Historic Report

- Hunts Point Food Distribution Center Remedial Action Work Plan, Parcel E OU-2, Bronx, NY, Henningson, Durham, and Richardson Architecture and Engineering P.C., June 2011

Hunts Point
Food Distribution Center
Remedial Action Work Plan

Parcel E OU-2,
Bronx, New York

- Final -

Prepared for:

New York City
Economic Development
Corporation

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1.0 INTRODUCTION

This Remedial Action Workplan (RAWP) has been prepared by Henningson, Durham & Richardson Architecture and Engineering P.C. in association with HDR Engineering, Inc. (HDR) at the request of the New York City Economic Development Corporation (NYCEDC) for the property currently known as Operable Unit 2 of Parcel E (Site E OU-2) (Block 2781, Lot 500) Bronx, New York (Site). The Site is shown on Figure 1, Site Location Map, located in the Figures section of this submittal. Commercial use of the Site as an alternative fuel facility for the sale and distribution of commercial fleet fuels is proposed for the property. At the time of this Report, the facility would be the first of its kind constructed in New York City.

Site E is broken into two Operable Units (1 & 2). Figure 2 shows the boundary of Site E OU-2. A metes and bounds description of the Site is included in Attachment 1. Operable Unit 1 (D2-0004-94-04) received a signed release letter dated August 25, 2003 (Attachment 1). Figure 3 shows the 2004 aerial photograph of Hunts Point and the approximate location of Site E OU-2 relative to other Hunts Point Voluntary Cleanup Program (VCP) sites. Site E OU-2 is bounded completely on the south by the Con Ed compressor station, the west by Halleck Street and the north by East Bay/Food Center Drive. The eastern end of the Site abuts a fence associated with the Iroquois gas transmission line that enters the Con Edison site. The Site includes three separate areas (shown on Figure 4):

1. Development Parcel: The specific Alternative Fuel Facility redevelopment area covered under this RAWP.

2. Iroquois Access Road: A narrow strip that runs along the northeast boundary of the Site that was developed as the access road into the Iroquois facility under the Iroquois Gas Pipeline project. Work related to the Voluntary Cleanup Agreement (VCA) is considered to be completed in this area.

3. SE Segment: A portion of the Site located in the southeast corner that was investigated and remediated along with the initial E OU-1 area and will receive a no further action (NFA) letter with the completion of the Development Parcel. Work related to the VCA is considered to be completed in this area.

This RAWP has been prepared for the Development Parcel only. The Iroquois Access Road and SE Segment were remediated previously in accordance with the VCA. The remediation of the Development Parcel will be the final remedy for Site E OU-2 and upon its completion a NFA for the entire parcel will be requested from NYSDEC. The currently proposed metes and bounds of the Development Parcel are included as Attachment 2. The final limits of the development are not expected to change significantly but may be altered slightly during lease negotiations, to allow for utility easements in the immediate vicinity, or New York City land use approvals. The parcel will be surveyed during the land use review period and that survey information will be provided to NYSDEC prior to initiation of the RAWP in the event there is a modification to the metes and bounds currently proposed.

1.1 Purpose

This RAWP has been prepared in accordance with the Parcel E VCA to address the remedial activities on Site E OU-2. This RAWP will incorporate the New York State Department of Environmental Conservation (NYSDEC) approved Interim Remedial Measure (IRM) Scope of Work, dated November 2007, with the final Site remedy and redevelopment.

Typically, IRM is completed prior to implementing the RAWP; however, the E OU-2 developer became involved prior to implementation of the approved IRM and will therefore be completing the IRM in concert with Site redevelopment. As part of this RAWP, the IRM, included in this report as Attachment 3, will be completed as an initial phase of the Site redevelopment. If redevelopment design issues arise that require modifications to activities in the approved IRM (e.g. the removal of material in the areas and depths shown in the IRM), a written description and request will be prepared and submitted to NYSDEC for review, comment and approval prior to implementation.

The components of the approved IRM will be combined with the redevelopment in this RAWP resulting in a final remedy for the Site that will include: excavation and removal of coal tar and purifier waste per the approved IRM, final reporting (in the form of a Final Engineering Report, or FER), documentation sampling, implementation of a CAMP, construction of engineering controls, and implementation of intuitional controls [Site Management Plan (SMP), Periodic Review Reports (PRRs), and filing a deed restriction]. The remedy is intended to eliminate exposure and be protective to human health and the environment. Additionally, this effort will satisfy the VCA and allow the Site to be put into use with a plan for future maintenance of the closure. Currently Site redevelopment plans include the construction of two aboveground structures and the installation of numerous underground utilities including underground storage tanks. The preliminary redevelopment plan layout is shown in Figure 4.

1.2 Schedule

The redevelopment project involves several distinct phases. Some of these phases may be implemented simultaneously. Included are numerous formal approvals required prior to the completion of each phase of redevelopment and the finalization of the associated plans. The phases presented in this RAWP represent pre- and post-construction efforts. They focus approvals from various New York City agencies regarding land use, environmental impact evaluations and Site engineering. In addition, the phases include all remedial efforts and engineering control installations. Following construction, the final phase will include the submission of documents required under the Voluntary Cleanup Program including but not be limited to: SMP, FER, Operation and Maintenance Plan (O&M) and finalization of institutional controls.

New York City Uniform Land Use Review Procedure (ULURP) involves numerous City Departments and organizations that review the proposed redevelopment project and its impact on local communities. An overview of the process with estimated time frames is included as Plate 1. The time allotted for this effort will incorporate several additional tasks including an

environmental assessment. With the anticipated effort and approvals, including those currently being worked on and those anticipated for the remediation and construction, it is anticipated that remediation/construction will begin in the spring of 2013. This incorporates design and additional New York City approvals required for the project including: permanent storm and industrial discharge permits, negative declaration confirmation, City Planning and New York City Fire Department approvals. Documents required for construction will include a New York City Department of Sanitation (DSNY) Fill Management Operation Permit (FMO) and NYSDEC Stormwater Pollution Prevention Plan (SWPPP). The Department will be provided with regular electronic updates (email) for New York City related approvals. After the project is fully approved, the design is completed and the contractors are procured, progress updates will be provided as monthly written reports.

Additional time beyond the anticipated schedule dates may be required for instances that include, but are not limited to:

- Where public review and comment may be necessary; and
- Where multiple projects/properties are involved (conflict of interest reviews).

The Post Construction SMP and FER will be prepared and submitted to NYSDEC and NYSDOH within 90 days of the completion of the engineering controls. This may or may not occur prior to the completion of all construction activities. Currently, because of the early phase in the overall facility design and because it is still well in advance of specification preparation, it is not possible to know the relative order of the construction activities. When the schedule is determined, it will be made available to the Department.

1.3 Institutional Controls

The redevelopment project will incorporate into the overall design, engineering controls, material removal, and the installation of passive or active remedial systems to prevent indoor vapor intrusion from impacting newly constructed workspaces. In addition, there will be an institutional control incorporated into the project that will further limit contact and exposure to residual contamination or historic fill materials that remain on the property. More specifically, a deed restriction will be filed with the Bronx Borough clerk upon the completion of the project. The deed restriction will become fixed to the property description for the foreseeable future. The deed restriction will reference the existing information and reports and will restrict the use of groundwater as a potable source to assure continued protectiveness of the Site remedy. In addition to the Deed Restriction, inspections and an annual certification of the engineering controls will be completed. The inspection and certification of the engineering controls, put in place in accordance with the RAWP, will be filed with NYSDEC to verify the remedy remains in place and that the protective measures are being maintained. This certification will be performed until NYSDEC determines it is no longer necessary.

The actual date of filing for the deed restriction will be dependant on the date of construction completion, certificate of occupancy and other related items. The proposed facility is unique and it is the first of its kind anywhere within New York City. The redevelopment is therefore anticipated to require variances from typical permit reviews, and the final inspections and

signoffs may require procedures not yet identified. The deed restriction will be filed as quickly as possible following all final approvals and will be noted in the monthly progress report.

1.4 Previous Reports

Several investigations and subsequent Reports have been issued for the Site. They include:

- Investigative Scope of Work for Operating Unit Portion of Parcel E, Bronx, NY, June 1999;
- Response Plan for the Operating Unit Portion of Parcel E, Bronx, NY, September 2000;
- Site Investigative Report Operable Unit 2 of Parcel E, Bronx, NY (Draft) 2005;
- Response Plan, Operable Unit 2 Portion of Parcel E, Bronx, NY, June 2007; and
- Interim Remedial Measure Scope of Work, Operable Unit 2 Portion of Parcel E, Bronx, NY, November 2007.

The September 2000 Response Plan included the area identified in this report as the SE Segment and did not address the Development Parcel. The subsequent investigation on E OU-2 was completed and a draft report was submitted in 2005. Due to the levels of contamination encountered during that investigation and documented in the draft report, NYSDEC requested additional sampling and delineation. The additional sampling data was added to the report and it was submitted final in June 2007. Per NYSDEC request, the title was changed to Response Plan, Operable Unit 2 Portion of Parcel E. In 2007 a potential developer planned to incorporate all of Parcel E into a larger development project. This project area was to include Sites E OU-1 and E OU-2 as well as a new contiguous area now identified as E OU-3 (Figure 3). This configuration never made it past the planning stages; however, in an effort to make the entire Site available for redevelopment, NYCEDC submitted the IRM Scope of Work that was finalized in November 2007.

The IRM presented the removal plan detailed in the 2007 Response Plan but did not incorporate a specific final redevelopment. The removal plan proposed the excavation and off-Site disposal of approximately 2,500 cubic yards (cyd) of material severely impacted with coal tar and purifier waste. Stipulations of the IRM stated that any future development project would be required to incorporate additional engineering and institutional controls to complete the Site remedy. The approximate volume of material identified for removal was determined during the delineation investigation. The limits of the excavation areas are based on a qualitative examination of the material that is severely impacted rather than specific analytical limits. This approach is consistent with previous redevelopment and remedial efforts completed within the footprint of the former Hunts Point Manufactured Gas Plant (MGP). Residual contaminants will be addressed with engineering and institutional controls to eliminate exposure to subsurface contamination.

Conditions within the footprint of the former Hunts Point MGP vary; however, fill material consistently includes soil, construction and demolition material, ash, cinders, residual coal and material moderately to severely impacted by MGP waste (coal tar and purifier waste). Concentrations of these various components in the fill materials vary widely and make using analytical limits to isolate areas targeted for removal virtually impossible. Comparing the variable concentrations of metals and semi-volatiles throughout the fill materials to stringent (e.g., unrestricted use) cleanup objectives would result in the excavation and disposal of nearly the entire peninsula. Alternatively, engineering controls or caps consisting of bituminous pavement, acceptable fill, or concrete building slabs with vapor barriers and passive venting systems have been used to eliminate exposure to remaining fill. These presumptive engineering controls have been utilized for new developments in Hunts Point including parcels with residual metals and semi-volatile concentrations in the fill. The use of these controls in a consistent manner has allowed planning, design and construction on the impacted development parcels to move forward. The same approach is proposed for the Alternative Fuel Facility development on Site E OU-2 following the removal of the severely impacted fill as described in the IRM.

1.5 Site History

Prior to New York City purchasing the Site in or around 1968 (along with much of the property to the south and east of the parcel) the property was owned by Consolidated Edison and operated as part of a much larger MGP. The MGP was constructed between 1924 and 1932 and encompassed the entire southern portion of the Hunts Point Peninsula. The plant operated until the early 1960s and included approximately 50 buildings or structures including one 15,000,000-cubic-foot gas holder that was reportedly 254 feet in diameter and 365 feet in height. Based on Sanborn Fire Insurance Maps, there were no significant MGP-related structures on Site E OU-2; however, any Site activities that may have occurred prior to 1968 were related to the operations of the MGP. MGP structures, including a large gas holder, filtration equipment and purifying beds were reportedly located south and east of the Site **(**Figure 5).

The Iroquois Natural Gas Pipeline enters the Site from its route along Food Center Drive/East Bay Avenue and runs along the eastern boundary of the Site (Iroquois Access Road). The area adjacent to and immediately south of the subject E OU-2 parcel was retained by Consolidated Edison, later Con Edison, and is currently used as a natural gas compressor station. The operations on this adjacent parcel currently handle compressed natural gas from larger transmission pipelines and distribute it for use. The Con Edison site has been investigated separately and was found to have historic fill and levels of soil contamination similar to those across much of the Hunts Point peninsula. There was also some low level PCB contamination encountered that may be a result of the post MGP facility storage of old transformers.

No information or documentation has been identified that provides a specific source of MGP waste within the bounds of the Site. The sampling data from the two investigations is the only record of waste material within the Site. It was used exclusively for the preparation of the IRM and will be used moving forward to guide the redevelopment work.

2.0 GENERAL MATERIAL CHARACTERIZATION

2.1 Remedial Investigation

As described in Section 1.4, Previous Reports, an investigation was conducted on the Site and a subsequent delineation effort was performed as the basis of the approved IRM. A copy of the IRM Scope of Work (approved by NYSDEC) is included in this report as Attachment 3.

Site investigations have included advancing soil borings, test pits, and soil gas points and the collection of samples for visual examination and laboratory analysis. Soil/fill samples were typically analyzed for;

- Volatile Organic Compounds (VOCs)
- Semi-Volatile Organic Compounds (SVOCs)
- RCRA Metals (Metals)
- Poly chlorinated Biphenyls (PCBs)
- Pesticides
- Cyanide (Cn)
- Diesel and Gasoline-Range Organics (DRO and GRO respectively)

Waste characterization, including TCLP and RCRA analysis, was not completed during the previous investigations. It is anticipated that specific disposal facilities will be identified during the remedial design. At that time, a current list of analytical requirements and sampling frequencies for each eligible facility will be identified, and waste characterization sampling will be conducted accordingly as described later in this report.

2.2 Soil and Groundwater Classification

The following is a brief summary of the results of the Site investigations. A full description of the sampling activities is included in the IRM Scope of Work (Attachment 3).

The surface of the Site contains various types of construction debris including concrete, boulders, guardrails and asphalt. Removal of these materials may be required for Site development; however, it is not specifically part of the remedy required by the VCA. All material that is excavated, demolished or removed from the Site as a result of the remedy or redevelopment will be classified in accordance with NYCRR Part 360 Solid and Hazardous Waste Regulations. Because soil and fill material is mixed throughout the Hunts Point area with coal, coal ash and/or cinders, it has typically been classified, at a minimum, as industrial waste under Part 360-1.2(b)(88). Material classified as Construction & Demolition (C&D) debris, falling under the definition in Part 360-1.2 (b)(38), cannot contain historic fill material. Any material removed from the Site as C&D can contain only concrete, asphalt, rock, steel or other material free of historic fill. For purposes of this RAWP, historic fill includes all soils present at the Site at a depth above or below the clay layer. Soils and fill materials from below the clay layer that are excavated as part of the project will not be permitted for disposal as "soil" under the C&D definition (uncontaminated C&D). These materials will have to pass through the shallower soil horizons and will potentially come in contact with shallow

groundwater impacted by Site fill; therefore, soils and fill materials from beneath the clay layer are considered "impacted" material. Additionally, coal and coal ash were found, consistently at or near the surface across the Site and cannot be segregated from the surrounding fill therefore, any topsoil or the uppermost layer of soil/fill that supports vegetation will also be excluded from disposal as C&D.

These restrictions and their application are intended to prevent uncontrolled recycling of inappropriate soil and/or fill at local beneficial reuse facilities registered under Part 360. These facilities are permitted to handle material defined under NYCRR Part 360 as "uncontaminated C&D". The fill material at the Site is considered impacted by former industrial uses and waste from that use and is therefore not appropriate for disposal at a beneficial reuse facility. If the developer wishes to use Site material for fill at another project site, a proper beneficial use determination (BUD) must be submitted to NYSDEC Division of Hazardous Remediation and Solid and Hazardous Waste and all approvals must be provided by NYSDEC prior to the removal of any material to that site. NYCEDC will retain final right of approval for any beneficial reuse request as the material is under ownership of the City of New York. A request to NYSDEC for a BUD will only be made for non-MGP impacted materials. Any sampling required by the Department will be performed prior to removal of material from the Site.

During the Site E OU-2 investigation, low level PCBs were identified in fill samples. All concentrations were below 1.0 mg/kg (NYSDEC surface soil criterion) with the exception of two locations. The samples from these two borings (both located in the central portion of the Site) were just above the surficial level with 1.2 and 1.1 mg/kg respectively being reported. During redevelopment, additional PCB material may be encountered as there is no documentation available that would limit this to one location. Sampling will be performed and material will be handled appropriately.

Site groundwater was encountered at relatively shallow depths (5 feet or less below ground surface, or bgs) and varies across the Site. It is expected that the depth of the water table will change during the year. Any groundwater encountered above the clay layer is assumed to be perched and is relatively shallow in depth (though depth to water varied during the investigation activities).

All groundwater pumped from the Site will require proper handling and/or treated prior to discharging. Discharge to New York City sewers will require an industrial permit. Prior to any discharge it must be shown that the subject combined sewer outfall (CSO)/sanitary sewer does not connect directly to any outfall that would allow water to be discharged directly to either the Bronx or East Rivers.

3.0 ADDITIONAL TESTING

3.1 Intrusive Activities

Additional soil and subsurface testing is likely to be required during the design of the alternative fuel facility. These tests may include geotechnical borings for foundation design, and/or infrastructure layout. Final remedial design may also require additional testing. Prior

to any invasive work not specifically addressed in this work plan, a Scope of Work including a description of required tasks, any required testing, methods of preventing cross contamination on and beneath the Site, and how waste generated will be monitored, contained, stored and disposed of, will be prepared.

Structural borings for building permits and pile designs, as well as dewatering evaluations, may also be needed. In the event that borings are required on the parcel, a description of the method(s) for preventing the spreading of shallow contaminated material into deeper zones will be described. An example of a previously approved method includes installing temporary PVC casings to a confining layer and grouting it into place. Deeper drilling can then continue through this protective casing. Detailed boring logs noting observations, monitoring and any analytical testing will be documented for inclusion in the FER for submission to NYSDEC.

Boring logs will include: material type, composition, color, grain size and distribution, depth to water, visual or olfactory evidence of contamination, as well as any other distinctive characteristics observed. Following the completion of each boring, the borehole will be grouted to a depth above the measured groundwater table at that location. The grout in any borehole will meet NYSDEC Division of Environmental Remediation (DER) 10 requirements and at a minimum will consist of fluids that will harden for permanent plugging of the borehole. Grout mixtures typically include Portland cement and bentonite to seal the borehole. Any wells installed for temporary purposes (including groundwater monitoring or dewatering) will be removed using a procedure approved by NYSDEC, and grouted in accordance with NYSDEC well closure guidance.

Prior to Site work commencing, underground utilities will be identified and any work being performed in East Bay or Food Center Drive will require road opening permits and lane closures (if applicable) from the New York City Department of Transportation.

3.2 Sample Collection

All samples collected for the evaluation of fill material, disposal classification, beneficial reuse or physical analysis will be documented and made available for inclusion in the FER. Chemical analyses for disposal classification will include a combined list of parameters matching the requirements each of the proposed disposal facilities. Samples will be taken using the most conservative rate and frequency so that the classification data is acceptable to each of the potential facilities. The list of parameters is anticipated to include, at a minimum; DRO and GRO, VOCs using EPA Method 8260, SVOCs using EPA Method 8270, Pesticides and PCBs using EPA Methods 8081 and 8082 , TAL metals and Cn, TCLP RCRA metals, TCLP benzene, and British Thermal Units (BTU) content for coal tar waste. All samples will be collected and shipped under chain-of-custody protocol to a NYSDOH-approved laboratory.

No evidence of free-phase product was identified at the Site during the previous investigations. In the event that free-phase product is noted in an excavation (or any location), NYCEDC will be notified immediately and NYCEDC will in turn notify NYSDEC. Based on the actual conditions encountered, a response plan will then be prepared and submitted to NYSDEC for review and approval.

4.0 REMEDIAL EXCAVATION

The following is a presentation of the conceptual design plan for the Development Parcel described previously. The redevelopment includes the excavation and off-Site disposal of Site materials severely impacted by MGP wastes in accordance with the approved IRM Scope of Work and the construction of an alternative fuel facility for the sale and distribution of commercial fleet fuels. Engineering and institutional controls will be implemented with the redevelopment in order to complete the Site remedy. During the performance of activities described in this RAWP, HDR will provide environmental monitoring services on behalf of NYCEDC and the City of New York to ensure that the contractor and developer adhere to the requirements of the RAWP.

4.1 Project Staging

The project entails complete redevelopment of the Development Parcel. Construction activities will include remedial excavation, construction of the engineering controls, as well as the installation of infrastructure, utility and all above-ground structures related to the alternative fuel facility. The Site is "L" shaped and approximately 1000 feet long by 130 feet wide. The Site size and constraints do not allow for large contractor staging areas. If additional areas are needed beyond the Site due to timing and staging constraints a plan will be prepared describing the areas needed and indicating the use and provisions for protecting or restoring those areas.

There are currently no specific logistical plans outlined that indicate the order of the redevelopment process. However, it is assumed for purposes of this RAWP that the remedial effort outlined in the IRM will be completed prior to major redevelopment construction. The IRM is primarily an excavation of approximately 2,500 cyd of soils and fill materials that were found to be heavily impacted by MGP material to varying depths on the Site. The excavations areas are shown on Figure 7. There are multiple options for locating the required decontamination and soil staging areas and for sequencing soil classification and disposal activities during this portion of the project. It is not the intent of this RAWP to limit those efforts by dictating one process or procedure, but to indicate the overall efforts that need to be completed in order to present options for review and approval by NYSDEC.

Based on on-Site space limitations, it is anticipated that redevelopment activities will begin following the remedial excavation efforts. There may be specific construction activities that can begin concurrently with the IRM activities; these will be outlined and coordinated as permits and designs are completed. All excavations will be conducted in accordance with a SWPPP submitted prior to beginning the project (in addition, all relevant OSHA statutes related to the excavation will be followed). The SWPPP will be prepared by the developer's professional engineer and maintained at the Site during all remediation and construction efforts.

4.2 Soil Remediation

Remediation will begin with the identification and flagging of the areas that have been slated for removal. Next, the existing cover material will be cleared from those areas. Some portions of the Site include a thin veneer of fill above the MGP waste. The method for the removal of this thin fill layer will be determined by the developer. If this material is combined with the MGP waste, the total volume of waste for disposal will be increased by the amount of surficial material removed.

The in-situ volume of material identified for remedial excavation has been estimated at just under 2,500 cyd. Following excavation, this volume could be expected to "fluff", or expand, 10% to 20% due to handling and stockpiling. This may result in a total remedial volume ranging from 2,700 to 3,000 cyd. The physical characteristics of the waste have not been analyzed but, based on previous efforts, the material density is expected to range between 1.3 to 1.6 tons per cubic yard (depending on moisture and debris content). Typically, excavations of this type result in the disposal of some amount of adjacent material. Given the type of historic fill at the Site, will likely be difficult to distinguish the limits of the severely impacted material by waste because much of the area contains black coal fragments. Additionally, the total volume of material removed during IRM activities may include a significant amount of other material (sands, fill) if the contractor determines segregation is not efficient or economical.

The approved initial phase of the remedy indicates locations where excavation and removal are required. These areas are shown on Figure 7. Additionally, a location associated with DTP-4 (shown on Figure 7) has recently been identified as requiring excavation and removal. This location was found to contain solidified coal tar that was sampled. Benzene was detected in the sample at 71 mg/kg, above the commercial Restricted Use Soil Cleanup Objectives Table 375-6.8(b).

It is expected that material will be excavated and staged in piles based on: facility classification needs, on-Site space consolidations, and convenience for classification sampling. Due to the available areas and Site constraints, piles are not expected to be larger than 300 cyd. In the event an alternate staging area is used, pile sizes may be increased (but management of piles larger than 500 cyd is not recommended). It is also possible to first classify material in-situ and then directly load into conveying vehicles; however, this approach is not anticipated on this Site due to the limited width of the parcel, its location adjacent to an active roadway, and the distribution of the excavation areas throughout the Site.

All material excavated for disposal and placed in a stockpile will have, at a minimum, the following protection:

- A nylon fiber reinforced poly liner (or equivalent) placed under the stockpile and extending beyond the pile limits far enough to allow the edges to be elevated/curbed. The curb will be constructed to be sufficient to prevent surficial runoff from entering the pile during storm events. The poly liner will be tolerant of the contaminants in the MGP waste and will not degrade or melt.

- The edges of the piles will be surrounded and/or bermed to prevent any loss of MGP waste to the surrounding area by erosion. The berm is meant to maintain the pile integrity until all soils are removed for disposal off-Site.
- Piles will be covered daily to limit odors and prevent loss of material from the pile or precipitation from entering the pile.
- When a pile reaches the desired size it will be sampled according to the disposal facility matrix and no additional material will be added. The pile will remain covered until all approvals for disposal have been presented to NYCEDC and removal is authorized.

The following protections will also be in place during remedial construction activities:

- The Site will be surrounded with protective fencing to prevent unexpected entry into an open excavation, as well as dumping onto or removal of any staged material without prior approval.
- Any temporary settling vessels or tanks that may be used to contain liquids (e.g., excavation water; decontamination rinse water) will be bermed and have containment beneath them to contain any loss in the event of a leak. The berm will be sized according to the volume of the container and based on the estimated pumping and volume of fluid being removed.
- The project will maintain a Community Air Monitoring Program (CAMP). The CAMP will include monitoring of the perimeter and downwind areas. The CAMP will describe procedures to be employed in the event vapors are found leaving the Site in excess of the established limits approved by NYSDEC/NYSDOH.

4.3 Material Classification

Material present at the Site that requires removal to satisfy the IRM includes historic fill severely impacted by MGP waste, specifically coal tar and purifier waste. The developer and his contractor will determine if the waste will be handled as one waste stream or if different materials will be segregated during waste characterization (prior to disposal). There is no specific regulatory requirement for segregation of these types of wastes, and this RAWP is not proposing to restrict the waste handling methods to be used. The significant difference between the purifier bed and coal tar wastes is often the concentrations of total petroleum and inorganic compounds. The purifier waste typically contains higher levels of sulfur, cyanide and several metals. It usually contains moderate levels of BTEX compounds and naphthalene, where coal tar can contain percentage levels of these organics in addition to very high levels of total petroleum hydrocarbons and DRO and GRO.

At the time of the IRM approval, there was an EPA hazardous waste exemption for MGP material contaminated with coal tar. The exemption was specifically limited to material to be thermally destroyed and found to be a characteristic hazardous waste based on benzene analysis. If the exemption remains in effect at the time of the remediation, and the developer removes material for thermal desorption, it could qualify for this exemption. Material determined to be characteristic hazardous waste for other parameters listed in CFR 261.20-261.24 (reactivity, ignitability, corrosivity or toxicity) will be manifested and disposed of as hazardous waste in accordance with all applicable regulations.

The process of classification of staged or stockpiled material will include the solicitation, receipt, and review of requirements and other information from eligible disposal and treatment facilities. This information will include all permits, testing and handling needs, and limiting characteristics as well as waste profile applications required for material acceptance into the facility. The documentation for each facility will be provided to NYCEDC for review. Following the approval of a list of facilities sufficient to handle all of the material, a waste classification analytical program will be defined. The testing program will consider all of the analytical parameters required by each eligible treatment and disposal facility and assemble a minimum testing matrix. The matrix will account for the frequency of testing required by each facility and will target one round of testing that satisfies all of the facilities. This will allow for flexibility when choosing the final disposal facility once data is received. It will also allow disposal shipping to any of the approved facilities without additional testing.

Waste characterization samples will be collected and submitted under chain-of-custody protocol to an independent third party laboratory. Analytical results will be reviewed and compared to facility limitations and acceptance criteria to determine which facilities are appropriate. If sample results indicate that a pile (or excavation) appears to contain a "hot spot," that pile may be re-sampled by the developer in order to refine the classification and reduce the volume of the elevated concentrations in the "hot spot". This process will be fully documented and vetted through NYCEDC.

Post-excavation or end point samples will be collected in excavations to provide documentation of the remaining condition and chemical content of the Site materials. This information will be used to identify the potential need for future vapor intrusion mitigation and to provide data for preparation of future construction and intrusive activities' plans. Sample quantities and the depths will vary based on the final dimensions of each excavation. The proposed sampling plan will generally include the collection of at least four sidewall samples (i.e., one per wall) from the depth corresponding with waste material observations. If groundwater is not present in the excavation two bottom samples will also be collected. The final number of post-excavation samples will depend on the final excavation dimensions (in accordance with DER-10).

It is not recommended that groundwater samples be collected from standing water in excavations as this water has been mixed and in contact with waste that has been removed. Based on previous excavations at other VCP sites in the Hunts Point peninsula, it is expected that when the excavation has been left exposed to the atmosphere for a short period of time (several days) residual VOCs from the excavation disturbance are volatilized. If the excavations are larger in area than initially determined, HDR, NYCEDC and NYSDEC will discuss and determine the approximate number of samples required to document conditions.

4.4 Waste Loading, Hauling, Treatment and Disposal

Following review of all data from the material staged for disposal, documentation will be submitted to the chosen treatment and/or disposal facility(ies). A formal written approval will be provided by each facility. The approval will include an acceptance letter for the material on

facility letterhead. The documentation will include a brief discussion that indicates that the data package submitted for review has been completely reviewed by a qualified, designated person at the facility. Additionally, the letter will state that either all of the material meets the facility's permit requirements (and can be accepted) or will provide a description of specific samples that exceed the facility permit or are above the levels that the facility wishes to accept. The letter will be signed by an official or officer of that facility. Approvals signed by a person not employed by that facility such as a consulting engineer or broker who is employed by a separate firm will not be accepted.

The approval letter will also provide a clear description of any treatment process that will be employed such as thermal desorption, incineration, beneficial reuse, or metals reclamation. The IRM specifies that waste material will be thermally treated prior to final disposal. If another method of treatment is desired, it will be described and proposed in writing to NYSDEC. A written approval will be sought before the change is implemented. All facilities treating material prior to final disposal will also include information regarding the final disposition, use or disposal of the treated material. For example, if coal tar material will be incinerated and the resulting energy will be used to create steam or electricity and the final ash residue is to be used for cover at a solid waste facility, the solid waste facility will be named and documentation will be provided from the facility accepting the material as part of their waste stream. Any reuse of treated material such as in a process or product that places it outside of a final solid waste disposal facility will be documented and approved by NYCEDC prior to removal of material from the Site.

Following facility approval, and all necessary documentations on file, vehicles will be loaded with excavated material. The materials will be covered prior to transport and prior to any vehicle leaving the Site. A CAMP will be in place during all loading activities. CAMP monitoring will include upwind and downwind perimeter monitoring. The IRM Scope attached to this RAWP includes a full CAMP for the removal stage and includes vapor emission as well as particulate monitoring.

All vehicles will be checked prior to leaving the Site for loose material and will be decontaminated when any material is noted. A track off pad will be constructed at the loading area and will consist of coarse stone. The track off pad is intended to remove loose materials from the truck tires so that material is not tracked into local roadways. High pressure washing may also be used to keep vehicle tires free of material. Equipment and/or provisions will be available to clean any Site materials from the local roadways should it be noted beyond the Site. Following the completion of the project, the track off pad will be removed and material properly disposed of or used on the redevelopment Site.

Each vehicle that leaves the Site will contain a manifest signed by NYCEDC or a representative of NYCEDC. The manifest will be from the disposal facility to where the material is being sent. Information included on the manifests varies by facility but will at a minimum include an estimated yardage contained on the vehicle, time leaving the Site and driver signature. When vehicles arrive at the treatment or disposal facility they will be weighed twice, with the full load, and immediately after dumping the material. A weight ticket will be produced at the facility that will be provided as soon as possible to document the tonnage for that specific load. All pertinent information will be maintained and documented for inclusion in the FER.

4.5 Backfill of Excavation Areas

The Site redevelopment plans include the construction of two above-ground buildings for the commercial sale of alternative fuels and the facility's mechanical infrastructure. The facility design has not been completed but it can be assumed that basic appurtenances such as an overhead canopy, pump islands, and underground utilities (including storage tanks) may be included. There will be several larger excavations for the underground storage tanks. The locations of the underground storage tanks have not yet been determined, however, it is assumed that their locations will be finalized prior to the start of the remedial excavation activities. Following the current NYCRR Part 360-1.15(b)(8) (beneficial reuse allowance for non-hazardous contaminated soil excavated as part of a construction project, when it is returned to the same or similar excavation), this document will serve to grant the development project the authorization to reuse material excavated during the construction portion of the project within the Site. The current reuse allowance referenced above does exclude remedial projects being performed under the Departments review. This is because the reuse of material under a remedial program would be requested as part of the remediation. The notification is provided in this RAWP in the event that the remedial excavation completed for the construction phase is not necessarily covered under the intent of the 360 Regulation or the VCP.

All additional backfill material required for structural purposes, grading or Site filling will meet requirements similar to the SMP (Attachment 4). The SMP has been drafted to cover the redevelopment of the Site as well as long term maintenance of the cover system. The purpose of the surface cover system is to eliminate the potential for human contact with fill material, eliminate the potential for contaminated runoff from the property, and prevent infiltration of surface water through the fill. The cover system consists of an asphalt layer a minimum of 0.75 feet of asphalt and sub base material, concrete sidewalks and concrete building slabs beneath the Site structures. Any areas where there will be open landscaping will first have a geotextile fabric placed over the fill and then approximately one foot of material that meets the restricted commercial criteria in Part 375. The SMP was drafted and submitted with the IRM to address remedial activities. It will be updated following the completion of the removal activities. The revised SMP will address all aspects of the Site as they relate to exposure and maintaining the engineered surfaces and caps. The SMP will also address intrusive work where the engineered surfaces will be disturbed and the movement of fill onto or off the Site may occur in the future.

The SMP identifies importation of approved material into several categories;

1. Fill from a Registered Facility Source that is free of industrial or other potential sources of chemical or petroleum contamination. Material from a Registered Recycling Facility that handles material defined in NYCRR Part 360-16.2(c) is acceptable for this use. This material may not be acceptable for use in the upper foot of vegetative areas unless it is tested in accordance with the SMP.

2. Recycled Concrete Aggregate (RCA) may be used beneath the upper foot of material if it originates from a New York State Department of Transportation project or comes from a NYSDEC Permitted or Registered Recycling Facility. Material imported must meet the requirements identified and listed in the attached SMP. Several additional alternate fill descriptions are provided in the SMP and will be used for importation.

3. Non-Regulated Soil and Sand imported from a source other than a registered recycling facility can be used provided it follows and meets the requirements listed in the SMP. These requirements include specific grain size requirements as well as due diligence indicating the material is not associated with any historic environmental condition. This material is also subject to chemical testing to document it will not negatively impact the Site and surrounding area.

4. Non-Regulated Gravel and Rock can also be used as backfill provided the requirements listed in the SMP are met. This includes material from operating commercial gravel or mining pits with crushing operations.

5. The importation of asphalt from recycling facilities that have no source documentation for the material will require prior testing to demonstrate that the material meets the applicable use-based and Groundwater Protection Soil Cleanup Objectives (SCOs) for the Site.

5.0 SITE REDEVELOPMENT

Following the remedial excavation outlined in the IRM (Attachment 3), redevelopment activities will be completed resulting in the final remedy for the Site. Site redevelopment is anticipated to include two single story slab-on-grade buildings (with no basements) as well as several other aboveground structures possibly including: aboveground storage of compressed natural gas, electrical transformers, a recycling area, a free standing canopy and fuel dispensers. The facility's underground infrastructure may include: underground storage tanks for motor fuels; stormwater detention and drainage; and electric, sanitary, water and other utilities. Site drainage may require additional evaluation during Site design due to the physical constraints of the Site. Possible measures include detention and drainage (mentioned above), or direct infiltration. NYSDEC will be consulted during these evaluations in order to insure the solution is protective to human health and the environment and in accordance with stormwater guidelines.

It is noted that the entire Site will be capped to eliminate human contact with any remaining contaminants or historic fill materials. The cap will be constructed of engineered surfaces including concrete building foundations and slabs, tank support slabs and asphalt pavement. In the event there are open spaces where vegetation is expected to be planted, the cap will include a geotextile barrier beneath a one-foot layer of approved topsoil/fill. The topsoil will allow vegetation to grow but prevent exposure and contact with the historic fill material beneath it. The geotextile material will be permeable to prevent overflow and allow vegetation to grow, however it will prevent the mixing of the lower fill materials with the upper foot of topsoil during freeze-thaw cycles (demarcation layer).

5.1 Sub-Slab Vapor Mitigation

The approved IRM scope of work includes the removal and thermal treatment of just under 2,500 cyd of material. This addresses the bulk of the soils identified during Site investigation activities to be severely impacted by MGP wastes. However, there are areas along these deposits where thin layers of residual MGP waste may remain following remedial excavation. These thin limited areas were addressed in the IRM and the method for excavation has been approved by NYSDEC based on the existence of a considerable amount of coal, ash, slag and demolition debris surrounding the delineated excavation areas. In addition, the Hunts Point peninsula consists of historic fill that is similar in nature. To prevent potential exposures to volatile organic vapors that may be emanating from remaining historic fill on the Site, a vapor barrier will be placed beneath the enclosed buildings. In addition, coarse aggregate and slotted piping will be placed beneath the barrier to collect vapors and direct them away from building interiors.

5.1.1 Vapor Barrier

Vapor barriers are widely available and are applicable in various applications. The barrier selected for the Site will be compatible with the final foundation system and underground utilities beneath the building slab. The material will have the following basic characteristics:

- The barrier will be placed immediately beneath the slab.
- The material will be essentially impermeable for water and vapors (as compared to a vinyl or polyvinyl sheeting).
- The barrier and its components will be compatible with the organic and inorganic compounds that have been identified at the Site.
- The barrier will be continuous beneath foundations and will be sealed to all structures making a continuous liner.
- The barrier will be durable enough to withstand staging at a construction site without tearing or perforations.
- Visual inspections will be made prior to pouring concrete over the vapor barrier. Procedures will be established for patching any holes/perforations.

5.1.2 Permeable Layer and Venting System

The barrier placed immediately beneath the slab will prevent vapors from coming in contact with the more porous concrete and penetrating into the building spaces. In order to capture any vapors and direct them away from the sub-slab area or capture them (if their concentrations are sufficient), a layer of permeable material (gravel) 4-6 inches thick will be placed beneath the buildings. This material takes the place of the compacted gravel base typically used beneath concrete slabs.

The sub-slab layer will have sufficient porosity to allow vapors to be collected in the zone beneath the vapor barrier. The basic configuration for connecting the sub-barrier layer includes installing sections of polyvinyl chloride (PVC) piping that begin in the bedding as a collection point and pass through the foundation. The PVC vents can extend to just above the ground surface with a vented cap or to the building roofline where a wind driven turbine vent can draw the vapors out. Slotted PVC piping can also be embedded in the layer beneath the barrier to connect the entire area with a system that allows rapid removal of any accumulated vapors.

The vapors collected in this layer can be easily vented to the outside atmosphere. Normal wind movement, barometric pressure changes and thermal temperature differences all move the collected vapors through vent piping and away from the building. The typical concentrations that vent from the building are not expected to be above NYSDEC Air Guide (DAR-1 Sept. 2007) limits that require treatment. In the event that they may be considered a nuisance or a potential health or exposure issue, the venting could be modified from a passive system to an active system. The system could be made active in a number of different configurations include a negative pressure blower that would rapidly remove any sub-slab vapors or a fan system for lower volume applications. A solar powered option could be used to reduce electrical usage; this would be limited to daylight usage unless a backup battery was used. The exhaust could be directed through activated carbon to remove contaminants (e.g., benzene, toluene, xylenes and naphthalene) and reduce odor issues.

Vent piping that extends above the surface will be installed with a sampling port. The ports will be installed so that sampling can assess the type and concentration of contaminants being vented from beneath the slab. Sampling will be performed following construction to establish a baseline level and for three quarterly events during the first year after project completion. It is not anticipated that indoor air sampling will be required. Vent piping and sampling protocols will be provided after design is completed but will include volatile compounds using a modified TO-15 method and naphthalene. The quarterly sampling results from the passive venting system will be submitted to NYSDEC and NYSDOH for review and evaluation. This evaluation will be used to determine the need for modification of the passive venting system to an active sub-slab depressurization system (SSDS).

NYSDEC is currently reviewing the DAR-1 Air Guide for maximum allowable concentrations. In the event the limits for contaminants of concern are modified, an additional data review will be completed at that time. The current short term guideline concentration (SGC) for benzene is 407 parts per billion by volume (ppbv). If samples from beneath a building contain an average of 407 ppbv or greater, the venting system will be made active and will be directed into carbon to remove benzene from the discharge. If subsequent sampling shows concentrations to be below the criteria, active venting and carbon polishing may be discontinued.

5.2 Geotextile Material

Areas beneath the parking lots and open green space will have a geotextile fabric placed on the uppermost surface of the remaining historic fill. This will allow passive venting upward through the fill material. Pavement inherently has a degree of porosity and the large open

surface area allows the transfer of subsurface gas through it (as well as outside ambient air back into the fill). The geotextile will provide a demarcation barrier to guide intrusive work or cap repairs performed in the future. The SMP attached to this document will provide procedures to be followed for post development documentation and procedures for handling material. The geotextile layer will also help prevent the mixing of material beneath any supporting layers due to freeze-thaw conditions.

In addition to areas beneath pavement, excavations around the Site that contain utilities or other equipment associated with the redevelopment will be lined on the bottom with a geotextile barrier that acts as a barrier to limit worker contact with the historic fill and to provide a marker in the event of future excavations, allowing for compliance with the SMP. This procedure applies to the following: drainage trenches, underground storage tanks, electric utility boxes, sanitary and storm drains, catch basins and underground petroleum product piping trenches. If Site fill material is used as backfill for or around these excavations, the barrier should be placed at the highest surface where historic fill is present.

5.3 Deeper Soil Excavation and Disturbances

Based on conceptual redevelopment plans excavations may extend into the water table and/or beneath the clay layer at the Site. Examples of these types of excavations and disturbances include; geotechnical borings, piles driven to bearing strata to support buildings and large structures, excavations to support slabs for underground storage tanks, and utility connections. In the event that excavations extend beneath the existing water table, all water collected will be handled and discharged in accordance with applicable New York City permits [i.e., discharge to a New York City Department of Environmental Protection (NYCDEP) Wastewater Pollution Control Treatment Plant (WWPCP) or storage and off-Site disposal to a permitted treatment facility].

Geotechnical borings will require segregation as augers or driving equipment passes through the shallow contaminated material. This will prevent driving or carrying contaminated material through the clay layer and into the deeper saturated zone. Methods that have been used successfully on past projects include installing large diameter PVC casings to a point below the clay layer and grouting it in place. Geotechnical borings using re-circulated mud will require a change out of mud used above the clay and in historic fill to prevent it from being used in deeper drilling below the clay.

General excavations that extend beneath the clay layer may require some form of protection to prevent water impacted by shallow conditions from draining uncontrollably into deeper formations after construction is complete. This may include grouting, shotcrete, a liner or another form of barrier.

The following conditions are positive enhancements to this particular Site:

- Construction is planned to be at grade. Limited excavations deeper than 5 feet will occur for utilities and storage tanks.

- Following completion of the project, nearly the entire surface will be covered with a solid concrete or paved surface (cap).

- A vapor barrier and slotted PVC piping installed in trenches will be placed beneath buildings with enclosed spaces further reducing the likelihood of short circuiting or the release of vapors to occupied areas (installation of the barrier will be observed for final reporting and documentation purposes).

- While the concentrations of soil gas vented from the subsurface may not warrant treatment before discharge to ambient air (according to NYSDEC Air Guide), carbon will be evaluated at this location.

- Following the completion of Site redevelopment and system testing to the satisfaction of NYSDEC and all other involved parties, the underground piping can be capped or allowed to remain as a passive venting system without requiring further intrusive work.

5.4 Citizen Participation

A 30-day public notice and comment period will begin prior to NYSDEC approving this RAWP. Notification of this RAWP will be prepared and distributed in accordance with the VCP.

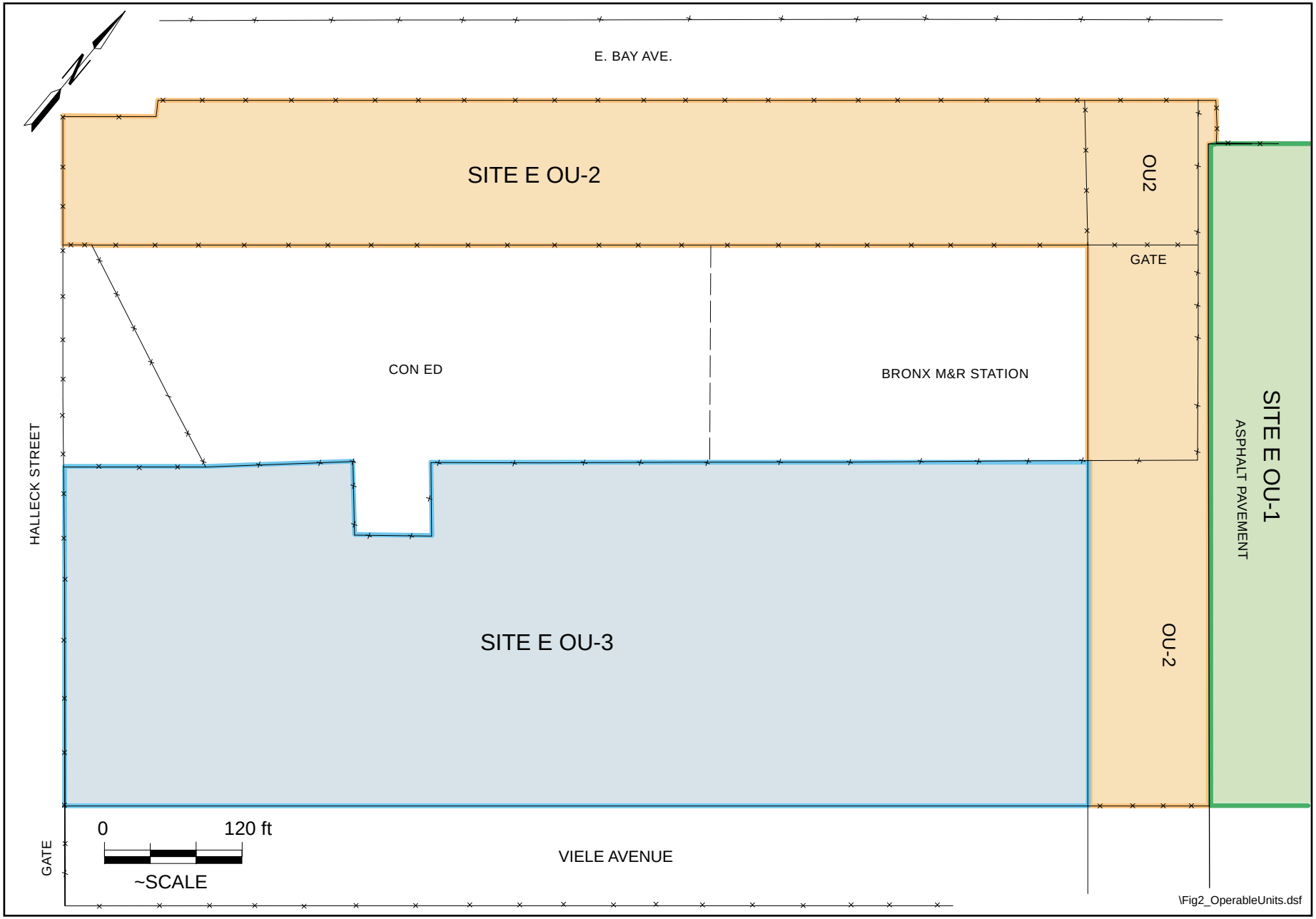
6.0 CERTIFICATION

Certification: I Michael P. Musso *certify that I am a currently NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this Remedial Action Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).*

Michael P. Musso, P.E.

Figures

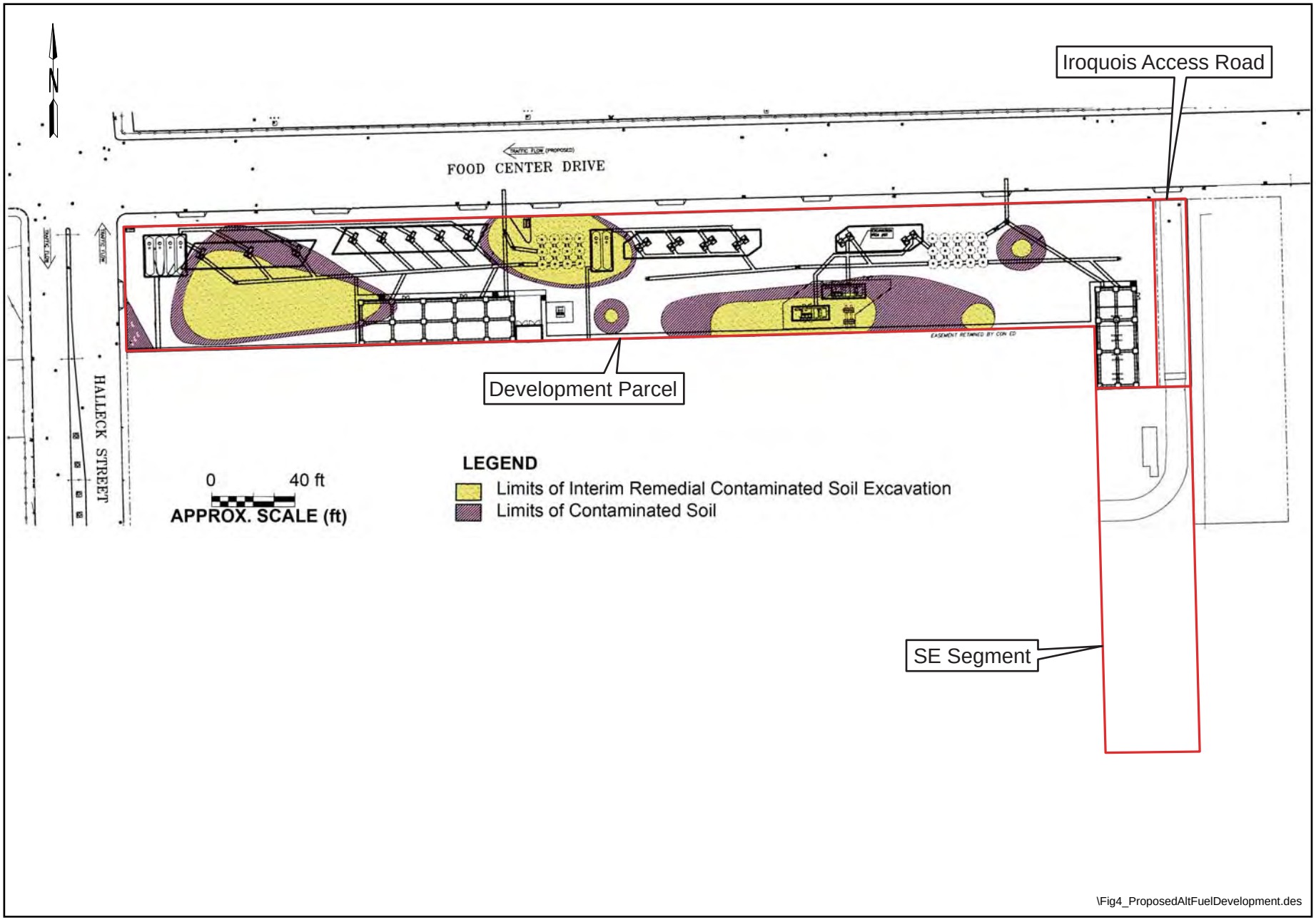
HDR Henningson, Durham & Richardson Architecture and Engineering, P.C. One Blue Hill Plaza Pearl River, NY 10965	**Site Location Map** **Hunts Point • Site E OU-2**	**Figure 1**



Henningson, Durham & Richardson Architecture and Engineering, P.C. One Blue Hill Plaza Pearl River, NY 10965	**Site E Operable Units** **Hunts Point • Site E OU-2**	**Figure 2**

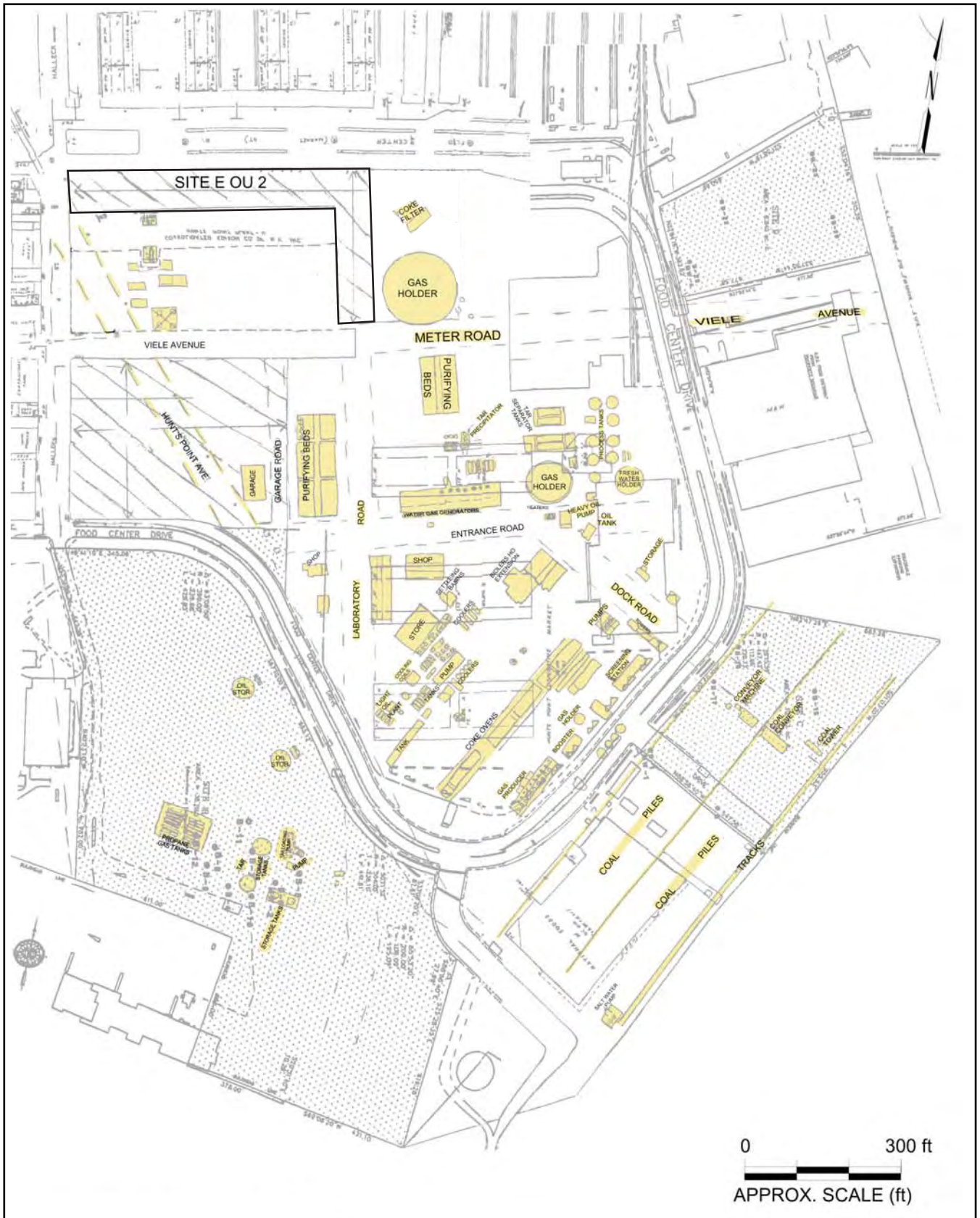
\Fig3_HZP2004AerialPhoto.des

HDR	Henningson, Durham & Richardson Architecture and Engineering, P.C. One Blue Hill Plaza Pearl River, NY 10965	**Hunts Point - 2004 Aerial Photograph** **Hunts Point • Site E OU-2**	**Figure 3**



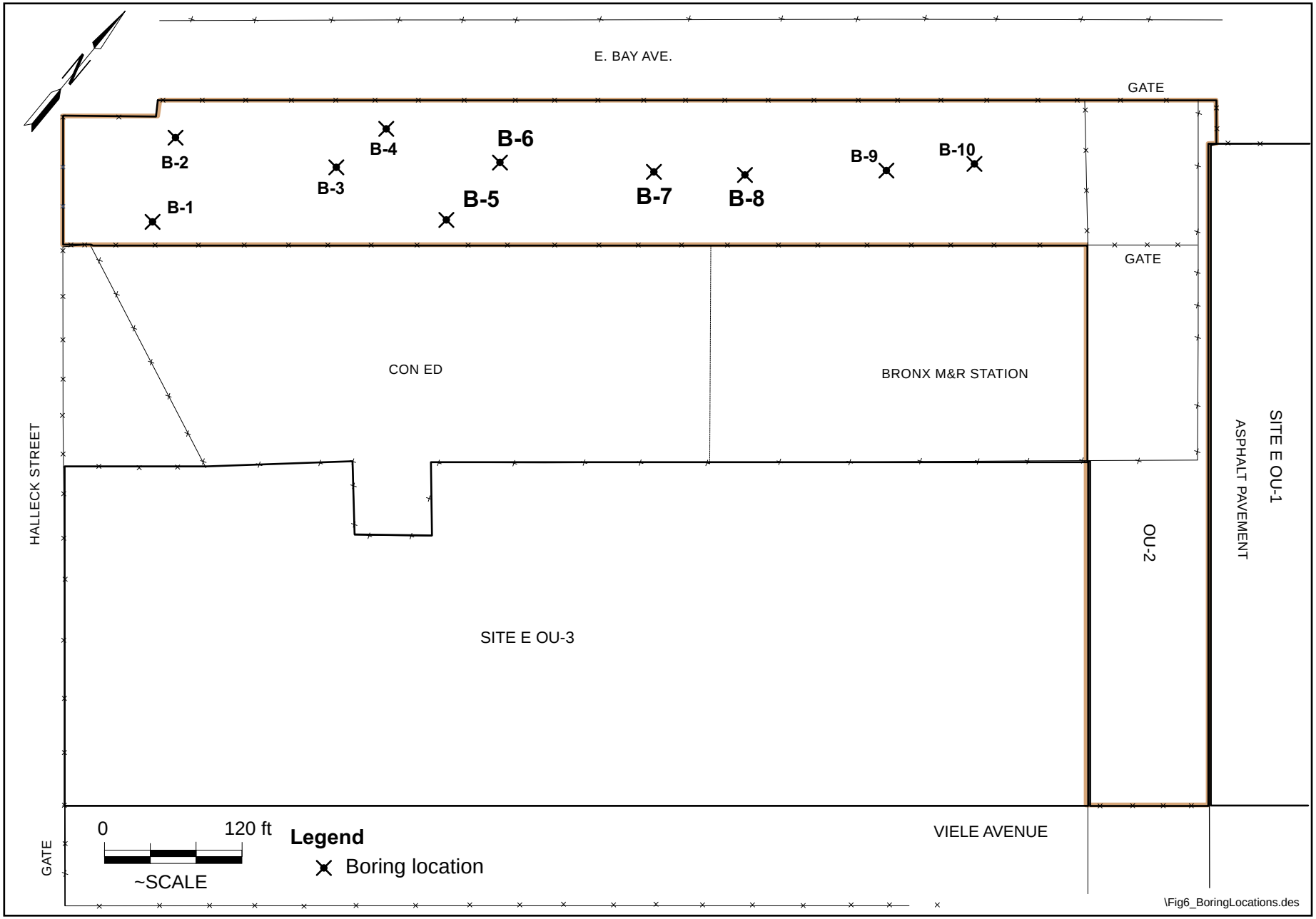
\Fig4_ProposedAltFuelDevelopment.des

HDR	Henningson, Durham & Richardson Architecture and Engineering, P.C. One Blue Hill Plaza Pearl River, NY 10965	**Proposed Alternative Fuel Development** **Hunts Point • Site E OU-2**	**Figure 4**

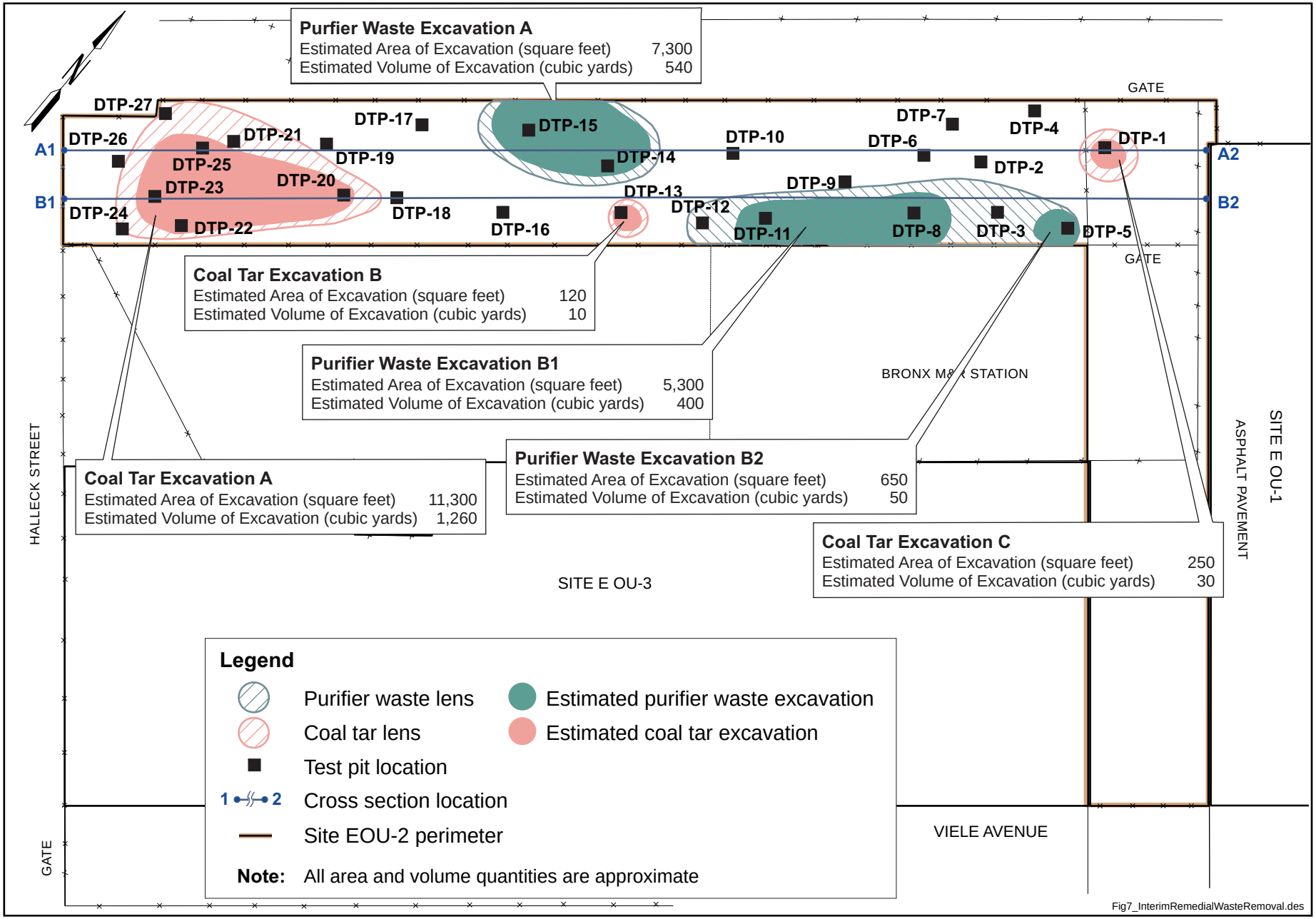


\Fig5_FormerMEPstructures.des

HDR	Henningson, Durham & Richardson Architecture and Engineering, P.C. One Blue Hill Plaza Pearl River, NY 10965	**Former MEP Structures** **Hunts Point • Site E OU-2**	**Figure 5**



Henningson, Durham & Richardson Architecture and Engineering, P.C. One Blue Hill Plaza Pearl River, NY 10965	**Boring Locations** **Hunts Point • Site E OU-2**	**Figure 6**



Henningson, Durham & Richardson Architecture and Engineering, P.C. One Blue Hill Plaza Pearl River, NY 10965	**Interim Remedial Waste Removal** **Hunts Point • Site E OU-2**	**Figure 7**

Attachment 1

The Reynolds Group Inc.

State Certificate of Authorization
No. GA-276945

Engineers
Landscape Architects
Land Surveyors
Planners
Environmental Specialists

Legal Description
Of a Portion
Of
Lot 500 Block 2781 & Farragut Street
Site "E" OU –2 & Berm Area
Borough of the Bronx
County of the Bronx
State of New York
TRG No. 03-024

Beginning at a point, said point being the intersection of the southerly sideline of Food Center Drive and the easterly sideline of Halleck Street (100' wide); thence

1. Along the southerly sideline of Food Center Drive North 78° 01' 34" East a distance of 1,019.89' to a point on the easterly sideline of Farragut Street; thence

2. Leaving Food Center Drive and running southerly along the easterly sideline of Farragut Street South 11° 58' 32" East a distance of 600.00' to a point on the northerly sideline of Viele Avenue; thence

3. Along said sideline of Viele Avenue South 78° 01' 34" West a distance of 80.00' to the westerly sideline of Farragut Street; thence

4. Running northerly along said sideline North 11° 58' 26" West a distance of 410.00' to a point; thence

5. Leaving said sideline and running along lands now or formerly of Con Edison North 56° 58' 26" West a distance of 14.14' to a point; thence

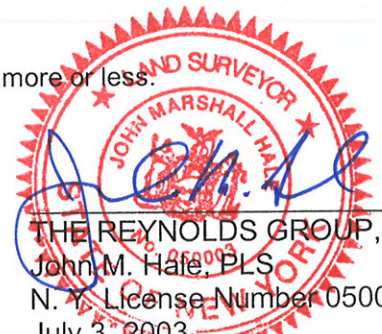
6. Still with said lands and easement area "C" North 11° 58' 26" West a distance of 60.00'; thence

7. Still with said lands and easement South 78° 01' 34" West a distance of 902.97' to the easterly sideline of Hunts Point Avenue; thence

8. Along said sideline North 38° 49' 36" West a distance of 59.83' to the easterly sideline of Halleck Street; thence

9. Along said sideline North 11° 59' 04" West a distance of 66.61' to the point and place of beginning.

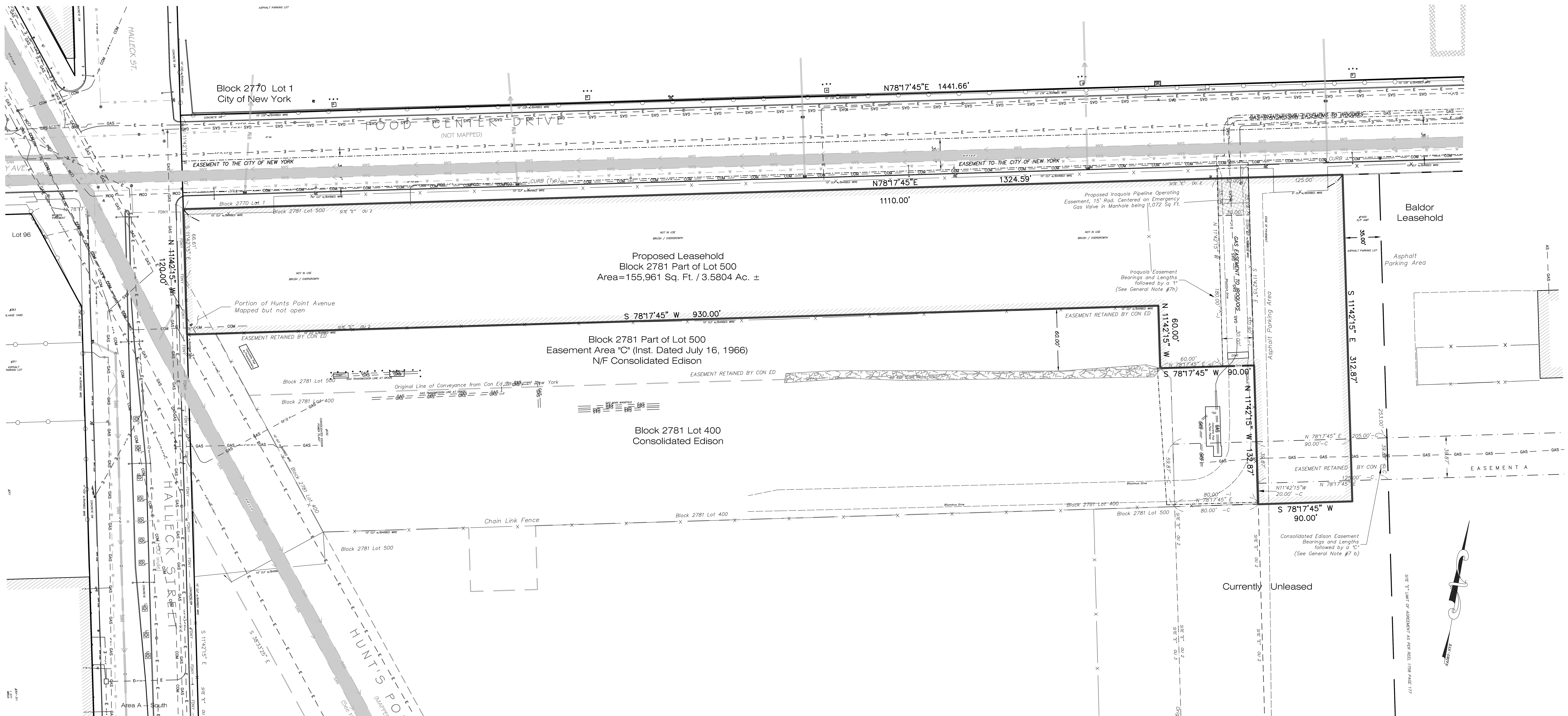
Containing 160,695 square feet or 3.69 acres of land, more or less.

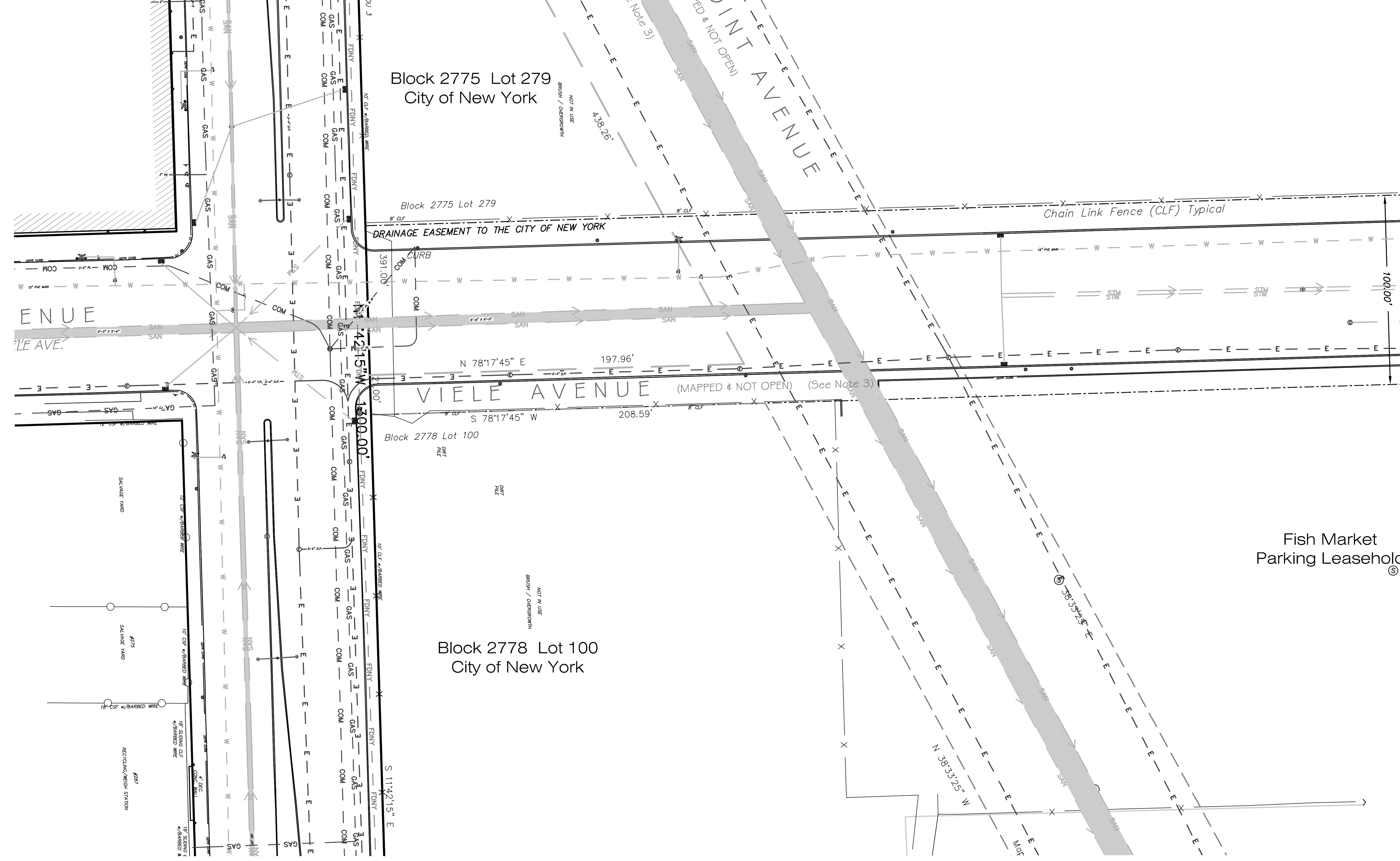


THE REYNOLDS GROUP, INC.
John M. Hale, PLS
N. Y. License Number 050003
July 3, 2003
Revised August 11, 2003

Block 2781, Lot 500 & Farragut St.leg

Attachment 2





Linetypes

Building Line
Combined Sewer
Communication Conduit
CATV Conduit
Steam/Chilled Water Line
Curb Line
Electric Conduit
FDNY Conduit
Gas Main
Major Contour
Minor Contour
Storm Sewer
Sanitary Sewer
Water Main
Wall line

Legend

Bicycle Rack	Fire Call Box	Subway Manhole
Bollard	First Floor Elev.	Telephone Booth
Cable Box	Light Pole	Traffic Signal
Catch Basin	Gas Valve	Traverse Point
Comm. Manhole	Hydrant	Tree
	Manhole	Utility Pole
Electric Box	Oil Fill	Vault
Electric Manhole	Sewer Manhole	Water Manhole
ECS Manhole	Stand Pipe	Water Valve
FDNY Manhole	Street Light	

Description

Being a part of Lot 500 Block 2781 situate, lying, and being in the Borough of the Bronx, City and State of New York, bounded and more particularly described as:

BEGINNING at the northerly intersection of the southerly line of Food Center Drive with the easterly right-of-way line of Halleck Street (100 ft. wide), and running thence:

1. Along the southerly line of Food Center Drive, N 78°17'45" E, a distance of 1110.00' to a point on the easterly limit of the parcel, thence;
2. Along the easterly limit, S 11°42'15" E, a distance of 312.87' to a point on the southerly limit of the parcel, thence;
3. Along said southerly limit, S 78°17'45" W, a distance of 90.00' to a point on the easterly limit of an existing Iroquois transmission easement, thence;
4. Along said easement , N 11°42'15" W, a distance of 132.87' to a point, thence;
5. Continuing along the same, S 78°17'45" W, a distance of 90.00' to the a point on an existing Consolidated Edison easement, thence;
6. Along said easement N 11°42'15" W, a distance of 60.00' to a point, thence;
7. Continuing along the same, S 78°17'45" W, a distance of 930.00' to the easterly right-of-way line of said Halleck Street, thence;
8. Along the easterly right-of-way line, N 11°42'15' W, a distance of 120.00' to the point of BEGINNING.

Said Parcel containing 155,961 Sq Ft / 3.5804 Acres more or less.

Being subject to existing easements to Iroquois and Consolidated Easements

Abbreviations

Aband.	Abandonded	RCP	Reinforced Concrete Pipe
BC	Bottom Curb	SFC	Steel Faced Curb
INLET	Street Inlet	STM	Storm
CL	Center Line	TC	Top Curb
CSP	Corrugate Steel Pipe	TRAV	Traverse Point
COND.	Conduit	Typ	Typical
COM	Communication	UTIL	Utility
DC	Depressed Curb	VLT	Vault
DIP	Ductile Iron Pipe	WV	Water Valve
ELEV	Elevation		

General Notes

This survey is based upon a combination of field investigations and surveys conducted by Mercator Land Surveying on April 7, 2008 by and/or under the direction and supervision of the undersigned licensed surveyor.

1. North arrow, bearings, and coordinates based upon the North American Datum of 1983 (1996 adjustment). The projection is New York - East (3101)/New Jersey (2900).
2. Project control was determined using Leica dual-frequency GPS receivers. The reference monuments were NJI2 (PID #AJ3348) and LAMT (PID#AJ4872).
3. The vertical datum used was the Bronx Highway Datum, being 2.608 feet above mean sea level at Sandy Hook, NJ (NGVD29)
4. All units shown on this map are US standard survey feet.
5. Other than the East River there were no watercourses visible at the time of the survey.
6. Hunts Point Avenue and Viele Avenue are shown as closed. The roads are not in use or open. However, the Topographical Bureau at the Bronx Borough President's Office has no record of officially adopted maps that discontinued the roads. Additionally, a sewer easement is shown along the southern limits this parcel. It has not been mapped, but it is use.
7. Reference is made to the following maps and documents:
   a. Final Section Map "Section 5"; Dated 1914. Filed in The Office of Borough President of the Bronx. Prepared by John Drake, Assistant Engineer, April 1936. Revised September 4, 1998.
   b. An agreement dated 15th of July, 1966 between Consolidated Edison Company and the City of New York. Recorded with the City of New York Board of Estimate as No. 6537 Vol. 140.
   c. "Map Discontinuing and Closing the Street System within the Territory Bounded by Halleck Street, Edgewater Road, Lafayette Avenue, Bronx River and East Bay Avenue," Dated March 29th, 1961. Filed the Office of the Borough President of the Bronx, Topographic Bureau, as Map No. 11627.
   d. "Map Showing the Changes to Lines and Grades in Halleck Street at Hunts Point Avenue," Dated March 2, 1962. Filed in the Office of the Borough President of the Bronx, Topographic Bureau, as Map No. 11659.
   e. "Map Discontinuing and Closing the Hunts Point Avenue from Halleck Street to Farragut Street & Viele Avenue and Ryawa Avenue from Halleck Street to Hunts Point Ave," Undated and filed the Office of Borough President of the Bronx, Topographic Bureau, as Map No. 11772.
   f. Legal Description: "A Portion of Block 2781 Lot 500 & Farragut Street, Site "E" OU-2 & Berm Area, Borough of the Bronx, County of the Bronx, State of New York, TRG-No. 03-024." Dated July 3, 2003. Prepared by Reynolds Group Inc. Revised August 11, 2003.
   g. Legal Description: A Portion of Block 2781 Lot 500 Site "E" OU-3 & M & R Staging Area, Borough of the Bronx, County of the Bronx, State of New York, TRG-No. 03-024." Dated August 8, 2003. Prepared by Reynolds Group Inc. Revised August 11, 2003.
   h. "Exhibit A: Legal Description Permanent 5' Easement, For Iroquois Gas Company, Borough of the Bronx, County of the Bronx, State of New York, TRG-No. 01-035." Dated September 15, 2003. Prepared by Reynolds Group Inc. Pages 1-6.
   i. "Schedule B: Legal Description, Developed Area #1 Easement For Iroquois Gas Company, Borough of the Bronx, County of the Bronx, State of New York; TRG-No. 01-035." Dated August 12, 2002. Prepared by Reynolds Group Inc.
   j. "Schedule B: Legal Description, Developed Area #2 Easement For Iroquois Gas Company, Borough of the Bronx, County of the Bronx, State of New York, TRG-No. 01-035." Dated August 12, 2002. Prepared by Reynolds Group Inc.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

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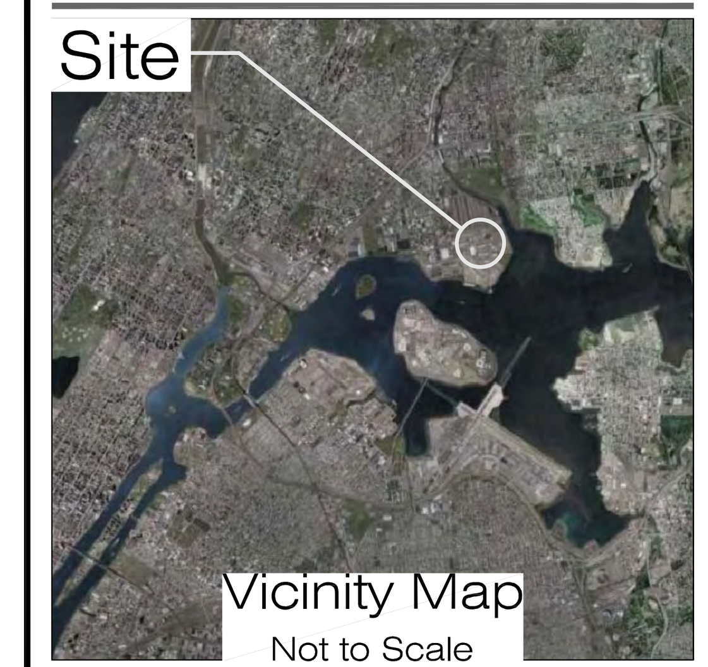
J. R. Lemuel Morrison
NY Lic Surveyor #50404



Vicinity Map
Not to Scale

Prepared For:

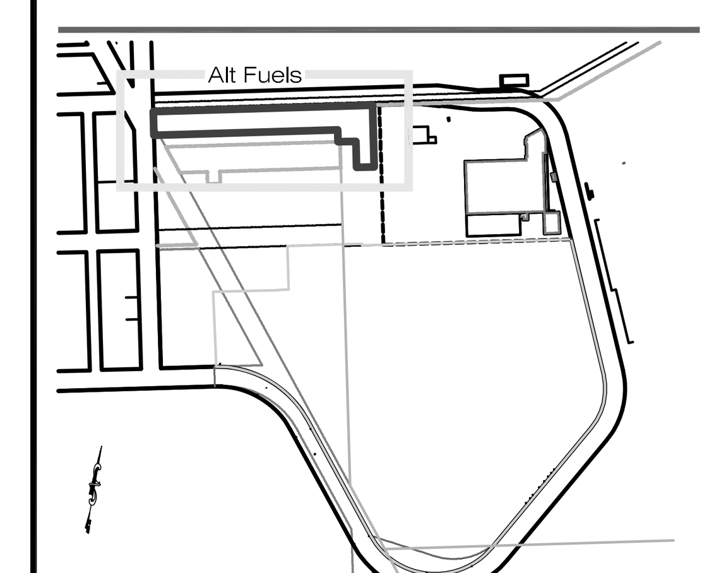
New York City Economic Development Corporation
110 William Street New York, NY 10158

Hunt's Point

Proposed Alternate Fuel Leasehold

p/o Block 2781 Lot 500
Hunt's Point, Bronx County
State of New York

NYC EDC Contract# 219000001-11



Location Map
1"=1000'

Xref: XXXXX-XX

No.	Date	Description
A	4/8/08	Revise Limits around Iroquois Esmt

REVISIONS

Date 4/7/08 First Issue of Drawing

Drawing Title

Leasehold Survey

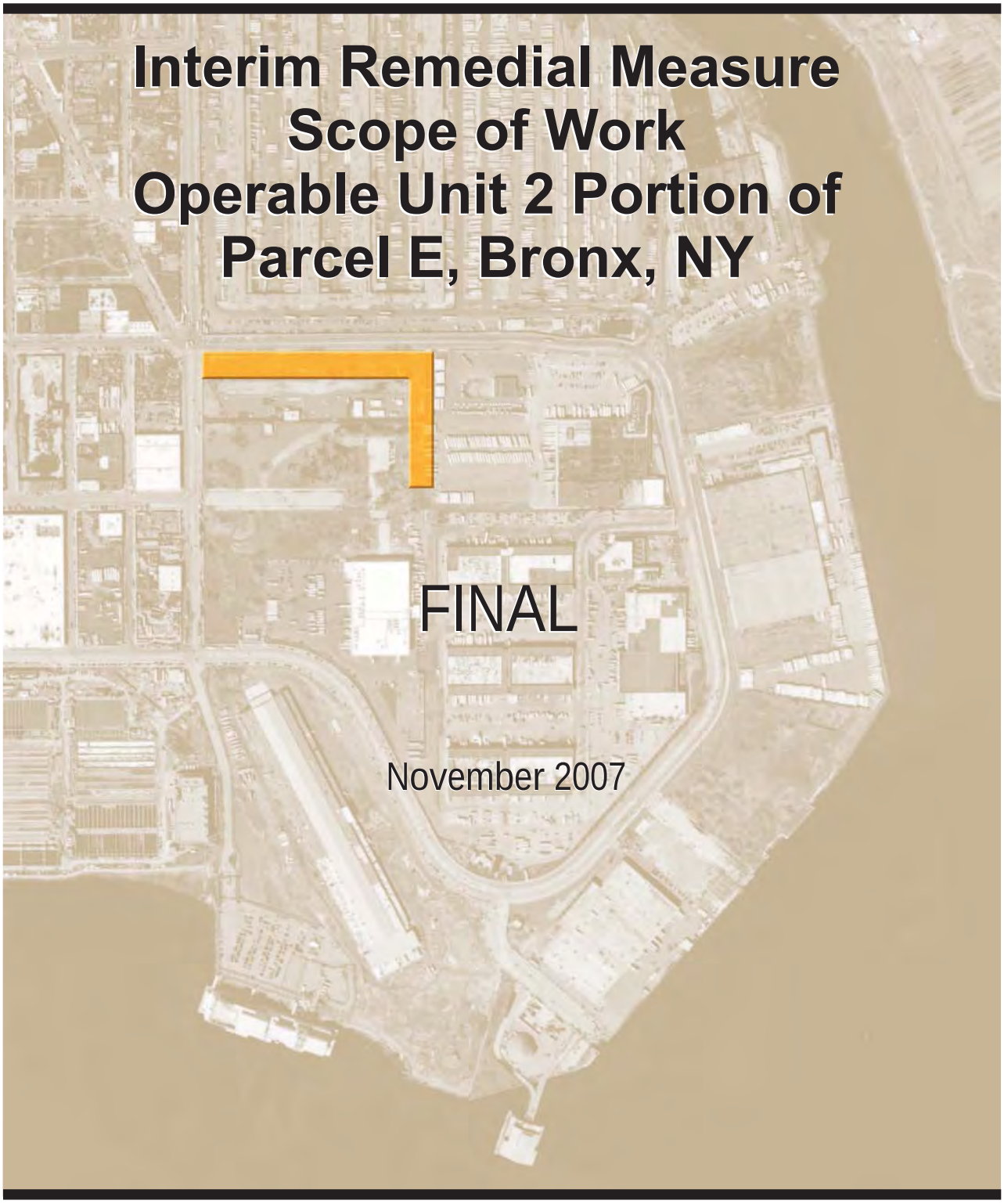
Scale	1" = 50' / 1:600	Project Number:	05J152D
Field Book	FB 26	Sheet Number	
Surveyed	4/7/08	1 of 1	
Drawn	DM		
Checked	AS		
Approved	RLM		

CAD File: V-05J152-14(AltFuels).dwg

Attachment 3

Hunts Point Food Distribution Center

Redevelopment Plan



Interim Remedial Measure Scope of Work Operable Unit 2 Portion of Parcel E, Bronx, NY

FINAL

November 2007

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in association with HDR Engineering, Inc.

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www.hdrinc.com

Hunts Point Food Distribution Center Redevelopment Plan

Interim Remedial Measure Scope of Work for the Operable Unit 2 Portion of Parcel E, Bronx, NY

- Final -

Prepared for:

New York City Economic Development Corporation

110 William Street, New York, New York 10038

Prepared by:

HDR | LMS

One Blue Hill Plaza- 12th Floor, Pearl River New York 10965

November 2007

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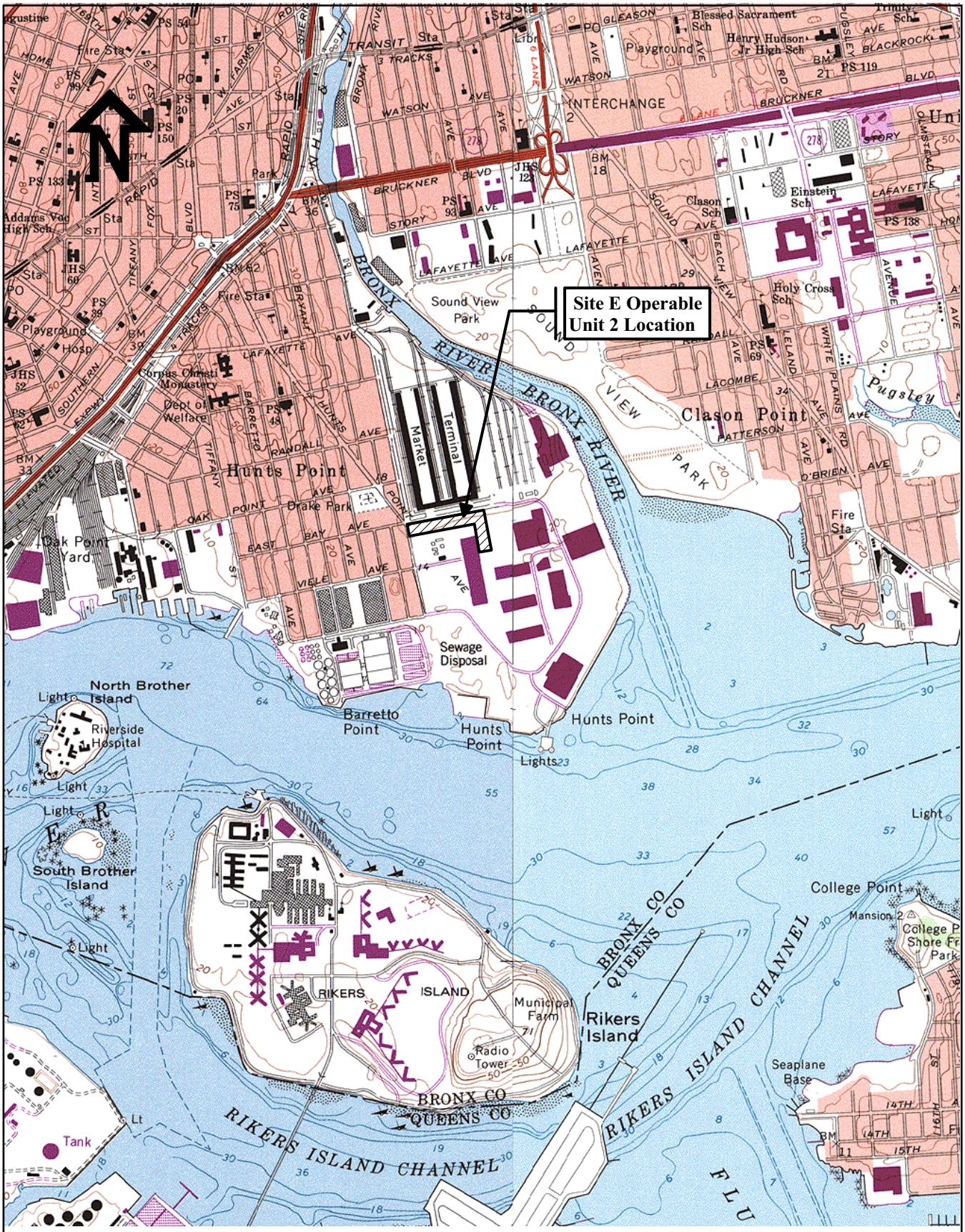
INTRODUCTION

This scope of work outlines the site activites for the Interim Remedial Measure (IRM), which involves the removal of waste material defined as residual coal tar and purifier waste to take place on Operable Unit 2 of Parcel E (Site E OU-2). Site E OU-2 is located in the northwestern portion of the Hunts Point Food Distribution Center (Figure 1). A subsurface investigation and coal tar delineation/characterization have been performed on the Site under a New York State Department of Conservation (NYSDEC) and New York State Department of Health (NYSDOH) approved investigation work plan, under the New York State Voluntary Cleanup Program (VCP). Based on the results, several areas of concern have been identified on the Site. These include coal tar waste, purifier waste and various fill materials believed to be associated with the historic use of the Site as a Manufactured Gas Plant (MGP). The purpose of this IRM will be to provide sufficient removal to remediate the portion of the the MGP waste found in Site E OU-2 prior to the final development as a parking area with an engineered cap.

Site E is rectangular in shape and is bordered by East Bay Avenue to the north, Halleck Street to the West and the former Viele Avenue and Meat Market to the south. The eastern border is located between the former A&P facility and the new truck maintenance facility located on Site E OU-1 (refer to Figures 2 and 3). The total area of the Site, including all three Site E operable units, is approximately 11.6 acres with the Site E OU-2 area approximately 3.69 acres in size.

Site E contains three individual operable units which are each VCP sites. The sites are each shown in Figure 3. Site E OU-1 (not shown in full on Figure 3) was previously investigated, a removal was completed and the site was redeveloped as part of the A&P maintenance truck garage and trailer storage yard. Sites E OU-2 and E OU-3 are both currently in the preliminary redevelopment design phase. While this document covers the actual removal of waste for Site E OU-2, it is the first activity planned for that operable unit. The second activity that will be included will be the land use layout for the parking lot that will occupy Site E OU-2. The proposed use for this space will be for an open-air parking lot that will be used as an employee parking for a food warehouse and distribution center proposed to be constructed on Site E OU-3. The parking lot layout will include descriptions for removal and movement of material necessary to create the grades and elevations for the site.

Site E OU-2 is an inverted and reversed L-shaped parcel formed by two rectangular areas (one oriented east-west and the second oriented north-south). Both converge at the northwest corner of Site E OU-1 along the southern boundary of East Bay Avenue. The northern portion of Site E OU-2 is bounded on the north by East Bay Avenue, on the south by the Consolidated Edison Facility (Con Ed) Bronx Metering and Regulating Facility (M&R Station), on the west by Halleck Street and on the east by Site E OU-1. The southern portion of Site E OU-2 has also been referred to as the “berm area” and historically contained excavated soils generated during the redevelopment and construction of the A&P paved parking area and truck maintenance facility (Site E OU-1). This “berm” material was



0 2000 ft

~SCALE: 1" = 2000'

Map source: USGS 7.5 minute quadrangle series, Central Park, NY-NJ, 1966, photorevised 1988.

\201944_NYCEDC\0040001_SiteEOU2\Report\E OU 2 IRM SOW\Figures&Tables\Fig1SiteLocation.dsf

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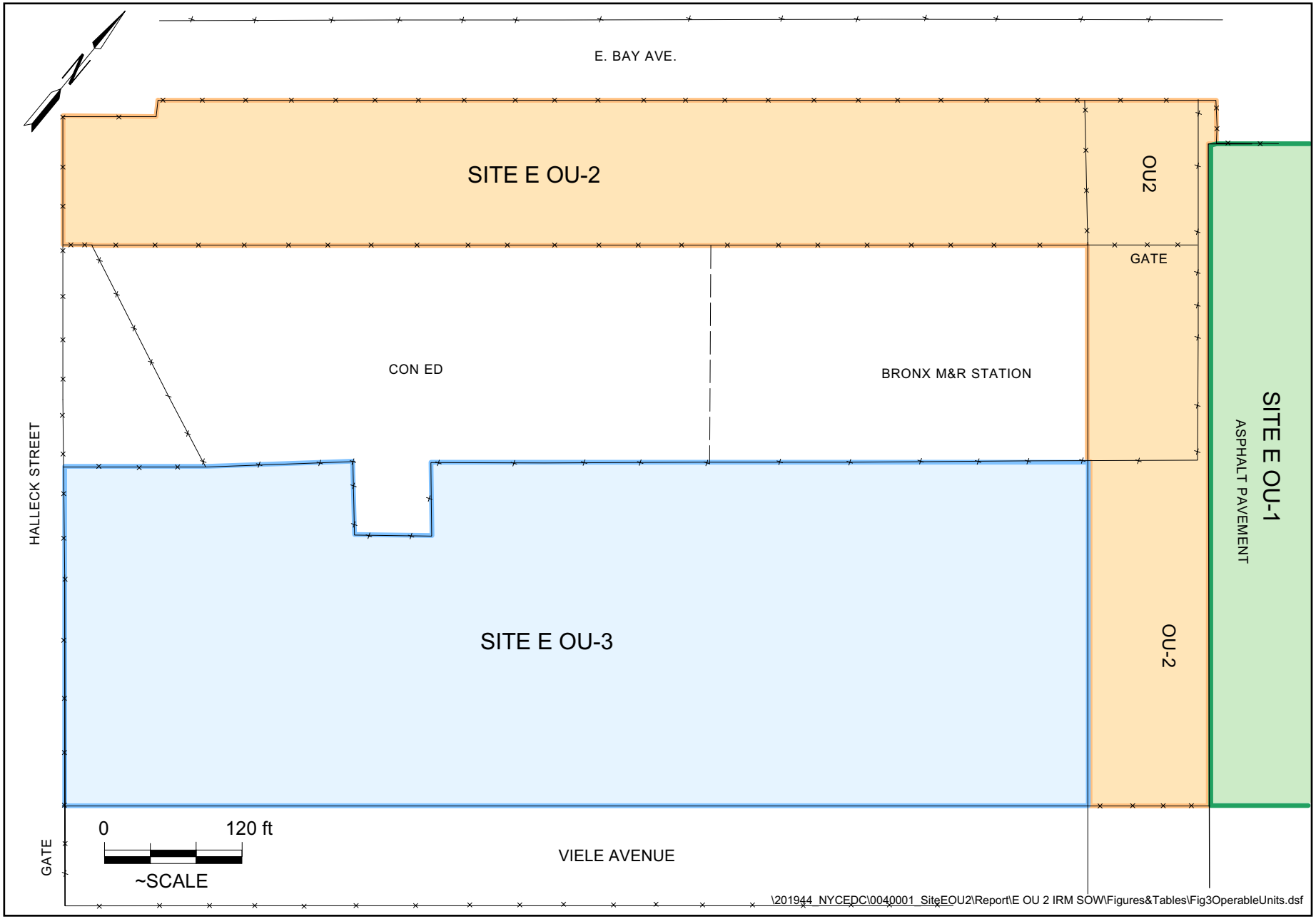
Site Location

Hunts Point • Site E OU-2

Figure 1

\201944_NYCEDC\0040001_SiteEOU2\Report\E OU 2 IRM SOW\Figures&Tables\Fig2AerialOfAllSites.des

HDR | LMS Henningson, Durham & Richardson Architecture and Engineering, P.C. in association with HDR Engineering, Inc. One Blue Hill Plaza Pearl River, NY 10965	**Hunts Point - 2004 Aerial Photograph** **Hunts Point • Site E OU-2**	**Figure 2**



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Site E Operable Units

Hunts Point • Site E OU-2

Figure 3

removed and relocated to Site A OU-2, another Hunts Point Voluntary Cleanup Program (VCP) site, following approval from NYSDEC (refer to Figure 2).

As part of the initial Site E OU-2 subsurface investigation, historic Sanborn and topographic maps were reviewed as well as historic aerial photograhs, and Consolidated Edison Company of New York (Con Ed) site maps. Overall, this parcel was part of a Con Ed coal gassification Plant that was constructed between 1924 and 1932 and operated until the early 1960s. A total of approximately 46 buildings or structures existed on the site that were actively involved in gas production. The plant was constructed to manufacture both oven gas and carburetted water gas as major products and coke, ammonium sulphate, coal tar, water gas tar, and light oil as by products.

Site E OU-1 is located in the northern end of the former facility where several structures were located including the main 15,000,000 cubic foot waterless gas holder, reportedly 254 ft in diameter and 365 ft high. Several additional structures associated with the gas holder were located on the site, including a number of pump tanks, coke filters, a waste oil tank, a centrifuge, a tar separator, and substation structures. The foundation of the former gas holder and some associated tank like structures were confirmed during the initial field investigation on Site E OU-1. The area of focus in this Interim Remedial Measure Scope of Work is the northern portion of Site E OU-2.

SITE INVESTIGATION AND WASTE DELINEATION

HDR|LMS utilized the site specific health and safety plan prepared as part of the initial site investigation and re-confirmed the presence of utilities on the site with respect to the sampling locations.

During the initial site investigation in 2005, several intrusive locations (borings, test pits and/or soil gas installation points) were observed to contain coal tar. Another small area was found to contain a thin seam of what appeared to be purifier waste material. Based upon these initial observations, a delineation of the coal tar was planned and conducted in April 2006 around these areas to identity the limits of waste and allow preparation of this removal scope. All soil analytical results were compared to the cleanup criteria laid out by the NYSDEC Brownfield Cleanup Program (BCP) Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health under restricted commercial scenarios (Track 2), as per NYSDEC Revised Public Review Draft Brownfield Cleanup Program Guide, dated June 2006.

Several delineation locations were found to contain coal tar mixed with fill material and some sporadic purifier waste. Fill material was also encountered across the site and in some areas, it was found to have been impacted with varying levels of petroleum. Much of this material consisted of coal, coal ash and granular fill. There were no areas where the fill was found to be saturated with recoverable product but rather water with a noticeable petroleum type odor typical of coal tar. Only one sample exhibited a single-magnitude exceedence of one volatile organic compound (VOCs). The analyte detected above Track 2 thresholds was Benzene in sample location DTP-4. Analyses of samples from these areas showed

that Track 2 semi-volatile organic compound (SVOC) concentrations were exceeded. The odors are believed to be low odor threshold SVOCs in pore space of the granular material. Delineation areas and soil sample locations are further illustrated in Figure 4. The areas containing coal tar were delineated for the proposed removal. This material was also found to be within a similar matrix of coal ash fill.

The shallow groundwater table was observed to be variable as it was encountered at different depths across the site. Due to the variable surface elevation of the underlying clay layer and the ability for shallow drainage to take place through the fill material, the upper groundwater is difficult to measure for consistent groundwater flow direction. Some test pits contained groundwater at much shallower depths than others, even where the surface elevation was found to be similar. It is for this reason that the shallow water table is considered to be perched and not consistently connected to lower saturated materials.

Within the areas where coal tar mixed with fill was encountered, the overall thickness was readily discernable as it was seen in other Hunts Point Voluntary Cleanup Program (VCP) sites. As in other VCP sites, such as Site A OU-2, Site B and Site D, the limits of the coal tar material were fairly easy to visually identify. The general range of thickness for the fill intermingled with coal tar was between 0.5 and 1.5 feet with some isolated locations up to 2.7 feet. Purifier type waste was encountered in a much more limited area and it was seen in thickness of 0.5 to 1.0 feet.

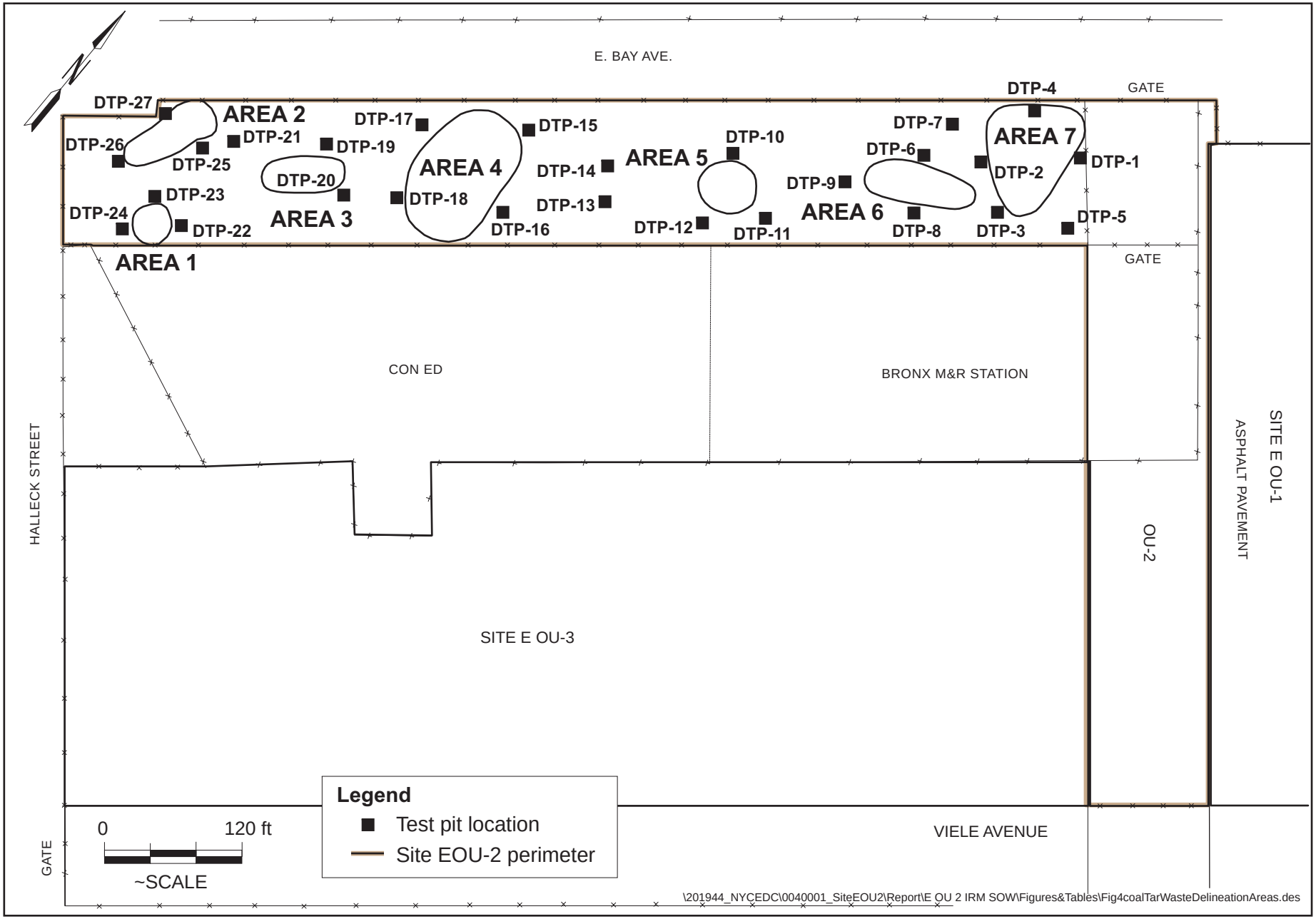
During the investigation and delineation activities, samples of material and waste were collected from test pit excavations. The following parameters were analyzed by a NYSDOH certified laboratory:

- Volatiles Organic Compounds
- Semi-Volatiles Organic Compounds
- RCRA Metals
- Polychlorinated Biphenyls
- Pesticides
- Cyanide
- Diesel-Range Organics
- Gasoline-Range Organics

Depending upon the location and reason for sampling, the samples contained a combination of soil, fill, purifier-contaminated and coal tar-contaminated waste, collected from the most visually contaminated layers of the pit. Table 1 contains the specific analytical results of the waste delineation sampling. These samples were all collected from within areas proposed for removal and therefore represent worst case waste rather than concentrations of material that will remain.

As a result of the delineation activities, a figure was created to show areas of waste material that are proposed to be removed. Figure 5, Figure 6 and Figure 7 show the various locations, thickness, depths, and aerial coverage of the Site E OU-2.

The following is a summary of the data collected from the delineation. It should be noted that all coal tar / purifier-type material removed as a result of this IRM will be submitted to facilities permitted to accept such material for thermal destruction. NYSDEC currently maintains an exemption for characteristic hazardous waste material, such as this, specifically for Toxicity Characteristic Leachate Procedure (TCLP) Benzene in the way it is



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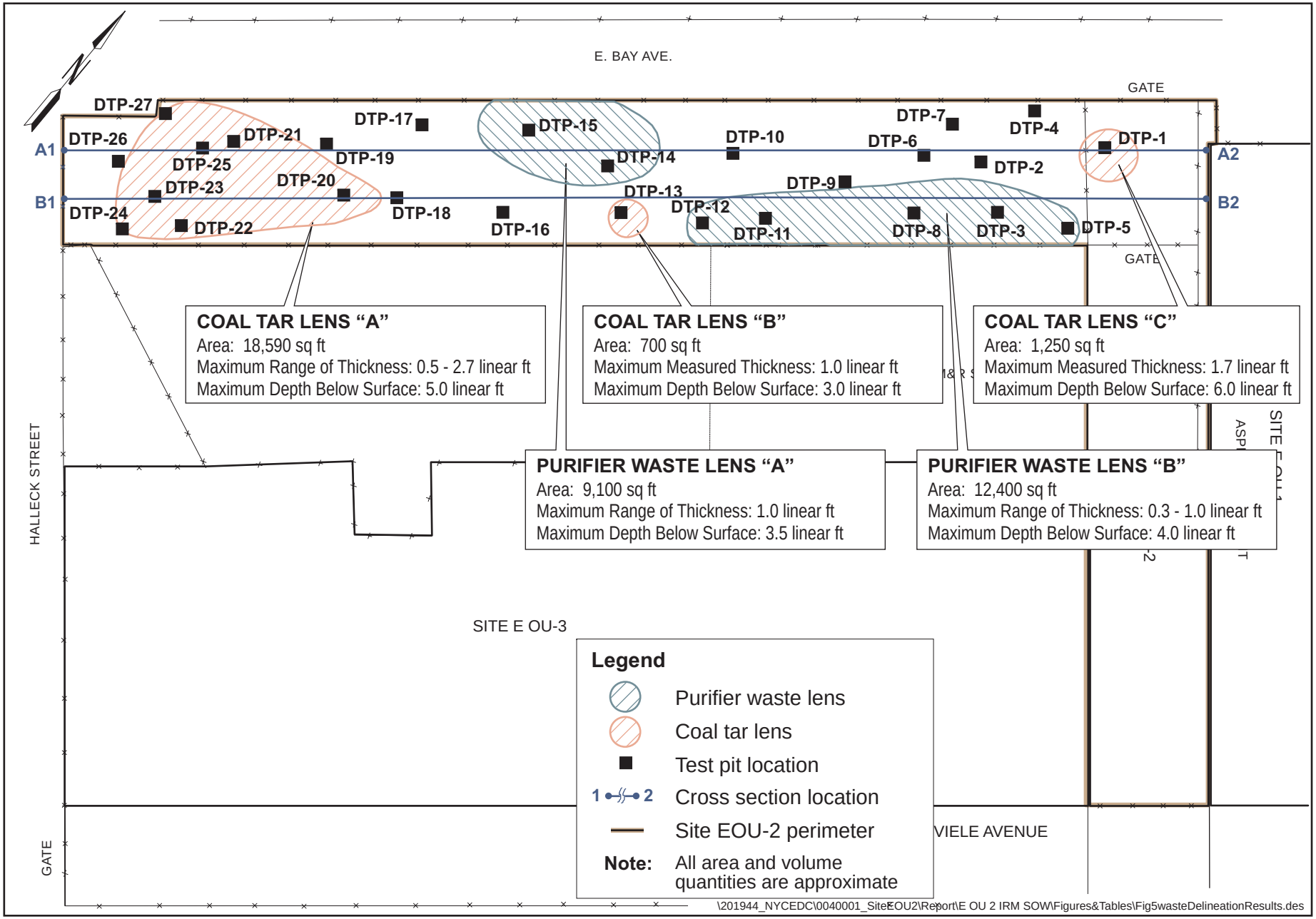
Coal Tar Waste Delineation Areas and Test Pit Locations

Hunts Point • Site E OU-2

Figure 4



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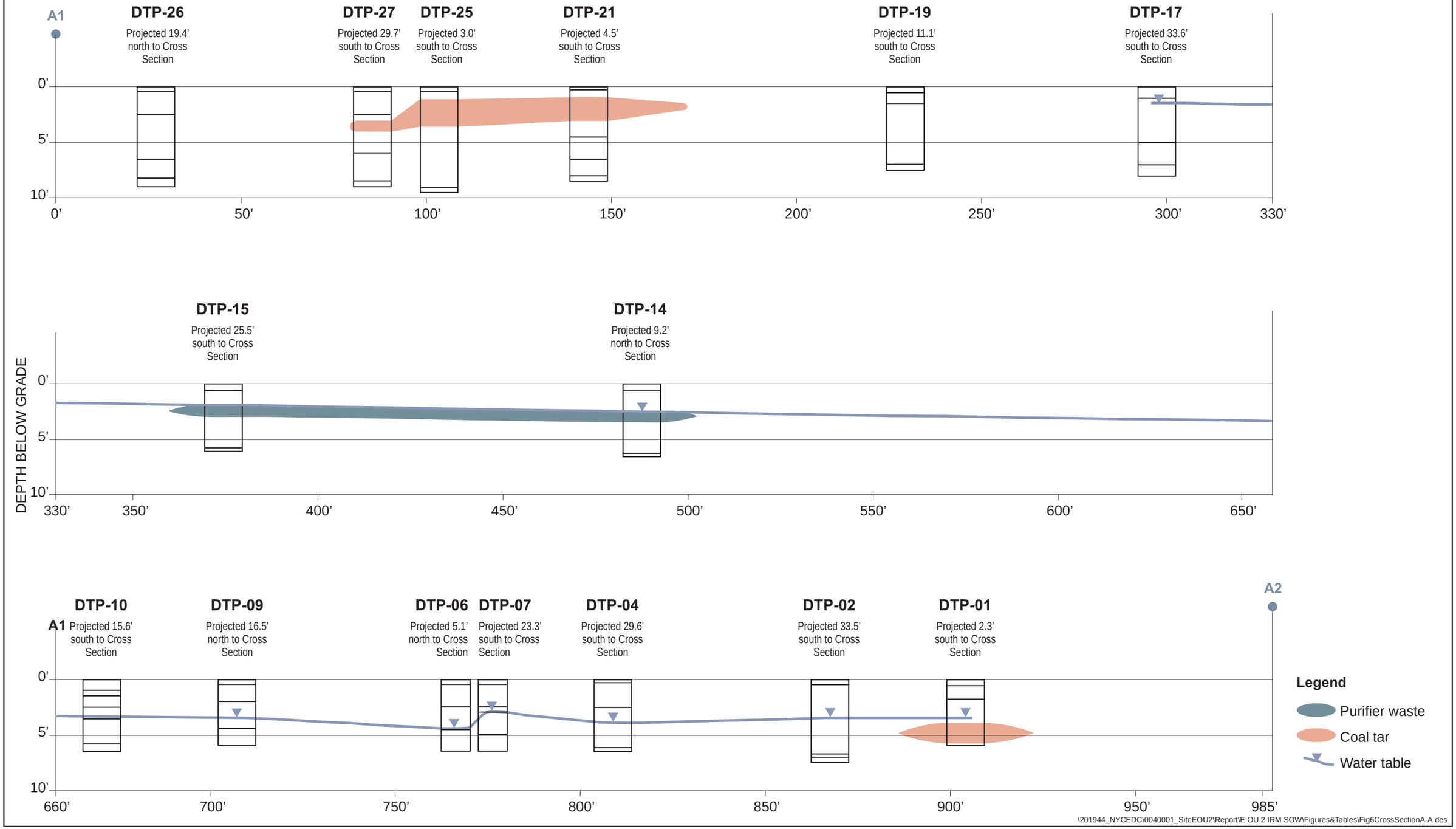
Waste Delineation Results (Plan View)

Hunts Point • Site E OU-2

Figure 5



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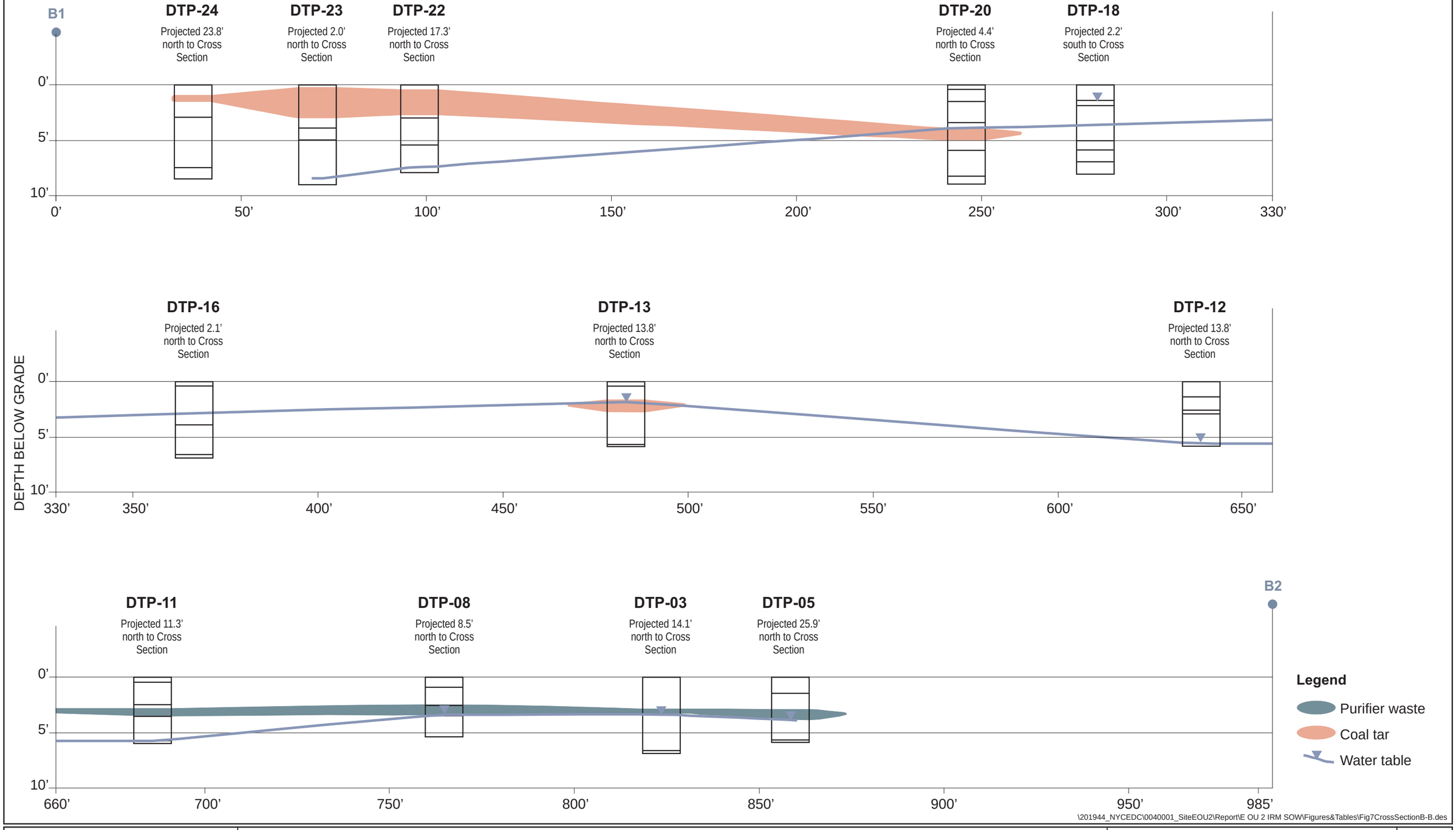
Cross Section A_1-A_2

Hunts Point • Site E OU-2

Figure 6



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Cross Section B_1-B_2

Hunts Point • Site E OU-2

Figure 7

Table 1
Page (1 of 12)
Hunt's Point Site E OU 2
Coal Tar Delineation
Volatile Organic Compound Data Summary
April 2006

Sample ID **Lab Sample ID** **Date Sampled**	**DTP-2 (7-7.5')** **E0451-07B** **4/10/2006** DF 1:1	**DTP-4 (3-5')** **E0451-06B** **4/10/2006** DF 1:1	**DTP-5 (3-4')** **E0451-02E** **4/10/2006** DF 1:1	**DTP-6 (2-4')** **E0451-05B** **4/10/2006** DF 1:1	**DTP-8 (1-3')** **E0451-03E** **4/11/2006** DF 1:1	**NYSDEC BCP Track 2 Restricted Use Soil Cleanup Objectives (Commercial) ***
VOCs (mg/kg)						
Acetone	ND	0.063	ND	0.052	0.025	500 [a]
Carbon Disulfide	ND	0.023	ND	0.021	0.009	NS
2-Butanone	ND	ND	ND	ND	ND	500 [a]
Chloroform	0.002 J	0.002 J	ND	ND	ND	350
Benzene	ND	**71 UD [DF 100:1]**	ND	0.005 J	0.002 J	44
Toluene	ND	0.12	ND	0.007 J	0.004 J	500 [a]
Ethylbenzene	ND	18 DJ [DF 100:1]	ND	0.088	0.002 J	390
m,p-Xylene	ND	15 DJ [DF 100:1]	ND	0.02	0.005 J	NS
o-Xylene	ND	17 DJ [DF 100:1]	ND	0.037	0.004 J	NS
Xylene (Total)	ND	32 DJ [DF 100:1]	ND	0.057	0.009	500 [a]
Styrene	ND	ND	ND	0.002 J	ND	NS
Isopropylbenzene	ND	0.17	ND	0.025	ND	NS
n-Propylbenzene	ND	0.15	ND	0.026	ND	500 [a]
1,3,5-Trimethylbenzene	ND	71 UD [DF 100:1]	ND	0.063	0.003 J	190
1,2,4-Trimethylbenzene	ND	35 DJ [DF 100:1]	ND	0.17	0.006	190
4-Isopropyltoluene	ND	0.11	ND	ND	0.003 J	NS
Naphthalene	0.003 JB	**1700 DB [DF 100:1]**	0.013 B	21 DB [DF 1:1]	12 DB [DF 1:1]	500 [a]
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	NS

Notes:

J - Analyte detected below quantitation limits.
D - This flag iidentifies all compounds identified in an analysis at a secondary dilution factor.
E - Indicates the analyte's concentration exceeds the calibrated range of the GC/MS instrument for that specific analysis.
B - Indicates the analyte was found in the blank as well as the sample; report as "12B".
ND - Non-Detectable Concentration
DF - Dilution Factor (e.g., 10:1)
ND - Not Detected at the reporting limit
NS - No Standard
Note - Numbers in bold exceed the Track 2 soil cleanup objective(s).
a - The SCOs for commercial use were capped at a maximum value of 500 ppm (refer to NYSDEC TSD Section 9.3).
* - NYSDEC Brownfield Cleanup Program (BCP) Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health under restricted commercial scenarios (Track 2) (as per NYSDEC Revised Public Review Draft Brownfield Cleanup Program Guide, dated June 2006) cleanup criteria.

Table 1
Page (2 of 12)
Hunt's Point Site E OU 2
Coal Tar Delineation
Volatile Organic Compound Data Summary
April 2006

Sample ID Lab Sample ID Date Sampled	DTP-13 (0-1.5') E0451-01E 4/11/2006 DF 1:1	DTP-14 (1.5-3') E0451-04B 4/11/2006 DF 1:1	DTP-18 (2-3.5') E0466-03B 4/12/2006 DF 1:1	DTP-19 (5-6') E0466-05B 4/12/2006 DF 1:1	DTP-20 (3-4') E0466-04B 4/12/2006 DF 1:1	NYSDEC BCP Track 2 Restricted Use Soil Cleanup Objectives (Restricted
VOCs (mg/kg)						
Acetone	ND	ND	0.08	0.062	0.057	500 [a]
Carbon Disulfide	ND	ND	ND	ND	ND	NS
2-Butanone	ND	ND	ND	ND	ND	500 [a]
Chloroform	0.002 J	0.001 J	ND	ND	ND	350
Benzene	0.003 J	ND	0.017	0.026	0.014	44
Toluene	0.005 J	ND	0.027	0.038	0.011	500 [a]
Ethylbenzene	ND	ND	0.24	0.043	0.12	390
m,p-Xylene	0.004 J	ND	0.066	0.057	0.037	NS
o-Xylene	0.002 J	ND	0.08	0.051	0.045	NS
Xylene (Total)	0.006 J	ND	0.15	0.11	0.082	500 [a]
Styrene	ND	ND	ND	ND	ND	NS
Isopropylbenzene	ND	ND	0.036	0.006	0.017	NS
n-Propylbenzene	ND	ND	ND	0.005 J	0.007	500 [a]
1,3,5-Trimethylbenzene	0.003 J	ND	0.056	0.021	0.021	190
1,2,4-Trimethylbenzene	0.003 J	ND	0.12	0.051	0.056	190
4-Isopropyltoluene	ND	ND	0.054	ND	ND	NS
Naphthalene	0.016 B	0.016 B	110 DB [DF 10:1]	47 DB [DF 8:1]	65 DB [DF 8:1]	500 [a]
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	NS

Notes:

J - Analyte detected below quantitation limits.
D - This flag iidentifies all compounds identified in an analysis at a secondary dilution factor.
E - Indicates the analyte's concentration exceeds the calibrated range of the GC/MS instrument for that specific analysis.
B - Indicates the analyte was found in the blank as well as the sample; report as "12B".
ND - Non-Detectable Concentration
DF - Dilution Factor (e.g., 10:1)
ND - Not Detected at the reporting limit
NS - No Standard
Note - Numbers in bold exceed the Track 2 soil cleanup objective(s).
a - The SCOs for commercial use were capped at a maximum value of 500 ppm (refer to NYSDEC TSD Section 9.3).
* - NYSDEC Brownfield Cleanup Program (BCP) Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health under restricted commercial scenarios (Track 2) (as per NYSDEC Revised Public Review Draft Brownfield Cleanup Program Guide, dated June 2006) cleanup criteria.

Table 1
Page (3 of 12)
Hunt's Point Site E OU 2
Coal Tar Delineation
Volatile Organic Compound Data Summary
April 2006

Sample ID Lab Sample ID Date Sampled	DTP-21 (2-4') E0466-06B 4/12/2006 DF 1:1	DTP-22 (0-3') E0466-02B 4/13/2006 DF 1:1	DTP-24 (0-4') E0466-01B 4/13/2006 DF 1:1	NYSDEC BCP Track 2 Restricted Use Soil Cleanup Objectives (Restricted
VOCs (mg/kg)				
Acetone	ND	0.13	ND	500 [a]
Carbon Disulfide	ND	ND	ND	NS
2-Butanone	ND	0.002	ND	500 [a]
Chloroform	ND	ND	ND	350
Benzene	0.004 J	ND D [DF 50:1]	0.02	44
Toluene	0.002 J	ND D [DF 50:1]	0.042	500 [a]
Ethylbenzene	0.001 J	0.15	0.038	390
m,p-Xylene	0.003 J	5.8 DJ [DF 50:1]	0.097	NS
o-Xylene	0.002 J	ND D [DF 50:1]	0.091	NS
Xylene (Total)	0.005 J	5.8 DJ [DF 50:1]	0.19	500 [a]
Styrene	ND	ND D [DF 50:1]	ND	NS
Isopropylbenzene	ND	0.011	0.003 J	NS
n-Propylbenzene	ND	0.011	ND	500 [a]
1,3,5-Trimethylbenzene	0.004 J	0.1	0.044	190
1,2,4-Trimethylbenzene	0.006	4.2 DJ [DF 50:1]	0.099	190
4-Isopropyltoluene	ND	ND	ND	NS
Naphthalene	2.1 DB [DF 1:1]	450 DB [DF 50:1]	59 DB [DF 8:1]	500 [a]
1,2,3-Trichlorobenzene	ND	ND	ND	NS

Notes:

J - Analyte detected below quantitation limits.
D - This flag iidentifies all compounds identified in an analysis at a secondary dilution factor.
E - Indicates the analyte's concentration exceeds the calibrated range of the GC/MS instrument for that specific analysis.
B - Indicates the analyte was found in the blank as well as the sample; report as "12B".
ND - Non-Detectable Concentration
DF - Dilution Factor (e.g., 10:1)
ND - Not Detected at the reporting limit
NS - No Standard
Note - Numbers in bold exceed the Track 2 soil cleanup objective(s).
a - The SCOs for commercial use were capped at a maximum value of 500 ppm (refer to NYSDEC TSD Section 9.3).
* - NYSDEC Brownfield Cleanup Program (BCP) Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health under restricted commercial scenarios (Track 2) (as per NYSDEC Revised Public Review Draft Brownfield Cleanup Program Guide, dated June 2006) cleanup criteria.

Table 1
Page (4 of 12)
Hunt's Point Site E OU 2
Coal Tar Delineation
Semi-Volatile Organic Compound Data Summary
April 2006

Sample ID Lab Sample ID Date Sampled	DTP-2 (7-7.5') E0451-07A 4/10/2006 DF 1:1	DTP-4 (3-5') E0451-06A 4/10/2006 DF 10:1	DTP-5 (3-4') E0451-02A 4/10/2006 DF 1:1	DTP-5 (3-4') RE E0451-02ARE 4/10/2006 DF 1:1	DTP-6 (2-4') E0451-05A 4/10/2006 DF 10:1	NYSDEC BCP Track 2 Restricted Use Soil Cleanup Objectives (Commercial) *
SVOCs (mg/kg)						
Phenol	ND	ND	0.059 J	ND	ND	500 [a]
2-Methylphenol	ND	ND	ND	ND	ND	NS
4-Methylphenol	ND	ND	0.09 J	ND	ND	NS
2,4-Dimethylphenol	ND	ND	ND	ND	ND	NS
Naphthalene	17	**1000 D [DF 20:1]**	3.2	2.8	140	500 [a]
4-Chloroaniline	ND	ND	ND	ND	ND	NS
2-Methylnaphthalene	3.1 J	76	2.1	3.8	23 J	NS
Acenaphthylene	4.5 J	54	2.5	3.3	84	500 [a]
Acenaphthene	2.9 J	150	0.6	0.86 J	190	500 [a]
Dibenzofuran	4.3 J	130	0.74	1.2 J	120	350
Fluorene	8.1	240	2.4	4.9	230	500 [a]
Phenanthrene	27	**670**	130 D [DF 4:1]	22	**760 D [DF 20:1]**	500 [a]
Anthracene	8.1	210	3.6	4	260	500 [a]
Carbazole	2.5 J	77	0.47 J	0.47 J	66	NS
Di-n-butylphthalate	ND	ND	120 J	ND	ND	NS
Fluoranthene	25	450	18 D [DF 4:1]	26	**580**	500 [a]
Pyrene	20	350	23 D [DF 4:1]	21	490	500 [a]
Benzo(a)anthracene	**11**	**180**	**9.6 D [DF 4:1]**	**11**	**270**	5.6
Chrysene	10	**170**	10 D [DF 4:1]	12	**240**	56
bis(2-Ethylhexyl)phthalate	ND	ND	0.35 J	0.98 J	ND	NS
Benzo(b)fluoranthene	**11**	**170**	**12 D [DF 4:1]**	**12**	**280**	5.6
Benzo(k)fluoranthene	4.8	**78**	3.8	5.1	**110**	56
Benzo(a)pyrene	**10**	**160**	**7.8**	**8.6**	**260**	1 [b]
Indeno(1,2,3-cd)pyrene	**6**	**74**	3.7	**5.6**	**110**	5.6
Dibenzo(a,h)anthracene	**1.8 J**	**26 J**	**1.2**	**1.7 J**	**38 J**	0.56
Benzo(g,h,i)perylene	7.7	79	4.1	6.2	120	500 [a]

Notes:

J - Analyte detected below quantitation limits.

D - This flag iidentifies all compounds identified in an analysis at a secondary dilution factor.

DF - Dilution Factor e.g., 10:1.

ND - Not Detected at the Reporting Limit.

NS - No Standard.

Note - Numbers in bold exceed the Track 2 soil cleanup objective(s).

a - The SCOs for commercial use were capped at a maximum value of 500 ppm (refer to NYSDEC TSD Section 9.3).

b - For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the DEC/DOH rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

* - NYSDEC Brownfield Cleanup Program (BCP) Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health under restricted commercial scenarios (Track 2) (as per NYSDEC Revised Public Review Draft Brownfield Cleanup Program Guide, dated June 2006) cleanup criteria.

Hunt's Point Site E OU 2
Coal Tar Delineation
Semi-Volatile Organic Compound Data Summary
April 2006

Sample ID **Lab Sample ID** **Date Sampled**	**DTP-8 (1-3')** **E0451-03A** **4/11/2006** DF 5:1	**DTP-13 (0-1.5')** **E0451-01A** **4/11/2006** DF 10:1	**DTP-14 (1.5-3')** **E0451-04A** **4/11/2006** DF 5:1	**DTP-18 (2-3.5')** **E0466-03A** **4/12/2006** DF 10:1	**DTP-18 (2-3.5') RE** **E0466-03ARE** **4/12/2006** DF 4:1	**NYSDEC BCP Track 2 Restricted Use Soil Cleanup Objectives (Commercial) ***
SVOCs (mg/kg)						
Phenol	ND	ND	ND	0.82 J	ND	500 [a]
2-Methylphenol	ND	ND	ND	ND	ND	NS
4-Methylphenol	0.54 J	ND	ND	980 J	ND	NS
2,4-Dimethylphenol	ND	ND	ND	ND	ND	NS
Naphthalene	30	43	13 J	110 D [DF 40:1]	150	500 [a]
4-Chloroaniline	ND	ND	ND	ND	ND	NS
2-Methylnaphthalene	13 J	15 J	2.7 J	15	34	NS
Acenaphthylene	29	78	18 J	13	27	500 [a]
Acenaphthene	5 J	8.3 J	3.4 J	18	35	500 [a]
Dibenzofuran	9.6 J	17 J	6.3 J	27	48	350
Fluorene	23	36 J	12 J	46	90	500 [a]
Phenanthrene	120	220	66	130 D [DF 40:1]	260	500 [a]
Anthracene	39	78	21	44	77	500 [a]
Carbazole	4.3 J	8.4 J	4.2 J	19	34	NS
Di-n-butylphthalate	ND	ND	ND	ND	ND	NS
Fluoranthene	150	370	85	98 D [DF 40:1]	190	500 [a]
Pyrene	120	270	75	79 D [DF 40:1]	160	500 [a]
Benzo(a)anthracene	**72**	**160**	**44**	**46**	**81**	5.6
Chrysene	**68**	**160**	44	37	**81**	56
bis(2-Ethylhexyl)phthalate	ND	18 J	ND	ND	ND	NS
Benzo(b)fluoranthene	**76**	**180**	**53**	**42**	**70**	5.6
Benzo(k)fluoranthene	32	**84**	20 J	20	28	56
Benzo(a)pyrene	**62**	**160**	**46**	**36**	**61**	1 [b]
Indeno(1,2,3-cd)pyrene	**34**	**78**	**27**	**16**	**27**	5.6
Dibenzo(a,h)anthracene	**11 J**	**24 J**	**8.8 J**	**5.7**	**9.8 J**	0.56
Benzo(g,h,i)perylene	37	85	31	16	29	500 [a]

Notes:

J - Analyte detected below quantitation limits.

D - This flag iidentifies all compounds identified in an analysis at a secondary dilution factor.

DF - Dilution Factor e.g., 10:1.

ND - Not Detected at the Reporting Limit.

NS - No Standard.

Note - Numbers in bold exceed the Track 2 soil cleanup objective(s).

a - The SCOs for commercial use were capped at a maximum value of 500 ppm (refer to NYSDEC TSD Section 9.3).

b - For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the DEC/DOH rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

* - NYSDEC Brownfield Cleanup Program (BCP) Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health under restricted commercial scenarios (Track 2) (as per NYSDEC Revised Public Review Draft Brownfield Cleanup Program Guide, dated June 2006) cleanup criteria.

Hunt's Point Site E OU 2
Coal Tar Delineation
Semi-Volatile Organic Compound Data Summary
April 2006

Sample ID Lab Sample ID Date Sampled	DTP-19 (5-6') E0466-05A 4/12/2006 DF 10:1	DTP-19 (5-6') RE E0466-05ARE 4/12/2006 DF 4:1	DTP-20 (3-4') E0466-04A 4/12/2006 DF 1:1	DTP-20 (3-4') RE E0466-04ARE 4/12/2006 DF 4:1	DTP-21 (2-4') E0466-06A 4/12/2006 DF 1:1	NYSDEC BCP Track 2 Restricted Use Soil Cleanup Objectives (Commercial) *
SVOCs (mg/kg)						
Phenol	ND	ND	0.53 J	ND	0.058 J	500 [a]
2-Methylphenol	ND	ND	ND	ND	0.19 J	NS
4-Methylphenol	ND	ND	0.63 J	ND	0.18 J	NS
2,4-Dimethylphenol	ND	ND	ND	ND	ND	NS
Naphthalene	24	27	80 D [DF 4:1]	63	20 D [DF 4:1]	500 [a]
4-Chloroaniline	ND	ND	ND	ND	ND	NS
2-Methylnaphthalene	4.3	6.5 J	20	19	4.2	NS
Acenaphthylene	10	11 J	17	14 J	2.5	500 [a]
Acenaphthene	5.8	7.2 J	22	30	1.4	500 [a]
Dibenzofuran	7.3	9 J	24	24	1.5	350
Fluorene	16	22	45	51	3.6	500 [a]
Phenanthrene	59	74	200 D [DF 4:1]	190	12 D [DF 4:1]	500 [a]
Anthracene	22	23	63	60	3.3	500 [a]
Carbazole	4.6	7.5 J	24	20	1.2	NS
Di-n-butylphthalate	ND	ND	ND	ND	ND	NS
Fluoranthene	59	59	180 D [DF 4:1]	180	8.9 D [DF 4:1]	500 [a]
Pyrene	49	54	140 D [DF 4:1]	160	9.4 D [DF 4:1]	500 [a]
Benzo(a)anthracene	**27**	**26**	**75 D [DF 4:1]**	**76**	4.7	5.6
Chrysene	26	25	**65**	**78**	4.6	56
bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	0.096 J	NS
Benzo(b)fluoranthene	**29**	**25**	**61**	**72**	3.9	5.6
Benzo(k)fluoranthene	13	11 J	21	29	1.4	56
Benzo(a)pyrene	**26**	**22**	**53**	**66**	**3.4**	1 [b]
Indeno(1,2,3-cd)pyrene	**13**	**13 J**	**26**	**30**	1.7	5.6
Dibenzo(a,h)anthracene	**3.9**	**3.7 J**	**8.3**	**9.3 J**	**0.58**	0.56
Benzo(g,h,i)perylene	14	16	28	34	2.1	500 [a]

Notes:

J - Analyte detected below quantitation limits.

D - This flag iidentifies all compounds identified in an analysis at a secondary dilution factor.

DF - Dilution Factor e.g., 10:1.

ND - Not Detected at the Reporting Limit.

NS - No Standard.

Note - Numbers in bold exceed the Track 2 soil cleanup objective(s).

a - The SCOs for commercial use were capped at a maximum value of 500 ppm (refer to NYSDEC TSD Section 9.3).

b - For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the DEC/DOH rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

* - NYSDEC Brownfield Cleanup Program (BCP) Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health under restricted commercial scenarios (Track 2) (as per NYSDEC Revised Public Review Draft Brownfield Cleanup Program Guide, dated June 2006) cleanup criteria.

Hunt's Point Site E OU 2
Coal Tar Delineation
Semi-Volatile Organic Compound Data Summary
April 2006

Sample ID Lab Sample ID Date Sampled	DTP-21 (2-4') RE E0466-06ARE 4/12/2006 DF 1:1	DTP-22 (0-3') E0466-02A 4/13/2006 DF 10:1	DTP-22 (0-3') RE E0466-02ARE 4/13/2006 DF 5:1	DTP-24 (0-4') E0466-01A 4/13/2006 DF 10:1	DTP-24 (0-4') RE E0466-01ARE 4/13/2006 DF 10:1	NYSDEC BCP Track 2 Restricted Use Soil Cleanup Objectives (Commercial) *
SVOCs (mg/kg)						
Phenol	ND	4.9	ND	ND	ND	500 [a]
2-Methylphenol	ND	3.5 J	2.1 J	ND	ND	NS
4-Methylphenol	ND	8.4	5.6 J	ND	ND	NS
2,4-Dimethylphenol	0.63 J	5.1	ND	ND	ND	NS
Naphthalene	21	290 D [DF 50:1]	**690 D [DF 20:1]**	220	59	500 [a]
4-Chloroaniline	ND	ND	ND	73	ND	NS
2-Methylnaphthalene	8.8	76 D [DF 50:1]	160	49	23 J	NS
Acenaphthylene	5.7	61	110	82	81	500 [a]
Acenaphthene	3 J	12	24	19 J	12 J	500 [a]
Dibenzofuran	2.3 J	52	96	38	30 J	350
Fluorene	7.8	78 D [DF 50:1]	140	64	54	500 [a]
Phenanthrene	29	220 D [DF 50:1]	400 D [DF 20:1]	210	210	500 [a]
Anthracene	7.8	70 D [DF 50:1]	130	81	78	500 [a]
Carbazole	2 J	32	55	21 J	19 J	NS
Di-n-butylphthalate	ND	ND	ND	ND	ND	NS
Fluoranthene	24	150 D [DF 50:1]	270	260	310	500 [a]
Pyrene	26	120 D [DF 50:1]	210	230	270	500 [a]
Benzo(a)anthracene	**14**	**61**	**110**	**160**	**170**	5.6
Chrysene	14	**58**	**96**	**120**	**160**	56
bis(2-Ethylhexyl)phthalate	ND	ND	ND	ND	ND	NS
Benzo(b)fluoranthene	**13**	**48**	**94**	**160**	**190**	5.6
Benzo(k)fluoranthene	4.8	23	40	**64**	**80**	56
Benzo(a)pyrene	**11**	**45**	**86**	**140**	**170**	1 [b]
Indeno(1,2,3-cd)pyrene	5.1	**18**	**37**	**67**	**86**	5.6
Dibenzo(a,h)anthracene	**1.8 J**	**6.4**	**12 J**	**22 J**	**29 J**	0.56
Benzo(g,h,i)perylene	6	18	39	70	91	500 [a]

Notes:

J - Analyte detected below quantitation limits.

D - This flag iidentifies all compounds identified in an analysis at a secondary dilution factor.

DF - Dilution Factor e.g., 10:1.

ND - Not Detected at the Reporting Limit.

NS - No Standard.

Note - Numbers in bold exceed the Track 2 soil cleanup objective(s).

a - The SCOs for commercial use were capped at a maximum value of 500 ppm (refer to NYSDEC TSD Section 9.3).

b - For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the DEC/DOH rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

* - NYSDEC Brownfield Cleanup Program (BCP) Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health under restricted commercial scenarios (Track 2) (as per NYSDEC Revised Public Review Draft Brownfield Cleanup Program Guide, dated June 2006) cleanup criteria.

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Hunt's Point Site E OU 2
Coal Tar Delineation
Diesel-Range and Gasoline-Range Organics Data Summary
April 2006

Sample ID Lab Sample ID Date Sampled	DTP-5 (3-4') E0451-02 4/10/2006	DTP-8 (0-3') E0451-03 4/11/2006	DTP-13 (0-1.5') E0451-01 4/11/2006	DTP-18 (2-3.5') E0466-03D 4/12/2006	DTP-20 (3-4') E0466-04D 4/12/2006	DTP-21 (2-4') E0466-06D 4/12/2006	DTP-22 (0-3') E0466-02D 4/13/2006
DRO (mg/kg)	DF 10:1	DF 10:1	DF 10:1	DF 10:1	DF 10:1	DF 10:1	DF 10:1
Diesel-Range Organics	2000	3900	7100	6300 B	4000 B	1000 B	6300 B
GRO (mg/kg)	DF 1:1	DF 1:1	DF 1:1	DF 1:1	DF 1:1	DF 1:1	DF 1:1
Gasoline-Range Organics	15 B	14 B	10 B	69 B	53 B	15 B	130 B

Notes:

B - Indicates the analyte was found in the blank as well as the sample; report as "12B".

DF - Dilution Factor e.g., 10:1.

Table 1
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Hunt's Point Site E OU 2
Coal Tar Delineation
Heavy Metals Data Summary
April 2006

Sample ID Lab Sample ID Date Sampled	DTP-2 (7-7.5') E0451-07 4/10/2006 DF 1:1	DTP-4 (3-5') E0451-06 4/10/2006 DF 1:1	DTP-5 (3-4') E0451-02 4/10/2006 DF 1:1	DTP-6 (2-4') E0451-05 4/10/2006 DF 1:1	DTP-8 (1-3') E0451-03 4/11/2006 DF 1:1	DTP-13 (0-1.5') E0451-01 4/11/2006 DF 1:1	DTP-14 (1.5-3') E0451-04 4/11/2006 DF 1:1	NYSDEC BCP Track 2 Restricted Use Soil Cleanup Objectives (Commercial) *
Metals (mg/kg)								
Arsenic	**24.2 ****	**72.4 ****	**17.6 ****	14.7 **	14.3 **	10.6 **	6.8 **	16 [a]
Barium	207	120	287	104	110	112	110	400
Cadmium	0.75 E **	0.12 BE **	0.27 BE **	0.21 BE **	ND	0.051 BE **	ND	9.3
Chromium	25.5	25.2	29.2	20.9	16.2	20.9	17.3	1500 [b]
Lead	554 E **	488 E **	679 E **	492 E **	426 E **	386 E **	522 E **	1000
Selenium	1.5	6.4	1 B	0.39 B	1.4	ND	0.67 B	1500
Silver	ND	ND	ND	ND	ND	ND	ND	1500
Mercury	2 N	2.5 N	**3 N**	2.5 N	2.6 N	**2.9 N**	1.7 N	2.8 [c]
Cyanide	NA	NA	**95.6**	NA	11.6	21.4	NA	27 [b]

Notes:

B - Indicates the analyte was found in the blank as well as the sample; report as "12B".

H - Parameter analyzed outside of hold time

N - Matrix spike recovery falls outside of the control limit.

E - Indicates the analyte's concentration exceeds the calibrated range of the GC/MS instrument for that specific analysis.

DF - Dilution Factor e.g., 10:1.

NA - Not Analyzed

ND - Not Detected at the Reporting Limit.

NS - No Standard.

Note - Numbers in bold exceed the Track 2 soil cleanup objective(s).

a - For consituents where the calculated SCO was lower than the rural soil background concentration as determined by the DEC/DOH rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

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

c - This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts) (refer to NYSDEC TSD table 5.6-1).

* - NYSDEC Brownfield Cleanup Program (BCP) Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health under restricted commercial scenarios (Track 2) (as per NYSDEC Revised Public Review Draft Brownfield Cleanup Program Guide, dated June 2006) cleanup criteria.

** - Relative Percent Difference for duplicate analyses is outside of the control limit.

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Hunt's Point Site E OU 2
Coal Tar Delineation
Heavy Metals Data Summary
April 2006

Sample ID Lab Sample ID Date Sampled	DTP-18 (2-3.5') E0466-03D 4/12/2006 DF 1:1	DTP-19 (5-6') E0466-05A 4/12/2006 DF 1:1	DTP-20 (3-4') E0466-04D 4/12/2006 DF 1:1	DTP-21 (2-4') E0466-06D 4/12/2006 DF 1:1	DTP-22 (0-3') E0466-02D 4/13/2006 DF 1:1	DTP-24 (0-4') E0466-01D 4/13/2006 DF 1:1	NYSDEC BCP Track 2 Restricted Use Soil Cleanup Objectives (Commercial) *
Metals (mg/kg)							
Arsenic	9.8	8.9	8.3	9.4	11.5	11.5	16 [a]
Barium	98.4	129	150	60.8	197	110	400
Cadmium	ND	0.23	0.19 B	ND	0.67	0.14 B	9.3
Chromium	17.3	19.7	23.4	6.4	21.2	19.3	1500 [b]
Lead	216	363	600	94.1	452	385	1000
Selenium	0.48 B	ND	ND	1.9	0.41	0.15 B	1500
Silver	ND	ND	ND	ND	ND	ND	1500
Mercury	1	0.92	2.5	0.32	0.78	0.69	2.8 [c]
Cyanide	14.9	NA	22 H	5.2	2.5	NA	27 [b]

Notes:

B - Indicates the analyte was found in the blank as well as the sample; report as "12B".

H - Parameter analyzed outside of hold time

N - Matrix spike recovery falls outside of the control limit.

E - Indicates the analyte's concentration exceeds the calibrated range of the GC/MS instrument for that specific analysis.

DF - Dilution Factor e.g., 10:1.

NA - Not Analyzed

ND - Not Detected at the Reporting Limit.

NS - No Standard.

Note - Numbers in bold exceed the Track 2 soil cleanup objective(s).

a - For consituents where the calculated SCO was lower than the rural soil background concentration as determined by the DEC/DOH rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

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

c - This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts) (refer to NYSDEC TSD table 5.6-1).

* - NYSDEC Brownfield Cleanup Program (BCP) Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health under restricted commercial scenarios (Track 2) (as per NYSDEC Revised Public Review Draft Brownfield Cleanup Program Guide, dated June 2006) cleanup criteria.

** - Relative Percent Difference for duplicate analyses is outside of the control limit.

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Hunt's Point Site E OU 2
Coal Tar Delineation
Pesticide and Polychlorinated Biphenyl Data Summary
April 2006

Sample ID Lab Sample ID Date Sampled	DTP-2 (7-7.5') E0451-07A 4/10/2006	DTP-4 (3-5') E0451-06A 4/10/2006	DTP-5 (3-4') E0451-02A 4/10/2006	DTP-6 (2-4') E0451-05A 4/10/2006	DTP-8 (1-3') E0451-03A 4/11/2006	DTP-13 (0-1.5') E0451-01A 4/11/2006	DTP-14 (1.5-3') E0451-04A 4/11/2006	NYSDEC BCP Track 2 Restricted Use Soil Cleanup Objectives (Commercial) *
Pesticides (mg/kg)	DF 1:1	DF 10:1	DF 10:1	DF 10:1	DF 5:1	DF 5:1	DF 5:1	
beta-BHC	ND	ND	ND	ND	0.015 P	ND	ND	3
Heptachlor epoxide	ND	ND	ND	0.025 P	ND	ND	0.017	15
Dieldrin	ND	0.046 P	ND	ND	ND	ND	ND	1.4
4,4-DDE	ND	ND	ND	0.14 P	0.042 P	0.028 P	ND	62
4,4-DDD	0.017 P	ND	0.19 P	0.53 P	0.22 P	ND	0.033 P	92
Endosulfan sulfate	0.005	0.061	ND	0.18 P	0.091	0.063 P	ND	200 [a]
4,4-DDT	0.012	0.1	0.7	0.16 P	0.12	0.11 P	0.045	47
Methoxychlor	ND	ND	ND	ND	ND	ND	0.56	NS
Endrin ketone	0.013	ND	0.11	0.18 P	0.25	0.088 P	0.05	NS
Endrin aldehyde	0.0062	ND	ND	ND	ND	ND	ND	NS
gamma-Chlordane	0.0044 P	0.063 P	ND	0.15 P	0.056 P	0.036 P	0.032 P	NS
PCBs (mg/kg)	DF 1:1	DF 1:1	DF 1:1	DF 1:1	DF 1:1	DF 1:1	DF 1:1	
Aroclor-1254	0.084	0.6 P	0.4 P	0.61 P	0.66 P	0.44 P	0.76	1
Aroclor-1260	0.064	0.53	0.41	0.4 P	0.66	0.22 P	0.29 P	1

Notes:

P - Pesticide/Aroclor target analyte has > 25% difference for the detected concentrations between the two GC columns.
E - Indicates the analyte's concentration exceeds the calibrated range of the GC/MS instrument for that specific analysis.
DF - Dilution Factor (e.g., 10:1)
ND - Not Detected at the Reporting Limit.
NS - No Standard.
Note - Numbers in bold exceed the Track 2 soil cleanup objective(s).
a - The SCOs for commercial use were capped at a maximum value of 500 ppm (refer to NYSDEC TSD Section
b - This SCO is for the sum of Endosulfan I, Endosulfan II and Endosulfan Sulfate.
* - NYSDEC Brownfield Cleanup Program (BCP) Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health under restricted commercial scenarios (Track 2) (as per NYSDEC Revised Public Review Draft Brownfield Cleanup Program Guide, dated June 2006) cleanup criteria.

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Hunt's Point Site E OU 2
Coal Tar Delineation
Pesticide and Polychlorinated Biphenyl Data Summary
April 2006

Sample ID Lab Sample ID Date Sampled	DTP-18 (2-3.5') E0466-03D 4/12/2006	DTP-19 (5-6') E0466-05A 4/12/2006	DTP-20 (3-4') E0466-04D 4/12/2006	DTP-21 (2-4') E0466-06D 4/12/2006	DTP-22 (0-3') E0466-02D 4/13/2006	DTP-24 (0-4') E0466-01D 4/13/2006	NYSDEC BCP Track 2 Restricted Use Soil Cleanup Objectives (Commercial) *
Pesticides (mg/kg)	DF 5:1	DF 5:1	DF 5:1	DF 5:1	DF 5:1	DF 5:1	
beta-BHC	0.018 P	ND	ND	ND	ND	ND	3
Heptachlor epoxide	0.045	0.014 P	0.048	ND	ND	ND	15
Dieldrin	ND	ND	ND	ND	ND	ND	1.4
4,4-DDE	ND	ND	0.069	ND	ND	ND	62
4,4-DDD	0.11 P	0.14 P	0.096 P	0.16 PE	ND	0.04 P	92
Endosulfan sulfate	ND	ND	ND	0.023	0.032 P	0.039 P	200 [a]
4,4-DDT	0.033 P	0.084	0.18	0.038	0.032 P	0.029	47
Methoxychlor	0.21 P	0.25	ND	0.11 P	ND	ND	NS
Endrin ketone	0.072	0.038 P	ND	ND	0.043	0.071 P	NS
Endrin aldehyde	0.036 P	ND	ND	0.024 P	ND	ND	NS
gamma-Chlordane	0.082 P	0.032 P	0.083 P	ND	0.032 P	0.033 P	NS
PCBs (mg/kg)	DF 1:1	DF 1:1	DF 5:1	DF 1:1	DF 1:1	DF 1:1	
Aroclor-1254	0.28	0.39	**3.4**	ND	0.2	0.32	1
Aroclor-1260	0.15	0.42	**1.4**	ND	0.12	0.13 P	1

Notes:

P - Pesticide/Aroclor target analyte has > 25% difference for the detected concentrations between the two GC columns.
E - Indicates the analyte's concentration exceeds the calibrated range of the GC/MS instrument for that specific analysis.
DF - Dilution Factor (e.g., 10:1)
ND - Not Detected at the Reporting Limit.
NS - No Standard.
Note - Numbers in bold exceed the Track 2 soil cleanup objective(s).
a - The SCOs for commercial use were capped at a maximum value of 500 ppm (refer to NYSDEC TSD Section 5
b - This SCO is for the sum of Endosulfan I, Endosulfan II and Endosulfan Sulfate.
* - NYSDEC Brownfield Cleanup Program (BCP) Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health under restricted commercial scenarios (Track 2) (as per NYSDEC Revised Public Review Draft Brownfield Cleanup Program Guide, dated June 2006) cleanup criteria.

thermally treated. Any TCLP testing for disposal will be performed post-excavation when material is fully stockpiled.

Volatile Organic Compounds (VOCs): Of the 13 test pit soil samples collected, only one sample was found to contain concentrations of Benzene above NYSDEC BCP Track 2 SCOs (DTP-4). Most of the test pit soil samples submitted for analysis for VOCs had to be diluted because of the heightened concentrations of Naphthalene.

Semi-Volatile Organic Compounds (SVOCs): Of the 13 test pit samples and 7 additional reanalysis of selected samples, all samples were found to contain concentrations of several compounds in exceedence of NYSDEC BCP Track 2 SCOs. The compounds exhibiting the highest concentrations in exceedence of the SCOs included Naphthalene, Phenanthrene, Flouranthene, Benzo(a)anthracene, Chrysene, Benzo(b)anthracene, Benzo(k)anthracene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene and Dibenzo(a,h)anthracene. The samples containing the highest total SVOC concentrations (DTP-4, DTP-6, DTP-13, DTP-22 and DTP-24) were located in areas containing either purifier waste or visibly impacted soil.

Diesel range organics (DROs) and gasoline range organics (GROs) were also ran to provide background for some potential disposal options. The analytical results did not indicate the petroleum content would be overly restrictive for material disposal.

RCRA Metals (Metals): Of the 13 samples, 4 were reported to contain metals above the NYSDEC BCP Track 2 SCOs. Arsenic, Mercury and/or Cyanide concentrations exceeded Track 2 thresholds in samples DTP-2, DTP-4, DTP-5 and DTP-13.

Pesticides/PCBs: Of the 13 samples analyzed for PCBs, only one sample (DTP-20) was found to contain concentrations in exceedence of NYSDEC BCP Track 2 SCOs. Aroclor-1254 and Aroclor-1260 were detected at concentrations of 3.4 and 1.4 mg/kg, thus exceeding the SCOs of 1 mg/kg. Although detectable levels of PCBs were obtained in other samples, no other locations exhibited concentrations in exceedence. All of the 13 samples analyzed for Pesticides were found to contain concentrations well below NYSDEC BCP Track 2 SCOs.

REMEDIAL WASTE REMOVAL

Removal Delineation and Feasibility

Two types of waste (purifier and coal tar) are targeted for excavation, removal and treatment from Site E OU-2 to complete the proposed IRM. These areas targeted include all areas identified as areas of concern during the site investigation and waste delineation activities. The determining factors used in this recommendation are based upon conditions and actions that have already been established on previously remediated VCP sites at Hunts Point. Essentially, pockets of waste that are thick enough and continuous, as well as being at a depth where they could be removed without impacting the subsurface clay layer are targeted for removal.

Two purifier waste lenses were encountered. Both deposits were measured to be between 0.5 and 1 foot thick. Removal for buried waste deposits less than approximately 6 inches thick has not been effective and mixes additional fill material that is not proposed for excavation. The removal of waste that is approximately 1 foot thick and meets the conditions described previously is proposed to be targeted for removal. The conditions of the perched and discontinuous water table at this site will also be evaluated during excavation. This is expected to impact the removal of the areas of purifier waste. Essentially, the same procedure that was used during the removal of purifier waste at Site B (Fish Market) will be employed. Based on the area and expected thickness of the purifier waste deposits, it is expected that approximately 990 cubic yards of this material will be removed (refer to Figure 8).

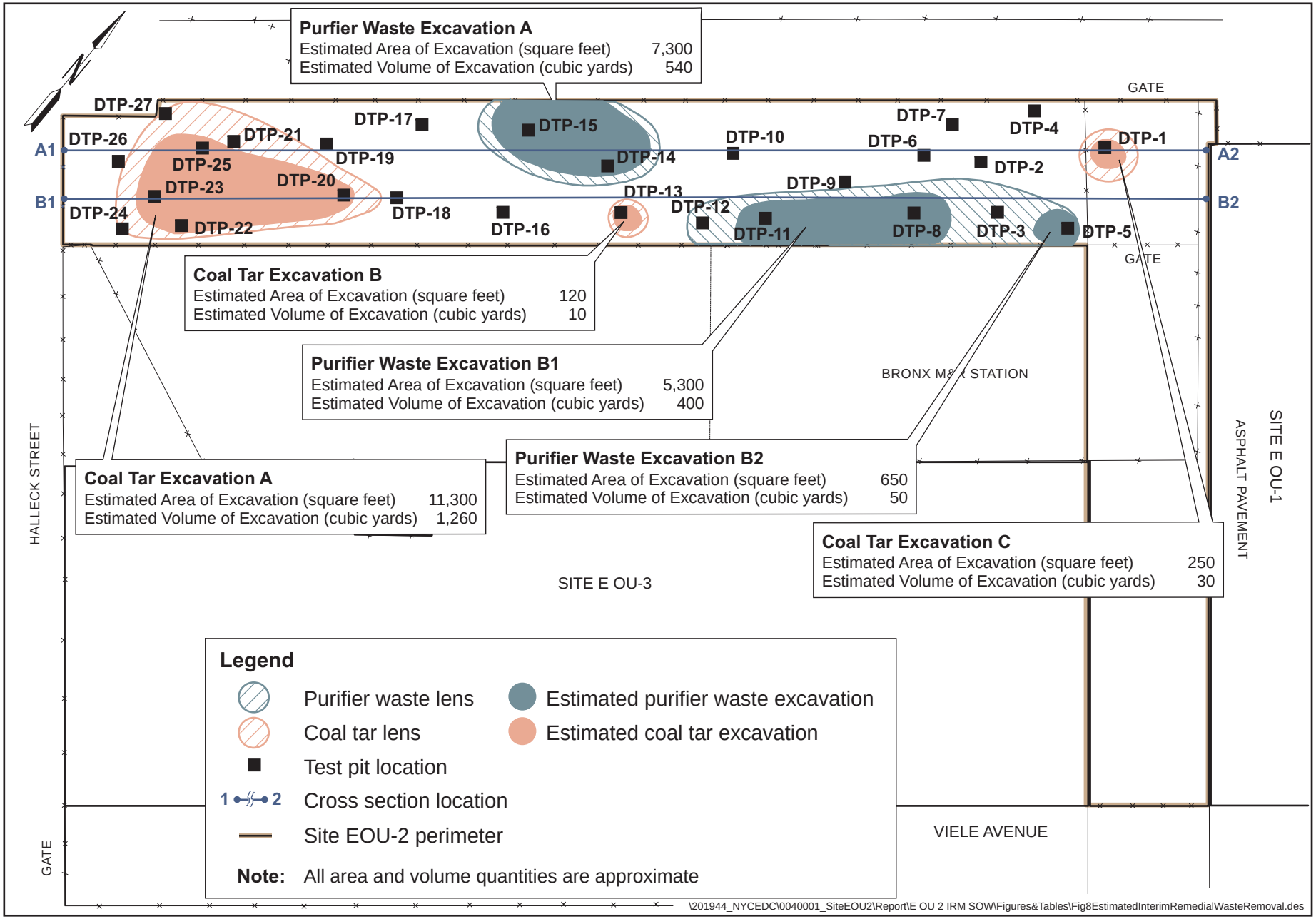
Coal tar was (in-situ) encountered in three areas across the Site. Each of these three coal tar areas are proposed to be removed for treatment and disposal. Excavation in the two smaller areas and a portion of the larger area may occur partially beneath the shallow water table. During the excavation if material is removed beneath the water table it will be temporarily set on the site of the excavation to allow for free water to drain back into the excavation. Efforts at removing coal tar from just below the perched water table have met with reasonable success in several previous Hunts Point VCP remediation efforts. The removal will not extend into the underlying clay deposit of the three lenses and is targeted to excavate and remove off-Site the cohesive portions of fill that have been combined with coal tar.

The largest exists along the western portion of the Site (Coal Tar Lens A), with an approximated area of 18,600 square feet. The second largest coal tar lens was identified near the eastern perimeter of the Site (Coal Tar Lens C), with an approximated area of 1,250 square feet. The smallest coal tar lens was identified along the central portion of the site (Coal Tar Lens B), with an approximated area of 700 square feet (refer to Figure 8).

The following are the calculated estimated volumes of each of the different excavation locations, referenced in Figure 8:

Coal Tar Lens A (western portion of E OU-2)	1,260	cubic yards
Coal Tar Lens B (central portion of E OU-2)	10	cubic yards
Coal Tar Lens C (eastern portion of E OU-2)	30	cubic yards
Purifier Waste Lens A (central portion of E OU-2)	540	cubic yards
Purifier Waste Lens B (eastern portion of E OU-2)	450	cubic yards
Total	2,290	cubic yards

Delineation sample DTP-4, taken 3 to 5 feet below ground surface, exhibited a single VOC concentration in exceedence of the Track 2 threshold for Benzene (71 ppm). As per the field log completed during the time of the delineation test pit excavation, the material found at that interval is an unconsolidated mixture of slag, cinders and small amounts of what appeared to be solidified coal tar. As the target of this IRM is the excavation of coal tar and



Henningson, Durham & Richardson
Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.
One Blue Hill Plaza
Pearl River, NY 10965

Estimated Interim Remedial Waste Removal

Hunts Point • Site E OU-2

Figure 8

purifier waste and since this material only contained small amounts of coal tar, this mixture is being added to the excavation.

The final quantity of waste will vary depending upon the expansion, thickness, and the relative percentage of coal tar in the surrounding fill matrix. Disposal of this classification of material is performed by weight (tons) rather than by volume. The total estimated tons expected for removal are based on the 2,290 cubic yards of in-situ material. The fill is then estimated to weigh 1.5 to 1.7 tons per yard depending on moisture and general composition. This will equal between 3,435 to 3,893 tons.

Waste material (coal tar and purifier) will be thermally treated prior to disposal. Coal tar that has been thermally treated (incinerated) requires the residual ash and granular matrix to be disposed of at an appropriate solid waste facility. Purifier material will also be thermally treated. In some cases, metals will be extracted from the residual ash should a sufficient quantity be recovered.

The removal of waste from the site will be evaluated based on the type of facilities permitted to accept this specific material. In previous removal actions, coal tar and purifier wastes were brought to facilities that performed various types of thermal treatment. As previously mentioned, NYSDEC Division of Environmental Remediation DER-8 (TAGM 4060) allows for treatment of coal tar waste to be performed and this also exempts this category of waste from being characteristic hazardous waste based on the benzene concentration.

If during the removal of coal tar, additional fill material is determined to be saturated with other petroleum material (petroleum saturated fill was not encountered in the delineation), then this will also be excavated and stockpiled with the coal tar material. HDR|LMS will document the removal locations by using Global Positioning Satellite (GPS).

The proposed future use of Parcel E OU-2 will be as a paved parking lot associated with the overall Site E OU-3 redevelopment for use as a food distribution facility. The site will require typical upgrades and the installation of utilities including drainage, fencing, entrance and exit cuts and lighting. There are currently no plans for structures or enclosed buildings on Site E OU-2. The removal of the coal tar from this area is based on the need to provide a stable ground surface in addition to removal of as much of the concentrated MGP waste as feasibly possible. The removal is expected to extend into the shallow saturated zone only in several locations as the vast majority of the waste was encountered above groundwater.

Removal of purifier waste will still be performed on areas where the layer can be removed without including significant amounts of fill material. The primary reason for removal of this material will be to prevent exposure to workers during construction and installation of utilities. Based upon field observations during the waste delineation activities, the two purifier waste lenses were seen as existing just at the water table and/or measuring 12 inches or less. In the event purifier material is encountered significantly beneath the water table or it cannot be segregated without including significant additional fill material, it will be marked and left in place. The Site Management Plan and Site Health and Safety Plan will address post

redevelopment exposure hazards and hazard avoidance pertaining to possible future intrusive work involving any residual material.

Any remaining residual material will be encapsulated by the final engineering surface on the site which will include a bituminous paved parking lot. The material used to make asphalt will contain significant quantities and percentages of petroleum hydrocarbons and many of the same compounds bound up in the coal tar will also be built into the asphalt matrix. This allows the parking lot to effectively encapsulate any residual material below the surface and prevent exposure in the future. The encapsulation of residual waste and historic fill will significantly reduce further contact of precipitation with the fill material, preventing migration downward through the soil column. The goal of the removal will be to excavate identified coal tar material that is present in an amount that could liquefy and cause soft areas in the parking lot or actually erupt at the surface.

Excavation, Removal and Disposal Activities

Prior to site entry, HDR|LMS will submit for approval to the NYSDEC and NYSDOH a Site-Specific Health and Safety Plan (HASP) and Community Air Monitoring Plan (CAMP). A comprehensive project schedule including all IRM activities will be provided as soon as the information becomes available. Prior to excavation commencing, HDR|LMS will mark-out / flag the approximate excavation limitations based upon GPS coordinates obtained during the waste delineation activities. Excavations will be performed by a 40-hour OSHA trained operator using a tire or track-mounted backhoe/excavator.

During excavation activities, all inspection of material will occur from outside the excavation pit. HDR|LMS will monitor and log each excavation operation with a combustible gas indicator (CGI) and either a photo-ionization detector (PID), or flame-ionization detector (FID). Readings will be collected according to depth and location in the excavations and will be used to reconstruct a subsurface profile of the Site. Material that is excavated above water and is intended to be placed back in the excavation will be stockpiled adjacent or as near the excavation as possible. It is expected that this will be removed in increments until the depth of the waste material is encountered. Waste will be removed and stockpiled separately at a location to be determined in the field. The location will be chosen based upon site conditions at the time of the removal, however it is anticipated that a section of the exposed historic paved surface will provide a level supporting location. The temporary storage area will be underlain and covered with polyethylene sheeting. The edges of the polyethylene sheeting in each storage area will be weighed down to ensure the cover will not be accidentally removed. The sheeting will sufficiently prevent the waste from directly contacting the staging area. At the end of each workday, the stockpiles will be surrounded by silt fencing. As work progresses, it is anticipated that separate piles will be created in order to allow for disposal sampling to be conducted. Pile size will be determined in the field based on a combination of logistical access, equipment reach, and disposal facility sampling frequency requirements. Once it has been determined that no further material should be added to a particular pile, classification/disposal samples will be collected according to disposal facility requirements. The pile will be covered and given a specific identification (numerical). Piles will be secured with a polyethylene cover in such a way as to prevent wind and rain from contacting and causing the waste to wash or blow across the site.

Excavations will continue to a point at which no additional waste can be reasonably segregated from the surrounding fill material, as described previously. If an excavation area is to remain open and not backfilled, yellow tape or some other marking instrument will be placed around the perimeter of the area. When conditions at a specific location are completed, the area will be photographically documented and the limits will be recorded with GPS. NYSDEC will be contacted with a basic description of the completed work for that location (approximate area, volume, depth, conditions, any changes from initial and/or sampling plans).

End point samples will be collected at each excavation to document conditions of the material remaining in that area. Sample quantity and depth collected from each excavation pit will vary as dimensions of each excavation can not be determined prior to their completion. The basic proposed plan for sampling will be the collection of at least four (4) sidewall samples from the depth covering the corresponding waste material at the location in the excavation. If groundwater is not present in the excavation two (2) bottom samples will also be collected. It is not proposed that groundwater samples be collected from standing water in excavations as this water has been mixed and in contact with waste that has been removed. It has been determined from previous excavations at other VCP sites in the Hunts Point peninsula that when the excavation has been left exposed to the atmosphere for a short period of time (several days) residual VOCs resulting from the excavation disturbance are volatilized. If the excavations are larger in area than initially determined, HDR|LMS, NYCEDC and NYSDEC will discuss and determine the approximate number of samples to document conditions.

Upon completion of stockpiling and conditions sampling, the stockpiled fill material may be placed back in the excavations. During the waste removal, the following materials will not be permitted to be backfilled:

- Organic matter such as wood, roots, or stumps;
- Waste tires;
- Scrap metal;
- Latex paints;
- Furniture and toys;
- Domestic refuse;
- Discarded appliances;
- Vehicles;
- Empty aerosol cans and paint cans; and
- Compressed gas cylinders.

The conditions of the site that were discovered during the delineation activities indicated fill of varying condition and composition located across the site. Therefore, it is not proposed that specific effort be taken when staging excavated material for backfill so that the material is returned to the same location in the excavation from where it was removed. If there are areas of standing water in excavations, HDR|LMS proposes to backfill with a layer of imported non-regulated material that will have a larger grain size in comparison to what was removed. Material similar to recycled concrete will be acceptable provided it is imported from a NYSDEC solid waste registered facility. Use of this material in saturated zones or zones with standing water will allow drainage to occur rather than the creation of soft areas that will settle at a later date.

Post-Removal Activities

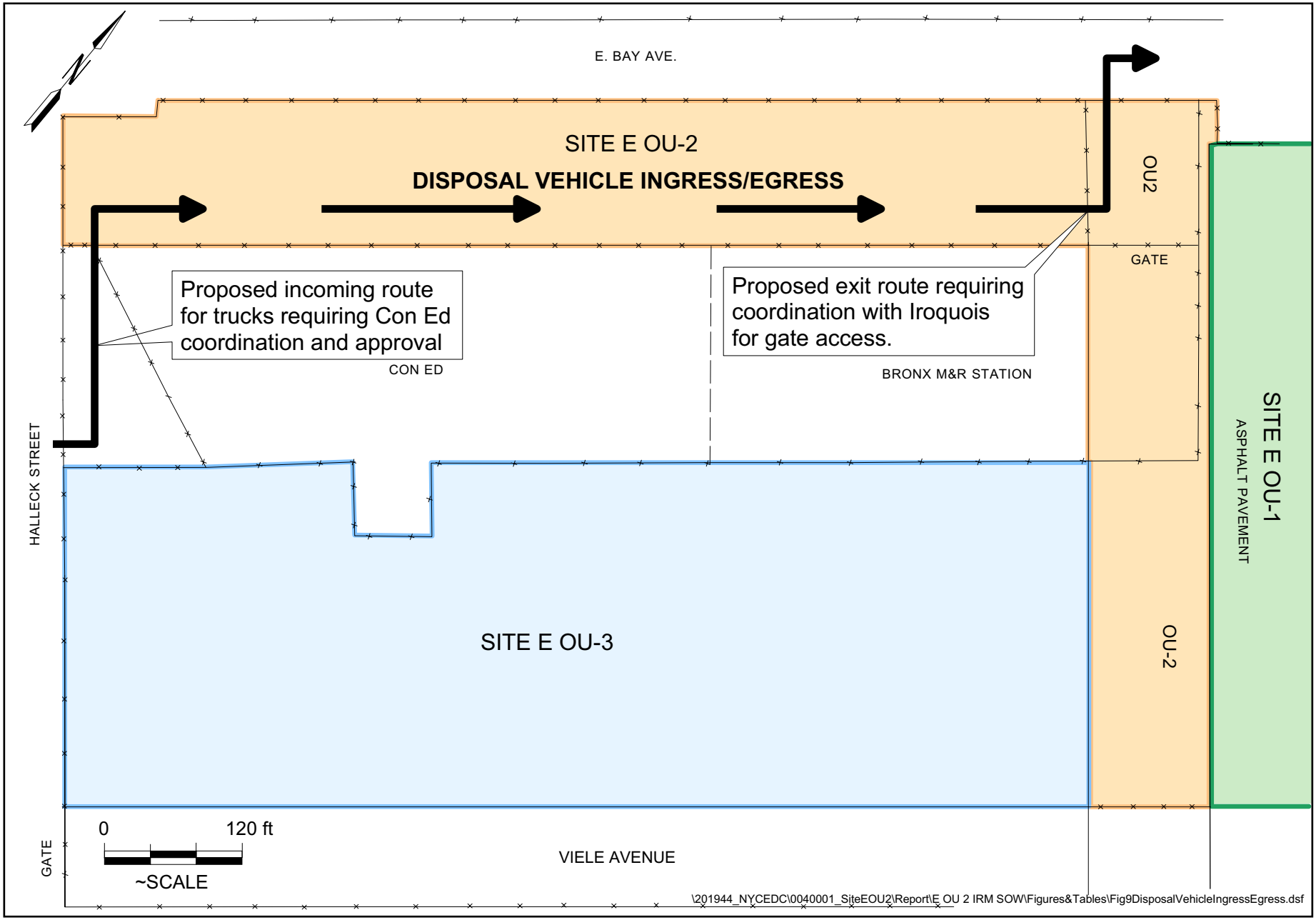
Following removal and stockpiling of the source material from the excavations, the balance of the material will be placed back into the excavation. Understanding that additional material is necessary for the final development of the Site, HDR|LMS is not proposing to bring in fill to replace what is removed for disposal. The remaining backfill will be placed in the excavation as evenly as possible. HDR|LMS's subconsultant performing the excavation operations will be responsible for the erection of yellow warning tape around the post-excavation areas. Upon receipt of the analytical results the material will be loaded onto properly licensed and permitted vehicles and then transported to the final disposal facility. Prior to the commencement of site work, an area where gravel or recycled concrete will be identified. This area will be used for the inspection of disposal vehicles for both tight-fitting covers and to assure that materials from the site will not be taken onto public roadways via tire tracks or overfill before leaving the site. If a vehicle is determined to require washing prior to departing from the site, a truck wash will be erected. Each load of material from a specific pile will be logged and a weight ticket will be submitted from the accepted treatment/disposal facility. Figure 9 shows the proposed disposal vehicle ingress and egress routes from the site.

HDR|LMS will review permits, sampling frequency and requirements from submitted disposal facilities and based on the criteria that will be the basis for the decision, one or more facilities will be chosen. HDR|LMS will maintain the file for this material and this information will be provided in the Interim Remedial Action Report.

When the material has been removed HDR|LMS will prepare an Interim Remedial Report. The report will be submitted in both hardcopy and in digital format on compact disk to NYSDEC and NYSDOH. The report will outline the following items:

- Figures showing excavations with dimensions, piles, structures, and conditions encountered
- Pile locations, dimensions, sample locations, designation, and results
- Copies of disposal documentation, manifests, weigh tickets (if applicable)
- Written description of the procedure, conditions, or changes

The Interim Remedial Report will precede the Final Engineering Report relating to the overall parking lot construction and site redevelopment.



HDR | LMS Henningson, Durham & Richardson Architecture and Engineering, P.C. in association with HDR Engineering, Inc. One Blue Hill Plaza Pearl River, NY 10965	**Disposal Vehicle Ingress/Egress** **Hunts Point • Site E OU-2**	**Figure 9**

APPENDIX A

HDR|LMS HEALTH AND SAFETY PLAN (HASP)

PROJECT SPECIFIC HEALTH AND SAFETY PLAN

For

INTERIM REMEDIAL MEASURES

On behalf of the

New York City Economic Development Corporation

At

OPERABLE UNIT 2 PORTION OF PARCEL E
HUNTS POINT FOOD DISTRIBUTION CENTER
BRONX, NEW YORK
NYSDEC VCP SITE NO. V00681-2

Dates in Effect
[*MONTH YEAR*] to [*MONTH YEAR*]

HDR | LMS
One Blue Hill Plaza, 12th Floor
Pearl River, New York 10965

Project Number
147-000000000040001-001

Table of Contents

SITE SPECIFIC HEALTH & SAFETY PLAN
TITLE PAGE
HDR|LMS

PROJECT NAME**: NYCEDC Hunts Point Site E OU 2**	PROJECT COMPANY: **HDR**|**LMS**
JOB SITE ADDRESS: **Not Available (southeast corner or Halleck St. & E Bay Av.)**	JOB NUMBER: **147-000000000040001-001**
PROJECT MANAGER: **Kevin P. McCarty**	PHONE NO. : **(845) 735-8300, extension 223**
SITE CONTACT: **Kevin P. McCarty or Stephanie C. Nakai**	PHONE NO. : **(845) 735-8300, extension 223 or extension 263**
(-) AMENDMENT NO. 0	

OBJECTIVES OF FIELD WORK:

Perform interim remedial contaminated soil/fill excavation and removal from site.

Field Activities Include but are not limited to:
1. Flagging of pre-determined remedial areas of excavation
2. Excavation of pre-determined remedial areas
3. Stockpiling of targeted excavated waste for pre-disposal testing
4. Endpoint soil sampling of each pre-determined remedial area of excavation
5. Backfilling of non-targeted material excavated from remedial area
6. Off-site removal and disposal of targeted excavated waste

SITE TYPE: *Check as many as applicable*

( ) Active	( ) Landfill	( ) Natural
(X) Inactive	( ) Uncontrolled	( ) Military
(X) Secure	**(X) Industrial**	( ) Other specify**:**
( ) Unsecured	( ) Residential	
( ) Enclosed space	( ) Well Field	

DESCRIPTION AND FEATURES: *Summarize below. Include principal operations and unusual features (containers, buildings, dikes, power lines, hills, slopes, rivers)*

The Site is located in the urbanized Hunts Point Food Distribution Center in Bronx, New York.

Intrusive sampling and physical inspection of material on the site took place 2005-2006. This phase consisted of installation of 10 test borings and excavation of 20 test pits. Samples from these areas were collected and submitted for analysis. It also included the installation of 2 groundwater piezometers and 7 shallow soil gas sampling points. The final phase was the collection and analysis of samples from the installed piezometers and gas points. It also included the collection of measurement points using a Global Positioning System (GPS) to accurately document the areas where sampling was conducted. Based upon March 16, 2006, comments received from NYSDEC on the Draft Investigative Report for E OU 2, HDR|LMS performed a coal tar waste delineation in April 2006 to supplement the results of the site investigation. Twenty-seven (27) test pits were installed.

Site E OU 2 can be described as an inverted and reversed “L” shaped site. The top section lies parallel and adjacent to the southern boundary of East Bay Avenue from the intersection of Halleck Street approximately 950 ft east. This is referred in this report to the northern portion of Site E OU 2. The bottom leg of the parcel begins at East Bay Avenue at the eastern end of the previously described “northern section” of E OU 2. It continues south approximately 600 ft. This is referred to in this Report as the southern portion of Site E OU 2.

No investigation was performed on the southern section of Site E OU 2 for this Report as this entire area was previously investigated, remediated and given sign off by NYSDEC and NYSDOH under the closure for Site E OU 1.

The results of the investigative tasks and laboratory analyses across the site show that the northern portion of the E OU 2 site contains a significant amount and variety of fill material. Some areas of the site contain mixed soil and demolition material while a significant portion of the remainder of the northern portion of the site contains coal cinders,

SITE SPECIFIC HEALTH & SAFETY PLAN
TITLE PAGE
HDR|LMS

ash, and slag believed to be from the coal gas production process. Several areas within the site contained residual coal tar in the shallow test pits and at the ground surface with boils visible along the southern fence line adjacent to the Con Edison compressor station.

There were a number of locations within the northern portion of the site that were found to contain coal ash that was heavily impacted with what appeared to be coal tar. These areas were identified in the test pitting and in several probes. The southern portion of Site E OU 2 was previously investigated during the initial site E OU 1 investigation and redevelopment of Site E OU 1. During the redevelopment there were several thousand yards of excess material excavated during the construction of the parking area of E OU 1 and that material was placed on the southern portion of E OU 2. This material was referred to in that report as the "berm". The berm amounted to several thousand yards that was relocated to Site A OU 2 to be used for replacement of material for a pending coal tar removal on Site A OU 2.

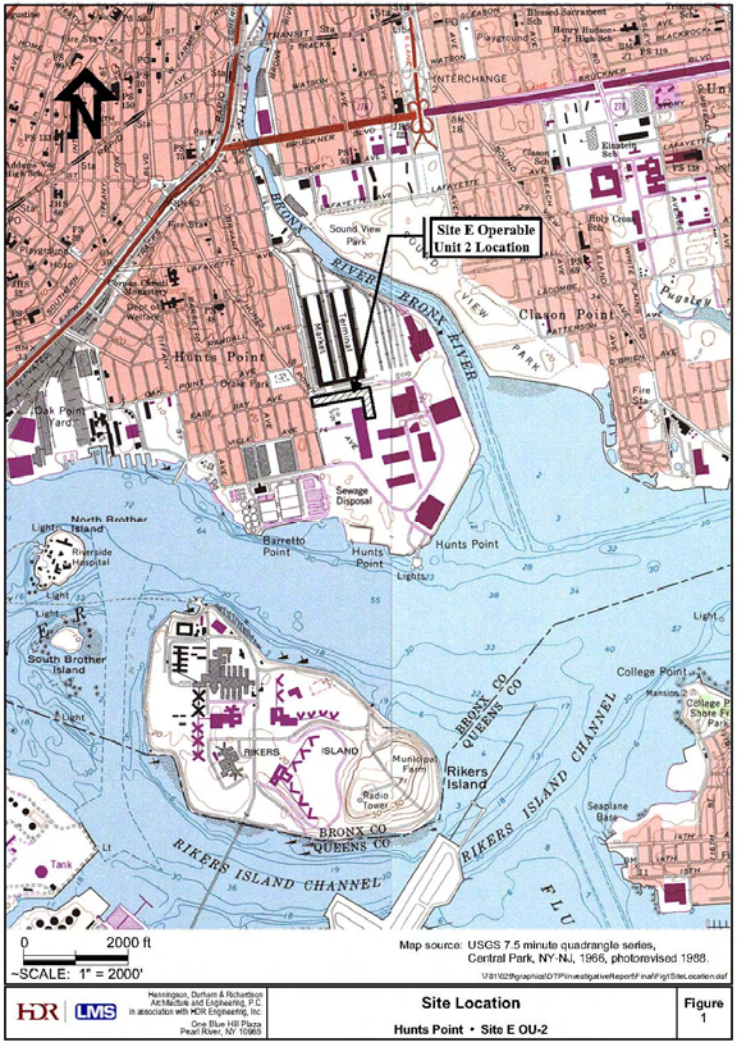
The northernmost section of this piece of E OU 2 lies between the Con Edison compressor site and E OU 1. This area is currently part of an existing right of way for the Iroquois gas pipeline entrance into the Con Edison compressor station. It is surrounded by 8 ft high chain link fences topped with razor wire and the entrance off East Bay Avenue is restricted by an 8 ft high chain link and razor wire topped gate. This area also had material placed on it during site E OU 1 redevelopment but after sampling and analysis, it was determined that some of the material was contaminated with PCBs at a level that required removal and special disposal. The area was delineated and a removal action was performed.

Following the removal and the completion of the Iroquois Gas pipeline project, this entire northerly portion (approximately 200 ft) of Site E OU 2 was paved and surrounded with security fencing, sealing it and, making it completely inaccessible.

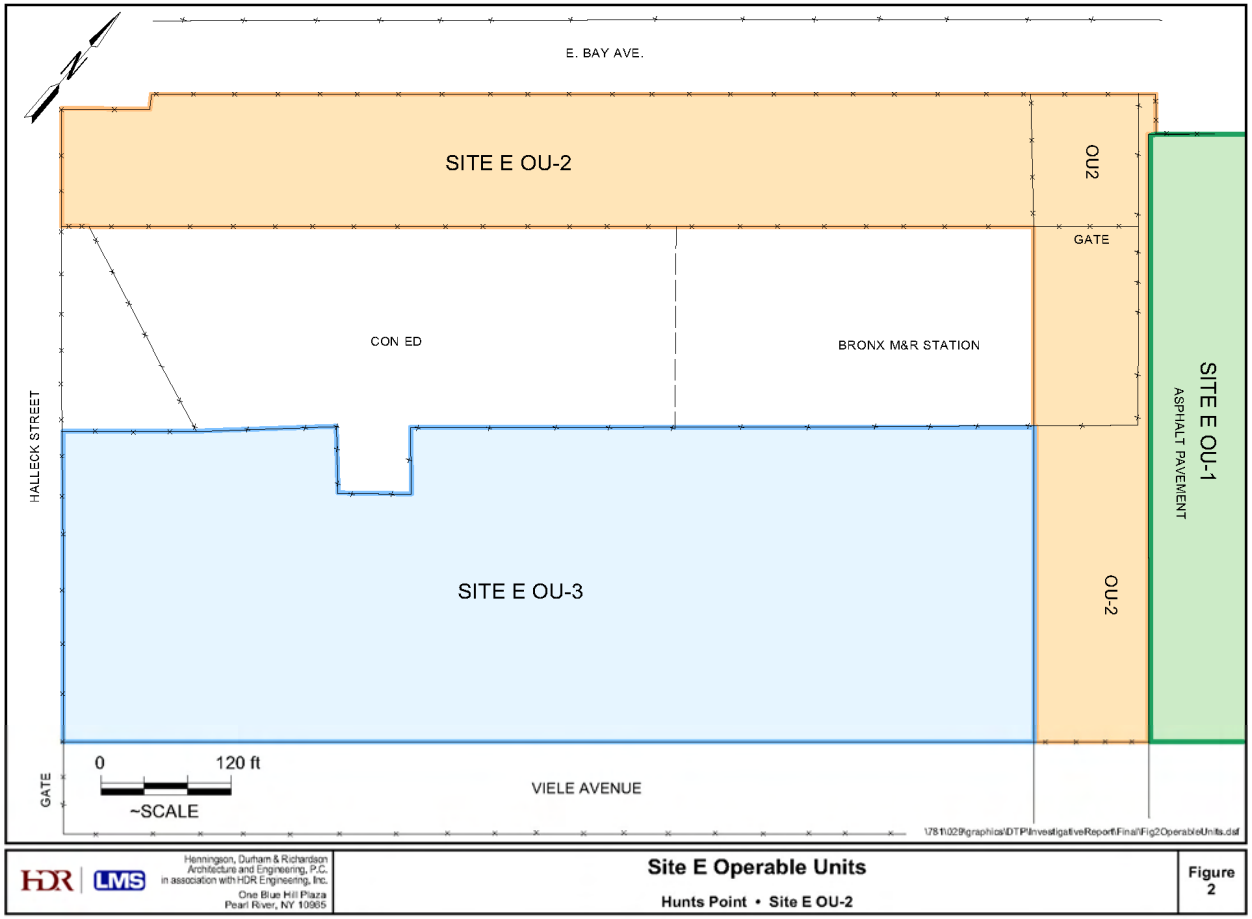
SURROUNDING POPULATION: ( ) Residential **(X) Industrial** ( ) Rural **(X) Urban** **(X) Commercial** ( ) Other:

SITE SPECIFIC HEALTH & SAFETY PLAN
SITE LOCATION PLAN / SITE SKETCH
HDR|LMS

Figure 1 contains the Site Location. Figure 2 contains the Parcel E Operable Unit divisions.



SITE SPECIFIC HEALTH & SAFETY PLAN
SITE LOCATION PLAN / SITE SKETCH
HDR|LMS



Note: The southern portion of Site E OU 2 was previously investigated during the initial site E OU 1 investigation and redevelopment of Site E OU 1. During the redevelopment there were several thousand yards of excess material excavated during the construction of the parking area of E OU 1 and that material was placed on the southern portion of E OU 2. This material was referred to in that report as the "berm". The berm amounted to several thousand yards that was relocated to Site A OU 2 to be used for replacement of material for a pending coal tar removal on Site A OU 2.

SITE SPECIFIC HEALTH & SAFETY PLAN
EMERGENCY CONTACTS & APPROVALS
HDR|LMS

EMERGENCY CONTACTS		**EMERGENCY CONTACTS**	**NAME**	**PHONE**
EPA Region II	(800) 227-8917	Project Manger	Kevin P. McCarty	(845) 735-8300, x223
State EPA Office	(518) 402-8559	Health and Safety Officers	John M. Guzewich Stephanie C. Nakai	(845) 735-8300, x252 (845) 735-8300, x263
Site Telephone	Not Available	State Spill		(845) 256-3000
Poison Control Center	(800) 522-6337	Fire Department		911
Continuum Health Care (Occupational Health Management)	1-800-229-3674 (ext. 440)	Police Department		911
National Response Center	(800) 424-8802	**Number of 24-Hour Ambulance:**		**911**
		Nearest Hospital Emergency Room Number:	St. Barnabus Hospital 1967 Turnbull Avenue Bronx, New York	(718) 409-2633

1. Evacuation Routes will be specified by the HSO and communicated to all personnel on site.
2. Personnel will evacuate under conditions specified by air monitoring or as directed by the HSO.
3. An INCIDENT REPORT form will be completed for all accidents (see Appendix A).

QA REVIEW: _____ Date: _____
HDR|LMS Office Safety Coordinator

HEALTH AND SAFETY PLAN APPROVALS

Project Manager: _____ Date: _____

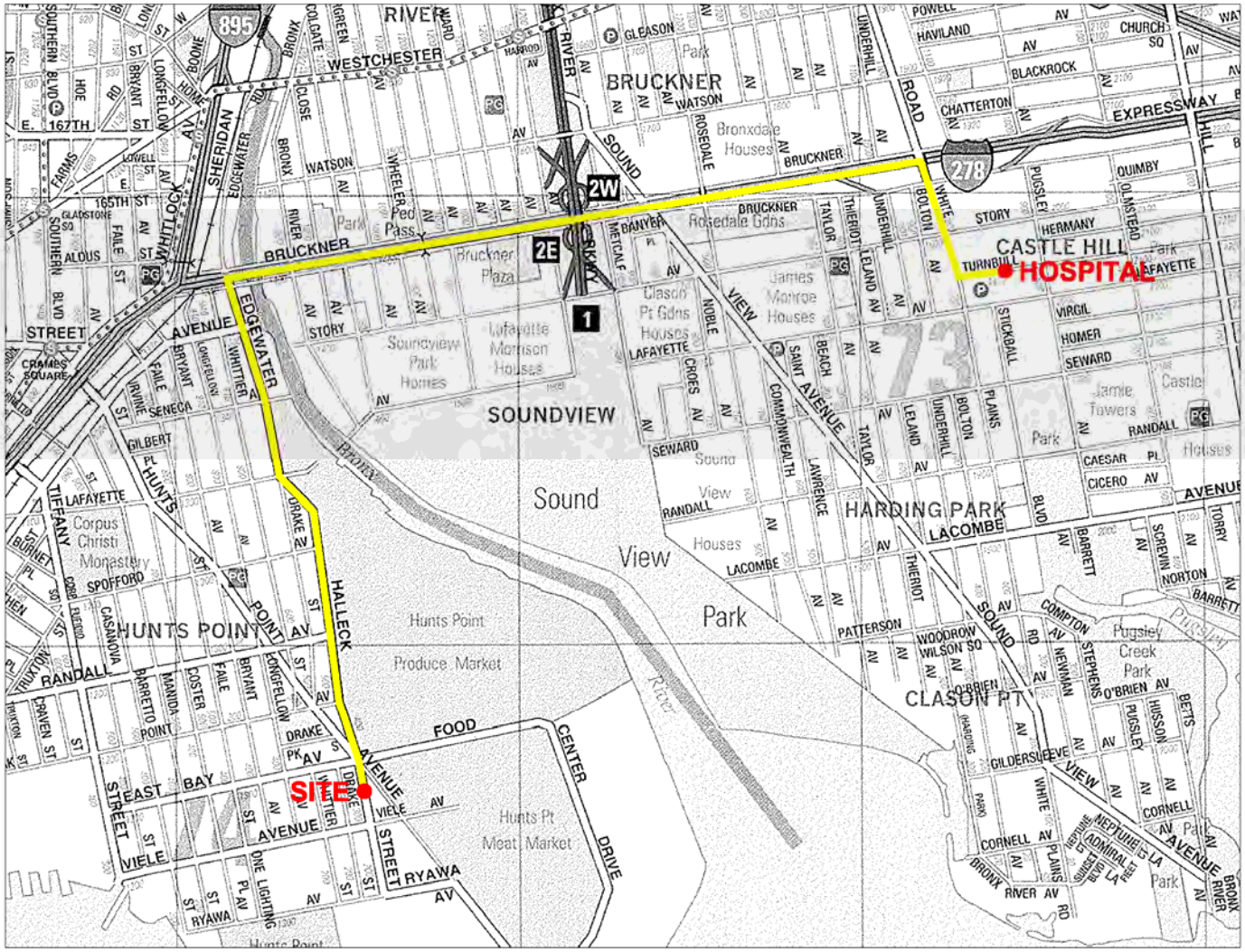
Site Health and Safety Officer _____ Date: _____

Route to Hospital is described on the following page with a map to the hospital on the next page.

SITE SPECIFIC HEALTH & SAFETY PLAN
HOSPITAL MAP ROUTE
HDR|LMS

Directions to St. Barnabus Hospital from the site:

1. Turn right onto Halleck Street
2. Go straight onto Edgewater Road
3. Turn right onto Bruckner Boulevard
4. Take I-278 East/Bruckner Expressway towards the Throgs Neck Bridge
5. Exit at White Plains Road / Castle Hill Avenue
6. Merge onto Bruckner Boulevard
7. Turn right onto White Plains Road
8. Turn left onto Turnbull Avenue.



SITE SPECIFIC HEALTH & SAFETY PLAN
HISTORY AND WASTE CHARACTERIZATION
HDR|LMS

HISTORY: Summarize site specific information below or attach information behind this page.

WASTE TYPES: **(X) Liquid (X) Solid (X) Sludge** ( ) Gas ( ) Unknown ( ) Other specify:

WASTE CHARACTERISTICS: Check as many as applicable.

( ) Corrosive ( ) Flammable ( ) Radioactive

(X) Toxic **(X) Volatile** ( ) Reactive

( ) Inert Gas ( ) Unknown ( ) Other specify:

WORK ZONES: Describe how the Exclusion, Contamination Reduction, and Support Zones will be delineated in terms that on-site personnel will recognize. Work zones will be shown on "WORK ZONE MAP PAGE."

1. Exclusion zone will be considered to be within 20 feet of the sampling location

HAZARDS OF CONCERN: Check as many as applicable.

(X) Heat Stress attach guidelines
( ) Cold Stress attach guidelines
(X) Explosive/Flammable
( ) Oxygen Deficient
( ) Radiological
( ) Biological

(X) Noise
(X) Inorganic Chemicals
(X) Organic Chemicals
(X) Motorized Traffic
(X) Heavy Machinery
(X) Slips, Trips & Falls

(X) Other:
- **First Aid/CPR**
- **Air Monitoring**
- **Personal Protective Equipment**

(X) Other specify: CONFINED SPACES WILL NOT BE ENTERED.
(If confined spaces are to be entered a specific confined space entry plan will be developed)

PRINCIPAL DISPOSAL METHODS AND PRACTICES: Summarize Site Specific Conditions Procedures Below:

All waste generated by Interim Remedial site activities shall be the full responsibility of the subconsultant retained by HDR|LMS.

SITE SPECIFIC HEALTH & SAFETY PLAN
HAZARDOUS MATERIALS SUMMARY
HDR|LMS

HAZARDOUS MATERIAL SUMMARY: Underline and bold waste type and estimate amounts by category (if possible)

CHEMICALS Amounts/Units:	SOLIDS Amounts/Units:	SLUDGES Amounts/Units:	SOLVENTS Amounts/Units:	OILS Amounts/Units:	OTHER Amounts/Units:
Acids	Fly ash	Paint	Halogenated (chloro, bromo) Solvents	**Oily Wastes**	Laboratory
Pickling Liquors	Asbestos	Pigments	**Hydrocarbons**	Gasoline	Pharmaceutical
Caustics	Milling/Mine Tailings	Metal Sludges	Alcohols	Diesel Oil	Hospital
Pesticides	Ferrous Smelter	POTW Sludge	Ketones	Lubricants	Radiological
Dyes/Inks	Non-ferrous Smelter	Aluminum	Esters	**PCBs**	Municipal
Cyanides	**Metals**	Distillation Bottoms	Ethers	**Polynuclear Aromatics**	Construction
Phenols	**Other:**	**Other:**	**Other:**	**Other:**	Munitions
Halogens	**- Solidified Coal Tar**	**- Malleable Coal Tar**	**- VOCs and SVOCs found in GW & soil samples**	**- Site former MGP plant**	Other
Dioxins	**- Coal/Coke Ash/Cinders**				Specify:
Other (Specify):	**- Purifier Waste**				

OVERALL HAZARD EVALUATION: ( ) High **(X) Medium** ( ) Low ( ) Unknown
JUSTIFICATION: Materials and operations on the site pose a moderate threat to site workers.

FIRE/EXPLOSION POTENTIAL: ( ) High ( ) Medium **(X) Low** ( ) Unknown

SITE SPECIFIC HEALTH & SAFETY PLAN
CHEMICAL HAZARD TABLE
HDR|LMS

KNOWN CONTAMINANTS	HIGHEST OBSERVED CONCENTRATION (specify units and media)	PEL/TLV ppm or mg/m^3 (specify)	IDLH ppm or mg/m^3 (specify)	SYMPTOMS/EFFECTS OF ACUTE EXPOSURE	PHOTOIONIZATION POTENTIAL
Benzene	71 ppm(S) (DTP-4 April 2006)	PEL: 1 ppm TLV: 0.5 ppm	500 ppm	Symptoms of acute overexposure include irritation of the eyes, nose, and respiratory tract, breathlessness, euphoria, nausea, drowsiness, headache, dizziness, and intoxication. Severe exposure may lead to convulsions and unconsciousness. Skin contact may cause a drying rash (dermatitis).	9.24
Naphthalene	2,000 ppm (S) (TP-C April 2005)	PEL: 10 ppm TLV: 10 ppm	500 ppm	**Inhalation:** Vapor inhalation causes headache, confusion, nausea, sometimes vomiting, loss of appetite, extensive sweating, dysuria (painful urination), hematuria (blood in the urine), and hemolysis (destruction of red blood cells). **Eye:** Irritation, conjunctivitis, and corneal injury upon prolonged contact. **Skin:** Irritation and hypersensitivity dermatitis. **Ingestion:** Unlikely. However, ingestion causes irritation of the mouth and stomach, hemolytic anemia with hepatic and renal lesions and vesical congestion, kidney failure, hematuria, jaundice, depression of CNS, nausea, vomiting, abdominal pain, blue face, lips, or hands, rapid and difficult breathing, headache, confusion, excitement, malaise, fever, perspiration, urinary tract pain, dizziness, convulsions, coma, and death. Symptoms may appear 2 to 4 hours after exposure.	Insufficient Data

NA = Not Available NE = None Established U = Unknown
S = Soil SW = Surface Water T = Tailings W = Waste SD = Sediment
A = Air GW = Groundwater SL = Sludge D = Drums OFF = Offsite

HAZARD COMMUNICATIONS STANDARD

A notebook containing this Site Specific Health and Safety Plan will be taken to the field with the crew and kept in the vehicle. A current inventory of chemicals to be brought on-site and appropriate MSDSs will accompany these chemicals in the vehicle.

SITE SPECIFIC HEALTH & SAFETY PLAN
TASK DESCRIPTION
HDR|LMS

FIELD ACTIVITIES COVERED UNDER THIS PLAN - **ATTACH ACTIVITY HAZARD ANALYSIS FOR EACH TASK**				HAZARD		
TASK DESCRIPTION/SPECIFIC TECHNIQUE-STANDARD OPERATING PROCEDURES/SITE LOCATION(Attach additional sheets as necessary)	Type	Primary	Contingency	SCHEDULE		
1 Mobilization / Site Preparation	Intrusive	A B C D	A B C D	Hi	Med	**Low**
	Non-intrusive	**Modified D**	**Exit Area**			**X**
2 Interim Remedial Waste Excavation/Stockpiling/Removal Observation	**Intrusive**	A B C D	A B C D	Hi	**Med**	Low
	Non-intrusive	**Modified D**	**Exit Area**		**X**	
3 Interim Remedial Waste Excavation Endpoint Sampling	**Intrusive**	A B C D	A B C D	Hi	**Med**	Low
	Non-intrusive	**Modified D**	**Exit Area**		**X**	
4 Demobilization	Intrusive	A B C D	A B C D	Hi	Med	**Low**
	Non-intrusive	**Modified D**	**Exit Area**			**X**

PERSONNEL AND RESPONSIBILITIES (Include subcontractors) Responsibilities and the reporting organizational structure are described on the following page.

NAME	**PHONE**	**DATE OF LAST TRAINING**	**DATE OF HEALTH CLEARANCE**	**RESPONSIBILITIES**	**ON-SITE? List task numbers**
Kevin P. McCarty	(845) 735-8300, ext. 223	11/12/2004	2002	PROJECT MANAGER	No
John M. Guzewich	(845) 735-8300, ext. 252	01/20/2006	-	HEALTH AND SAFETY OFFICER	No
Stephanie C. Nakai	(845) 735-8300, ext. 263	04/13/2007	08/18/2007	HEALTH AND SAFETY OFFICER, SITE COORDINATOR	Yes, Tasks 1-4

1. Site Safety and Health Personnel.

   The Site Health and Safety Officer (HSO), in conjunction with the Site Coordinator, ensures that the provisions of this HASP are adequate and implemented in the field. The Project Manager is to take all necessary actions to guarantee site safety. Changing field conditions may require decisions to be made concerning adequate protection programs and may require deviations or additions to this HASP. All deviations and/or additions must be documented and approved by the HSO on the DEVIATIONS AND ADDITIONS form, located in Appendix B. Personnel assigned as HSO must be experienced and meet the additional training requirements specified by OSHA in 29 CFR 1910.120 and this HASP. The HSO is also responsible for conducting site inspections on a regular basis to ensure the effectiveness of this plan.

2. Organizational Structure and Responsibilities.

   Briefly describe the responsibilities of all team members and denote the reporting structure.

   1. Project Manager
   - a. Overall responsibility for project schedule.
   - b. Develop cost estimates for work identified.
   - c. Identify scope of work and estimate schedule for work.
   - d. Determine the technical/field team.
   - e. Will not be on site.

   2. Site Coordinator (reports to "1" when "1" is on-site, otherwise in charge)
   - a. Enforce disciplinary action when unsafe acts or practices occur.
   - b. Grant permission for site access (including visitors, see Appendix C).
   - c. Designate site security.
   - d. Enforce the buddy system.
   - e. Attend all Site pre-entry safety briefings.
   - f. Serve as the facilitator of communications in emergencies.

   3. Site Health and Safety Officer (HSO) (Same as "2")
   - a. Maintain daily field log book and a health and safety file for the project.
   - b. Conduct safety meetings.
   - c. Monitor on-site hazards and conditions.
   - d. Enforce safety procedures.
   - e. Designate facilities, and equipment for health and safety.
   - f. Select, dispense, and ensure availability of Personal Protective Equipment (PPE).
   - g. Maintain copies of instrument operation manuals and maintain records of usage and calibration.
   - h. Periodically inspect PPE and ensure proper storage and maintenance.
   - i. Monitor for heat and cold stress.
   - j. Set up decontamination lines, control decontamination, prepare decontamination solutions, and monitor.
   - k. Train employees on emergency procedures and evacuation routes.
   - l. Control entry and exit at the Access Control Points.
   - m. Confirm an employee's suitability for work based on the physician's recommendation.

   4. Other On-Site Personnel (report to "2")

SITE SPECIFIC HEALTH & SAFETY PLAN
PPE BY TASK
HDR|LMS

PROTECTIVE EQUIPMENT: Specify by task. Indicate type and/or material as necessary. Use copies of this sheet if needed.

TASKS: **1** - 2 - 3 - 4 **(x) Primary**
LEVEL: A - B - C - D - Modified ( ) Contingency

Respiratory: (x) Not Needed
( ) SCBA, Airline:
( ) APR:
( ) Cartridge:
( ) Escape Mask:
( ) Other:

Head and Eye: ( ) Not Needed
(x) Safety Glasses
( ) Face Shield:
( ) Goggles:
(x) Hard Hat
( ) Other:

Boots: ( ) Not Needed
(x) Boots: Leather steel-toed work boots
( ) Over boots:
( ) Rubber:

Protective Clothing: (x) Not Needed
( ) Encapsulated Suit:
( ) Splash Suit:
( ) Apron
( ) Tyvek Coverall:
( ) Saranex Coverall:
( ) Cloth Coverall:
( ) Other:

Gloves: ( ) Not Needed
( ) Under gloves:
(x) Gloves
( ) Over gloves:

( ) Other - specify below:

TASKS: 1 - **2** - 3 - 4 **(x) Primary**
LEVEL: A - B - C - D - Modified ( ) Contingency

Respiratory: (x) Not Needed
( ) SCBA, Airline:
( ) APR:
( ) Cartridge:
( ) Escape Mask:
( ) Other:

Head and Eye: ( ) Not Needed
(x) Safety Glasses
( ) Face Shield:
( ) Goggles:
(x) Hard Hat
( ) Other:

Boots: ( ) Not Needed
(x) Boots: Leather steel-toed work boots
( ) Over boots:
( ) Rubber:

Protective Clothing: (x) Not Needed
( ) Encapsulated Suit:
( ) Splash Suit:
( ) Apron
(x) Tyvek Coverall - OPTIONAL
( ) Saranex Coverall:
( ) Cloth Coverall:
( ) Other:

Gloves: ( ) Not Needed
( ) Under gloves:
(x) Gloves
( ) Over gloves:

( ) Other - specify below:

TASKS: 1 - 2 - **3** - 4 **(x) Primary**
LEVEL: A - B - C - D - Modified ( ) Contingency

Respiratory: (x) Not Needed
( ) SCBA, Airline:
( ) APR:
( ) Cartridge:
( ) Escape Mask:
( ) Other:

Head and Eye: ( ) Not Needed
(x) Safety Glasses
( ) Face Shield:
( ) Goggles:
(x) Hard Hat
( ) Other:

Boots: ( ) Not Needed
(x) Boots: Leather steel-toed work boots
( ) Over boots:
( ) Rubber:

Protective Clothing: (x) Not Needed
( ) Encapsulated Suit:
( ) Splash Suit:
( ) Apron
(x) Tyvek Coverall - OPTIONAL
( ) Saranex Coverall:
( ) Cloth Coverall:
( ) Other:

Gloves: ( ) Not Needed
( ) Under gloves:
(x) Gloves
( ) Over gloves:

( ) Other - specify below:

TASKS: 1 - 2 - 3 - **4** **(x) Primary**
LEVEL: A - B - C - D - Modified ( ) Contingency

Respiratory: (x) Not Needed
( ) SCBA, Airline:
( ) APR:
( ) Cartridge:
( ) Escape Mask:
( ) Other:

Head and Eye: ( ) Not Needed
(x) Safety Glasses
( ) Face Shield:
( ) Goggles:
(x) Hard Hat
( ) Other:

Boots: ( ) Not Needed
(x) Boots: Leather steel-toed work boots
( ) Over boots:
( ) Rubber:

Protective Clothing: (x) Not Needed
( ) Encapsulated Suit:
( ) Splash Suit:
( ) Apron
( ) Tyvek Coverall:
( ) Saranex Coverall:
( ) Cloth Coverall:
( ) Other:

Gloves: ( ) Not Needed
( ) Under gloves:
(x) Gloves
( ) Over gloves:

( ) Other - specify below:

SITE SPECIFIC HEALTH & SAFETY PLAN
AIR MONITORING BY TASK
HDR|LMS

MONITORING EQUIPMENT: Specify by task. Indicate type as necessary. Attach additional sheets as necessary.

INSTRUMENT	TASK	ACTION GUIDELINES	COMMENTS (Includes schedules of use)
Combustible Gas Indicator	1 - 2 - 3 - 4	0-10% LEL No explosion hazard 10-25% LEL Potential explosion hazard; notify HSO. >25% LEL Explosion hazard; interrupt task/evacuate 21.0% 02 Oxygen normal <20.5% 02 Oxygen deficient; notify HSO. <19.5% 02 Interrupt task/evacuate	**(X) Not Needed**
Radiation Survey Meter	1 - 2 - 3 - 4	3X Background Notify SHSC >2mR/hr Interrupt task/evacuate	**(X) Not Needed**
Photo ionization Detector ( ) 11.7 ev **(X) 10.2 ev** ( ) 9.8 ev ( ) ___ ev	1 - **2 - 3** - 4	**Specify: If TOTAL VOC's ≥ 5 PPM above background in the breathing zone, sustained for 5 or more minutes, all personnel shall evacuate the site. Contact Project HSO and the site shall be reevaluated after 30 minutes. The HSO will re-enter the site upwind and monitor with the PID. Once the volatile levels are below 1 PPM, work can continue.**	( ) Not Needed
Flame Ionization Detector	1 - 2 - 3 - 4	Specify:	**(X) Not Needed**
Detector Tubes/Monitox	1 - 2 - 3 - 4	Specify:	**(X) Not Needed**
Dust Monitor	1 - **2 - 3** - 4	**Specify: Particulates will be monitored within the work area during intrusive activities. Prior to beginning intrusive work, a background ambient measurement will be collected. If during the work, particulate levels in the work area are 150 ug/m^3 above the background level for a period of fifteen (15) minutes, then downwind perimeter measurements will be collected. If measurements remain 150 ug/m^3 above the background then dust suppression techniques will be employed.**	( ) Not Needed
Other: Specify	1 - 2 - 3 - 4	Specify:	( ) Not Needed

Notes:
1. Personal air samples and area samples taken during unique project activities must be documented on the INDUSTRIAL HYGIENE SAMPLING SHEET (see Appendix D).
2. When area samples are collected for routine project activities, the following information must be recorded in the field log book: date and time; location; air temperature; wind direction and speed; cloud cover and type of precipitation; sampler; instrumentation used; activity being sampled; result; sample duration time; applicable comments.

SITE SPECIFIC HEALTH & SAFETY PLAN
DECONTAMINATION
HDR|LMS

DECONTAMINATION PROCEDURES

ATTACH SITE MAP INDICATING EXCLUSION, DECONTAMINATION, AND SUPPORT ZONES AS PAGE TWO

Personalized Decontamination Summarize below and/or attach diagram; discuss use of work zones. Sampler will wear disposable gloves. No other portion of body should be exposed. Observers will wear disposable PPE. **(X) Not Needed**	Sampling Equipment Decontamination Summarize below and/or attach diagram; discuss use of work zones. For equipment such as spoons, knives, bowls, trowels, hand augers, balers, direct-push samplers and surface water sampling devices (dippers), the following procedures will be used: (1) Initial wash with potable water/alconox soap mixture. Scrub brushes will be used to remove all residual dirt or other debris. (2) Potable water wash to remove all soap residue. (3) Rinse with distilled/deionized water. (4) Wrap decontaminated equipment in plastic or aluminum foil to prevent recontamination. For sampling in areas where free-product petroleum (NAPL) is encountered, the following additional steps will be added between steps 2 and 3 above: 2a) Methanol Rinse 2b) Hexane Rinse 2c) Methanol Rinse For sampling in areas where elevated metal concentrations are a concern, the following additional step will be added between steps 2 and 3 above: 2a) Rinse with diluted (10%) nitric acid (HNO_3). ( ) Not Needed	Heavy Equipment Decontamination Summarize below and/or attach diagram; discuss use of work zones. For equipment such as drill rigs, augers, drill rods, etc. the following procedures will be used: (1) Spray with a hot water/high pressure sprayer (Hotsy) using on-base potable water supply. (2) Stubborn soil or residue may be washed with a potable water/alconox soap mixture. Scrub brushes will be used to remove all residual dirt or other debris. (3) Place decontaminated equipment in a secure location, or wrap in plastic to prevent recontamination ( ) Not Needed
Containment and Disposal Method Disposable PPE will be placed in sealed plastic bags, and disposed of as municipal waste.	Containment and Disposal Method See principal disposal methods and practices.	Containment and Disposal Method See principal disposal methods and practices.

SITE SPECIFIC HEALTH & SAFETY PLAN
WORK ZONE
HDR|LMS

THIS PAGE RESERVED FOR MAP (Show Exclusion, Contamination Reduction, and Support Zones. Indicate evacuation and reassembly points.)

To Be Completed On Site.

SITE SPECIFIC HEALTH & SAFETY PLAN
SIGNATURE PAGE
HDR|LMS

The following personnel have read and fully understand the contents of this Site Health and Safety Plan and referenced HDR|LMS H&S procedures and further agree to all requirements contained herein. Furthermore, the individuals are fully trained and have required clearances in accordance with HDR|LMS H&S Procedure #20. Attach copies of current HTRW and first aid training, medical clearance, and respiratory fit test records.

Name	Affiliation	Date	Signature

APPENDIX B

HDR|LMS COMMUNITY AIR MONITORING PLAN

(CAMP)

PROJECT SPECIFIC COMMUNITY AIR MONITORING PLAN

For

INTERIM REMEDIAL MEASURES

On behalf of the

New York City Economic Development Corporation

At

OPERABLE UNIT 2 PORTION OF PARCEL E
HUNTS POINT FOOD DISTRIBUTION CENTER
BRONX, NEW YORK
NYSDEC VCP SITE NO. V00681-2

Dates in Effect
June 2007 to June 2008

HDR | LMS
One Blue Hill Plaza, 12th Floor
Pearl River, New York 10965

Project Number
147-000000000040001-001

This Community Air Monitoring Plan (CAMP) is being used for the interim remedial activities to be conducted on behalf of the New York City Economic Development Corporation (NYCEDC) on Operable Unit 2 of Parcel E (Site E OU 2), located in the northwestern portion of the Hunts Point Food Distribution Center at the southeastern corner of Halleck Street and East Bay Avenue, Hunts Point peninsula, Bronx, New York. A CAMP requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of a work area when certain activities are in progress at contaminated sites. Continuous monitoring will be required for all ground intrusive activities. For the interim remedial activities being conducted at the site, real-time monitoring for VOCs and background particulate matter at the downwind perimeter of the work area.

Volatile Organic Compound (VOC) Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) will be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis. Upwind concentrations shall be measured at the start of each workday and periodically thereafter to establish background concentrations. The monitoring will be conducted using a Minirae 2000 photo-ionization detection (PID), equipped with a 10.2 eV lamp, capable of detecting all site contaminants of concern (COC). The PID shall be calibrated daily. The PID will calculate instantaneous concentrations, which will be compared to the levels specified.

Vapor Emission

If total organic vapors in the work area exceed 5 ppm above background then additional measurements will be collected at the perimeter. If perimeter measurements exceed 5ppm, work activities under the provisions of the Vapor Emissions Response Plan will be performed.

Vapor Emission Response Plan

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

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

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

Major Vapor Emission

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

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

If efforts to abate the emission source are unsuccessful and if the following levels persist for more than 30 minutes in the 20 Foot Zone, then the Major Vapor Emission Response Plan shall automatically be placed into effect;

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

Major Vapor Emission Response Plan

Upon activation, the following activities will be undertaken:

1. All Emergency Response Contacts as listed in the Health and Safety Plan of the Work Plan will go into effect.

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

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

PID readings (detected concentrations, time, date, initials of sampling employee) will be regularly recorded in a field log book. Additional supportive site information shall be recorded if an exceedence above 5 ppm background occurs, such as wind estimation and direction, weather conditions (temperature in degrees Fahrenheit, precipitation, etc.), site activities, possible/likely OVC sources, position of PID when exceedence occurred, etc. All monitoring information shall be available for State (NYSDEC and Department of Health) and federal (OSHA) personnel to review.

Particulate Matter Monitoring, Response Levels, and Actions

Particulates will be monitored within the work area during intrusive activities. Prior to beginning intrusive work, a background ambient measurement will be taken. If during the work, particulate levels in the work area are 150 ug/m^3 greater than the background level for a period of fifteen (15) minutes, then downwind perimeter measurements will be collected. If measurements remain 150 ug/m^3 above the background then dust suppression techniques will be employed. All readings must be recorded and be available for State (DEC & DOH) personnel to review.

Generally, open-space background ambient dust levels range from 0.3 mg/m^3 to 0.8 mg/m^3, depending on proximity to exposed soil surfaces, wind speed, recent precipitation, proximity to traffic, farming activities, etc. Even in high winds in agricultural areas, it is rare to exceed background levels above 1.5 mg/m^3. The current occupational inhalation exposure level for nuisance dust (ACGIH TLV) is 10 mg/m^3 as an 8-hour time weighted average (OSHA PEL is 15 mg/m^3).

APPENDIX C

PROJECT SCHEDULE

NOTE:

PROJECT SCHEDULE TO BE SUBMITTED UNDER SEPARATE COVER

Attachment 4

SITE MANAGEMENT PLAN

Draft Site E OU-2 (Draft November 2010)

1.0 Overview and Objectives

Site E OU-2 is a parcel located south of East Bay Avenue/Food Center Drive (FCD), east of Halleck Street and immediately north of the Con Edison compressor station. The property is owned by the City of New York is being leased to Atlantis Management Group (AMG) for a Alternative Fuel distribution facility. AMG will be constructing and then operating the distribution facility under the terms of its lease agreement with NYC. The location of the site is shown on Figure 1-1. The site has been characterized during a previous investigation under the Voluntary Cleanup Agreement with New York State Department of Environmental Conservation (NYSDEC). The user of this Site Management Plan (SMP) should refer to the Site E OU-2 Remedial Action Work Plan (RAWP) for other information relating to the engineering controls that were recommended as part of the site remediation. The objective of this SMP is to set guidelines for the management of soil/fill material during the site redevelopment process and any activities which would breach the surficial cap (engineering control or cover system) at the Site after construction of the facility has been completed. This SMP addresses environmental concerns related to management of fill importation as well as the material to be imported from adjacent bulkhead reconstruction and rehabilitation projects. This document has been reviewed and approved by the NYSDEC and New York State Department of Health (NYSDOH).

2.0 Nature and Extent of Contamination

Based on data obtained from the previous investigation, Interim Remedial Measure (IRM) and the proposed and approved engineering controls for the redevelopment at the site, a Remedial Action Work Plan Parcel E OU-2, Bronx, New York September 2010was developed by Henningson, Durham & Richardson, PC (HDR). The Site was a portion of a former manufactured gas plant (MGP) that occupied the entire peninsula between 1926 and the late 1950s. Across the peninsula on other sites three types of waste material of potential concern was encountered during the investigation activities. The following categories were assigned to the material based on visual observation and are as follows: Coal Tar; Purifier Waste, and; a mixture of both Coal Tar and Purifier Waste. Site E OU-2 was found to contain areas heavily impacted with coal tar as well as some smaller areas of purifier waste. The approved IRM included the removal of the significantly impacted materials and this included approximately 2200 cubic yards of material. Following the removal of this material, there is a significant amount of residual coal, ash and other fill that contains petroleum. The engineering controls for the Site redevelopment were approved and are being implemented in order to alleviate the issues relating to the remaining residual contamination. The potential exists for encountering impacted material during any excavation and the procedures for handling and the disposal are outlined in this document.

Coal tar is a product of the destructive distillation of bituminous coal. It is a dark reddish brown to black, oily, viscous liquid that does not readily mix with water. It has a very strong odor, which many people find similar to mothballs or driveway sealant. Coal tars, derived from both coal carbonization and carbureted water gas processes, are complex mixtures of organic chemicals. The following two major classes of chemical compounds found in coal tar are:

- Volatile organic compounds (VOCs) characterized by benzene, toluene, naphthalene, ethylbenzene and xylene, which are identified (with the exception of naphthalene) by their initials as the BTEX compounds, and

- Semi-volatile organic compounds (SVOCs) known as polycyclic aromatic hydrocarbons or PAHs.

Purifier Waste is typically found as a mixture of wood chips with a very strong, unpleasant burnt odor. Once exposed at the ground surface, the waste will often develop an iridescent blue color known as "prussian blue". It contains significant quantities of chemically complexed Cyanide compounds. In addition to containing complexed Cyanide, water which comes into contact with purifier waste is often acidic. If the acidic water discharges to a stream or other surface water body, it may cause harm to fish and wildlife.

There are three major means by which a toxic substance can come into contact with or enter the body. These are called routes of exposure and are as follows:

1. Inhalation (breathing) of gases, vapors, dusts or mists is a common route of exposure. Chemicals can enter and irritate the nose, air passages and lungs. They can become deposited in the airways or can be absorbed through the lungs into the bloodstream. The blood can then carry these substances to the rest of the body.

2. Direct contact (touching) with the skin or eyes is also a route of exposure. Some substances are absorbed through the skin and enter the bloodstream. Broken, cut or cracked skin will allow substances to enter the body more easily.

3. Ingestion (swallowing) of food, drink, or other substances is the third route of exposure. Chemicals that get in or on food, cigarettes, utensils or hands can be swallowed. Substances can be absorbed into the blood and then transported to the rest of the body.

The constituents of potential concern (COPCs) for soil consist primarily of VOCs (BTEX compounds), SVOCs (PAHs), Metals, and complexed Cyanide compounds.

Results of ground water sampling indicate that constituents in the soil/fill material have impacted ground water quality above applicable NYSDEC Technical Operational Guidance Series 1.1.1 (TOGS 1.1.1) standards for ground water, requiring treatment prior to use.

3.0 Contemplated Use

The Site was abandoned and unused prior to any investigation, remediation and redevelopment covered under this Site Management Plan. Any work performed in or near this Site area should not be performed without properly identifying all underground utilities. There is a high pressure gas main located near the eastern, western and southern ends of the Site and no work should be performed near these areas without contacting NYCEDC, Con Edison and Iroquois gas.

As part of the redevelopment project, the Site will be identified for restricted commercial use as a distribution facility within the Hunts Point Cooperative Market Area. A number of commercial enterprises and municipally operated facilities are located in the area including; the Hunts Point Produce Market, Fulton Fish Market, Hunts Point Meat Market, and NYCDEP Sewage Treatment Plant.

4.0 Purpose and Description of Surface Cover System

The purpose of the surface cover system is to eliminate the potential for human contact with fill material, eliminate the potential for contaminated runoff from the property, and prevent infiltration of surface water through the fill and replacement of the roadway surface. The cover system consists

of an asphalt layer over the traffic portion of the route with a minimum of 6 inches of asphalt and sub base material, concrete sidewalks and concrete building slabs beneath the site structures. Any areas where there will be open landscaping will first have a Geotextile fabric placed over the fill and then one foot of material that meets the chemical limitations for the restricted residential criteria in Part 375.

5.0 Management of Soils/Fill and Long-Term Maintenance of Cover System

The purpose of this section is to provide environmental guidelines for the management of subsurface soils/fill and the long-term maintenance/replacement of the cover system during and after any future intrusive work which breaches the cover system.

The SMP includes, but is not limited to, the following conditions:

- Any breach of the cover system, including for the purposes of construction or utility work, requires that upon completion of the effort, the cover be replaced as it was originally installed. Backfill material used must be from an acceptable source, free of potential industrial sources of chemical or petroleum contamination (refer to Sections 5.1 through 5.3 for additional excavation/backfill-specific requirements). The repaired area must be covered with a similar layering of material comparable to that which was removed, and the repairs carried out in accordance with applicable City specifications for the surface removed.
- During construction activities, control of surface erosion and run-off of the entire area must be maintained at all times. *A Stormwater Pollution Prevention Plan (SWPPP) will be prepared and approved by NYSDEC for both construction and post construction handling and treatment of stormwater. The SWPPP will be attached to the Final Redevelopment Plan.*
- Site soil/fill that is excavated and is intended to be removed from the property must be managed, stockpiled, characterized, and properly disposed of in accordance with City, State and Federal regulations.
- Prior to any construction activities, workers are to be notified of the site conditions with clear instructions regarding how the work is to proceed. Invasive work performed at the property will be performed in accordance with all applicable local, state, and federal regulations to protect worker health and safety. A general Health & Safety Plan (HASP) to be reviewed by any contractor involved in subsurface work and used by that contractor as a base for preparing an individual HASP has been prepared and is attached with this SMP. The contractor will have in their possession a HASP that has been reviewed by workers involved in intrusive work where the site cover materials will be disturbed.
- The Owner (City of New York) shall annually, or such time as NYSDEC may allow, complete and submit to the NYSDEC Certification Report beginning in the year following the completion of construction and approval of the Final Engineering Report by NYSDEC and NYSDOH. The Certification Report shall contain a statement signed by the entity responsible for direct management of the property (tenant) certifying that the institutional controls put in place, pursuant to the, Voluntary Cleanup Agreement for the Site and the Declaration of Covenants and Restrictions imposed upon the fee title to the site and recorded in the Office of the New York City Register, as specified in the VCA, are still in place, have not been altered and are still effective. Additionally, the Certification Report shall specify that the remedy and protective cover have been maintained, and that the conditions at the site are fully protective of public health and the environment.

If the cover system has been breached during the period covered by that Certification Report, the owner/tenant of the property shall include the following in that certification report:

A certification that all work was performed in conformance with this SMP.

In addition, a deed restriction will be implemented in accordance with the requirements of the New York State Voluntary Cleanup Program (VCP) limiting the future use of the property identified in the metes and bounds description in the NYSDEC Voluntary Cleanup Agreement (VCA) for this Site as a commercial distribution facility. The property that is subject to this deed restriction is shown on Figure 1. A portion of the Site located at the eastern end of the parcel is also included under another VCA know as the Iroquois Gas Pipleline/Perimeter Site. An SMP has been completed for that parcel as well and specific restrictions apply to that area as well. They are similar in nature to those in this document, however if any work is being completed within that area, a copy of the SMP for that Site should be used to direct work related to fill material and certification of the Engineering Controls. The deed restriction will be identified by adjacent parcel lot and block numbers due to the current site not being identified as a specific lot and block number. *In the event that in the future the City of New York identifies this Site as a specific tax lot and block number, that designation will be made.*

5.1 Excavated and Stockpiled Soil/Fill Disposal

Soil/fill that is excavated as part of development that includes waste material as described in Section 2.0 of this document that cannot be used as fill below the cover system will be further characterized prior to transportation off-site for disposal at a properly permitted facility. All fill will be segregated according to the contractor's chosen disposal facility requirements. Prior to any fill material being removed from the Site, each disposal facility will provide to the contractor the maximum concentrations allowed for compounds and analytes listed in Table 2 as well as the minimum sampling frequency and analytical requirements. The analytical requirements and limits will be in accordance with the facilities most current operating permit for its destination State. The Contractor/developer will review all analytical results in comparison to the allowable facility concentrations and will determine if the material is permissible at the subject facility. No material will be removed to a NYSDEC-registered recycling facility with the exception of road base material (asphalt) or existing above grade structures (concrete). Following disposal of material, the records associated with the disposal will be made available for review should they be requested.

5.2 Sub-grade Material for Reuse

On-Site excavated sub-grade material used to backfill excavations or placed to increase grades or elevation shall meet the following criteria:

1. Excavated on-Site soil/fill which appears to be impacted to a degree comparable to material having been removed as part of the approved IRM with either coal tar or purifier waste materials as described in Section 2.0 of this SMP shall be segregated from material proposed to be used as backfill, sampled, and analyzed for proper off-Site disposal (as described in Section 5.1 of this SMP).

2. The remaining material can be used as backfill in accordance with NYCRR Solid Waste Management Facilities Part 360 1-15(b)(8), which allows for the re-use of non-hazardous, contaminated soil which has been excavated as part of a construction project, other than a department-approved or undertaken inactive hazardous waste disposal site remediation program, and which is used as backfill for the same excavation or excavations containing similar contaminants at the same site.

5.3 Imported Material for Use as Backfill

Imported material for use of backfill on the Site must adhere to the following conditions. Off-Site soils intended for use as site backfill cannot otherwise be defined as solid waste in accordance with 6 NYCRR Part 360-1.2(a).

1. Registered Facility Source:

   Any off-Site material brought to the site for filling and grading purposes shall be from an acceptable borrow source free of industrial and/or other potential sources of chemical or petroleum contamination. For example, uncontaminated C&D as defined in 6 NYCRR Part 360-16.2 (c) that has been processed by a NYSDEC-registered C&D recycling facility may be used provided it meets the existing New York State Department of Transportation (NYSDOT) Standard Specification as described below in Section 5.3.2.

   This material is not acceptable to be used in the upper (top) foot of fill and must be placed beneath the approved engineered surface cover, unless it is sampled as described in 3a and meets the criteria in 3c or 3d.

2. Recycled Portland Cement Concrete Aggregate (RCA):

   If Recycled Portland Cement Concrete Aggregate (RCA) is used beneath the top foot or approved engineering surface and it comes from other than a New York State Department of Transportation project, documentation showing that the material comes from a NYSDEC permitted or registered facility is required. Off-site material imported for filling and grading purposes shall conform to Section 304 of New York State Department of Transportation Standard Specifications Construction and Materials Volume 1 (2002). Section 304 option B, "single layer of Type I Sub-base Course" provides 3 alternate types of material suitable for backfill material. Material originating as RCA from a registered facility with less than 10% fine-grained sediments by weight passing through a 200 sieve does not require analytical testing.

   a. Alternate A: at least 95% by weight, of (RCA) and free from organic and other deleterious material. This material may contain up to 5% by weight asphalt and/or brick;

   b. Alternate B: a mixture of RCA conforming to Alternate A above mixed with stone, sand, gravel, or blast furnace slag. This material may contain up to 5% by weight asphalt and/or brick; and/or

   c. Alternate C: bituminous material that is reclaimed from bituminous pavement and/or shoulders (Reclaimed Asphalt Pavement, or RAP) on a project constructed by the Department of Transportation and is well-graded from coarse to fine and free from organic or other deleterious material, including tar. This material is at least 95%, by weight, reclaimed bituminous material and has a maximum top size, at time of placement, of 50mm." If Alternate C is used, documentation of its being from a Department of Transportation source must be provided (This is similar to the reference for RCA).

Table 1: NYSDOT Gradation Table 304-1

Sieve Size No.	Sieve Size Designation	Percent Passing by Weight (%)
N/A	100 mm	-
N/A	75 mm	100
N/A	50 mm	90 – 100
N/A	6.3 mm	30 – 65
40	425 µm	5 – 40
200	75 µm	0 – 10

3. Non-Regulated Soil and Sand:

   If the contractor designates a source of soil to be used as fill, it shall be further documented in writing to only contain soil and no man-made materials (such as construction and demolition (C&D) debris). Sand from an operating gravel pit or similar facility operating under a mining permit must contain less than 7% fine-grained sediments by weight passing through a 200 sieve. Also covered under this section is material from non-commercial locations where there is no information available. These materials as described in this section (Section 5.3.3), shall be subject to the following acceptance criteria:

   a. Soils will be subject to the collection of one (1) representative composite sample per source per 1000 cubic yards. The sample(s) should be analyzed for TCL VOCs, SVOCs, pesticides, PCBs, arsenic, barium, beryllium, cadmium, chromium (Hexavalent and trivalent), copper, lead, manganese, total mercury, nickel, selenium, silver, zinc, and total cyanide in accordance with the quality assurance standards set forth in 40 CFR Part 136 and the most current NYSDEC Analytical Services Protocol (ASP). Soil analyses shall be reported as Category A deliverables specified in the most current NYSDEC ASP. The soil will be acceptable for use as backfill for depths below the one foot surface cover if analytical results indicate that the contaminants, if any, are present at concentrations below those described in Table 2: Backfill Analytical Parameters. Table 2 was created through collaboration between the NYSDEC, NYSDOH, NYCEDC and HDR.

   b. If any of the parameters exceed the thresholds set in Table 2, and there is still a desire to use the soil below the top foot, a written request will be made to the NYSDEC which will include a full description of the soil, its source, volume and analytical data. The NYSDEC will review the data and provide a written response within a reasonable time of the request.

   c. If the results of the analyses indicate the soil meets or is below the concentrations listed in Table 2, then it will be acceptable for use within the upper foot if open soil is desired. A Geotextile fabric of permeable membrane shall be placed on the surface of the material below the top foot to prevent mixing from frost heave or other settling related actions.

d. If any of the parameters exceed Table 2, and there is still a desire to use the soil in the upper foot, a written request will be made to the NYSDEC which will include a full description of the material, its source, volume and analytical data. The NYSDEC will review the data and provide a written response within a reasonable time of the request.

4. Non-Regulated Gravel and Rock:

   If the contractor designates a source of soil to be used as fill, it shall be further documented in writing to only contain soil and no man made materials (such as construction and demolition (C&D) debris). Crushed gravel or rock from an operating gravel pit or similar facility operating under a mining permit does not require analytical testing. Sand from an operating gravel pit or similar facility operating under a mining permit is not included in this section (refer to Section 5.3.3).

Table 2: Backfill Analytical Parameters

Contaminant	CAS Number	Backfill Limit
Metals		
Arsenic	7440-38-2	16
Barium	7440-39-3	400
Beryllium	7440-41-7	47
Cadmium	7440-43-9	7.5
Chromium, hexavalent [1]	18540-29-9	19
Chromium, trivalent [1]	16065-83-1	1500
Copper	7440-50-8	270
Total Cyanide	57-12-5	27
Lead	7439-92-1	450
Manganese	7439-96-5	2000
Total Mercury		0.73
Nickel	7440-02-0	130
Selenium	7782-49-2	4
Silver	7440-22-4	8.3
Zinc	7440-66-6	2480
PCBs / Pesticides		
2,4,5-TP Acid (Silvex)	93-72-1	3.8
4,4'-DDE	72-55-9	17
4,4'-DDT	50-29-3	47
4,4'-DDD	72-54-8	14
Aldrin	309-00-2	0.19
Alpha-BHC	319-84-6	0.02
Beta-BHC	319-85-7	0.09
Chlordane (alpha)	5103-71-9	2.9
Delta-BHC	319-86-8	0.25
Dibenzofuran	132-64-9	210
Dieldrin	60-57-1	0.1
Endosulfan I	959-98-8	102
Endosulfan II	33213-65-9	102
Endosulfan sulfate	1031-07-8	200
Endrin	72-20-8	0.06
Heptachlor	76-44-8	0.38
Lindane	58-89-9	0.1
Polychlorinated biphenyls	1336-36-3	1

Table 2: Backfill Analytical Parameters (continued)

Contaminant	CAS Number	Backfill Limit
Volatile organic compounds [2]		
1,1,1-Trichloroethane	71-55-6	0.68
1,1-Dichloroethane	75-34-3	0.27
1,1-Dichloroethene	75-35-4	0.33
1,2-Dichlorobenzene	95-50-1	1.1
1,2-Dichloroethane	107-06-2	0.02
cis-1,2-Dichloroethene	156-59-2	0.25
trans-1,2-Dichloroethene	156-60-5	0.19
1,3-Dichlorobenzene	541-73-1	2.4
1,4-Dichlorobenzene	106-46-7	1.8
1,4-Dioxane	123-91-1	0.1
Acetone	67-64-1	0.05
Benzene	71-43-2	0.06
n-Butylbenzene	104-51-8	12
Carbon tetrachloride	56-23-5	0.76
Chlorobenzene	108-90-7	1.1
Chloroform	67-66-3	0.37
Ethylbenzene	100-41-4	1
Hexachlorobenzene	118-74-1	3.2
Methyl ethyl ketone	78-93-3	0.12
Methyl tert-butyl ether	1634-04-4	0.93
Methylene chloride [3]	75-09-2	0.05 [3]
n-Propylbenzene	103-65-1	3.9
sec-Butylbenzene	135-98-8	11
tert-Butylbenzene	98-06-6	5.9
Tetrachloroethene [3]	127-18-4	1.3 [3]
Toluene	108-88-3	0.7
Trichloroethene [3]	79-01-6	0.47 [3]
1,2,4-Trimethylbenzene	95-63-6	3.6
1,3,5-Trimethylbenzene	108-67-8	8.4
Vinyl chloride	75-01-4	0.02
Xylene (mixed)	1330-20-7	1.6

Table 2: Backfill Analytical Parameters (continued)

Contaminant	CAS Number	Backfill Limit
Semi-Volatile Organic Compounds		
Acenaphthene	83-32-9	98
Acenapthylene	208-96-8	107
Anthracene	120-12-7	500
Benz(a)anthracene	56-55-3	1
Benzo(a)pyrene	50-32-8	1
Benzo(b)fluoranthene	205-99-2	1.7
Benzo(g,h,i)perylene	191-24-2	500
Benzo(k)fluoranthene	207-08-9	1.7
Chrysene	218-01-9	1
Dibenz(a,h)anthracene	53-70-3	0.56
Fluoranthene	206-44-0	500
Fluorene	86-73-7	386
Indeno(1,2,3-cd)pyrene	193-39-5	5.6
m-Cresol	108-39-4	0.33
Naphthalene	91-20-3	12
o-Cresol	95-48-7	0.33
p-Cresol	106-44-5	0.33
Pentachlorophenol	87-86-5	0.8
Phenanthrene	85-01-8	500
Phenol	108-95-2	0.33
Pyrene	129-00-0	500

Footnotes:
All backfill limits are in parts per million (ppm)/mg/kg
ND = Non-Detect
[1] = The backfill limit for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific backfill limit for hexavalent chromium.
[2] = Any VOCs present that require a dilution to be performed for the analysis will cause the material to be considered not acceptable for use as fill beneath or within a 10-foot radius of a building, foundation or structure that is not open to the air for free ventilation on the Site.
[3] = Any material to be considered for use as fill beneath or within a 10-foot radius of a building, foundation or structure that is not open to the air for free ventilation on the Site, with specific VOC air guideline values prescribed by the most current NYSDEC/NYSDOH soil vapor intrusion guidance, may not have concentrations exceeding the method detection limit (MDL) (i.e. being detectable) as defined by the most current NYSDEC Analytical Services Protocol (ASP).

Notes:
- Allowable values for imported soils are determined by comparing either the Track 1 or the Track 2 use-based Protection of Public Health value (based on the site's achieved cleanup track) with the Protection of Groundwater value and selecting the lower of the two (for sites with no ecological resources). If the site was cleaned up to protect ecological resources, then the ecological resource value would be used, where it is lower than both the groundwater protection and public health protection values.
- The following material may be imported, without chemical testing, to be used as backfill beneath pavement or the final soil cover (i.e. the uppermost 1 or 2 feet, depending on the site's use restriction):
  a. Rock or stone, consisting of virgin material from a permitted mine or quarry;
  b. Recycled concrete, brick or asphalt from a NYSDEC-registered C&D processing facility which conforms to Section 304 of the New York State Department of Transportation Standard Specifications Construction and Materials Volume 1 (2002). This material must contain less than 10% (by weight) material which would pass through a size 200 sieve.

DEFINITIONS

When any soil or material from an off-site source is proposed to be used for backfilling an excavation, the following procedure will be instituted for approval of the material:

The designated NYC representative will be contacted when the source has been chosen and before any material is imported. As long as the property remains under NYC ownership, the City will be responsible for then having a qualified Environmental Professional (EP) review the backfill information and present at the site to document the process for the annual certification. If the material is under control or other ownership, an EP will be responsible for performing the review and presenting the information for certification. The EP will have the following qualifications;

- He/she will have a working familiarity of the site conditions, remedy, and conditions of the approved Engineering Report, Site Management Plan or final Report that outlines the redevelopment conditions and the recertification requirements that must be met.
- Be familiar with NYSDEC Part 360 and the definitions of C&D, recycling facility operating criteria, and the types and analytical criteria for acceptable backfill material and for a facility accepting excess material.
- Have the experience on previous projects to understand and be able to visually identify material that would not be acceptable immediately upon inspection. Such material includes; petroleum impacted material, material mixed with industrial waste, and material that does not qualify as uncontaminated C&D even after processing.
- Be able to review documents from the source facility/location to determine the applicability of the material proposed for backfill and in comparison to the registration, in addition to the validity of the facility documents as they are presented.
- The EP will have the ability to request any additional applicable information to assist in making the determination for the acceptance of the fill material.

Following approval of backfill material, the EP will document the specific information that is relevant to the Periodic Recertification including:

1. Facility providing material
2. Copy of facility Registration (current if applicable)
3. Volume of material imported for fill.
4. Pertinent sampling data that applies to the acceptance of the material (Table 2).
5. Volume of material that was disposed of off site and all pertinent sampling data.
6. Disposal Facility accepting excess material.
7. Map of the site showing dimensions and locations of where work was performed.
8. A statement relating to the recapping of those areas where work has taken place that they maintain the approved conditions.

9. The imported fill material was physically inspected and physically meets all of the criteria for unregulated material such as: no odors of petroleum or other chemicals, staining or discoloration.

The Periodic Certification will also include the signature and stamp of a New York State P.E. that states the original conditions of the approved closure are being maintained and that any areas that have been opened have been backfilled with proper material and properly recapped.

The following is an example of an on-site pile manifest that will be provided to the construction engineer or representative for Atlantis Management Group. The piles will all be individually numbered and each pile will be inspected prior to its acceptance for use as backfill at Site E OU-2. For purposes of this draft document I have attached it in this file but it will be an attachment at the end of the SMP.

HDR/LMS **Stockpile Sampling Daily Log**

Sheet 1 of 1

Site E OU-2 Soil Pile Acceptance Manifest

HDR/LMS Personnel:	
STOCKPILE ID #:	**Stockpile Contents:**
Sampling Date:	**Accepted by:**
Analytical Laboratory:	
Sampling Locations Illustration:	

Plate 1

UNIFORM LAND USE REVIEW PROCEDURE

• CITY MAP CHANGES • MAPS OF SUBDIVISIONS PLATTINGS • ZONING MAP CHANGES • CPC SPECIAL PERMITS • REVOCABLE CONSENTS FRANCHISE RFP'S MAJOR CONCESSIONS • NON-CITY PUBLIC IMPROVEMENTS • HOUSING AND URBAN RENEWAL PLANS • LANDFILLS • DISPOSITION OF REAL PROPERTY • ACQUISITION OF REAL PROPERTY • SITE SELECTION	DEPARTMENT OF CITY PLANNING Application and Pre-Certification	COMMUNITY BOARD	BOROUGH PRESIDENT (and) BOROUGH BOARD)	CITY PLANNING COMMISSION	SEE CHART BELOW FOR THE PROCESS FOR CITY COUNCIL AND MAYORAL REVIEW (Charter Section 197-d)
	• Receives application and related documents. • Forwards application and documents within 5 days toCB, BP, and CC (and BB - if project affects more than one CB). • Certifies application as complete	• Notifies public • Holds public hearing • Submits recommendation to CPC, BP (and BB). • Can waive rights on franchise RFP's and leases.	• BP submits recommendation to CPC or waives right to do so. • BB (if project affects more than one CB) may hold a public hearing and submit recommendation to CPC or waive right to do so.	• Holds public hearing • Approves, modifies or disapproves application. • Files approvals and approvals with modifications with City Council. • Disapprovals are final, except for zoning map changes, special permits, and urban renewal plans.	
PROCESS TAKES	No Specified Time Limit (after 6 months, applicant or BP in some cases, may appeal to CPC for certification).	60 Days	30 Days	60 Days	
Clock = 1 Year					
TOTAL DAYS. . . .		60 Days	90 Days	150 Days	

IF CPC APPROVES APPLICATION

- AUTOMATIC REVIEW BY CITY COUNCIL
  - -- Zoning map changes
  - -- Zoning text changes (non-ULURP)
  - -- Housing and urban renewal plans
  - -- Disposition of residential buildings (except to non-profit companies for low-income housing
- "TRIPLE NO" - AUTOMATIC REVIEW BY COUNCIL OF ITEMS IN ELECTIVE LIST (BELOW), IF :
  - -- CB recommended disapproval (NO #1)
  - -- BP recommended disapproval (NO #2)
  - -- CPC approved or approved with modifications
  - -- BP files objection with Council and CPC within 5 days of receipt of CPC's approval (NO #3)
- CITY COUNCIL MAY ELECT TO REVIEW:
  - -- City map changes
  - -- Maps of subdivisions or plattings
  - -- CPC special permits
  - -- Revocable consents, franchise RFP's, and major concessions
  - -- Non-City public improvements
  - -- Landfills
  - -- Disposition of commercial or vacant property
  - -- Disposition of residential buildings to nonprofit companies for low income housing
  - -- Acquisition of real property
  - -- Site selection

CITY COUNCIL

- Can review application, hold a public hearing, and vote to approve, approve with modifications, or disapprove.
- Refers any proposed modifications to CPC for an additional 15-day review.
- If Council does not act (or does not assume jurisdiction on items it must elect to review), CPC decision is final.

Action requires majority vote.

Must assume jurisdiction within 20 days.

Action requires majority vote

50 Days*

MAYOR

- Reviews application.
- May veto Council action.
- If Council does not act (or does not assume jurisdiction on items it must elect to review), may veto CPC decision

5 Days

CITY COUNCIL

- May override Mayor's veto by 2/3 vote

10 Days

IF CPC DISAPPROVES APPLICATION, ALL ITEMS ARE DEFEATED EXCEPT;

- -- SPECIAL PERMITS, if Mayor certifies as necessary
- -- ZONING MAP AND TEXT CHANGES, if Mayor certifies as necessary

URBAN RENEWAL PLANS, Per State Law.

Action requires 2/3 vote.
Action is final.
50 Days**

Action requires 3/4 vote.
Action is final.
Law and timetable to be revised.

* Does not include 15 day review for proposed modifications.

Abbreviations:
DCP = Department of City Planning;
CPC = City Planning Commission;
CB = Community Board;
BP = Borough President;
CC = City Council;
BB = Borough Board

Abbreviations: DCP = Department of City Planning; CPC = City Planning Commission; CB = Community Board; BP = Borough President; CC = City Council; BB = Borough Board