matrix was adapted for use in this HHEA by considering only the sub-slab vapor thresholds for the eight volatile compounds as follows:

- Trichloroethene (TCE), cis-2,3-dichloroethene, 1,1-dichloroethene, and carbon tetrachloride:
    - If the soil gas concentration is less than 6 micrograms per cubic meter (µg/m^3), no further action is required.
    - If the soil gas concentration is greater than 6 µg/m^3 but less than the USEPA soil gas VISL, no further action is required.
    - If the soil gas concentration exceeds the VISL or 60 µg/m^3, a potential exists for future risk from exposure.
- Tetrachloroethene (PCE), 1,1,1-trichloroethane, and methylene chloride:
    - If the soil gas concentration is less than 100 µg/m^3, no further action is required.
    - If the soil gas concentration is greater than 100 µg/m^3 but less than the USEPA soil gas VISL, no further action is required.
    - If the soil gas concentration exceeds the VISL or 1,000 µg/m^3, a potential exists for future risk from exposure.
- Vinyl chloride:
    - If the soil gas concentration is less than 6 µg/m^3 and less than the USEPA soil gas VISL, no further action is required.
    - If the soil gas concentration is greater than 6 µg/m^3 but less than the USEPA soil gas VISL, no further action is required.
    - If the soil gas concentration exceeds the VISL or 60 µg/m^3, a potential exists for future risk from exposure.

The 2017 soil vapor analytical data included in the RIR are presented in **Table 2** (only detected values are presented). As previously described, for the purpose of this HHEA, the data for select compounds were compared to NYSDOH sub-slab thresholds and USEPA's soil gas VISLs protective of residential indoor air and commercial indoor air. Benzene and TCE were detected in soil gas samples at concentrations exceeding the residential risk-based levels and are identified as COPCs should a future residential building be constructed at the Site. Although the detected concentrations of TCE exceed the NYSDOH lower matrix threshold, the detected concentrations do not exceed the NYSDOH upper limit or

USEPA's commercial indoor air VISL (see **Table 2**). No COPC in soil vapor was identified under a future commercial scenario should a commercial building be constructed at the Site.

Based on the evaluation of soil gas data, should a future residential building be constructed at the Site, a soil vapor intrusion assessment should be conducted to evaluate the need for engineering controls to mitigate potential vapor migration into indoor air (e.g., installation of soil vapor mitigation system and/or vapor barrier).

2.5 Summary of Constituents of Potential Concern

A summary of site COPCs identified for potential future residential and commercial use scenarios is presented in **Table 3**. COPCs are identified for each exposure medium: surface soil, subsurface soil, groundwater, and soil vapor (via potential future indoor air). COPCs were identified by comparison of sample results to risk-based screening levels protective of human health.

3 CONTAMINANT FATE AND TRANSPORT

This section presents the general environmental fate and transport characteristics for site COPCs based on information obtained from toxicological profiles developed by the Agency for Toxic Substances and Disease Registry (ATSDR) and from information provided in the Hazardous Substances Data Bank (HSDB).

Arsenic

Arsenic is identified as a COPC in surface and subsurface soils. According to ATSDR, arsenic is a naturally occurring element widely distributed in the earth's crust. Anthropogenic sources of arsenic include non-ferrous mining and smelting wastes, pesticide applications, wood combustion, and waste incineration. In the environment, arsenic is combined with oxygen, chlorine, and sulfur to form inorganic arsenic compounds. Arsenic in animals and plants combines with carbon and hydrogen to form organic arsenic compounds. Arsenic in soil may be transported by wind and runoff or may leach into subsurface soil. In sediments, arsenic may be sorbed to iron and manganese oxides and may be released under reducing conditions. Transport and partitioning of arsenic in water depends upon its chemical form (i.e., oxidation state) and other materials present. Arsenic may be present in soluble form in the water column or adsorbed onto sediments or soils. Groundwater arsenic concentrations are generally controlled by adsorption rather than mineral precipitation. Bioconcentration of arsenic occurs in aquatic organisms, primarily in algae and lower invertebrates, although biomagnification in aquatic food chains does not appear to be significant (ATSDR 2007a).

Barium

Barium is identified as a COPC in surface soils. Barium is a naturally occurring element often associated with minerals where it is released during normal weathering processes. Anthropogenic sources include industrial processes (e.g., mining, refining barium). Barium released to the atmosphere is most likely to be present in particulate form and will be removed by wet and/or dry deposition to ground or water surfaces. In soils, barium is typically either bioconcentrated by plants or transported through soil with precipitation, although it is not very mobile in most soil systems because it forms water-insoluble barium salts. In aquatic systems, barium is most likely to precipitate out of the solution as an insoluble salt, which may settle into sediment. Barium is bioconcentrated by aquatic plants and also bioaccumulates in higher level biota (ATSDR 2007b).

Cadmium

Cadmium is identified as a COPC in subsurface soils. According to ATSDR, cadmium is a naturally occurring element often associated with minerals where it is released during normal weathering processes. Anthropogenic sources include industrial processes (e.g., manufacture, use, and disposal of products intentionally utilizing cadmium), or from the presence of cadmium as a natural but not functional impurity in non-cadmium-containing products (fertilizers, cement, alloys of zinc, lead, and copper). Cadmium is expected to partition to soil when released to the environment. Cadmium emitted to the atmosphere condenses onto very small particulates that are in the respirable range and are subject to long-range transport. Particulate and vapor cadmium may be released to the air but will eventually deposit onto soils. Cadmium-containing particulates may dissolve in atmospheric water droplets and be removed from air by wet deposition. Cadmium is more mobile in aquatic environments than most other

heavy metals. In unpolluted natural waters, most cadmium transported in the water column will exist in the dissolved state. In polluted or organic-rich waters, adsorption of cadmium by humic substances and other organic complexing agents plays a dominant role in transport, partitioning, and remobilization of cadmium. The cadmium concentration in water is inversely related to the pH and the concentration of organic material in the water. Cadmium has a relatively long residence time in aquatic systems. Cadmium is not known to form volatile compounds in the aquatic environment; therefore, partitioning from water to the atmosphere does not occur. Precipitation and sorption to mineral surfaces, hydrous metal oxides, and organic materials are the most important processes for removal of cadmium to bed sediments. Humic acid is the major component of sediment responsible for adsorption. Sorption increases as the pH increases. In soils, pH, oxidation-reduction reactions, and formation of complexes are important factors affecting the mobility of cadmium. Cadmium in soils may leach into water, especially under acidic conditions. Cadmium is taken up efficiently by plants and, therefore, enters the food chain for humans and other animals. Aquatic and terrestrial organisms bioaccumulate cadmium and cadmium bioaccumulates in all levels of the food chain (ATSDR 2012a).

Copper

Copper is identified as a COPC in surface soils. According to ATSDR, copper is a naturally occurring element. Anthropogenic sources include industrial processes (mining operations, agriculture, sludge from publicly owned treatment works [POTWs], and municipal and industrial solid waste). Copper is released to the atmosphere in the form of particulate matter or adsorbed to particulate matter. It is removed by gravitational settling (bulk deposition), dry deposition, in-cloud scavenging (attachment of particles by droplets within clouds), and washout. The importance of wet to dry deposition generally increases with decreasing particle size. Much of the copper discharged into waterways is in particulate matter and settles out. In the water column and in sediments, copper adsorbs to organic matter, hydrous iron and manganese oxides, and clay. Most copper deposited on soil is adsorbed with greater concentrations in the upper 5 to 10 centimeters of soil except in sandy soils where the lability of bound copper is greater. Copper's movement in soil is determined by the soil components. In general, copper will adsorb to organic matter, carbonate minerals, clay minerals, or hydrous iron and manganese oxides. Sandy soils with low pH have the greatest potential for leaching. Soil microorganisms also affect the absorption of copper in soils due to the uptake and assimilation of the metal by these microorganisms. Copper binds strongly to soils with high organic content (ATSDR 2004).

Lead

Lead is identified as a COPC in surface and subsurface soils. Lead is an element. According to ATSDR, anthropogenic sources of lead include mining and smelting of ore, manufacture of lead-containing products, combustion of coal and oil, and waste incineration. Because lead does not degrade, the historical uses of lead (including in gasoline, paint, solder [food cans], pesticides, etc.) result in elevated concentrations in the environment and particularly in urban environments. In the atmosphere, non-organic compounds of lead exist primarily in the particulate form. Upon release to the atmosphere, lead particles are dispersed and ultimately removed from the atmosphere by wet or dry deposition. Wet deposition is more important than dry deposition for removing lead from the atmosphere. The amount of soluble lead in surface waters depends upon the pH of the water and the dissolved salt content. A significant fraction of lead carried by river water is expected to be in an undissolved form, which can consist of colloidal particles or larger undissolved particles of lead carbonate, lead oxide, lead hydroxide, or other lead

compounds incorporated in other components of surface particulate matters from runoff. Lead may occur either as sorbed ions or surface coatings on sediment mineral particles, or it may be carried as a part of suspended living or nonliving organic matter in water. The fate of lead in soil is affected by the adsorption at mineral interfaces, the precipitation of sparingly soluble solid forms of the compound, and the formation of relatively stable organic-metal complexes or chelates with soil organic matter. These processes are dependent on factors such as soil pH, soil type, particle size, organic matter content of soil, the presence of inorganic colloids and iron oxides, cation exchange capacity, and the amount of lead in soil. The mobility of lead increases in environments having low pH due to the enhanced solubility of lead under acidic conditions. The accumulation of lead in most soils is primarily a function of the rate of deposition from the atmosphere. Most lead is retained strongly in soil, and very little is transported through runoff to surface water or leaching to groundwater except under acidic conditions. Lead is strongly sorbed to organic matter in soil, and although not subject to leaching, it may enter surface waters as a result of erosion of lead-containing soil particulates. Lead may be taken up in edible plants from the soil via the root system, by direct foliar uptake and translocation within the plant, and by surface deposition of particulate matter. Uptake of lead in animals may occur as a result of inhalation of contaminated ambient air or ingestion of contaminated plants. However, lead is not biomagnified in aquatic or terrestrial food chains. Plants and animals may bioconcentrate lead, but biomagnification is not expected (ATSDR 2007d).

Manganese

Manganese is identified as a COPC in subsurface soils. According to ATSDR, manganese is widely distributed in the environment from both natural and anthropogenic sources. Anthropogenic sources include industrial processes (e.g., iron and steel production facilities, power plants, coke ovens, use as a gasoline additive). Manganese compounds have negligible vapor pressures but may exist in air as suspended particulate matter. Manganese-containing particles are mainly removed from the atmosphere by gravitational settling, with large particles tending to fall out faster than small particles. The transport and partitioning of manganese in water are controlled by the solubility of the specific chemical form present, which is in turn determined by pH, oxidation-reduction potential, and characteristics of the available anions. Manganese is generally transported in rivers as suspended sediments. Manganese in water may be significantly bioconcentrated at lower trophic levels. The ability of soluble manganese compounds to adsorb to soils and sediments depends largely on the cation exchange capacity and organic composition of the soil (ATSDR 2012b).

Mercury

Mercury is identified as a COPC in surface and subsurface soils. According to ATSDR, natural sources of mercury include volcanic eruptions and emissions from the ocean. Anthropogenic sources include emissions from fuels or raw materials, or from uses in products or industrial processes. Some of the mercury circulating through today's environment was released years ago. The natural global biogeochemical cycling of mercury is characterized by degassing of the element from soils and surface waters, followed by atmospheric transport, deposition of mercury back to land and surface waters, and sorption of the compound to soil or sediment particulates. Mercury deposited on land and open water is in part re-volatilized back into the atmosphere. Mercury has three valence states. The specific state and form in which the compound is found in an environmental medium are dependent upon a number of factors, including the oxidation-reduction potential and pH of the medium. Metallic mercury released in

vapor form to the atmosphere can be transported long distances before it is converted to other forms of mercury, and wet and dry deposition processes return it to land and water surfaces. In soils and surface waters, mercury can exist in the mercuric (Hg^{+2}) and mercurous (Hg^{+1}) states as a number of complex ions with varying water solubilities. Mercuric mercury, present as complexes and chelates with ligands, is likely the predominant form of mercury present in surface waters. The transport and partitioning of mercury in surface waters and soils are influenced by the particular form of the compound. Volatile forms (e.g., metallic mercury and dimethylmercury) are expected to evaporate to the atmosphere, whereas solid forms partition to particulates in the soil or water column and are transported downward in the water column to the sediments. The dominant process controlling the distribution of mercury compounds in the environment appears to be the sorption of nonvolatile forms to soil and sediment particulates, with little resuspension from the sediments back into the water column. The sorption process has been found to be related to the organic matter content of the soil or sediment. The most common organic form of mercury, methylmercury, is soluble, mobile, and quickly enters the aquatic food chain. This form of mercury is accumulated to a greater extent in biological tissue than are inorganic forms of mercury. Mercury will bioaccumulate in aquatic and terrestrial food chains (ATSDR 1999).

Nickel

Nickel is identified as a COPC in subsurface soil. Nickel is released to the atmosphere in the form of particulate matter or adsorbed to particulate matter. It is dispersed by wind and removed by gravitational settling (sedimentation), dry deposition, washout by rain, and rainout. Gravitational settling governs the removal of large particles (greater than 5 micrometers), whereas smaller particles are removed by other forms of dry and wet deposition. The importance of wet deposition relative to dry deposition generally increases with decreasing particle size. The fate of heavy metals in aquatic systems depends on partitioning between soluble and particulate solid phases. Adsorption of nickel onto suspended particles in water is one of the main removal mechanisms of nickel from the water column. Much of the nickel released into waterways as runoff is associated with particulate matter; it is transported and settles out in areas of active sedimentation such as the mouth of a river. Nickel is strongly adsorbed at mineral surfaces such as oxides and hydrous oxides of iron, manganese, and aluminum. Such adsorption plays an important role in controlling the concentration of nickel in natural waters. Nickel is strongly adsorbed by soil. Soil properties such as texture, bulk density, pH, organic matter, the type and amount of clay minerals, and certain hydroxides, as well as the extent of groundwater flow, influence the retention and release of metals by soil. Nickel is not accumulated in significant amounts by aquatic organisms. Uptake and accumulation of nickel into various plant species is known to occur (ASTDR 2005).

Benzene

Benzene is identified as a COPC in subsurface soil, groundwater, and soil vapor. According to ATSDR, sources of benzene emissions include gasoline vapors, automobile exhaust, cigarette smoke, chemical production, and user facilities. The high volatility of benzene is the controlling physical property in the environmental transport and partitioning of this chemical (ATSDR 2007c). Benzene will exist solely as a vapor in the ambient atmosphere. Benzene is very water soluble and may be removed from the atmosphere by rain (HSDB 2014). A substantial portion of any benzene in rainwater that is deposited to soil or water will be returned to the atmosphere via volatilization. Benzene released to soil surfaces partitions to the atmosphere through volatilization, to surface water through runoff, and to groundwater as a result of leaching. Benzene is highly mobile in soil and readily leaches into groundwater. Greater soil

adsorption occurs with increasing organic matter content (ATSDR 2007c). Benzene is expected to biodegrade in soils. If released into water, benzene is not expected to adsorb to sediment and suspended solids. Volatilization from soil and water surfaces is expected to be an important fate process (HSDB 2014). Benzene does not bioaccumulate in marine organisms. Since benzene exists primarily in the vapor phase, air-to-leaf transfer is considered to be the major pathway of vegetative contamination. Benzene accumulates in leaves and fruits of plants (ATSDR 2007c).

Chloroform

Chloroform is identified as a COPC in groundwater. According to ATSDR, chloroform is both a synthetic and naturally occurring compound, although anthropogenic sources are responsible for most of the chloroform in the environment. Chloroform is released into the environment as a result of its manufacture and use; its formation in the chlorination of drinking water, municipal and industrial wastewater, and swimming pool and spa water; and from other water treatment processes involving chlorination. Historically, chloroform was used as a solvent to extract fats, oils, and greases; as a dry-cleaning agent; in fire extinguishers; and as a fumigant and anesthetic (NYSDEC 2018).

Chloroform readily evaporates into air, and dissolves in groundwater (ATSDR 1997). Chloroform typically volatizes to the atmosphere from surface water or shallow soils. Chloroform may leach from soil into groundwater, has a low adsorption capacity, and is soluble in water. Chloroform persists in groundwater for a long time. Most chloroform in the environment eventually enters the atmosphere, where it may be transported and/or degraded by photochemical reactions. Significant bioaccumulation of chloroform does not occur in aquatic food chains (ATSDR 1997).

Ethylbenzene

Ethylbenzene is identified as a COPC in groundwater. Ethylbenzene is used primarily in the production of styrene. It is also used as a solvent, as a constituent of asphalt and naphtha, and in fuels (NYSDEC 2018). Ethylbenzene has a high vapor pressure and will partition into the atmosphere from surface soils and surface water; subsurface soil infiltration will also occur (ATSDR 2010a). This chemical has a relatively high mobility in soils because sorption is not significant enough to prevent migration. Ethylbenzene will leach into groundwater, particularly in soils with low organic carbon content. Significant bioaccumulation does not occur in aquatic food chains. In surface water, ethylbenzene can be transformed via photo-oxidation and biodegradation. In soils, aerobic soil microbes are responsible for biodegradation.

Styrene

Styrene is identified as a COPC in groundwater. According to ATSDR, it is primarily a synthetic chemical used in the production of rubber, plastic, insulation, fiberglass, pipes, automobile parts, food containers, and carpet backing as well as in resins to make boat hulls, thermoplastics, glues, and adhesives (NYSDEC 2018). Styrene released to soils or sediments will likely volatilize to the atmosphere; the rate of volatilization depends on the characteristics of the soil or sediment. Styrene is “moderately mobile” in soil; styrene will adsorb to the organic carbon in soil material. If there is less organic carbon, styrene will be more mobile. The major fate of atmospheric styrene is determined by the rate of photo-oxidation. There is no information indicating that styrene will hydrolyze in water. Styrene is rapidly degraded in most soils under aerobic conditions, but it persists when soil conditions are anaerobic (ATSDR 2010b).

Toluene

Toluene is identified as a COPC in groundwater. The primary use of toluene is as a mixture added to gasoline to improve octane ratings. Toluene is also used to produce benzene and as a solvent in paints, coatings, synthetic fragrances, adhesives, inks, and cleaning agents. Toluene is also used in the production of polymers used to make nylon, plastic soda bottles, and polyurethanes and for pharmaceuticals, dyes, cosmetic nail products, and the synthesis of organic chemicals (NYSDEC 2018). If released to the environment, toluene tends to partition to air and when released to surface water or soil will volatilize quickly (ATSDR 2017). Toluene will exist solely as a vapor in the ambient atmosphere. Volatilization from surface soil and water surfaces is expected to be an important fate process. Toluene present in deep soil is much less likely to volatilize. Biodegradation is expected to occur rapidly in soil surfaces. Toluene is expected to be moderately to highly mobile in soil (HSDB 2016a). The rate of toluene transport to groundwater depends on the degree of adsorption to soil. Toluene is moderately retarded by adsorption to soils rich in organic matter but is readily leached from soils with low organic content (ATSDR 2017). If released into water, toluene is not expected to adsorb to suspended solids and sediment. Biodegradation is expected to occur rapidly in water. Bioconcentration in aquatic organisms is low to moderate (HSDB 2016a). Based on its lipophilic properties, toluene is expected to have a low tendency to bioconcentrate in the fatty tissues of aquatic organisms. The levels that accumulate in the flesh of aquatic species also depend on the degree to which the species metabolize toluene. The highest tissue levels of toluene tend to occur in species such as eels, crabs, and herring that have a low rate of toluene metabolism. Metabolism of toluene limits its tendency to biomagnify in the food chain (ATSDR 2017).

Trichloroethene

TCE is identified as a COPC in soil vapor. TCE is used in the vapor degreasing of metal parts as an extraction solvent for greases, oils, fats, waxes, and tars. It is also a chemical intermediate of PCE and is a component in consumer products such as paint removers/strippers, adhesives, spot removers, rug-cleaning fluids, and typewriter correction fluids (NYSDEC 2018). The major route of removal of TCE from water is volatilization; TCE is moderately soluble in water. TCE has lower potential for sorption of soil or sediment particles, has medium to high mobility in soils, and readily leaches into groundwater. TCE is not expected to adsorb to suspended solids and sediments in water. TCE has a low to moderate tendency to bioaccumulate in aquatic systems and biomagnification is unlikely to be important (ATSDR 2014).

Vinyl Chloride

Vinyl chloride is identified as a COPC in groundwater. Vinyl chloride is used to make polyvinyl chloride used in the manufacturing of vinyl products including pipes, wire, cable components, packaging materials, furniture, automobile upholstery and parts, and houseware (wall covering, furniture) (NYSDEC 2018). Essentially all vinyl chloride in the atmosphere exists solely as a gas (ATSDR 2006). It volatilizes readily from surfaces of soil and waters and is not expected to degrade in waters. It is soluble in water and does not readily sorb to soils; therefore, vinyl chloride can leach through soil into groundwater. The potential for bioconcentration in aquatic organisms is predicted to be low, and bioaccumulation or biomagnification in aquatic systems is not expected to be significant (ATSDR 2006).

Xylenes (Total)

Xylenes (all isomers combined) are identified as a COPC in groundwater. Xylenes are primarily used in the production of ethylbenzene, as a solvent in products such as paints and coatings and are blended into gasoline (NYSDEC 2018). If released to air, xylenes will exist solely in the vapor phase in the atmosphere. Once xylenes enter the atmosphere, they undergo rapid photooxidation such that washout and long-range atmospheric transport are not expected to be important processes. Volatilization is expected to be the dominant transport mechanism for xylenes in surface soil and surface water. Xylenes are mobile in soil and will not adsorb strongly to organic matter. Xylenes will leach into groundwater from soil. If released into water, xylenes are not expected to adsorb to suspended solids and sediment. Potential for bioconcentration in aquatic organisms is predicted but expected to be minimal for all isomers of xylenes. Biodegradation of xylenes is expected to occur rapidly in aerobic soil but may proceed more slowly under anaerobic conditions. Xylenes are biodegraded in groundwater under aerobic conditions and may be degraded under anaerobic denitrifying conditions (HSDB 2016b; ATSDR 2007e).

Polycyclic Aromatic Hydrocarbons

Several PAHs are identified as COPCs in soils and groundwater. According to ATSDR, PAHs released to the environment are primarily a result of incomplete burning of organic material (e.g., wood, coal, oil, gasoline, and garbage). In addition to coal and wood ash used historically as fill material, PAHs have been associated with emissions from gasoline and diesel-powered engines. PAHs are also found in petroleum residues incidental to the normal operation of motor vehicles, including crude oil, coal tar, creosote, and asphalt (Massachusetts Department of Environmental Protection 2002).

PAHs are split into low molecular weight PAHs, which have less than four aromatic rings, and high molecular weight PAHs, which have more than four aromatic rings (ATSDR 1995). The site COPCs are high molecular weight PAHs (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene) with the exception of naphthalene, which is a low molecular weight PAH.

PAHs released to the atmosphere are subject to short- and long-range transport and are removed by wet and dry deposition onto soil, water, and vegetation. In surface water, PAHs can volatilize, photolyze, oxidize, biodegrade, bind to suspended particles or sediments, or accumulate in aquatic organisms (with bioconcentration factors often in the range of 10 to 10,000). In sediments, PAHs can biodegrade or accumulate in aquatic organisms. PAHs in soil can volatilize, undergo abiotic degradation (photolysis and oxidation), biodegrade, or accumulate in plants. PAHs in soil can also enter groundwater and be transported within an aquifer.

Generally, when found in air, PAHs that have four rings (chrysene, benzo[a]anthracene) are present in both the vapor and particulate phase, and PAHs having five or more rings (benzo[a]pyrene, benzo[g,h,i]perylene) are found predominantly in the particle phase. The high molecular weight PAHs will volatilize from water only to a limited extent. In general, PAHs have low water solubilities. Because of their low solubility and high affinity for organic carbon, PAHs in aquatic systems are primarily found sorbed to particles that either have settled to the bottom or are suspended in the water column. Volatilization from soil and surface water is not an important transport mechanism for high molecular weight PAHs (ATSDR 1995).

4 POTENTIAL RECEPTORS AND EXPOSURE PATHWAYS

An initial step in evaluating the potential for human exposure to site COPCs is to identify the receptors and potentially complete exposure pathways. For an exposure pathway to be complete, the following five elements must exist:

- contaminant source
- contaminant release and transport mechanisms
- point of exposure
- route of exposure
- receptor population

An exposure pathway is considered incomplete and may be eliminated from further evaluation in the HHEA when any one of the five elements comprising an exposure pathway has not existed in the past, does not exist in the present, and can reasonably be anticipated to not exist in the future (New York City Department of Environmental Protection [NYCDEP] 2017).

Currently, the Site is a vacant, paved parking lot. For the purposes of this assessment, it is assumed a trespasser could gain access to the Site. However, there is no potential for exposure to soil given that the ground surface is covered by impervious asphalt and cement. There are no buildings at the Site, although buildings are present at adjacent properties. Finally, groundwater is not considered a drinking water source (NYCDEP 2017) and there is no potential for exposure. Surface water reservoirs located in upstate New York serve as the source of drinking water (NYCDEP 2018).

Potentially complete human exposure pathways for the Site exist only under a future use scenario. Although the future land use is considered to be consistent with current uses, should the Site be redeveloped in the future, potential future site receptors include the commercial worker (including indoor workers and outdoor workers), trespasser, and construction and/or utility worker (see **Table 4**).

Exposure pathways for current and future use scenarios are evaluated below.

Potential direct contact with surface and subsurface soils—current site conditions

Based on current and anticipated future land use, commercial workers, construction or utility workers, and/or trespassers are potential receptors at the Site. However, the Site is currently covered by impervious surfaces of asphalt and cement that preclude exposure by any receptors to surface and subsurface soils. Therefore, the direct contact exposure pathway to COPCs in surface soil is incomplete for commercial workers and trespassers.

Potential direct contact with surface and subsurface soils—future site conditions

Based on potential future land use, construction and/or utility workers may be exposed to COPCs in surface and subsurface soils should intrusive activities (e.g., remediation, development, utility maintenance/repair) occur at the Site. Underground utility lines are assumed to be present on and in the vicinity of the Site. The maximum detected concentrations of the surface soil COPCs exceeding the Commercial SCO are associated with surface soil samples EB-13D/MW-13D, EB-11D/MW-11D, EB-14D/MW-14, and EB-07/MW-7 (**Figure 3** and **Appendix A** – Table 2A). Subsurface soil samples with

concentrations exceeding SCOs for commercial land use were collected from depths of 2 to 2.5 and 4 to 6 feet bgs, with the highest detected concentrations generally associated with sample EB-09/MW-9 outside the presumed former remediation area associated with a previous petroleum discharge (Spill 0303688) and west of the concrete pad (**Figure 3** and **Appendix A** – Table 2).

Although the potential exists that exposure by construction and utility workers to surface and subsurface soils may occur during any future intrusive activities, it is likely that workers involved with intrusive activities would follow appropriate health and safety plans (e.g., use of personal protective equipment [PPE] such as gloves, Tyvek® apparel, safety glasses, appropriate ventilation), mitigating any potential exposure to COPCs in surface and subsurface soils.

Potential inhalation of vapors and/or particulates

Under current conditions, there are no exposed surface or subsurface soils at the Site given that the entire Site is covered by impervious surfaces. Therefore, no potential exposure via inhalation currently exists for any current outdoor worker or trespasser.

Construction and utility workers may be exposed to COPCs in subsurface soils and shallow groundwater via inhalation during future intrusive activities. However, as stated previously, future workers would be expected to follow appropriate health and safety protocols, mitigating the potential for any exposure.

There are no buildings on the Site and therefore no current potential for volatile COPCs from a groundwater source to intrude into indoor air. Given that eight volatile analytes were detected in groundwater at concentrations exceeding risk-based thresholds, an evaluation should be conducted to determine the need for vapor mitigation in the event that a building intended for human occupancy is constructed. Options to consider when constructing a future building include installation of a vapor barrier and/or vapor mitigation system.

Potential direct contact with groundwater (construction/utility workers)

Under current conditions, there is no potential for exposure to groundwater by potential receptors at the Site. Shallow groundwater on the Site flows southerly and is generally encountered at a depth of approximately 3 to 6 feet bgs. Groundwater is not used as a potable source, nor is it hydraulically connected to a potable source.

Under future conditions, it is possible that future receptors would include commercial workers and/or utility/construction workers involved with an excavation. However, as previously stated, groundwater is not utilized as a drinking water source and there is no other pathway that would allow exposure to groundwater (with the possible exception of migration of volatiles from groundwater into indoor air of a future building, as discussed previously).

Future construction and/or utility workers could potentially be exposed to groundwater on the Site during intrusive activities. However, it is expected that intrusive activities would include engineering controls (dewatering) to prevent shallow groundwater from infiltrating an excavation or trench. Additionally, potential exposure to shallow groundwater by a construction and/or utility worker would be mitigated by the use of PPE and implementation of required health and safety protocols.

5 SUMMARY AND CONCLUSIONS

This HHEA presents a qualitative exposure assessment characterizing the exposure setting, evaluates contaminant fate and transport pathways, and identifies potentially complete exposure pathways. Analytical data indicate that site COPCs include VOCs (benzene, chloroform, ethylbenzene, naphthalene, toluene, styrene, xylenes, and vinyl chloride), PAHs, and metals (arsenic, barium, cadmium, copper, lead, manganese, and mercury). The RIR indicates that metals and PAHs at concentrations exceeding SCOs are common in historical fill used at the Site (AESI 2017). Urban fill similar to that placed at the Site is ubiquitous throughout Brooklyn and elsewhere in New York City.

Under current conditions, there is no complete exposure pathway to surface soil. Although trespassers and commercial workers could be present at the Site, the entire Site is covered with an impervious surface, precluding potential exposure to surface soil.

The potential for exposure to COPCs in surface and subsurface soils is limited to future construction or excavation activities whereby the asphalt or concrete covering the Site is removed. Potential exposure of future construction and/or utility workers that may be engaged in intrusive activities would likely be mitigated through the use of appropriate required health and safety protocols (e.g., engineering controls and PPE).

Some VOC and PAH analytes were identified as COPCs in groundwater based on comparison to risk-based levels protective of indoor air exposure by future building occupants. Should a future building be constructed at the Site, an evaluation of potential vapor mitigation strategies is recommended. As noted previously, the RIR indicates that PAHs and metals are commonly associated with the fill material historically used at the Site.

Groundwater is not used as a potable resource at the Site under current and future conditions. Under current conditions, there is no potential for volatiles in the subsurface to migrate into indoor air via vapor intrusion since there are no buildings at the Site. Under a future use scenario, it is possible that construction workers and/or utility workers could be in contact with Site groundwater infiltrating an excavation at 15 feet bgs (the depth to groundwater is 3 to 6 feet bgs on average). Although the exposure to shallow groundwater pathway is considered potentially complete for these receptors, potential exposure to groundwater during future intrusive activities is expected to be mitigated with the use of appropriate required health and safety protocols including PPE.

Under a future use scenario, if buildings are constructed at the Site, TCE is a possible COPC for soil vapor intrusion and indoor air.

The presence of the impervious surface prevents potential contact with soil COPCs by current site receptors, including trespassers and commercial workers. This condition exists until the impervious surface is removed, exposing the soil at the Site. Under a future use scenario whereby a building is to be constructed at the Site, it is recommended that potential vapor mitigation strategies be evaluated.

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TABLES

Table 1
Subsurface Soil Analytical Results

Human Health Exposure Assessment
BT Red Hook, LLC
Red Hook 4 - NYSDEC Brownfield Site #C224214
Brooklyn, Kings County, New York

Analyte	Commercial SCO [1]	Restricted Residential SCO [1]	Location: / Depth Range: / Depth Unit: / Sample Date: / Unit	A-RH4-DB1 5-10 feet 6/27/2017	A-RH4-DB2 5-10 feet 6/29/2017
General Chemistry					
Chromium III	1500	180	mg/kg	15.7	17.3
Cyanide	27	27	mg/kg	< 0.56 U	< 0.61 U
Inorganics					
Aluminum			mg/kg	7600	8470
Antimony			mg/kg	< 0.345 U	< 0.429 U
Arsenic	16	16	mg/kg	4.91 J	3.55 J
Barium	400	400	mg/kg	48.8	49.4
Beryllium	590	72	mg/kg	0.483	0.492
Cadmium	9.3	4.3	mg/kg	0.0835 J	< 0.214 U
Calcium			mg/kg	2450	2270
Chromium			mg/kg	15.7 J	17.3 J
Chromium VI	400	110	mg/kg	< 1.8 U	< 1.8 U
Cobalt			mg/kg	5.85	6.61
Copper	270	270	mg/kg	17.7	12.2
Iron			mg/kg	16100	16700
Lead	1000	400	mg/kg	55.2	8.39
Magnesium			mg/kg	3040	2940
Manganese	10000	2000	mg/kg	286	120
Mercury	2.8	0.81	mg/kg	< 0.118 U	0.0133 J
Nickel	310	310	mg/kg	19.7 J	21 J
Potassium			mg/kg	1540	1590
Selenium	1500	180	mg/kg	< 0.69 U	0.264 J
Silver	1500	180	mg/kg	< 0.173 U	< 0.214 U
Sodium			mg/kg	237	170
Thallium			mg/kg	0.0795 J	0.0909 J
Vanadium			mg/kg	25.2 J	24.9 J
Zinc	10000	10000	mg/kg	61.3 J	38.1 J
Organochlorine Pesticides					
4,4-DDD	92	13	mg/kg	0.00044 J	< 0.0021 U
4,4-DDT	47	7.9	mg/kg	< 0.0020 U	< 0.0021 U
Dibenzofuran	350	59	mg/kg	< 0.039 U	< 0.04 U
Heptachlor epoxide			mg/kg	0.00027 J	< 0.0010 U
PCBs					
Aroclor 1248			mg/kg	< 0.02 U	< 0.021 U
Polychlorinated biphenyls	1	1	mg/kg	< 0.02 U	< 0.021 U
SVOCs					
1,1-Biphenyl			mg/kg	< 0.039 U	< 0.04 U
2-Methylnaphthalene			mg/kg	0.005 J	0.015 J
4-Chlorophenyl phenyl ether			mg/kg	< 0.039 U	< 0.04 U
4-Methylphenol	500	100	mg/kg		
Acenaphthene	500	100	mg/kg	< 0.02 U	< 0.021 U
Acenaphthylene	500	100	mg/kg	0.006 J	0.011 J
Anthracene	500	100	mg/kg	0.009 J	0.008 J
Benzo(a)anthracene	5.6	1	mg/kg	0.027	0.014 J
Benzo(a)pyrene	1	1	mg/kg	0.025	0.01 J
Benzo(b)fluoranthene	5.6	1	mg/kg	0.028	0.012 J
Benzo(g,h,i)perylene	500	100	mg/kg	0.016 J	0.006 J
Benzo(k)fluoranthene	56	3.9	mg/kg	0.015 J	< 0.021 U
Benzoic Acid			mg/kg	< 0.58 U	0.45 J
bis(2-Ethylhexyl)phthalate			mg/kg	< 0.2 U	< 0.21 U
Carbazole			mg/kg	< 0.039 U	< 0.04 U
Chrysene	56	3.9	mg/kg	0.03	0.008 J
Dibenzo(a,h)anthracene	0.56	0.33	mg/kg	0.008 J	< 0.021 U
Fluoranthene	500	100	mg/kg	0.043	0.014 J

See Notes on Page 2.

Table 1
Subsurface Soil Analytical Results

Human Health Exposure Assessment
BT Red Hook, LLC
Red Hook 4 - NYSDEC Brownfield Site #C224214
Brooklyn, Kings County, New York

Analyte	Commercial SCO [1]	Restricted Residential SCO [1]	Location: / Depth Range: / Depth Unit: / Sample Date: / Unit	A-RH4-DB1 5-10 feet 6/27/2017	A-RH4-DB2 5-10 feet 6/29/2017
SVOCs (cont.)					
Fluorene	500	100	mg/kg	0.004 J	< 0.021 U
Indeno(1,2,3-cd)pyrene	5.6	0.5	mg/kg	0.016 J	< 0.021 U
Naphthalene	500	100	mg/kg	< 0.02 U	0.01 J
Phenanthrene	500	100	mg/kg	0.026	0.014 J
Pyrene	500	100	mg/kg	0.042	0.024
VOCs					
1,1,2,2-Tetrachloroethane			mg/kg	< 0.005 U	< 0.006 UJ
1,1,2-Trichloroethane			mg/kg	< 0.005 U	< 0.006 U
1,2,3-Trichloropropane			mg/kg	< 0.005 U	< 0.006 UJ
1,2,4-Trimethylbenzene	190	52	mg/kg	< 0.005 U	< 0.006 UJ
1,2-Dichlorobenzene	500	100	mg/kg	< 0.005 U	< 0.006 UJ
1,2-Dichloroethane	30	3.1	mg/kg	< 0.005 U	< 0.006 U
1,3,5-Trimethylbenzene	190	52	mg/kg	< 0.005 U	< 0.006 UJ
1,4-Dichlorobenzene	130	13	mg/kg	< 0.005 U	< 0.006 UJ
2-Butanone (MEK)	500	100	mg/kg	< 0.01 U	< 0.012 U
Acetone	400	100	mg/kg	0.047	0.024
Benzene	44	4.8	mg/kg	< 0.005 U	< 0.006 U
Carbon Disulfide			mg/kg	< 0.005 U	0.004 J
Chlorobenzene	500	100	mg/kg	< 0.005 U	< 0.006 U
cis-1,2-Dichloroethene	500	100	mg/kg	< 0.005 U	< 0.006 U
Cyclohexane			mg/kg	< 0.005 U	< 0.006 U
Cymene (p-Isopropyltoluene)			mg/kg	< 0.005 U	< 0.006 UJ
Dichloromethane	500	100	mg/kg	< 0.005 U	< 0.006 U
Isopropylbenzene			mg/kg	< 0.005 U	< 0.006 U
Methyl Acetate			mg/kg	< 0.005 U	< 0.006 U
Methyl N-Butyl Ketone (2-Hexanone)			mg/kg	< 0.01 U	< 0.012 U
Methylcyclohexane			mg/kg	< 0.005 U	< 0.006 U
n-Butylbenzene	500	100	mg/kg	< 0.005 U	< 0.006 UJ
n-Propylbenzene	500	100	mg/kg	< 0.005 U	< 0.006 UJ
sec-Butylbenzene	500	100	mg/kg	< 0.005 U	< 0.006 UJ
tert-Butylbenzene	500	100	mg/kg	< 0.005 U	< 0.006 UJ
Trichloroethene	200	21	mg/kg	< 0.005 U	< 0.006 U

Notes:
Only detected constituents included; herbicides were not detected.
blank = not available or not analyzed
[1] 6 New York Codes, Rules, and Regulations (NYCRR) Part 375 SCOs for commercial land use and restricted residential land use (NYSDEC 2006)
< = not detected
J = estimated value
mg/kg = milligrams per kilogram
PCB = polychlorinated biphenyl
SCO = soil cleanup objective
SVOC = semi-volatile organic compound
U = not detected
VOC = volatile organic compound

Table 2
Soil Vapor Analytical Results

Human Health Exposure Assessment
BT Red Hook, LLC
Red Hook 4 - NYSDEC Brownfield Site #C224214
Brooklyn, Kings County, New York

Analyte [1]	NYSDOH Matrix Threshold [2]		USEPA Target Sub-Slab Soil Vapor Concentration [3]		Location: Sample Date	SV01 5/31/2017	SV02 6/15/2017	SV03 6/15/2017	SV04 6/15/2017	SV05 5/31/2017	SV06 5/31/2017	SV07 5/31/2017	Residential Indoor Air COPC	Commercial Indoor Air COPC
	Lower Limit	Upper Limit	Residential	Commercial	Unit									
VOCs														
2,2,4-Trimethylpentane			NS	NS	ug/m^3	ND	ND	ND	ND	19	35	ND		
Acetone			107000	451000	ug/m^3	63	9.0	ND	ND	16	38	5		
Benzene			12	52.4	ug/m^3	**48**	11	ND	**12**	**15**	**34**	**22**	X	
Carbon Disulfide			2430	10200	ug/m^3	20	58	ND	ND	25	10	26		
Carbon Tetrachloride	6	60	15.6	68.1	ug/m^3	3.2	ND	ND	ND	ND	ND	ND		
Cyclohexane			20900	87600	ug/m^3	8.3	ND	ND	ND	ND	63	ND		
Dichlorodifluoromethane			NS	NS	ug/m^3	ND	ND	ND	ND	ND	11	ND		
Methylene chloride	100	1000	2090	8760	ug/m^3	11	ND	ND	120	41	ND	7.3		
Methyl ethyl ketone			17400	73000	ug/m^3	12	ND	ND	ND	ND	ND	ND		
n-Heptane			1390	5840	ug/m^3	18	ND	ND	ND	ND	18	ND		
n-Hexane			2430	10200	ug/m^3	120	ND	ND	ND	ND	8.5	ND		
Tetrachloroethene	100	1000	139	584	ug/m^3	14	ND	ND	ND	ND	15	ND		
Toluene			17400	73000	ug/m^3	36	11	9.8	10	27	42	26		
Trichloroethene	6	60	6.95	29.2	ug/m^3	**15**	3.2	4.3	2.7	4.3	**12**	3.8	X	
Xylenes (m&p)			NS	NS	ug/m^3	29	13	9.1	9.1	30	46	38		
Xylenes (o)			348	1460	ug/m^3	8.7	ND	ND	ND	9.1	13	11		

Notes:

[1] Soil vapor sample results obtained from Appendix D of the Remedial Investigation Report (Atlantic Environmental Solutions, Inc. 2017). Only detected analytes are presented.

[2] NYSDOH has published a decision matrix for eight volatile compounds as sub-slab soil gas samples (NYSDOH 2017), adapted for use at this Site. If soil gas concentrations are below the lower limit or VISLs, no further action is required. If soil gas concentrations exceed the lower limit but are below the VISL, no further action is required. If soil gas concentrations exceed the upper limit or VISLs, analyte is identified as a COPC for the vapor migration to indoor air pathway.

[3] Target sub-slab soil vapor concentrations for residential and commercial use from the VISL Calculator (USEPA 2018).
COPCs exceeding the USEPA Target Sub-Slab Soil Vapor Concentration for residential indoor air are bold.

COPC = constituent of potential concern
ug/m^3 = micrograms per cubic meter
ND = not detected
NS = no standard
NYSDOH = New York State Department of Health
USEPA = United States Environmental Protection Agency
VISL = Vapor Intrusion Screening Level
VOC = volatile organic compound

Table 3
COPC Summary

Human Health Exposure Assessment
BT Red Hook, LLC
Red Hook 4 - NYSDEC Brownfield Site #C224214
Brooklyn, Kings County, New York

COPC	COPC under Residential Scenario				COPC under Commercial Scenario			
	Surface Soil	Subsurface Soil	Groundwater (Indoor Air)	Soil Vapor (Indoor Air)	Surface Soil	Subsurface Soil	Groundwater (Indoor Air)	Soil Vapor (Indoor Air)
Inorganics								
Arsenic	x	x			x	x		
Barium	x				x			
Cadmium		x						
Copper	x				x			
Lead	x	x			x	x		
Manganese		x						
Mercury	x	x			x	x		
Nickel		x				x		
SVOCs								
1,1-Biphenyl			x				x	
Acenaphthene		x						
Acenaphthylene		x				x		
Anthracene		x						
Benzo(a)anthracene	x	x	x			x		
Benzo(a)pyrene	x	x			x	x		
Benzo(b)fluoranthene	x	x						
Benzo(k)fluoranthene	x	x				x		
Chrysene	x	x				x		
Dibenzo(a,h)anthracene	x	x			x	x		
Fluoranthene		x				x		
Fluorene		x						
Indeno(1,2,3-cd)pyrene	x	x				x		
Naphthalene		x	x			x	x	
Phenanthrene		x				x		
Pyrene		x				x		
Organochlorine Pesticides								
Dibenzofuran		x						
VOCs								
Benzene		x	x	x			x	
Chloroform			x					
Ethylbenzene			x				x	
Styrene			x					
Toluene			x				x	
Trichloroethene				x				
Vinyl chloride			x				x	
Xylenes			x				x	

Notes:
x = selected as a COPC
COPC = constituent of potential concern
SVOC = semi-volatile organic compound
VOC = volatile organic compound

Table 4
Qualitative Exposure Assessment Summary

Human Health Exposure Assessment
BT Red Hook, LLC
Red Hook 4 - NYSDEC Brownfield Site #C224214
Brooklyn, Kings County, New York

Environmental Media	Exposure Route	Human Receptor Exposure Assessment	
		Current	Future
Surface Soil	Direct Contact & Particulate/Vapor Inhalation	None exists. Impervious surface present.	Future Outdoor Commercial Workers - contact only if impervious surfaces removed. Trespassers - contact only if impervious surfaces and fences removed
Subsurface Soil	Direct Contact & Particulate/Vapor Inhalation	None exists. Impervious surface present.	Construction/Utility Workers - conducting intrusive work.
Groundwater	Direct Contact & Vapor Inhalation	None exists. No building exists.	Future Commercial Worker or Resident - inhalation only if a new building is constructed. Construction/Utility Workers - conducting intrusive work.

Note:
Direct contact with constituents of potential concern (COPCs) includes incidental ingestion and dermal contact.

FIGURES

REFERENCE: BASE MAP USGS 7.5 MIN. TOPO. QUADS., JERSEY CITY, NJ-NY, 2016, AND BROOKLYN, NY, 2016

0 1000' 2000'

Approximate Scale: 1 in. = 1000 ft.

BT RED HOOK, LLC
RED HOOK 4
44 AND 62 FERRIS STREET/219 SULLIVAN STREET
BROOKLYN, NEW YORK

SITE LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE 1

CITY: SYRACUSE, NY DIV/GROUP: EBC-IM/DV DB/LD: L.POSENAUER PM:(Reqd) TM: J.RODDY LYR:(Opt)ON=*;OFF=*REF*
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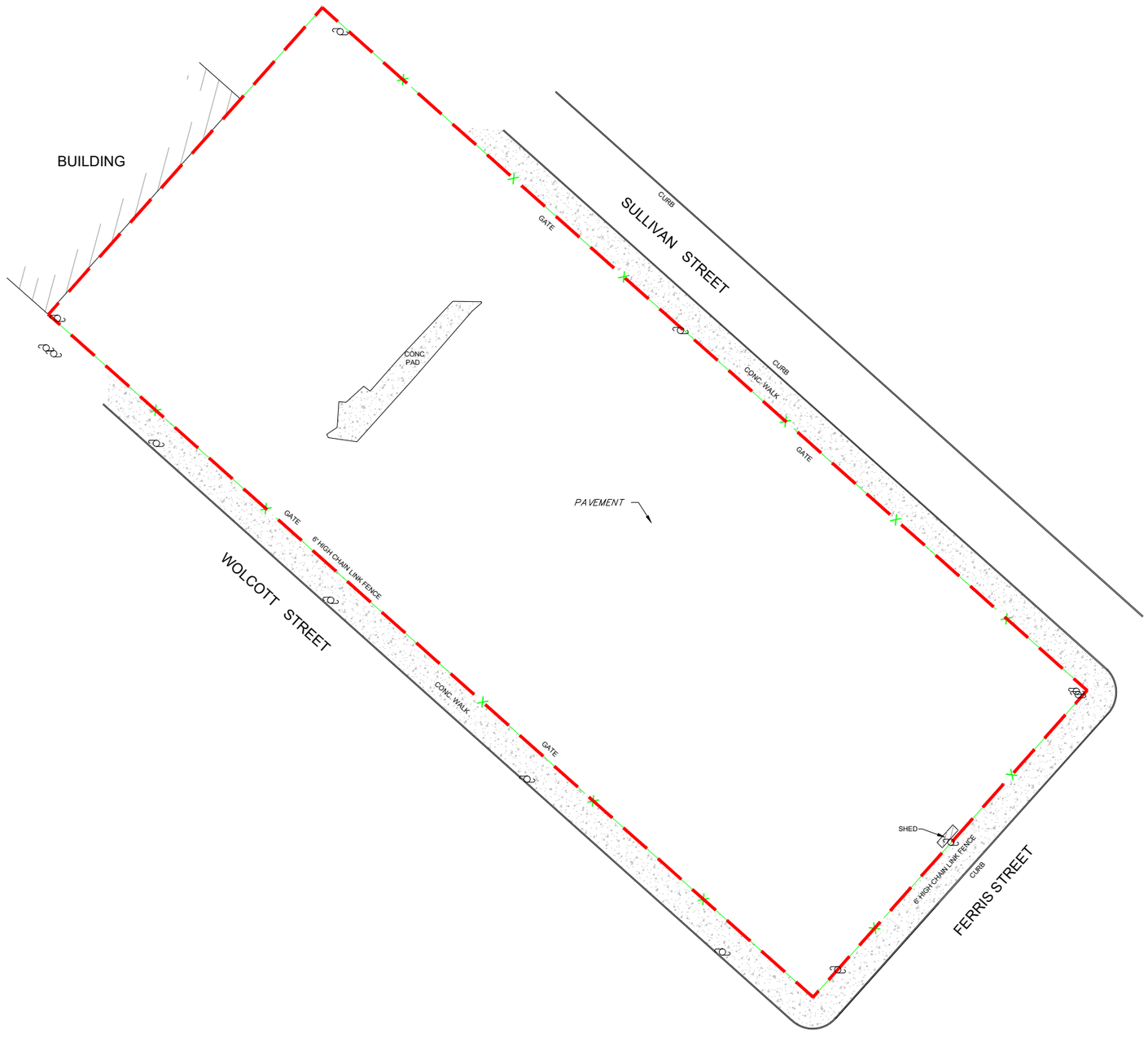

LEGEND:

- SITE BOUNDARY
- FENCE
- UTILITY POLES

NOTE:

1. BASED ON "EXISTING SITE" FIGURE (AESI MARCH 2017) AND "NY CITY DEPARTMENT OF FINANCE DIGITAL TAX MAP" (AUGUST 15, 2017).

0 60' 120'

GRAPHIC SCALE

BT RED HOOK, LLC
RED HOOK 4
44 AND 62 FERRIS STREET/219 SULLIVAN STREET
BROOKLYN, NEW YORK

SITE MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE
2

CITY:(Reqd) DIV/GROUP:(Reqd) DB:(Reqd) LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
D:\PROJECTS\12.UPS\05.Red Hook\After Scale\Figure 2 - RH4 Site Map.dwg LAYOUT: 2 SAVED: 12/12/2017 5:06 PM ACADVER: 20.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 12/12/2017 6:09 PM BY: CHANDRAKANTH THORWATH
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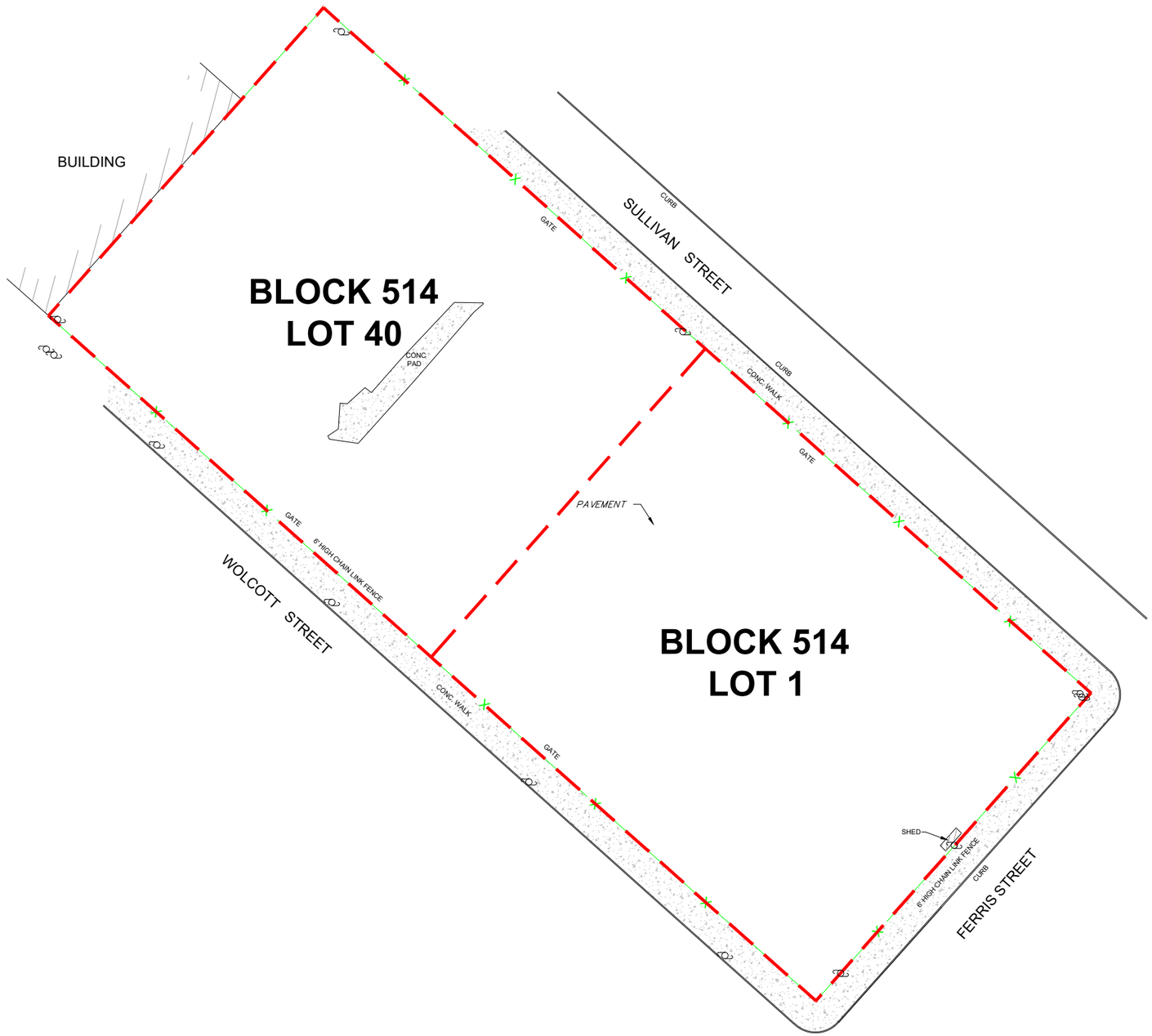

LEGEND:

- BLOCK/LOT BOUNDARY
- FENCE
- UTILITY POLES

NOTE:

1. BASED ON "EXISTING SITE" FIGURE (AESI MARCH 2017) AND "NY CITY DEPARTMENT OF FINANCE DIGITAL TAX MAP" (AUGUST 15, 2017).

0 60' 120'

GRAPHIC SCALE

BT RED HOOK, LLC
RED HOOK 4
44 AND 62 FERRIS STREET/219 SULLIVAN STREET
BROOKLYN, NEW YORK

SITE MAP WITH BLOCK/LOT BOUNDARIES

ARCADIS Design & Consultancy for natural and built assets

FIGURE 2A

CITY:(Reqd) DIV/GROUP:(Reqd) DB:(Reqd) LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
D:\PROJECTS\12.UPS\05.Red Hook\After Scale\Figure 2A - RH4 Site Map.dwg LAYOUT: 2A SAVED: 12/12/2017 5:08 PM ACADVER: 20.0S (LMS TECH) PAGESETUP: ----
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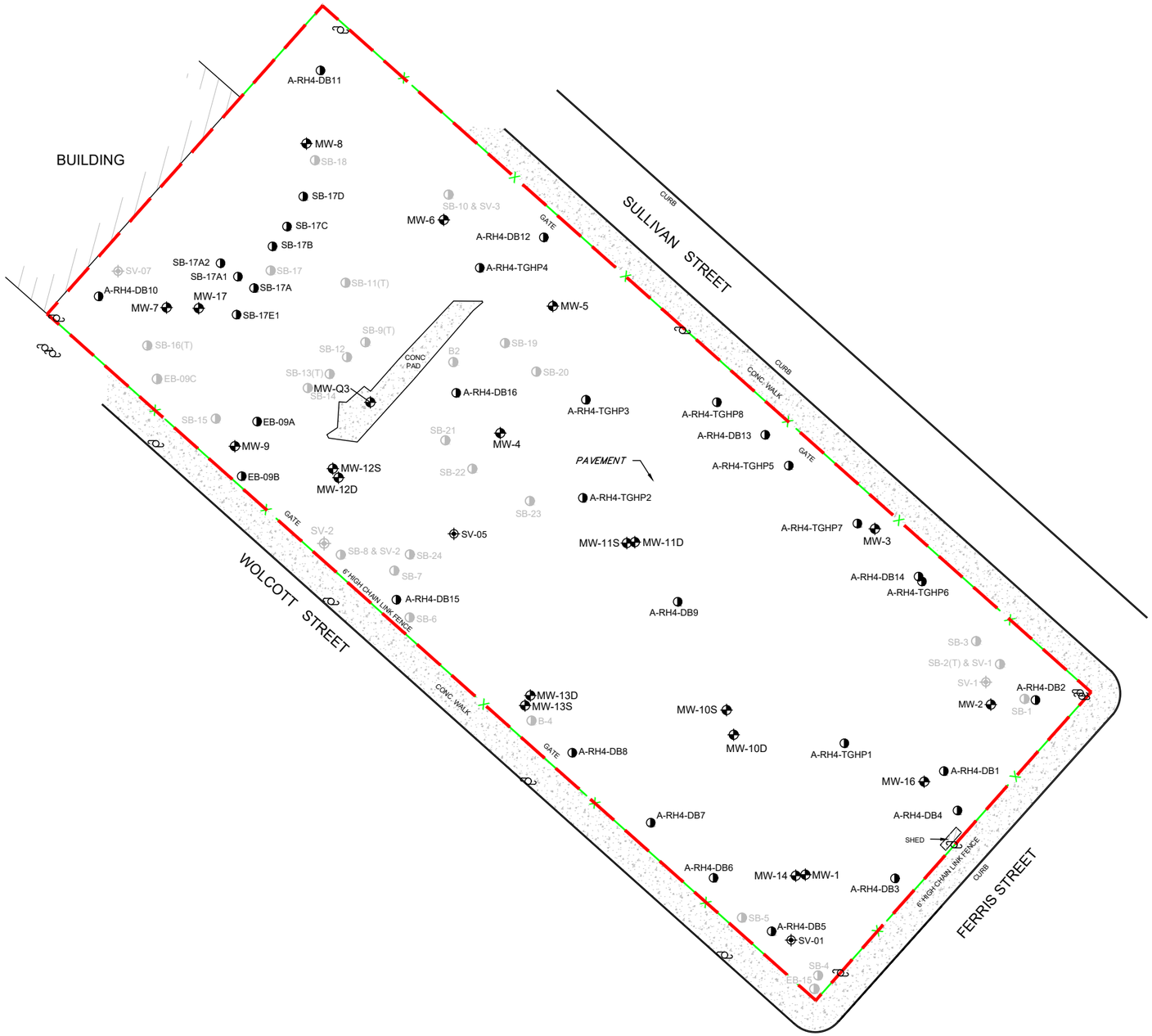

LEGEND:

- MONITORING WELL
- SOIL BORING
- SOIL BORING (NOT SURVEYED)
- SOIL VAPOR MONITORING POINT
- SOIL VAPOR MONITORING POINT (NOT SURVEYED)
- SITE BOUNDARY
- FENCE
- UTILITY POLES

NOTES:

1. FIGURE IS BASED ON A SURVEY PREPARED BY DPK LAND SURVEYING, LLC ON 11/2/2017.
2. PROPERTY BOUNDARIES OBTAINED FROM FIGURE ENTITLED "ALTA/NSPS LAND TITLE SURVEY" (LANGAN APRIL 4, 2017).
3. BORING LOCATIONS SHOWN IN GRAY WERE NOT FIELD LOCATED OR SURVEYED BY ARCADIS AND WERE DIGITIZED FROM FIGURES PROVIDED BY AESI AND LANGAN.
4. "TGHP" INDICATES A TarGOST® LOCATION.
5. SOIL BORINGS AND TarGOST® LOCATIONS WITH AN "A-" PREFIX WERE ADVANCED BY ARCADIS.
6. TarGOST® -TAR SPECIFIC GREEN OPTICAL SENSING TOOL.

0 60' 120'

GRAPHIC SCALE

BT RED HOOK, LLC
RED HOOK 4
44 AND 62 FERRIS STREET/219 SULLIVAN STREET
BROOKLYN, NEW YORK

MONITORING WELL AND SOIL BORING LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE 3

CITY:(Reqd) DIV/GROUP:(Reqd) DB:(Reqd) LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
C:\Users\DJ01061\OneDrive - ARCADIS\BIM 360 Docs\UNITED PARCEL SERVICE\Red Hook 4 Supplemental Del In\2018\B0038932.0003\01-DWG\Figure 5 - RH4 Proposed DNAPL and LNAPL Delineation Boring Locations.dwg LAYOUT: 3 SAVED: 5/30/2018 6:02 PM ACADVER: 21.0S (LMS TECH)
PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 5/30/2018 6:04 PM BY: JAYAPAL, DINESH KUMAR
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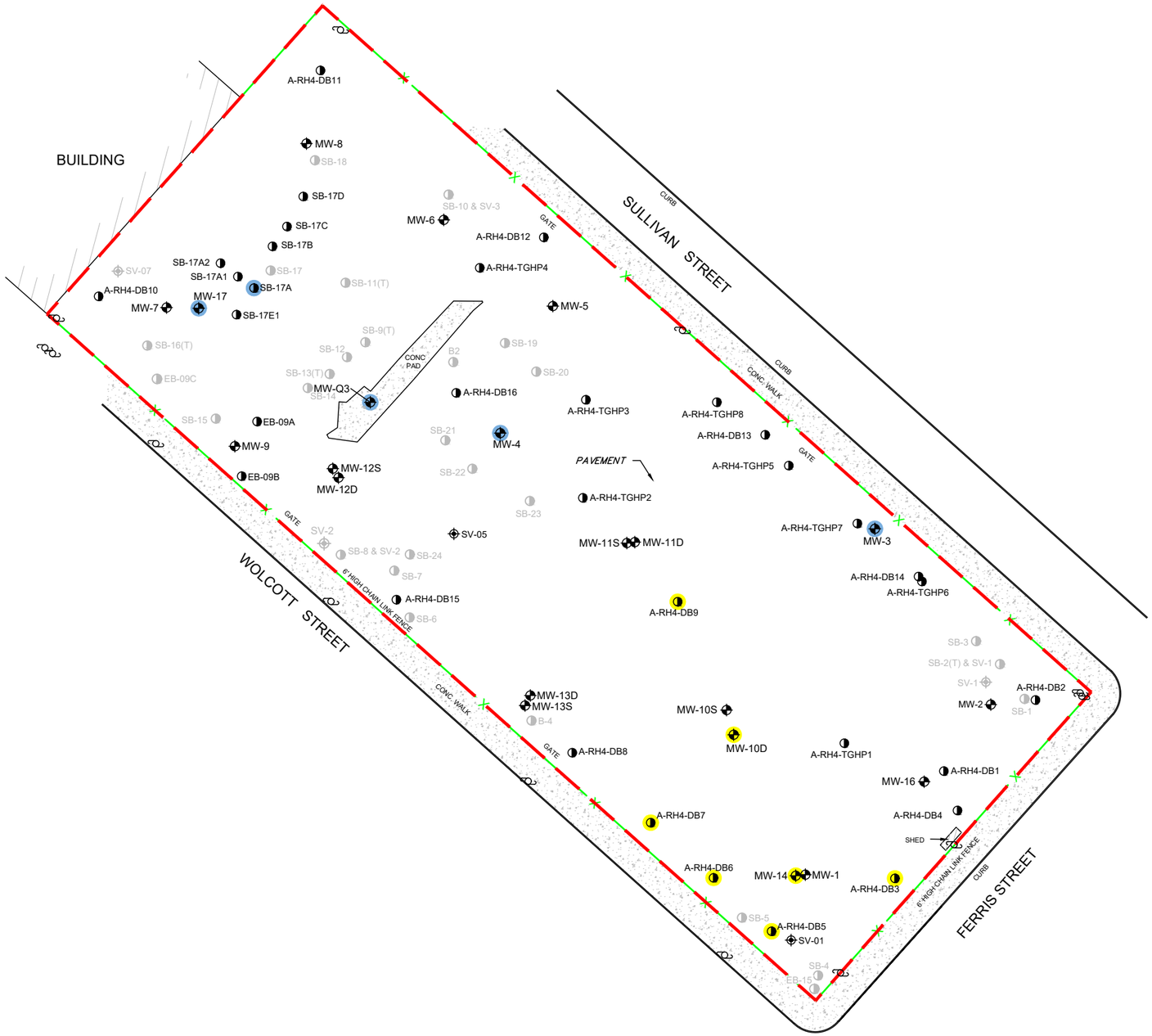

LEGEND:

- MONITORING WELL
- SOIL BORING
- SOIL BORING (NOT SURVEYED)
- SOIL VAPOR MONITORING POINT
- SOIL VAPOR MONITORING POINT (NOT SURVEYED)
- SITE BOUNDARY
- FENCE
- UTILITY POLES
- VISIBLE DNAPL IN BORING LOG OR MEASURABLE DNAPL DURING WELL GAUGING ON 4/27/2018 (SEE NOTE 9)
- VISIBLE LNAPL IN BORING LOG OR MEASURABLE LNAPL DURING WELL GAUGING ON 4/27/2018 (SEE NOTE 9)

NOTES:

1. FIGURE IS BASED ON A SURVEY PREPARED BY DPK LAND SURVEYING, LLC ON 11/2/2017.
2. PROPERTY BOUNDARIES OBTAINED FROM FIGURE ENTITLED "ALTA/NSPS LAND TITLE SURVEY" (LANGAN APRIL 4, 2017).
3. BORING LOCATIONS SHOWN IN GRAY WERE NOT FIELD LOCATED OR SURVEYED BY ARCADIS AND WERE DIGITIZED FROM FIGURES PROVIDED BY AESI AND LANGAN.
4. "TGHP" INDICATES A TarGOST® LOCATION.
5. SOIL BORINGS AND TarGOST® LOCATIONS WITH AN "A-" PREFIX WERE ADVANCED BY ARCADIS.
6. TarGOST® -TAR SPECIFIC GREEN OPTICAL SENSING TOOL.
7. LNAPL - LIGHT NON-AQUEOUS PHASE LIQUID.
8. DNAPL - DENSE NON-AQUEOUS PHASE LIQUID.
9. FIELD OBSERVATIONS SHOWED THAT LNAPL WAS ENCOUNTERED PRIMARILY AT DEPTHS LESS THAN 20 FEET BELOW GROUND SURFACE (BGS) AND THE VERTICAL INTERVAL FOR DNAPL WAS 50 TO 75 FEET BGS.

0 60' 120'

GRAPHIC SCALE

BT RED HOOK, LLC - RED HOOK 4
44 AND 62 FERRIS STREET/219 SULLIVAN STREET
BROOKLYN, NEW YORK

OCCURRENCE OF VISIBLE DNAPL AND LNAPL

ARCADIS Design & Consultancy for natural and built assets

FIGURE 4

CITY:(Reqd) DIV/GROUP:(Reqd) DB:(Reqd) LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
C:\Users\DJ01061\OneDrive - ARCADIS\BIM 360 Docs\UNITED PARCEL SERVICE\Red Hook 4 Supplemental Del In\2018\B0038932.0003\01-DWG\Figure 4 - RH4 Occurrence of Visible DNAPL and LNAPL.dwg LAYOUT: 4 SAVED: 6/7/2018 5:56 PM ACADVER: 21.0S (LMS TECH) PAGESETUP: ----
PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 6/7/2018 5:56 PM BY: JAYAPAL, DINESH KUMAR
XREFS: IMAGES: PROJECTNAME: ----

APPENDIX A

Atlantic Environmental Solutions, Inc. Remedial Investigation Report
Tables 1 through 4

Table 1
Brownfield Cleanup Program
C224214 "Red Hook 4"
Soil Analytical Data (RI Scope)

Sample #:		Part 375-6.8(a) Unrestricted Use Soil Cleanup	Part 375-6.8(b) Protection of Public Health		EB01-025	EB01-055	EB01-170	EB02-025	EB02-055	EB02-130	DUP EB02-130	EB03-025	EB03-075	EB03-185	EB05-025	EB05-075	EB05-180	EB09A	EB09B	EB09C	EB09-025	EB09-115	EB09-180	DUP EB09-180
Field ID:																								
Lab ID:					04342-012	04342-013	04342-014	04342-015	04342-016	04342-017	04342-018	04342-019	04342-001	04342-002	04342-003	04342-004	04342-005	04342-006	04342-007	04342-008	04342-009	04342-010	04342-011	04342-020
Date Sampled:					05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017
Depth(ft):	CAS	Objectives (ppm)	Residential (ppm)	Restricted Residential (ppm)	2/2.5	5/5.5	16.5/17	2/2.5	5/5.5	12.5/13		2/2.5	7/7.5	18/18.5	2/2.5	7/7.5	17.5/18	5/6	5/6	5/6	2/2.5	11/11.5	17/17.5	
Volatiles (mg/Kg)					Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Dichlorodifluoromethane	75-71-8	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Chloromethane	74-87-3	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Vinyl chloride	75-01-4	0.02	0.21	0.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Bromomethane	74-83-9	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Chloroethane	75-00-3	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Trichlorofluoromethane	75-69-4	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
1,1-Dichloroethene	75-35-4	0.33	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Acetone	67-64-1	0.05	100	100	ND	0.015	**0.076**	ND	ND	ND	0.010	**4.92**	**0.148**	ND	0.030	ND	0.00443	~	~	~	ND	0.00579	0.018	**0.224**
Carbon disulfide	75-15-0	NS	100	NS	ND	ND	ND	0.00409	ND	0.00296	0.00173	ND	ND	ND	ND	ND	0.00119	~	~	~	ND	0.00325	0.0038	0.00619
Methylene chloride	75-09-2	0.05	51	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00257	0.00222	~	~	~	ND	ND	ND	ND
trans-1,2-Dichloroethene	156-60-5	0.19	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Methyl tert-butyl ether (MTBE)	1634-04-4	0.93	62	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
1,1-Dichloroethane	75-34-3	0.27	19	26	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
cis-1,2-Dichloroethene	156-59-2	0.25	59	100	ND	ND	ND	ND	ND	0.00277	0.000717	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
2-Butanone (MEK)	78-93-3	0.12	100	100	ND	ND	0.00215	ND	ND	ND	0.00111	ND	ND	ND	ND	ND	ND	~	~	~	ND	0.00105	0.00114	0.00294
Bromochloromethane	74-97-5	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Chloroform	67-66-3	0.37	10	49	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
1,1,1-Trichloroethane	71-55-6	0.68	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Carbon tetrachloride	56-23-5	0.76	1.4	2.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
1,2-Dichloroethane (EDC)	107-06-2	0.02	2.3	3.1	ND	ND	ND	ND	ND	0.000893	0.000223	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Benzene	71-43-2	0.06	2.9	4.8	ND	ND	ND	ND	ND	0.00053	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Trichloroethene	79-01-6	0.47	10	21	ND	ND	ND	ND	ND	0.000332	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
1,2-Dichloropropane	78-87-5	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
1,4-Dioxane	123-91-1	0.1	9.8	13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Bromodichloromethane	75-27-4	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
cis-1,3-Dichloropropene	10061-01-5	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
4-Methyl-2-pentanone (MIBK)	108-10-1	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Toluene	108-88-3	0.7	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
trans-1,3-Dichloropropene	10061-02-6	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
1,1,2-Trichloroethane	79-00-5	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Tetrachloroethene	127-18-4	1.3	5.5	19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
1,3-Dichloropropane	142-28-9	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
2-Hexanone	591-78-6	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Dibromochloromethane	124-48-1	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
1,2-Dibromoethane (EDB)	106-93-4	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Chlorobenzene	108-90-7	1.1	100	100	ND	ND	ND	ND	ND	0.00116	0.000476	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Ethylbenzene	100-41-4	1	30	41	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Total Xylenes	1330-20-7	0.26	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Styrene	100-42-5	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Bromoform	75-25-2	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Isopropylbenzene	98-82-8	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	0.000125	0.000244	0.000454
1,1,2,2-Tetrachloroethane	79-34-5	NS	35	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
1,2,3-Trichloropropane	96-18-4	NS	80	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
n-Propylbenzene	103-65-1	3.9	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
1,3,5-Trimethylbenzene	108-67-8	8.4	47	52	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
tert-Butylbenzene	98-06-6	5.9	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	0.00099	0.0016	0.00225
1,2,4-Trimethylbenzene	95-63-6	3.6	47	52	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
sec-Butylbenzene	135-98-8	11	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	0.000169	0.00053	0.000981
1,3-Dichlorobenzene	541-73-1	2.4	17	49	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
4-Isopropyltoluene	99-87-6	NS	NS	NS	0.000331	0.000208	ND	ND	ND	ND	ND	1.21	0.055	ND	ND	ND	ND	~	~	~	ND	ND	0.000239	0.000401
1,4-Dichlorobenzene	106-46-7	1.8	9.8	13	ND	ND	ND	ND	ND	0.00106	0.000754	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
n-Butylbenzene	104-51-8	12	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
1,2-Dichlorobenzene	95-50-1	1.1	100	100	ND	ND	ND	ND	ND	0.00367	0.00166	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	96-12-8	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
1,2,4-Trichlorobenzene	120-82-1	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
1,2,3-Trichlorobenzene	87-61-6	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Methyl acetate	79-20-9	NS	NS	NS	ND	0.00112	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Cyclohexane	110-82-7	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	0.00191	0.011	0.014
Methylcyclohexane	108-87-2	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	0.031	ND	ND	ND	ND	~	~	~	0.000671	0.012	0.030	0.041
TOTAL VO's:		NS	NS	NS	0.000331	0.016	0.078	0.00409	ND	0.013	0.017	6.13	0.234	ND	0.030	0.00257	0.00784	~	~	~	0.000671	0.025	0.066	0.291
TOTAL TIC's:		NS	NS	NS	0.051	ND	ND	ND	ND	0.012	ND	24.3	1.90	ND	0.023	0.00884	ND	~	~	~	0.013	0.097	0.205	0.217
TOTAL VO's & TIC's:		NS	NS	NS	0.051	0.016	0.078	0.00409	ND	0.025	0.017	30.4	2.13	ND	0.053	0.011	0.00784	~	~	~	0.014	0.122	0.271	0.508

6NYCRR Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives & NYCRR Part 375-6.8(b) Restricted Use Soil Cleanup Objectives December 2006

BOLD Conc indicates a concentration that exceeds residential restricted criteria.

BOLD RL Indicates RL that exceeds applicable criteria.

BOLD MDL Indicates MDL that exceeds applicable criteria.

NS = No Standard Available

~ = Sample not analyzed for

ND = Analyzed for but Not Detected at the MDL

J = Concentration detected at a value below the RL and above the MDL for target compounds. For non-target compounds (i.e. TICs), qualifier indicates estimated concentrations.

D = The compound was reported from the Diluted analysis

All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.

C = Common Laboratory and/or Bottle Contaminant.

N = Presumptive evidence of a compound from the use of GC/MS library search.

Table 1
Brownfield Cleanup Program
C224214 "Red Hook 4"
Soil Analytical Data (RI Scope)

Sample #:		Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives (ppm)	Part 375-6.8(b) Protection of Public Health		EB01-025	EB01-055	EB01-170	EB02-025	EB02-055	EB02-130	DUP-3	EB03-025	EB03-075	EB03-185	EB05-025	EB05-075	EB05-180	EB09A	EB09B	EB09C	EB09-025	EB09-115	EB09-180	DUP-4
Field ID:																								
Lab ID:					04342-012	04342-013	04342-014	04342-015	04342-016	04342-017	04342-018	04342-019	04342-001	04342-002	04342-003	04342-004	04342-005	04342-006	04342-007	04342-008	04342-009	04342-010	04342-011	04342-020
Date Sampled:					05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017
Depth(ft):			Residential (ppm)	tricted Reside (ppm)	2/2.5	5/5.5	16.5/17	2/2.5	5/5.5	12.5/13		2/2.5	7/7.5	18/18.5	2/2.5	7/7.5	17.5/18	5/6	5/6	5/6	2/2.5	11/11.5	17/17.5		
Semivolatiles - BNA (mg/Kg)	CAS				Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Benzaldehyde	100-52-7	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Phenol	108-95-2	0.33	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Bis(2-chloroethyl) ether	111-44-4	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
2-Chlorophenol	95-57-8	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
2-Methylphenol	95-48-7	0.33	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
2,2'-Oxybis(1-Chloropropane)	108-60-1	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
4-Methylphenol **	106-44-5	0.33	34	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	0.098	ND	ND	ND
N-Nitrosodi-n-propylamine	621-64-7	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Acetophenone	98-86-2	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Hexachloroethane	67-72-1	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Nitrobenzene	98-95-3	NS	3.7	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Isophorone	78-59-1	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
2-Nitrophenol	88-75-5	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
2,4-Dimethylphenol	105-67-9	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Bis(2-chloroethoxy) methane	111-91-1	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
2,4-Dichlorophenol	120-83-2	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Naphthalene	91-20-3	12	100	100	0.052	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.097	ND	ND	~	~	~	1.79	ND	ND	ND
4-Chloroaniline	106-47-8	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Hexachlorobutadiene	87-68-3	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Caprolactam	105-60-2	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
4-Chloro-3-methylphenol	59-50-7	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
2-Methylnaphthalene	91-57-6	NS	0.41	NS	0.053	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.076	ND	ND	~	~	~	**0.972**	ND	ND	ND
Hexachlorocyclopentadiene	77-47-4	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
2,4,6-Trichlorophenol	88-06-2	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
2,4,5-Trichlorophenol	95-95-4	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
1,1'-Biphenyl	92-52-4	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	0.227	ND	ND	ND
2-Chloronaphthalene	91-58-7	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
2-Nitroaniline	88-74-4	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Dimethyl phthalate	131-11-3	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
2,6-Dinitrotoluene	606-20-2	NS	1.03	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Acenaphthylene	208-96-8	100	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.055	ND	ND	~	~	~	0.118	ND	ND	ND
3-Nitroaniline	99-09-2	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Acenaphthene	83-32-9	20	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.112	ND	ND	~	~	~	2.04	ND	ND	ND
2,4-Dinitrophenol	51-28-5	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
4-Nitrophenol	100-02-7	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
2,4-Dinitrotoluene	121-14-2	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Dibenzofuran	132-64-9	7	14	59	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.082	ND	ND	~	~	~	1.40	ND	ND	ND
Diethyl phthalate	84-66-2	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Fluorene	86-73-7	30	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.082	ND	ND	~	~	~	1.45	ND	ND	ND
4-Chlorophenyl phenyl ether	7005-72-3	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
4-Nitroaniline	100-01-6	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
1,2,4,5-Tetrachlorobenzene	95-94-3	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
2,3,4,6-Tetrachlorophenol	58-90-2	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol	534-52-1	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
N-Nitrosodiphenylamine	86-30-6	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
4-Bromophenyl phenyl ether	101-55-3	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Hexachlorobenzene	118-74-1	0.33	0.41	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Atrazine	1912-24-9	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Pentachlorophenol	87-86-5	0.8	2.4	6.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Phenanthrene	85-01-8	100	100	100	0.257	ND	ND	0.302	ND	ND	ND	0.990	ND	ND	0.955	ND	ND	~	~	~	10.3	ND	ND	ND
Anthracene	120-12-7	100	100	100	0.055	ND	ND	0.074	ND	ND	ND	ND	ND	ND	0.301	ND	ND	~	~	~	2.03	ND	ND	ND
Carbazole	86-74-8	NS	NS	NS	ND	ND	ND	0.034	ND	ND	ND	ND	ND	ND	0.089	ND	ND	~	~	~	0.889	ND	ND	ND
Di-n-butyl phthalate	84-74-2	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Fluoranthene	206-44-0	100	100	100	0.320	ND	ND	0.429	ND	ND	ND	0.760	ND	ND	1.44	ND	ND	~	~	~	7.78	ND	ND	ND
Pyrene	129-00-0	100	100	100	0.301	ND	ND	0.386	ND	ND	ND	0.798	ND	ND	1.46	ND	ND	~	~	~	7.38	ND	ND	ND
Butyl benzyl phthalate	85-68-7	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
3,3'-Dichlorobenzidine	91-94-1	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Benzo[a]anthracene	56-55-3	1	1	1	0.184	ND	ND	0.247	ND	ND	ND	ND	ND	ND	0.927	ND	ND	~	~	~	**3.67**	ND	ND	ND
Chrysene	218-01-9	1	1	3.9	0.172	ND	ND	0.244	ND	ND	ND	ND	ND	ND	0.936	ND	ND	~	~	~	**3.52**	ND	ND	ND
Bis(2-ethylhexyl) phthalate	117-81-7	NS	50	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Di-n-octyl phthalate	117-84-0	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Benzo[b]fluoranthene	205-99-2	1	1	1	0.144	ND	ND	0.219	ND	ND	ND	ND	ND	ND	0.866	ND	ND	~	~	~	**2.65**	ND	ND	ND
Benzo[k]fluoranthene	207-08-9	0.8	1	3.9	0.137	ND	ND	0.172	ND	ND	ND	ND	ND	ND	**0.837**	ND	ND	~	~	~	**2.87**	ND	ND	ND
Benzo[a]pyrene	50-32-8	1	1	1	0.154	ND	ND	0.224	ND	ND	ND	ND	ND	ND	0.976	ND	ND	~	~	~	**3.24**	ND	ND	ND
Indeno[1,2,3-cd]pyrene	193-39-5	0.5	0.5	0.5	0.103	ND	ND	0.134	ND	ND	ND	ND	ND	ND	**0.597**	ND	ND	~	~	~	**1.81**	ND	ND	ND
Dibenz[a,h]anthracene	53-70-3	0.33	0.33	0.33	0.037	ND	ND	0.052	ND	ND	ND	ND	ND	ND	0.216	ND	ND	~	~	~	**0.694**	ND	ND	ND
Benzo[g,h,i]perylene	191-24-2	100	100	100	0.104	ND	ND	0.140	ND	ND	ND	ND	ND	ND	0.658	ND	ND	~	~	~	1.99	ND	ND	ND
Dinitrotoluene (2,4- and 2,6-)	25321-14-6	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
TOTAL BNA'S:		NS	NS	NS	2.07	ND	ND	2.66	ND	ND	ND	2.55	ND	ND	10.8	ND	ND	~	~	~	56.9	ND	ND	ND
TOTAL TIC's:		NS	NS	NS	0.171	ND	ND	0.223	ND	ND	ND	985	ND	0.258	1.86	0.828	ND	~	~	~	16.2	ND	ND	0.832
TOTAL BNA'S & TIC's:		NS	NS	NS	2.24	ND	ND	2.88	ND	ND	ND	988	ND	0.258	12.7	0.828	ND	~	~	~	73.1	ND	ND	0.832

6NYCRR Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives & NYCRR Part 375-6.8(b) Restricted Use Soil Cleanup Objectives December 2006

BOLD Conc Indicates a concentration that exceeds residential restricted criteria.
BOLD RL Indicates RL that exceeds applicable criteria.
BOLD MDL Indicates MDL that exceeds applicable criteria.
NS = No Standard Available
~ = Sample not analyzed for
ND = Analyzed for but Not Detected at the MDL
J = Concentration detected at a value below the RL and above the MDL for target compounds. For non-target compounds (i.e. TICs), qualifier indicates estimated concentrations.
D = The compound was reported from the Diluted analysis
All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.
C = Common Laboratory and/or Bottle Contaminant.
N = Presumptive evidence of a compound from the use of GC/MS library search.

Table 1
Brownfield Cleanup Program
C224214 "Red Hook 4"
Soil Analytical Data (RI Scope)

Sample #:		Part 375-6.8(a)	Part 375-6.8(b)		EB01-025	EB01-055	EB01-170	EB02-025	EB02-055	EB02-130	DUP-3	EB03-025	EB03-075	EB03-185	EB05-025	EB05-075	EB05-180	EB09A	EB09B	EB09C	EB09-025	EB09-115	EB09-180	DUP-4
Field ID:		Unrestricted Use	Protection of																					
Lab ID:		Soil Cleanup	Public Health		04342-012	04342-013	04342-014	04342-015	04342-016	04342-017	04342-018	04342-019	04342-001	04342-002	04342-003	04342-004	04342-005	04342-006	04342-007	04342-008	04342-009	04342-010	04342-011	04342-020
Date Sampled:		Objectives	Residential	tricted Reside	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017	05/24/2017
Depth(ft):		(ppm)	(ppm)	(ppm)	2/2.5	5/5.5	16.5/17	2/2.5	5/5.5	12.5/13		2/2.5	7/7.5	18/18.5	2/2.5	7/7.5	17.5/18	5/6	5/6	5/6	2/2.5	11/11.5	17/17.5	
PCB's (mg/Kg)	CAS				Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Aroclor-1016	12674-11-2	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Aroclor-1221	11104-28-2	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Aroclor-1232	11141-16-5	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Aroclor-1242	53469-21-9	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Aroclor-1248	12672-29-6	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Aroclor-1254	11097-69-1	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Aroclor-1260	11096-82-5	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Aroclor-1262	37324-23-5	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Aroclor-1268	11100-14-4	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
PCBs	1336-36-3	0.1	1	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Pesticides (mg/Kg)					Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
alpha-BHC	319-84-6	0.02	0.097	0.48	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
beta-BHC	319-85-7	0.036	0.072	0.36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
gamma-BHC (Lindane)	58-89-9	0.1	0.28	1.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
delta-BHC	319-86-8	0.04	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Heptachlor	76-44-8	0.042	0.42	2.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Aldrin	309-00-2	0.005	0.019	0.097	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Heptachlor epoxide	1024-57-3	NS	0.077	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Endosulfan I	959-98-8	2.4	4.8	24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
4,4'-DDE	72-55-9	0.0033	1.8	8.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Dieldrin	60-57-1	0.005	0.039	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Endrin	72-20-8	0.014	2.2	11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Endosulfan II	33213-65-9	2.4	4.8	24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
4,4'-DDD	72-54-8	0.0033	2.6	13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Endrin aldehyde	7421-93-4	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Endosulfan sulfate	1031-07-8	2.4	4.8	24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
4,4'-DDT	50-29-3	0.0033	1.7	7.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Endrin ketone	53494-70-5	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Methoxychlor	72-43-5	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
alpha-Chlordane	5103-71-9	0.094	0.91	4.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
gamma-Chlordane	5103-74-2	NS	0.54	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Toxaphene	8001-35-2	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Endosulfan (I and II)	115-29-7	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Chlordane (alpha and gamma)	57-74-9	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Herbicides (mg/Kg)					Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Dalapon	75-99-0	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Dicamba	1918-00-9	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
2,4-D	94-75-7	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
2,4,5-TP (Silvex)	93-72-1	3.8	58	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
2,4,5-T	93-76-5	NS	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
2,4-DB	94-82-6	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Dinoseb	88-85-7	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Metals (mg/Kg)					Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Aluminum	7429-90-5	NS	NS	NS	8050	8380	4850	9610	10600	5160	4460	3340	9050	12400	9370	8240	14300	4080	5790	10700	5680	8580	20500	13400
Antimony	7440-36-0	NS	NS	NS	0.718	ND	ND	ND	ND	ND	ND	1.00	ND	ND	1.76	ND	ND	12.3	0.283	ND	5.77	ND	ND	ND
Arsenic	7440-38-2	13	16	16	7.07	3.71	1.12	3.18	3.41	2.47	3.01	8.19	2.96	3.35	12.5	3.93	4.46	**67.1**	3.46	3.46	10.6	2.92	9.75	6.27
Barium	7440-39-3	350	350	400	67.2	36.5	37.8	61.2	57.5	24.3	17.8	100	54.3	116	177	39.9	110	145	36.3	125	100	54.6	75.2	50.0
Beryllium	7440-41-7	7.2	14	72	0.488	0.425	0.325	0.698	0.748	ND	ND	ND	0.581	0.813	0.877	0.422	0.994	0.390	ND	0.422	0.710	0.481	1.19	0.758
Cadmium	7440-43-9	2.5	2.5	4.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.494	ND	ND	0.420	ND	ND	ND
Calcium	7440-70-2	NS	NS	NS	12200	890	1170	1650	3550	938	723	1010	1610	2500	44200	1750	11700	3780	1400	3840	6770	5110	6900	3770
Chromium	7440-47-3	NS	NS	NS	15.6	17.9	13.8	18.9	23.0	11.3	11.6	19.2	15.5	38.0	84.8	15.5	39.5	11.9	15.6	33.3	13.5	13.9	41.3	64.9
Cobalt	7440-48-4	NS	30	NS	9.07	6.49	4.02	8.04	7.98	4.43	3.42	6.38	7.31	12.9	6.48	7.67	13.4	7.77	5.51	11.1	8.72	8.59	14.9	22.6
Copper	7440-50-8	50	270	270	32.6	10.1	7.64	18.1	14.3	5.94	4.13	**74.2**	13.4	20.6	46.7	15.0	22.5	**164**	17.1	18.6	**320**	21.9	29.2	25.6
Iron	7439-89-6	NS	2000	NS	45900	18200	10700	22700	23400	13200	11800	30400	21800	29000	27700	19800	30500	26200	19400	26500	39000	26600	46400	35300
Lead	7439-92-1	63	400	400	**99.0**	5.94	3.68	22.1	15.0	8.01	2.83	**260**	13.3	10.8	**416**	13.7	12.1	**2580**	40.8	16.8	**171**	11.9	61.4	40.8
Magnesium	7439-95-4	NS	NS	NS	2570	2470	2430	3480	3560	2390	2490	708	3490	7550	3400	2880	18900	1840	2610	6820	1710	4390	10200	31100
Manganese	7439-96-5	1600	2000	2000	437	304	94.5	132	161	94.0	77.0	109	174	447	351	162	585	342	206	223	497	416	569	514
Mercury	7439-97-6	0.18	0.81	0.81	0.073	ND	ND	0.055	0.015	ND	ND	0.047	ND	ND	**0.238**	ND	ND	**0.590**	0.035	ND	**0.580**	0.019	0.158	0.066
Nickel	7440-02-0	30	140	310	19.6	21.8	15.0	25.4	24.9	16.8	14.2	24.2	17.5	**129**	17.4	21.6	**92.3**	23.1	16.0	**70.3**	19.3	19.8	**72.5**	**298**
Potassium	7440-09-7'	NS	NS	NS	1150	1450	1160	1910	1670	830	855	290	1310	3360	1950	989	4130	741	1220	3800	762	1430	3600	2690
Selenium	7782-49-2	3.9	36	180	1.12	2.37	0.615	0.929	**4.06**	1.91	ND	0.989	ND	0.772	0.503	1.43	1.75	2.02	1.06	2.14	ND	0.431	0.566	1.31
Silver	7440-22-4	2	36	180	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.369	ND	ND	ND	ND	ND	ND
Sodium	7440-23-5	NS	NS	NS	630	310	153	161	167	120	126	76.1	101	167	216	145	460	97.6	63.1	162	81.4	184	327	225
Thallium	7440-28-0	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	7440-62-2	NS	100	NS	23.9	21.4	12.6	26.7	30.1	13.0	13.8	22.2	20.0	29.8	27.0	19.8	34.6	16.8	18.0	34.1	22.5	16.4	46.6	33.0
Zinc	7440-66-6	109	2200	10000	61.9	29.7	19.2	85.9	39.9	23.9	17.8	62.8	43.9	58.3	**216**	38.3	55.8	**347**	**145**	64.2	**174**	49.0	84.9	61.5
General Analytical					Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Hexavalent Chromium-mg/Kg	18540-29-9	1	22	110	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	~	~	~	ND	ND	ND	ND
Cyanide, Total-mg/Kg	57-12-5	27	27	27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.713	ND	ND	~	~	~	ND	ND	ND	ND

6NYCRR Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives & NYCRR Part 375-6.8(b) Restricted Use Soil Cleanup Objectives December 2006

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ND = Analyzed for but Not Detected at the MDL

J = Concentration detected at a value below the RL and above the MDL for target compounds. For non-target compounds (i.e. TICs), qualifier indicates estimated concentrations.

D = The compound was reported from the Diluted analysis

All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.

C = Common Laboratory and/or Bottle Contaminant.

N = Presumptive evidence of a compound from the use of GC/MS library search.

Table 2
Brownfield Cleanup Program
C224214 "Red Hook 4"
(June 2017)
Soil Analytical Data (Delineation Scope)

Sample #:		Part 375-6.8(b) Protection of Public Health		EB15-700	EB15-175	EB15-025	SB-17A	SB-17A1	SB-17A2	SB-17C	SB-17D	SB-17G
Field ID:												
Lab ID:				04678-001	04678-002	04678-003	04588-010	04588-011	04588-012	04588-013	04588-014	04588-015
Date Sampled:		Residential	Restricted Residential	06/05/2017	06/05/2017	06/05/2017	06/02/2017	06/02/2017	06/02/2017	06/02/2017	06/02/2017	06/02/2017
Depth(ft):	CAS	(ppm)	(ppm)	70/75	17/17.5	2/2.5	7/7.5	9/9.5	8.5/9	7/7.5	9.5/10	7/7.5
Volatiles (mg/Kg)				Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Dichlorodifluoromethane	75-71-8	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	74-87-3	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	75-01-4	0.21	0.9	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	74-83-9	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	75-00-3	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	75-69-4	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	75-35-4	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	67-64-1	100	100	ND	0.00359	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	75-15-0	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	75-09-2	51	100	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	156-60-5	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether (MTBE)	1634-04-4	62	100	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	75-34-3	19	26	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	156-59-2	59	100	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	78-93-3	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	74-97-5	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	67-66-3	10	49	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	71-55-6	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	56-23-5	1.4	2.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane (EDC)	107-06-2	2.3	3.1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	71-43-2	2.9	4.8	0.846	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	79-01-6	10	21	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	78-87-5	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dioxane	123-91-1	9.8	13	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	75-27-4	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	10061-01-5	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone (MIBK)	108-10-1	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	108-88-3	100	100	2.09	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	10061-02-6	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	79-00-5	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	127-18-4	5.5	19	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	142-28-9	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	591-78-6	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	124-48-1	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane (EDB)	106-93-4	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	108-90-7	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	100-41-4	30	41	0.357	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	1330-20-7	100	100	1.71	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	100-42-5	NS	NS	0.883	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	75-25-2	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	98-82-8	100	NS	ND	ND	ND	11.9	3.76	4.88	10.6	6.31	1.44
1,1,2,2-Tetrachloroethane	79-34-5	35	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	96-18-4	80	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	103-65-1	100	100	0.060	ND	ND	22.3	6.62	7.93	20.9	12.5	0.867
1,3,5-Trimethylbenzene	108-67-8	47	52	0.138	ND	ND	ND	ND	0.269	ND	ND	ND
tert-Butylbenzene	98-06-6	100	100	ND	ND	ND	ND	0.913	1.29	1.97	ND	0.818
1,2,4-Trimethylbenzene	95-63-6	47	52	0.396	ND	ND	0.846	1.51	3.21	ND	ND	0.144
sec-Butylbenzene	135-98-8	100	100	ND	ND	ND	22.2	6.66	7.78	25.0	14.8	4.54
1,3-Dichlorobenzene	541-73-1	17	49	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Isopropyltoluene	99-87-6	NS	NS	ND	ND	ND	0.365	0.383	1.03	3.80	2.87	0.171
1,4-Dichlorobenzene	106-46-7	9.8	13	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	104-51-8	100	100	ND	ND	ND	21.0	6.47	7.81	18.3	11.5	4.71
1,2-Dichlorobenzene	95-50-1	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	96-12-8	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	120-82-1	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	87-61-6	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl acetate	79-20-9	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane	110-82-7	NS	NS	ND	ND	ND	ND	ND	1.89	ND	ND	ND
Methylcyclohexane	108-87-2	NS	NS	0.026	ND	ND	91.4	22.4	29.1	60.2	29.4	15.4
TOTAL VO's:		NS	NS	6.51	0.00359	ND	170	48.7	65.2	141	77.4	28.1
TOTAL TIC's:		NS	NS	13.6	ND	ND	1950	587	629	1760	1270	364
TOTAL VO's & TIC's:		NS	NS	20.1	0.00359	ND	2120	636	694	1900	1350	392

6NYCRR Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives & NYCRR Part 375-6.8(b) Restricted Use Soil Cleanup Objectives December 2006

BOLD Conc Indicates a concentration that exceeds restricted residential criteria.

BOLD RL Indicates RL that exceeds applicable criteria.

BOLD MDL Indicates MDL that exceeds applicable criteria.

NS = No Standard Available

ND = Analyzed for but Not Detected at the MDL

J = Concentration detected at a value below the RL and above the MDL for target compounds. For non-target compounds (i.e. TICs), qualifier indicates estimated concentrations.

All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.

N = Presumptive evidence of a compound from the use of GC/MS library search.

Table 2
Brownfield Cleanup Program
C224214 "Red Hook 4"
(June 2017)
Soil Analytical Data (Delineation Scope)

Sample #:		Part 375-6.8(b) Protection of Public Health		EB15-700	EB15-175	EB15-025	SB-17A	SB-17A1	SB-17A2	SB-17C	SB-17D	SB-17G
Field ID:												
Lab ID:				04678-001	04678-002	04678-003	04588-010	04588-011	04588-012	04588-013	04588-014	04588-015
Date Sampled:		Residential	Restricted Residential	06/05/2017	06/05/2017	06/05/2017	06/02/2017	06/02/2017	06/02/2017	06/02/2017	06/02/2017	06/02/2017
Depth(ft):		(ppm)	(ppm)	70/75	17/17.5	2/2.5	7/7.5	9/9.5	8.5/9	7/7.5	9.5/10	7/7.5
	CAS											
Semivolatiles - BNA (mg/Kg)				Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Benzaldehyde	100-52-7	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenol	108-95-2	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-chloroethyl) ether	111-44-4	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorophenol	95-57-8	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylphenol	95-48-7	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,2'-Oxybis(1-Chloropropane)	108-60-1	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol **	106-44-5	34	100	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodi-n-propylamine	621-64-7	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetophenone	98-86-2	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachloroethane	67-72-1	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrobenzene	98-95-3	3.7	15	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isophorone	78-59-1	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Nitrophenol	88-75-5	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	105-67-9	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-chloroethoxy) methane	111-91-1	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dichlorophenol	120-83-2	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	91-20-3	100	100	0.317	ND	ND	0.792	0.296	0.106	0.646	0.514	0.539
4-Chloroaniline	106-47-8	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	87-68-3	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Caprolactam	105-60-2	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloro-3-methylphenol	59-50-7	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	91-57-6	0.41	NS	0.150	ND	ND	0.229	0.102	0.031	0.167	0.148	0.111
Hexachlorocyclopentadiene	77-47-4	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	88-06-2	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	95-95-4	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1'-Biphenyl	92-52-4	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	91-58-7	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Nitroaniline	88-74-4	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl phthalate	131-11-3	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	606-20-2	1.03	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	208-96-8	100	100	0.073	ND	ND	0.138	0.039	ND	0.347	ND	0.064
3-Nitroaniline	99-09-2	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	83-32-9	100	100	ND	ND	0.036	2.09	0.887	0.247	1.26	0.337	0.562
2,4-Dinitrophenol	51-28-5	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Nitrophenol	100-02-7	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	121-14-2	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	132-64-9	14	59	ND	ND	ND	1.20	0.534	0.124	0.636	0.241	0.418
Diethyl phthalate	84-66-2	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	86-73-7	100	100	0.067	ND	ND	1.82	0.715	0.166	1.12	0.473	0.516
4-Chlorophenyl phenyl ether	7005-72-3	NS	NS	ND	ND	ND	ND	0.261	ND	ND	ND	ND
4-Nitroaniline	100-01-6	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4,5-Tetrachlorobenzene	95-94-3	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,3,4,6-Tetrachlorophenol	58-90-2	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol	534-52-1	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	86-30-6	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Bromophenyl phenyl ether	101-55-3	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	118-74-1	0.41	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Atrazine	1912-24-9	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	87-86-5	2.4	6.7	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	85-01-8	100	100	0.194	ND	0.306	3.85	1.65	0.280	3.94	1.61	1.12
Anthracene	120-12-7	100	100	0.053	ND	0.066	1.79	0.787	0.152	1.10	0.555	0.630
Carbazole	86-74-8	NS	NS	ND	ND	ND	0.183	ND	ND	ND	ND	ND
Di-n-butyl phthalate	84-74-2	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	206-44-0	100	100	0.052	ND	0.350	2.87	1.42	ND	1.30	1.00	1.05
Pyrene	129-00-0	100	100	0.085	ND	0.405	3.57	1.37	ND	2.27	1.11	1.06
Butyl benzyl phthalate	85-68-7	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	91-94-1	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo[a]anthracene	56-55-3	1	1	0.033	ND	0.210	**1.95**	0.633	0.063	**1.16**	0.426	0.530
Chrysene	218-01-9	1	3.9	ND	ND	0.211	**1.86**	0.656	0.066	**1.56**	0.566	0.577
Bis(2-ethylhexyl) phthalate	117-81-7	50	NS	ND	ND	ND	0.060	ND	ND	ND	ND	ND
Di-n-octyl phthalate	117-84-0	100	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo[b]fluoranthene	205-99-2	1	1	ND	ND	0.189	0.792	0.245	ND	0.459	0.211	0.246
Benzo[k]fluoranthene	207-08-9	1	3.9	ND	ND	0.168	0.541	0.232	ND	0.494	0.105	0.181
Benzo[a]pyrene	50-32-8	1	1	ND	ND	0.209	0.912	0.366	ND	0.247	0.212	0.348
Indeno[1,2,3-cd]pyrene	193-39-5	0.5	0.5	ND	ND	0.069	0.224	0.120	ND	0.107	0.055	0.102
Dibenz[a,h]anthracene	53-70-3	0.33	0.33	ND	ND	0.042	0.161	0.074	ND	ND	ND	0.084
Benzo[g,h,i]perylene	191-24-2	100	100	ND	ND	0.076	0.248	0.123	ND	0.105	0.061	0.111
Dinitrotoluene (2,4- and 2,6-)	25321-14-6	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND
TOTAL BN'S:		NS	NS	1.02	ND	2.34	25.3	10.5	1.23	16.9	7.62	8.25
TOTAL TIC's:		NS	NS	ND	ND	0.244	81.9	170	100	34.1	80.7	42.5
TOTAL BN'S & TIC's:		NS	NS	1.02	ND	2.58	107	181	101	51.0	88.3	50.8

6NYCRR Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives & NYCRR Part 375-6.8(b) Restricted Use Soil Cleanup Objectives December 2006

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BOLD RL Indicates RL that exceeds applicable criteria.

BOLD MDL Indicates MDL that exceeds applicable criteria.

NS = No Standard Available

ND = Analyzed for but Not Detected at the MDL

J = Concentration detected at a value below the RL and above the MDL for target compounds. For non-target compounds (i.e. TICs), qualifier indicates estimated concentrations.

All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.

N = Presumptive evidence of a compound from the use of GC/MS library search.

Table 2
Brownfield Cleanup Program
C224214 "Red Hook 4"
(June 2017)
Soil Analytical Data (Delineation Scope)

Sample #:		Part 375-6.8(b) Protection of Public Health		EB15-700	EB15-175	EB15-025	SB-17A	SB-17A1	SB-17A2	SB-17C	SB-17D	SB-17G
Field ID:												
Lab ID:				04678-001	04678-002	04678-003	04588-010	04588-011	04588-012	04588-013	04588-014	04588-015
Date Sampled:		Residential	Restricted Residential	06/05/2017	06/05/2017	06/05/2017	06/02/2017	06/02/2017	06/02/2017	06/02/2017	06/02/2017	06/02/2017
Depth(ft):		(ppm)	(ppm)	70/75	17/17.5	2/2.5	7/7.5	9/9.5	8.5/9	7/7.5	9.5/10	7/7.5
PCB's (mg/Kg)	CAS			Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Aroclor-1016	12674-11-2	NS	NS	ND	ND	ND	~	~	~	~	~	~
Aroclor-1221	11104-28-2	NS	NS	ND	ND	ND	~	~	~	~	~	~
Aroclor-1232	11141-16-5	NS	NS	ND	ND	ND	~	~	~	~	~	~
Aroclor-1242	53469-21-9	NS	NS	ND	ND	ND	~	~	~	~	~	~
Aroclor-1248	12672-29-6	NS	NS	ND	ND	ND	~	~	~	~	~	~
Aroclor-1254	11097-69-1	NS	NS	ND	ND	ND	~	~	~	~	~	~
Aroclor-1260	11096-82-5	NS	NS	ND	ND	ND	~	~	~	~	~	~
Aroclor-1262	37324-23-5	NS	NS	ND	ND	ND	~	~	~	~	~	~
Aroclor-1268	11100-14-4	NS	NS	ND	ND	ND	~	~	~	~	~	~
PCBs	1336-36-3	1	1	ND	ND	ND	~	~	~	~	~	~

Sample #:		Part 375-6.8(b) Protection of Public Health		EB15-700	EB15-175	EB15-025	SB-17A	SB-17A1	SB-17A2	SB-17C	SB-17D	SB-17G
Field ID:												
Lab ID:				04678-001	04678-002	04678-003	04588-010	04588-011	04588-012	04588-013	04588-014	04588-015
Date Sampled:		Residential	Restricted Residential	06/05/2017	06/05/2017	06/05/2017	06/02/2017	06/02/2017	06/02/2017	06/02/2017	06/02/2017	06/02/2017
Depth(ft):		(ppm)	(ppm)	70/75	17/17.5	2/2.5	7/7.5	9/9.5	8.5/9	7/7.5	9.5/10	7/7.5
Pesticides (mg/Kg)	CAS			Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
alpha-BHC	319-84-6	0.097	0.48	ND	ND	ND	~	~	~	~	~	~
beta-BHC	319-85-7	0.072	0.36	ND	ND	ND	~	~	~	~	~	~
gamma-BHC (Lindane)	58-89-9	0.28	1.3	ND	ND	ND	~	~	~	~	~	~
delta-BHC	319-86-8	100	100	ND	ND	ND	~	~	~	~	~	~
Heptachlor	76-44-8	0.42	2.1	ND	ND	ND	~	~	~	~	~	~
Aldrin	309-00-2	0.019	0.097	ND	ND	ND	~	~	~	~	~	~
Heptachlor epoxide	1024-57-3	0.077	NS	ND	ND	ND	~	~	~	~	~	~
Endosulfan I	959-98-8	4.8	24	ND	ND	ND	~	~	~	~	~	~
4,4'-DDE	72-55-9	1.8	8.9	ND	ND	ND	~	~	~	~	~	~
Dieldrin	60-57-1	0.039	0.2	ND	ND	ND	~	~	~	~	~	~
Endrin	72-20-8	2.2	11	ND	ND	ND	~	~	~	~	~	~
Endosulfan II	33213-65-9	4.8	24	ND	ND	ND	~	~	~	~	~	~
4,4'-DDD	72-54-8	2.6	13	ND	ND	ND	~	~	~	~	~	~
Endrin aldehyde	7421-93-4	NS	NS	ND	ND	ND	~	~	~	~	~	~
Endosulfan sulfate	1031-07-8	4.8	24	ND	ND	ND	~	~	~	~	~	~
4,4'-DDT	50-29-3	1.7	7.9	ND	ND	ND	~	~	~	~	~	~
Endrin ketone	53494-70-5	NS	NS	ND	ND	ND	~	~	~	~	~	~
Methoxychlor	72-43-5	100	NS	ND	ND	ND	~	~	~	~	~	~
alpha-Chlordane	5103-71-9	0.91	4.2	ND	ND	ND	~	~	~	~	~	~
gamma-Chlordane	5103-74-2	0.54	NS	ND	ND	ND	~	~	~	~	~	~
Toxaphene	8001-35-2	NS	NS	ND	ND	ND	~	~	~	~	~	~
Endosulfan (I and II)	115-29-7	NS	NS	ND	ND	ND	~	~	~	~	~	~
Chlordane (alpha and gamma)	57-74-9	NS	NS	ND	ND	ND	~	~	~	~	~	~

6NYCRR Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives & NYCRR Part 375-6.8(b) Restricted Use Soil Cleanup Objectives December 2006

BOLD Conc Indicates a concentration that exceeds restricted residential criteria.
BOLD RL Indicates RL that exceeds applicable criteria.
BOLD MDL Indicates MDL that exceeds applicable criteria.
NS = No Standard Available
ND = Analyzed for but Not Detected at the MDL
J = Concentration detected at a value below the RL and above the MDL for target compounds. For non-target compounds (i.e. TICs), qualifier indicates estimated concentrations.
All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.
N = Presumptive evidence of a compound from the use of GC/MS library search.

Table 2
Brownfield Cleanup Program
C224214 "Red Hook 4"
(June 2017)
Soil Analytical Data (Delineation Scope)

Sample #:		Part 375-6.8(b) Protection of Public Health		EB15-700	EB15-175	EB15-025	SB-17A	SB-17A1	SB-17A2	SB-17C	SB-17D	SB-17G
Field ID:												
Lab ID:				04678-001	04678-002	04678-003	04588-010	04588-011	04588-012	04588-013	04588-014	04588-015
Date Sampled:		Residential	Restricted Residential	06/05/2017	06/05/2017	06/05/2017	06/02/2017	06/02/2017	06/02/2017	06/02/2017	06/02/2017	06/02/2017
Depth(ft):	CAS	(ppm)	(ppm)	70/75	17/17.5	2/2.5	7/7.5	9/9.5	8.5/9	7/7.5	9.5/10	7/7.5
Herbicides (mg/Kg)				Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Dalapon	75-99-0	NS	NS	ND	ND	ND	~	~	~	~	~	~
Dicamba	1918-00-9	NS	NS	ND	ND	ND	~	~	~	~	~	~
2,4-D	94-75-7	100	NS	ND	ND	ND	~	~	~	~	~	~
2,4,5-TP (Silvex)	93-72-1	58	100	ND	ND	ND	~	~	~	~	~	~
2,4,5-T	93-76-5	100	NS	ND	ND	ND	~	~	~	~	~	~
2,4-DB	94-82-6	NS	NS	ND	ND	ND	~	~	~	~	~	~
Dinoseb	88-85-7	NS	NS	ND	ND	ND	~	~	~	~	~	~

Sample #:		Part 375-6.8(b) Protection of Public Health		EB15-700	EB15-175	EB15-025	SB-17A	SB-17A1	SB-17A2	SB-17C	SB-17D	SB-17G
Field ID:												
Lab ID:				04678-001	04678-002	04678-003	04588-010	04588-011	04588-012	04588-013	04588-014	04588-015
Date Sampled:		Residential	Restricted Residential	06/05/2017	06/05/2017	06/05/2017	06/02/2017	06/02/2017	06/02/2017	06/02/2017	06/02/2017	06/02/2017
Depth(ft):	CAS	(ppm)	(ppm)	70/75	17/17.5	2/2.5	7/7.5	9/9.5	8.5/9	7/7.5	9.5/10	7/7.5
Metals (mg/Kg)				Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Aluminum	7429-90-5	NS	NS	6960	11500	9390	~	~	~	~	~	~
Antimony	7440-36-0	NS	NS	ND	ND	0.646	~	~	~	~	~	~
Arsenic	7440-38-2	16	16	1.06	3.55	6.04	~	~	~	~	~	~
Barium	7440-39-3	350	400	95.3	162	56.8	~	~	~	~	~	~
Beryllium	7440-41-7	14	72	0.333	0.922	0.527	~	~	~	~	~	~
Cadmium	7440-43-9	2.5	4.3	ND	ND	ND	~	~	~	~	~	~
Calcium	7440-70-2	NS	NS	4690	3040	2210	~	~	~	~	~	~
Chromium	7440-47-3	NS	NS	16.6	46.4	21.4	~	~	~	~	~	~
Cobalt	7440-48-4	30	NS	6.25	11.7	7.92	~	~	~	~	~	~
Copper	7440-50-8	270	270	9.79	45.7	34.0	~	~	~	~	~	~
Iron	7439-89-6	2000	NS	**18000**	**29000**	**24900**	~	~	~	~	~	~
Lead	7439-92-1	400	400	5.04	9.65	64.6	~	~	~	~	~	~
Magnesium	7439-95-4	NS	NS	4690	12700	3200	~	~	~	~	~	~
Manganese	7439-96-5	2000	2000	264	485	358	~	~	~	~	~	~
Mercury	7439-97-6	0.81	0.81	ND	ND	0.152	~	~	~	~	~	~
Nickel	7440-02-0	140	310	16.9	94.9	29.8	~	~	~	~	~	~
Potassium	7440-09-7'	NS	NS	2220	3740	1480	~	~	~	~	~	~
Selenium	7782-49-2	36	180	1.21	0.423	0.744	~	~	~	~	~	~
Silver	7440-22-4	36	180	ND	ND	ND	~	~	~	~	~	~
Sodium	7440-23-5	NS	NS	1170	271	143	~	~	~	~	~	~
Thallium	7440-28-0	NS	NS	0.315	ND	ND	~	~	~	~	~	~
Vanadium	7440-62-2	100	NS	21.8	35.5	26.1	~	~	~	~	~	~
Zinc	7440-66-6	2200	10000	27.6	44.9	86.1	~	~	~	~	~	~
General Analytical				Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Hexavalent Chromium-mg/Kg	18540-29-9	22	110	ND	ND	ND	~	~	~	~	~	~
Cyanide, Total-mg/Kg	57-12-5	27	27	ND	ND	ND	~	~	~	~	~	~

6NYCRR Part 375-6.8(a) Unrestricted Use Soil Cleanup Objectives & NYCRR Part 375-6.8(b) Restricted Use Soil Cleanup Objectives December 2006

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N = Presumptive evidence of a compound from the use of GC/MS library search.

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Table 2A
Soil Sample Analytical Results Summary - VOCs
Remedial Investigation Report

Red Hook 4 Properties
Brooklyn, New York
Langan Project Number: 170363001

Location Sample ID Lab ID Sample Date Sample Interval (ft bgs)	NYSDEC Part 375 Unrestricted SCO	NYSDEC Part 375 Restricted Use Commercial SCO	EB04 EB04_0-2 17B0419-03 2/10/2017 0-2		EB04 EB04_4-5 17B0419-04 2/10/2017 4-5		EB04 EB04_24-25 17B0419-06 2/10/2017 24-25		EB06 EB06_0-2 17B0225-01 2/6/2017 0-2		EB06 EB06_7-8 17B0225-02 2/6/2017 7-8		EB06 EB06_14-15 17B0225-03 2/6/2017 14-15		EB07 EB07_0-1 17B0225-04 2/6/2017 0-1		EB07 EB07_1-2 17B0225-05 2/6/2017 1-2		EB07 EB07_7-8 17B0225-06 2/6/2017 7-8		EB08 EB08_0-2 17B0271-08 2/7/2017 0-2		EB08 EB08_9-10 17B0271-10 2/7/2017 9-10	
Volatile Organic Compounds - VOCs (mg/kg)																								
1,1,2,2-Tetrachloroethane	~	~	0.0066	U	5.9	D	0.0047	U	0.0048	U	1.2	U	0.0041	U	0.0055	U	0.007	U	0.0062	U	0.0044	U	0.45	U
1,1,2-Trichloroethane	~	~	0.0066	U	0.98	D	0.0047	U	0.0048	U	1.2	U	0.0041	U	0.0055	U	0.007	U	0.0062	U	0.0044	U	0.45	U
1,2,3-Trichloropropane	~	~	0.0066	U	1.5	D	0.0047	U	0.0048	U	1.2	U	0.0041	U	0.0055	U	0.007	U	0.0062	U	0.0044	U	0.45	U
1,2,4-Trimethylbenzene	3.6	190	0.0066	U	1.3	D	0.0047	U	0.0048	U	1.2	U	0.0041	U	0.0055	U	0.007	U	0.0062	U	0.0044	U	0.45	U
1,3,5-Trimethylbenzene (Mesitylene)	8.4	190	0.0066	U	0.49	U	0.0047	U	0.0048	U	1.2	U	0.0041	U	0.0055	U	0.007	U	0.0062	U	0.0044	U	0.3	JD
2-Hexanone	~	~	0.0066	U	4	D	0.0047	U	0.0048	U	1.2	U	0.0041	U	0.0055	U	0.007	U	0.0062	U	0.0044	U	0.45	U
Acetone	0.05	500	0.099		0.53	JD	0.0075	J	0.01		*2.4*	U	0.021		0.007	J	0.21		0.024		0.019		*0.9*	U
Benzene	0.06	44	0.0066	U	*0.49*	U	0.0047	U	0.0048	U	*1.2*	U	0.0041	U	0.0055	U	0.007	U	0.0062	U	0.0044	U	*0.45*	U
Carbon Disulfide	~	~	0.0039	J	0.49	U	0.0047	U	0.0048	U	1.2	U	0.0041	U	0.0055	U	0.007	U	0.0062	U	0.0044	U	0.45	U
Cymene	~	~	0.0066	U	0.88	D	0.0047	U	0.0048	U	0.99	JD	0.0041	U	0.0055	U	0.007	U	0.0062	U	0.0044	U	0.45	U
Ethylbenzene	1	390	0.0066	U	0.49	U	0.0047	U	0.0048	U	*1.2*	U	0.0041	U	0.0055	U	0.007	U	0.0062	U	0.0044	U	0.45	U
Isopropylbenzene (Cumene)	~	~	0.0066	U	0.49	U	0.0047	U	0.0048	U	2.1	D	0.0041	U	0.0055	U	0.007	U	0.0062	U	0.0044	U	0.62	D
M,P-Xylene	~	~	0.013	U	0.99	U	0.0094	U	0.0095	U	*2.4*	U	0.0082	U	0.011	U	0.014	U	0.012	U	0.0088	U	0.9	U
Methyl Acetate	~	~	0.0066	U	0.49	U	0.0047	U	0.0048	U	1.2	U	0.0041	U	0.0055	U	0.007	U	0.0062	U	0.0044	U	1.5	D
Methyl Ethyl Ketone (2-Butanone)	0.12	500	0.015		*0.49*	U	0.0047	U	0.0048	U	*1.2*	U	0.0057		0.0055	U	0.035		0.005	J	0.0044	U	*0.45*	U
Methylcyclohexane	~	~	0.0066	U	0.49	U	0.0047	U	0.0048	U	21	D	0.0067		0.0055	U	0.007	U	0.0062	U	0.0044	U	1.3	D
Methylene Chloride	0.05	500	0.0075	JB	0.67	JBD	0.0094	U	0.0064	J	*2.4*	U	0.0082	U	0.011	U	0.014	U	0.012	U	0.0088	U	*0.9*	U
N-Butylbenzene	12	500	0.0066	U	0.72	D	0.0047	U	0.0048	U	1.2	U	0.0041	U	0.0055	U	0.007	U	0.0062	U	0.0044	U	2.2	D
N-Propylbenzene	3.9	500	0.0066	U	0.49	U	0.0047	U	0.0048	U	3.9	D	0.0024	J	0.0055	U	0.007	U	0.0062	U	0.0044	U	0.45	U
O-Xylene (1,2-Dimethylbenzene)	~	~	0.0066	U	0.49	U	0.0047	U	0.0048	U	1.2	U	0.0041	U	0.0055	U	0.007	U	0.0062	U	0.0044	U	0.45	U
Sec-Butylbenzene	11	500	0.0066	U	1	D	0.0047	U	0.0048	U	3.9	D	0.0025	J	0.0055	U	0.007	U	0.0062	U	0.0044	U	5.8	D
Styrene	~	~	0.0066	U	0.49	U	0.0047	U	0.0048	U	1.2	U	0.0041	U	0.0055	U	0.007	U	0.0062	U	0.0044	U	0.45	U
T-Butylbenzene	5.9	500	0.0066	U	0.51	D	0.0047	U	0.0048	U	1.2	U	0.0041	U	0.0055	U	0.007	U	0.0062	U	0.0044	U	0.38	JD
Toluene	0.7	500	0.0066	U	0.49	U	0.0047	U	0.0048	U	*1.2*	U	0.0041	U	0.0055	U	0.007	U	0.0062	U	0.0044	U	0.45	U
Xylenes, Total	0.26	500	0.02	U	*1.5*	U	0.014	U	0.014	U	*3.7*	U	0.012	U	0.017	U	0.021	U	0.019	U	0.013	U	*1.4*	U

Notes and Qualifiers:

1. Soil sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (NYCRR) Part 375 Unrestricted Use and Restricted Use Commercial Soil Cleanup Objectives (SCOs).
2. Only compounds with detections are shown in the table.
3. Concentrations above the NYSDEC Part 375 Unrestricted Use SCOs are shaded.
4. Concentrations above the NYSDEC Part 375 Restricted Use Commercial SCOs were not identified.
5. Reporting Limits (RL) above the NYSDEC Part 375 Unrestricted Use SCO standards are italicized.
6. ~ = Criterion does not exist.
7. J = The analyte was detected above the Method Detection Limit (MDL), but below the RL; therefore, the result is an estimated concentration.
8. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.
9. E = The value is estimated. The value is estimated due to its behavior during calibration.
10. B = Analyte is found in the associated analysis batch blank.
11. D = Result is from an analysis that required dilution.
12. DUP01_020717 is a duplicate sample of EB11D_1-2 and DUP02_020817 is a duplicate of sample EB14D_0-2.
13. ft. bgs = feet below grade surface
14. mg/kg = milligrams per kilogram

Table 2A
Soil Sample Analytical Results Summary - VOCs
Remedial Investigation Report

Red Hook 4 Properties
Brooklyn, New York
Langan Project Number: 170363001

Location Sample ID Lab ID Sample Date Sample Interval (ft bgs)	NYSDEC Part 375 Unrestricted SCO	NYSDEC Part 375 Restricted Use Commercial SCO	EB08 EB08_19-20 17B0271-07 2/7/2017 19-20		EB10D EB10D_0-2 17B0169-01 2/3/2017 0-2		EB10D EB10D_41-42 17B0169-04 2/3/2017 41-42		EB10D EB10D_49-50 17B0169-05 2/3/2017 49-50		EB10D EB10D_62-64 17B0169-07 2/3/2017 62-64		EB10D EB10D_73-75 17B0169-08 2/3/2017 73-75		EB11D EB11D_0-1 17B0271-01 2/7/2017 0-1		EB11D EB11D_1-2 17B0271-02 2/7/2017 1-2		EB11D DUP01_020717 17B0271-04 2/7/2017 1-2		EB11D EB11D_7.5-8.5 17B0271-03 2/7/2017 7.5-8.5		EB12D EB12D_0-2 17B0058-01 2/1/2017 0-2	
Volatile Organic Compounds - VOCs (mg/kg)																								
1,1,2,2-Tetrachloroethane	~	~	0.0055	U	0.0052	U	0.0053	U	0.005	U	0.92	U	0.0045	U	0.0046	U	0.0043	U	0.0045	U	0.0049	U	0.64	U
1,1,2-Trichloroethane	~	~	0.0055	U	0.0052	U	0.0053	U	0.005	U	0.92	U	0.0045	U	0.0046	U	0.0043	U	0.0045	U	0.0049	U	0.64	U
1,2,3-Trichloropropane	~	~	0.0055	U	0.0052	U	0.0053	U	0.005	U	0.92	U	0.0045	U	0.0046	U	0.0043	U	0.0045	U	0.0049	U	0.64	U
1,2,4-Trimethylbenzene	3.6	190	0.0055	U	0.0052	U	0.0053	U	0.005	U	44	D	0.0045	U	0.0046	U	0.0043	U	0.0045	U	0.0049	U	0.64	U
1,3,5-Trimethylbenzene (Mesitylene)	8.4	190	0.0055	U	0.0052	U	0.0053	U	0.005	U	15	D	0.0045	U	0.0046	U	0.0043	U	0.0045	U	0.0049	U	0.64	U
2-Hexanone	~	~	0.0055	U	0.0052	U	0.0053	U	0.005	U	0.92	U	0.0045	U	0.0046	U	0.0043	U	0.0045	U	0.0049	U	0.64	U
Acetone	0.05	500	0.024		0.038		0.019		0.01	U	*1.8*	U	0.0089	U	0.019		0.023		0.012		0.028		*1.3*	U
Benzene	0.06	44	0.0055	U	0.0052	U	0.0053	U	0.005	U	31	DE	0.0045	U	0.0046	U	0.0043	U	0.0045	U	0.0049	U	*0.64*	U
Carbon Disulfide	~	~	0.0055	U	0.0052	U	0.0053	U	0.005	U	0.92	U	0.0045	U	0.0046	U	0.0043	U	0.0045	U	0.0049	U	0.64	U
Cymene	~	~	0.0055	U	0.0052	U	0.0072		0.005	U	0.92	U	0.0045	U	0.0046	U	0.0043	U	0.0045	U	0.0049	U	1.8	D
Ethylbenzene	1	390	0.0055	U	0.0052	U	0.0028	J	0.005	U	24	D	0.0045	U	0.0046	U	0.0043	U	0.0045	U	0.0049	U	0.64	U
Isopropylbenzene (Cumene)	~	~	0.0055	U	0.0052	U	0.0053	U	0.005	U	1.9	D	0.0045	U	0.0046	U	0.0043	U	0.0045	U	0.0049	U	0.64	U
M,P-Xylene	~	~	0.011	U	0.01	U	0.011	U	0.01	U	68	DE	0.0089	U	0.0091	U	0.0086	U	0.009	U	0.0099	U	1.3	U
Methyl Acetate	~	~	0.0038	J	0.0052	U	0.0053	U	0.005	U	0.59	JD	0.0045	U	0.0046	U	0.0043	U	0.0045	U	0.0049	U	0.64	U
Methyl Ethyl Ketone (2-Butanone)	0.12	500	0.0084		0.0034	J	0.0038	J	0.005	U	*0.92*	U	0.0045	U	0.003	J	0.0043	U	0.0045	U	0.0039	J	*0.64*	U
Methylcyclohexane	~	~	0.0055	U	0.0052	U	0.0053	U	0.005	U	2.8	D	0.0045	U	0.0046	U	0.0043	U	0.0045	U	0.0049	U	0.64	U
Methylene Chloride	0.05	500	0.011	U	0.01	U	0.011	U	0.01	U	*1.8*	U	0.0089	U	0.0091	U	0.0086	U	0.009	U	0.0099	U	*1.3*	U
N-Butylbenzene	12	500	0.0055	U	0.0052	U	0.0053	U	0.005	U	0.92	U	0.0045	U	0.0046	U	0.0043	U	0.0045	U	0.0049	U	0.64	U
N-Propylbenzene	3.9	500	0.0055	U	0.0052	U	0.0053	U	0.005	U	7.3	D	0.0045	U	0.0046	U	0.0043	U	0.0045	U	0.0049	U	0.64	U
O-Xylene (1,2-Dimethylbenzene)	~	~	0.0055	U	0.0052	U	0.0053	U	0.005	U	35	DE	0.0045	U	0.0046	U	0.0043	U	0.0045	U	0.0049	U	0.64	U
Sec-Butylbenzene	11	500	0.0055	U	0.0052	U	0.0053	U	0.005	U	0.54	JD	0.0045	U	0.0046	U	0.0043	U	0.0045	U	0.0049	U	0.64	U
Styrene	~	~	0.0055	U	0.0052	U	0.0053	U	0.005	U	77	DE	0.0045	U	0.0046	U	0.0043	U	0.0045	U	0.0049	U	0.64	U
T-Butylbenzene	5.9	500	0.0055	U	0.0052	U	0.0053	U	0.005	U	0.92	U	0.0045	U	0.0046	U	0.0043	U	0.0045	U	0.0049	U	0.64	U
Toluene	0.7	500	0.0055	U	0.0052	U	0.0053	U	0.005	U	160	D	0.0045	U	0.0046	U	0.0043	U	0.0045	U	0.0049	U	0.64	U
Xylenes, Total	0.26	500	0.017	U	0.016	U	0.016	U	0.015	U	100	D	0.013	U	0.014	U	0.013	U	0.013	U	0.015	U	*1.9*	U

Notes and Qualifiers:

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Remedial Investigation Report

Red Hook 4 Properties
Brooklyn, New York
Langan Project Number: 170363001

Location Sample ID Lab ID Sample Date Sample Interval (ft bgs)	NYSDEC Part 375 Unrestricted SCO	NYSDEC Part 375 Restricted Use Commercial SCO	EB12D EB12D_7-8 17B0058-02 2/1/2017 7-8		EB12D EB12D_8-9 17B0058-03 2/1/2017 8-9		EB13D EB13D_0-2 17B0122-01 2/2/2017 0-2		EB13D EB13D_4-5 17B0122-02 2/2/2017 4-5		EB13D EB13D_9-10 17B0122-03 2/2/2017 9-10		EB14D EB14D_0-2 17B0358-02 2/8/2017 0-2		EB14D DUP02_020817 17B0358-03 2/8/2017 0-2		EB14D EB14D_2-3 17B0358-04 2/8/2017 2-3		EB14D EB14D_66-68 17B0358-06 2/8/2017 66-68		EB14D EB14D_93-95 17B0358-09 2/8/2017 93-95	
Volatile Organic Compounds - VOCs (mg/kg)																						
1,1,2,2-Tetrachloroethane	~	~	0.0055	U	0.0062	U	0.0069	U	0.006	U	0.0043	U	0.0082	U	0.0045	U	0.0052	U	0.87	U	0.0036	U
1,1,2-Trichloroethane	~	~	0.0055	U	0.0062	U	0.0069	U	0.006	U	0.0043	U	0.0082	U	0.0045	U	0.0052	U	0.87	U	0.0036	U
1,2,3-Trichloropropane	~	~	0.0055	U	0.0062	U	0.0069	U	0.006	U	0.0043	U	0.0082	U	0.0045	U	0.0052	U	0.87	U	0.0036	U
1,2,4-Trimethylbenzene	3.6	190	0.0055	U	0.0062	U	0.0069	U	0.006	U	0.0043	U	0.0082	U	0.0045	U	0.0052	U	0.87	U	0.0036	U
1,3,5-Trimethylbenzene (Mesitylene)	8.4	190	0.0055	U	0.0062	U	0.0069	U	0.006	U	0.0043	U	0.0082	U	0.0045	U	0.0052	U	5.8	D	0.0036	U
2-Hexanone	~	~	0.0055	U	0.0062	U	0.0069	U	0.006	U	0.0043	U	0.0082	U	0.0045	U	0.0052	U	2	D	0.0036	U
Acetone	0.05	500	*1.1*	U	0.062		0.016		0.05		0.0096		0.0085	J	0.0068	J	0.0062	J	*1.7*	U	0.0073	U
Benzene	0.06	44	0.0055	U	0.0062	U	0.0069	U	0.006	U	0.0043	U	0.0082	U	0.0045	U	0.0052	U	8.1	D	0.0036	U
Carbon Disulfide	~	~	0.0055	U	0.0062	U	0.0069	U	0.006	U	0.0043	U	0.0082	U	0.0045	U	0.0052	U	0.87	U	0.0036	U
Cymene	~	~	0.0055	U	0.0062	U	0.0069	U	0.006	U	0.0043	U	0.0082	U	0.0045	U	0.0052	U	0.87	U	0.0036	U
Ethylbenzene	1	390	0.0055	U	0.0062	U	0.0069	U	0.006	U	0.0043	U	0.0082	U	0.0045	U	0.0052	U	3.2	D	0.0036	U
Isopropylbenzene (Cumene)	~	~	0.0055	U	0.0062	U	0.0069	U	0.006	U	0.0043	U	0.0082	U	0.0045	U	0.0052	U	0.87	U	0.0036	U
M,P-Xylene	~	~	0.011	U	0.012	U	0.014	U	0.012	U	0.0086	U	0.016	U	0.009	U	0.01	U	15	D	0.0073	U
Methyl Acetate	~	~	0.0055	U	0.0062	U	0.0069	U	0.006	U	0.0043	U	0.0082	U	0.0045	U	0.0052	U	0.87	U	0.0036	U
Methyl Ethyl Ketone (2-Butanone)	0.12	500	0.0088		0.009		0.0069	U	0.006	U	0.0043	U	0.0082	U	0.0045	U	0.0052	U	*0.87*	U	0.0036	U
Methylcyclohexane	~	~	0.0055	U	0.0062	U	0.0069	U	0.006	U	0.0043	U	0.0082	U	0.0045	U	0.0052	U	0.87	U	0.0036	U
Methylene Chloride	0.05	500	0.011	U	0.012	U	0.014	U	0.012	U	0.0086	U	0.016	U	0.009	U	0.01	U	*1.7*	U	0.0073	U
N-Butylbenzene	12	500	0.0055	U	0.0062	U	0.0069	U	0.006	U	0.0043	U	0.0082	U	0.0045	U	0.0052	U	0.87	U	0.0036	U
N-Propylbenzene	3.9	500	0.0055	U	0.0062	U	0.0069	U	0.006	U	0.0043	U	0.0082	U	0.0045	U	0.0052	U	0.7	JD	0.0036	U
O-Xylene (1,2-Dimethylbenzene)	~	~	0.0055	U	0.0062	U	0.0069	U	0.006	U	0.0043	U	0.0082	U	0.0045	U	0.0052	U	7.2	D	0.0036	U
Sec-Butylbenzene	11	500	0.0055	U	0.0062	U	0.0069	U	0.006	U	0.0043	U	0.0082	U	0.0045	U	0.0052	U	0.87	U	0.0036	U
Styrene	~	~	0.0055	U	0.0062	U	0.0069	U	0.006	U	0.0043	U	0.0082	U	0.0045	U	0.0052	U	14	D	0.0036	U
T-Butylbenzene	5.9	500	0.0055	U	0.0062	U	0.0069	U	0.006	U	0.0043	U	0.0082	U	0.0045	U	0.0052	U	0.87	U	0.0036	U
Toluene	0.7	500	0.0055	U	0.0062	U	0.0069	U	0.006	U	0.0043	U	0.0082	U	0.0045	U	0.0052	U	19	D	0.0036	U
Xylenes, Total	0.26	500	0.016	U	0.018	U	0.021	U	0.018	U	0.013	U	0.024	U	0.014	U	0.016	U	22	D	0.011	U

Notes and Qualifiers:

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2. Only compounds with detections are shown in the table.
3. Concentrations above the NYSDEC Part 375 Unrestricted Use SCOs are shaded.
4. Concentrations above the NYSDEC Part 375 Restricted Use Commercial SCOs were not identified.
5. Reporting Limits (RL) above the NYSDEC Part 375 Unrestricted Use SCO standards are italicized.
6. ~ = Criterion does not exist.
7. J = The analyte was detected above the Method Detection Limit (MDL), but below the RL; therefore, the result is an estimated concentration.
8. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.
9. E = The value is estimated. The value is estimated due to its behavior during calibration.
10. B = Analyte is found in the associated analysis batch blank.
11. D = Result is from an analysis that required dilution.
12. DUP01_020717 is a duplicate sample of EB11D_1-2 and DUP02_020817 is a duplicate of sample EB14D_0-2.
13. ft. bgs = feet below grade surface
14. mg/kg = milligrams per kilogram

DRAFT

Table 2B
Soil Sample Analytical Results Summary - SVOCs
Remedial Investigation Report

Red Hook 4 Properties
Brooklyn, New York
Langan Project Number: 170363001

Location Sample ID Lab ID Sample Date Sample Interval (ft bgs)	NYSDEC Part 375 Unrestricted SCO	NYSDEC Part 375 Restricted Use Commercial SCO	EB04 EB04_0-2 17B0419-03 2/10/2017 0-2		EB04 EB04_4-5 17B0419-04 2/10/2017 4-5		EB04 EB04_24-25 17B0419-06 2/10/2017 24-25		EB06 EB06_0-2 17B0225-01 2/6/2017 0-2		EB06 EB06_7-8 17B0225-02 2/6/2017 7-8		EB06 EB06_14-15 17B0225-03 2/6/2017 14-15		EB07 EB07_0-1 17B0225-04 2/6/2017 0-1		EB07 EB07_1-2 17B0225-05 2/6/2017 1-2		EB07 EB07_7-8 17B0225-06 2/6/2017 7-8		EB08 EB08_0-2 17B0271-08 2/7/2017 0-2		EB08 EB08_9-10 17B0271-10 2/7/2017 9-10	
Semivolatile Organic Compounds - SVOCs (mg/kg)																								
2-Methylnaphthalene	~	~	0.0953	U	0.0925	U	0.0986	U	0.132	U	0.15	U	0.0979	U	0.144	U	0.16	U	0.146	U	0.0461	JD	0.103	U
Acenaphthene	20	500	0.0953	U	0.0925	U	0.0986	U	0.132	U	0.146	JD	0.0979	U	0.144	U	0.16	U	0.146	U	0.09	U	0.103	U
Acenaphthylene	100	500	0.0953	U	0.0925	U	0.0986	U	0.132	U	0.15	U	0.0979	U	0.144	U	0.152	JD	0.146	U	0.09	U	0.103	U
Anthracene	100	500	0.0953	U	0.0925	U	0.0986	U	0.132	U	0.15	U	0.0979	U	0.1	JD	0.266	D	0.146	U	0.825	D	0.599	DE
Benzo(a)Anthracene	1	5.6	0.0495	JD	0.0925	U	0.0986	U	0.139	D	0.15	U	0.0979	U	0.456	D	1.13	D	0.146	U	2.09	D	0.217	D
Benzo(a)Pyrene	1	1	0.0526	JD	0.0925	U	0.0986	U	0.152	D	0.15	U	0.0979	U	0.586	D	**1.01**	D	0.146	U	**1.88**	D	0.103	U
Benzo(b)Fluoranthene	1	5.6	0.0739	JD	0.0925	U	0.0986	U	0.129	JD	0.15	U	0.0979	U	0.721	D	0.736	D	0.146	U	2.23	D	0.103	U
Benzo(g,h,i)Perylene	100	500	0.0953	U	0.0925	U	0.0986	U	0.0751	JD	0.15	U	0.0979	U	0.327	D	0.753	D	0.146	U	1.21	D	0.103	U
Benzo(k)Fluoranthene	0.8	56	0.0732	JD	0.0925	U	0.0986	U	0.157	D	0.15	U	0.0979	U	0.58	D	1.04	D	0.146	U	2.16	D	0.113	D
Benzyl Butyl Phthalate	~	~	0.0953	U	0.0925	U	0.0986	U	0.132	U	0.15	U	0.0979	U	0.144	U	0.16	U	0.146	U	0.09	U	0.103	U
Biphenyl (Diphenyl)	~	~	0.0953	U	0.0925	U	0.0986	U	0.132	U	0.15	U	0.0979	U	0.144	U	0.16	U	0.146	U	0.09	U	0.103	U
Bis(2-Ethylhexyl) Phthalate	~	~	0.0953	U	0.0925	U	0.0986	U	0.132	U	0.15	U	0.0979	U	0.144	U	0.16	U	0.146	U	0.09	U	0.0764	JD
Carbazole	~	~	0.0953	U	0.0925	U	0.0986	U	0.132	U	0.15	U	0.0979	U	0.144	U	0.16	U	0.146	U	0.526	D	0.103	U
Chrysene	1	56	0.0854	JD	0.0925	U	0.0986	U	0.163	D	0.15	U	0.0979	U	0.553	D	1.29	D	0.146	U	2.32	D	0.331	D
Dibenz(a,h)Anthracene	0.33	0.56	0.0953	U	0.0925	U	0.0986	U	0.132	U	0.15	U	0.0979	U	0.199	D	0.252	D	0.146	U	0.421	D	0.103	U
Dibenzofuran	7	350	0.0953	U	0.0925	U	0.0986	U	0.132	U	0.15	U	0.0979	U	0.144	U	0.16	U	0.146	U	0.161	D	0.103	U
Fluoranthene	100	500	0.104	D	0.0925	U	0.0986	U	0.349	D	1.35	D	0.0979	U	0.842	D	2.31	D	0.146	U	7.08	D	0.103	U
Fluorene	30	500	0.0953	U	0.0925	U	0.0986	U	0.132	U	0.15	U	0.0979	U	0.144	U	0.16	U	0.146	U	0.276	D	0.15	D
Hexachloroethane	~	~	0.0953	U	0.0925	U	0.0986	U	0.132	U	0.15	U	0.0979	U	0.144	U	0.16	U	0.146	U	0.09	U	0.103	U
Indeno(1,2,3-C,D)Pyrene	0.5	5.6	0.0953	U	0.0925	U	0.0986	U	0.072	JD	0.15	U	0.0979	U	0.289	D	0.575	D	0.146	U	1.02	D	0.103	U
Naphthalene	12	500	0.0953	U	0.0925	U	0.0986	U	0.132	U	0.15	U	0.0979	U	0.144	U	0.16	U	0.146	U	0.117	D	0.27	D
Phenanthrene	100	500	0.0678	JD	0.0925	U	0.0986	U	0.148	D	0.15	U	0.0979	U	0.252	D	0.693	D	0.146	U	4.18	D	0.62	DE
Pyrene	100	500	0.0876	JD	0.0925	U	0.0986	U	0.253	D	0.15	U	0.0979	U	0.55	D	1.77	D	0.146	U	5.75	D	0.49	D

Notes and Qualifiers:

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2. Only compounds with detections are shown in the table.
3. Concentrations above the NYSDEC Part 375 Unrestricted Use SCOs are shaded.
4. Concentrations above the NYSDEC Part 375 Restricted Use Commercial SCOs are shaded and bolded.
5. Reporting Limits (RL) above the NYSDEC Part 375 Unrestricted Use SCO standards are italicized.
6. ~ = Criterion does not exist.
7. J = The analyte was detected above the Method Detection Limit (MDL), but below the RL; therefore, the result is an estimated concentration.
8. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.
9. E = The value is estimated. The value is estimated due to its behavior during calibration.
10. D = Result is from an analysis that required dilution.
11. DUP01_020717 is a duplicate sample of EB11D_1-2 and DUP02_020817 is a duplicate of sample EB14D_0-2.
12. ft. bgs = feet below grade surface
13. mg/kg = milligrams per kilogram

Table 2B
Soil Sample Analytical Results Summary - SVOCs
Remedial Investigation Report

Red Hook 4 Properties
Brooklyn, New York
Langan Project Number: 170363001

Location Sample ID Lab ID Sample Date Sample Interval (ft bgs)	NYSDEC Part 375 Unrestricted SCO	NYSDEC Part 375 Restricted Use Commercial SCO	EB08 EB08_19-20 17B0271-07 2/7/2017 19-20		EB10D EB10D_0-2 17B0169-01 2/3/2017 0-2		EB10D EB10D_41-42 17B0169-04 2/3/2017 41-42		EB10D EB10D_49-50 17B0169-05 2/3/2017 49-50		EB10D EB10D_62-64 17B0169-07 2/3/2017 62-64		EB10D EB10D_73-75 17B0169-08 2/3/2017 73-75		EB11D EB11D_0-1 17B0271-01 2/7/2017 0-1		EB11D EB11D_1-2 17B0271-02 2/7/2017 1-2		EB11D DUP01_020717 17B0271-04 2/7/2017 1-2		EB11D EB11D_7.5-8.5 17B0271-03 2/7/2017 7.5-8.5		EB12D EB12D_0-2 17B0058-01 2/1/2017 0-2	
Semivolatile Organic Compounds - SVOCs (mg/kg)																								
2-Methylnaphthalene	~	~	0.1	U	0.0524	JD	0.0903	U	0.206	D	1180	D	0.594	D	0.0461	U	0.0484	U	0.0485	U	0.0465	U	0.0993	U
Acenaphthene	20	500	0.1	U	0.081	JD	2.83	D	0.202	D	*242*	U	0.107	U	0.028	J	0.0484	U	0.0485	U	0.0465	U	0.0993	U
Acenaphthylene	100	500	0.1	U	0.205	D	0.0903	U	0.124	D	**503**	D	0.2	D	0.0781		0.0484	U	0.0485	U	0.0465	U	0.0993	U
Anthracene	100	500	0.1	U	0.352	D	0.0903	U	0.545	D	271	D	0.122	D	0.127		0.0488		0.0559		0.0465	U	0.189	D
Benzo(a)Anthracene	1	5.6	0.1	U	1.01	D	**8.58**	D	0.441	D	**168**	JD	0.0751	JD	0.475		0.197		0.204		0.0465	U	0.0993	U
Benzo(a)Pyrene	1	1	0.1	U	**1.58**	D	**7.87**	D	0.335	D	*242*	U	0.107	U	0.398		0.197		0.166		0.0465	U	0.0993	U
Benzo(b)Fluoranthene	1	5.6	0.1	U	1.17	D	1.96	D	0.133	D	*242*	U	0.107	U	0.401		0.142		0.164		0.0465	U	0.0993	U
Benzo(g,h,i)Perylene	100	500	0.1	U	1.2	D	2.53	D	0.154	D	*242*	U	0.107	U	0.201		0.13		0.164		0.0465	U	0.085	JD
Benzo(k)Fluoranthene	0.8	56	0.1	U	1.36	D	2.05	DE	0.186	D	*242*	U	0.107	U	0.421		0.168		0.167		0.0465	U	0.0993	U
Benzyl Butyl Phthalate	~	~	0.1	U	0.0874	U	0.0903	U	0.101	U	242	U	0.107	U	0.0461	U	0.0484	U	0.0485	U	0.0465	U	0.0993	U
Biphenyl (Diphenyl)	~	~	0.1	U	0.0874	U	0.0903	U	0.101	U	242	U	0.0742	JD	0.0461	U	0.0484	U	0.0485	U	0.0465	U	0.0993	U
Bis(2-Ethylhexyl) Phthalate	~	~	0.1	U	0.0874	U	0.119	D	0.101	U	242	U	0.107	U	0.0461	U	0.0484	U	0.0485	U	0.0465	U	0.0993	U
Carbazole	~	~	0.1	U	0.0566	JD	0.0903	U	0.101	U	242	U	0.107	U	0.0461	U	0.0484	U	0.0485	U	0.0465	U	0.0993	U
Chrysene	1	56	0.1	U	1.38	D	9.13	D	0.447	D	**170**	JD	0.0751	JD	0.539		0.231		0.231		0.0465	U	0.0993	U
Dibenz(a,h)Anthracene	0.33	0.56	0.1	U	**0.576**	D	**0.849**	D	0.0679	JD	*242*	U	0.107	U	0.0722		0.0592		0.0725		0.0465	U	0.0993	U
Dibenzofuran	7	350	0.1	U	0.0874	U	0.0903	U	0.0582	JD	*242*	U	0.107	U	0.0461	U	0.0484	U	0.0485	U	0.0465	U	0.0993	U
Fluoranthene	100	500	0.1	U	1.67	D	7.72	D	0.393	D	294	D	0.113	D	0.718		0.248		0.294		0.0465	U	0.309	D
Fluorene	30	500	0.1	U	0.137	D	0.411	D	0.101	U	381	D	0.124	D	0.0273	J	0.0484	U	0.0485	U	0.0465	U	0.0993	U
Hexachloroethane	~	~	0.1	U	0.0874	U	0.0903	U	0.101	U	242	U	0.107	U	0.0461	U	0.0484	U	0.0485	U	0.0465	U	0.0993	U
Indeno(1,2,3-C,D)Pyrene	0.5	5.6	0.1	U	0.972	D	1.78	D	0.109	D	*242*	U	0.107	U	0.188		0.106		0.14		0.0465	U	0.0993	U
Naphthalene	12	500	0.1	U	0.0874	U	1.95	D	0.698	D	**3080**	D	1.71	D	0.0461	U	0.0286	J	0.0485	U	0.0465	U	0.0993	U
Phenanthrene	100	500	0.1	U	0.936	D	13.1	DE	0.0857	JD	**1020**	D	0.399	D	0.512		0.253		0.291		0.0465	U	0.199	D
Pyrene	100	500	0.1	U	1.47	D	26.7	D	1.37	D	414	D	0.196	D	0.973		0.489		0.453		0.0465	U	0.233	D

Notes and Qualifiers:

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7. J = The analyte was detected above the Method Detection Limit (MDL), but below the RL; therefore, the result is an estimated concentration.
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Table 2B
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Remedial Investigation Report

Red Hook 4 Properties
Brooklyn, New York
Langan Project Number: 170363001

Location Sample ID Lab ID Sample Date Sample Interval (ft bgs)	NYSDEC Part 375 Unrestricted SCO	NYSDEC Part 375 Restricted Use Commercial SCO	EB12D EB12D_7-8 17B0058-02 2/1/2017 7-8		EB12D EB12D_8-9 17B0058-03 2/1/2017 8-9		EB13D EB13D_0-2 17B0122-01 2/2/2017 0-2		EB13D EB13D_4-5 17B0122-02 2/2/2017 4-5		EB13D EB13D_9-10 17B0122-03 2/2/2017 9-10		EB14D EB14D_0-2 17B0358-02 2/8/2017 0-2		EB14D DUP02_020817 17B0358-03 2/8/2017 0-2		EB14D EB14D_2-3 17B0358-04 2/8/2017 2-3		EB14D EB14D_66-68 17B0358-06 2/8/2017 66-68		EB14D EB14D_93-95 17B0358-09 2/8/2017 93-95	
Semivolatile Organic Compounds - SVOCs (mg/kg)																						
2-Methylnaphthalene	~	~	2.2	U	0.0971	U	0.128	D	0.0663	JD	0.094	U	0.0546	JD	0.0664	JD	0.106	D	1060	D	0.0919	U
Acenaphthene	20	500	2.2	U	0.2	D	0.28	D	0.0874	JD	0.094	U	0.105	D	0.109	U	0.0949	U	167	D	0.0919	U
Acenaphthylene	100	500	2.2	U	0.0971	U	1.28	D	0.422	D	0.094	U	0.0912	U	0.0638	JD	0.0949	U	**745**	D	0.0919	U
Anthracene	100	500	2.2	U	0.389	D	1.82	D	0.657	D	0.094	U	0.29	D	0.135	D	0.0949	U	455	D	0.0919	U
Benzo(a)Anthracene	1	5.6	*2.2*	U	0.731	D	4.52	D	1.81	D	0.094	U	0.83	D	0.546	D	0.0949	U	**259**	D	0.0919	U
Benzo(a)Pyrene	1	1	*2.2*	U	0.545	D	**2.97**	D	**2.01**	D	0.094	U	0.839	D	0.484	D	0.0949	U	**161**	D	0.0919	U
Benzo(b)Fluoranthene	1	5.6	*2.2*	U	0.436	D	3.96	D	2.2	D	0.094	U	0.612	D	0.486	D	0.0949	U	**89.9**	D	0.0919	U
Benzo(g,h,i)Perylene	100	500	2.2	U	0.274	D	3.17	D	1.14	D	0.094	U	0.472	D	0.368	D	0.0949	U	92.8	D	0.0919	U
Benzo(k)Fluoranthene	0.8	56	*2.2*	U	0.528	D	4.37	D	1.62	D	0.094	U	0.688	D	0.53	D	0.0949	U	**111**	D	0.0919	U
Benzyl Butyl Phthalate	~	~	2.2	U	0.0971	U	0.124	D	0.101	U	0.094	U	0.0912	U	0.109	U	0.0949	U	37.8	U	0.0919	U
Biphenyl (Diphenyl)	~	~	2.2	U	0.0971	U	0.0985	U	0.101	U	0.094	U	0.0912	U	0.109	U	0.0949	U	196	D	0.0919	U
Bis(2-Ethylhexyl) Phthalate	~	~	2.2	U	0.101	D	0.0985	U	0.0712	JD	0.094	U	0.0912	U	0.109	U	0.0949	U	37.8	U	0.0919	U
Carbazole	~	~	2.2	U	0.144	D	0.367	D	0.203	D	0.094	U	0.0831	JD	0.109	U	0.0949	U	37.8	U	0.0919	U
Chrysene	1	56	*2.2*	U	0.84	D	4.57	DE	2.2	D	0.094	U	1.08	D	0.737	D	0.0736	JD	**233**	D	0.0919	U
Dibenz(a,h)Anthracene	0.33	0.56	*2.2*	U	0.144	D	**1.32**	D	0.476	D	0.094	U	0.0912	U	0.131	D	0.0949	U	**42.6**	D	0.0919	U
Dibenzofuran	7	350	2.2	U	0.0714	JD	0.0985	U	0.0817	JD	0.094	U	0.0517	JD	0.109	U	0.0949	U	87.1	D	0.0919	U
Fluoranthene	100	500	2.2	U	1.7	D	7.46	D	2.91	D	0.094	U	1.51	D	0.948	D	0.0501	JD	439	D	0.0919	U
Fluorene	30	500	2.2	U	0.155	D	0.268	D	0.101	D	0.094	U	0.102	D	0.109	U	0.0949	U	**744**	D	0.0919	U
Hexachloroethane	~	~	2.2	U	0.0971	U	0.0724	JD	0.101	U	0.094	U	0.0912	U	0.109	U	0.0949	U	37.8	U	0.0919	U
Indeno(1,2,3-C,D)Pyrene	0.5	5.6	*2.2*	U	0.219	D	2.48	D	0.919	D	0.094	U	0.397	D	0.315	D	0.0949	U	**59.9**	D	0.0919	U
Naphthalene	12	500	2.2	U	0.0971	U	0.162	D	0.0841	JD	0.094	U	0.0525	JD	0.109	U	0.0607	JD	**2030**	D	0.0919	U
Phenanthrene	100	500	2.2	U	1.7	D	5.3	D	1.81	D	0.094	U	1.29	D	0.553	D	0.136	D	**854**	D	0.0919	U
Pyrene	100	500	2.2	U	1.59	D	8.26	D	3.07	D	0.094	U	1.75	D	1.03	D	0.0493	JD	**545**	D	0.0919	U

Notes and Qualifiers:

1. Soil sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (NYCRR) Part 375 Unrestricted Use and Restricted Use Commercial Soil Cleanup Objectives (SCOs).
2. Only compounds with detections are shown in the table.
3. Concentrations above the NYSDEC Part 375 Unrestricted Use SCOs are shaded.
4. Concentrations above the NYSDEC Part 375 Restricted Use Commercial SCOs are shaded and bolded.
5. Reporting Limits (RL) above the NYSDEC Part 375 Unrestricted Use SCO standards are italicized.
6. ~ = Criterion does not exist.
7. J = The analyte was detected above the Method Detection Limit (MDL), but below the RL; therefore, the result is an estimated concentration.
8. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.
9. E = The value is estimated. The value is estimated due to its behavior during calibration.
10. D = Result is from an analysis that required dilution.
11. DUP01_020717 is a duplicate sample of EB11D_1-2 and DUP02_020817 is a duplicate of sample EB14D_0-2.
12. ft. bgs = feet below grade surface
13. mg/kg = milligrams per kilogram

DRAFT

Table 2C
Soil Sample Analytical Results Summary - Inorganics, PCBs, Pesticides, and Herbicides
Remedial Investigation Report

Red Hook 4 Properties
Brooklyn, New York
Langan Project Number: 170363001

Location Sample ID Lab ID Sample Date Sample Interval (ft bgs)	NYSDEC Part 375 Unrestricted SCO	NYSDEC Part 375 Restricted Use Commercial SCO	EB04 EB04_0-2 17B0419-03 2/10/2017 0-2		EB04 EB04_4-5 17B0419-04 2/10/2017 4-5		EB04 EB04_24-25 17B0419-06 2/10/2017 24-25		EB06 EB06_0-2 17B0225-01 2/6/2017 0-2		EB06 EB06_7-8 17B0225-02 2/6/2017 7-8		EB06 EB06_14-15 17B0225-03 2/6/2017 14-15		EB07 EB07_0-1 17B0225-04 2/6/2017 0-1		EB07 EB07_1-2 17B0225-05 2/6/2017 1-2		EB07 EB07_7-8 17B0225-06 2/6/2017 7-8		EB08 EB08_0-2 17B0271-08 2/7/2017 0-2		EB08 EB08_9-10 17B0271-10 2/7/2017 9-10	
Inorganics (mg/kg)																								
Aluminum	~	~	7230		4910		7390		3690		3240		4590		3580		6310		3900		6370		4530	
Antimony	~	~	0.572	U	0.554	U	0.591	U	0.529	U	0.599	U	0.587	U	25.4		0.639	U	0.585	U	0.54	U	0.616	U
Arsenic	13	16	1.14	U	5.64		1.18	U	1.06	U	6.27		1.48		11.4		**20.5**		1.17	U	2.1		1.23	U
Barium	350	400	89		259		42.8		31.3		85.4		29.8		214		137		27.9		77.9		29.2	
Beryllium	7.2	590	0.203		0.182		0.118	U	0.106	U	0.12	U	0.122		0.23		0.128	U	0.231		0.108	U	0.123	U
Cadmium	2.5	9.3	2.47		0.333	U	0.355	U	0.317	U	0.677		0.352	U	2.16		0.384	U	0.351	U	0.324	U	0.37	U
Calcium	~	~	1780		6110		1810		9630		17300		707		15100		4520		3300		30800		1270	
Chromium III	30	1500	16.6		10.4		46.8		9.94		6.59		11.2		38.4		20		8.03		10.5		9.47	
Chromium, Hexavalent	1	400	0.572	U	0.554	U	0.591	U	0.529	U	1.34		0.587	U	0.576	U	0.639	U	0.585	U	1.17		1.23	
Chromium, Total	~	~	16.6		10.4		46.8		9.94		7.93		11.2		38.4		20		8.03		11.7		10.7	
Cobalt	~	~	12.1		5.3		41.4		3.63		3.6		2.97		8.63		4.7		4.07		5.88		5.93	
Copper	50	270	**2780**		20.6		37.6		11.4		23.3		7.73		**345**		42.3		6.84		38.2		10.6	
Cyanide	27	27	0.572	U	0.554	U	0.591	U	0.529	U	1.8		0.587	U	0.576	U	0.639	U	0.585	U	0.54	U	0.616	U
Iron	~	~	72500	E	10700		26800		13000		6960		9240		50700		16100		11200		11300		8890	
Lead	63	1000	241		391		9.78		14.6		92.5		5.84		**1880**		**1270**		15.6		65.6		11.3	
Magnesium	~	~	965		1710		61600		2480		3630		1450		5220		2730		1930		5620		2930	
Manganese	1600	10000	340		184		699		216		116		49.5		287		115		104		206		61.4	
Mercury	0.18	2.8	0.308		0.246		0.0355	U	0.0674		0.476		0.0352	U	1.12		**3.15**		0.0351	U	0.11		0.0573	
Nickel	30	310	28.7		14.2		**832**		9.32		12.2		11.2		46		19.3		10.9		20.4		26.7	
Potassium	~	~	801		850		2550		948		745		685		479		1680		948		1430		1660	
Selenium	3.9	1500	11.4		1.11		2.58		1.28		1.2	U	1.17	U	5.08		2.71		1.17	U	1.09		1.23	U
Silver	2	1500	0.572	U	0.554	U	0.591	U	0.529	U	0.599	U	0.587	U	0.576	U	0.674		0.585	U	0.54	U	0.616	U
Sodium	~	~	265		186		476		208		423		273		206		277		195		288		205	
Thallium	~	~	1.14	U	1.11	U	1.18	U	1.06	U	1.2	U	1.17	U	1.15	U	1.28	U	1.17	U	1.08	U	1.23	U
Vanadium	~	~	32		14.9		21.8		16.3		14		17.4		80.7		16.5		12		26		15.4	
Zinc	109	10000	1020		58.2		51.6		23.7		332		18.5		1640		84.2		25.6		63.4		31.1	
Polychlorinated Biphenyls - PCBs (mg/kg)																								
PCB-1248 (Aroclor 1248)	~	~	0.019	U	0.0185	U	0.0197	U	0.0176	U	0.0199	U	0.0195	U	0.0192	U	0.0213	U	0.0195	U	0.018	U	0.0205	U
PCB-1254 (Aroclor 1254)	~	~	0.019	U	0.0185	U	0.0197	U	0.0297		0.0199	U	0.0195	U	0.0192	U	0.0213	U	0.0195	U	0.018	U	0.0205	U
PCB-1260 (Aroclor 1260)	~	~	0.019	U	0.0185	U	0.0197	U	0.0176	U	0.0199	U	0.0195	U	0.0192	U	0.0213	U	0.0195	U	0.018	U	0.0205	U
Total PCBs	0.1	1	0.019	U	0.0185	U	0.0197	U	0.0297		0.0199	U	0.0195	U	0.0192	U	0.0213	U	0.0195	U	0.018	U	0.0205	U
Pesticides (mg/kg)																								
4,4'-DDD	0.0033	92	0.00189	U	0.00183	U	0.00195	U	0.00175	U	0.00198	U	0.00194	U	0.0032	D	0.00211	U	0.00193	U	0.00178	U	0.00203	U
4,4'-DDT	0.0033	47	0.00189	U	0.00183	U	0.00195	U	0.00175	U	0.00198	U	0.00194	U	0.0019	U	0.00211	U	0.00193	U	0.00192	D	0.00203	U
Alpha Chlordane	0.094	24	0.00189	U	0.00183	U	0.00195	U	0.00175	U	0.00198	U	0.00194	U	0.0019	U	0.00211	U	0.00193	U	0.00209	D	0.00203	U
Gamma-Chlordane	~	~	0.00189	U	0.00183	U	0.00195	U	0.00175	U	0.00198	U	0.00194	U	0.0019	U	0.00211	U	0.00193	U	0.00189	DP	0.00203	U
Herbicides (mg/kg)																								
Silvex (2,4,5-Tp)	~	~	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
General Chemistry (%)																								
Solids, Percent	~	~	87.5		90.2		84.5		94.5		83.5		85.2		86.8		78.2		85.5		92.6		81.2	

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7. DUP01_020717 is a duplicate sample of EB11D_1-2 and DUP02_020817 is a duplicate of sample EB14D_0-2.
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Table 2C
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Remedial Investigation Report

Red Hook 4 Properties
Brooklyn, New York
Langan Project Number: 170363001

Location Sample ID Lab ID Sample Date Sample Interval (ft bgs)	NYSDEC Part 375 Unrestricted SCO	NYSDEC Part 375 Restricted Use Commercial SCO	EB08 EB08_19-20 17B0271-07 2/7/2017 19-20		EB10D EB10D_0-2 17B0169-01 2/3/2017 0-2		EB10D EB10D_41-42 17B0169-04 2/3/2017 41-42		EB10D EB10D_49-50 17B0169-05 2/3/2017 49-50		EB10D EB10D_62-64 17B0169-07 2/3/2017 62-64		EB10D EB10D_73-75 17B0169-08 2/3/2017 73-75		EB11D EB11D_0-1 17B0271-01 2/7/2017 0-1		EB11D EB11D_1-2 17B0271-02 2/7/2017 1-2		EB11D DUP01_020717 17B0271-04 2/7/2017 1-2		EB11D EB11D_7.5-8.5 17B0271-03 2/7/2017 7.5-8.5		EB12D EB12D_0-2 17B0058-01 2/1/2017 0-2	
Inorganics (mg/kg)																								
Aluminum	~	~	4330		3210		2290		2610		2720		2180		3840		4470		4880		1370		2570	B
Antimony	~	~	0.601	U	0.613		0.541	U	0.607	U	0.58	U	0.64	U	0.552	U	0.58	U	0.582	U	0.557	U	0.596	U
Arsenic	13	16	1.2	U	4.39		1.08	U	1.21	U	1.16	U	1.28	U	8.2		4.73		11.2		10.5		13.3	
Barium	350	400	27.8		56.8		15.2		22.3		16.2		9.49		102		**5190**		**1030**		88.8		90.3	
Beryllium	7.2	590	0.18		0.247		0.108	U	0.121	U	0.116	U	0.128	U	0.326		0.625		0.216		0.161		0.219	
Cadmium	2.5	9.3	0.36	U	0.415		0.325	U	0.364	U	0.348	U	0.384	U	2.04		1.5		0.349	U	0.334	U	0.56	
Calcium	~	~	851		71000		4560		5310		4430		1180		3300		8590		6040		58600		2890	
Chromium III	30	1500	17.9		10.3		9.21		4.69		7.74		4.35		9.64		15.3		19		4.66		7.12	
Chromium, Hexavalent	1	400	0.721		0.524	U	0.649		0.607	U	0.929		0.64	U	0.552	U	0.58	U	0.582	U	0.557	U	0.596	U
Chromium, Total	~	~	18.6		10.3		4.69		4.73		8.67		4.35		9.64		15.3		19		4.66		7.12	
Cobalt	~	~	14.2		2.91		2.82		3.46		3.93		2.64		6.27		11.1		16.4		3.05		5.26	
Copper	50	270	10.2		79.3		6.41		5.76		8.9		6.7		**7380**		**11000**		**814**		7.32		46.4	
Cyanide	27	27	0.601	U	0.524	U	0.541	U	0.607	U	0.58	U	0.64	U	0.552	U	0.58	U	0.582	U	0.557	U	0.596	U
Iron	~	~	13000		7960		4720		6330		6690		5870		15600		51500		34800		10700		8970	
Lead	63	1000	7.71		121		2.43		2.31		3.07		1.95		353		413		255		15.5		76.2	
Magnesium	~	~	22300		40900		2270		2890		4060		1320		2100		1700		1880		2220		598	
Manganese	1600	10000	155		189		136		199		187		142		121		379		361		222		52.8	
Mercury	0.18	2.8	0.036	U	0.218		0.0325	U	0.0364	U	0.0348	U	0.0384	U	0.392		0.0945		0.396		0.0615		0.449	
Nickel	30	310	223		10.7		13		11.5		26.4		5.6		42.4		57.2		36.4		6.22		13.3	
Potassium	~	~	947		493		457		502		621		521		464		532		717		311		383	
Selenium	3.9	1500	1.2	U	1.05	U	1.08	U	1.21	U	1.16	U	1.28	U	2.35		6.17		5.19		1.55		2.24	
Silver	2	1500	0.601	U	0.524	U	0.541	U	0.607	U	0.58	U	0.64	U	0.552	U	0.58	U	0.582	U	0.557	U	0.596	U
Sodium	~	~	157		242		157		469		950		1670		140		148		136		393		266	B
Thallium	~	~	1.2	U	1.05	U	1.08	U	1.21	U	1.16	U	1.28	U	1.1	U	1.96		1.16	U	1.11	U	1.19	U
Vanadium	~	~	11.1		15.3		6.84		7.33		10		7.23		15.1		17.6		15.9		14.6		13.3	
Zinc	109	10000	28.5		141		14		13.2		15.6		9.8		2740		5590		3170		37		279	
Polychlorinated Biphenyls - PCBs (mg/kg)																								
PCB-1248 (Aroclor 1248)	~	~	0.02	U	0.0175	U	0.018	U	0.0202	U	0.0193	U	0.0213	U	0.0184	U	0.0193	U	0.0194	U	0.0186	U	0.0198	U
PCB-1254 (Aroclor 1254)	~	~	0.02	U	0.0175	U	0.018	U	0.0202	U	0.0193	U	0.0213	U	0.0184	U	0.0193	U	0.0194	U	0.0186	U	0.0198	U
PCB-1260 (Aroclor 1260)	~	~	0.02	U	0.0389		0.018	U	0.0202	U	0.0193	U	0.0213	U	0.0184	U	0.0193	U	0.0194	U	0.0186	U	0.0198	U
Total PCBs	0.1	1	0.02	U	0.0389		0.018	U	0.0202	U	0.0193	U	0.0213	U	0.0184	U	0.0193	U	0.0194	U	0.0186	U	0.0198	U
Pesticides (mg/kg)																								
4,4'-DDD	0.0033	92	0.00198	U	0.0131	D	0.00179	U	0.002	U	0.00192	U	0.00211	U	0.00182	U	0.00192	U	0.00192	U	0.00184	U	0.00197	U
4,4'-DDT	0.0033	47	0.00198	U	0.00472	D	0.00179	U	0.002	U	0.00192	U	0.00211	U	0.00182	U	0.00192	U	0.00192	U	0.00184	U	0.00197	U
Alpha Chlordane	0.094	24	0.00198	U	0.00173	U	0.00179	U	0.002	U	0.00192	U	0.00211	U	0.00182	U	0.00192	U	0.00192	U	0.00184	U	0.00197	U
Gamma-Chlordane	~	~	0.00198	U	0.00173	U	0.00179	U	0.002	U	0.00192	U	0.00211	U	0.00182	U	0.00192	U	0.00192	U	0.00184	U	0.00197	U
Herbicides (mg/kg)																								
Silvex (2,4,5-Tp)	~	~	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
General Chemistry (%)																								
Solids, Percent	~	~	83.2		95.4		92.4		82.4		86.2		78.1		90.5		86.1		85.9		89.7		84	

Notes and Qualifiers:

1. Soil sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (NYCRR) Part 375 Unrestricted Use and Restricted Use Commercial Soil Cleanup Objectives (SCOs).
2. Only compounds with detections are shown in the table.
3. Concentrations above the NYSDEC Part 375 Unrestricted Use SCOs are shaded.
4. Concentrations above the NYSDEC Part 375 Restricted Use Commercial SCOs are shaded and bolded.
5. Reporting Limits (RL) above the NYSDEC Part 375 Unrestricted Use SCO standards are italicized.
6. ~ = Criterion does not exist.
7. DUP01_020717 is a duplicate sample of EB11D_1-2 and DUP02_020817 is a duplicate of sample EB14D_0-2.
8. ft. bgs = feet below grade surface
9. mg/kg = milligrams per kilogram
10. ND = Not Detected
11. B = Analyte is found in the associated analysis batch blank.
12. D = Result is from an analysis that required dilution.
13. E = The value is estimated. The value is estimated due to its behavior during calibration.
14. J = The analyte was detected above the Method Detection Limit (MDL), but below the RL; therefore, the result is an estimated concentration.
15. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.

Table 2C
Soil Sample Analytical Results Summary - Inorganics, PCBs, Pesticides, and Herbicides
Remedial Investigation Report

Red Hook 4 Properties
Brooklyn, New York
Langan Project Number: 170363001

Location Sample ID Lab ID Sample Date Sample Interval (ft bgs)	NYSDEC Part 375 Unrestricted SCO	NYSDEC Part 375 Restricted Use Commercial SCO	EB12D EB12D_7-8 17B0058-02 2/1/2017 7-8		EB12D EB12D_8-9 17B0058-03 2/1/2017 8-9		EB13D EB13D_0-2 17B0122-01 2/2/2017 0-2		EB13D EB13D_4-5 17B0122-02 2/2/2017 4-5		EB13D EB13D_9-10 17B0122-03 2/2/2017 9-10		EB14D EB14D_0-2 17B0358-02 2/8/2017 0-2		EB14D DUP02_020817 17B0358-03 2/8/2017 0-2		EB14D EB14D_2-3 17B0358-04 2/8/2017 2-3		EB14D EB14D_66-68 17B0358-06 2/8/2017 66-68		EB14D EB14D_93-95 17B0358-09 2/8/2017 93-95	
Inorganics (mg/kg)																						
Aluminum	~	~	2510	B	2200	B	5810	B	4830	B	6410	B	4720		2110		5930		4420		4170	
Antimony	~	~	0.528	U	0.582	U	12.3		13.3		0.564	U	0.546	U	1.66		0.569	U	0.605	U	0.551	U
Arsenic	13	16	4.6		11.4		**20.4**		**33.2**		2.43		8.24		**35.1**		1.14	U	1.21	U	1.1	U
Barium	350	400	27.4		63.2		300		343		35.8		268		158		47		31.8		31.3	
Beryllium	7.2	590	0.106	U	0.116	U	0.299		0.29		0.113	U	0.157		0.296		0.114	U	0.121	U	0.11	U
Cadmium	2.5	9.3	0.317	U	0.349	U	2.44		4.59		0.338	U	0.548		0.393	U	0.341	U	0.363	U	0.331	U
Calcium	~	~	43800		2210		12000	B	12500	B	903	B	2810		3020		1590		3560		2360	
Chromium III	30	1500	5.85		12.2		16.9		13.2		14		18.7		13.2		11.1		9.53		8.18	
Chromium, Hexavalent	1	400	0.528	U	0.582	U	0.709		0.922		0.564	U	0.546	U	0.655	U	0.569	U	0.605	U	0.551	U
Chromium, Total	~	~	5.85		12.2		17.6		14.1		14		18.7		13.2		11.1		9.53		8.18	
Cobalt	~	~	3.61		5.2		11.5		11		7.89		5.68		4.97		8.64		5.01		4.46	
Copper	50	270	43.1		94.3		223		231		12.1		**878**		144		14		9.7		9.5	
Cyanide	27	27	0.528	U	0.582	U	0.591	U	0.607	U	0.564	U	0.546	U	0.655	U	0.569	U	0.605	U	0.551	U
Iron	~	~	10200		20200		38900	B	59000		13600	B	12400		33600		28500		8610		8260	
Lead	63	1000	46.6		110		885		**1900**		5.04		374		265		19.2		2.83		2.92	
Magnesium	~	~	10500		530		1970		1670		2270		2180		553		959		3410		2120	
Manganese	1600	10000	120		96.5		343		2040		228		109		109		4260		170		147	
Mercury	0.18	2.8	0.0317	U	0.445		**6.61**		**11.8**		0.0338	U	0.927		0.562		0.0579		0.0363	U	0.0331	U
Nickel	30	310	8.08		14		33.6		28.5		28.3		35.5		23.8		11.9		16.9		9.75	
Potassium	~	~	669		427		799		679		1330		737	B	328	B	778	B	1720	B	1390	B
Selenium	3.9	1500	1.06	U	3.18		4.42		5.63		1.13	U	2.26		19.3		3.89		1.21	U	1.1	U
Silver	2	1500	0.528	U	0.582	U	0.591	U	0.607	U	0.564	U	0.546	U	0.655	U	0.569	U	0.605	U	0.551	U
Sodium	~	~	265	B	249	B	301		211		159		330		380		308		1130		1070	
Thallium	~	~	1.06	U	1.16	U	1.18	U	1.21	U	1.13	U	1.09	U	1.31	U	1.14	U	1.21	U	1.1	U
Vanadium	~	~	31.6		10.9		33		26.1		19.1		23.5		19.9		25		14.4		23.9	
Zinc	109	10000	113		136		741	B	1620	B	30.5	B	718		235		25.6		18.1		15.6	
Polychlorinated Biphenyls - PCBs (mg/kg)																						
PCB-1248 (Aroclor 1248)	~	~	0.0565		0.0194	U	0.0197	U	0.0202	U	0.0188	U	0.0182	U	0.0218	U	0.019	U	0.0202	U	0.0184	U
PCB-1254 (Aroclor 1254)	~	~	0.0176	U	0.0194	U	0.0197	U	0.0202	U	0.0188	U	0.0182	U	0.0218	U	0.019	U	0.0202	U	0.0184	U
PCB-1260 (Aroclor 1260)	~	~	0.0176	U	0.0194	U	0.0197	U	0.0202	U	0.0188	U	0.0182	U	0.0218	U	0.019	U	0.0202	U	0.0184	U
Total PCBs	0.1	1	0.0565		0.0194	U	0.0197	U	0.0202	U	0.0188	U	0.0182	U	0.0218	U	0.019	U	0.0202	U	0.0184	U
Pesticides (mg/kg)																						
4,4'-DDD	0.0033	92	0.00174	U	0.00192	U	0.00195	U	0.002	U	0.00186	U	0.0018	U	0.00216	U	0.00188	U	0.002	U	0.00182	U
4,4'-DDT	0.0033	47	0.00295	D	0.00192	U	0.00195	U	0.002	U	0.00186	U	0.0018	U	0.00216	U	0.00188	U	0.002	U	0.00182	U
Alpha Chlordane	0.094	24	0.00174	U	0.00192	U	0.00195	U	0.002	U	0.00186	U	0.0018	U	0.00216	U	0.00188	U	0.002	U	0.00182	U
Gamma-Chlordane	~	~	0.00174	U	0.00192	U	0.00195	U	0.002	U	0.00186	U	0.0018	U	0.00216	U	0.00188	U	0.002	U	0.00182	U
Herbicides (mg/kg)																						
Silvex (2,4,5-Tp)	~	~	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
General Chemistry (%)																						
Solids, Percent	~	~	94.7		85.9		84.7		82.4		88.7		91.5		76.3		87.9		82.7		90.7	

Notes and Qualifiers:

1. Soil sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (NYCRR) Part 375 Unrestricted Use and Restricted Use Commercial Soil Cleanup Objectives (SCOs).
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15. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.

Table 3
Brownfield Cleanup Program
C224214 "Red Hook 4"
Groundwater Analytical Data

Sample #:		TOGs - Table 5 Groundwater Effluent Limitations (Class GA) (ug/L)	MW 1		MW 1 FILT		MW 2		MW 2 FILT		MW 3		MW 3 FILT		MW04		MW04 FILT		MW05		MW05-FILT		MW06		MW06-FILT		MW07		MW07-FILT		MW08		MW08-FILT		MW09		MW09-FILT		MW 10S	
Field ID:																																							
Lab ID:			04764-001		04764-014		04764-003		04764-016		04764-004		04764-017		05060-002		05060-011		04600-001		04600-012		04600-002		04600-013		04600-003		04600-014		04600-004		04600-015		04600-005		04600-016		04764-005	
Date Sampled:			06/08/2017		06/08/2017		06/08/2017		06/08/2017		06/08/2017		06/08/2017		06/16/2017		06/16/2017		06/03/2017		06/03/2017		06/03/2017		06/03/2017		06/03/2017		06/03/2017		06/03/2017		06/03/2017		06/03/2017		06/03/2017		06/08/2017	
Depth(ft):																																						
Volatiles (ug/L)	CAS		Conc		Conc		Conc		Conc		Conc		Conc		Conc		Conc		Conc		Conc		Conc		Conc		Conc		Conc		Conc		Conc		Conc		Conc	
Dichlorodifluoromethane	75-71-8	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Chloromethane	74-87-3	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Vinyl chloride	75-01-4	2	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Bromomethane	74-83-9	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Chloroethane	75-00-3	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Trichlorofluoromethane	75-69-4	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,1-Dichloroethene	75-35-4	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Acetone	67-64-1	50	ND	~	ND	~	ND	~	ND	~	**184**	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Carbon disulfide	75-15-0	60	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Methylene chloride	75-09-2	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
trans-1,2-Dichloroethene	156-60-5	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Methyl tert-butyl ether (MTBE)	1634-04-4	10	ND	~	ND	~	ND	~	ND	~	**12.1**	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,1-Dichloroethane	75-34-3	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
cis-1,2-Dichloroethene	156-59-2	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
2-Butanone (MEK)	78-93-3	50	ND	~	ND	~	ND	~	ND	~	4.65	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Bromochloromethane	74-97-5	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Chloroform	67-66-3	7	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,1,1-Trichloroethane	71-55-6	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Carbon tetrachloride	56-23-5	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,2-Dichloroethane (EDC)	107-06-2	0.6	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Benzene	71-43-2	1	ND	~	ND	~	ND	~	ND	~	**1.38**	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Trichloroethene	79-01-6	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,2-Dichloropropane	78-87-5	1	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,4-Dioxane	123-91-1	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Bromodichloromethane	75-27-4	50	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
cis-1,3-Dichloropropene	10061-01-5	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
4-Methyl-2-pentanone (MIBK)	108-10-1	NS	ND	~	ND	~	ND	~	ND	~	3.08	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Toluene	108-88-3	5	ND	~	ND	~	ND	~	ND	~	4.83	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
trans-1,3-Dichloropropene	10061-02-6	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,1,2-Trichloroethane	79-00-5	1	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Tetrachloroethene	127-18-4	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
2-Hexanone	591-78-6	50	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Dibromochloromethane	124-48-1	50	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,2-Dibromoethane (EDB)^	106-93-4	0.0006	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Chlorobenzene	108-90-7	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Ethylbenzene	100-41-4	5	ND	~	ND	~	ND	~	ND	~	0.762	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Total Xylenes	1330-20-7	15	ND	~	ND	~	ND	~	ND	~	**97.4**	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Styrene	100-42-5	930	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Bromoform	75-25-2	50	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Isopropylbenzene	98-82-8	5	ND	~	ND	~	ND	~	ND	~	3.42	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	1.60	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,1,2,2-Tetrachloroethane	79-34-5	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,3-Dichlorobenzene	541-73-1	3	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,4-Dichlorobenzene	106-46-7	3	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,2-Dichlorobenzene	95-50-1	3	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,2-Dibromo-3-chloropropane^	96-12-8	0.04	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,2,4-Trichlorobenzene	120-82-1	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,2,3-Trichlorobenzene	87-61-6	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Methyl acetate	79-20-9	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Cyclohexane	110-82-7	NS	ND	~	ND	~	ND	~	ND	~	89.5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	9.26	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Methylcyclohexane	108-87-2	NS	ND	~	ND	~	ND	~	ND	~	190	~	ND	~	ND	~	ND	~	ND	~	ND	~	1.13	~	11.6	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,3-Dichloropropene (cis- and trans-)	542-75-6	0.4	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
TOTAL VO's:		NS	ND	~	ND	~	ND	~	ND	~	591	~	ND	~	ND	~	ND	~	ND	~	ND	~	1.13	~	22.5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
TOTAL TIC's:		NS	ND	~	ND	~	ND	~	ND	~	378	~	288	~	ND	~	ND	~	ND	~	ND	~	ND	~	180	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
TOTAL VO's & TIC's:		NS	ND	~	ND	~	ND	~	ND	~	969	~	288	~	ND	~	ND	~	ND	~	ND	~	1.13	~	203	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~

Technical Guidance and Operational Series - Table 1 New York State Ambient Water Quality Standards and Guidance Values and Table 5 New York State Groundwater Effluent Limitations (Class GA), June 1998.

BOLD Conc Indicates a concentration that exceeds applicable criteria.
BOLD RL Indicates RL that exceeds applicable criteria.
BOLD MDL Indicates MDL that exceeds applicable criteria.
NS = No Standard Available
~ = Sample not analyzed for
ND = Analyzed for but Not Detected at the MDL
J = Concentration detected at a value below the RL and above the MDL for target compounds. For non-target compounds (i.e. TICs), qualifier indicates estimated concentrations.
D = The compound was reported from the Diluted analysis
All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.
N = Presumptive evidence of a compound from the use of GC/MS library search.
X = Samples analyzed for total and dissolved metals differ at <= 20% RPD.

Table 3
Brownfield Cleanup Program
C224214 "Red Hook 4"
Groundwater Analytical Data

Sample #:		TOGs - Table 5 Groundwater Effluent Limitations (Class GA) (ug/L)	MW 10S FILT	MW10D	MW10D FILT	MW 11S	MW 11S FILT	MW 11D	MW 11D FILT	MW12	MW12-FILT	MW12D	MW12D-FILT	MW 13S	MW 13S FILT	MW 13D	MW 13D FILT	MW14	MW14 FILT	MW15	MW15 FILT	MW 16	MW 16 FILT	MW17	MW17 FILT
Field ID:																									
Lab ID:			04764-018	05060-003	05060-012	04764-006	04764-019	04764-007	04764-020	04600-007	04600-018	04600-008	04600-019	04764-008	04764-021	04764-009	04764-022	05060-001	05060-010	05060-005	05060-014	04764-010	04764-023	05060-004	05060-013
Date Sampled:			06/08/2017	06/16/2017	06/16/2017	06/08/2017	06/08/2017	06/08/2017	06/08/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/08/2017	06/08/2017	06/08/2017	06/08/2017	06/16/2017	06/16/2017	06/16/2017	06/16/2017	06/08/2017	06/08/2017	06/16/2017	06/16/2017
Depth(ft):																									
Volatiles (ug/L)	CAS		Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Dichlorodifluoromethane	75-71-8	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Chloromethane	74-87-3	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Vinyl chloride	75-01-4	2	~	ND	~	ND	~	**3.59**	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Bromomethane	74-83-9	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Chloroethane	75-00-3	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Trichlorofluoromethane	75-69-4	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,1-Dichloroethene	75-35-4	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Acetone	67-64-1	50	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	9.87	~	ND	~	ND	~
Carbon disulfide	75-15-0	60	~	ND	~	ND	~	1.60	~	ND	~	1.92	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Methylene chloride	75-09-2	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
trans-1,2-Dichloroethene	156-60-5	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Methyl tert-butyl ether (MTBE)	1634-04-4	10	~	ND	~	2.05	~	2.67	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,1-Dichloroethane	75-34-3	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
cis-1,2-Dichloroethene	156-59-2	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
2-Butanone (MEK)	78-93-3	50	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	4.39	~	ND	~	ND	~
Bromochloromethane	74-97-5	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Chloroform	67-66-3	7	~	ND	~	ND	~	ND	~	ND	~	1.07	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,1,1-Trichloroethane	71-55-6	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Carbon tetrachloride	56-23-5	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,2-Dichloroethane (EDC)	107-06-2	0.6	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Benzene	71-43-2	1	~	**16600**	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	**11600**	~	ND	~	ND	~	ND	~
Trichloroethene	79-01-6	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,2-Dichloropropane	78-87-5	1	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,4-Dioxane	123-91-1	NS	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Bromodichloromethane	75-27-4	50	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
cis-1,3-Dichloropropene	10061-01-5	NS	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
4-Methyl-2-pentanone (MIBK)	108-10-1	NS	~	ND	~	ND	~	ND	~	ND	~	0.743	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Toluene	108-88-3	5	~	**15300**	~	ND	~	ND	~	ND	~	0.454	~	ND	~	ND	~	**15300**	~	ND	~	ND	~	ND	~
trans-1,3-Dichloropropene	10061-02-6	NS	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,1,2-Trichloroethane	79-00-5	1	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Tetrachloroethene	127-18-4	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
2-Hexanone	591-78-6	50	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Dibromochloromethane	124-48-1	50	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,2-Dibromoethane (EDB)^	106-93-4	0.0006	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Chlorobenzene	108-90-7	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Ethylbenzene	100-41-4	5	~	**801**	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	**1640**	~	ND	~	ND	~	ND	~
Total Xylenes	1330-20-7	15	~	**4630**	~	ND	~	ND	~	ND	~	1.16	~	ND	~	ND	~	**5420**	~	ND	~	ND	~	ND	~
Styrene	100-42-5	930	~	**3410**	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	**3370**	~	ND	~	ND	~	ND	~
Bromoform	75-25-2	50	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Isopropylbenzene	98-82-8	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	1.66	~	ND	~	1.65	~
1,1,2,2-Tetrachloroethane	79-34-5	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,3-Dichlorobenzene	541-73-1	3	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,4-Dichlorobenzene	106-46-7	3	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,2-Dichlorobenzene	95-50-1	3	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,2-Dibromo-3-chloropropane^	96-12-8	0.04	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,2,4-Trichlorobenzene	120-82-1	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,2,3-Trichlorobenzene	87-61-6	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Methyl acetate	79-20-9	NS	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Cyclohexane	110-82-7	NS	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	4.92	~	ND	~	2.23	~
Methylcyclohexane	108-87-2	NS	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	7.40	~	ND	~	5.92	~
1,3-Dichloropropene (cis- and trans-)	542-75-6	0.4	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
TOTAL VO's:		NS	~	40700	~	2.05	~	7.86	~	ND	~	5.35	~	ND	~	ND	~	37300	~	28.2	~	ND	~	9.80	~
TOTAL TIC's:		NS	~	16500	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	25100	~	352	~	16.3	~	120	~
TOTAL VO's & TIC's:		NS	~	57200	~	2.05	~	7.86	~	ND	~	5.35	~	ND	~	ND	~	62400	~	380	~	16.3	~	130	~

Technical Guidance and Operational Series - Table 1 New York State Ambient Water Quality Stand

BOLD Conc Indicates a concentration that exceeds applicable crite
BOLD RL Indicates RL that exceeds applicable criteria.
BOLD MDL Indicates MDL that exceeds applicable criteria.
NS = No Standard Available
~ = Sample not analyzed for
ND = Analyzed for but Not Detected at the MDL
J = Concentration detected at a value below the RL and above the MDL for target compounds. For
D = The compound was reported from the Diluted analysis
All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.
N = Presumptive evidence of a compound from the use of GC/MS library search.
X = Samples analyzed for total and dissolved metals differ at <= 20% RPD.

Table 3
Brownfield Cleanup Program
C224214 "Red Hook 4"
Groundwater Analytical Data

Sample #:		TOGs - Table 5	MW 1	MW 1 FILT	MW 2	MW 2 FILT	MW 3	MW 3 FILT	MW04	MW04 FILT	MW05	MW05-FILT	MW06	MW06-FILT	MW07	MW07-FILT	MW08	MW08-FILT	MW09	MW09-FILT	MW 10S
Field ID:		Groundwater																			
Lab ID:		Effluent	04764-001	04764-014	04764-003	04764-016	04764-004	04764-017	05060-002	05060-011	04600-001	04600-012	04600-002	04600-013	04600-003	04600-014	04600-004	04600-015	04600-005	04600-016	04764-005
Date Sampled:		Limitations (Class GA)	06/08/2017	06/08/2017	06/08/2017	06/08/2017	06/08/2017	06/08/2017	06/16/2017	06/16/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/08/2017
Depth(ft):		(ug/L)																			
	CAS																				
2,2'-Oxybis(1-Chloropropane)	108-60-1	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
4-Methylphenol **	106-44-5	see total phenols	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
N-Nitrosodi-n-propylamine	621-64-7	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Acetophenone	98-86-2	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Hexachloroethane	67-72-1	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Nitrobenzene	98-95-3	0.4	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Isophorone	78-59-1	50	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2-Nitrophenol	88-75-5	see total phenols	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2,4-Dimethylphenol	105-67-9	see total phenols	ND	~	ND	~	0.681	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Bis(2-chloroethoxy) methane	111-91-1	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2,4-Dichlorophenol	120-83-2	see total phenols	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Naphthalene	91-20-3	10	0.328	~	ND	~	ND	~	**10.6**	~	0.187	~	0.761	~	ND	~	ND	~	ND	~	ND
4-Chloroaniline	106-47-8	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Hexachlorobutadiene	87-68-3	0.5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Caprolactam	105-60-2	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
4-Chloro-3-methylphenol	59-50-7	see total phenols	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2-Methylnaphthalene	91-57-6	NS	ND	~	ND	~	ND	~	2.09	~	ND	~	0.254	~	ND	~	ND	~	ND	~	ND
Hexachlorocyclopentadiene	77-47-4	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2,4,6-Trichlorophenol	88-06-2	see total phenols	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2,4,5-Trichlorophenol	95-95-4	see total phenols	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
1,1'-Biphenyl	92-52-4	5	ND	~	ND	~	ND	~	ND	~	ND	~	0.195	~	ND	~	ND	~	ND	~	ND
2-Chloronaphthalene	91-58-7	10	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2-Nitroaniline	88-74-4	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Dimethyl phthalate	131-11-3	50	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2,6-Dinitrotoluene	606-20-2	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Acenaphthylene	208-96-8	NS	ND	~	ND	~	ND	~	0.729	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
3-Nitroaniline	99-09-2	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Acenaphthene	83-32-9	20	ND	~	ND	~	ND	~	0.848	~	ND	~	0.888	~	1.54	~	ND	~	ND	~	ND
2,4-Dinitrophenol	51-28-5	see total phenols	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
4-Nitrophenol	100-02-7	see total phenols	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2,4-Dinitrotoluene	121-14-2	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Dibenzofuran	132-64-9	NS	ND	~	ND	~	ND	~	ND	~	ND	~	0.299	~	ND	~	ND	~	ND	~	ND
Diethyl phthalate	84-66-2	50	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Fluorene	86-73-7	50	ND	~	ND	~	ND	~	0.543	~	ND	~	0.492	~	0.990	~	ND	~	ND	~	ND
4-Chlorophenyl phenyl ether	7005-72-3	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
4-Nitroaniline	100-01-6	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
1,2,4,5-Tetrachlorobenzene	95-94-3	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2,3,4,6-Tetrachlorophenol	58-90-2	see total phenols	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
4,6-Dinitro-2-methylphenol	534-52-1	see total phenols	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
N-Nitrosodiphenylamine	86-30-6	50	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
4-Bromophenyl phenyl ether	101-55-3	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Hexachlorobenzene	118-74-1	0.04	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Atrazine	1912-24-9	7.5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Pentachlorophenol	87-86-5	see total phenols	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Phenanthrene	85-01-8	50	ND	~	ND	~	ND	~	0.461	~	ND	~	0.406	~	0.328	~	ND	~	ND	~	0.276
Anthracene	120-12-7	50	ND	~	ND	~	ND	~	0.276	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Carbazole	86-74-8	NS	ND	~	ND	~	ND	~	ND	~	ND	~	0.407	~	ND	~	ND	~	ND	~	ND
Di-n-butyl phthalate	84-74-2	50	0.229	~	0.211	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Fluoranthene	206-44-0	50	ND	~	ND	~	ND	~	0.635	~	0.224	~	0.503	~	ND	~	ND	~	ND	~	ND
Pyrene	129-00-0	50	ND	~	ND	~	ND	~	0.728	~	ND	~	0.452	~	ND	~	ND	~	ND	~	ND
Butyl benzyl phthalate	85-68-7	50	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
3,3'-Dichlorobenzidine	91-94-1	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Benzo[a]anthracene	56-55-3	0.002	ND	~	ND	~	ND	~	ND	~	**0.113**	~	ND	~	ND	~	ND	~	ND	~	ND
Chrysene	218-01-9	0.002	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Bis(2-ethylhexyl) phthalate	117-81-7	5	0.907	~	0.633	~	ND	~	0.622	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Di-n-octyl phthalate	117-84-0	50	ND	~	ND	~	ND	~	0.380	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Benzo[b]fluoranthene	205-99-2	0.002	ND	~	ND	~	ND	~	ND	~	**0.142**	~	ND	~	ND	~	ND	~	ND	~	ND
Benzo[k]fluoranthene	207-08-9	0.002	ND	~	ND	~	ND	~	ND	~	**0.112**	~	ND	~	ND	~	ND	~	ND	~	ND
Benzo[a]pyrene	50-32-8	NS	ND	~	ND	~	ND	~	ND	~	0.150	~	ND	~	ND	~	ND	~	ND	~	ND
Indeno[1,2,3-cd]pyrene	193-39-5	0.002	ND	~	ND	~	ND	~	ND	~	**0.129**	~	ND	~	ND	~	ND	~	ND	~	ND
Dibenz[a,h]anthracene	53-70-3	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Benzo[g,h,i]perylene	191-24-2	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Dinitrotoluene (2,4- and 2,6-)	25321-14-6	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
TOTAL BNA'S:		NS	1.46	~	0.844	~	0.681	~	17.9	~	1.06	~	4.66	~	2.86	~	ND	~	ND	~	0.276
TOTAL TIC's:		NS	12.7	~	ND	~	24.9	~	140	~	4.30	~	59.4	~	55.8	~	ND	~	6.80	~	16.2
TOTAL BNA'S & TIC's:		NS	14.2	~	0.844	~	25.6	~	158	~	5.36	~	64.1	~	58.7	~	ND	~	6.80	~	16.5

Technical Guidance and Operational Series - Table 1 New York State Ambient Water Quality Standards and Guidance Values and Table 5 New York State Groundwater Effluent Limitations (Class GA), June 1998.

BOLD Conc Indicates a concentration that exceeds applicable criteria.
BOLD RL Indicates RL that exceeds applicable criteria.
BOLD MDL Indicates MDL that exceeds applicable criteria.
NS = No Standard Available
~ = Sample not analyzed for
ND = Analyzed for but Not Detected at the MDL
J = Concentration detected at a value below the RL and above the MDL for target compounds. For non-target compounds (i.e. TICs), qualifier indicates estimated concentrations.
D = The compound was reported from the Diluted analysis
All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.
N = Presumptive evidence of a compound from the use of GC/MS library search.
X = Samples analyzed for total and dissolved metals differ at <= 20% RPD.

Table 3
Brownfield Cleanup Program
C224214 "Red Hook 4"
Groundwater Analytical Data

Sample #:		TOGs - Table 5	MW 10S FILT	MW10D	MW10D FILT	MW 11S	MW 11S FILT	MW 11D	MW 11D FILT	MW12	MW12-FILT	MW12D	MW12D-FILT	MW 13S	MW 13S FILT	MW 13D	MW 13D FILT	MW01D	MW01D FILT	MW15	MW15 FILT	MW 16	MW 16 FILT	MW14	MW14 FILT
Field ID:		Groundwater																							
Lab ID:		Effluent	04764-018	05060-003	05060-012	04764-006	04764-019	04764-007	04764-020	04600-007	04600-018	04600-008	04600-019	04764-008	04764-021	04764-009	04764-022	05060-001	05060-010	05060-005	05060-014	04764-010	04764-023	05060-004	05060-013
Date Sampled:		Limitations (Class GA)	06/08/2017	06/16/2017	06/16/2017	06/08/2017	06/08/2017	06/08/2017	06/08/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/08/2017	06/08/2017	06/08/2017	06/08/2017	06/16/2017	06/16/2017	06/16/2017	06/16/2017	06/08/2017	06/08/2017	06/16/2017	06/16/2017
Depth(ft):		(ug/L)																							
	CAS																								
2,2'-Oxybis(1-Chloropropane)	108-60-1	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
4-Methylphenol **	106-44-5	see total phenols	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
N-Nitrosodi-n-propylamine	621-64-7	NS	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Acetophenone	98-86-2	NS	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Hexachloroethane	67-72-1	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Nitrobenzene	98-95-3	0.4	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Isophorone	78-59-1	50	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
2-Nitrophenol	88-75-5	see total phenols	~	64.2	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
2,4-Dimethylphenol	105-67-9	see total phenols	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Bis(2-chloroethoxy) methane	111-91-1	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
2,4-Dichlorophenol	120-83-2	see total phenols	~	**2690**	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Naphthalene	91-20-3	10	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	**10800**	~	5.57	~	ND	~	7.26	~
4-Chloroaniline	106-47-8	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Hexachlorobutadiene	87-68-3	0.5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Caprolactam	105-60-2	NS	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
4-Chloro-3-methylphenol	59-50-7	see total phenols	~	308	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
2-Methylnaphthalene	91-57-6	NS	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	3580	~	ND	~	ND	~	0.950	~
Hexachlorocyclopentadiene	77-47-4	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
2,4,6-Trichlorophenol	88-06-2	see total phenols	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
2,4,5-Trichlorophenol	95-95-4	see total phenols	~	**23.0**	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,1'-Biphenyl	92-52-4	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	**381**	~	ND	~	ND	~	ND	~
2-Chloronaphthalene	91-58-7	10	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
2-Nitroaniline	88-74-4	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Dimethyl phthalate	131-11-3	50	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
2,6-Dinitrotoluene	606-20-2	5	~	133	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Acenaphthylene	208-96-8	NS	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	1340	~	ND	~	ND	~	0.476	~
3-Nitroaniline	99-09-2	5	~	17.3	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Acenaphthene	83-32-9	20	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	0.333	~	**353**	~	ND	~	ND	~	1.15	~
2,4-Dinitrophenol	51-28-5	see total phenols	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
4-Nitrophenol	100-02-7	see total phenols	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
2,4-Dinitrotoluene	121-14-2	5	~	4.35	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Dibenzofuran	132-64-9	NS	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	98.5	~	ND	~	ND	~	ND	~
Diethyl phthalate	84-66-2	50	~	38.7	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	3.45	~	ND	~	ND	~
Fluorene	86-73-7	50	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	**1160**	~	ND	~	ND	~	0.661	~
4-Chlorophenyl phenyl ether	7005-72-3	NS	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
4-Nitroaniline	100-01-6	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
1,2,4,5-Tetrachlorobenzene	95-94-3	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
2,3,4,6-Tetrachlorophenol	58-90-2	see total phenols	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
4,6-Dinitro-2-methylphenol	534-52-1	see total phenols	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
N-Nitrosodiphenylamine	86-30-6	50	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
4-Bromophenyl phenyl ether	101-55-3	NS	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Hexachlorobenzene	118-74-1	0.04	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Atrazine	1912-24-9	7.5	~	38.6	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Pentachlorophenol	87-86-5	see total phenols	~	8.05	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Phenanthrene	85-01-8	50	~	13.7	~	ND	~	ND	~	ND	~	0.469	~	ND	~	0.202	~	**2630**	~	ND	~	ND	~	0.195	~
Anthracene	120-12-7	50	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	**717**	~	ND	~	ND	~	0.321	~
Carbazole	86-74-8	NS	~	3.22	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	32.7	~	ND	~	ND	~	ND	~
Di-n-butyl phthalate	84-74-2	50	~	4.84	~	ND	~	0.198	~	ND	~	ND	~	ND	~	ND	~	ND	~	0.431	~	ND	~	ND	~
Fluoranthene	206-44-0	50	~	ND	~	0.240	~	ND	~	ND	~	ND	~	ND	~	ND	~	**691**	~	ND	~	ND	~	0.377	~
Pyrene	129-00-0	50	~	**0.305**	~	ND	~	0.555	~	ND	~	ND	~	ND	~	ND	~	**1090**	~	ND	~	ND	~	0.355	~
Butyl benzyl phthalate	85-68-7	50	~	**0.589**	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
3,3'-Dichlorobenzidine	91-94-1	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Benzo[a]anthracene	56-55-3	0.002	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	**407**	~	ND	~	ND	~	ND	~
Chrysene	218-01-9	0.002	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	**359**	~	ND	~	ND	~	ND	~
Bis(2-ethylhexyl) phthalate	117-81-7	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Di-n-octyl phthalate	117-84-0	50	~	0.173	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Benzo[b]fluoranthene	205-99-2	0.002	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	**171**	~	ND	~	ND	~	ND	~
Benzo[k]fluoranthene	207-08-9	0.002	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	**147**	~	ND	~	ND	~	ND	~
Benzo[a]pyrene	50-32-8	NS	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	314	~	ND	~	ND	~	ND	~
Indeno[1,2,3-cd]pyrene	193-39-5	0.002	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	**102**	~	ND	~	ND	~	ND	~
Dibenz[a,h]anthracene	53-70-3	NS	~	3390	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	36.9	~	ND	~	ND	~	ND	~
Benzo[g,h,i]perylene	191-24-2	NS	~	4040	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	130	~	ND	~	ND	~	ND	~
Dinitrotoluene (2,4- and 2,6-)	25321-14-6	NS	~	7430	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
TOTAL BNA'S:		NS	~		~	0.240	~	0.753	~	ND	~	0.469	~	ND	~	0.535	~	24500	~	9.45	~	ND	~	11.7	~
TOTAL TIC's:		NS	~		~	ND	~	14.3	~	4.50	~	29.8	~	25.7	~	25.6	~	12800	~	240	~	4.20	~	73.3	~
TOTAL BNA'S & TIC's:		NS	~		~	0.240	~	15.1	~	4.50	~	30.3	~	25.7	~	26.1	~	37300	~	249	~	4.20	~	85.0	~

Technical Guidance and Operational Series - Table 1 New York State Ambient Water Quality Stand

BOLD Conc Indicates a concentration that exceeds applicable crite
BOLD RL Indicates RL that exceeds applicable criteria.
BOLD MDL Indicates MDL that exceeds applicable criteria.

NS = No Standard Available
~ = Sample not analyzed for
ND = Analyzed for but Not Detected at the MDL
J = Concentration detected at a value below the RL and above the MDL for target compounds. For
D = The compound was reported from the Diluted analysis
All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.
N = Presumptive evidence of a compound from the use of GC/MS library search.
X = Samples analyzed for total and dissolved metals differ at <= 20% RPD.

Table 3
Brownfield Cleanup Program
C224214 "Red Hook 4"
Groundwater Analytical Data

Sample #:		TOGs - Table 5	MW 1	MW 1 FILT	MW 2	MW 2 FILT	MW 3	MW 3 FILT	MW04	MW04 FILT	MW05	MW05-FILT	MW06	MW06-FILT	MW07	MW07-FILT	MW08	MW08-FILT	MW09	MW09-FILT	MW 10S
Field ID:		Groundwater																			
Lab ID:		Effluent	04764-001	04764-014	04764-003	04764-016	04764-004	04764-017	05060-002	05060-011	04600-001	04600-012	04600-002	04600-013	04600-003	04600-014	04600-004	04600-015	04600-005	04600-016	04764-005
Date Sampled:		Limitations (Class GA)	06/08/2017	06/08/2017	06/08/2017	06/08/2017	06/08/2017	06/08/2017	06/16/2017	06/16/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/08/2017
Depth(ft):		(ug/L)																			
	CAS																				
Aroclor-1254	11097-69-1	see total PCBs	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Aroclor-1260	11096-82-5	see total PCBs	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Aroclor-1262	37324-23-5	see total PCBs	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Aroclor-1268	11100-14-4	see total PCBs	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
PCBs	1336-36-3	0.09	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Pesticides (ug/L)			Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
alpha-BHC	319-84-6	0.01	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
beta-BHC	319-85-7	0.04	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
gamma-BHC (Lindane)	58-89-9	0.05	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
delta-BHC	319-86-8	0.04	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Heptachlor	76-44-8	0.04	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Aldrin	309-00-2	ND	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Heptachlor epoxide	1024-57-3	0.03	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Endosulfan I	959-98-8	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
4,4'-DDE	72-55-9	0.2	ND	~	ND	~	0.025	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Dieldrin	60-57-1	0.004	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Endrin	72-20-8	ND	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Endosulfan II	33213-65-9	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
4,4'-DDD	72-54-8	0.3	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Endrin aldehyde	7421-93-4	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Endosulfan sulfate	1031-07-8	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
4,4'-DDT	50-29-3	0.2	ND	~	ND	~	0.069	~	ND	~	0.00645	~	ND	~	ND	~	ND	~	ND	~	ND
Endrin ketone	53494-70-5	5	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Methoxychlor	72-43-5	35	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
alpha-Chlordane	5103-71-9	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
gamma-Chlordane	5103-74-2	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Toxaphene	8001-35-2	0.06	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Endosulfan (I and II)	115-29-7	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Chlordane (alpha and gamma)	57-74-9	0.05	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Herbicides (ug/L)			Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Dalapon	75-99-0	50	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Dicamba	1918-00-9	0.44	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2,4-D	94-75-7	50	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2,4,5-TP (Silvex)	93-72-1	0.26	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2,4,5-T	93-76-5	35	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
2,4-DB	94-82-6	NS	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Dinoseb	88-85-7	2	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Sample #:		TOGs - Table 5	MW 1	MW 1 FILT	MW 2	MW 2 FILT	MW 3	MW 3 FILT	MW04	MW04 FILT	MW05	MW05-FILT	MW06	MW06-FILT	MW07	MW07-FILT	MW08	MW08-FILT	MW09	MW09-FILT	MW 10S
Field ID:		Groundwater																			
Lab ID:		Effluent	04764-001	04764-014	04764-003	04764-016	04764-004	04764-017	05060-002	05060-011	04600-001	04600-012	04600-002	04600-013	04600-003	04600-014	04600-004	04600-015	04600-005	04600-016	04764-005
Date Sampled:		Limitations (Class GA)	06/08/2017	06/08/2017	06/08/2017	06/08/2017	06/08/2017	06/08/2017	06/16/2017	06/16/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/08/2017
Depth(ft):		(ug/L)																			
	CAS																				
Cadmium	7440-43-9	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	7440-70-2	NS	223000	264000	119000	127000	98300	95700	243000	216000	179000	162000	151000	118000	185000	187000	134000	126000	139000	145000	114000
Chromium	7440-47-3	100	ND	ND	ND	ND	ND	ND	ND	ND	4.72	1.13	ND	ND	ND	ND	ND	ND	1.89	ND	ND
Cobalt	7440-48-4	NS	6.45	6.74	2.27	2.41	1.09	ND	ND	ND	5.39	1.26	ND	ND	ND	ND	ND	ND	0.841	ND	2.62
Copper	7440-50-8	1000	10.6	5.71	9.19	7.40	4.75	ND	10.9	ND	20.3	2.22	ND	ND	ND	ND	2.54	ND	25.3	6.34	9.44
Iron	7439-89-6	600	**936**	45.9	**15100**	**11600**	**37200**	**33600**	**64700**	**63600**	**7320**	ND	22.7	ND	**53600**	**52500**	81.4	37.7	265	ND	**28000**
Lead	7439-92-1	50	2.23	ND	9.71	ND	3.61	ND	2.72	ND	**271**	2.85	ND	ND	ND	ND	0.948	ND	14.7	ND	6.95
Magnesium	7439-95-4	35000	**46400**	**55200**	11900	12000	10900	10200	27300	24200	22500	21200	145	ND	**54100**	**54500**	19300	18200	17200	17800	14300
Manganese	7439-96-5	600	**8810**	**1360**	**1870**	**1440**	**2180**	**1800**	**2000**	**1810**	**3330**	**1070**	6.44	ND	**976**	**972**	37.5	26.5	156	127	**3510**
Mercury	7439-97-6	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	7440-02-0	200	18.0	17.0	5.06	4.62	ND	ND	1.16	ND	1.59	ND	1.26	ND	ND	ND	ND	ND	ND	ND	6.89
Potassium	7440-09-7'	NS	14500	16800	5300	4860	9230	9270	26900	24300	12200	13000	43100	40800	26700	27100	29500	27100	32600	33500	8180
Selenium	7782-49-2	20	ND	ND	ND	ND	2.60	ND	6.48	5.80	13.2	15.4	ND	ND	5.27	ND	3.10	ND	2.04	ND	ND
Silver	7440-22-4	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	7440-23-5	case by case	453000	510000	258000	239000	256000	252000	216000	186000	390000	334000	155000	148000	688000	705000	87900	79300	231000	236000	245000
Thallium	7440-28-0	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	7440-62-2	NS	1.79	ND	1.21	ND	ND	ND	1.48	ND	3.96	4.18	5.04	0.875	ND	ND	7.15	8.66	5.40	3.12	ND
Zinc	7440-66-6	5000	4.46	4.36	14.4	4.07	3.98	3.14	14.0	ND	57.3	5.02	29.8	ND	7.96	ND	3.10	1.87	52.4	47.0	22.3
General Analytical			Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc	Conc
Hexavalent Chromium-ug/L	18540-29-9	100	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND
Cyanide, Total-ug/L	57-12-5	400	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND

Technical Guidance and Operational Series - Table 1 New York State Ambient Water Quality Standards and Guidance Values and Table 5 New York State Groundwater Effluent Limitations (Class GA), June 1998.

BOLD Conc Indicates a concentration that exceeds applicable criteria.
BOLD RL Indicates RL that exceeds applicable criteria.
BOLD MDL Indicates MDL that exceeds applicable criteria.
NS = No Standard Available
~ = Sample not analyzed for
ND = Analyzed for but Not Detected at the MDL
J = Concentration detected at a value below the RL and above the MDL for target compounds. For non-target compounds (i.e. TICs), qualifier indicates estimated concentrations.
D = The compound was reported from the Diluted analysis
All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.
N = Presumptive evidence of a compound from the use of GC/MS library search.
X = Samples analyzed for total and dissolved metals differ at <= 20% RPD.

Table 3
Brownfield Cleanup Program
C224214 "Red Hook 4"
Groundwater Analytical Data

Sample #:		TOGs - Table 5	MW 10S FILT	MW10D	MW10D FILT	MW 11S	MW 11S FILT	MW 11D	MW 11D FILT	MW12	MW12-FILT	MW12D	MW12D-FILT	MW 13S	MW 13S FILT	MW 13D	MW 13D FILT	MW01D	MW01D FILT	MW15	MW15 FILT	MW 16	MW 16 FILT	MW14	MW14 FILT
Field ID:		Groundwater Effluent																							
Lab ID:		Limitations (Class GA)	04764-018	05060-003	05060-012	04764-006	04764-019	04764-007	04764-020	04600-007	04600-018	04600-008	04600-019	04764-008	04764-021	04764-009	04764-022	05060-001	05060-010	05060-005	05060-014	04764-010	04764-023	05060-004	05060-013
Date Sampled:		(ug/L)	06/08/2017	06/16/2017	06/16/2017	06/08/2017	06/08/2017	06/08/2017	06/08/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/08/2017	06/08/2017	06/08/2017	06/08/2017	06/16/2017	06/16/2017	06/16/2017	06/16/2017	06/08/2017	06/08/2017	06/16/2017	06/16/2017
Depth(ft):																									
	CAS																								
Aroclor-1254	11097-69-1	see total PCBs	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Aroclor-1260	11096-82-5	see total PCBs	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Aroclor-1262	37324-23-5	see total PCBs	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Aroclor-1268	11100-14-4	see total PCBs	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
PCBs	1336-36-3	0.09	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Pesticides (ug/L)			**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**
alpha-BHC	319-84-6	0.01	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
beta-BHC	319-85-7	0.04	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
gamma-BHC (Lindane)	58-89-9	0.05	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
delta-BHC	319-86-8	0.04	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Heptachlor	76-44-8	0.04	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Aldrin	309-00-2	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Heptachlor epoxide	1024-57-3	0.03	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Endosulfan I	959-98-8	NS	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
4,4'-DDE	72-55-9	0.2	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Dieldrin	60-57-1	0.004	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Endrin	72-20-8	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Endosulfan II	33213-65-9	NS	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
4,4'-DDD	72-54-8	0.3	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Endrin aldehyde	7421-93-4	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Endosulfan sulfate	1031-07-8	NS	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
4,4'-DDT	50-29-3	0.2	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Endrin ketone	53494-70-5	5	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Methoxychlor	72-43-5	35	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
alpha-Chlordane	5103-71-9	NS	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
gamma-Chlordane	5103-74-2	NS	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Toxaphene	8001-35-2	0.06	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Endosulfan (I and II)	115-29-7	NS	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Chlordane (alpha and gamma)	57-74-9	0.05	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Herbicides (ug/L)			**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**
Dalapon	75-99-0	50	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Dicamba	1918-00-9	0.44	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
2,4-D	94-75-7	50	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
2,4,5-TP (Silvex)	93-72-1	0.26	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
2,4,5-T	93-76-5	35	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
2,4-DB	94-82-6	NS	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Dinoseb	88-85-7	2	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~

Sample #:		TOGs - Table 5	MW 10S FILT	MW10D	MW10D FILT	MW 11S	MW 11S FILT	MW 11D	MW 11D FILT	MW12	MW12-FILT	MW12D	MW12D-FILT	MW 13S	MW 13S FILT	MW 13D	MW 13D FILT	MW01D	MW01D FILT	MW15	MW15 FILT	MW 16	MW 16 FILT	MW14	MW14 FILT
Field ID:		Groundwater Effluent																							
Lab ID:		Limitations (Class GA)	04764-018	05060-003	05060-012	04764-006	04764-019	04764-007	04764-020	04600-007	04600-018	04600-008	04600-019	04764-008	04764-021	04764-009	04764-022	05060-001	05060-010	05060-005	05060-014	04764-010	04764-023	05060-004	05060-013
Date Sampled:		(ug/L)	06/08/2017	06/16/2017	06/16/2017	06/08/2017	06/08/2017	06/08/2017	06/08/2017	06/03/2017	06/03/2017	06/03/2017	06/03/2017	06/08/2017	06/08/2017	06/08/2017	06/08/2017	06/16/2017	06/16/2017	06/16/2017	06/16/2017	06/08/2017	06/08/2017	06/16/2017	06/16/2017
Depth(ft):																									
	CAS																								
Cadmium	7440-43-9	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	7440-70-2	NS	120000	232000	224000	95200	91000	96100	102000	145000	136000	94100	66000	171000	167000	250000	239000	241000	243000	201000	200000	126000	121000	174000	176000
Chromium	7440-47-3	100	ND	ND	ND	ND	ND	ND	ND	1.51	1.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cobalt	7440-48-4	NS	2.18	1.52	1.53	0.862	ND	1.43	1.48	ND	ND	ND	ND	2.69	2.41	6.62	6.42	ND	ND	ND	ND	1.45	1.46	ND	ND
Copper	7440-50-8	1000	7.58	11.0	11.5	3.58	ND	8.15	2.90	3.70	3.77	ND	ND	8.67	5.47	6.42	ND	7.73	ND	10.0	ND	1.74	ND	3.08	ND
Iron	7439-89-6	600	**27700**	**2400**	**2010**	**8680**	**5240**	**768**	**640**	**26800**	**23200**	**1160**	451	**1490**	487	**2870**	**2370**	**3400**	**1460**	**31600**	**28300**	**28000**	**32000**	**49400**	**41500**
Lead	7439-92-1	50	ND	2.47	ND	1.33	ND	ND	ND	ND	ND	ND	ND	10.9	0.853	ND	ND	ND	ND	0.723	ND	ND	ND	ND	ND
Magnesium	7439-95-4	35000	14700	**940000**	**1050000**	10700	10100	**432000**	**448000**	15000	14000	**313000**	**194000**	23000	22200	**1070000**	**1100000**	**980000**	**1060000**	22200	22100	14200	13400	**68200**	**67300**
Manganese	7439-96-5	600	**3780**	**3610**	**3520**	**2130**	**2050**	**2350**	**2440**	**898**	**1080**	**1850**	**1270**	**7290**	**7050**	**10100**	**8940**	**3860**	**3850**	**861**	**847**	**2320**	**2200**	**751**	**731**
Mercury	7439-97-6	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	7440-02-0	200	5.22	5.02	4.76	1.66	1.32	2.71	2.30	ND	ND	ND	ND	5.03	3.76	3.35	3.19	ND	ND	ND	ND	5.97	6.81	1.63	1.71
Potassium	7440-09-7'	NS	8750	315000	304000	10600	10100	172000	178000	23800	22800	142000	95500	15600	14900	295000	289000	313000	315000	20400	20300	11300	10400	24100	24300
Selenium	7782-49-2	20	ND	5.57	6.58	ND	ND	ND	ND	1.56	ND	3.92	ND	ND	ND	ND	ND	5.00	2.95	4.27	ND	ND	ND	ND	ND
Silver	7440-22-4	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	7440-23-5	case by case	262000	8900000	9840000	200000	190000	5450000	5450000	213000	202000	4750000	2640000	223000	210000	10400000	10200000	8950000	9590000	289000	287000	331000	326000	721000	721000
Thallium	7440-28-0	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	7440-62-2	NS	ND	ND	ND	2.22	ND	ND	ND	3.19	ND	ND	ND	1.87	ND	ND	ND	ND	ND	2.02	ND	ND	ND	ND	ND
Zinc	7440-66-6	5000	5.25	ND	ND	12.1	1.95	1.24	ND	11.6	ND	ND	ND	23.4	13.8	3.00	2.32	ND	ND	ND	ND	5.97	ND	12.7	ND
General Analytical			**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**	**Conc**
Hexavalent Chromium-ug/L	18540-29-9	100	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~
Cyanide, Total-ug/L	57-12-5	400	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~	ND	~

Technical Guidance and Operational Series - Table 1 New York State Ambient Water Quality Stan

BOLD Conc Indicates a concentration that exceeds applicable crite
BOLD RL Indicates RL that exceeds applicable criteria.
BOLD MDL Indicates MDL that exceeds applicable criteria.

NS = No Standard Available
~ = Sample not analyzed for
ND = Analyzed for but Not Detected at the MDL
J = Concentration detected at a value below the RL and above the MDL for target compounds. Fo
D = The compound was reported from the Diluted analysis
All qualifiers on individual Volatiles & Semivolatiles are carried down through summation.
N = Presumptive evidence of a compound from the use of GC/MS library search.
X = Samples analyzed for total and dissolved metals differ at <= 20% RPD.

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Table 3B
Groundwater Sample Analytical Results Summary - Metals, PCBs, Pesticides, and Herbicides
Remedial Investigation Report

Red Hook 4 Properties
Brooklyn, New York
Langan Project Number: 170363001

Location Sample ID Lab ID Sample Date	NYSDEC AWQS	MW04 MW04_021417 17B0517-03 2/14/2017	MW06 MW06_020717 17B0276-03 2/7/2017	MW06 DUP03_020717 17B0276-04 2/7/2017	MW07 MW07_021017 17B0419-01 2/10/2017	MW08 MW08_021317 17B0460-06 2/13/2017	MW10D-R MW10D_R_021317 17B0460-04 2/13/2017	MW10S MW10S_021317 17B0460-05 2/13/2017	MW11D MW11D_021417 17B0517-01 2/14/2017	MW11S MW11S_021417 17B0517-02 2/14/2017	MW12D MW12D_020717 17B0276-01 2/7/2017	MW12S MW12S_020717 17B0276-02 2/7/2017	MW13D MW13D_021317 17B0460-08 2/13/2017	MW13S MW13S_021317 17B0460-09 2/13/2017	MW14 MW14_021317 17B0460-02 2/13/2017
Total Metals (µg/L)															
Aluminum	~	3540	1300	1030	931	55.6 U	10200	2580	3520	55.6 U	1330	8530	6900	294	140
Arsenic	25	6.85 D	4.38 D	3.02 D	42.2 D	2 U	36.2 D	11.5 D	42.9 D	3.52 D	27.6 D	28.7 D	60.5 D	2 U	44.4 D
Barium	1000	153	51.1	55.7	750	38.1	242	206	282	132	184	285	228	41.3	391
Beryllium	3	1.11 U	0.667 U	0.667 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.13 D	1.96 D	1.11 U	1.11 U	1.11 U
Calcium	~	63600	79400	81100	194000	80000	125000	98300	156000	74900	30600	112000	172000	16400	154000
Chromium III	~	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	18	10.8	10 U	10 U
Chromium, Hexavalent	50	35 B	10 U	10 U	35	20	13	10 U	45 B	45 B	10 U	10 U	10 U	10 U	10 U
Chromium, Total	50	17.1	5 U	5 U	19.1	5.56 U	17.4	7.57	15.2	5.56 U	5 U	18	14.7	5.56 U	6.6
Copper	200	16.1	3 U	3 U	18.5	3.33 U	25.6	22.3	319	3.33 U	5.9	20.9	21.8	4.84	22.6
Iron	300	6100	292	121	50000	42.3	8090	14300	4160	3930	1630	27300	6440	340	2080
Lead	25	11.9	3 U	3 U	106	3.33 U	7.17	47.8	16.9	3.33 U	3 U	106	4.61	4.31	3.33 U
Magnesium	35000	7180	137	66.3	40100	11900	321000	13200	306000	8230	67500	15200	494000	1750	429000
Manganese	300	615	5 U	5 U	1110	16.2	2700	3250	3220	1600	767	1150	6530	133	2790
Molybdenum	~	6.19 D	12 D	10.4 D	2.35 D	10.2 D	23.8 D	4.14 D	20.5 D	4.74 D	23.9 D	12.4 D	16.5 D	4.1 D	7.22 D
Nickel	100	21.8	9.32	8.79	6.19	10.5	26.6	24.5	36.1	7.41	6.87	31.2	24.5	6.6	6.47
Potassium	~	8220 B	23900	23900	30700	22400	322000	6820	97900	7310 B	58100	12800	555000	8140	544000
Selenium	10	*11.1* U	7.89 D	5.36 D	*11.1* U	*11.1* U	*11.1* U	*11.1* U	*11.1* U	*11.1* U	102 D	25.5 D	*11.1* U	*11.1* U	*11.1* U
Sodium	20000	241000 B	60100	59700	466000	51700	4610000	117000	4550000	89700 B	1980000	166000	6110000	185000	7080000
Vanadium	~	11.1 U	12.1	10 U	11.1 U	11.1 U	15	11.1 U	11.1 U	11.1 U	10 U	30.9	11.4	11.1 U	11.1 U
Zinc	2000	73.9	13.7	11.1	88	19.9	41.9	115	121	19.9	16.7	122	46.7	28.3	29.9
Dissolved Metals (µg/L)															
Aluminum	~	55.6 U	1010	1010	55.6 U	55.6 U	55.6 U	55.6 U	3100	878	55.6 U	55.6 U	55.6 U	84.5	55.6 U
Arsenic	25	6.85 D	2.22 U	2.22 U	42.2 D	2.22 U	40.2 D	12.7 D	42.9 D	3.52 D	24 D	16.7 D	67.2 D	2.22 U	49.3 D
Barium	1000	117	58.8	59.9	656	39.8	180	164	320	147	184	87.8	184	33.5	376
Beryllium	3	1.11 U	0.933 D	1.04 D	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.24 D	1 D	1.11 U	1.11 U	1.11 U
Calcium	~	60000	85900	87000	176000	79800	126000	91900	181000	72000	33000	80800	172000	15500	156000
Chromium, Total	50	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	18.8	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U
Copper	200	3.33 U	5.45	3.33 U	12.7	6.28	15.1	3.76	389	24.7	8.42	6.33	12.1	4.66	23.7
Iron	300	1950	30.1	44.2	43000	22.2 U	457	10000	6320	5670	631	1000	299	67.7	1820
Lead	25	3.33 U	3.33 U	3.33 U	3.33 U	3.33 U	3.33 U	3.33 U	26.9	16.4	3.33 U	3.33 U	3.33 U	3.33 U	3.33 U
Magnesium	35000	6180	55.6 U	72.8	35900	11400	339000	11400	352000	8300	74800	9650	514000	1580	443000
Manganese	300	530	5.56 U	5.56 U	994	16.3	2660	3160	3790	2020	803	199	6550	115	2710
Molybdenum	~	6.19 D	10.8 D	10.8 D	2.35 D	11.3 D	26.5 D	4.6 D	20.5 D	4.74 D	23.6 D	19.4 D	18.3 D	4.56 D	8.03 D
Nickel	100	11.8	10.8	10.5	5.56 U	12.4	5.91	13.6	59.2	12.6	5.56 U	6.31	8.4	8.61	5.56 U
Potassium	~	7300	25700	26500	27200	23800	104000	7280	117000	7440	64200	10100	134000	8670	120000
Selenium	10	*11.1* U	8.2 D	7 D	*11.1* U	*11.1* U	*11.1* U	*11.1* U	*11.1* U	*11.1* U	91.4 D	22.5 D	*11.1* U	*11.1* U	*11.1* U
Sodium	20000	219000	60800	61500	416000	53600	3860000	128000	3340000	89700	1940000	142000	5410000	190000	5120000
Zinc	2000	35.4	16.6	13.5	34.1	16.9	21.7	37.8	167	43.4	18.3	15.8	20.1	22	24.4
Polychlorinated Biphenyls (µg/L)															
PCBs	0.09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pesticides (µg/L)															
Total Pesticides	~	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDD	0.3	0.00485 U	0.00471 U	0.00444 U	0.00444 U	0.00421 U	0.00421 U	0.00426	0.00421 U	0.005 U	0.0041 U	0.005 U	0.00432 U	0.00432 U	0.041 U
Herbicides (µg/L)															
Silvex (2,4,5-Tp)	~	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes and Qualifiers:

1. Groundwater sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (AWQS) and Guidance Values for Class GA
2. Only detected compounds are shown in the table.
3. Concentrations exceeding the NYSDEC TOGS AWQS criteria are shaded.
4. Reporting limits (RL) exceeding the NYSDEC TOGS AWQS criteria are italicized.
5. µg/L = micrograms per liter
6. ~ = Criterion doesn't exist
7. DUP03_020717 is a duplicate sample of MW06_020717.
8. B = Analyte found in the analysis batch blank
9. D = Result is from an analysis that required a dilution.
10. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

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Table 3B
Groundwater Sample Analytical Results Summary - Metals, PCBs, Pesticides, and Herbicides
Remedial Investigation Report

Red Hook 4 Properties
Brooklyn, New York
Langan Project Number: 170363001

Location Sample ID Lab ID Sample Date	NYSDEC AWQS	MW04 MW04_021417 17B0517-03 2/14/2017	MW06 MW06_020717 17B0276-03 2/7/2017	MW06 DUP03_020717 17B0276-04 2/7/2017	MW07 MW07_021017 17B0419-01 2/10/2017	MW08 MW08_021317 17B0460-06 2/13/2017	MW10D-R MW10D_R_021317 17B0460-04 2/13/2017	MW10S MW10S_021317 17B0460-05 2/13/2017	MW11D MW11D_021417 17B0517-01 2/14/2017	MW11S MW11S_021417 17B0517-02 2/14/2017	MW12D MW12D_020717 17B0276-01 2/7/2017	MW12S MW12S_020717 17B0276-02 2/7/2017	MW13D MW13D_021317 17B0460-08 2/13/2017	MW13S MW13S_021317 17B0460-09 2/13/2017	MW14 MW14_021317 17B0460-02 2/13/2017
Total Metals (µg/L)															
Aluminum	~	3540	1300	1030	931	55.6 U	10200	2580	3520	55.6 U	1330	8530	6900	294	140
Arsenic	25	6.85 D	4.38 D	3.02 D	42.2 D	2 U	36.2 D	11.5 D	42.9 D	3.52 D	27.6 D	28.7 D	60.5 D	2 U	44.4 D
Barium	1000	153	51.1	55.7	750	38.1	242	206	282	132	184	285	228	41.3	391
Beryllium	3	1.11 U	0.667 U	0.667 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.13 D	1.96 D	1.11 U	1.11 U	1.11 U
Calcium	~	63600	79400	81100	194000	80000	125000	98300	156000	74900	30600	112000	172000	16400	154000
Chromium III	~	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	18	10.8	10 U	10 U
Chromium, Hexavalent	50	35 B	10 U	10 U	35	20	13	10 U	45 B	45 B	10 U	10 U	10 U	10 U	10 U
Chromium, Total	50	17.1	5 U	5 U	19.1	5.56 U	17.4	7.57	15.2	5.56 U	5 U	18	14.7	5.56 U	6.6
Copper	200	16.1	3 U	3 U	18.5	3.33 U	25.6	22.3	319	3.33 U	5.9	20.9	21.8	4.84	22.6
Iron	300	6100	292	121	50000	42.3	8090	14300	4180	3930	1830	27300	6440	340	2080
Lead	25	11.9	3 U	3 U	106	3.33 U	7.17	47.8	16.9	3.33 U	3 U	106	4.61	4.31	3.33 U
Magnesium	35000	7180	137	66.3	40100	11900	321000	13200	306000	8230	67500	15200	494000	1750	429000
Manganese	300	615	5 U	5 U	1110	16.2	2700	3250	3220	1800	767	1150	6530	133	2790
Molybdenum	~	6.19 D	12 D	10.4 D	2.35 D	10.2 D	23.8 D	4.14 D	20.5 D	4.74 D	23.9 D	12.4 D	16.5 D	4.1 D	7.22 D
Nickel	100	21.8	9.32	8.79	6.19	10.5	26.6	24.5	36.1	7.41	6.87	31.2	24.5	6.6	6.47
Potassium	~	8220 B	23900	23900	30700	22400	322000	6820	97900	7310 B	58100	12800	555000	8140	544000
Selenium	10	*11.1* U	7.89 D	5.36 D	*11.1* U	*11.1* U	*11.1* U	*11.1* U	*11.1* U	*11.1* U	102 D	25.5 D	*11.1* U	*11.1* U	*11.1* U
Sodium	20000	241000 B	60100	59700	466000	51700	4610000	117000	4550000	89700 B	1980000	166000	6110000	185000	7080000
Vanadium	~	11.1 U	12.1	10 U	11.1 U	11.1 U	15	11.1 U	11.1 U	11.1 U	10 U	30.9	11.4	11.1 U	11.1 U
Zinc	2000	73.9	13.7	11.1	88	19.9	41.9	115	121	19.9	16.7	122	46.7	28.3	29.9
Dissolved Metals (µg/L)															
Aluminum	~	55.6 U	1010	1010	55.6 U	55.6 U	55.6 U	55.6 U	3100	878	55.6 U	55.6 U	55.6 U	84.5	55.6 U
Arsenic	25	6.85 D	2.22 U	2.22 U	42.2 D	2.22 U	40.2 D	12.7 D	42.9 D	3.52 D	24 D	16.7 D	67.2 D	2.22 U	49.3 D
Barium	1000	117	58.8	59.9	656	39.8	180	164	320	147	184	87.8	184	33.5	376
Beryllium	3	1.11 U	0.933 D	1.04 D	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.11 U	1.24 D	1 D	1.11 U	1.11 U	1.11 U
Calcium	~	60000	85900	87000	176000	79800	126000	91900	181000	72000	33000	80800	172000	15500	156000
Chromium, Total	50	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	18.8	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U	5.56 U
Copper	200	3.33 U	5.45	3.33 U	12.7	6.28	15.1	3.76	389	24.7	8.42	6.33	12.1	4.66	23.7
Iron	300	1950	30.1	44.2	43000	22.2 U	457	10000	6320	5670	631	1000	299	67.7	1820
Lead	25	3.33 U	3.33 U	3.33 U	3.33 U	3.33 U	3.33 U	3.33 U	26.9	16.4	3.33 U	3.33 U	3.33 U	3.33 U	3.33 U
Magnesium	35000	6180	55.6 U	72.8	35900	11400	339000	11400	352000	8300	74800	9650	514000	1580	443000
Manganese	300	530	5.56 U	5.56 U	994	16.3	2660	3160	3790	2020	803	199	6550	115	2710
Molybdenum	~	6.19 D	10.8 D	10.8 D	2.35 D	11.3 D	26.5 D	4.6 D	20.5 D	4.74 D	23.6 D	19.4 D	18.3 D	4.56 D	8.03 D
Nickel	100	11.8	10.8	10.5	5.56 U	12.4	5.91	13.6	59.2	12.6	5.56 U	6.31	8.4	8.61	5.56 U
Potassium	~	7300	25700	26500	27200	23800	104000	7280	117000	7440	64200	10100	134000	8670	120000
Selenium	10	*11.1* U	8.2 D	7 D	*11.1* U	*11.1* U	*11.1* U	*11.1* U	*11.1* U	*11.1* U	91.4 D	22.5 D	*11.1* U	*11.1* U	*11.1* U
Sodium	20000	219000	60800	61500	416000	53600	3860000	128000	3340000	89700	1940000	142000	5410000	190000	5120000
Zinc	2000	35.4	16.6	13.5	34.1	16.9	21.7	37.8	167	43.4	18.3	15.8	20.1	22	24.4
Polychlorinated Biphenyls (µg/L)															
PCBs	0.09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pesticides (µg/L)															
Total Pesticides	~	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDD	0.3	0.00485 U	0.00471 U	0.00444 U	0.00444 U	0.00421 U	0.00421 U	0.00426	0.00421 U	0.005 U	0.0041 U	0.005 U	0.00432 U	0.00432 U	0.041 U
Herbicides (µg/L)															
Silvex (2,4,5-Tp)	~	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes and Qualifiers:

1. Groundwater sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards (AWQS) and Guidance Values for Class GA
2. Only detected compounds are shown in the table.
3. Concentrations exceeding the NYSDEC TOGS AWQS criteria are shaded.
4. Reporting limits (RL) exceeding the NYSDEC TOGS AWQS criteria are italicized.
5. µg/L = micrograms per liter
6. ~ = Criterion doesn't exist
7. DUP03_020717 is a duplicate sample of MW06_020717.
8. B = Analyte found in the analysis batch blank
9. D = Result is from an analysis that required a dilution.
10. U = The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

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Table 4
QAQC Analytical Results Summary - Field Blanks and Trip Blanks
Remedial Investigation Report

Red Hook 4 Properties
Brooklyn, New York
Langan Project Number: 170363001

Location	Field Blank	Field Blank	Field Blank	Trip Blank	Trip Blank	Trip Blank	Trip Blank	Trip Blank	Trip Blank	Trip Blank	Trip Blank	Trip Blank
Sample ID	FB01_020717	FB01_021317	FB02_020817	TB01_020117	TB02_020217	TB03_020317	TB04_020617	TB04_020717	TB05_020817	TB06_021017	TB08_021317	TB08_021417
Lab ID	17B0271-06	17B0460-10	17B0358-01	17B0058-04	17B0122-04	17B0169-10	17B0225-07	17B0271-05	17B0358-10	17B0419-02	17B0460-07	17B0517-04
Sample Date	2/7/2017	2/13/2017	2/8/2017	2/1/2017	2/2/2017	2/3/2017	2/6/2017	2/7/2017	2/8/2017	2/10/2017	2/13/2017	2/14/2017
Volatile Organic Compounds - VOCs (µg/L)												
Acetone	2.6	2 B	2.6	1.9 J	2 U	2.8	2 U	2.5	2.9	2 J	2.3 B	1.9 J
Bromomethane	0.5 U	0.5 U	0.5 U	2 U	0.5 U	0.5 U	1.1 JB	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Disulfide	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.37 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	0.5 U	0.23 J	0.5 U	0.5 U	0.5 U	0.5 U	0.23 J	0.23 J	0.5 U	0.5 U	0.22 J	0.23 J
Chloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tert-Butyl Alcohol	1 U	2 U	1.7	2 U	1 U	1 U	2 U	0.56 J	1 U	1 U	2 U	1 U
Semivolatile Organic Compounds - SVOCs (µg/L)												
Naphthalene	0.0385 U	0.0615 B	0.162	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides (µg/L)												
Total Pesticides	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Herbicides (µg/L)												
Total Herbicides	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated Biphenyls (µg/L)												
Total PCBs	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Metals (µg/L)												
Iron	20 U	28.8	22.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	7.48	11	6.29	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	50 U	144	96.5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	444	1700	760	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	10 U	14.7	16.9	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes and Qualifiers:

1. Only detected compounds are shown in the table.
2. µg/L = micrograms per liter
3. NA = Not Analyzed
4. ND = Not Detected
5. B = Analyte found in the analysis batch blank
6. J = Analyte detected at or above the method detection limit but below the RL; therefore data is estimated.
7. U = The analyte was analyzed for, but was not detected at a

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