Halesite Former Manufactured Gas Plant

HALESITE, SUFFOLK COUNTY, NEW YORK

Remedial Action Work Plan – Phase I

NYSDEC Order on Consent Index No. D1-0001-98-11

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LIST OF ACRONYMS

ACO – Administrative Consent Order
AMWP – Air Monitoring Work Plan
BTEX – Benzene, Toluene, Ethylbenzene, and Xylenes

CAMP – Community Air Monitoring Plan

CFH – Cubic Feet Per Hour

DNAPL – Dense Non Aqueous Phase Liquid

DO – Dissolved Oxygen

FER – Final Engineering Report

HASP – Health and Safety Plan

GCL – Geosynthetic Clay Liner

HASP – Health and Safety Plan

HVAC – Heating, Ventilation, and Air Conditioning

LILCO – Long Island Lighting Company

LIPA – Long Island Power Authority

LNAPL – Light Non Aqueous Phase Liquid

MGP – Manufactured Gas Plant

NAPL – Non Aqueous Phase Liquid

NYCRR – New York Code of Rules and Regulations

NYSDEC – New York State Department of Environmental Conservations

NYSDOH – New York State Department of Health

O_2 – Oxygen

OM&M – Operation, Maintenance, and Monitoring

ORP – Oxidation-Reduction Potential

PAHs – Polycyclic Aromatic Hydrocarbons

PCBs – Polychlorinated Biphenyls

PPBV – Parts Per Billion-Volume

PPE – Personal Protective Equipment

PPM – Parts Per Million

QAPP – Quality Assurance Project Plan

QA/QC – Quality Assurance/Quality Control

RAOs – Remedial Action Objectives

RAP – Remedial Action Plan

RAWP – Remedial Action Work Plan

RDWP – Remedial Design Work Plan

RI – Remedial Investigation

RIR – Remedial Investigation Report

ROI – Radius of Influence

RSCOs – Recommended Soil Cleanup Objectives

SCGs – Standards, Criteria, and Guidance

SCOs – Soil Cleanup Objectives

SMP – Site Management Plan

SSSALs – Site Specific Soil Action Levels

SVOCs – Semivolatile Organic Compounds

SWPPP – Storm Water Pollution Prevention Plan

TAGM – Technical and Administrative Guidance Memorandum

TOH – Town of Huntington

VOCs – Volatile Organic Compounds

1.0 INTRODUCTION

The Halesite Former Manufactured Gas Plant (MGP) site is located in the Hamlet of Halesite, Town of Huntington, Suffolk County, New York (Figure 1). The site comprises approximately one acre located on the east side of North New York Avenue, south of the Halesite Post Office, and north of an office building property and a Town of Huntington Nature Preserve. The site is owned by the Long Island Power Authority (LIPA), and a portion of the site is used by LIPA as an electric system substation, which is currently operated and maintained by National Grid for LIPA. The remainder of the site is steeply sloped, heavily vegetated, and vacant (Figure 2). An aerial photograph of the site, including the approximate site boundaries, is included as Figure 3. Remedial work at the site is being managed with the oversight of the New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH) under Administrative Consent Order (ACO) Index No. D1-0001-98-11.

A Remedial Action Plan (RAP) submitted in March 2006 assessed remedial action options and outlined a general description of the remedy approved by NYSDEC. The preferred remedial alternative selected in the RAP consists of the following elements:

- Excavate soil in four dense non-aqueous phase liquid (DNAPL) tar on-site source areas, including any structures that may remain in place, with off-site thermal treatment of soils.
- Construct an engineered cap in the unsaturated zone across two DNAPL tar source areas in the Upland Area of the site.
- Establish institutional controls to prevent use of groundwater in the area affected by MGP-related contaminants and to prevent any disturbance of the engineered caps.
- Construct an engineered treatment barrier/zone along the Eastern and the Western property boundaries in the Lowland Area of the site.
- Recover DNAPL tar where feasible.
- Monitor groundwater for potential effects from MGP-related contaminants downgradient of the site and on the office building property south of the site.

The objective of this Remedial Action Work Plan (RAWP) – Phase I is to present a design for the first two elements of the approved remedial approach, which include excavation of the defined areas of concern on the site (DNAPL source areas) and construction of an engineered cap. Phase II of the RAWP will be submitted to the NYSDEC in October 2008 to present a design for the remaining elements of the remedial approach, which include oxygen injection in the Lowland Area, non-aqueous phase liquid (NAPL) recovery, groundwater monitoring, and establishment of institutional controls. The RAWP is being prepared in two phases to expedite completion of the active excavation and site restoration/stabilization prior to the end of the 2008 planting season. A complete description of the approved Phase I remedial action is presented in Section 4.0.

2.0 SITE DESCRIPTION

2.1 SITE LOCATION

The Halesite former MGP site is located in Halesite, which is located in the Town of Huntington, in northwestern Suffolk County, New York. The approximately one-acre site is located along North New York Avenue, approximately 200 feet east of Huntington Harbor. A site survey is provided in Appendix A.

2.2 SITE AND VICINITY CHARACTERISTICS

An active LIPA electric substation is located on the western third, or Lowland Area, of the site. The remaining eastern two-thirds of the property, or Upland Area, is undeveloped, heavily vegetated land that is characterized by a steep slope. The substation and Upland Area of the site are fully enclosed and secured by a chain link fence.

The elevation of the site ranges from about 16 feet above mean sea level (msl) near the western boundary of the site in the Lowland Area to approximately 86 feet above msl at the eastern boundary of the site in the Upland Area. The topography in the Lowland Area of the site is relatively flat. The undeveloped Upland Area rises sharply eastward from approximately 20 feet to 60 feet above msl and continues to slope upward more gently to a highpoint of 86 feet above msl near the northeast corner of the property.

The surrounding area is primarily residential with a mixture of commercial properties along New York Avenue. A United States Postal Service post office is located north of the subject site, beyond which are residential properties. Residences are located east of the site. An office building property and the Town of Huntington (TOH) Nature Preserve are located south of the site. The Halesite Fire Department, TOH Marina and associated parking lot, and the Huntington Harbor are located west of the site across New York Avenue. The nearest surface water body is Huntington Harbor, located approximately 160 feet west of the western edge of the site. Surrounding land uses are shown on Figure 2.

2.3 SENSITIVE RECEPTORS

A Qualitative Human Exposure Assessment was completed as part of the March 2006 RAP to identify potential exposure of site contaminants to on-site or off-site receptors. Under current and future site use conditions, potential on-site receptors include possible trespassers and National Grid workers. Potential current and future off-site receptors include commercial workers, visitors to commercial establishments, off-site recreators, nearby off-site residents, and nearby off-site construction and utility workers.

2.4 SITE HISTORY

The Halesite former MGP (also known as the Huntington MGP) is believed to have operated from around 1892 to 1918. The water gas/carbureted gas or carbureted water-gas process and an oil-gas process were used on-site to manufacture gas. The plant was owned by the Standard Gas and Electric Light Company from 1892 to 1893. The Huntington Gas Company took over the site in 1900, followed by the Long Island Lighting Company (LILCO) in 1919. Structures that had been used for the manufacture of gas were later dismantled and removed from the site. Following the merger between LILCO and the Brooklyn Union Gas Company, the Halesite former MGP site became the property of LIPA, due to the presence of the electric substation facility. The former MGP structures are depicted on Figure 2. Additional details regarding the history of the site are provided in the April 2004 Final Remedial Investigation Report (RIR).

2.5 DESCRIPTION OF CONTEMPLATED SITE USE

The future use is unlikely to change from the current use, and redevelopment is not anticipated.

2.6 SITE GEOLOGY, HYDROGEOLOGY, AND SUBSURFACE CHARACTERISTICS

Based on the results of the remedial investigation, there are four primary stratigraphic units at the site. These units in order of increasing depth are as follows: topsoil/fill material, shallow sand unit, fine-grained unit, and glacial sand unit. The fine-grained unit primarily consists of silty sands and clay-rich silts with lesser amounts of clay. This unit is fairly continuous and encountered throughout the Lowland and Upland portions of the site. The unit is encountered between 8 and 10 feet below ground surface in the Lowland Area, and given its variable topography, at depths ranging from approximately 20 to 70 feet below ground surface, in the Upland Area. The unit is generally less than 5 feet thick, but grades to a thickness of up to 8 feet in areas of the Upland Area. Based on geotechnical analyses, the fine-grained unit acts as a partial confining unit, and where present, this unit has inhibited the vertical migration of MGP-related material released to the shallow subsurface environment. Geologic cross-sections of the Upland Area and Lowland Area are shown on Figures 4a and 4b, respectively. Geotechnical issues related to permeability and dewatering the Lowland Area sand in particular is discussed in Section 4.2.1.

Based on the results of the remedial investigation, and as summarized in the March 2006 RAP, the shallow groundwater in the Downgradient Area (i.e., the area between the site and Huntington Harbor, including New York Avenue) appears to be perched above the fine-grained unit, which acts as a partial confining layer. Shallow groundwater elevations at the site are tidally influenced. In a shallow groundwater study performed on July 15 and 16, 2003, groundwater elevations in the Lowland Area ranged from elevation +11.61 feet to +12.26 feet and groundwater elevations in the Upland Area ranged from elevation +11.95 feet to +13.53 feet on the eastern end of the site. The average hydraulic gradient in the shallow water table zone is relatively flat and increases in steepness as groundwater flows across the site from east to west towards Huntington Harbor. Groundwater elevations are depicted on the geologic cross-sections shown on Figures 4a and 4b.

2.7 NATURE AND EXTENT OF CONTAMINATION

An extensive remedial investigation was performed on the subject site from 2001 to 2004 with several phases of groundwater, soil and soil vapor sampling. Laboratory analytical reports and summary tables were included in the April 2004 RIR. The remedial investigation identified MGP-related contaminants in the subsurface beneath the former site and adjacent properties. The following sections describe the distribution of contaminants in the site area.

2.7.1 Soil Contamination

The remedial investigation identified three primary source areas of non-aqueous phase liquids (NAPL)-saturated soil at the site:

- Tar Deposit Area 3 in the Upland Area
- Small Crater/Tar Deposit Area 5 in the Upland Area
- Southeast of the former Gas House and MGP process area in the Lowland Area

Tar-saturated soil was observed in subsurface soil at and above the fine-grained unit in the vicinity of the three primary source areas. Additional impacts were identified below the fine-grained unit near two of these primary source areas: the Small Crater/Tar Deposit Area 5; and the former Gas House and MGP process area. Tar-saturated soil was identified to depths of approximately 52 feet below ground surface, 54 feet below ground surface and 22 feet below ground surface, in the vicinity of Tar Deposit Area 3, the Small Crater/Tar Deposit Area 5, and the former Gas House and MGP process area, respectively. Within these primary source areas, the majority of the tar-saturated soil was present in the shallow unsaturated soil near Tar Deposit Area 3, the Small Crater/Tar Deposit Area 5, and in the shallow saturated soil in the vicinity of the active LIPA substation. The deeper impacts represent a relatively small proportion of the MGP-related impacts and appear to be distributed in thin, discrete lenses.

Off-site sampling indicated that dense non-aqueous phase liquid (DNAPL) tar had not migrated off-site in the Upland Area or north of the site in the Lowland Area. Tar-saturated soil was observed off-site to the west in the Downgradient Area and to the south in the Lowland Area. No significant MGP-related impacts were identified in soil borings advanced along the bulkhead of Huntington Harbor in the Downgradient Area, and groundwater analyses in the Downgradient Area indicated limited MGP-related compounds. Sediment probing activities in Huntington Harbor did not indicate NAPL impacts to harbor sediments. MGP-related impacts at the south-adjacent property appear to be limited. Tar-saturated soil was observed in one soil boring limited the 10- to 11-foot interval. Other MGP-related impacts on the south-adjacent property were limited to depths ranging from approximately 4 to 12 feet below ground surface.

2.7.2 Groundwater Contamination

Groundwater impacts discussed in the RIR are based on the hydrogeologic setting of the site, according to the following zones: water table, shallow, intermediate, and deep. In general, concentrations of dissolved benzene, toluene, ethylbenzene, and xylenes (BTEX) and polycyclic aromatic hydrocarbons (PAHs) in groundwater on-site and downgradient of the site are decreasing or have remained relatively stable from 2001 through to the present.

Water Table Groundwater

The water table groundwater zone includes samples collected from the water table to a maximum depth of 14 feet below ground surface within the Lowland Area and at depths of 22 to 57 feet below ground surface in the Downgradient Area.

The analytical results indicated that the groundwater samples with the highest concentrations of BTEX and PAHs in the water table groundwater zone above the fine-grained unit were obtained from monitoring wells located in the Lowland Area. These wells were generally located downgradient of Tar Deposit Area 3 and south of the former Gas House and MGP process area in the Lowland Area. In addition, the groundwater results indicated non-detectable to low concentrations of BTEX and PAHs in samples collected from the Downgradient Area.

During the April 2005 sampling round, a 0.4-foot thick layer of light non-aqueous phase liquid (LNAPL) was observed in monitoring well HHMW-12 located near the southern boundary of the site in the Upland Area adjacent to the TOH Nature Preserve. Laboratory forensic analysis of this LNAPL indicated that it primarily consisted of diesel or #2 heating oil, and included the presence of a weathered tar product from a separate release.

Shallow Groundwater

The shallow groundwater zone includes groundwater samples collected immediately below the fine-grained unit and within the glacial sand unit. This zone generally corresponds to a 15-foot interval of approximately 0 to 15 feet below the fine-grained unit.

The groundwater sample with the highest concentrations of BTEX and PAHs in the shallow groundwater zone was obtained from monitoring well HHMW-10, located immediately southeast of the former Gas House and MGP process area located in the Lowland Area. DNAPL accumulated in monitoring well HHMW-10 and the high concentrations that were detected in the sample have been attributed to residual DNAPL in the groundwater sample. With the exception of well HHMW-10, monitoring wells sampled in July 2003 in the shallow zone generally exhibited non-detectable to low levels of BTEX and PAHs.

The analytical results of groundwater samples collected from monitoring wells in the Upland Area indicated non-detectable to low concentrations of BTEX and PAHs within the on-site and off-site portions of the Upland Area. This indicates that upgradient groundwater in the shallow zone beneath this area has not been significantly affected.

Intermediate Groundwater

The intermediate groundwater zone includes all groundwater data collected from the glacial sand unit from a depth of 30 to 60 feet below ground surface within the Lowland and Downgradient Areas. This zone generally corresponds to a 30-foot interval of approximately 15 to 45 feet below the fine-grained unit in these areas.

BTEX compounds were not detected in intermediate groundwater in the Lowland Area. Concentrations of PAHs were non-detectable to low, and carcinogenic PAHs were not detected in samples collected from the Lowland Area intermediate monitoring wells. In addition, the groundwater results indicated non-detect to low concentrations of BTEX and PAHs within the Upland Area, which indicates that groundwater within the intermediate zone beneath this area has not been significantly affected.

Deep Groundwater

The deep groundwater zone includes all groundwater data collected from the glacial sand unit greater than 60 feet below ground surface within the Lowland and Downgradient Areas. This zone generally corresponds to depths greater than 45 feet below the fine-grained unit in these areas. The deep groundwater results indicated non-detectable to low concentrations of BTEX and PAHs.

2.7.3 Soil Gas

The remedial investigation consisted of 14 soil vapor probes collected on-site and in the vicinity of the site. Concentrations of total BTEX in soil vapor ranged from non-detect to 30.3 parts per billion-volume (ppbv). Naphthalene, a compound associated with MGP waste, was not detected in any of the soil vapor samples.

3.0 SUMMARY OF REMEDIAL ACTION ASSESSMENT

3.1 REMEDIAL ACTION GOALS AND STANDARDS, CRITERIA, AND GUIDANCE

The remedial action goals for the site are: to be protective of public health and the environment given the intended use of the site; and to remove or eliminate identifiable sources of contamination to the extent feasible. These two goals will be applied to the site as the site-specific Standards, Criteria, and Guidance (SCGs), in accordance with DER-10, 6 NYCRR §375-1.10(c)(1), and Technical and Administrative Guidance Memorandum (TAGM) 4030, for determining success of the final remedy. Specifically, the following Site Specific Soil Action Levels (SSSALs) have been developed for the site:

- Total semivolatile organic compound (SVOC) concentration of 500 parts per million (ppm) for shallow soil to a depth of 2' bgs between the Upland Area excavations outlined in the March 2006 RAP.
- Restricted Industrial Use Soil Cleanup Objectives (SCOs), as outlined in 6 NYCRR §375-6.8(b) for all other areas and intervals.

3.2 REMEDIAL ACTION OBJECTIVES

Implementation of the approved remedial alternative will achieve the following Remedial Action Objectives (RAOs) developed for the site in accordance with regulatory requirements:

<u>Groundwater</u>

- Prevent, to the extent practicable, contact with, or ingestion of, contaminated groundwater associated with the site.
- Prevent, to the extent practicable, the migration of contaminated groundwater into Huntington Harbor.
- Remove, to the extent practicable, the source of groundwater contamination.

<u>Soil</u>

- Prevent, to the extent practicable, ingestion/direct contact with contaminated soil.
- Prevent, to the extent practicable, the migration of DNAPL tar beyond the boundaries of the site.

<u>Soil Vapor</u>

- Prevent, to the extent practicable, inhalation of contaminants volatilizing from soil or groundwater into enclosed structures.

3.3 REMEDIAL ACTION PLAN

The March 2006 RAP assessed five potential response actions, considering the RI findings, the current and future exposure scenarios, the requirements of the Order, and the applicable regulatory requirements. The RAP included tables and figures documenting the location and depth of contamination and planned excavation areas. The NYSDEC-approved remedial action consisted of the following:

- Excavate shallow/unsaturated soil in the two pre-determined DNAPL tar source areas in the Upland Area and excavate shallow soil below the water table in two pre-determined DNAPL source areas in the Lowland Area, including any structures that may remain in place, with off-site thermal treatment of soils;

- Construct an engineered cap in the unsaturated zone across the two DNAPL tar source areas in the Upland Area;
- Construct an engineered treatment barrier/zone along the eastern and the western property boundaries of the Lowland Area;
- Recover DNAPL tar where feasible;
- Establish institutional controls to prevent use of groundwater in the area affected by MGP-related contaminants and to prevent any disturbance of the engineered cap; and
- Monitor groundwater for potential effects from MGP-related contaminants in the Lowland Area and on the office building property south of the site.

As described previously, the objective of this RAWP – Phase I is to present a design for the first two elements of the approved remedial approach, which include excavation of the defined areas of concern on the site and construction of an engineered cap. Details of these remedial elements are set forth in Section 4.0. Details of the remaining remedial elements, including oxygen injection in the Lowland Area, NAPL recovery, and establishment of institutional controls, will be presented in the RAWP – Phase II to be submitted in October 2008.

The RAP also identified a remedial alternative contingency to address off-site contamination identified on the office building property south of the subject site. Remedial options were presented for either: active remediation (i.e., excavation) under the office building parking lot; or establishment of an environmental easement restricting future site uses if vapor monitoring indicates that the off-site contamination is not affecting indoor air in the office building. Based on recent and on-going discussions with the office building property owner, it is National Grid's intent to implement the off-site option for active remediation. This option involves excavation of shallow/unsaturated soils in the pre-determined DNAPL tar source area to the extent possible given structural limitations, with off-site thermal treatment of the excavated soil. The off-site contingency remediation work is included in this RAWP- Phase I, with details set forth in Section 4.0. The off-site remediation work is tentatively scheduled to be conducted in October 2008 during the same mobilization as the Upland and Lowland excavation. However, final scheduling of the off-site work is contingent on National Grid completing an access agreement with the property owner.

3.4 REMEDIAL DESIGN WORK PLAN

The February 2008 Remedial Design Work Plan (RDWP) established a protocol for characterization of shallow soil between the two areas of concern in the Upland Area, soil waste characterization analyses, and monitoring of groundwater in existing monitoring wells and soil vapor. The soil vapor and groundwater monitoring will be conducted prior to implementation of the Phase II RAWP (e.g., start-up of the oxygen injection system and NAPL recovery.) The shallow soil sampling and waste characterization was performed in July 2008 following NYSDEC approval of the RDWP in April 2008, and prior to implementation of the activities under this RAWP. Results from this sampling are described in the following sections.

3.4.1 Shallow Soil Delineation

The approved remedial alternative specified that surface soils that exceed 500 parts per million total PAHs between the two Upland excavation areas would be removed and replaced to the extent practicable during excavation activities. Therefore, shallow soil characterization was conducted in a targeted area between the two Upland excavations, as shown on Figure 5, to determine the extent of shallow soil removal required. The delineation sampling conducted on July 17, 2008 consisted of advancing eight soil borings (HA-RD-1 through HA-RD-8) within the targeted area to a depth of 2 feet, and collecting a composite sample across the 0 to 2 feet depth interval in each boring. All samples were analyzed for SVOCs by EPA Method 8270. Analytical results are summarized in Table 1 and complete laboratory analytical data reports are provided in Appendix B. The results indicated that samples from four of the eight borings (HA-RD-2, HA-RD-3, HA-RD-4, and HA-RD-5) contained total PAHs at concentrations exceeding 500 ppb. Based on results from the shallow delineation samples and from Upland shallow soil sample concentrations reported in the Remedial Investigation Report for the site (Vanasse Hangen Brustlin, Inc., 2004) shallow soil removal will be conducted in an approximately 40 by 70 foot area, as shown on Figure 5. This area will be excavated and disposed of off-site in accordance with the procedures outlined in Section 4.0 of this RAWP – Phase I.

3.4.2 Waste Characterization

Waste characterization soil sampling was performed in the two Upland excavation areas on July 17, 2008. Grab and composite soil samples were collected for laboratory analysis based on the combined requirements of the designated disposal facilities. The results indicated that soil in the two upland areas can be characterized as non-hazardous MGP waste undergoing thermal treatment. Analytical data is included in Appendix C. Waste characterization sampling in the Lowland excavation areas will be conducted in September 2008, during remediation activities in the Upland area. Waste characterization in the Off-site excavation area would also be conducted in September 2008, contingent on access.

4.0 REMEDIAL ACTION ACTIVITIES

The selected remedial alternative involves excavating and disposing of all hydrocarbon-contaminated soil in the areas shown on Figure 6. A HASP (Appendix D), Air Monitoring Work Plan (Appendix E), and a Stormwater Pollution Prevention Plan (SWPPP - Appendix A), will be implemented to ensure protection of site workers, the surrounding community, and nearby surface water during the soil excavation activities. All remediation work will be conducted in accordance with this RAWP – Phase I. The various elements of the proposed Phase I remedial alternative are described in more detail in the following sections.

4.1 SITE PREPARATION

Prior to conducting any intrusive activities for site remediation activities, the work zone(s), designated entry points, soil stockpile staging areas, decontamination zones, and truck routes will be established, as applicable. The site plan will be updated as necessary to reflect any changes in operations during the course of the intrusive work. During remediation activities, construction fencing will be installed along the perimeter of the work areas at the Lowland Area and off-site excavation area. Perimeter fencing is already in place at the Upland area. Any sediment and erosion control measures will be installed prior to any intrusive activities, as required by the SWPPP. Additional details of site preparation activities are provided in the following sections.

4.1.1 Access and Staging

To access the Upland Area excavations, a haul road beginning at the base of the hill adjacent to the rear portion of the Post Office driveway will be constructed and extend up the hill to the work areas. A temporary locking gate will be installed along the existing fence at the designated construction entrance. The haul road will be constructed with two switchbacks to achieve an average maximum grade of 15 percent. The road bed will be stabilized with geotextile fabric and crushed stone, and the sides of the road will be stabilized with gabion wall constructed of steel baskets and rip-rap stone, and by sloping the sidewalls and placing crushed stone. Prior to commencing remediation activities, the area where the road will be installed and the areas to be excavated will be cleared and grubbed. Material not in contact with soil will remain in the undisturbed vegetated/wooded areas, while vegetative material in contact with soil, such as root balls, will be handled as contaminated soil. The access road design and details are included in Appendix A.

As described in Section 3.4.1, the approved remedial alternative specifies that surface soil (i.e., soil shallower than 2 feet below grade) that exceeds 500 parts per million total PAHs between the two Upland excavation areas will be removed and replaced to the extent practicable during excavation activities. Therefore, prior to construction of the haul road, shallow fill containing PAH concentrations greater than 500 ppm in the area shown on Figure 5 will be excavated to approximately 2 feet below grade. This excavation area was based on shallow delineation sampling described in Section 3.4.1. In addition, soil within the targeted area between the two Upland excavations that is deeper than 2 feet below grade, contains total PAH concentrations greater than 500 ppm, and requires excavation for haul road construction will be segregated as contaminated material and disposed of off-site. This will be done to prevent re-working of such material (containing total PAH concentrations greater than 500 ppm), which could result in its placement at depths of less than two feet below grade. To delineate which soil will need to be managed as contaminated, soil borings will be advanced along the proposed road cut within the targeted area prior to the road construction. Composite samples will be collected from ground surface to the proposed excavation depth and analyzed for SVOCs by EPA Method 8270 at a minimum frequency of one sample per 100 cubic yards.

Construction fencing will be installed along the perimeter of the work areas at the Lowland Area and off-site excavation areas. Sidewalk closure and part time shoulder and lane closures may be required during the Lowland/off-site remediation activities to allow trucks to be loaded along the northbound lane of New York Avenue in front of the site. To maintain two-way traffic flow during lane closure, the traffic lanes will be shifted to the west by re-striping the road and installing appropriate signage and traffic cones to direct traffic into the temporary lanes. Permit requirements are described in Section 4.1.3.

Parking will be prohibited at the south-adjacent office building property during off-site soil excavation activities. Therefore, temporary parking will be provided for the office workers at the Town of Huntington Marina, located across New York Avenue. A crossing guard will be provided in the morning and afternoon to assist office workers in safely crossing the street.

Work and storage trailers will be located north of the substation. Staging and storage of other materials, to the extent practicable, will be confined to the area east (rear) of the substation. By the nature of the work involved in this project, a certain amount of material and equipment staging and storage will be required adjacent to areas being worked on. These areas will move as work progresses.

4.1.2 Sediment and Erosion Control Measures

Sediment and erosion control measures will be installed at the site prior to conducting any ground-intrusive work. These measures will be installed according to the requirements of the SWPPP and all applicable or relevant and appropriate federal, state and local laws. The SWPPP is included as Appendix A. The control measures include silt fencing or hay bales around the perimeter of the work areas at the site and the perimeter of contaminated soil stockpiles, stabilized construction pads at each construction entrance, and temporary and permanent stabilization measures to address disturbed areas, including the steep slope in the Upland Area. Open excavations will be covered with polyethylene sheeting if rain is anticipated to prevent accumulation of rainwater or movement of contaminated materials by overland flow of rainwater. Temporary stockpiles will be placed on polyethylene sheeting on the upgradient side of open excavations so that excess water will drain into the excavations. Excessive moisture in stockpiles of saturated soil will be managed through the use of absorbent polymers, such as ZapZorb®. A manufacturer cut sheet and Material Safety Data Sheet (MSDS) for ZapZorb are included in Appendix F.

4.1.3 Permits

All necessary permits will be obtained prior to commencing the remediation work. The required permits include:

- Town of Huntington – Permits will be obtained from the Departments of Building & Housing (building, plumbing, electrical, and mechanical).
- New York State Department of Transportation – A Maintenance and Protection of Traffic Plan (MPT) for the sidewalk and shoulder closure along New York Avenue for the Lowland Area and off-site excavations will be submitted for NYSDOT approval.

4.2 SOIL REMOVAL

4.2.1 Excavation

Extent

Excavation in the Upland and Lowland Areas and the off-site excavation area will be completed as outlined in the RAP and depicted on Figure 6. The actual extent of the Lowland Area excavations may require minor adjustments in the field to avoid interference with subsurface utilities. An estimated total of 900 and 1,100 cubic yards of contaminated soil will be removed from the Upland and Lowland DNAPL excavation areas, respectively. An estimated 655 cubic yards of contaminated soil will be removed from the off-site excavation area. Approximately 200 yards of shallow soil will be removed from the 2-foot deep excavation area between the two Upland excavations.

Following access road construction, shallow unsaturated soil will be excavated in the newly delineated area to a depth of 2’ below ground surface and in the two Upland Area

DNAPL tar source areas to depths of approximately 22 feet below ground surface (Tar Deposit Area #5) and 13 feet below ground surface (Tar Deposit Area #3). For the Lowland Area, shallow soil will be excavated below the water table in two DNAPL source areas to depths of approximately 12 feet below ground surface (southwest corner of site) and 13 feet below ground surface (northwest corner of site). For the off-site excavation area, soil will be excavated below the water table to a depth of approximately 12 feet below ground surface. The elevation at the base of each excavation will be surveyed to confirm the excavation depths.

Methodology

The excavations will be shored using slide panel and rail shoring systems. Due to the steep slope of the of Upland Area, excavated material will be removed and loaded into a small track-mounted dump truck and transported down the hill to the contaminated soil staging area. The material will be offloaded from the dump truck and stockpiled on 6-mil polyethylene sheeting with a bermed perimeter for subsequent load out. The steep slope precludes the use of traditional rubber tire-mounted trucks and is the limiting factor as to the size of the equipment that can be utilized.

For the Lowland Area, excavated material will be removed, with the wet material staged short term on 6-mil polyethylene sheeting immediately next to the excavation to drain, and then either live-loaded for off-site disposal or loaded into a dump truck and transported to the contaminated soil staging area behind the substation. The material will be off-loaded from the dump truck and staged for subsequent load out.

For the off-site remediation, excavated material will be excavated, with wet material staged on plastic sheeting immediately next to the excavation to drain. The drained material then will be cast over the retaining wall along the northern edge of the office parking lot onto the substation property, and transferred to the stockpile staging area using a front end loader.

The Lowland excavations will be performed "in the wet" (i.e. without dewatering) to minimize impacts to the adjacent substation and adjacent roadway and properties. As shown on Figure 6, the Lowland Area excavations (where groundwater is anticipated during excavation), are located immediately adjacent to the active electrical substation with aboveground and underground electrical components, subsurface electrical duct banks and manholes, and off-site driveways and sidewalks with additional subsurface utilities all encroaching on the areas of proposed excavation. In addition, the excavations are adjacent to large trees and utility poles and guy wires. The off-site excavation also will be performed in the wet to minimize impacts to the office building foundation.

The soil in the Lowland and off-site areas consists of loose, fine grained soil (primarily sand and silt). Dewatering in loose sands can be problematic, due to the high permeability and loose nature of the material. If the area were to be dewatered during excavation, the weight of the soil and the water would be removed in a relatively short period of time. The resulting upward flow of water and entrained fine grained soil into the excavation area (uplift) would likely cause "running" sands in and/or surrounding the excavation area. The soil could become liquefied and create an unstable subsurface condition that could adversely affect adjacent foundations and structures. However, if the water remained in the excavation area and soil was excavated within a trench box, the overall pressures would remain stable for the short period of time needed to remove the soil within each area. To increase the stability of the excavation, a bentonite polymer would be added to the wet soil, if needed based on field observations, to increase the density, enabling excavation to take place with a less likelihood of causing a quick condition in the surrounding soil. A manufacturer cut sheet and MSDS for the bentonite polymer are included in Appendix F. Because the substation is not pile supported, excavation in the wet will minimize the likelihood of forming a quick condition, which could result in undermining the substation and/or adjacent subsurface utilities and sidewalks.

For additional structural support, excavation boxes, constructed using a slide rail system, will be used to maintain excavation sidewalls in all remediation areas. The slide rail system will consist of a series of environmental corner posts (corners) and panels that are used to form a box. Each corner contains a set of two or three slide rails on three or four sides. Initially, panels are installed on the outer corner rails to form the first level of the initial box. As the excavation is extended vertically, the next level of the box is formed by installing new panels on the inner corner rails, and the box is pushed downward. As the excavation is expanded horizontally, adjacent boxes are formed by adding panels to the unused sets of rails on the environmental corners and installing new corners and panels, as per the shoring system design provided in Appendix G. Using the environmental corners allows a panel to always be present between clean and contaminated soils. Once the excavation activities are completed in a box, the excavation is backfilled and the panels are removed incrementally, starting from the bottom level, as backfilling and compaction activities continue. The lateral extent of the excavation areas will mimic the proposed configurations shown on Figure 6 as closely as possible; however, slight modifications will be required to allow the use of rectangular shoring boxes at irregular corners (e.g., the southwestern corner of the northern Lowland excavation area).

The excavations will be conducted in small (15 feet by 20 feet) cells in order to further minimize impacts from running sands to the substation, sidewalk, roadway, and utilities. The controlled size of the excavation cells and the erosion control measures summarized in Section 4.1.2 and detailed in Appendix A will also allow for greater control of overland stormwater flow during rain events.

Open excavations will be covered with polyethylene sheeting if rain is anticipated. An absorbent polymer, such as ZapZorb® or similar, will be used to absorb free liquids from stockpiled materials. Washed crushed stone will be utilized as backfill below the water table since this material has larger pore space than finer grained material to prevent groundwater levels from rising to grade during backfilling activities.

4.2.2 Trucking and Disposal

All contaminated soil will be transported to a thermal desorption recycling facility. All trucks will have the required waste-transporter permits from the NYSDEC as per 6 NYCRR 364. The trucks will be covered with plastic sheeting for odor control. All trucks will be covered with a tarp before leaving the site.

A decontamination pad will be located at the construction exit gate, as shown on Figure 6. Prior to entering and leaving the site, all vehicles will be inspected. Any such contamination will be removed on the decontamination pad before the truck exits the site using dry decontamination methods when possible. Any generated wash water will be collected for treatment and disposal.

All trucks for the excavation in the Upland Area will enter the site from the north-adjacent USPS driveway on New York Avenue. Trucks for the excavation in the Lowland Area and off-site will be loaded either from the closed northbound parking lane on New York Avenue in front of the site or from the adjacent driveways. Once loaded, all trucks will proceed south directly to the Long Island Expressway (LIE) via New York Avenue (State Highway 110), which becomes Walt Whitman Road and Broad Hollow Road (both still known as State Highway 110), with no stopping or staging in the neighborhood between the site and the LIE. The specified primary truck route to and from the LIE is shown on Figure 7. An alternate truck route would be developed in the event of road closures or other detours along the primary truck route.

Trucks will proceed west on the LIE with the final route dependent on the designated disposal facility. Four disposal facilities are contemplated for this remediation: Clean Earth of Philadelphia, Inc. in South Philadelphia, Pennsylvania; Clean Earth of New Castle, Inc. in New Castle, Delaware; Casie Protank (MART) of Vineland, NJ; and ESMI of New Jersey in Keasbey, NJ.

4.3 Remediation Monitoring

4.3.1 Soil Segregation

An environmental professional will be on-site to monitor all remediation activities and to direct the construction personnel in segregating soil based on waste characterization analyses. Monitoring will include inspecting soil for heavy staining, sheen, odors, or other evidence of gross contamination, and field screening for the presence of VOCs with a photoionization detector (PID). Material excavated outside of the targeted remediation areas (e.g., for construction of the access road and for installation of the clay liners outside the Upland Area excavations) will be reused on-site as backfill, unless gross contamination is observed during field monitoring.

4.3.2 Air/Odor Monitoring and Mitigation

Work zone air monitoring will be performed in accordance with a site-specific Health and Safety Plan provided in Appendix D. Air monitoring at the site perimeter and in the surrounding community will be performed in accordance with the Air Monitoring Work Plan (AMWP) provided in Appendix E. The AMWP specifies monitoring at the site perimeter for organic vapors, particulates (PM_{10}), odors, and visible dust.

Real-time perimeter air quality monitoring using an Air Logics system will be performed at the site during remedial activities when subsurface soils are excavated. The collection of real-time data will allow implementation of an early warning system to prevent elevated off-site exposures and to document conditions occurring at the site during excavation activities. The warning and action levels are based on the New York State Department of Health (NYSDOH) Generic Community Air Monitoring Plan (CAMP). Although this is a relatively small site, given the topography and that the work will be located near residences and businesses that have continual foot traffic, six monitoring stations will be used. The planned locations of the air monitoring stations are shown on Figure 8.

To supplement the real-time monitoring data, perimeter walk-around air monitoring will be completed to document potential nuisance odors and visible dust and to implement controls during the remediation construction activities, as necessary.

Odor will be controlled using odor controlling foam and 6 to 10 mil polyethylene sheeting. Additionally, a modified Piian odor neutralizing system (or equivalent) will be positioned along the perimeter fencing of the Lowland Area of the site during excavation activities. Manufacturer cut sheets and MSDSs for the odor control systems are provided in Appendix F.

Temporary stockpiles will be staged on plastic sheeting and covered each night. Large flat open excavations will be tarped with polyethylene sheeting overnight if nuisance odors are anticipated. When nuisance odors are noted extending beyond the perimeter of the work area, the working excavations and stockpiles in the vicinity will be sprayed with odor controlling foam. Trucks will be tarped prior to leaving the site to minimize odors from the material in the truck bed.

During excavation, the fresh air intakes for air handling systems on the off-site buildings adjacent to the site to the north, west and south will be equipped with carbon filters, as accessible and practicable, to prevent contaminant vapors and/or odors from entering these buildings via the heating/ventilation/air conditioning (HVAC) system.

4.3.3 Surveying

Once the designated limits of the soil removal area have been reached and prior to backfilling, the boundaries and bottom elevations of the excavation areas will be surveyed by a New York State-licensed surveyor. The footprint of the engineered cap will also be surveyed.

4.3.4 Documentation Sampling

After excavation is complete, one bottom documentation soil sample will be collected from each excavation area. In areas where the base excavation depth is below the water table, endpoint samples will be collected to the extent practicable with the excavator bucket. If significant soil mixing is noted on the excavation bottom during soil removal, the excavation will be backfilled and the bottom documentation sample will be collected from the surveyed bottom elevation from a post-excavation Geoprobe soil boring. The sides of the excavation areas will be limited to the dimensions of the shoring; therefore, sidewall documentation soil samples will not be collected. The bottom documentation samples will be analyzed for VOCs using EPA Method 8260 and base-neutral SVOCs using EPA Method 8270. While further excavation beyond the predefined excavation boundaries and depths will not be feasible due to physical limitations, any residual contamination exceeding the SSSALs will be documented in the Final Engineering Report (FER) and Site Management Plan (SMP). All documentation sampling will be conducted in accordance with the Quality Assurance Project Plan (QAPP) included in Appendix H.

4.3.5 Imported Backfill Sampling

Native material from a virgin quarry source will not be sampled prior to use as backfill on the site. All other imported material will be tested via collection of one composite sample per 1000 cubic yards of material from each source. Samples will be analyzed for VOCs using EPA Method 8260, SVOCs using EPA Method 8270, TAL metals using EPA Method 6000/7000 series, polychlorinated biphenyls (PCBs) using EPA Method 8082, pesticides using EPA Method 8081, and herbicides using EPA Method 8151. Soils will be considered appropriate for use as on-site imported backfill if contaminant concentrations are less than the 6 NYCRR Part 375 Residential Soil Cleanup Objectives. All sampling of imported backfill will be conducted in accordance with the QAPP included in Appendix H.

4.3.6 Recordkeeping

A project logbook will be maintained during all remediation activities, and will be available for NYSDEC and NYSDOH inspection. The following information will be recorded in the project logbook:

- Date, weather, and site conditions;
- Names and companies of all on-site personnel;
- Makes, models, and calibration records for all monitoring equipment;
- Makes and models of remediation equipment;
- Sample numbers and descriptions;
- A truck log listing license plate numbers and arrival/departure times; and
- Site sketches showing excavation areas, sampling locations, and stockpiles (if any).

Copies of all waste manifests and bills of lading will be maintained with the project logbook.

4.4 ENGINEERING CONTROLS

An impervious liner will be installed over the Upland Area excavations and all soil disturbance areas will be stabilized and the vegetation restored.

4.4.1 Upland Area Liner

Backfilling of the two excavations in the Upland Area will be accomplished in two stages to facilitate the installation of the impervious liner. The excavation initially will be backfilled to a depth of approximately 2.25 feet below ground surface. A three-inch thick geosynthetic clay liner (GCL) will then be installed and will extend an additional five feet laterally beyond each of the Upland Area excavation boundaries. GCLs are high performance self-sealing environmental liners composed of geosynthetic carrier components integrated with a layer of low-permeability volclay sodium bentonite. The locations of the Upland Area GCL caps are depicted on Figure 9. Following installation of the GCL cap, the area would be restored in accordance with the Final Grading and Landscaping Plans, as described in Section 4.4.2., which includes placement of 2 feet of top soil to the final grade.

The additional shallow material removed to install the liner beyond the limits of the excavation will be replaced as subsurface backfill below the liner if it is determined not to be grossly contaminated based upon field screening; otherwise it will be staged with the excavated material for subsequent off-site disposal. The backfilled surface to be lined (i.e., material at a depth of approximately 2.25 feet below ground surface) and the top 12 inches of soil cover at grade will be smooth and free of debris, roots, and angular or sharp rocks larger than 1 inch in diameter.

4.4.2 Stabilization, Landscaping, and Restoration

During the excavation and site work activities, care will be taken to minimize the impact on existing vegetation. Site restoration will include: construction of a gravel access path along a portion of the haul road to facilitate access to the monitoring and any future NAPL recovery wells; removal/regrading of the portions of the haul road not used for the access path; and filling in and landscaping to stabilize and restore the excavation areas and other areas of disturbance. Paved areas and sidewalks will be restored, as warranted, including the rear parking lot of the off-site office building property. A landscaping plan, which includes specifications for slope erosion control plantings is included in Appendix A.

4.5 CITIZEN PARTICIPATION

Citizen participation activities included discussions with the NYSDEC, NYSDOH, Town of Huntington, and the Suffolk County Department of Health Services. The meeting was conducted on March 13, 2008, and included a presentation on the proposed remedial actions and a question and answer period. A public meeting will be held prior to implementation of the RAWP – Phase I.

4.6 INSTITUTIONAL CONTROLS

4.6.1 Site Management Plan

Upon completion of the Phase II remedial activities, a Site Management Plan (SMP) will be prepared to specify future soil handling requirements, operation and maintenance procedures, and site use restrictions. The Site Management Plan will include a Soil Management Plan, HASP, and Operation, Maintenance, and Monitoring (OM&M) Plan. The OM&M Plan, which will be prepared at the completion of the remedy (i.e., following implementation of the RAWP – Phase II remedial elements), will include the following:

- As-built drawings and descriptions of all engineering controls implemented as part of the long-term remedy (i.e., oxygen injection system, NAPL recovery, site cap), including manufacturer cut sheets of any remediation equipment;
- Operation and maintenance procedures, including an inspection protocol, to ensure proper functioning of the remedy;
- A groundwater monitoring plan to evaluate the performance of the remedy;
- A soil vapor and indoor air sampling plan to evaluate the performance of the remedy; and
- A contingency plan describing procedures to be conducted in the event of an emergency.

The OM&M Plan will be updated periodically during use to reflect changes in site conditions or the manner in which the remedy is operated and/or maintained.

4.6.2 Deed Restriction

Following completion of the Phase II remedial activities, a deed restriction will be recorded for the site to enforce the following use restrictions:

- Restriction of use of the property for industrial use only;

- The use of the groundwater underlying the project site will be prohibited without treatment rendering it safe for the intended purpose;
- All future soil disturbance activities (post-remediation), including building renovation/expansion, subgrade utility line repair/relocation, and new construction must be conducted in accordance with the SMP;
- Annual inspections and certifications must be conducted in accordance with the SMP;
- The site cap, including the impermeable barrier installed in the Upland Area, must be maintained in accordance with the SMP;
- Operation, maintenance, and monitoring of all engineering controls must be performed in a manner specified in the SMP;
- Annual inspection and reporting, including operational and monitoring data, must be performed in a manner specified in the SMP;
- Groundwater and other environmental or public health monitoring, and reporting of information obtained, must be performed in a manner specified in the SMP;
- On-site environmental monitoring devices, including but not limited to, groundwater monitor wells and vapor monitoring wells, must be protected and replaced as necessary to ensure continued functioning in the manner specified in the SMP; and
- Vegetable gardens shall be prohibited.

The deed restriction will be recorded in the Suffolk County Clerk's Office and will include: a description of the use restriction; a map showing the area of the restriction; a written agreement by the property owner to establish and maintain the institutional and engineering controls; and a copy of the Site Management Plan.

4.6.3 Annual Certification

An Annual Certification will be submitted to the NYSDEC to document the efficacy of the remedy. The Annual Certification will be signed by a professional engineer or other qualified environmental professional and will certify that: the institutional and/or engineering controls are unchanged from the previous certification; nothing has occurred that would impair the ability of the controls to protect public health and the environment; and no violations of the site management plan have occurred. If changes are noted, the Annual Certification will include documentation explaining why the certification cannot be rendered and a statement of proposed corrective measures with a proposed schedule for implementing the corrective action. The certification will include the monitoring data collected during the reporting period as specified in the Site Management Plan.

4.7 REPORTING/MEETINGS

4.7.1 Weekly Progress Meetings

Weekly progress meetings will be held at the site during excavation activities with all on-site personnel. The meetings will include a summary of activities for the week, air sampling results (including any exceedances), and a description of any odor or dust problems and corrective actions taken. Any time-sensitive information (e.g., the occurrence of a spill or an emergency situation) will be communicated directly to the NYSDEC project manager via telephone or email.

4.7.2 Final Engineering Report

Upon completion of site remediation under the RAWP Phase I and Phase II, a Final Engineering Report will be prepared and submitted to the NYSDEC and NYSDOH. The Final Engineering Report will include:

- Photographs of remedial activities;
- As-built drawings for all constructed elements (e.g., excavation areas, oxygen injection system, NAPL recovery and other wells);
- Monitoring and documentation sampling results collected during implementation of the remedy;
- Site Management Plan (SMP) for the remedy;
- Operation, Maintenance, and Monitoring (OM&M) Plan for the oxygen injection system, NAPL recovery, groundwater monitoring, and site cap;
- Groundwater Monitoring Plan;
- Endpoint Sampling Results;
- Accounting of the destination of all material removed from the site and associated manifests/bills of lading and certificates of disposal from the respective receiving facilities;
- Documentation of source approval and sampling for backfill materials imported from off-site;
- Site survey showing locations of all primary contaminant sources identified during investigation and remediation activities; and
- Itemized description of costs incurred during site remediation.

4.8 SCHEDULE AND COSTS

Field work will be scheduled from 7:00 AM to 6:00 PM on weekdays. Appropriate approvals will be obtained for work conducted outside of these hours. The Phase I remediation work is scheduled for September through December 2008, with the Upland Area excavation and cap installation occurring between early September and mid-October, the off-site excavation and restoration occurring between mid-October and mid-November (contingent on access), and the Lowland Area excavation and restoration occurring between mid-November and mid-December. No intrusive excavation work will be performed prior to Labor Day. This schedule was coordinated with the Town of Huntington to minimize disruption of public activity during the summer months.

The RAWP – Phase II will be prepared during the on-going Phase I remediation activities, and is expected to be completed by mid-October 2008. The oxygen injection and NAPL recovery well installation will be conducted after excavation and site restoration is complete, and is anticipated to commence in December 2008 or January 2009.

The anticipated schedule and estimated costs for the remedial program are provided in Appendix I.

5.0 REFERENCES

1. NYSDEC; *Draft DER-10 Technical Guidance for Site Investigation and Remediation*; Division of Environmental Remediation; December 2002.
2. Dvirka and Bartilucci (D&B); *Remedial Investigation Report*; Halesite Former Manufactured Gas Plant Site; December 2002.
3. Vanasse Hangen Brustlin, Inc.; *Final Remedial Investigation Report*, Halesite Former Manufactured Gas Plant Site, Town of Huntington, New York, April 2004.
4. GEI Consultants, Inc.; *Remedial Action Plan*, Halesite Former Manufactured Gas Plant Site; March 2006.
5. AKRF Engineering, P.C.; *Remedial Design Work Plan*, Halesite Former Manufactured Gas Plant Site, February 26, 2008.
6. NYSDOH; *Generic Community Air Monitoring Plan*; from Draft DER-10 Technical Guidance for Site Investigation and Remediation, NYDEC, December 2002.

TABLES

Table Notes
Halesite Former Manufactured Gas Plant
Halesite, Suffolk County, NY
Soil Analytical Results
Semivolatile Organic Compounds

1	**:**	Duplicate = Duplicate sample of HA-RD-04 (0-1.75)
µg/kg	**:**	micrograms per kilogram = parts per billion (ppb)
U	**:**	compound not detected
*****	**:**	MS/MSD quality control exceeds control limits
J	**:**	Result is an estimated value below the reporting limit or a tentatively identified compound (TIC)
PAHs	**:**	Polycyclic Aromatic Hydrocarbons (highlighted in green or yellow)
CaPAHs	**:**	Carcinogenic PAHs (highlighted in green)

Table 1
Halesite Former Manufactured Gas Plant
Halesite, Suffolk County, NY
Soil Analytical Results

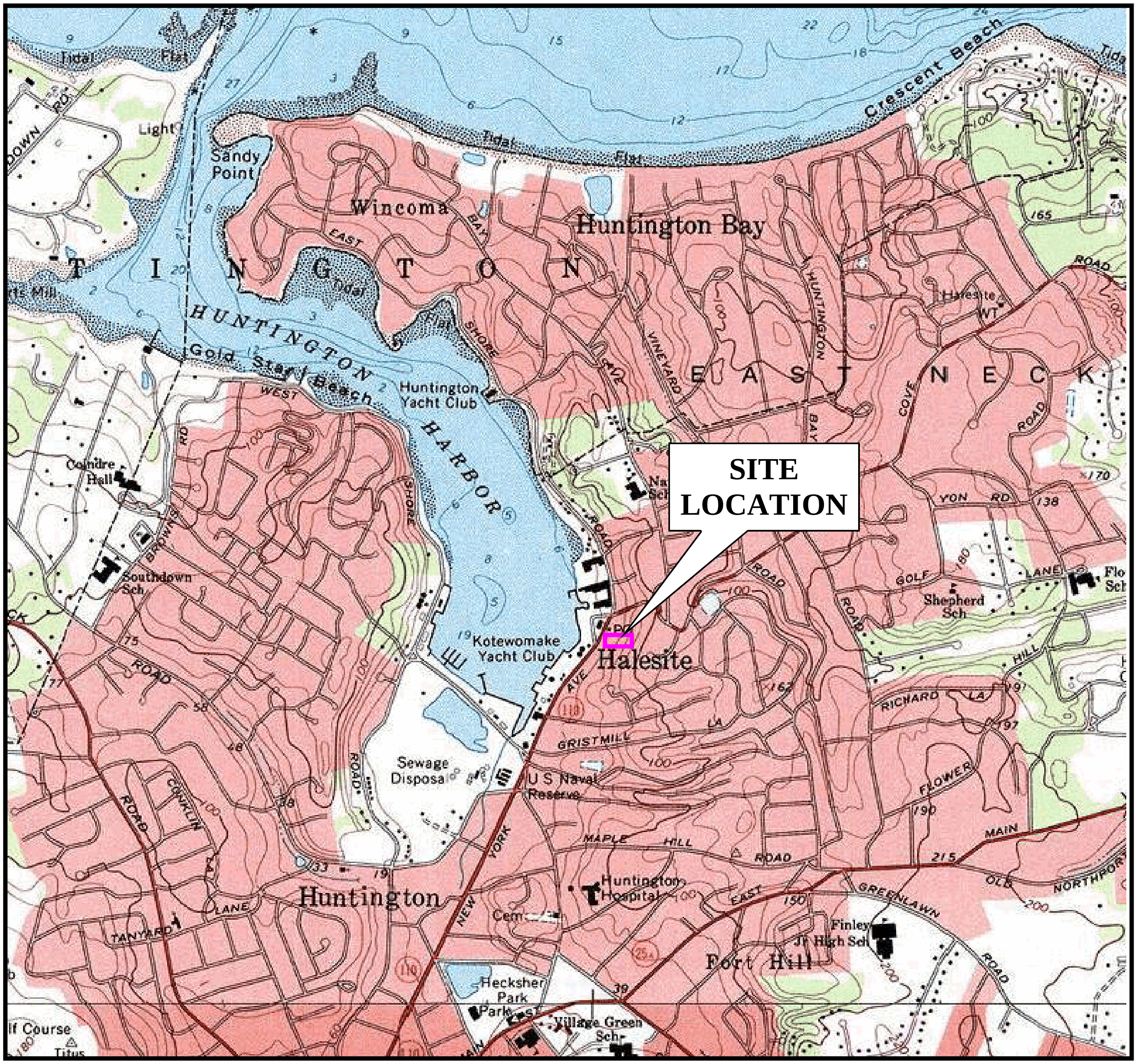
Semivolatile Organic Compounds

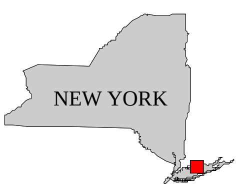
Client ID Lab Sample ID Date Sampled Dilution Units=ug/Kg	HA-RD-01 (0-2) 220-5890-1 7/17/2008 1	HA-RD-02 (0-1.5) 220-5890-2 7/17/2008 5	HA-RD-03 (0-2) 220-5890-3 7/17/2008 20	HA-RD-04 (0-1.75) 220-5890-4 7/17/2008 20	HA-RD-05 (0-2) 220-5890-5 7/17/2008 10
1,2,4-Trichlorobenzene	860 U	4,200 U	18,000 U	17,000 U	8,600 U
1,2-Dichlorobenzene	850 U	4,100 U	18,000 U	17,000 U	8,500 U
1,3-Dichlorobenzene	700 U	3,400 U	15,000 U	14,000 U	7,000 U
1,4-Dichlorobenzene	910 U	4,400 U	19,000 U	18,000 U	9,100 U
2,2'-oxybis[1-chloropropane]	1,000 U	4,900 U	22,000 U	20,000 U	10,000 U
2,4,5-Trichlorophenol	780 U	3,800 U	17,000 U	15,000 U	7,800 U
2,4,6-Trichlorophenol	860 U	4,200 U	18,000 U	17,000 U	8,500 U
2,4-Dichlorophenol	880 U	4,300 U	19,000 U	17,000 U	8,800 U
2,4-Dimethylphenol	690 U	3,300 U	15,000 U	14,000 U	6,900 U
2,4-Dinitrophenol	5,700 U *	28,000 U *	120,000 U *	110,000 U *	57,000 U *
2,4-Dinitrotoluene	800 U	3,900 U	17,000 U	16,000 U	8,000 U
2,6-Dinitrotoluene	700 U	3,400 U	15,000 U	14,000 U	7,000 U
2-Chloronaphthalene	900 U	4,400 U	19,000 U	18,000 U	9,000 U
2-Chlorophenol	950 U	4,600 U	20,000 U	19,000 U	9,500 U
2-Methylnaphthalene	970 U	4,700 U	150,000	19,000 U	18,000 J
2-Methylphenol	770 U	3,700 U	16,000 U	15,000 U	7,700 U
2-Nitroaniline	830 U	4,000 U	18,000 U	16,000 U	8,300 U
2-Nitrophenol	740 U	3,600 U	16,000 U	15,000 U	7,400 U
3,3'-Dichlorobenzidine	870 U	4,200 U	19,000 U	17,000 U	8,700 U
3-Nitroaniline	800 U	3,900 U	17,000 U	16,000 U	8,000 U
4,6-Dinitro-2-methylphenol	380 U	1,900 U	8,200 U	7,600 U	3,800 U
4-Bromophenyl phenyl ether	780 U	3,800 U	17,000 U	15,000 U	7,800 U
4-Chloro-3-methylphenol	760 U	3,700 U	16,000 U	15,000 U	7,600 U
4-Chloroaniline	690 U	3,300 U	15,000 U	14,000 U	6,900 U
4-Chlorophenyl phenyl ether	900 U	4,400 U	19,000 U	18,000 U	9,000 U
4-Methylphenol	1,000 U	4,900 U	22,000 U	20,000 U	10,000 U
4-Nitroaniline	800 U	3,900 U	17,000 U	16,000 U	7,900 U
4-Nitrophenol	950 U	4,600 U	20,000 U	19,000 U	9,500 U
Acenaphthene	920 U	4,500 U	20,000 U	18,000 U	9,200 U
Acenaphthylene	2,400 J	89,000	1,100,000	300,000	120,000
Anthracene	1,300 J	96,000	560,000	120,000	53,000
Benzo[a]anthracene	3,000 J	150,000	810,000	270,000	58,000
Benzo[a]pyrene	3,900 J	170,000	1,500,000	550,000	5,900 U
Benzo[b]fluoranthene	4,000 J	170,000	1,300,000	630,000	150,000
Benzo[g,h,i]perylene	6,000	190,000	780,000	1,100,000	460,000
Benzo[k]fluoranthene	1,400 J	68,000	510,000	220,000	46,000 J
Benzyl alcohol	730 U	3,600 U	16,000 U	15,000 U	7,300 U
Bis(2-chloroethoxy)methane	870 U	4,200 U	19,000 U	17,000 U	8,700 U
Bis(2-chloroethyl)ether	1,200 U	5,800 U	26,000 U	24,000 U	12,000 U
Bis(2-ethylhexyl) phthalate	4,700 J	4,100 U	18,000 U	17,000 U	8,400 U
Butyl benzyl phthalate	860 U	4,200 U	18,000 U	17,000 U	8,600 U
Carbazole	840 U	4,100 U	30,000 J	17,000 U	8,400 U
Chrysene	3,800 J	200,000	1,100,000	380,000	93,000
Dibenz(a,h)anthracene	2,000 J	31,000	190,000	150,000	63,000
Dibenzofuran	920 U	4,500 U	20,000 U	18,000 U	9,200 U
Diethyl phthalate	980 U	4,800 U	21,000 U	19,000 U	9,800 U
Dimethyl phthalate	900 U	4,400 U	19,000 U	18,000 U	9,000 U
Di-n-butyl phthalate	990 U	4,800 U	25,000 J	20,000 J	10,000 J
Di-n-octyl phthalate	750 U	3,600 U	16,000 U	15,000 U	7,500 U
Fluoranthene	3,500 J	130,000	720,000	200,000	35,000 J
Fluorene	960 U	9,900 J	170,000	39,000 J	16,000 J
Hexachlorobenzene	1,000 U	4,900 U	22,000 U	20,000 U	10,000 U
Hexachlorobutadiene	900 U	4,400 U	19,000 U	18,000 U	9,000 U
Hexachlorocyclopentadiene	1,300 U	6,400 U	28,000 U	26,000 U	13,000 U
Hexachloroethane	820 U	4,000 U	18,000 U	16,000 U	8,200 U
Indeno[1,2,3-cd]pyrene	7,600	160,000	810,000	900,000	430,000
Isophorone	970 U	4,700 U	21,000 U	19,000 U	9,700 U
Naphthalene	920 U	7,700 J	66,000 J	18,000 U	9,200 U
Nitrobenzene	1,000 U	5,000 U	22,000 U	20,000 U	10,000 U
N-Nitrosodi-n-propylamine	1,100 U	5,100 U	22,000 U	21,000 U	11,000 U
N-Nitrosodiphenylamine	850 U	4,100 U	18,000 U	17,000 U	8,500 U
Pentachlorophenol	520 U	2,500 U	11,000 U	10,000 U	5,200 U
Phenanthrene	990 J	32,000	79,000 J	48,000 J	9,600 J
Phenol	870 U	4,200 U	19,000 U	17,000 U	8,700 U
Pyrene	6,200	270,000	1,100,000	520,000	86,000
Total PAHs	46,090	1,773,600	10,945,000	5,427,000	1,637,600
Total CaPAHs	25,700	949,000	6,220,000	3,100,000	840,000

Table 1
Halesite Former Manufactured Gas Plant
Halesite, Suffolk County, NY
Soil Analytical Results
Semivolatile Organic Compounds

Client ID Lab Sample ID Date Sampled Dilution Units=ug/Kg	HA-RD-06 (0-2) 220-5890-6 7/17/2008 1	HA-RD-07 (0-2) 220-5890-7 7/17/2008 1	HA-RD-08 (0-2) 220-5890-8 7/17/2008 1	DUPLICATE[1] 220-5890-9 7/17/2008 20
1,2,4-Trichlorobenzene	930 U	870 U	980 U	17,000 U
1,2-Dichlorobenzene	920 U	860 U	960 U	17,000 U
1,3-Dichlorobenzene	760 U	710 U	800 U	14,000 U
1,4-Dichlorobenzene	990 U	920 U	1,000 U	18,000 U
2,2'-oxybis[1-chloropropane]	1,100 U	1,000 U	1,100 U	20,000 U
2,4,5-Trichlorophenol	840 U	790 U	880 U	15,000 U
2,4,6-Trichlorophenol	930 U	870 U	970 U	17,000 U
2,4-Dichlorophenol	950 U	890 U	1,000 U	18,000 U
2,4-Dimethylphenol	750 U	700 U	780 U	14,000 U
2,4-Dinitrophenol	6,200 U *	5,800 U *	6,500 U *	110,000 U *
2,4-Dinitrotoluene	870 U	810 U	910 U	16,000 U
2,6-Dinitrotoluene	760 U	710 U	800 U	14,000 U
2-Chloronaphthalene	980 U	910 U	1,000 U	18,000 U
2-Chlorophenol	1,000 U	970 U	1,100 U	19,000 U
2-Methylnaphthalene	1,100 U	980 U	1,100 U	99,000 J
2-Methylphenol	830 U	780 U	870 U	15,000 U
2-Nitroaniline	900 U	840 U	950 U	17,000 U
2-Nitrophenol	800 U	750 U	840 U	15,000 U
3,3'-Dichlorobenzidine	950 U	880 U	990 U	17,000 U
3-Nitroaniline	870 U	810 U	910 U	16,000 U
4,6-Dinitro-2-methylphenol	420 U	390 U	440 U	7,600 U
4-Bromophenyl phenyl ether	840 U	790 U	890 U	16,000 U
4-Chloro-3-methylphenol	830 U	770 U	870 U	15,000 U
4-Chloroaniline	750 U	700 U	780 U	14,000 U
4-Chlorophenyl phenyl ether	970 U	910 U	1,000 U	18,000 U
4-Methylphenol	1,100 U	1,000 U	1,100 U	20,000 U
4-Nitroaniline	860 U	810 U	910 U	16,000 U
4-Nitrophenol	1,000 U	960 U	1,100 U	19,000 U
Acenaphthene	990 U	930 U	1,000 U	18,000 U
Acenaphthylene	11,000	11,000	1,100 U	520,000
Anthracene	5,100 J	5,300	1,100 U	250,000
Benzo[a]anthracene	9,800	10,000	890 U	320,000
Benzo[a]pyrene	13,000	14,000	680 J	12,000 U
Benzo[b]fluoranthene	15,000	17,000	860 U	990,000
Benzo[g,h,i]perylene	12,000	14,000	1,300 J	1,300,000
Benzo[k]fluoranthene	4,900 J	5,500	770 U	320,000
Benzyl alcohol	800 U	740 U	840 U	15,000 U
Bis(2-chloroethoxy)methane	950 U	880 U	990 U	17,000 U
Bis(2-chloroethyl)ether	1,300 U	1,200 U	1,400 U	24,000 U
Bis(2-ethylhexyl) phthalate	19,000	6,000	3,400 J	17,000 U
Butyl benzyl phthalate	930 U	870 U	980 U	17,000 U
Carbazole	910 U	850 U	960 U	17,000 U
Chrysene	14,000	16,000	1,000 U	500,000
Dibenz(a,h)anthracene	2,500 J	540 U	1,400 J	210,000
Dibenzofuran	1,000 U	940 U	1,000 U	18,000 U
Diethyl phthalate	1,100 U	1,000 U	1,100 U	20,000 U
Dimethyl phthalate	970 U	910 U	1,000 U	18,000 U
Di-n-butyl phthalate	1,100 U	1,000 U	1,100 U	22,000 J
Di-n-octyl phthalate	810 U	760 U	850 U	15,000 U
Fluoranthene	13,000	13,000	1,100 U	150,000
Fluorene	2,100 J	1,500 J	1,100 U	85,000 J
Hexachlorobenzene	1,100 U	1,000 U	1,200 U	20,000 U
Hexachlorobutadiene	980 U	910 U	1,000 U	18,000 U
Hexachlorocyclopentadiene	1,400 U	1,300 U	1,500 U	26,000 U
Hexachloroethane	890 U	840 U	940 U	16,000 U
Indeno[1,2,3-cd]pyrene	12,000	14,000	3,400 J	1,300,000
Isophorone	1,100 U	980 U	1,100 U	19,000 U
Naphthalene	1,000 U	940 U	1,100 U	33,000 J
Nitrobenzene	1,100 U	1,000 U	1,200 U	21,000 U
N-Nitrosodi-n-propylamine	1,100 U	1,100 U	1,200 U	21,000 U
N-Nitrosodiphenylamine	920 U	860 U	970 U	17,000 U
Pentachlorophenol	570 U	530 U	590 U	10,000 U
Phenanthrene	3,100 J	3,600 J	1,000 U	32,000 J
Phenol	940 U	880 U	990 U	17,000 U
Pyrene	23,000	22,000	1,200 U	590,000
Total PAHs	140,500	146,900	6,780	6,699,000
Total CaPAHs	71,200	76,500	5,480	3,640,000

FIGURES





SCALE IN FEET

0’ 1000’ 2000’ 4000’

SCALE: 1”=2000’

N

SOURCE:
7.5 MINUTE SERIES USGS TOPOGRAPHIC MAP
QUADRANGLE: Lloyd Harbor, NY 1992

HALESITE FORMER MGP SITE
HALESITE, NEW YORK

SITE LOCATION MAP

AKRF Engineering P.C.

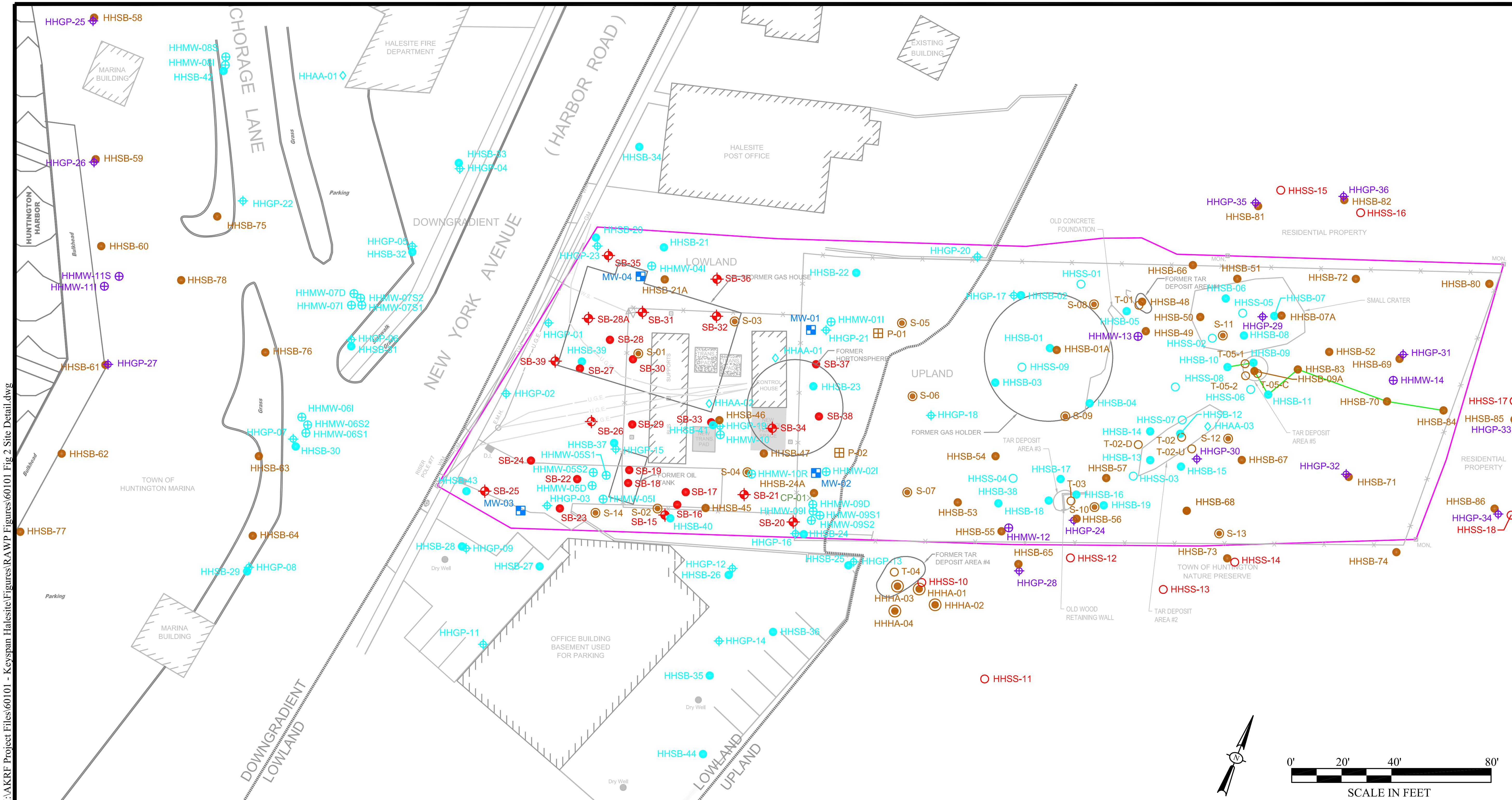
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

DATE
08.22.08

PROJECT No.
60101

SCALE
AS SHOWN

FIGURE
1



LEGEND:

HHSB-45	FINAL RI SUBSURFACE SOIL SAMPLING LOCATION
HHSS-10	FINAL RI SURFACE SOIL SAMPLING LOCATION
HHHA-01	FINAL RI HAND AUGER SOIL SAMPLING LOCATION
HHGP-24	FINAL RI GROUNDWATER PROBE LOCATION
HHMW-12	FINAL RI GROUNDWATER MONITORING WELL LOCATION S, S1, S2 = SHALLOW ZONE (WATER TABLE) I = INTERMEDIATE ZONE D = DEEP ZONE
HHSB-01	INITIAL RI SUBSURFACE SOIL SAMPLING LOCATION
HHSS-01	INITIAL RI SURFACE SOIL SAMPLING LOCATION
HHAA-01	INITIAL RI AMBIENT AIR SAMPLING LOCATION
HHGP-01	INITIAL RI GROUNDWATER PROBE LOCATION
CP-01	SOIL SAMPLING LOCATION FROM CUT AND PLUG IRM
SB-15	GEOPROBE LOCATION USED FOR SUBSURFACE SOIL AND GROUNDWATER SAMPLING FROM FLUOR DANIEL GTI PHASE I SITE INVESTIGATION
SB-16	GEOPROBE SUBSURFACE SOIL SAMPLING LOCATION FROM FLUOR DANIEL GTI PHASE I SITE INVESTIGATION
S-01	HAND AUGER SURFACE AND/OR SUBSURFACE SOIL SAMPLING LOCATION FROM FLUOR DANIEL GTI PHASE I SITE INVESTIGATION
T-01	SURFACE SOIL AND/OR ENDPOINT SAMPLING LOCATION FROM FLUOR DANIEL GTI PHASE I SITE INVESTIGATION
MW-01	SOIL BORING CONVERTED TO MONITORING WELL LOCATION USED FOR SUBSURFACE SOIL AND/OR GROUNDWATER SAMPLING FROM FLUOR DANIEL GTI PHASE I SITE INVESTIGATION
P-01	MICROWELL LOCATION (INSTALLED IN ANGLE BORINGS) FROM FLUOR DANIEL GTI PHASE I SITE INVESTIGATION
	PROJECT SITE BOUNDARY

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HALESITE FORMER MGP SITE
HALESITE, SUFFOLK COUNTY, NEW YORK

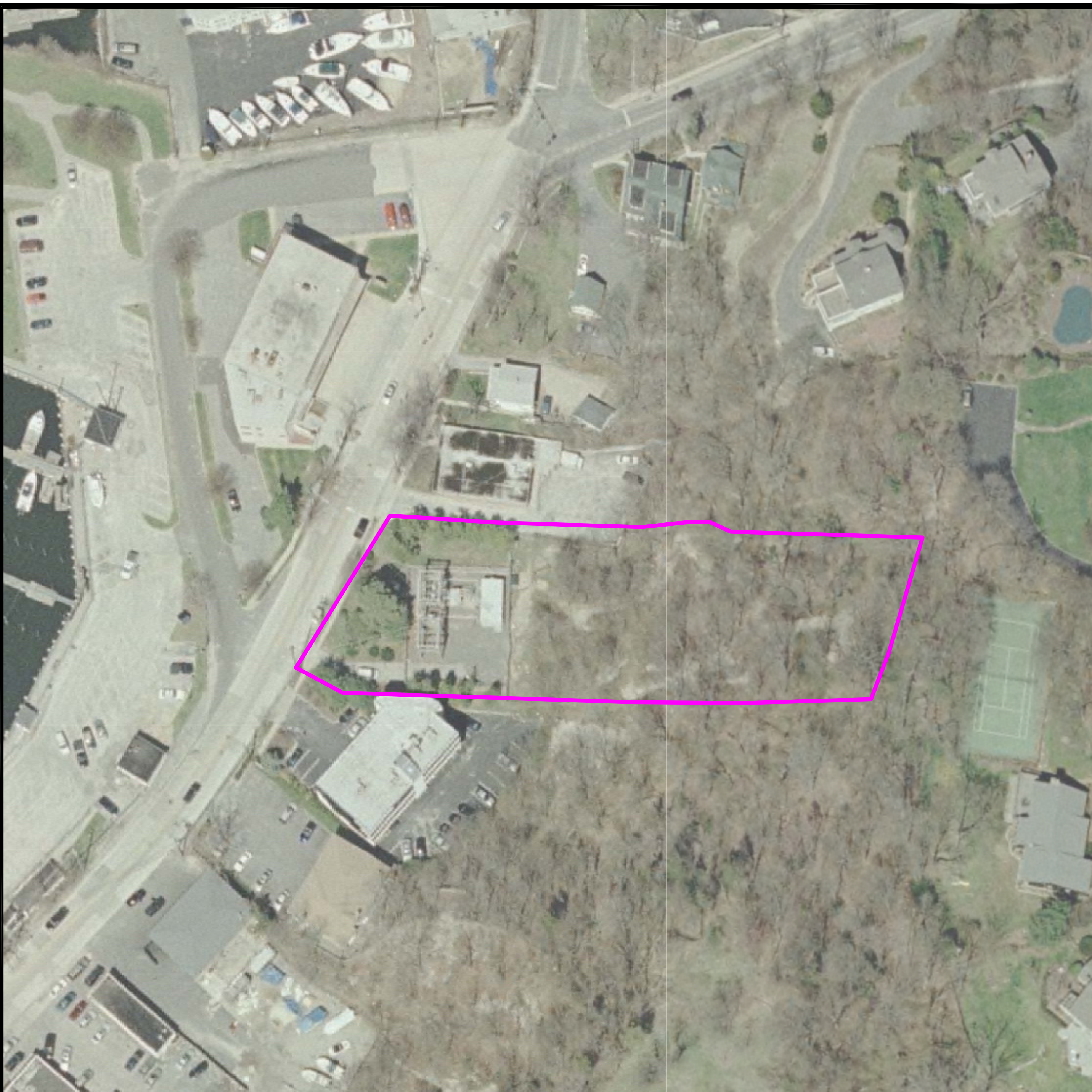
SITE DETAIL MAP

DATE
8.22.08

PROJECT NO.
60101

SCALE
1"=40'

FIGURE
2



0' 100' 200' 400'

SCALE IN FEET

N

LEGEND:

PROJECT SITE BOUNDARY

HALESITE FORMER MGP SITE

HALESITE, NEW YORK

2004 AERIAL PHOTO

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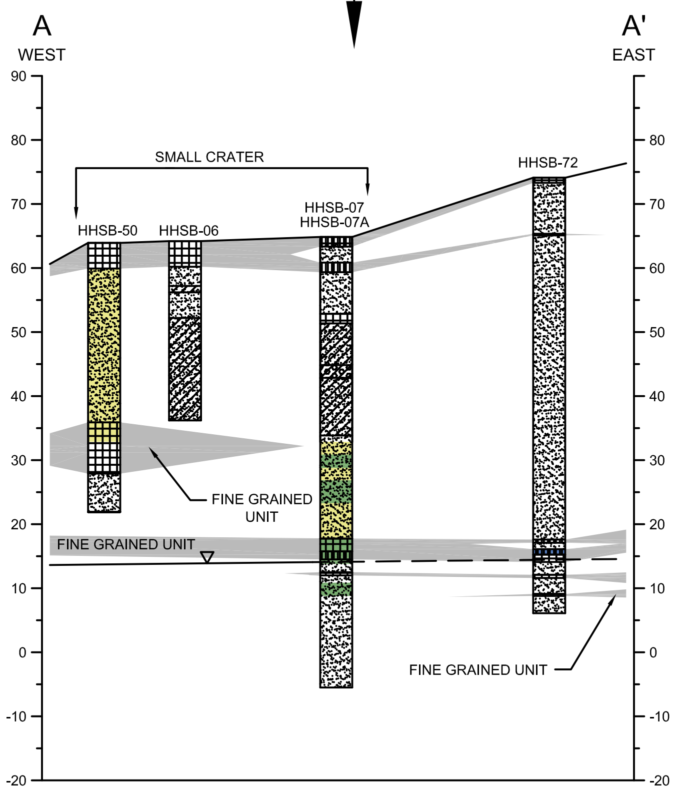
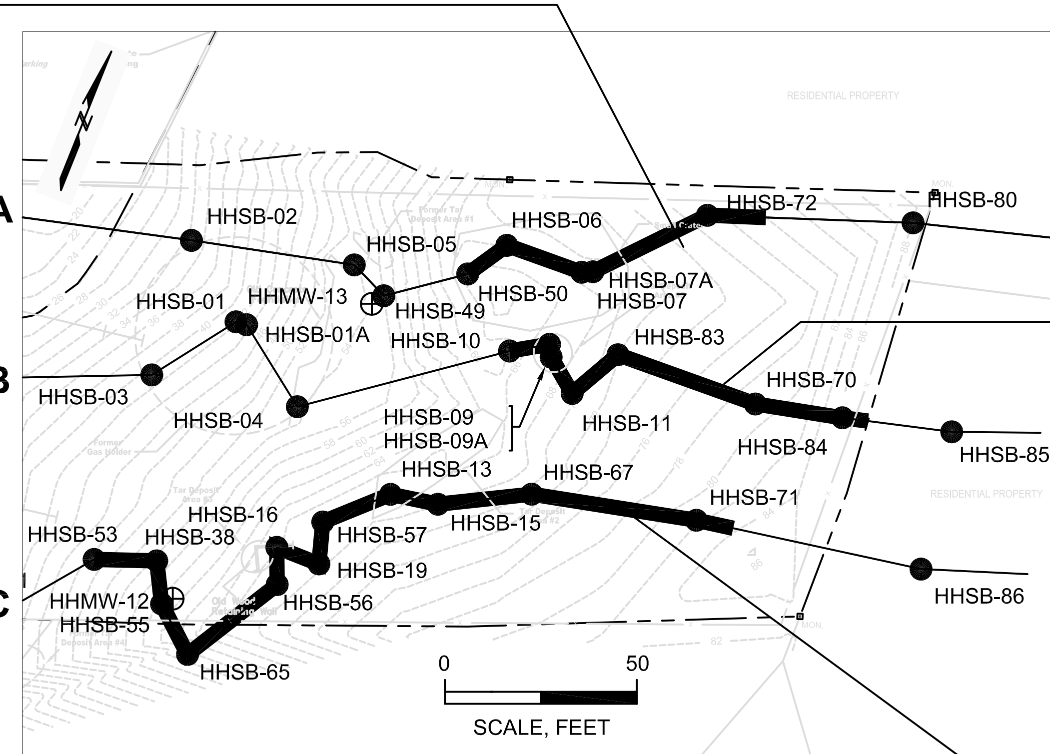
DATE **8.22.08**

PROJECT No. **60101**

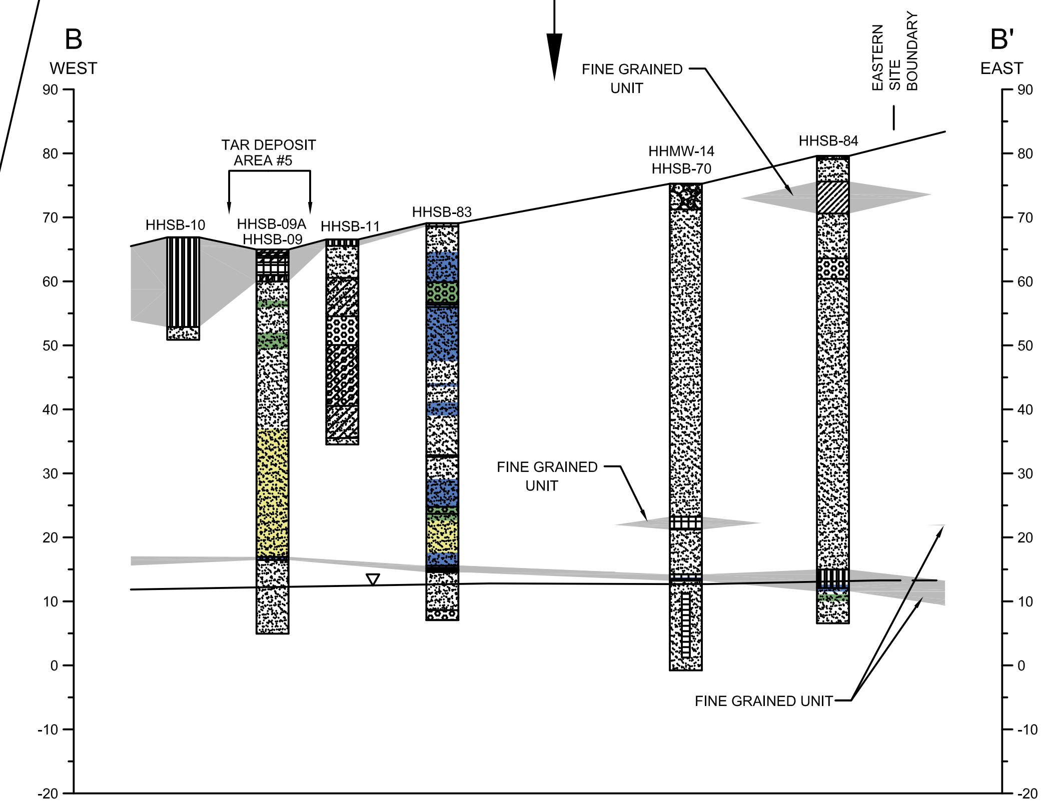
SCALE **as shown**

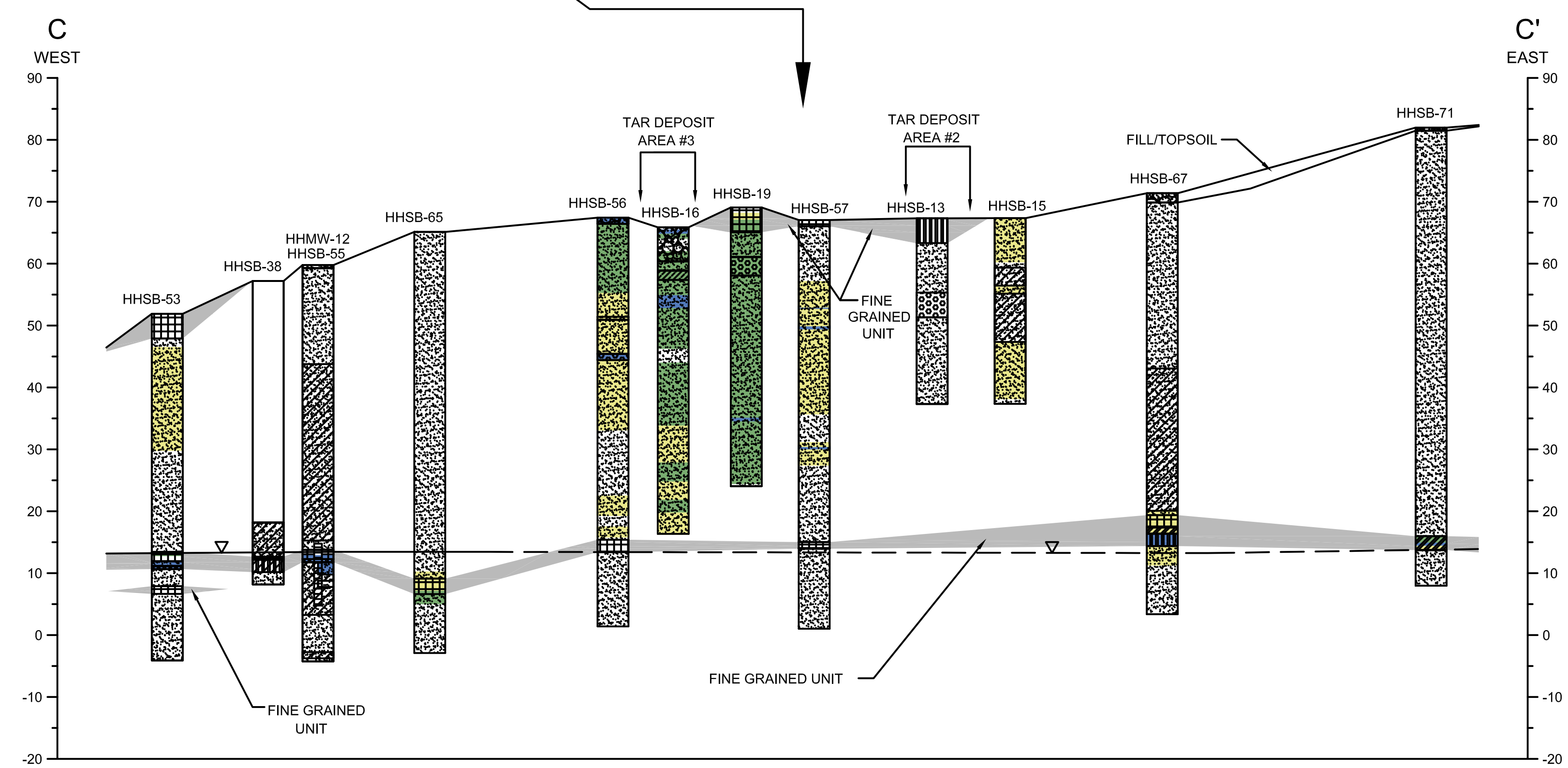
FIGURE **3**





UPLAND CROSS SECTION LOCATION MAP





LEGEND

GEOLOGICAL CLASSIFICATIONS

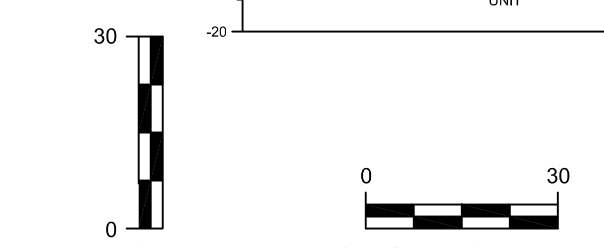
- TOPSOIL AND/OR FILL
- FINE, MEDIUM TO COARSE SANDS TO FINE, MEDIUM TO COARSE SANDS WITH GRAVEL
- GRAVEL, GRAVEL WITH SAND, GRAVELY SANDS
- SILTY SANDS TO SILT WITH SAND
- SILTS TO CLAY RICH SILTS
- CLAYS WITH SANDS
- CLAYS
- PEAT

PHYSICAL DESCRIPTIONS

- TAR/NAPHTHA ODORS
- TAR STAINING, BLEBS, GLOBS, LENSES GRAIN-COATING, SHEENS
- TAR SATURATED
- PETROLEUM-LIKE STAINING, SHEENS AND ODORS
- WELL SCREEN INTERVAL
- APPROXIMATE ELEVATION OF WATER TABLE GIVEN IN FEET ABOVE MEAN SEA LEVEL, DASHED WHERE INFERRED
- GROUND SURFACE

SOURCES:

BASED ON Figure 3-1, *UPLAND AREAS REMEDIAL INVESTIGATION CROSS SECTION EXERPTS*, PREPARED BY GEI CONSULTANTS IN THE REMEDIAL ACTION PLAN DATED MARCH 2006, WHICH WERE IN TURN BASED UPON *GEOLOGIC CROSS SECTIONS A-A', B-B'* FINAL REMEDIAL INVESTIGATION, HALESITE FORMER MGP SITE, PREPARED BY VANASSE HANGEN BRUSTLIN, INC., MIDDLETOWN, CT, HORIZONTAL SCALE: 1"=20'; VERTICAL SCALE: 1"=20', DATE: APRIL 2004.



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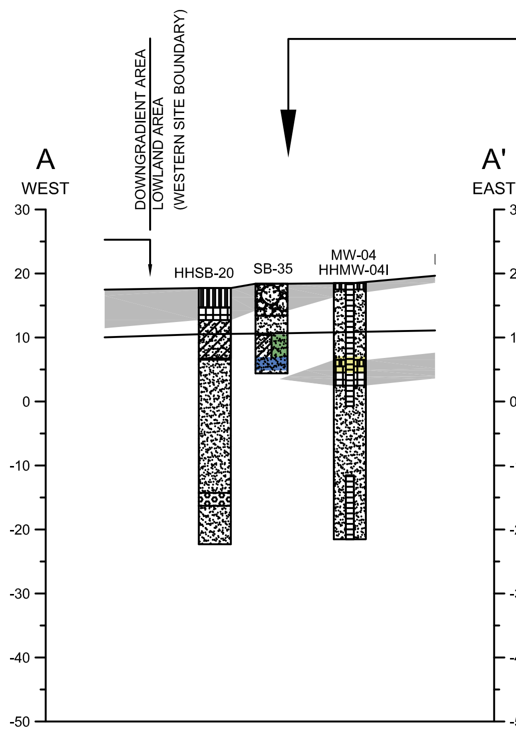
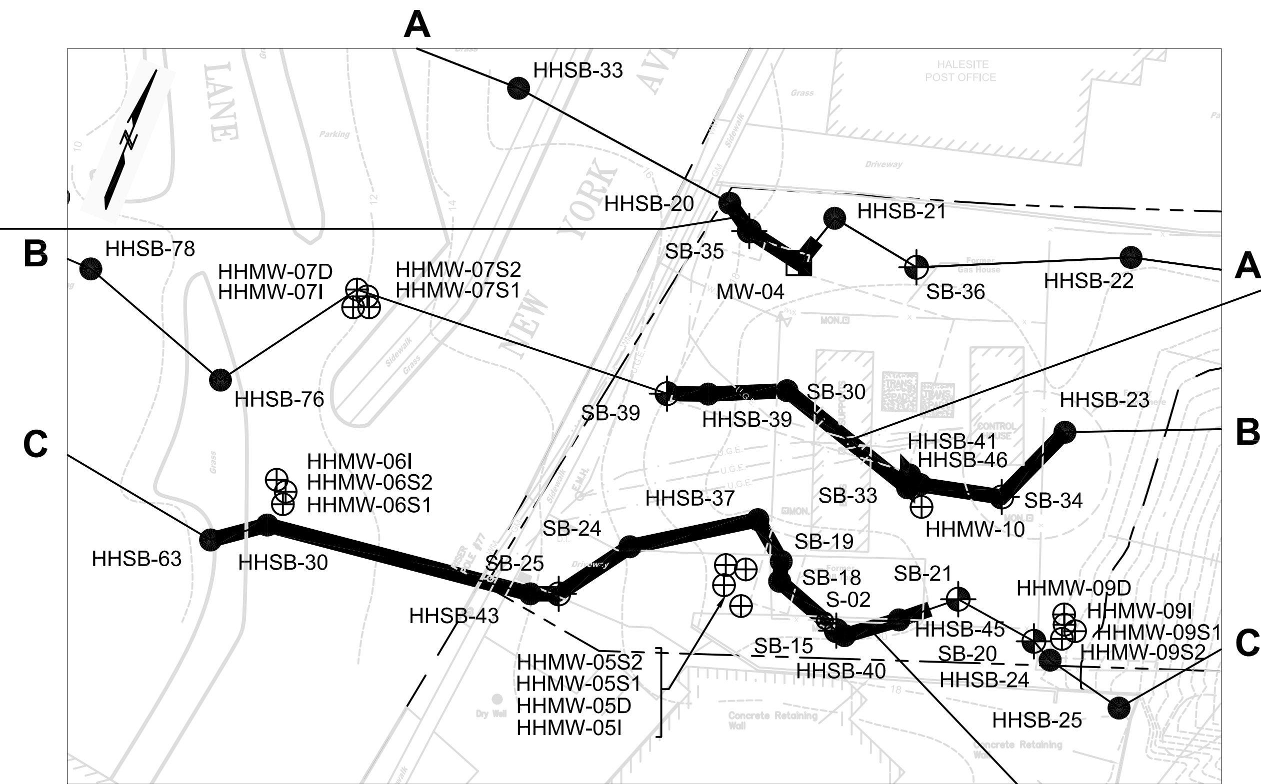
HALESITE FORMER MGP SITE
HALESITE, SUFFOLK COUNTY, NEW YORK

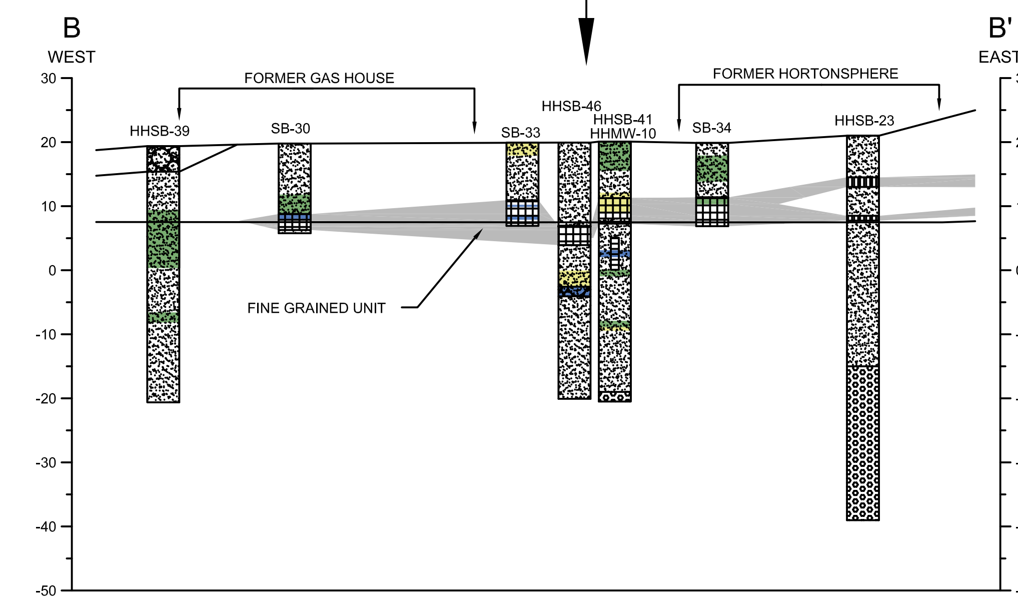
UPLAND AREAS REMEDIAL INVESTIGATION CROSS SECTION EXERPTS

DATE	8.22.08
PROJECT NO.	60101
SCALE	as shown
FIGURE	4a





LOWLAND CROSS SECTION LOCATION MAP



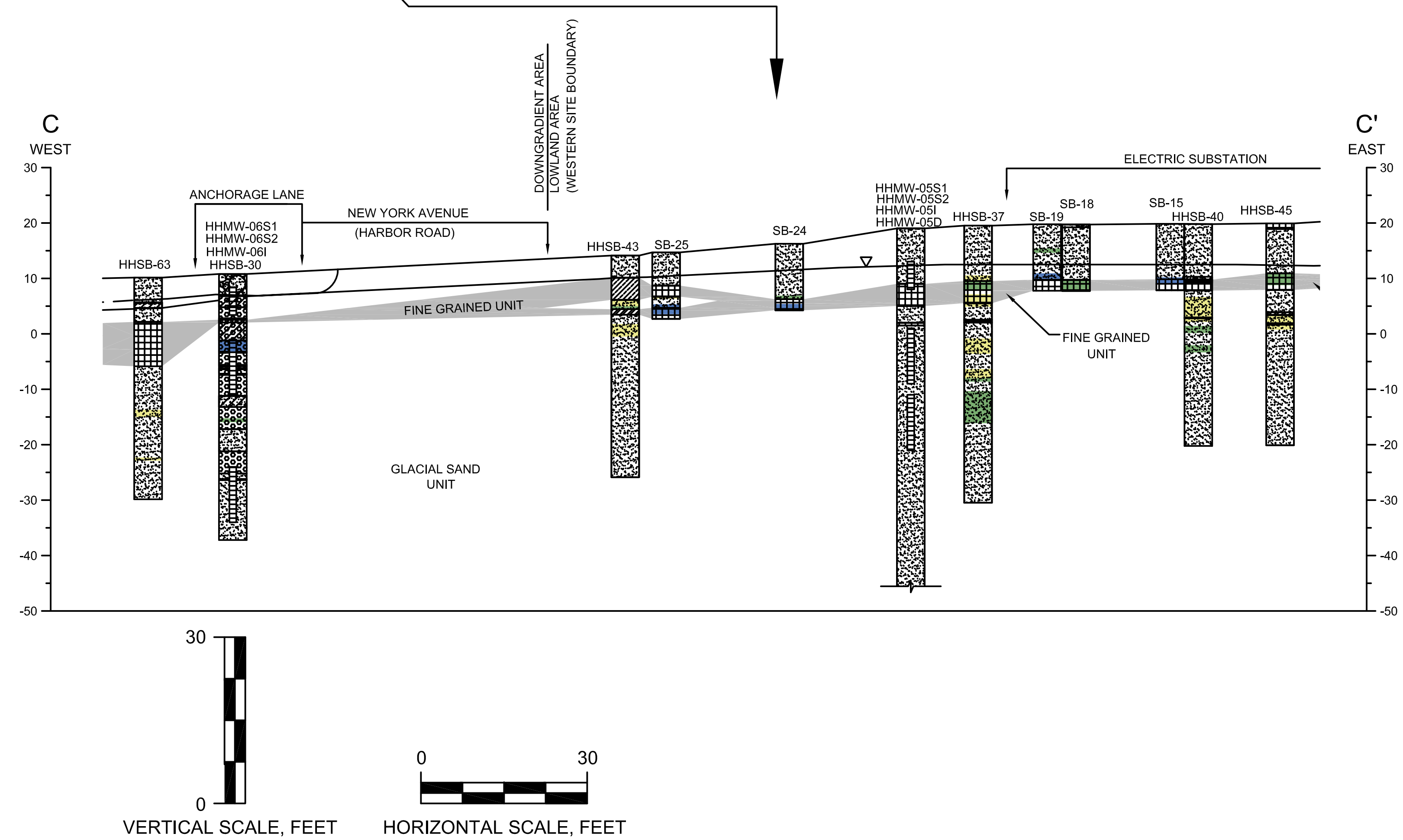
LEGEND

GEOLOGICAL CLASSIFICATIONS

- TOPSOIL AND/OR FILL
- FINE, MEDIUM TO COARSE SANDS TO FINE, MEDIUM TO COARSE SANDS WITH GRAVEL
- GRAVEL, GRAVEL WITH SAND, GRAVELY SANDS
- SILTY SANDS TO SILT WITH SAND
- SILTS TO CLAY RICH SILTS
- CLAYS WITH SANDS
- CLAYS
- PEAT

PHYSICAL DESCRIPTIONS

- TAR/NAPHTHA ODORS
- TAR STAINING, BLEBS, GLOBS, LENSES GRAIN-COATING, SHEENS
- TAR SATURATED
- PETROLEUM-LIKE STAINING, SHEENS AND ODORS
- WELL SCREEN INTERVAL
- APPROXIMATE ELEVATION OF WATER TABLE GIVEN IN FEET ABOVE MEAN SEA LEVEL, DASHED WHERE INFERRED
- GROUND SURFACE



SOURCES:

BASED ON Figure 3-1, *LOWLAND AREAS REMEDIAL INVESTIGATION CROSS SECTION EXERPTS*, PREPARED BY GEI CONSULTANTS IN THE REMEDIAL ACTION PLAN DATED MARCH 2006, WHICH WERE IN TURN BASED UPON *GEOLOGIC CROSS SECTIONS A-A', B-B'* FINAL REMEDIAL INVESTIGATION, HALESITE FORMER MGP SITE, PREPARED BY VANASSE HANGEN BRUSTLIN, INC., MIDDLETOWN, CT, HORIZONTAL SCALE: 1"=20'; VERTICAL SCALE: 1"=20', DATE: APRIL 2004.

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HALESITE FORMER MGP SITE

HALESITE, SUFFOLK COUNTY, NEW YORK

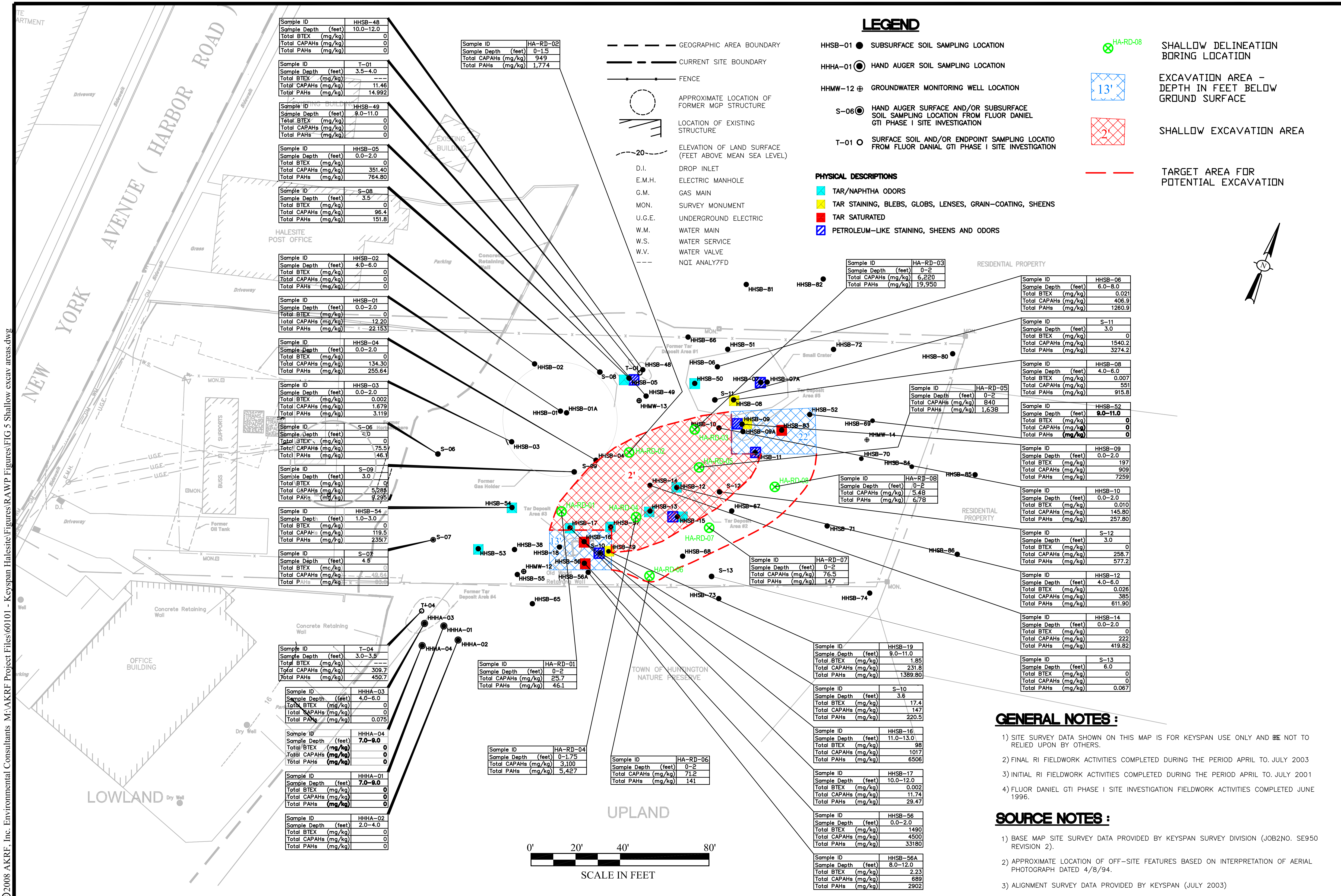
LOWLAND AREAS REMEDIAL INVESTIGATION CROSS SECTION EXERPTS

DATE **8.22.08**

PROJECT NO. **60101**

SCALE **as shown**

FIGURE **4b**



Sample ID	Sample Depth (feet)	Total BTEX (mg/kg)	Total CAPAHs (mg/kg)	Total PAHs (mg/kg)
HHSB-48	10.0-12.0	0	0	0
T-01	3.5-4.0	---	11.46	14.992
HHSB-49	9.0-11.0	0	0	0
HHSB-05	0.0-2.0	0	351.40	764.80
S-08	3.5	0	96.4	151.8
HHSB-02	4.0-6.0	0	0	0
HHSB-01	0.0-2.0	0	12.20	22.153
HHSB-04	0.0-2.0	0	134.30	255.64
HHSB-03	0.0-2.0	0.002	1.679	3.119
S-06	3.0	0	75.5	46.1
S-09	3.0	0	5,285	9,295
HHSB-54	1.0-3.0	0	119.5	235.7
S-07	4.5	0	49.64	83.6
T-04	3.0-3.5	---	309.7	450.7
HHHA-03	4.0-6.0	0	0	0.075
HHHA-04	7.0-9.0	0	0	0
HHHA-01	7.0-9.0	0	0	0
HHHA-02	2.0-4.0	0	0	0
HHSB-06	6.0-8.0	0.021	406.9	1260.9
S-11	3.0	0	1540.2	3274.2
HHSB-08	4.0-6.0	0.007	551	915.8
HHSB-52	9.0-11.0	0	0	0
HHSB-09	0.0-2.0	197	909	7259
HHSB-10	0.0-2.0	0.010	145.80	257.80
S-12	3.0	0	258.7	577.2
HHSB-12	4.0-6.0	0.026	385	611.90
HHSB-14	0.0-2.0	0	222	419.82
S-13	6.0	0	0	0.067
HHSB-19	9.0-11.0	1.85	231.8	1389.80
S-10	3.6	17.4	147	220.5
HHSB-16	11.0-13.0	98	1017	6506
HHSB-17	10.0-12.0	0.002	11.74	29.47
HHSB-56	0.0-2.0	1490	4500	33180
HHSB-56A	8.0-12.0	2.23	689	2902

Sample ID	Sample Depth (feet)	Total CAPAHs (mg/kg)	Total PAHs (mg/kg)
HA-RD-02	0-1.5	949	1,774
HA-RD-03	0-2	6,220	19,950
HA-RD-05	0-2	840	1,638
HA-RD-08	0-2	5.48	6.78
HA-RD-07	0-2	76.5	147
HA-RD-01	0-2	25.7	46.1
HA-RD-04	0-1.75	3,100	5,427
HA-RD-06	0-2	71.2	141

LEGEND

GEOGRAPHIC AREA BOUNDARY
CURRENT SITE BOUNDARY
FENCE
APPROXIMATE LOCATION OF FORMER MGP STRUCTURE
LOCATION OF EXISTING STRUCTURE
--20-- ELEVATION OF LAND SURFACE (FEET ABOVE MEAN SEA LEVEL)
D.I. DROP INLET
E.M.H. ELECTRIC MANHOLE
G.M. GAS MAIN
MON. SURVEY MONUMENT
U.G.E. UNDERGROUND ELECTRIC
W.M. WATER MAIN
W.S. WATER SERVICE
W.V. WATER VALVE
--- NOT ANALYZED

HHSB-01 ● SUBSURFACE SOIL SAMPLING LOCATION
HHHA-01 ◉ HAND AUGER SOIL SAMPLING LOCATION
HHMW-12 ⊕ GROUNDWATER MONITORING WELL LOCATION
S-06 ◉ HAND AUGER SURFACE AND/OR SUBSURFACE SOIL SAMPLING LOCATION FROM FLUOR DANIEL GTI PHASE I SITE INVESTIGATION
T-01 ○ SURFACE SOIL AND/OR ENDPOINT SAMPLING LOCATIO FROM FLUOR DANIAL GTI PHASE I SITE INVESTIGATION

HA-RD-08 SHALLOW DELINEATION BORING LOCATION
13' EXCAVATION AREA - DEPTH IN FEET BELOW GROUND SURFACE
2' SHALLOW EXCAVATION AREA
TARGET AREA FOR POTENTIAL EXCAVATION

PHYSICAL DESCRIPTIONS

TAR/NAPHTHA ODORS
TAR STAINING, BLEBS, GLOBS, LENSES, GRAIN-COATING, SHEENS
TAR SATURATED
PETROLEUM-LIKE STAINING, SHEENS AND ODORS

GENERAL NOTES :

1) SITE SURVEY DATA SHOWN ON THIS MAP IS FOR KEYSPAN USE ONLY AND IS NOT TO RELIED UPON BY OTHERS.
2) FINAL RI FIELDWORK ACTIVITIES COMPLETED DURING THE PERIOD APRIL TO JULY 2003
3) INITIAL RI FIELDWORK ACTIVITIES COMPLETED DURING THE PERIOD APRIL TO JULY 2001
4) FLUOR DANIEL GTI PHASE I SITE INVESTIGATION FIELDWORK ACTIVITIES COMPLETED JUNE 1996.

SOURCE NOTES :

1) BASE MAP SITE SURVEY DATA PROVIDED BY KEYSPAN SURVEY DIVISION (JOB NO. SE950 REVISION 2).
2) APPROXIMATE LOCATION OF OFF-SITE FEATURES BASED ON INTERPRETATION OF AERIAL PHOTOGRAPH DATED 4/8/94.
3) ALIGNMENT SURVEY DATA PROVIDED BY KEYSPAN (JULY 2003)

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HALESITE FORMER MGP SITE
HALESITE, SUFFOLK COUNTY, NEW YORK

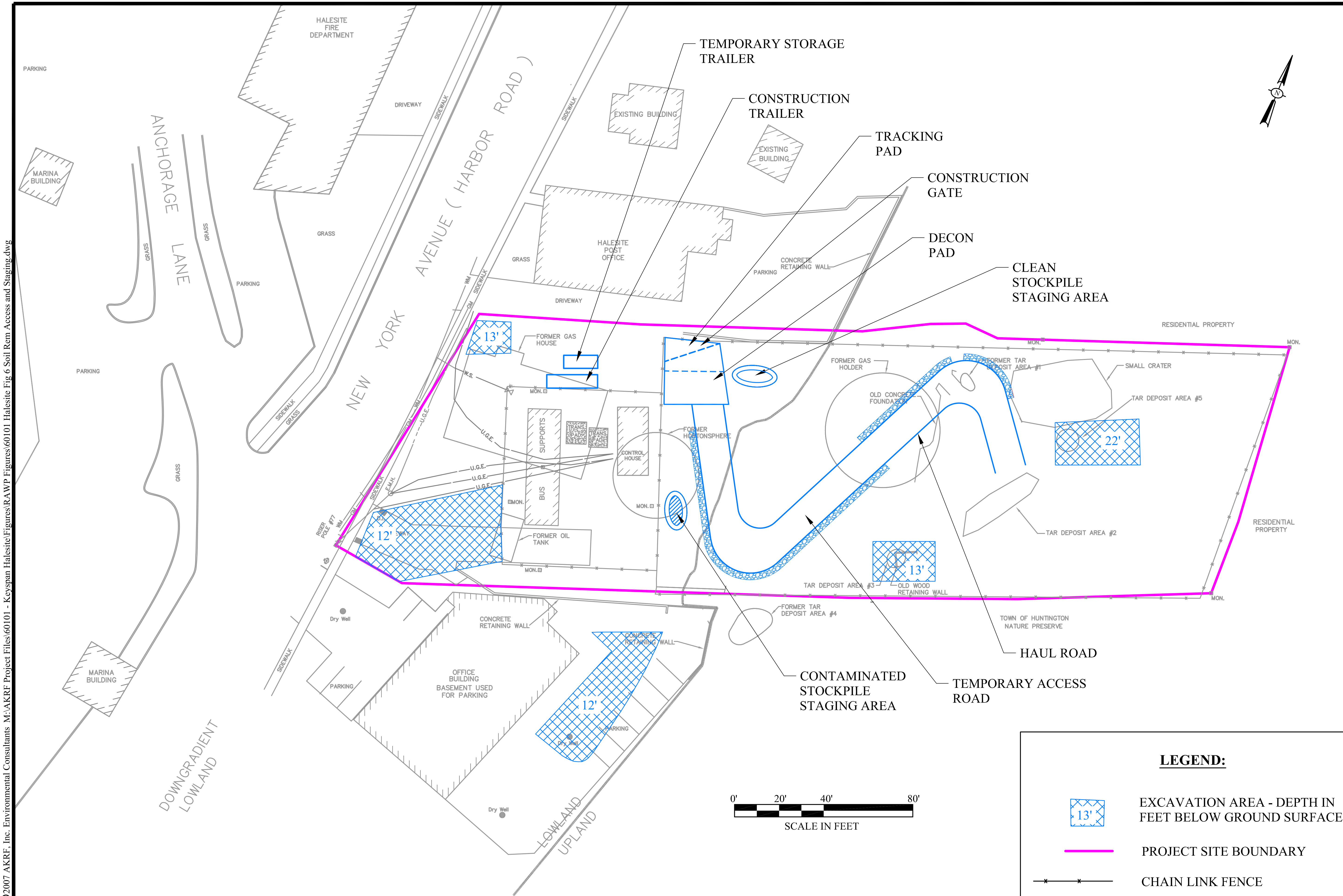
SHALLOW DILINEATION BORINGS AND EXCAVATION AREA

DATE 8.22.08

PROJECT NO. 60101

SCALE 1"=40'

FIGURE 5



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HALESITE FORMER MGP SITE
HALESITE, SUFFOLK COUNTY, NEW YORK

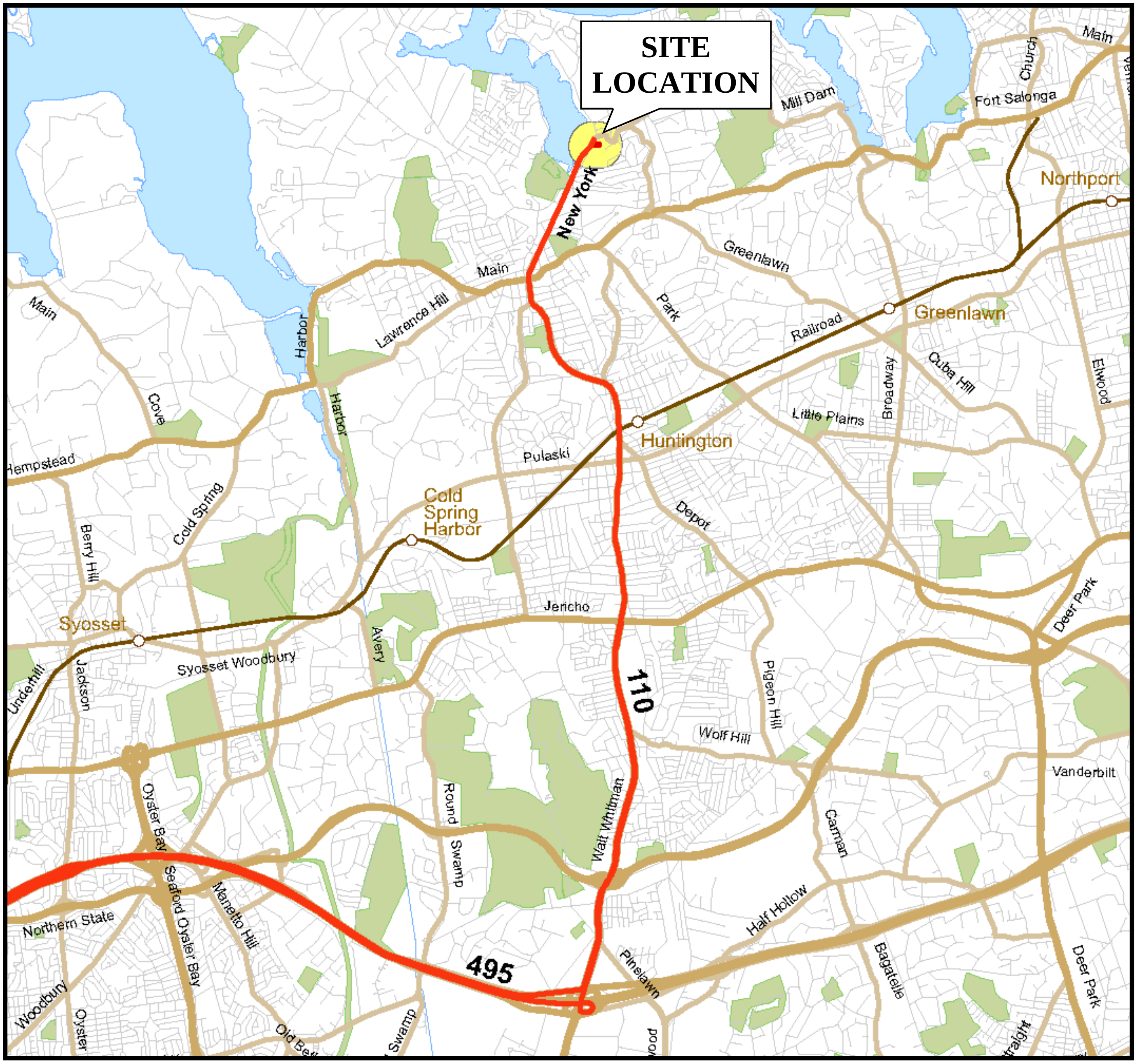
PLANNED SOIL REMEDIATION ACCESS AND STAGING

DATE 8.22.08

PROJECT NO. 60101

SCALE 1"=40'

FIGURE 6



NOTE: Truck route subject to change in the event of road closings or detours.

N

0 1 Mile

HALESITE FORMER MGP SITE
HALESITE, NEW YORK

PRIMARY TRUCK ROUTE

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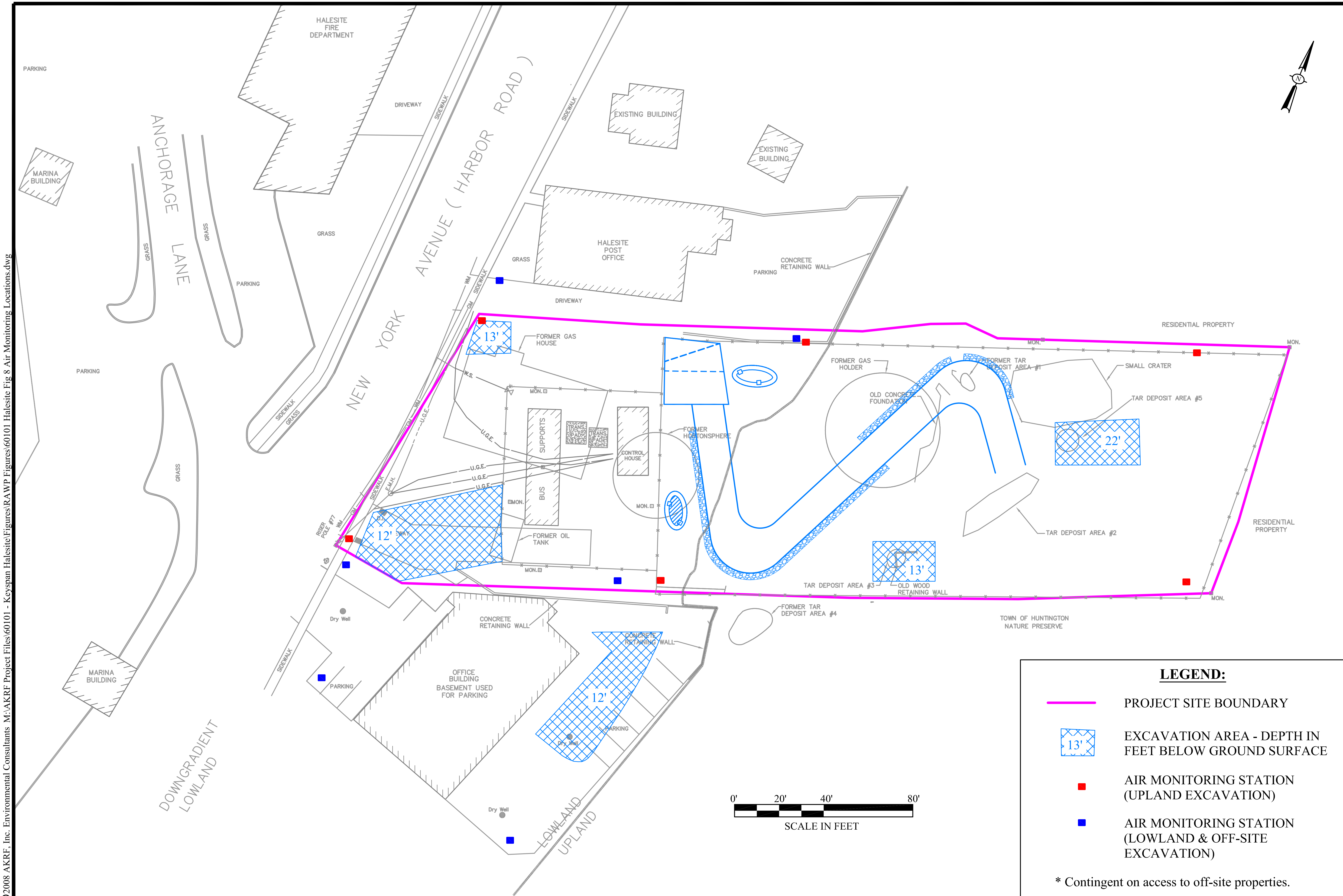
DATE
8.22.08

PROJECT No.
60101

SCALE
AS SHOWN

FIGURE
7



LEGEND:

- PROJECT SITE BOUNDARY
- EXCAVATION AREA - DEPTH IN FEET BELOW GROUND SURFACE
- AIR MONITORING STATION (UPLAND EXCAVATION)
- AIR MONITORING STATION (LOWLAND & OFF-SITE EXCAVATION)

* Contingent on access to off-site properties.

0' 20' 40' 80'

SCALE IN FEET

AKRF Engineering P.C.
Environmental Consultants
440 Park Avenue South, New York, NY 10016

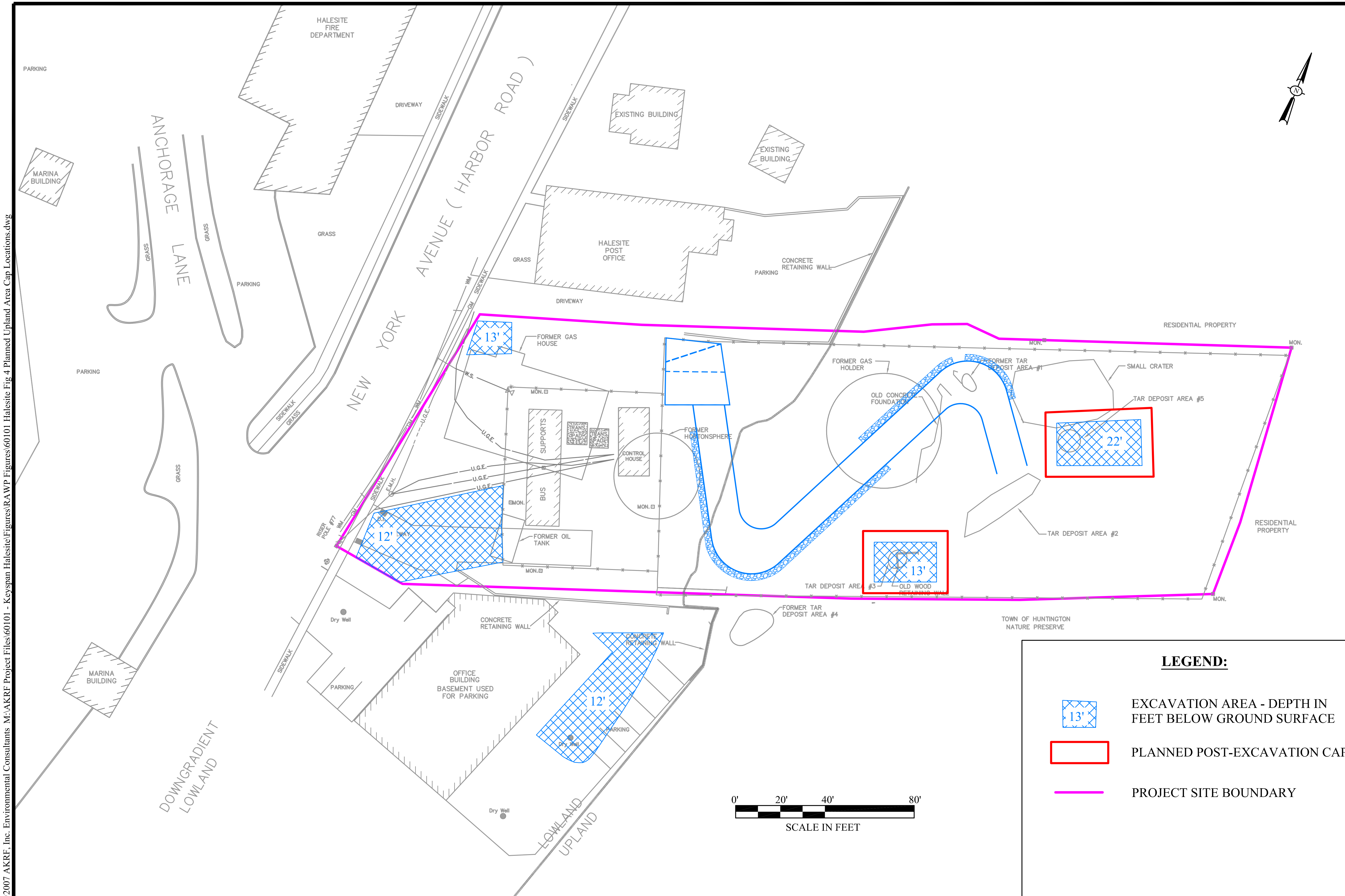
HALESITE FORMER MGP SITE
HALESITE, SUFFOLK COUNTY, NEW YORK
PLANNED AIR MONITORING STATION LOCATIONS

DATE **8.22.08**

PROJECT NO. **60101**

SCALE **1"=40'**

FIGURE **8**



LEGEND:

13' EXCAVATION AREA - DEPTH IN FEET BELOW GROUND SURFACE

PLANNED POST-EXCAVATION CAP

PROJECT SITE BOUNDARY

AKRF Engineering P.C.
Environmental Consultants
440 Park Avenue South, New York, NY 10016

HALESITE FORMER MGP SITE
HALESITE, SUFFOLK COUNTY, NEW YORK

PLANNED UPLAND AREA CAP LOCATIONS

DATE
8.22.08

PROJECT NO.
60101

SCALE
1"=40'

FIGURE
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