AECOM

Prepared for:
National Grid
Brooklyn, New York

Remedial Investigation Work Plan

Equity Former MGP Site
Brooklyn, New York
NYSDEC Site No.: 224050
Order on Consent Index #: A2-0552-0606

AECOM, Inc.
March 2009
Document No.: 01765-076

AECOM

Prepared for:
National Grid
287 Maspeth Avenue, Brooklyn, New York 11211

Remedial Investigation Work Plan

Equity Former MGP Site
Brooklyn, New York
NYSDEC Site No.: 224050
Order on Consent Index #: A2-0552-0606

Prepared By: Peter Cox, PG, Senior Geologist

Reviewed By: Mark McCabe, Principal-In Charge

AECOM, Inc.
March 2009
Document No.: 01765-076

Executive Summary

This Remedial Investigation Work Plan (RIWP) has been prepared for National Grid USA (National Grid) by AECOM Environment (AECOM) for a site located at 222 – 254 Maspeth Avenue in Brooklyn, New York (Site). This site, known as the Equity former manufactured gas plant site (MGP), was operated by Brooklyn Union Gas Company (BUG), a predecessor company to National Grid, from about 1903 to approximately 1933. The site currently houses a waste recycling facility and associated vehicle and equipment storage, with primary site activities occurring at the 222 Maspeth Avenue parcel currently owned by Cooper Tank Recycling. The entire site is now owned by third parties.

Results from a Records Search, prior investigations, and geotechnical borings at the site provide the following information:

- The site area, including locations within the MGP site boundary, formerly contained a stream/creek that was apparently filled in sometime between approximately 1905 and 1921.
- Soils within the upper 12-15 feet beneath the site are characterized as urban fill (black, medium soft silt with fragments of wood, brick, plastic, and “construction debris”). At depths of approximately 15 feet below ground surface (bgs) to 30 feet bgs, native soils were encountered and comprised of black to grey silty sand, clay, and peat. In one boring, a clay unit was noted from approximately 30 to 45 feet bgs (noted as very hard clay from 40 to 45 feet bgs), underlain by fine to medium sands at depths up to 80 feet bgs.
- Based on available hydrogeologic data, groundwater is present beneath the site at depths of approximately 7 to 8 feet bgs. This shallow water table aquifer within the fill materials is interpreted to extend into underlying native soils to a depth of approximately 30 feet bgs. The presence of a clay sequence noted from approximately 30 to 45 feet bgs at the on-site groundwater pumping well location (used for truck washing) suggests this clay unit might act as a partial aquitard between the water table aquifer and the underlying sand aquifer screened at the pumping well from 63 to 78 feet bgs. Active groundwater pumping from this well may influence groundwater flow in the shallow aquifer and deeper sand aquifer underlying the site.
- Visible and olfactory evidence of MGP impacts have been noted in various site borings to depths of 31 feet bgs. Available soil and groundwater data indicate impacts typical of former MGP operations.

The investigation presented in this RIWP will focus on the delineation of residual coal tar and associated soil impacts and dissolved phase impacts in groundwater, and will have the following objectives:

- To collect additional data to more completely determine the surface and subsurface characteristics of the site.
- To determine the nature and extent of MGP-related residuals in soils, soil vapor, and groundwater.
- To identify potential routes of off-site migration of MGP-related residuals from on-site sources.
- To perform an exposure assessment to evaluate the pathways by which human receptors (either on-site or off-site) may be exposed to MGP-related residuals.
- To further develop the dataset necessary to allow preparation of a Feasibility Study to evaluate remedies that will eliminate the potential threat to public health or the environment posed by the site.

The program will provide for the collection/analysis of the following samples:

- Approximately 49 soil samples
- Approximately 17 groundwater samples
- Vapor intrusion samples including one sub-slab soil gas, one indoor air, and one ambient air sample

Sufficient flexibility will be incorporated into the project scope to allow additions to, or modifications of, proposed investigation locations in real time, to better delineate the nature and extent of MGP residuals in various media (soil, soil vapor/indoor air, and groundwater).

The results from the program will be compiled into a comprehensive report to provide a delineation of MGP impacts and an evaluation of potential risk. The information will be appropriate for the evaluation of potential remedies for the site.

Contents

List of Appendices

List of Tables

List of Figures

1.0 Introduction

This Remedial Investigation (RI) Work Plan has been prepared for National Grid USA (National Grid) by AECOM Environment (AECOM) for a site located at 222 – 254 Maspeth Avenue in Brooklyn, New York (Site). The location of the site is shown on Figure 1-1. This site, known as the Equity former manufactured gas plant site (MGP), was operated by Brooklyn Union Gas Company (BUG), a predecessor company to National Grid, from about 1903 to approximately 1933. The site currently houses a waste recycling facility and associated vehicle and equipment storage, with primary site activities occurring at the 222 Maspeth Avenue parcel currently owned by Cooper Tank Recycling. The entire site is now owned by third parties. This investigation is being conducted by National Grid pursuant to a Multi-site Order on Consent and administrative settlement with the New York State Department of Environmental Conservation (NYSDEC), Index # A2-0552-0606, and in accordance with applicable guidelines of the NYSDEC, the New York State Department of Health (NYSDOH), the United States Environmental Protection Agency (USEPA).

This RI Work Plan presents the project objectives, provides background information regarding historical site use and current conditions, summarizes the results of previous investigations, and outlines the strategies and methodologies that will be implemented during the investigation. As a basis for development of this RI Work Plan, a Records Search was performed by AECOM including review of historical documentation, review of readily obtainable local agency documentation, and acquisition of an environmental database report to determine the presence or likely presence of areas of concern (AOC) on site as well as potentially responsible parties from off-site sources of concern. The following four appendices have been developed which detail the procedures and protocols outlined in this Work Plan:

- The Field Sampling and Analytical Plan (FSAP) provides information regarding field sampling methods and procedures that will be used during the investigation.
- The Quality Assurance Project Plan (QAPP) specifies the quality assurance/quality control procedures that will be implemented during the fieldwork and in the laboratory which performs the chemical analyses of the samples collected during the RI.
- A Community Air Monitoring Program (CAMP) provides information regarding the procedures to be used to monitor and control, if necessary, the potential release of airborne constituents at the downwind perimeters of the investigation work areas. Included in the CAMP are procedures regarding the control of odors that may be present as a result of the intrusive site investigation activities.
- A Site-Specific Health and Safety Plan (HASP) has been prepared to outline procedures that will be undertaken to protect site workers and visitors from potential hazards that may exist as a result of the fieldwork performed at the site.

1.1 Project objectives

In summary, the objectives of the RI include the following:

- Collect additional data, based on the initial information provided in previous investigations conducted at 252 and 254 Maspeth Ave. by the current owners, to more completely determine the surface and subsurface characteristics of the site.
- Determine the nature and extent of MGP-related residuals in soils, soil vapor, and groundwater.
- Evaluate soil vapor quality within the footprint of the operations center/scale building.
- Identify the potential off-site migration routes of MGP-related residuals from on-site sources.

- Perform an exposure assessment to evaluate the pathways by which human receptors (either on-site or off-site) may be exposed to MGP-related residuals.
- Further develop the dataset necessary to allow preparation of a Feasibility Study to evaluate remedies that will eliminate the threat to public health or the environment posed by the site.

Sufficient flexibility will be incorporated into the investigation scope to allow additions to, or modifications of investigation locations proposed in this document. Such changes may be required in real time to better delineate the nature and extent of MGP residuals in various media. Any modifications to the work presented herein will be made following consultation with National Grid and NYSDEC oversight personnel prior to work being performed.

1.2 Work plan organization

Details of the proposed RI activities are provided in the following sections:

- Section 2 – provides a description of the site, summary information regarding site ownership and operational history, and the results of the previous investigation work performed at the site.
- Section 3 – presents the objectives for the investigation followed by a description of the specific tasks that will be undertaken to gather sufficient information to meet the project objectives.
- Section 4 – describes the companion documents that are provided as appendices to this Work Plan, including: Field Sampling and Analytical Plan (FSAP); Quality Assurance Project Plan (QAPP); Community Air Monitoring Program (CAMP); and Site-Specific Health and Safety Plan (HASP).
- Section 5 – describes the Qualitative Human Health Exposure Assessment to be completed based on data collected during the RI that will be included as part of the RI Report.
- Section 6 – presents the approximate project schedule, with key milestones.
- Section 7 – provides a list of the references cited in the Work Plan.

Appendices to the Work Plan include the following:

- Historic Sanborn Fire Insurance Maps and facility drawings are included in Appendix A.
- Soil boring logs from previous investigation are included in Appendix B.
- The FSAP is included as Appendix C.
- The QAPP is included as Appendix D.
- The CAMP is included as Appendix E.
- The HASP is included as Appendix F.
- The previous investigation reports are included as Appendix G (CD-ROM).

2.0 Site description and history

This section presents a description of the site, summary information regarding site ownership and operational history, and summarizes the results of the previous investigation work.

2.1 Site description

The Equity former MGP site is located at 222 – 254 Maspeth Avenue, Brooklyn, Kings County, New York 11211, northwest of the English Kills, between Grand Street and the Brooklyn Queens Expressway (Highway 278). The site is comprised of the following three parcels of land:

Block/Lot Number	Owner's Name and Address	Operator's Name and Address	Status
Block 2927 Lot 44	222 Maspeth Avenue Inc.	222 Maspeth Avenue Brooklyn, NY 11215	Lot used as an active waste recycling/ waste transfer station. Currently one enclosed building housing offices and one open building (no walls, with roof) housing waste recycling operations are present on the lot. The lot is owned by Cooper Tank Recycling Co.
Block 2927 Lot 54	Giovanna Bordone	252 Maspeth Avenue Brooklyn, NY 11215	Currently one building is located on the lot (approximately 2,500 square feet). Used as a maintenance center for equipment. Currently leased by Cooper Tank Recycling Co.
Block 2927 Lot 57	254 Maspeth Ave, LLC.	254 Maspeth Avenue Brooklyn, NY 11215	Currently vacant land used for occasional storage of empty roll-offs and vehicle parking for Cooper Tank personnel working a 222 Maspeth Avenue.

Figure 2-1 provides a map showing the locations of the parcels listed above and shows adjacent parcels in the site area.

2.2 Site history

A review of the site history of the Equity former MGP site has been developed based on a review of the historic Sanborn Fire Insurance maps, aerial photographs for the site as well as other available information including internal BUG plant facility plans and municipal records. A copy of the maps and aerial photos is included in Appendix A, with a summary of the pertinent historical information for the property provided in Table 2-1. Figure 2-2 shows the locations of former MGP structures and other historical site features.

The Equity MGP is first evident on 1903 and 1905 BUG facility maps with gas generation, gas storage (430,000 ft^3 relief holder), and cleaning (purifier house) equipment/processes in place. Support facilities include coal storage/delivery facilities and miscellaneous tar and oil storage capacity, including tar wells, tar separators, drip tanks, and gas oil tanks. In addition, there was a structure located just east of the relief holder and identified as an "inlet and outlet pipe well" (shown on the 1903 and 1905 BUG facility maps and later labeled on the 1921 BUG facility map) that appears to have been a pipe chase structure housing piping between the relief holder and the purifier house (Figure 2-2). On the 1905 map, a well was shown in the northwest corner of the site near Maspeth Avenue. On a later BUG facility plan dated 1932, this well was labeled “6-inch pipe” with a reference stating “salt water.” Based on this information, this well may have been an historic water supply well used for plant operations (Figure 2-2).

The 1907 Sanborn map shows a consistent, although slightly more extensive, plant layout. The plant appears to be developed to its maximum extent on a 1921 BUG facility plan, although largely maintaining the layout shown on the earlier 1903 and 1905 plans. A 1932 BUG plan indicates that the relief holder was partially decommissioned and the 1933 Sanborn map shows that the gas manufacturing equipment had been removed. According to internal notes written on a BUG facility plan, BUG maintained ownership of the property until September of 1951. Subsequently, the site was used for storage (pipe and valves) for the period of 1965 to 1981, and appears to be vacant during the period of 1986 to 1988. The site appears to have been used as a solid waste transfer facility from 1990 to the present under the ownership of various parties (EDR, 2008a, 2008b). Evidence of spills/environmental issues on the property are limited to an observation of tar, i.e. “spill of 0 gallons” in soil on the eastern portion of the site in July 2006 (EDR, 2008c).

2.3 Previous investigation work

Previous investigation activities were conducted on portions of the Equity site in 2004 and 2005 by the contemporary site owners, as listed below:

- For the 252 Maspeth Avenue property, a Phase II Environmental Subsurface Investigation (ESI) was conducted in March 2005 by Gannett Fleming Engineers, P.C. (GFE) on behalf of Cooper Tank and Welding Corp. (Cooper Tank), who was the potential lessee of the property (GFE, 2005). GFE installed four soil borings on the property and collected soil samples which were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and 13 Priority Pollutant Metals plus barium. Temporary PVC wells were installed in two of the borings (B-1 and B-4), and groundwater samples were collected and analyzed for the same constituents as the soil samples. In soils, VOCs, SVOCs, and various metals were detected in samples from all four borings. PCBs were detected in only one soil sample. Odors and staining were observed in all four borings. In groundwater, VOCs, SVOCs and various metals were detected in samples collected from both temporary wells. PCBs were detected in one groundwater grab sample, but the detection is likely turbidity related given the relative insolubility of PCBs in water.
- For the 254 Maspeth Avenue property:
  - A Phase II ESI was conducted in September 2004 by EEA Inc. (EEA) on behalf of Spencer Realty Corporation (the property owner) and Cooper Tank (the potential property buyer) (EEA, 2004). EEA installed 6 soil borings on the property and collected soil samples which were analyzed for VOCs, SVOCs, and RCRA metals. SVOCs and various metals were detected in all six borings. VOCs were detected in two of the borings. The subsurface geology was characterized to the completion depth of the borings.
  - For the 254 Maspeth Avenue property, a Phase I Environmental Site Assessment (ESA) was conducted in October 2004 by GFE on behalf of Cooper Tank, who was the potential buyer of the property (GFE, 2004). GFE conducted a records search, interviews and site visit. Surficial soil staining was observed on site. A Phase II investigation of potential soil and groundwater impacts was recommended.
- For the 252 and 254 Maspeth Ave properties, GFE performed geotechnical investigation work on behalf of Cooper Tank in September 2006 (GFE, 2006). GFE installed five soil borings to investigate the geology below these properties. A report is not available, but a map and boring logs are provided in Appendix B.

Available subsurface boring logs from previous investigation work and geotechnical work are provided in Appendix B, with a copy of each report provided in Appendix G. Information provided in these reports has been summarized in the following sections.

2.3.1 Site physical characteristics

Information obtained during the previous site investigations regarding the site topography, geology, and hydrogeology is summarized in the following sections.

2.3.1.1 Site topography and drainage

The ground surface in the area of the former MGP operations is approximately 14 feet above mean sea level (GFE, 2004). The topography at the site is level. The English Kills is located approximately 900 feet southeast of the site, and is classified as a NYSDEC Class SD water body (NYSDEC, 2006). The designated uses for Class SD waters (the most degraded saline water body classification) are for fishing and fish survival. Surface drainage generally follows surface topography, and is managed through an onsite storm water drainage system. Within the 222 Maspeth Avenue parcel, it has been reported by the property owner that the ground surface across the majority of the parcel is covered with up to one foot of concrete to limit surface water infiltration and facilitate work activities (better traction and ability to scrape waste debris).

2.3.1.2 Site geology

Extrapolating from the various investigation at the three parcels (refer to Section 2.3), the site is underlain by a sequence of Pleistocene and Cretaceous aged unconsolidated glacial deposits which include sand, gravel, clay and silt. Bedrock is encountered at approximately 100 feet below the ground surface. The bedrock is composed of crystalline metamorphic and igneous rocks, which consist of muscovites, biotite schists, gneisses and granites. Soil borings were generally advanced to depths of 10 to 12 feet below ground surface (bgs) although a number of the borings at 254 Maspeth Avenue hit refusal (interpreted to be wood pilings) at 4 feet bgs. A limited number of geotechnical borings within the 252 and 254 Maspeth Avenue parcels were advanced to depths of 15 to 31 feet bgs. In addition, geologic data is available from one on-site groundwater pumping well (used for truck washing and occasional dust control of various stockpiled debris) that was installed to a depth of 78 feet bgs (the boring was completed to 80 feet bgs). Soils within the upper 12 to 15 feet were characterized as urban fill (black, medium soft silt with fragments of wood, brick, plastic, and “construction debris”). At depths of approximately 15 to 30 feet bgs, native soils were encountered and comprised of black to grey silty sand, clay, and peat. A clay unit was noted in the pumping well log from approximately 30 to 45 feet bgs (noted as very hard clay from 40 to 45 feet bgs), underlain by fine to medium sands at depths up to 80 feet bgs. This clay unit was not encountered in the geotechnical borings which were completed at 31 feet bgs.

Historical investigation borings, geotechnical borings, and the location of the groundwater pumping well are shown on Figure 2-2.

2.3.1.3 Site hydrogeology

Groundwater was encountered in various site borings at depths of approximately 7 to 8 feet bgs within the upper fill deposits across the site. Previous reports indicate that the inferred groundwater flow is southerly, discharging into the English Kills (GFE, 2005). However, a report associated with the investigation/ remediation of a petroleum spill on an abutting property to the east of the Equity former MGP site (300 Maspeth Ave.) indicates that “groundwater flows to the east at the southern portion of the site and to the north at the northern portion of the site” (EDR, 2008c). It is likely that groundwater flow within the upper water table aquifer is affected by a former stream/water course that dissected the western portion of the site, intersecting with a second water course that ran roughly parallel to the northern boundary of the 252 Maspeth Avenue parcel near the southeastern site boundary of 254 Maspeth Avenue (Figure 2-2). The former water course is interpreted to have eventually discharged into English Kills southeast of the former MGP. It is also possible that the on-site pumping well may influence groundwater flow within the upper water table aquifer.

Based on available hydrogeologic data, there is likely a shallow water table aquifer within the fill and upper native soils across the site to a depth of approximately 30 feet bgs. The presence of a clay sequence noted from approximately 30 to 45 feet bgs at the pumping well location suggests this clay unit might act as a partial aquitard (it is not known at this time if the clay unit is continuous at the site) between the water table aquifer and the underlying sand aquifer screened by the pumping well. The extent of the clay unit is not known based on historic investigations. Active groundwater pumping from this well may influence groundwater flow in the deeper sand aquifer underlying the site. This well is cased to a depth of 63 feet bgs, with a 15 foot screened interval from 63 to 78 feet bgs (Appendix B). A second groundwater pumping well is reported to be present at a car wash/truck washing business at the southwestern corner of the intersection of Maspeth and Vandervoort Avenues. Attempts will be made to better understand the presence and possible construction of this well during RI activities.

2.3.2 Site Impacts

The previous investigation activities have been limited to the central (252 Maspeth Ave.) and eastern (254 Maspeth Ave.) portions of the site. Figure 2-2 illustrates the locations of previous soil borings, as well as the locations of former MGP structures, as currently understood by National Grid. Figure 2-3 provides a summary of field impacts (odors, staining, visible impacts) noted during the previous investigations. In summary, moderate to heavy staining and odors were observed within the fill unit to depths of approximately 12 to 15 feet bgs. Despite the noted staining and odors, photoionization detector (PID) readings were generally low (0-5 parts per million). Moderate to strong odors and visible impacts described as “black sand oil”, “oil”, and “visible product” were noted at three geotechnical borings (SB-2, SB-3, and SB-5) at depths of 21 to 24 feet bgs, 29 to 31 feet bgs, and 14 to 16 feet bgs, respectively. The maximum depth of the geotechnical borings was 31 feet bgs.

Table 2-2 and 2-3 provide summaries of the analytical results that exceed the following NYSDEC criteria: 1) for soil, 6 NYCRR Subpart 375-6 (Part 375) Commercial Use and Industrial Use Soil Cleanup Objectives; and 2) for groundwater, Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (TOGS 1.1.1) (NYSDEC, 1998). The sample locations where the exceedances were observed in soils are illustrated on Figure 2-4.

Available soil data indicate that exceedances of the Part 375 Commercial Use Soil Cleanup Objectives have been limited to PAHs (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene) and metals (arsenic).

Associated exceedances of the Part 375 Commercial Use Soil Cleanup Objectives are limited to: benzo(a)anthracene (2 locations); benzo(a)pyrene (10 locations); benzo(b)fluoranthene (2 locations); dibenzo(a,h)anthracene (1 location); and arsenic (3 locations).

Groundwater exceedances for organic constituents were limited to: benzene (1 location); m, p xylenes (1 location); naphthalene (1 location); and PCBs (1 location). Metals exceedances in groundwater were observed at two locations in the center of the site. It is important to note that PCBs and many of the metals detected are not typically associated with MGP residuals and may be artifacts of more recent site use and suspected turbidity in the previous groundwater grab samples.

2.4 Adjacent properties

The current site is bounded by the following industrial or commercial facilities/areas:

- To the north - Maspeth Avenue and other National Grid properties (the Gate Station at 285 Maspeth Ave. and the Greenpoint Energy Center at 287 Maspeth Ave.) that were part of a separate former MGP site.
- To the south – Industrial/commercial properties abut the site. They have been occupied by a relatively consistent set of businesses, including a paper company and warehouse since approximately 1965.

- To the east – A truck terminal that has been operated by various parties since the mid-1960’s.
- To the west - A consistent set of businesses have occupied the adjacent properties to the west (across Vandervoort Ave.).

The locations of these properties are also generally illustrated on Figure 2-1, with a summary of their historical use presented in Table 2-4. A summary of environmental database search records for the properties/areas adjacent to the site is presented in Table 2-5. As indicated, significant off-site impacts with the potential to affect the site have been limited to petroleum releases at the truck terminal (to the east) and oil that has been observed on several occasions in the streets to the west of the site in the area of the Vandervoort and Maspeth Avenue intersection.

3.0 Remedial investigation objectives and field activities

The overall objective for the RI is to complete the investigation of the site and lay the groundwork for the selection of a site remedy. The principal activities will include the collection and analysis of representative samples of soil, groundwater, soil gas, and indoor air. The locations of the proposed sampling locations are shown on Figure 3-1. Summary information regarding the sampling locations, including their designation, the sampling rationale, the anticipated completion depth, and the laboratory analyses to be performed is provided in Table 3-1. The discussion of investigation activities has been grouped by environmental media of concern or field task in the following sections, with specific information related to laboratory analyses provided in Section 3.10. Additional information regarding the sampling methods and laboratory analyses is presented in the FSAP (Appendix C) and QAPP (Appendix D).

Observations/findings from the investigation will be reviewed with National Grid and the NYSDEC in an on-site meeting during the later stages of field activities to discuss the need and potential benefits of collecting additional data/samples to further the understanding of site conditions, or potentially complete the delineation of impacts. A review of the status of the program at that time provides the ability to improve the efficiency of the program and minimize the need for subsequent mobilizations of staff and equipment.

3.1 Underground utility clearance

Prior to the start of any intrusive fieldwork, clearance of underground utilities will be performed. The drilling subcontractor will contact Dig Safely New York to arrange for the location and marking of all underground utilities in the vicinity of the proposed soil boring and monitoring well locations. Copies of available city sewer and water maps from the site vicinity will also be obtained and reviewed during underground utility clearance procedures. Following review of the utilities in the site area, AECOM will contract a private company to locate all underground electric and gas utilities in the vicinity of each proposed subsurface sampling location using geophysical methods. Outlying areas where information is required to confirm the location of suspected utilities that may act as preferential migration pathways may also be surveyed using geophysical methods. Lastly, all boring/well locations will be hand or vacuum excavated to a depth of five feet to check for potential utilities not located by Dig Safely or geophysical methods.

3.2 Test pit excavation

Given the limited access in a number of areas of the site, the use of test pits will be focused in and around the former drip tanks/tar separator in the center of the site (TP-1), the gas/oil storage house and former No. 3 oil tank along the eastern edge of the property (TP-2), and the former separator and tar tank underlying the boiler house along the northern site boundary (TP-3). The test pits will be excavated with a backhoe or excavator using methods presented in the FSAP (Appendix C), with samples collected from the bucket of the excavator. Proposed sampling locations and rationale for the test pits are provided on Figure 3-1 and Table 3-1.

The test pits will be logged by a geologist recording such data as the presence of fill material or subsurface structures, the nature of each geologic unit encountered, observations regarding moisture content, the results of PID readings, and visual and olfactory observations regarding the presence of hydrocarbon-like residuals. The soils will be logged in accordance with the National Grid protocols (KeySpan, 2005) detailed in the FSAP (Appendix C).

The open excavations will be surrounded by temporary barricades to prevent unauthorized personnel from entering the excavation area and to protect site traffic. Soil removed during the excavation of each test pit will be temporarily stored on sheet plastic for return to the excavation. To the extent possible, clean soil will be segregated from impacted soil. Upon completion of each test pit, lightly impacted soil and debris will be returned to the excavation first, followed by clean soil and any additional clean backfill needed to return the excavation to original grade. Grossly contaminated material will not be returned to the excavation, but will be containerized and managed as investigation derived waste (IDW).

3.3 Surface soil sampling

Exposed surface soils are generally limited to the eastern areas of the site within the 252 and 254 Maspeth Avenue parcels. For purposes of this investigation, five surface soil samples have been proposed (SS-1 through SS-5) on Table 3-1. The proposed surface soil samples will be collected from the 0 to 2-inch bgs interval. The samples will be collected from proposed boring locations (as given on Table 3-1) using a stainless steel or disposable polyethylene trowel. All samples will be collected during utility clearance activities performed prior to borehole advancement.

As shown in Table 3-1, surface soil samples will be analyzed for full Target Compound List (TCL) VOCs (USEPA Method 8260B), SVOCs (USEPA Method 8270C), pesticides (USEPA Method 8081A), herbicides (USEPA Method 8151A), PCBs as Aroclors (USEPA Method 8082), Target Analyte List (TAL) metals, and free cyanide (extraction by EPA method 9013A and analysis by Microdiffusion, ASTM International method D4282-02). Additional information regarding the soil sampling methods and laboratory analyses is presented in the FSAP (Appendix C) and QAPP (Appendix D).

3.4 Subsurface soil sampling and monitoring well installation

Subsurface soil borings will be advanced in order to obtain additional information regarding the thickness and composition of fill and native soils beneath the site; to determine the depth to the water table; to observe and screen subsurface soil in order to identify conditions that may be indicative of impacts by MGP or other residuals; and to install the monitoring wells proposed for the RI.

The locations of the proposed soil borings and wells are shown on Figure 3-1. Table 3-1 provides summary information regarding the borings and wells, including the boring or well designation, the sampling location or rationale, the anticipated completion depth, and the laboratory analyses to be performed. A total of 14 soil borings are proposed with 6 locations proposed for conversion to monitoring wells (shallow/intermediate well pairs or shallow/intermediate/deep well triplets).

It is anticipated that the borings completed in the overburden soil will be advanced to varying depths (a maximum of 50 feet bgs) to delineate the vertical extent of MGP residuals previously observed at depths up to 31 feet bgs in soil at the site. However, as stated in the footnotes of Table 3-1, completion depths may be adjusted shallower in instances where 10 feet of clean soils are encountered below apparently contaminated soils. Likewise, if impacts are observed at the proposed termination depth in any boring, National Grid will consult with NYSDEC to determine the appropriate course of action, with a goal of obtaining vertical delineation in this RI mobilization.

Based on previous investigation methods, the subsurface borings will be advanced by either rotosonic drilling methods equipped with 4-inch diameter sampling cores or hollow-stem augers (HSAs) equipped with 2-inch or 3-inch diameter split-spoon samplers. In some instances, a direct-push (Geoprobe™) drilling rig equipped with Macro-Core™ samplers may be used if there are access limitations. Each of the methods will allow for continuous soil samples to be taken from the ground surface to the bottom of the borehole for both field characterization (photoionization detector screening and observations) and for the collection of samples for the chemical analyses.

The soil samples obtained by either method will be logged by a geologist recording such data as the presence of fill material or subsurface structures, the nature of each geologic unit encountered, observations regarding moisture content, the results of PID readings, and visual and olfactory observations regarding the presence of hydrocarbon-like residuals. The soils will be logged in accordance with the National Grid protocols (KeySpan, 2005) as discussed in Section 3.2.

Three soil samples are proposed for laboratory analysis from each soil boring. The first sample will either be a surface sample collected from 0 to 2 inches bgs (see Table 3-1 and Section 3.3) or will be collected at the depth of greatest apparent contamination from the 0 to 5 feet bgs interval. The sample will be collected during utility clearance activities performed prior to borehole advancement. It is anticipated that two subsurface samples (from greater than 5 feet bgs) will be collected for laboratory analysis from each boring location. Samples will be collected from the most apparently impacted intervals based on PID screening and field observations. If impacts are not encountered, a sample will be collected from the 1-foot interval immediately above the water table. The final sample will be collected at the first clean interval (if impacts are encountered) or the bottom of the boring to confirm “non-impacted” conditions.

As outlined on Table 3-1, the majority of the subsurface soil samples will be analyzed for VOCs (USEPA Method 8260B); SVOCs (USEPA Method 8270C); RCRA 8 metals (USEPA Methods 6010 and 7000-series); and free cyanide (extraction by EPA method 9013A and analysis by Microdiffusion, ASTM International method D4282-02). A subset (approximately 20%) of the sample locations (Table 3-1) will be analyzed for the full TCL VOCs; SVOCs; pesticides (USEPA Method 8081A); herbicides (USEPA Method 8151A); PCBs, as aroclors (USEPA Method 8082); TAL metals; and free cyanide.

Samples of grossly impacted soil containing visible tar-like or oil-like NAPL will generally not be sampled for laboratory analyses. These “MGP source” materials will be assumed to be impacted to the extent that management will be required by the NYSDEC. Information regarding the vertical extent of this material will be recorded on the boring logs by the field geologist and the areal extent of this material will be surveyed during the survey task. However, in some instances (e.g., locations adjacent to the site perimeter) samples may be collected for forensic analysis (i.e., petroleum fingerprinting) to better evaluate the potential source of the impacts.

Monitoring wells will be installed at six of the proposed RI soil boring locations. The monitoring well locations, shown on Figure 3-1 and detailed on Table 3-1, were selected to have a sufficient number of wells to evaluate groundwater within the former site boundary and in areas that are considered upgradient of the site. Proposed well location MW-6 is also designed to provide preliminary information related to the source of the observed product in the intersection of Maspeth and Vandervoort Avenues. In general, the groundwater monitoring wells will be installed at two depth intervals: the water table (estimated to be screened from 5 to 15 feet bgs) so that the screen straddles the water table; and from approximately 20 to 30 feet bgs in the intermediate portion of the upper aquifer to allow the screen to straddle the most impacted soil layers noted in the available geotechnical borings. Depths of the intermediate zone wells will be adjusted, if needed, to screen the surface of the reported clay layer noted in the on-site pumping well at approximately 30 feet bgs. In addition, three deep wells (estimated to be screened from approximately 40 to 50 feet bgs) below the reported clay layer (if laterally continuous) are also proposed to provide good lateral coverage across the site area to evaluate the lower sand aquifer screened at the on-site pumping well. If required, these wells will be installed with isolation casing in areas where shallower impacts are noted. Actual well design will depend on site conditions encountered, such as: thickness of the saturated zone; observed stratigraphy; and the presence, location, and thickness of NAPL, if any. Significant changes to the design presented in this Work Plan will be discussed with NYSDEC prior to implementation.

All wells will be constructed using a 2-inch diameter Schedule 40 PVC well riser with a 0.01-inch slotted screen (0.02-inch, if NAPL present) and a 2-foot long sump for monitoring the presence of any DNAPL. Grout will be tremied into the borehole annulus above the sand pack and the bentonite seal to complete the well to grade. Additional details for monitoring well installation are provided in the FSAP (Appendix C).

3.5 Well development

Each of the new monitoring wells will be developed not sooner than 24 hours after their installation to evacuate fine-grained sediments that may have accumulated within the well during installation. Well development methods are presented in the FSAP.

3.6 Groundwater sampling and aquifer conductivity testing

Following completion of the well development, the wells will be allowed to stabilize for at least two weeks, and then sampled. All new and selected existing wells, including perimeter locations, will be checked for the presence of light non-aqueous phase liquids (LNAPL) or dense non-aqueous phase liquid (DNAPL). Water levels will be measured in all the wells, and a groundwater flow direction map will be prepared and included in the RI Report. Groundwater samples will be collected from all wells by low-flow purging methods (USEPA, 1996) using either a peristaltic pump or submersible pump with the downhole tubing or the pump placed at the approximate midpoint of the screened interval. At the ground surface, the water will pass through a sealed chamber containing probes which will measure the water temperature, pH, specific conductivity, oxidation-reduction potential, and dissolved oxygen. Samples of water discharging from the chamber will be collected at regular intervals and analyzed for turbidity using a hand-held field meter. After passing through this chamber, the water will be discharged to a calibrated five-gallon bucket where the pumping rate will be calculated. When this bucket is full, the water will be transferred into a fifty-five gallon drum where it will be stored for future disposal. Pumping rates will be set below the maximum sustainable flow rate so as not to significantly lower the water level in the well. Groundwater analytical samples will be collected when water quality parameters have stabilized. Table 3-1 and Section 3.10 provide summary information for the groundwater samples to be collected including the sample designations, sample rationale, and the laboratory analyses to be completed.

In addition to the groundwater samples collected from the monitoring wells, a grab groundwater sample will be collected from proposed boring SB-14, located outside and downgradient of the former relief holder. A grab sample is proposed instead of installation of a monitoring well because of the heavy truck traffic on this parcel that would quickly damage or destroy the well. The sample will be collected using a direct-push screen point sampler positioned approximately 10 to 15 feet bgs consistent with the proposed shallow well depths. A sample of the water in the borehole will be collected using a peristaltic pump. The sample will be analyzed as indicated on Table 3-1.

Following groundwater sampling (and assuming that soil conditions are conducive, i.e. they do not recover too rapidly), conductivity tests (slug tests) will be performed at three well locations providing good lateral and vertical coverage at the Site. These data will be used to calculate the hydraulic conductivity of the aquifer to support the evaluation of the fate and transport of Site impacts and potential remedial alternatives.

Prior to any slug testing, “trial” slug tests will be performed to evaluate probable groundwater recovery characteristics at the wells. During aquifer testing, a background continuous water level survey (at least 24 hours) may also be performed at select wells to identify the potential effect of tidal influence or from the on-site pumping well. If the pre-screening evaluations show that slug tests are a viable method to evaluate aquifer conductivity at the site, the slug tests will be performed by slug removal or pneumatic testing methods and timing the equilibration to the static water level. The general steps to be performed during pneumatic slug testing are as follows:

- Static water level will be measured to the nearest 0.01 foot.
- A pressure transducer, attached to a data logger, will be placed into the well and the water level allowed to equilibrate to static conditions.
- The water column in the well will be pressurized while simultaneously measuring and recording water levels with the pressure transducer and data logger until the water level has equilibrated (“falling head test”).
- The pressure in the well will then be rapidly removed and the water level will be measured and recorded (“rising head test”).

The data from these tests will be analyzed by AQTESOLV® according to the Bouwer and Rice method (1989) or equivalent methods to calculate average hydraulic conductivity values for the aquifer.

3.7 Sub-slab vapor/indoor air/ambient air sampling

A soil vapor intrusion survey will be performed since MGP-related compounds have been detected in soil and groundwater samples collected from the Site. The work will be performed in accordance with *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (NYSDOH, 2006) and the USEPA document entitled *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils, Office of Solid Waste and Emergency Response* (USEPA, 2002). Methods also are consistent with National Grid's Draft Standard Operating Procedure for Soil Vapor Intrusion Evaluations at National Grid MGP Sites in New York State (National Grid, 2007).

The proposed sampling plan consists of the concurrent collection of a total of 4 samples (sub-slab vapor sample/duplicate, indoor air sample, and ambient air sample) to evaluate conditions in the scale house at the transfer facility on 222 Maspeth Ave. The scale house is one of the few enclosed structures at the facility, and it is occupied intermittently throughout the day. The sampling will be preceded by a chemical inventory check within the scale house. The approximate sampling location for IA-1/SV-1 is shown on the Figure 3-1.

Following utility clearance processes, sub-slab soil vapor samples will be collected from immediately below the concrete slab below the elevated scale house building in accordance with NYSDEC Guidance. The sub-slab sampling implants will be installed by drilling a ¾-inch diameter hole through the concrete slab and placing Teflon tubing in the hole. An air-tight seal will be created by filling the space between the tubing and the concrete with hydrated bentonite clay or modeling clay. The integrity of the seals around the implants will be confirmed by placing a helium-filled "shroud" around the insertion points. One to three volumes of air will be purged with a helium meter at a rate not to exceed 0.2 liters per minute. Detections of helium will indicate a leak in the seal, requiring that the seal be repaired or replaced.

The sample tubing will be attached to the sample container (6-liter Summa canister) with Swagelok™ fittings. All samples will be collected in batch certified clean canisters through regulators set for an eight-hour sample duration, which conforms to the NYSDOH Guidance. Following the sub-slab vapor sample collection, all concrete coring holes will be sealed and patched to match the existing grade. Additional information regarding the methods to be used for the soil vapor sampling is presented in the FSAP (Appendix C).

The indoor air sample will be collected in batch certified (clean), 6-liter Summa canisters through regulators set for an eight-hour sample duration, consistent with the soil vapor samples. The ambient air sample will be collected at a location determined to be upwind of the buildings at time of sampling. The air and soil gas samples will be shipped overnight to a NY ELAP-certified laboratory (Air Toxics, Ltd.) for analysis.

The laboratory samples will be analyzed for VOCs (including naphthalene) by USEPA SW846 Method TO-15, with an extended analyte list. The minimum reporting limit for the analysis will be at most one part per billion (1 to 7 micrograms per cubic meter depending on the molecular weight for each compound). The helium analysis will be performed using modified method ASTM D1945. The laboratory turn-around-time will be 14 days from the date the samples are received by the laboratory. The analytical results will be provided by the laboratory in a summary table, which will also include NYSDOH background concentrations for the respective target compounds.

The results of the indoor air and ambient air results will be evaluated by first comparing the VOC concentrations to typical background values published by NYSDOH. If compounds are detected above the typical range, the data will be evaluated to determine the sources of these compounds. For example, benzene may be associated with MGP residuals but is also widely found in urban soil gas and indoor air due to gasoline. To distinguish between these sources, and prevent the false attribution of the benzene to MGP residuals, compound ratios and the presence or absence of indicator compounds will be examined.

In addition to the standard TO-15 list of compounds, several additional compounds will be analyzed, including: 1,2,3-trimethyl benzene, 1-methylnaphthalene, 2-methylnaphthalene, tetramethylbenzene, indene, indane, thiophene, 2-methylpentane, isopentane, and 2,3-dimethylpentane. This list of additional compounds was developed specifically for use in evaluation of soil vapor intrusion at MGP sites. Indane, indene, and thiophene are usually associated with MGP residuals. The presence or absence of these indicator compounds will be used as a line of evidence to distinguish between MGP and non-MGP sources in the soil vapor and indoor air. Similarly, inclusion of the pentane compounds and MTBE will allow the presence of gasoline sources to be identified. In some cases, statistical analysis of the data may be used to distinguish among the sources.

3.8 Site survey

A survey of the investigation sampling points and important site features (buildings, streets, etc.) will be conducted at the end of the fieldwork by a licensed NY-State surveying contractor. All horizontal locations will be reported in the New York State Plane Coordinate System, Long Island Zone (NAD83) in feet. All vertical measurements will be reported in NAVD88 in feet, to the nearest 0.1 ft. and 0.01 ft. for soil borings and monitoring wells respectively.

3.9 Investigation-derived waste management

All investigation waste generated during the RI will be collected in properly labeled USDOT approved storage containers (55-gallon drums) or a small bulk roll-off container and grouped by environmental matrix (soil, water, PPE/plastic, construction debris). If drums are used, as they are filled they will be tracked and given unique identification codes based on the following:

- A prefix indicating the site where the drum was generated and the drum’s contents: i.e., E – Equity plus S – Soil, W – Water, P – PPE/Plastic, and C&D – Construction Debris.
- Following the prefix and a hyphen will be the drum’s chronological number of generation. For example, drum ES-1 is the first drum of the project generated and is filled with soil. Drum EW-8 is the eighth drum generated and contains water.
- As drums are generated, their identification code, date of generation, contents, source (i.e., drill cuttings from location x, purge water from well y), and date sampled will be entered on a tracking table.

The drums (or roll-off container) will be stored at a locked, temporary fenced location to be decided during the kickoff meeting, which will be completed prior to the start of the field investigation. Subsequently, the waste soils will be characterized with laboratory analyses including full TCLP, corrosivity, ignitability, reactivity, TPH, and PCBs. Waste transportation and disposal of all contaminated wastes will be managed by National Grid.

3.10 Analytical program summary

The laboratory samples for each media and the chemical analyses to be performed are included in Table 3-1. Requisite quality assurance/quality control (QA/QC) samples are presented in the QAPP (Appendix D).

3.10.1 Surface and subsurface soil analyses

The majority of the soil samples will be analyzed for the following parameters:

- VOC compounds by USEPA Method 8260B;
- Semi-volatile organic compounds (SVOCs) by USEPA Method 8270C;
- RCRA 8 metals by USEPA Method 6000-7000 Series; and
- Free Cyanide (extraction by EPA method 9013A and analysis by Microdiffusion, ASTM International method D4282-02).

A subset (approximately 20%) of the total number of soil samples will be analyzed for an expanded list of the following parameters:

- Full TCL VOCs by USEPA Method 8260B;
- Full TCL SVOCs by USEPA Method 8270C;
- TAL Metals by USEPA Method 6000-7000 Series;
- TCL Pesticides by USEPA Method 8081A;
- TCL Herbicides by USEPA Method 8151A;
- PCBs (as Aroclors) by USEPA Method 8082; and

The frequency of these additional analyses will be reviewed for subsequent samples.

3.10.2 Groundwater analyses

Similar to soils, the majority of groundwater samples will be analyzed for the following parameters:

- VOC compounds by USEPA Method 8260B;
- SVOC compounds by USEPA Method 8270C;
- TAL Metals by USEPA Method 6000-7000 Series; and
- Free Cyanide (Microdiffusion, ASTM International Method D4282-02).

A subset (approximately 20%) of the total number of groundwater samples will be analyzed for an expanded list of the following parameters:

- Full TCL VOCs by USEPA Method 8260B;
- Full TCL SVOCs by USEPA Method 8270C;
- TAL Metals by USEPA Method 6000-7000 Series;
- TCL Pesticides by USEPA Method 8081A;
- TCL Herbicides by USEPA Method 8151A;
- PCBs (as Aroclors) by USEPA Method 8082; and

The frequency of these additional analyses will be reviewed for subsequent samples.

3.10.3 Soil vapor/indoor air/ambient air analyses

The soil vapor/indoor air/ambient air samples will be analyzed for VOCs by USEPA Method TO-15 (including naphthalene). The soil vapor samples will also be analyzed for helium by ASTM Method ASTM D-1945. In addition to the standard TO-15 list of compounds, several additional compounds will be analyzed for, including: indane, indene, thiopene, styrene, 2-methyl pentane, isopentane, 2,3-dimethyl pentane, isooctane, and MTBE.

3.10.4 Waste characterization/profiling

Sufficient samples (a minimum of two) will be collected during the investigation and analyzed for full RCRA Hazardous Characteristics testing to determine if materials exhibiting hazardous characteristics may be present at the site and to support waste disposal profiling purposes. The analyses to be performed may include, but not be limited to, the following, depending on the medium and the selected disposal facility:

- Total Metals by USEPA Method 6010B (Mercury 7470A);

- Total Petroleum Hydrocarbons (DRO and GRO) by USEPA Method 8015 modified;
- PCBs by USEPA 8020;
- TCLP ZHE Extraction – U.S. EPA Method 1311;
- TCLP VOC – USEPA Method 8260B;
- TCLP SVOC – USEPA Method 8270C;
- TCLP RCRA Metals – USEPA Method 6010B (Mercury 7470A);
- Corrosivity – USEPA Method 9045C;
- Ignitability/Flashpoint – USEPA SW-846 Method 1010A
- Reactive Cyanide and Reactive Sulfide by USEPA SW-846 Chapter 7, Sections 7.3.3.2/7.3.4.2; and
- Total Organic Halogens – USEPA SW-846 Method 9020B

3.10.5 Quality assurance/quality control sampling

Field and laboratory quality control samples for the investigation will be collected and analyzed to document the accuracy and precision of the samples. The QA/QC samples, summarized in the QAPP (Appendix D), include trip blanks, field equipment blanks, field duplicates and matrix spikes, and matrix spike duplicates. The data quality level for the investigation will be consistent with procedures outlined in the NYSDEC Analytical Services Protocol (ASP) July 2005 methodologies. A full ASP Category B data package will be prepared by the laboratory for all samples. The data will be reviewed, and a Data Usability Summary Report (DUSR) will be prepared by a qualified chemist. Additional QA/QC information is provided in the QAPP.

3.11 Fish and wildlife resource impact assessment

Given the current site use and conditions, i.e. active solid waste transfer facility that is largely paved, it is unlikely that the site is a habitat for endangered, threatened or special concern species. Additionally, the fact that the site is located a significant distance (approximately 900 ft.) from the nearest surface water body (English Kills), it is unlikely that site impacts would affect off-site habitats. For these reasons, we do not believe that a Fish and Wildlife Resource Impact Assessment (FWRIA) (NYSDEC, 1991) will be required for the Equity former MGP site and appropriate documentation will be provided as part of the RI Report.

If, during the course of the investigation, a review of the FWRIAA Decision Key (NYSDEC, 2002 DER-10, Appendix 3C) indicates that further assessment is warranted, the appropriate procedures from DER-10, Sections 3.10.1 and 3.10.2 will be implemented and the results included in the RI Report.

4.0 Additional work plan documents

Four companion documents have been prepared to detail the methods and procedures to be used during the RI. Each of the documents is included as an Appendix to this Work Plan.

4.1 Field sampling and analytical plan

All sampling and analyses will be conducted in accordance with the methods described in the site-specific FSAP. The FSAP provides a description of the objectives and methods for each of the investigation field activities, and details concerning the project organization. The FSAP is provided in Appendix C.

4.2 Quality assurance project plan

In addition to the FSAP, a full QAPP has been developed for use on this project. The QAPP identifies the quality assurance objectives for the measurement data, the QA/QC procedures to be used in the field, the sample chain-of-custody methods to be used, and the analytical procedures to be followed. The QAPP will also include a description of the manner in which each type of data is to be used. The QAPP is provided in Appendix D.

4.3 Community air monitoring plan

A CAMP has been developed for this project that will be followed during all invasive fieldwork (soil borings, borings for well installations, and test pitting). It will provide information regarding the procedures to be used to monitor and control, if necessary, the potential release of airborne constituents and odors at the downwind perimeters of the investigation work areas. The CAMP is provided in Appendix E.

4.4 Site-specific health and safety plan

A site specific HASP has been prepared to outline health and safety risks and procedures for all site workers and visitors. Included in the HASP is information regarding physical and chemical hazards at the site, emergency procedures and contact information, incident reporting procedures, and the route to the hospital. The HASP is provided in Appendix F.

5.0 Qualitative Human Health Exposure Assessment

A Qualitative Human Health Exposure Assessment (QHHEA) will be conducted following NYSDEC guidance (Appendix 3B of NYSDEC, 2002). The QHHEA will characterize the exposure setting, identify potentially complete exposure pathways, and qualitatively evaluate potential fate and transport of constituents from one medium to another (i.e., soil-to-air or soil-to-groundwater).

An exposure pathway is considered complete when the following five conditions are met:

1. Source (i.e., MGP residuals);
2. Release and transport mechanism from source to environmental media (i.e., leaching of MGP residuals into the subsurface or volatilization to the air of an overlying building);
3. Point of human exposure (i.e., an occupied building or surface soil);
4. A route of exposure (ingestion, dermal contact, or inhalation);
5. A receptor population (i.e., on-site workers).

Once potentially complete exposure pathways are identified, the QHHEA will characterize site conditions to determine whether the site poses an existing or potential future hazard to the potentially exposed population. The evaluation will include a qualitative discussion of potential fate and transport mechanisms at the site. The results of the QHHEA will be included as part of the RI Report.

6.0 Project schedule and deliverables

6.1 Schedule

The RI field work will be initiated following approval of the scope of work presented in this Work Plan by NYSDEC. A general timeline for the project includes the following milestones:

- Field Mobilization – within 45 days of the approval of the work plan.
- Duration of Currently Proposed Field Activities – approximately 30 days.
- Draft Report to National Grid – within 60 days of the completion of field activities.
- Final Report to NYSDEC – within 90 days of the completion of field activities.

The milestones presented above are subject to change based on delays caused by access limitations and/or weather and unforeseen circumstances. However, it is intended to maintain a schedule to complete the project as expeditiously as possible. A more specific schedule will be submitted upon approval of the Work Plan.

6.2 Deliverables

6.2.1 RI Report

Upon completion of the field activities, an RI Report will be prepared to document the findings of the investigations performed at the site. The report will be consistent with the specifications presented in the Draft DER-10 (NYSDEC, 2002) document and will include:

- An executive summary
- A site description and history
- Summary information regarding previous investigations and remedial work performed at the site
- Descriptions of all field activities performed
- A summary of all field observations, field measurements, and laboratory analytical data summarized in tabular format. Data will be managed in a database. Soil and groundwater analytical results will be compared to appropriate NYSDEC guidance and standards. The results of the indoor air and ambient air results will be evaluated by first comparing the VOC concentrations to typical background values published by NYSDOH
- Plan view and cross-section figures presenting laboratory analytical data and field observations of surface and subsurface soil and groundwater impacts. A minimum of two profiles will be developed, one perpendicular to and one parallel with groundwater flow direction at the site
- A qualitative human health risk assessment which assesses the sources of impact, on and off-site human and ecological receptors, and exposure pathways
- Documentation to support the decision to eliminate the FWRIA, or a summary of FWRIA findings
- An integration of field observations and measurements with laboratory analytical data to evaluate the nature and extent of impacts and to develop a site conceptual model of potential contaminant migration
- A set of conclusions for the investigation
- Recommendations

Appendices to the report will include all pertinent data used to support the RI effort, including validated laboratory analytical results (Form 1s), data usability reports, stratigraphic boring and monitoring well construction logs, and all field sampling sheets (monitoring well development forms, aquifer testing results, groundwater sampling sheets, etc.).

The RI Report will be reviewed and approved by a qualified senior geologist. The report and site data will be prepared and organized such that it can be used for the preparation of a feasibility study for the site. If appropriate, recommendations for additional site activities will be provided.

7.0 References

Bouwer, H. and R.C. Rice, 1976. A Slug Test for Determining Hydraulic Conductivity of Unconfined Aquifers with Completely or Partially Penetrating Wells, US Water Conservation Laboratory, Phoenix, AZ.

Bouwer, Herman, 1989. The Bouwer and Rice Slug Test - An Update, US Water Conservation Laboratory, Phoenix, AZ.

EEA Inc., 2004. Phase II Environmental Subsurface Investigations, 254 Maspeth Avenue, Brooklyn, New York. October 2004.

Environmental Data Resources, Inc. (EDR), 2008a. Certified Sanborn® Map Report. Between Rewe Street and Maspeth Avenue, Brooklyn, NY 11215. Inquiry Number: 2278472.1s. July 29, 2008.

EDR, 2008b. The EDR Aerial Photo Decade Package. Equity Works Manufacturing Gas Plant, 222 Maspeth Avenue, Brooklyn, NY 11211. Inquiry Number: 2348436.2. October 27, 2008.

EDR, 2008c. The EDR Radius Map™ Report. Equity Works Manufacturing Gas Plant, 222 Maspeth Avenue, Brooklyn, NY 11211. Inquiry Number: 2348436.1s. October 28, 2008.

Gannett Fleming Engineers, PC (GFE), 2004. Phase I Environmental Site Assessment, Cooper Tank Transfer Facility, 254 Maspeth Avenue, Brooklyn, New York, 11211. Project # 44440.01. October 2004.

GFE, 2005. Phase II Environmental Site Investigation, 252 Maspeth Avenue, Brooklyn, New York, 11211. File # 44440.004. May 12, 2005.

GFE, 2006. Geotechnical Borings SB-1 through SB-5, 252 and 254 Maspeth Avenue, Brooklyn, New York, 11211.

KeySpan, 2005. Field Descriptions of Samples from Former MGP Sites, November, 2005.

National Grid, 2007. Draft Standard Operating Procedure for Soil Vapor Intrusion Evaluations at National Grid MGP Sites in New York State, updated September 2007.

New York State Department of Environmental Conservation (NYSDEC), 1991. Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites. Prepared by: New York State Department of Environmental Conservation, Division of Fish and Wildlife, June 1991.

NYSDEC, 1998. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Division of Water Technical and Operational Guidance Series (1.1.1), June 1998.

NYSDEC, 2002. Draft DER-10 Technical Guidance for Site Investigation and Remediation, December 2002.

NYSDEC Environmental Notice Bulletin, October 4, 2006. http://www.dec.ny.gov/enb2006/20061004/Reg2.html

New York State Department of Health (NYSDOH), 2006. Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, New York State Department of Health", October 2006

Order on Consent and Administrative Settlement, Index # A2-0552-0606, March 2007, modified in August 2007.

Sanborn Maps for 1888, 1907. 1933, 1951, 1965, 1968, 1977, 1979, 1980, 1981, 1986, 1987, 1988, 1990, 1991, 1992, 1993, 1994, and 1995.

United States Environmental Protection Agency (USEPA), 1996. Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures, EPA/540/S-95/504, April 1996.

USEPA, 2002. Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils, Office of Solid Waste and Emergency Response, 2002.

Tables

Table 2-1
Summary of Historic Use
Equity Former MGP Site
222, 252 and 254 Maspeth Avenue, Brooklyn, NY.

Date	Description	Source
1888	Site is undeveloped	Sanborn
1903	MGP structures developed, including gas storage holder, relief holder, generator house, purifiers, oil house, and creek	BUG 1903 facility plan
1905	Same as 1903 plan, except relief holder converted to tar tank, drip tank added, oil storage tank added, boiler room expansion	BUG 1905 facility plan
1907	MGP structures include a generator house, purifier house, coal shed, gas holder, tar tank, and oil bunker	Sanborn
1921	Appears to show maximum extent of MGP expansion, all major plant structures and supporting sturctures shown	BUG 1921 facility plan
1932	Many MGP structures still present, although holder listed as disconnected and purged, standards removed, and tank partially filled. Creek still present. Six-inch pipe labelled "salt water" shown northwest of holder near Maspeth Avenue (possible well).	BUG 1932 facility plan
1933	The coal shed, gas holder, tar tank and oil bunker are no longer evident and the buildings (generator/purifier houses) are "vacant"	Sanborn
1951	The site is still listed as owned by Brooklyn Union Gas, but no structures are evident	BUG facility plan
1951	The site listed as sold on September 17, 1951 (handwritten on 1932 BUG facilty plan).	Sanborn
1965-1981	No owner listed, storage of used pipe and valves is indicated - three metal clad on wood frame buildings onsite	Sanborn
1986-1988	The site appears to be vacant. However, NYC records indicate certificates of occupancy for construction debris transfer activities. Records indicate ownership of separate parcels by Fontana Transfer and Cooper Tank and Welding.	Sanborn
1990-1995	Property labeled as "Garbage Transfer Storage", there is a small one story iron building	Sanborn
2006	Site appears to be in use, similar configuration as 1995. A permitted above ground storage tank (275 gal) for used oil appears to have been in use during the period of 2000 to 2005. Operational as Cooper Tank Recycling to present day.	Aerial, EDR

Table 2-2
Summary of Prior Investigation Results
Exceedances of NYSDEC Criteria - Soil Samples

Site			**252 Maspeth Ave.** [1]				**254 Maspeth Ave.** [2]						
Date			**March-05**				**September-04**						
Location			**B-1**	**B-2**	**B-3**	**B-4**	**B-1**		**B-2**	**B-3**	**B-4**	**B-5**	**B-6**
Sample Depth (bgs)			**3-7 ft.**	**4-8 ft.**	**2-8 ft.**	**2-6 ft.**	**4-8 ft.**	**8-12 ft.**	**0-4 ft.**	**0-4 ft.**	**0-2 ft.**	**0-4 ft.**	**0-4 ft.**
Constituents	**Industrial Use Soil Cleanup Objectives** [3]	**Comercial Use Soil Cleanup Objectives** [4]											
PAHs (ug/Kg)													
Benzo(a)anthracene	11,000	5,600	4,000	4,400	**6,400J**	4,700J	2,500	2,900	**14,000**	**20,000**	**6,000**	2,600	**6,600**
Benzo(a)pyrene	1,100	1,000	**2,900**	**3,800J**	**5,100J**	**3,600J**	**1,800**	**1,700**	**11,000**	**15,000**	**4,700**	**2,100**	**4,800**
Benzo(b)fluoranthene	11,000	5,600	3,500	4,300J	**5,600J**	4,300J	1,600	1,400	**12,000**	**14,000**	4,300	2,100	**5,600**
Dibenzo(a,h)anthracene	1,100	560	400	500J	**860J**	**600J**	<330	<360	**1,100**	**1,500**	480	350	**720**
Indeno(1,2,3-cd)pyrene	11,000	5,600	1,500	2,100J	3,300J	2,100J	880	580	3,000	**7,100**	1,500	850	1,600
Metals (mg/Kg)													
Arsenic	16	16	5.1	5.3	**46**	4.7	2.1	<1.2	12	**18**	3.8	4.4	**17**

notes:

[1] Data from Gannett Fleming Engineers, PC, 2005. Phase II Environmental Site Investigation, 252 Maspeth Avenue, Brooklyn, New York, 11211. File # 44440.004. May 12, 2005.

[2] Data from EEA Inc. 2004. Phase II Environmental Subsurface Investigations, 254 Maspeth Avenue, Brooklyn, New York. October 2004.

[3] Industrial Use Soil Cleanup Objectives from 6 NYCRR 375-6 Table 375-6.8(b)

[4] Commercial Use Soil Cleanup Objectives from 6 NYCRR 375-6 Table 375-6.8(b)

[5] The xylene soil cleanup objectives are for total xylenes.

[6] The chromium Soil Cleanup Objectives from 6 NYCRR 375-6 Table 375-6.8(b) is the sum of the trivalent chromium and hexavalent chromium objectives.

< - Indicated constituent was not detected.

J - Indictes result is estimated

NA - Not analyzed

Bold - Result Exceeds Commercial Use Soil Cleanup Objectives from 6 NYCRR 375-6 Table 375-6.8(b)

🟨 Result exceeds Industrial Use Soil Cleanup Objectives from 6 NYCRR 375-6 Table 375-6.8(b)

Table 2-3
Summary of Prior Investigation Results
Exceedances of NYSDEC Criteria - Groundwater Samples [1]

	Site	**252 Maspeth Ave.**	
	Date	**March-05**	
	Location	**B-1**	**B-4**
Constituents	**NYSDEC TOGS Guidance Values [2]**		
VOCs (ug/L)			
Benzene	0.7	1	
m+p Xylene	5		7
PAHs (ug/L)			
Naphthalene	10		84
PCBs (ug/L)			
Aroclor 1260	0.09		2
Metals (mg/L)			
Arsenic	0.025	2.3	1.2
Barium	1	39	23
Beryllium	0.003	0.06	
Cadmium	0.005	0.52	
Chromium	0.05	3.3	2.5
Copper	0.2	45	21
Lead	0.025	130	44
Mercury	0.0007	0.26	0.079
Nickel	0.1	2.6	2.2
Selenium	0.01	0.16	0.14
Zinc	2	130	49

[1] Data from Gannett Fleming Engineers, PC, 2005. Phase II Environmental Site Investigation, 252 Maspeth Avenue, Brooklyn, New York, 11211. File # 44440.004. May 12, 2005.

[2] NYSDEC Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, June 1998.

Blank cells indicate result did not exceed the NYSDEC Groundwater Criteria.

Table 2-4
Summary of Historic Use
Properties/Areas Adjacent to the Equity Former MGP Site

Site	Date	Description	Source
Eastern Abutter			
300 Maspeth Block 2927, Lot 168	1954	Property is cleared and appears vegetated	Aerial
	1966, 1975, 1984, 1994 and 2006	Parking area for trucks, beyond which appears to the a shipping and/or receiving area. Multiple tanks remain on-site, many with leak detection or secondary containment	Aerial EDR Report
Northern Abutter across Maspeth			
285 -287 Maspeth Ave. Greenpoint MGP/Energy Center Block 2837 Lot 1	prior to 1951	Former MGP, with by-product and coking plant operated at the site from 1928 to 1951	EDR Report
	1954, 1966 and 1975	Beyond Maspeth are two MGP plant Tanks and cleared area around the two tanks	
	1964 and 1994	Beyond Maspeth is a baseball field and two MGP plant tanks and MGP plant structures	Aerial
	2001	Gas holders removed	EDR
	2006	Beyond Maspeth is a baseball field and foundations of two former MGP plant tanks and former MGP plant structures. Active PCB facility (tankage >1,100 gal) in 1997. Currently a large quantity generator of RCRA "D', "F", and "U" wastes	Aerial
Southern Abutter			
Southern Abutter Block 2927 Lots 42, 125	1888	Undeveloped	Sanborn
	1907	Only southern portion of site is developed with "J.A. Crombie Co Storage" and "Joseph A Solan saw and planning mill"	Sanborn
	1933	Entire property labeled "Chapman Dock Co" and there is a small road dividing the property. There are small offices and storage structures near what is now Rewe St.	Sanborn
	1951	Still Chapman Dock Co with structures at the southern portion for offices and building material storage	Sanborn
	1965-1981	Southern building identified as Salwen Paper Co. , but southeastern building is labeled "Lack Carpet Co."	Sanborn
	1986-1990	Southern building is still identified as Salwen Paper Co. building, but southeastern building is labeled "Boro recycling"	Sanborn
	1991-1995	Southern building is still identified as Salwen Paper Co., and southeastern building as "shipping"	Sanborn
Western Abutter			
214 Maspeth Ave. Block 2927 Lot 42	1954	Cleared property, beyond which is Vandervoort Ave.	EDR
	1966, 1975, 1984, and	Cleared property that appears to be used as truck parking or a shipping/receiving area	EDR
	2006	Portion of a building that is attached to the southern abutting industrial building (Block 2927, Lot 42)	EDR Report
Block 2090, Lot 30	1888	undeveloped	Sanborn
	1907	Property beyond Vandervoort is labeled "Standard Rope and Twine Co"	Sanborn
	1933	Property is labeled "Lignum Chemical Works", apparently a sawdust processing and storage facility.	Sanborn
	1951	Property appears to used for sawdust processing/storage and metal scrapping	Sanborn
	1965-1995	Part of the property (along Maspeth Ave) continues to be used for metal scrapping, use of the remaining portions are not specified.	Sanborn

Table 2-5
Summary of Environmental Database Search Records
Properties/Areas Adjacent to the Equity Former MGP Site

Location	Event	Source	
Western Intersection			
Maspeth Ave and Vandervoort Ave	Nov 1998 - Hazmat was called to unknown material on water in the street. The report estimates 60-gallons (assumed organic and water)	EDR Report	NY Spill
	May 2007 - Oil (approx. 5 oz.) was observed coming out of soil in a utility excavation. Subsequently, oil (approx. 1 pint) was observed on water within a utility trench located approx. 100 ft. from the prior observation.	EDR Report	NY Spill
	May 2007 - One pint of oil (unknown petroleum) in trench on 10 gallons of water	EDR Report	NY Spill
	Aug. 2007 - Sheen of unknown petroleum (approx. 1.5 gal) was observed on water (approx. 20 gal) in the bottom of an excavation.	EDR Report	NY Spill
Eastern Abutter			
Federal Express Ex (300 Maspeth)	July 2002 - Tank failure reported	EDR Report	Ltank
	2002- Removal of 20 550-gal gasoline USTs and surrounding soil (900 tons) from site and adjacent property (not identified) in 2002. N Black stained soil with strong petroleum odor observed "adjacent to the southwestern portion of the existing warehouse (not specifically identified)". NFA granted end of 2005/early 2006.	EDR Report	NY Spill
Northern Abutter across			
Brooklyn Union Gate Station - 285 Maspeth Ave.	1981- Liquid Condensate in pipeline found to contain PCB, All "batches" were tested, with off-site disposal	EDR Report	CERC-NFRAP
	Nov. 2003 - Fuel oil spill (1-3 gallons) addressed by in-house staff.	EDR Report	NY Spill
Greenpoint MGP - Energy Center - 287 Maspeth Ave	Nov. 1990 - Gasoline tank (4,000 gal) failed routine leak test (no determined leak rate). Excavated and repaired.	EDR Report	Ltank
	Jan. 1993 - Underground storage tank failed a routing "tightness" test. Vent connections (above level of product) were repaired.	EDR Report	Ltank
	Aug. 1996 - Diesel spill (10 gal) overfill of tank. Remediated		
	March 1998 - Gasoline spill (5 gal), leaking drum. Soil remediated		
	July 2001- Lead base paint debris cleanup from demolition of gas holders	EDR Report	NY Spill
	Sept. 2001- Diesel spill (200 gal), faulty valve on truck. Remediated by contractor and closed.	EDR Report	
	June 2004 - Preliminary site investigation report indicated shallow (0-5 ft. bgs) MGP impacts that were addressed in an Interim Remedial Action. Site impacts were not delineated.	EDR Report	SHWS
Maspeth Avenue	Aug. 2005 - Fuel oil (25 gal) observed in street, cleaned up by sanitation department.	EDR Report	NY Spill
Southern Abutter			
Sigagel Associates 1 Rewe St.	Nov 1996 - Fuel oil (#2) spill from poor housekeeping. UST and soil removed. Closure granted Feb 1998.	EDR Report	NY Spill

Table 3-1
Proposed RI Sample Location, Rationale, and Analytical Sample Summary
Equity Former MGP Site, Brooklyn, New York

Location ID	Sample ID	Completion Depth*	Sample Depth (bgs)	No. of Samples	Analyses	Rationale
Surface Soil/Subsurface Soil						
SS-1 (at SB-1)	SS-1	2 inches	Surface (0 - 2 inches)	1	TCL VOCs, TCL SVOCs, TAL Metals, Free CN, PCBs (as Aroclors), TCL Pesticides & Herbicides	Anticipated upgradient location. Evaluate background soil quality in site area.
SS-2 (at SB-3)	SS-2	2 inches	Surface (0 - 2 inches)	1	TCL VOCs, TCL SVOCs, TAL Metals, Free CN, PCBs (as Aroclors), TCL Pesticides & Herbicides	Evaluate existing surface soil on Site. Co-located with SB-3 at former generator house and former stream channel along northern site boundary. Likely downgradient boundary of former MGP footprint.
SS-3 (at SB-5)	SS-3	2 inches	Surface (0 - 2 inches)	1	TCL VOCs, TCL SVOCs, TAL Metals, Free CN, PCBs (as Aroclors), TCL Pesticides & Herbicides	Evaluate existing surface soil on Site. Co-located with SB-5 at area of former tar separator and drip tanks. Evaluate former stream channel near southern boundary of former MGP footprint.
SS-4 (at SB-7)	SS-4	2 inches	Surface (0 - 2 inches)	1	TCL VOCs, TCL SVOCs, TAL Metals, Free CN, PCBs (as Aroclors), TCL Pesticides & Herbicides	Evaluate existing surface soil on Site. Co-located with SB-7 at former oil tank structure along eastern footprint of former MGP.
SS-5 (at SB-11)	SS-5	2 inches	Surface (0 - 2 inches)	1	TCL VOCs, TCL SVOCs, TAL Metals, Free CN, PCBs (as Aroclors), TCL Pesticides & Herbicides	Evaluate existing surface soil on Site. Co-located with SB-11 at former stream channel area along southern boundary of former MGP.
SB-1	SB-1 (depth)	Est. 50 feet max	Zone of worst-case impacts, and first clean	2	VOCs, SVOCs, RCRA 8 Metals, and Free Cn	Anticipated upgradient location. Evaluate background soil quality in site area.
SB-2	SB-2 (depth)	Est. 50 feet max	Upper 5 feet, zone of worst-case impacts, and first clean or	3	VOCs, SVOCs, RCRA 8 Metals, and Free Cn	Evaluate former MGP structures along northern site boundary, in general area of former purifyer house and downgradient of former holder.
SB-3	SB-3 (depth)	Est. 50 feet max	Zone of worst-case impacts, and first clean or bottom	2	TCL VOCs, TCL SVOCs, TAL Metals, Free CN, PCBs (as Aroclors), TCL Pesticides & Herbicides	Evaluate former MGP structures (generator house) and former stream channel along northern site boundary. Likely downgradient boundary of former MGP footprint.
SB-4	SB-4 (depth)	Est. 50 feet max	Upper 5 feet, zone of worst-case impacts, and first clean or	3	VOCs, SVOCs, RCRA 8 Metals, and Free Cn	Evaluate former MGP structures along eastern site boundary, in general area of former gas oil tanks. Likely downgradient boundary of former MGP footprint.
SB-5	SB-5 (depth)	Est. 50 feet max	Zone of worst-case impacts, and first clean or bottom	2	TCL VOCs, TCL SVOCs, TAL Metals, Free CN, PCBs (as Aroclors), TCL Pesticides & Herbicides	Evaluate area of former tar separator and drip tanks. Evaluate former stream channel near southern boundary of former MGP footprint.
SB-6	SB-6 (depth)	Est. 50 feet max	Upper 5 feet, zone of worst-case impacts, and first clean or bottom	4	VOCs, SVOCs, RCRA 8 Metals, and free Cn. Petroleum fingerprint from any visible impact zones.	Anticipated upgradient location. Evaluate background soil quality and historical fill in site area. Evaluate reports of oil documented in records search work in western intersection of Maspeth and Vandervoort Avenues.
SB-7	SB-7 (depth)	Est. 50 feet max	Zone of worst-case impacts, and first clean or bottom	2	TCL VOCs, TCL SVOCs, TAL Metals, Free CN, PCBs (as Aroclors), TCL Pesticides & Herbicides	Evaluate former oil tank structure along eastern footprint of former MGP.
SB-8	SB-8 (depth)	Est. 50 feet max	Upper 5 feet, zone of worst-case impacts, and first clean or bottom	3	TCL VOCs, TCL SVOCs, TAL Metals, Free CN, PCBs (as Aroclors), TCL Pesticides & Herbicides	Evaluate former relief holder contents along western boundary of former MGP footprint. Boring to be terminated at holder bottom, if encountered.
SB-9	SB-9 (depth)	Est. 50 feet max	Upper 5 feet, zone of worst-case impacts,	3	VOCs, SVOCs, RCRA 8 Metals, and Free Cn	Evaluate former settling tank in central portion of former MGP footprint.
SB-10	SB-10 (depth)	Est. 50 feet max	Upper 5 feet, zone of worst-case impacts,	3	VOCs, SVOCs, RCRA 8 Metals, and Free Cn	Evaluate former tar tank locaton and area adjacent to former settling tank.
SB-11	SB-11 (depth)	Est. 50 feet max	Zone of worst-case impacts, and first clean	2	VOCs, SVOCs, RCRA 8 Metals, and Free Cn	Evaluate former stream channel area along southern boundary of former MGP.
SB-12	SB-12 (depth)	Est. 50 feet max	Upper 5 feet, zone of worst-case impacts,	3	VOCs, SVOCs, RCRA 8 Metals, and Free Cn	Provide lateral coverage adjacent to former stream channel along northern site boundary.
SB-13	SB-13 (depth)	Est. 50 feet max	Upper 5 feet, zone of worst-case impacts, and first clean or	3	VOCs, SVOCs, RCRA 8 Metals, and Free Cn	Evaluate former relief holder contents along western boundary of former MGP footprint. Boring to be terminated at holder bottom, if encountered.
SB-14	SB-14 (depth)	Est. 50 feet max	Upper 5 feet, zone of worst-case impacts,	3	VOCs, SVOCs, RCRA 8 Metals, and Free Cn	Evaluate outside, downgradient of former relief holder at western end of the former MGP footprint.
TP-1	TP-1 (date)	Water Table	Zone of worst-case impacts and first clean	2	VOCs, SVOCs, RCRA 8 Metals, and Free Cn	Evaluate tar separator/drip tanks in the center of the site
TP-2	TP-2 (date)	Water Table	Zone of worst-case impacts and first clean	2	VOCs, SVOCs, RCRA 8 Metals, and Free Cn	Evaluate gas oil storage area and No. 3 oil tank along eastern edge of the property
TP-3	TP-3 (date)	Water Table	Zone of worst-case impacts and first clean or bottom	2	VOCs, SVOCs, RCRA 8 Metals, and Free Cn	Evaluate former tar separator and tar tank underlying the boiler house along the northern site boundary near the buried stream channel.

Table 3-1
Proposed RI Sample Location, Rationale, and Analytical Sample Summary
Equity Former MGP Site, Brooklyn, New York

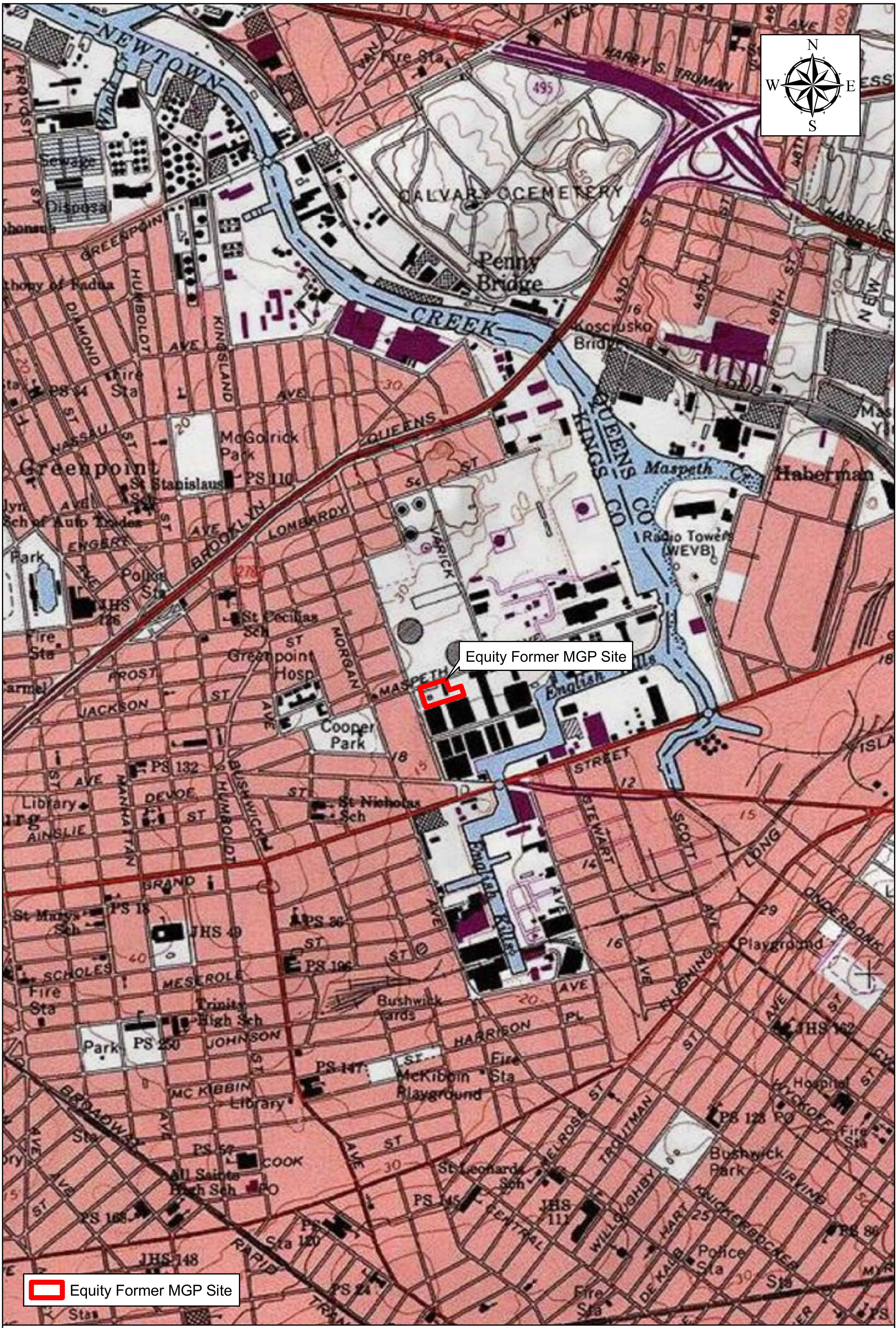
Location ID	Sample ID	Completion Depth*	Sample Depth (bgs)	No. of Samples	Analyses	Rationale
Groundwater						
MW-1	MW-1S/I/D (date)	S-est. 15 ft, I est. 30 ft, D est. 50 ft	S ~ 5-15 ft., I ~ 20-30 ft., D ~ 40-50 ft.	3	TCL VOCs, TCL SVOCs, TAL Metals, Free CN, PCBs (as Aroclors), TCL Pesticides & Herbicides	Anticipated upgradient/background location. Evaluate background groundwater quality in site area at the water table, at an intermediate depth within the native soils, and within the lower sand aquifer.
MW-2	MW-2S/I (date)	S-est. 15 ft, I est. 30 ft	S ~ 5-15 ft., I ~ 20-30 ft.	2	VOCs, SVOCs, RCRA 8 Metals, and Free CN	Anticipated downgradient site boundary location adjacent to former operations/holder area. Evaluate groundwater quality along the northern boundary of former MGP.
MW-3	MW-3S/I/D (date)	S-est. 15 ft, I est. 30 ft, D est. 50 ft	S ~ 5-15 ft., I ~ 20-30 ft., D ~ 40-50 ft.	3	TCL VOCs, TCL SVOCs, TAL Metals, Free CN, PCBs (as Aroclors), TCL Pesticides & Herbicides	Anticipated downgradient site boundary location adjacent to former operations area. Evaluate groundwater quality along the northern boundary of former MGP adjacent to former stream channel. Further evaluate reported visible impacts at geotechnical boring SB-2 from 21-24 feet bgs.
MW-4	MW-4S/I/D (date)	S-est. 15 ft, I est. 30 ft, D est. 50 ft	S ~ 5-15 ft., I ~ 20-30 ft., D ~ 40-50 ft.	3	VOCs, SVOCs, RCRA 8 Metals, and Free CN	Anticipated downgradient site boundary location adjacent to former gas oil storage house. Evaluate groundwater quality along the eastern boundary of former MGP near former stream channel.
MW-5	MW-5S/I (date)	S-est. 15 ft, I est. 30 ft	S ~ 5-15 ft., I ~ 20-30 ft.	2	VOCs, SVOCs, RCRA 8 Metals, and Free CN	Evaluate groundwater quality near southern boundary of former MGP footprint within the former stream channel.
MW-6	MW-6S/I (date)	S-est. 15 ft, I est. 30 ft	S ~ 5-15 ft., I ~ 20-30 ft.	2	VOCs, SVOCs, RCRA 8 Metals, and Free CN	Anticipated upgradient/background location. Evaluate background groundwater quality in site area and reports of oil detected in western intersection of Maspeth and Vandervoort Avenues.
GW-1	GW-1	Est. 50 ft max	5-10 ft.	1	VOCs, SVOCs, RCRA 8 Metals, and Free CN	Evaluate groundwater quality outside and downgradient of former relief holder at western end of the former MGP footprint.
On-Site Pumping	PW-1 (date)	78 feet	63-78 ft.	1	VOCs, SVOCs, RCRA 8 Metals, and Free CN	Evaluate groundwater conditions and potential vertical extent of dissolved impacts in lower sand aquifer.
Soil Vapor						
SV-1	SV-1 (date)	Just beneath floor slab		1	VOCs (TO-15), Naphthalene and indicator compounds	Satisfy partial requirements of the NYSDOH Soil Vapor Intrusion Guidance. Location may be adjusted based on use of building.
IA-1	IA-1 (date)	side scale house, co-located with SV		1	VOCs (TO-15), Naphthalene and indicator compounds	
AMB-1	AMB-1 (date)	nbient location adjacent to scale hou		1	VOCs (TO-15), Naphthalene and indicator compounds	

Notes

1. No. - number
2. ID - identification
3. NA - Not applicable
4. NYSDOH - New York State Department of Health
5. MGP - Manufactured Gas Plant
6. RCRA - Resource Conservation and Recovery Act
7. bgs - Below ground surface
8. SB - Soil Boring (Subsurface Soil)
9. MW - Monitoring Well (Groundwater Sample)
10. SV - Soil Vapor
11. IA- Indoor Air
12. AMB - Ambient Air
13. VOCs - volatile organic compounds
14. SVOCS - semi-volatile organic compounds
15. CN - cyanide
16. * - Depths may be adjusted shallower if 10 feet into clean achieved.

Indicates sample is proposed for inclusion in the 20% of originally proposed samples to be analyzed for an expanded list of analytes.

Figures



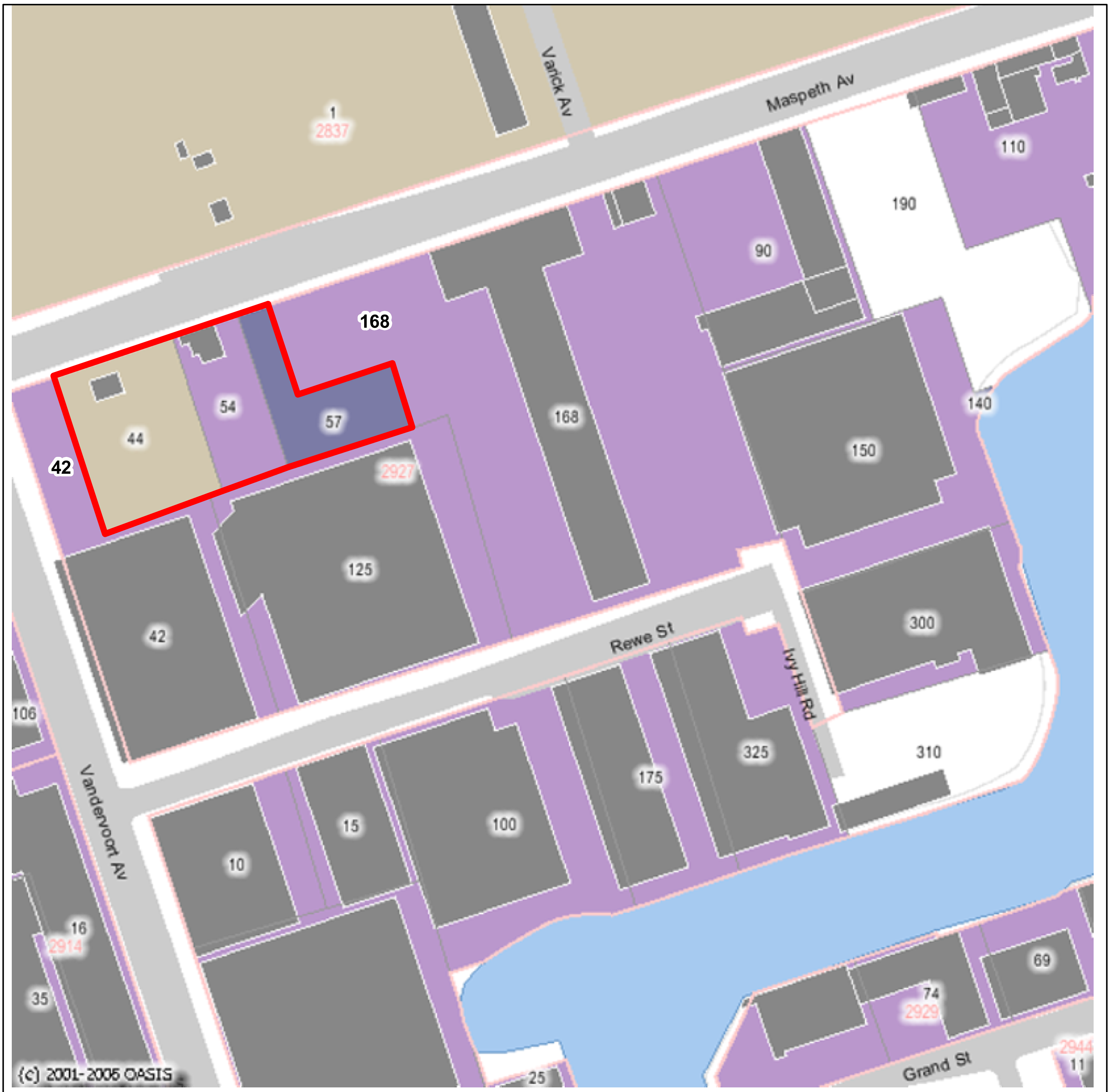
AECOM

NATIONAL GRID
EQUITY FORMER MGP SITE
1:12,000 1 Inch = 1000 ft
0 500 1,000 2,000 Feet

Site Location Map

Figure 1-1

Y:\Projects\Keyspan\01765-076-200\MXD\Figure_1-1_Site_Location_Map.mxd



Legend

▦ Block/Lot Boundaries

■ Buildings

■ Transportation & Parking

■ Industrial

■ Vacant Lots

☐ **Equity Former MGP Site**

Tax Block & Tax Lot files are copyrighted by the New York City Department of City Planning (2006 Release 06C)

AECOM

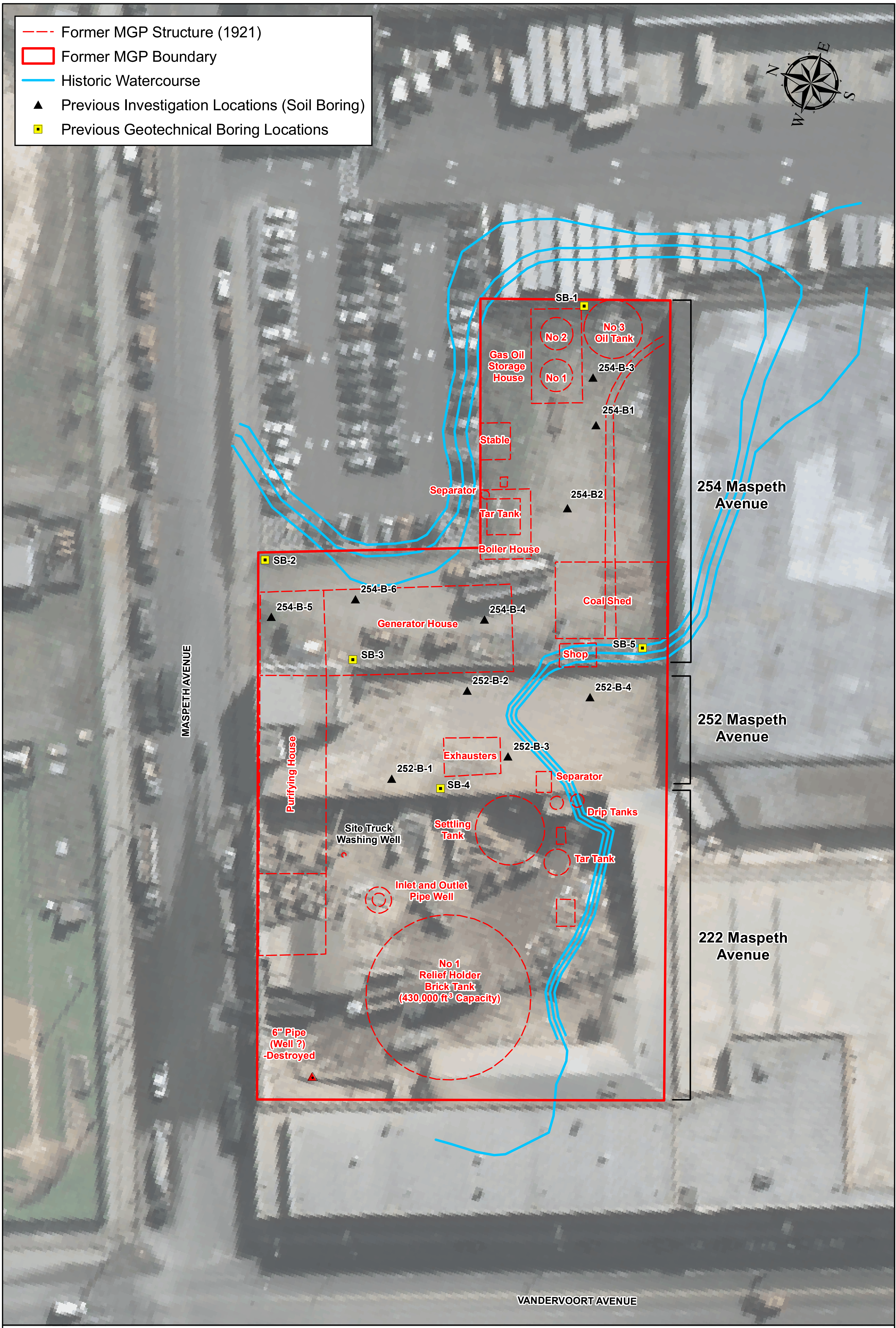
NATIONAL GRID
EQUITY FORMER MGP SITE
Not to Scale

Data Source: http://www.oasisnyc.com/oasismap.htm

Parcel Locations

Figure 2-1

Y:\Projects\Keyspan\01765-076-200\MXD\Figure_2-1_Parcel_Locations.mxd

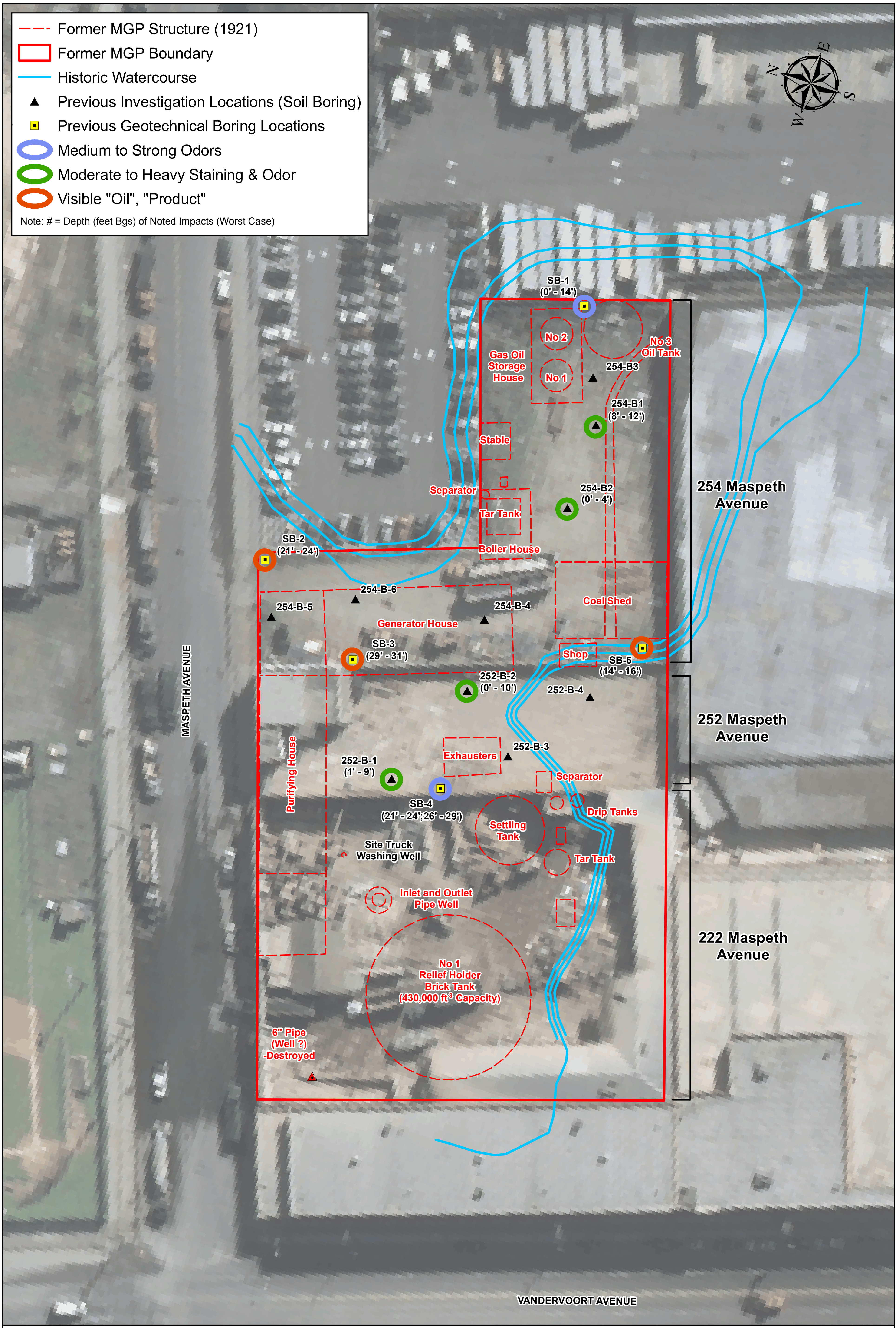


NATIONAL GRID
EQUITY FORMER MGP SITE
1:600 1 Inch = 50 ft
0 25 50 100 Feet

Previous Investigation Locations and Historic Site Features

Figure 2-2

Y:\Projects\Keyspan\01765-076-200\MXD\Figure_2-2_Previous_Investigation_Locations_and_Historic_Site_Features.mxd



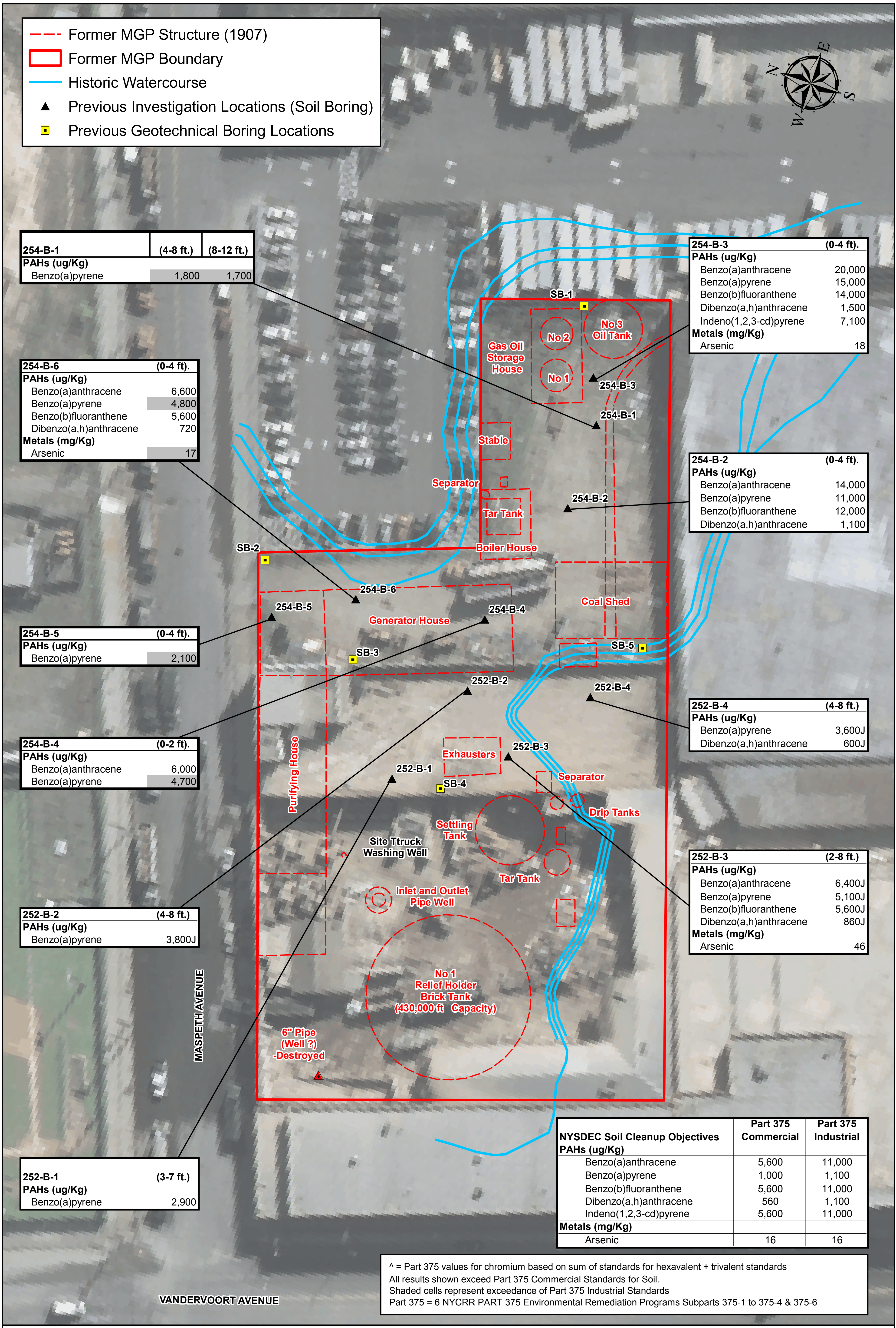
AECOM

NATIONAL GRID
EQUITY FORMER MGP SITE
1:600 1 Inch = 50 ft
0 25 50 100 Feet

Visible/Field Impacts

Figure 2-3

Y:\Projects\Keyspan\01765-076-200\MXD\Figure_2-3_Visible_Field_Impacts.mxd



- - -	Former MGP Structure (1907)
🟥	Former MGP Boundary
—	Historic Watercourse
▲	Previous Investigation Locations (Soil Boring)
▣	Previous Geotechnical Boring Locations

254-B-1	(4-8 ft.)	(8-12 ft.)
PAHs (ug/Kg)		
Benzo(a)pyrene	1,800	1,700

254-B-6	(0-4 ft).
PAHs (ug/Kg)	
Benzo(a)anthracene	6,600
Benzo(a)pyrene	4,800
Benzo(b)fluoranthene	5,600
Dibenzo(a,h)anthracene	720
Metals (mg/Kg)	
Arsenic	17

254-B-5	(0-4 ft).
PAHs (ug/Kg)	
Benzo(a)pyrene	2,100

254-B-4	(0-2 ft).
PAHs (ug/Kg)	
Benzo(a)anthracene	6,000
Benzo(a)pyrene	4,700

252-B-2	(4-8 ft.)
PAHs (ug/Kg)	
Benzo(a)pyrene	3,800J

252-B-1	(3-7 ft.)
PAHs (ug/Kg)	
Benzo(a)pyrene	2,900

254-B-3	(0-4 ft).
PAHs (ug/Kg)	
Benzo(a)anthracene	20,000
Benzo(a)pyrene	15,000
Benzo(b)fluoranthene	14,000
Dibenzo(a,h)anthracene	1,500
Indeno(1,2,3-cd)pyrene	7,100
Metals (mg/Kg)	
Arsenic	18

254-B-2	(0-4 ft).
PAHs (ug/Kg)	
Benzo(a)anthracene	14,000
Benzo(a)pyrene	11,000
Benzo(b)fluoranthene	12,000
Dibenzo(a,h)anthracene	1,100

252-B-4	(4-8 ft.)
PAHs (ug/Kg)	
Benzo(a)pyrene	3,600J
Dibenzo(a,h)anthracene	600J

252-B-3	(2-8 ft.)
PAHs (ug/Kg)	
Benzo(a)anthracene	6,400J
Benzo(a)pyrene	5,100J
Benzo(b)fluoranthene	5,600J
Dibenzo(a,h)anthracene	860J
Metals (mg/Kg)	
Arsenic	46

NYSDEC Soil Cleanup Objectives	Part 375 Commercial	Part 375 Industrial
PAHs (ug/Kg)		
Benzo(a)anthracene	5,600	11,000
Benzo(a)pyrene	1,000	1,100
Benzo(b)fluoranthene	5,600	11,000
Dibenzo(a,h)anthracene	560	1,100
Indeno(1,2,3-cd)pyrene	5,600	11,000
Metals (mg/Kg)		
Arsenic	16	16

^ = Part 375 values for chromium based on sum of standards for hexavalent + trivalent standards
All results shown exceed Part 375 Commercial Standards for Soil.
Shaded cells represent exceedance of Part 375 Industrial Standards
Part 375 = 6 NYCRR PART 375 Environmental Remediation Programs Subparts 375-1 to 375-4 & 375-6

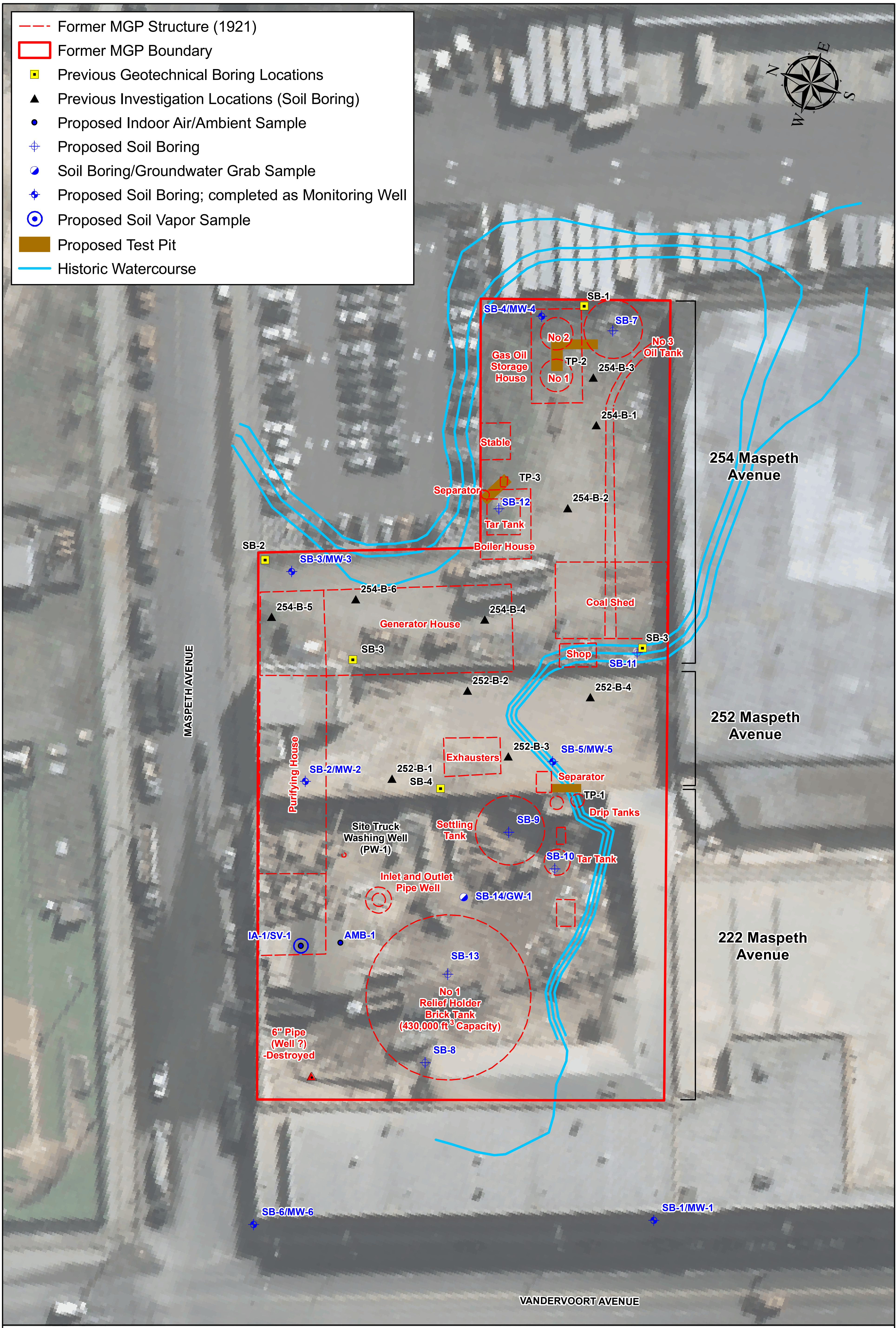
AECOM

NATIONAL GRID
EQUITY FORMER MGP SITE
1:600 1 Inch = 50 ft
0 25 50 100 Feet

Previous Investigation Locations with Laboratory Data - Soils

Figure 2-4

Y:\Projects\Keyspan\01765-076-200\MXD\Figure_2-4_Previous_Investigation_Locations_with_Laboratory_Data.mxd



NATIONAL GRID
EQUITY FORMER MGP SITE

1:600 1 Inch = 50 ft

0 25 50 100 Feet

Proposed Remedial Investigation Sampling Locations

Figure 3-1

Y:\Projects\Keyspan\01765-076-200\MXD\Figure_3-1_Proposed_Remedial_Investigation_Sampling_Locations.mxd

Appendix A

Historic Sanborn Fire Insurance Maps and Facility Drawings

Equity
Betw. Rewe St & Maspeth Ave
Brooklyn, NY 11211

Inquiry Number: 2278472.1s
July 29, 2008

Certified Sanborn® Map Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

7/29/08

Site Name:
Equity
Betw. Rewe St & Maspeth Ave
Brooklyn, NY 11211

EDR Inquiry # 2278472.1s

Client Name:
ENSR Consulting &
78 Main Street, Suite 3
Nyack, NY 10960

Contact: Jennifer Koch

EDR® Environmental Data Resources Inc

The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by ENSR Consulting & Engineering were identified for the years listed below (selected maps only*). The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

Certified Sanborn Results:

Site Name: Equity
Address: Betw. Rewe St & Maspeth Ave
City, State, Zip: Brooklyn, NY 11211
Cross Street:
P.O. # NA
Project: NA
Certification # 7594-437D-9BAB

Sanborn® Library search results
Certification # 7594-437D-9BAB

* Environmental Data Resources, Inc. has been instructed by ENSR Consulting & Engineering to print ONLY the Sanborn Maps for the years listed below:

1995 (1)
1994 (1)
1993 (2)
1992 (1)
1991 (1)
1990 (1)
1988 (1)
1987 (1)
1986 (1)
1981 (1)
1980 (1)
1979 (1)
1977 (1)
1968 (1)
1965 (1)
1951 (1)
1933 (1)
1907 (1)
1888 (1)

Total Maps: 20

The Sanborn Library includes more than 1.2 million Sanborn fire insurance maps, which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

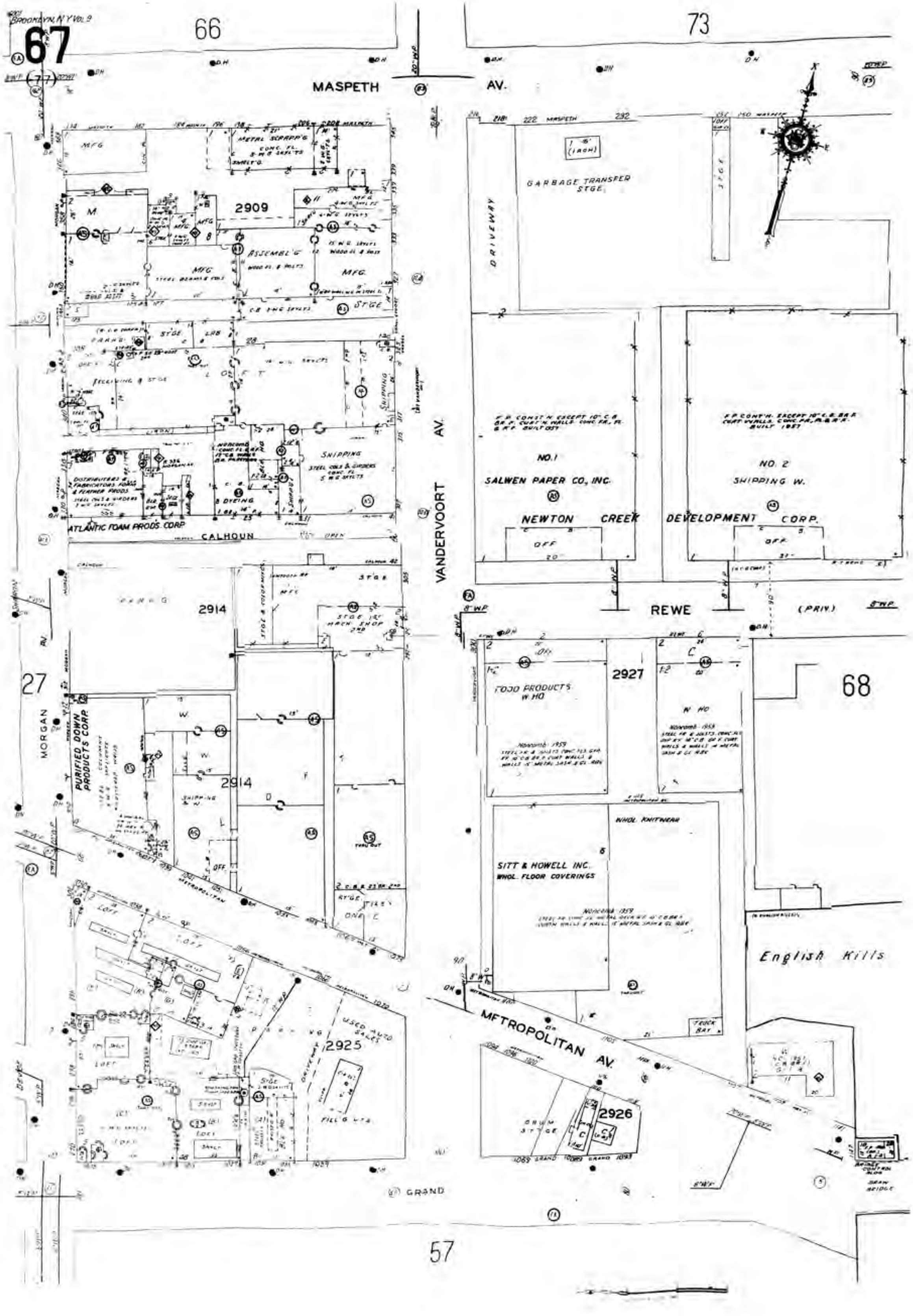
- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

Limited Permission To Make Copies

ENSR Consulting & Engineering (the client) is permitted to make up to THREE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

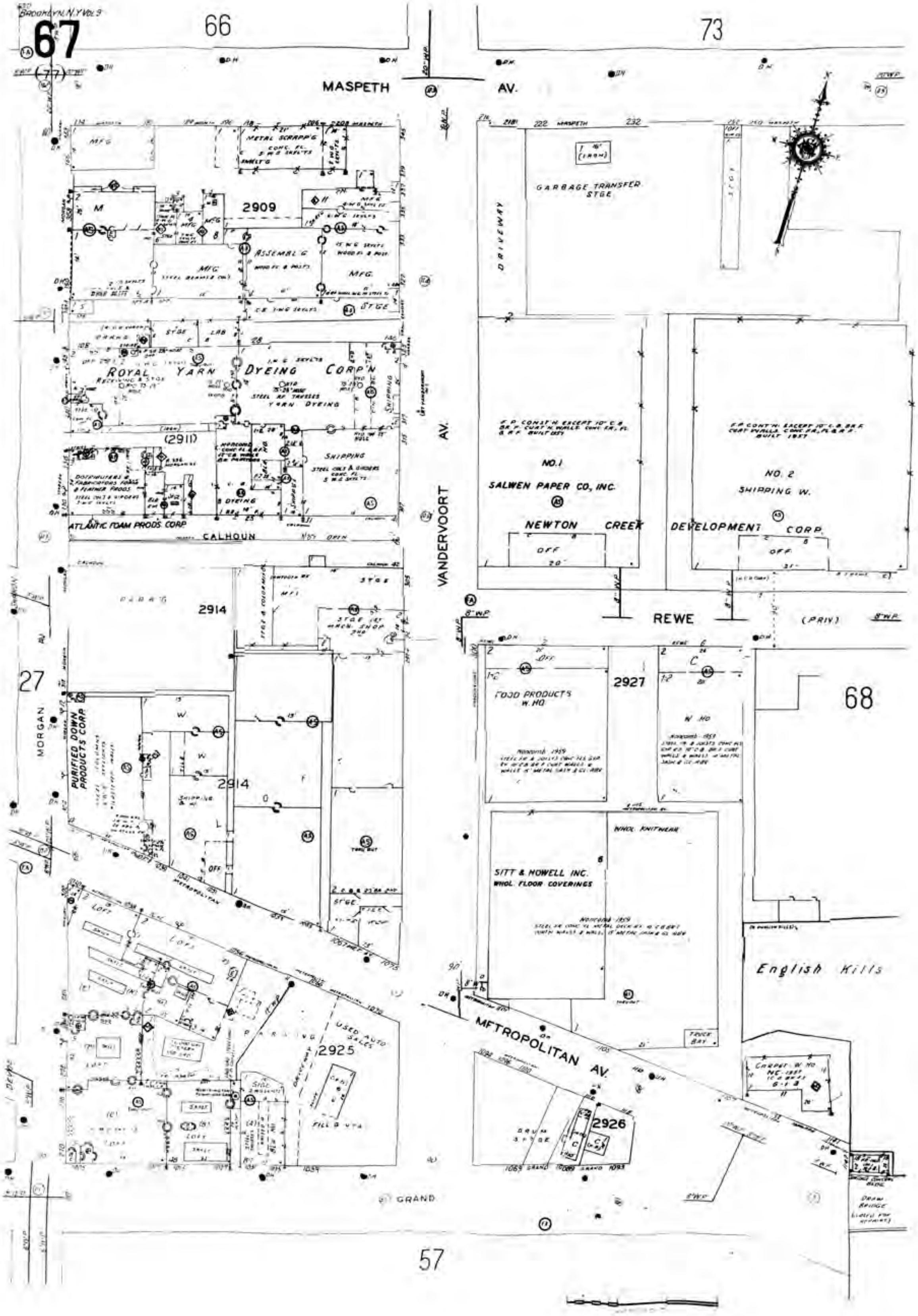
Disclaimer - Copyright and Trademark notice

Certification # 7594-437D-9BAB



©1995 Sanborn Co., EDR Sanborn, Inc.

Site Name:	Equity
Address:	Betw. Rewe St & Maspeth Ave
City, ST, ZIP:	Brooklyn NY 11211
Client:	ENSR Consulting & Engineering
EDR Inquiry:	2278472.1s
Order Date:	7/29/2008 8:59:40 AM
Certification #	7594-437D-9BAB
Copyright:	1995

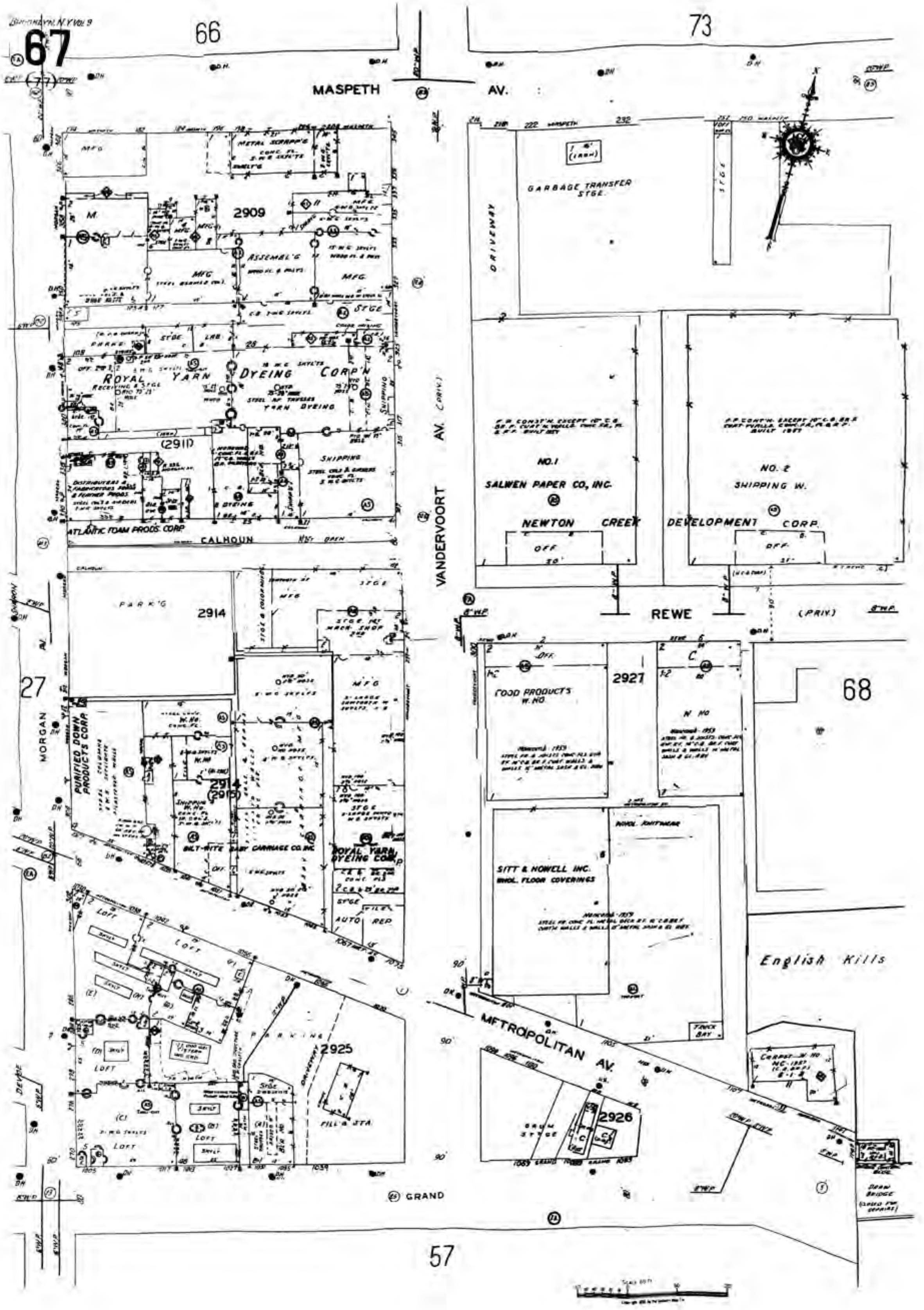


The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by The Sanborn Library LLC, the copyright holder for the collection.

Certification # 7594-437D-9BAB

Site Name:	Equity
Address:	Betw. Rewe St & Maspeth Ave
City, ST, ZIP:	Brooklyn NY 11211
Client:	ENSR Consulting & Engineering
EDR Inquiry:	2278472.1s
Order Date:	7/29/2008 8:59:40 AM
Certification #	7594-437D-9BAB
Copyright:	1994

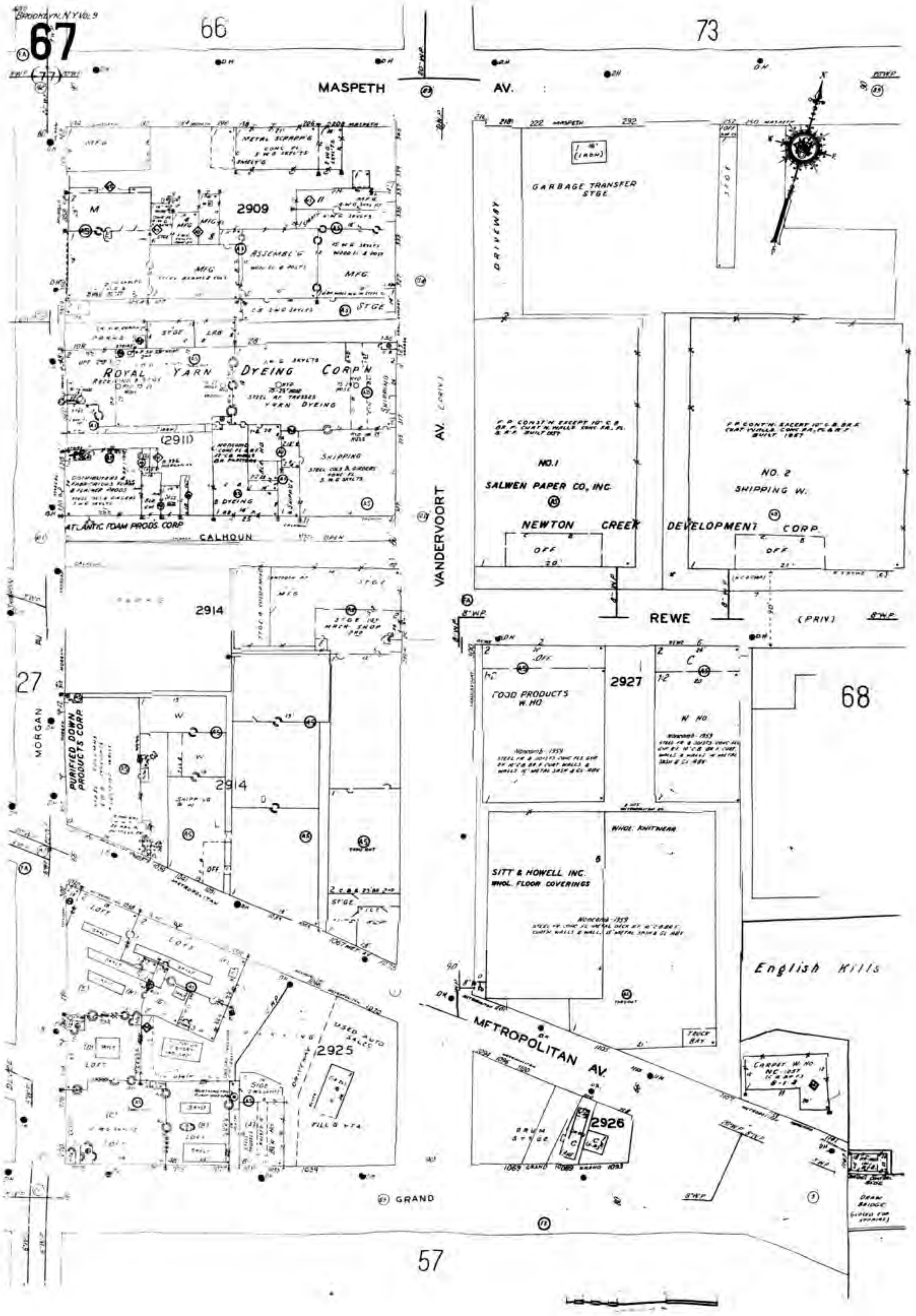
The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by The Sanborn Library LLC, the copyright holder for the collection.



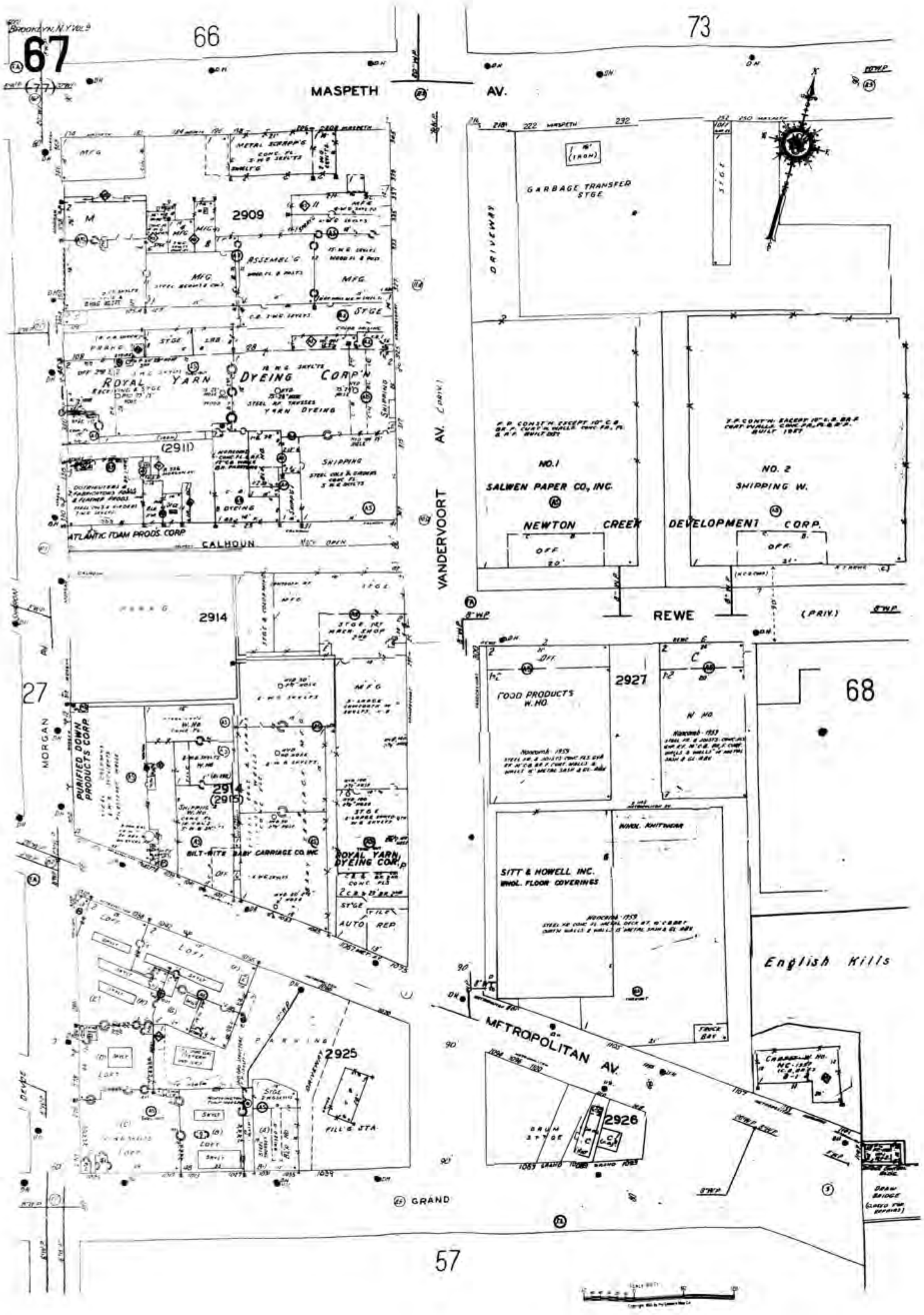
Certification # 7594-437D-9BAB

Site Name: Equity
Address: Betw. Rewe St & Maspeth Ave
City, ST, ZIP: Brooklyn NY 11211
Client: ENSR Consulting & Engineering
EDR Inquiry: 2278472.1s
Order Date: 7/29/2008 8:59:40 AM
Certification # 7594-437D-9BAB
Copyright: Jan, 1993

Certification # 7594-437D-9BAB



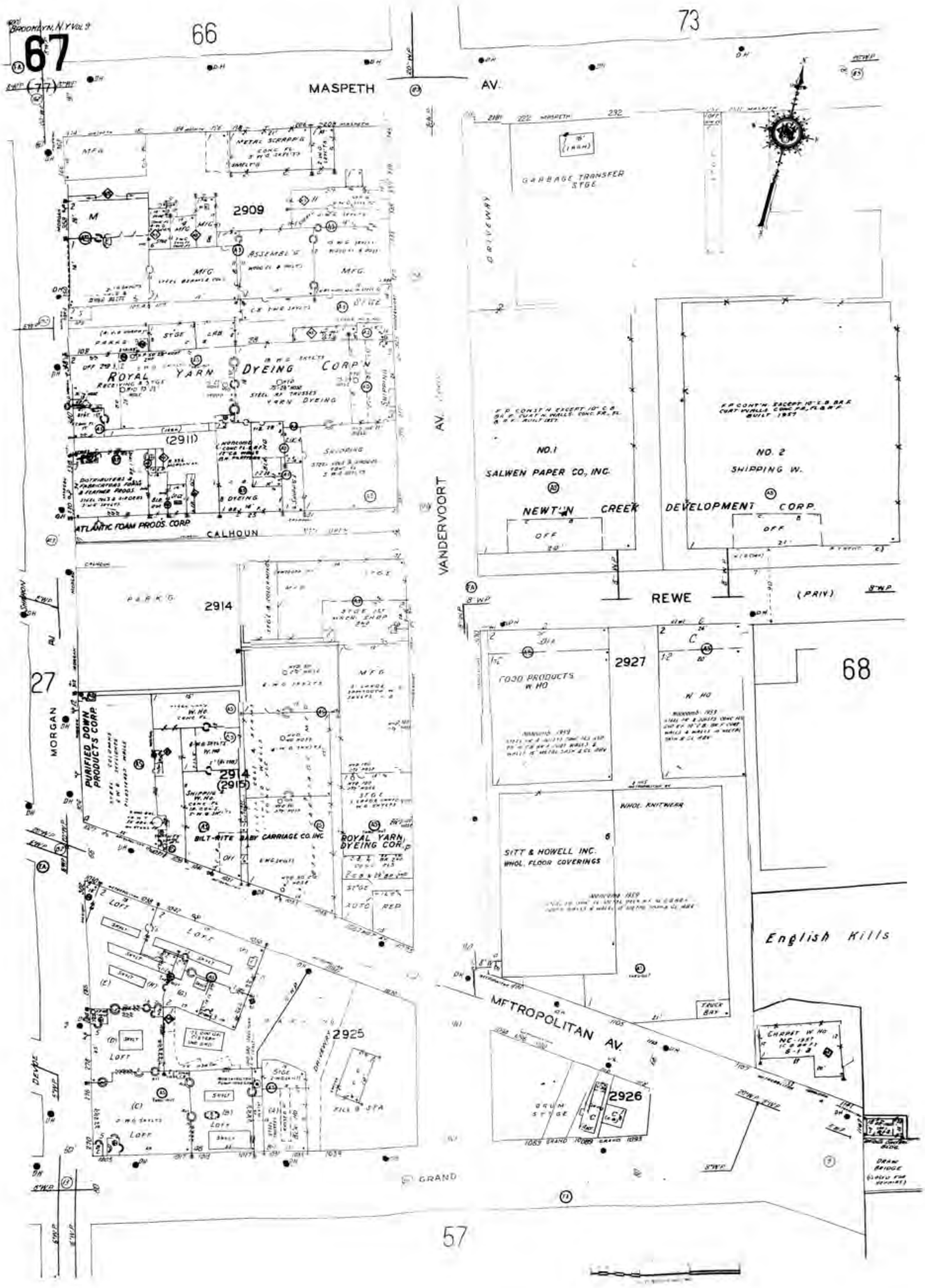
Site Name:	Equity
Address:	Betw. Rewe St & Maspeth Ave
City, ST, ZIP:	Brooklyn NY 11211
Client:	ENSR Consulting & Engineering
EDR Inquiry:	2278472.1s
Order Date:	7/29/2008 8:59:40 AM
Certification #	7594-437D-9BAB
Copyright:	Dec, 1993



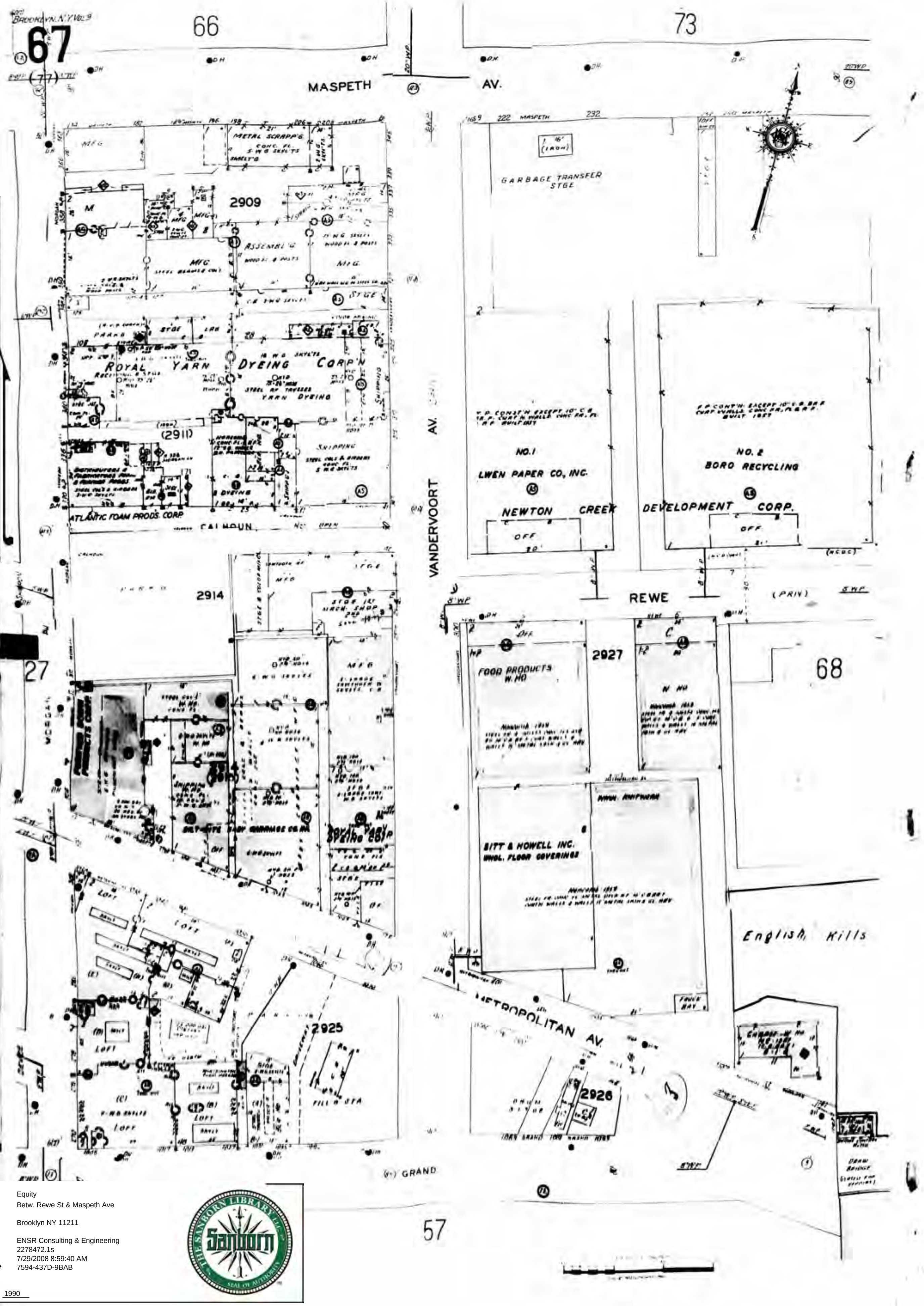
Certification # 7594-437D-9BAB

Site Name:	Equity
Address:	Betw. Rewe St & Maspeth Ave
City, ST, ZIP:	Brooklyn NY 11211
Client:	ENSR Consulting & Engineering
EDR Inquiry:	2278472.1s
Order Date:	7/29/2008 8:59:40 AM
Certification #	7594-437D-9BAB
Copyright:	1992

Certification # 7594-437D-9BAB



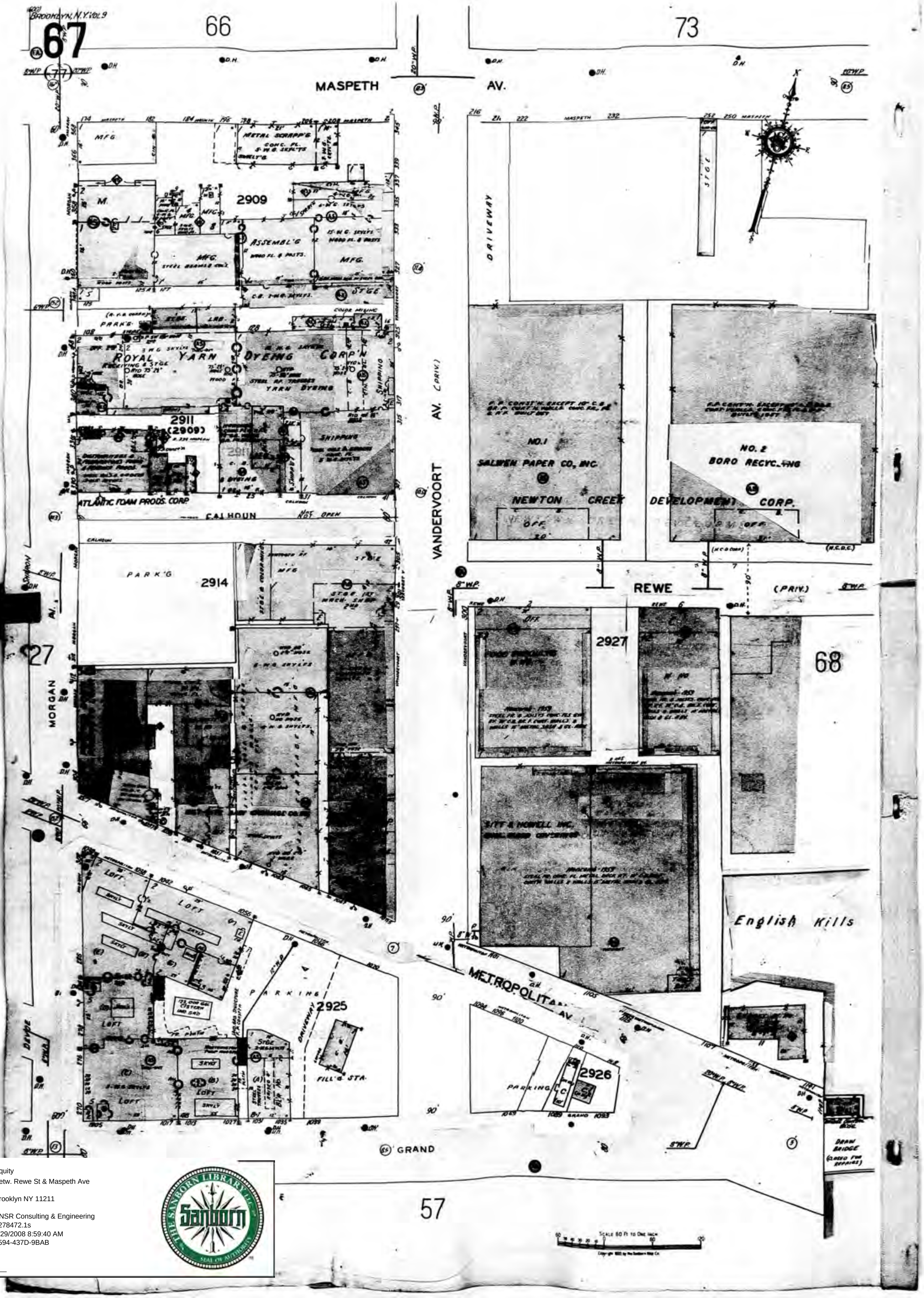
Site Name: Equity
Address: Betw. Rewe St & Maspeth Ave
City, ST, ZIP: Brooklyn NY 11211
Client: ENSR Consulting & Engineering
EDR Inquiry: 2278472.1s
Order Date: 7/29/2008 8:59:40 AM
Certification # 7594-437D-9BAB
Copyright: 1991



The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by The Sanborn Library LLC, the copyright holder for the collection.

Certification # 7594-437D-9BAB

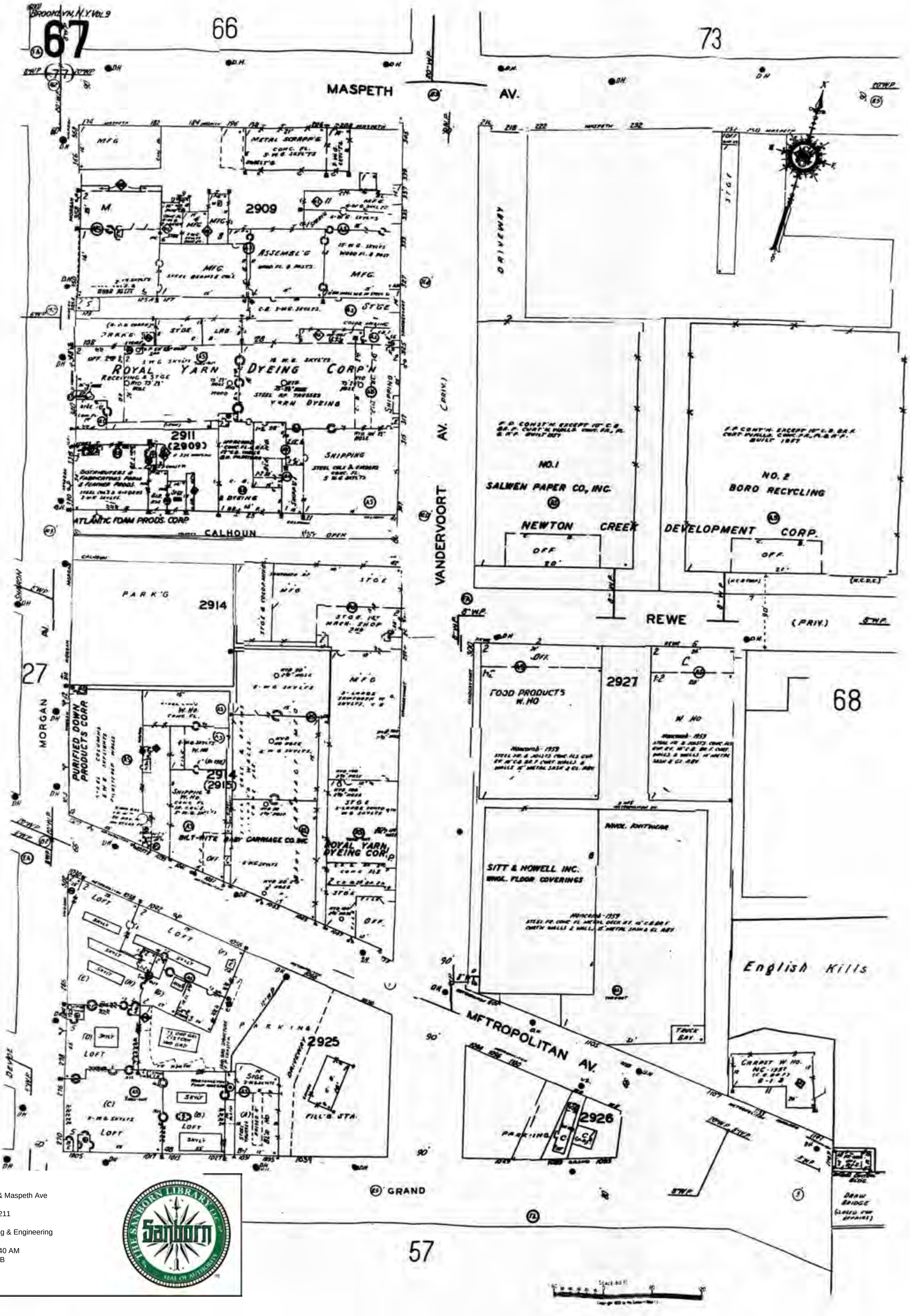
Site Name: Equity
Address: Betw. Rewe St & Maspeth Ave
City, ST, ZIP: Brooklyn NY 11211
Client: ENSR Consulting & Engineering
EDR Inquiry: 2278472.1s
Order Date: 7/29/2008 8:59:40 AM
Certification # 7594-437D-9BAB



Certification # 7594-437D-9BAB

Site Name:	Equity
Address:	Betw. Rewe St & Maspeth Ave
City, ST, ZIP:	Brooklyn NY 11211
Client:	ENSR Consulting & Engineering
EDR Inquiry:	2278472.1s
Order Date:	7/29/2008 8:59:40 AM
Certification #	7594-437D-9BAB

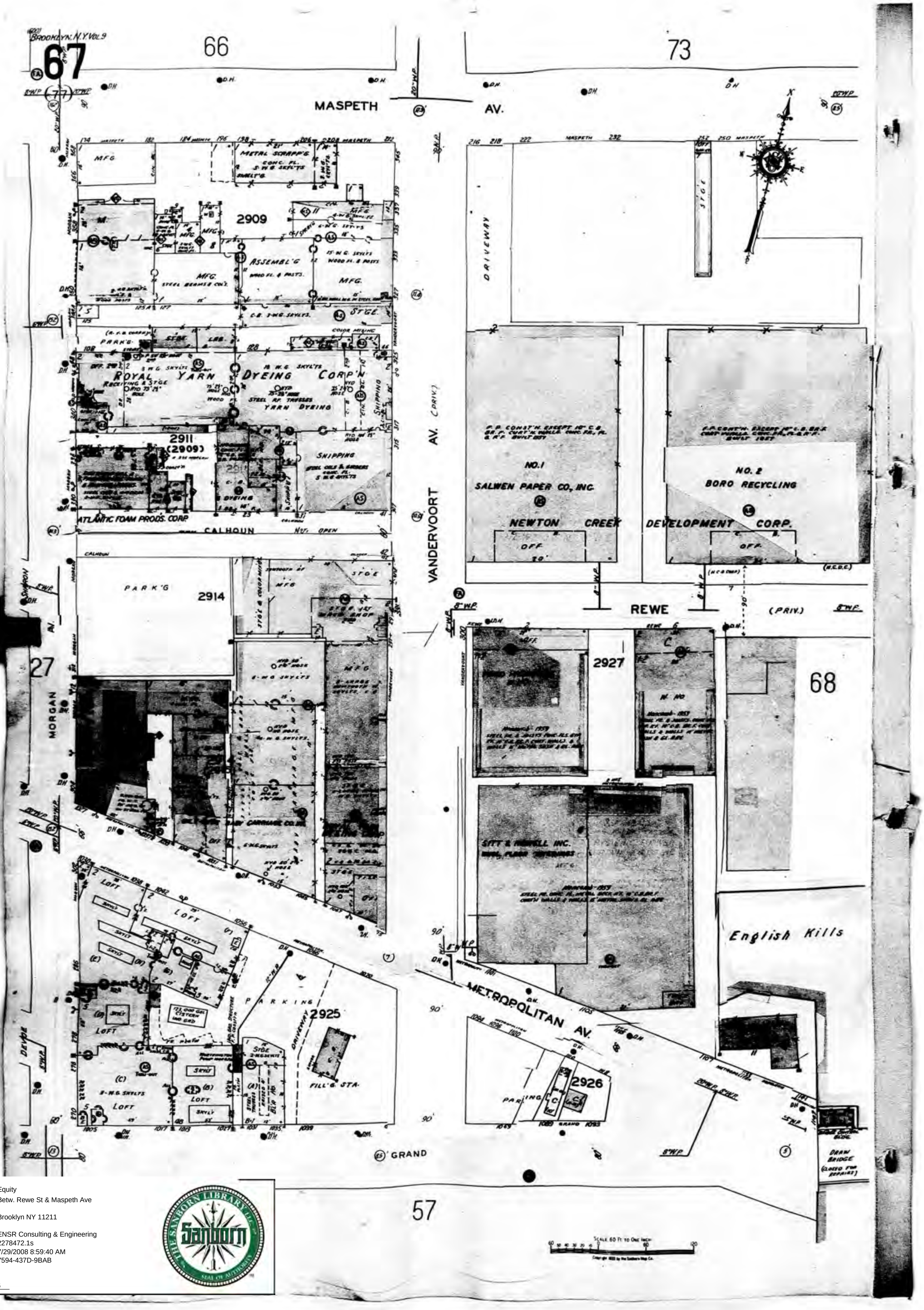
Certification # 7594-437D-9BAB



Site Name:	Equity
Address:	Betw. Rewe St & Maspeth Ave
City, ST, ZIP:	Brooklyn NY 11211
Client:	ENSR Consulting & Engineering
EDR Inquiry:	2278472.1s
Order Date:	7/29/2008 8:59:40 AM
Certification #	7594-437D-9BAB
Copyright:	1987

Certification #

7594-437D-9BAB



Site Name: Equity
Address: Betw. Rewe St & Maspeth Ave

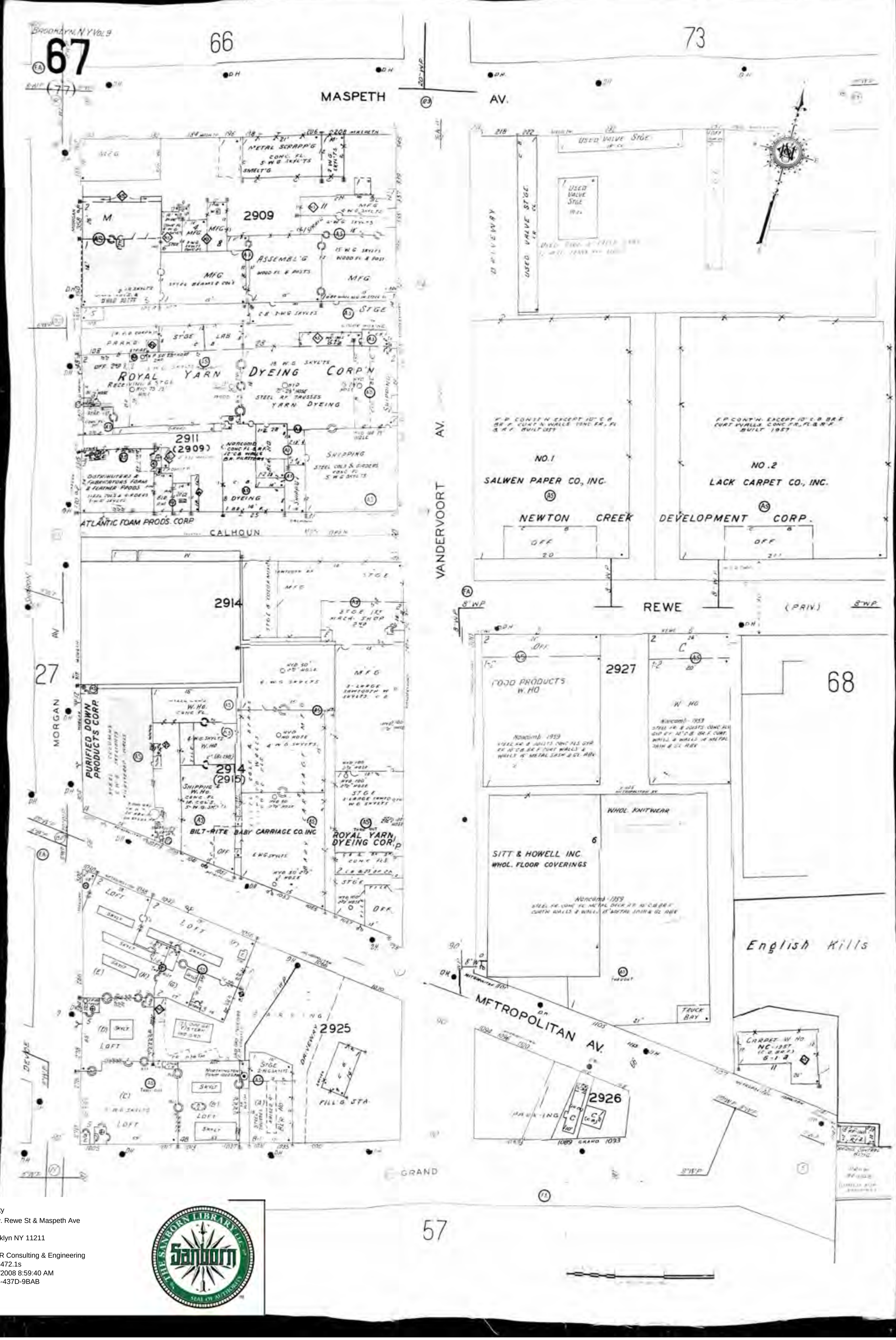
City, ST, ZIP: Brooklyn NY 11211

Client: ENSR Consulting & Engineering
EDR Inquiry: 2278472.1s
Order Date: 7/29/2008 8:59:40 AM
Certification # 7594-437D-9BAB

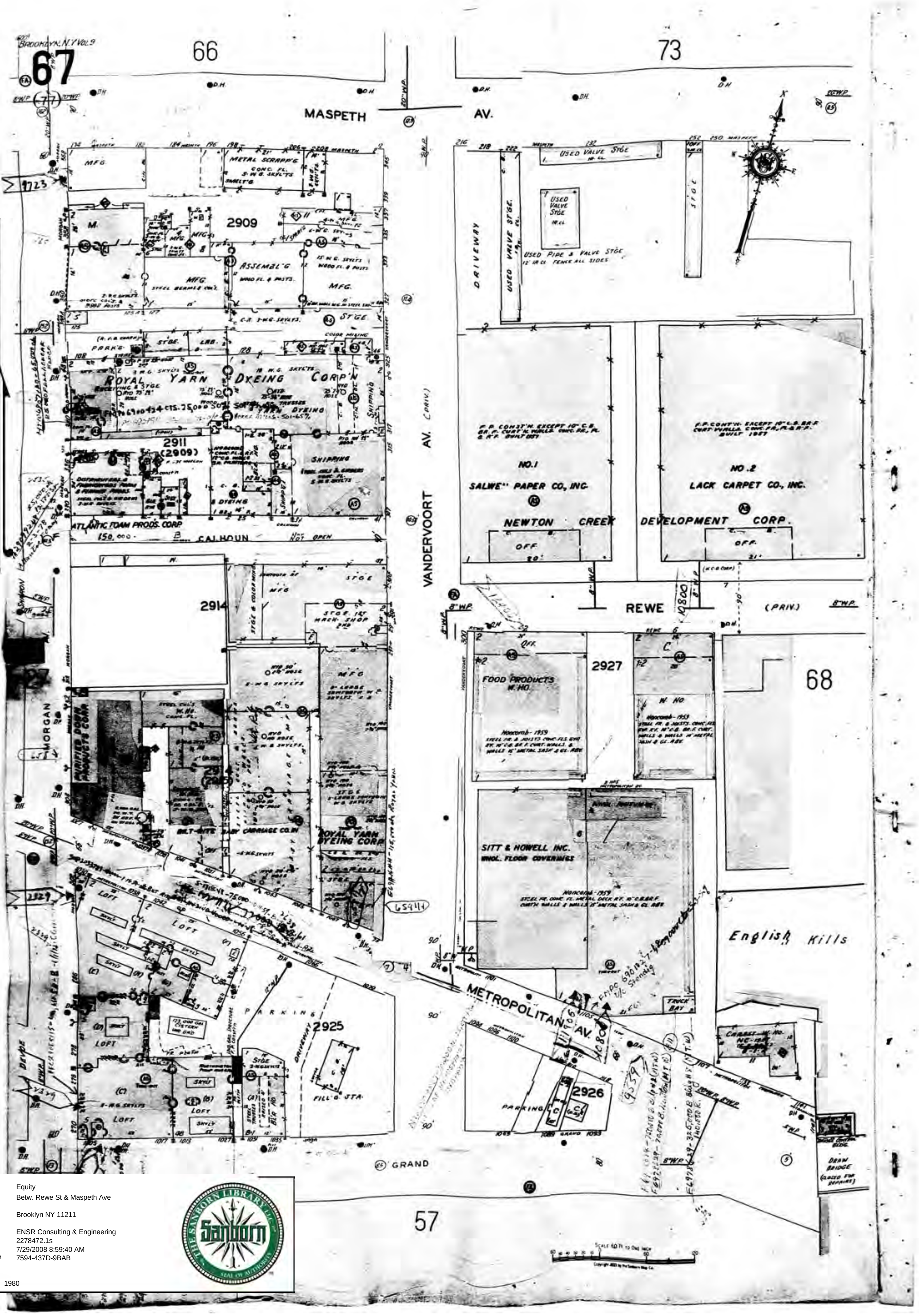
Copyright: 1986

The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by The Sanborn Library LLC, the copyright holder for the collection.

Certification # 7594-437D-9BAB

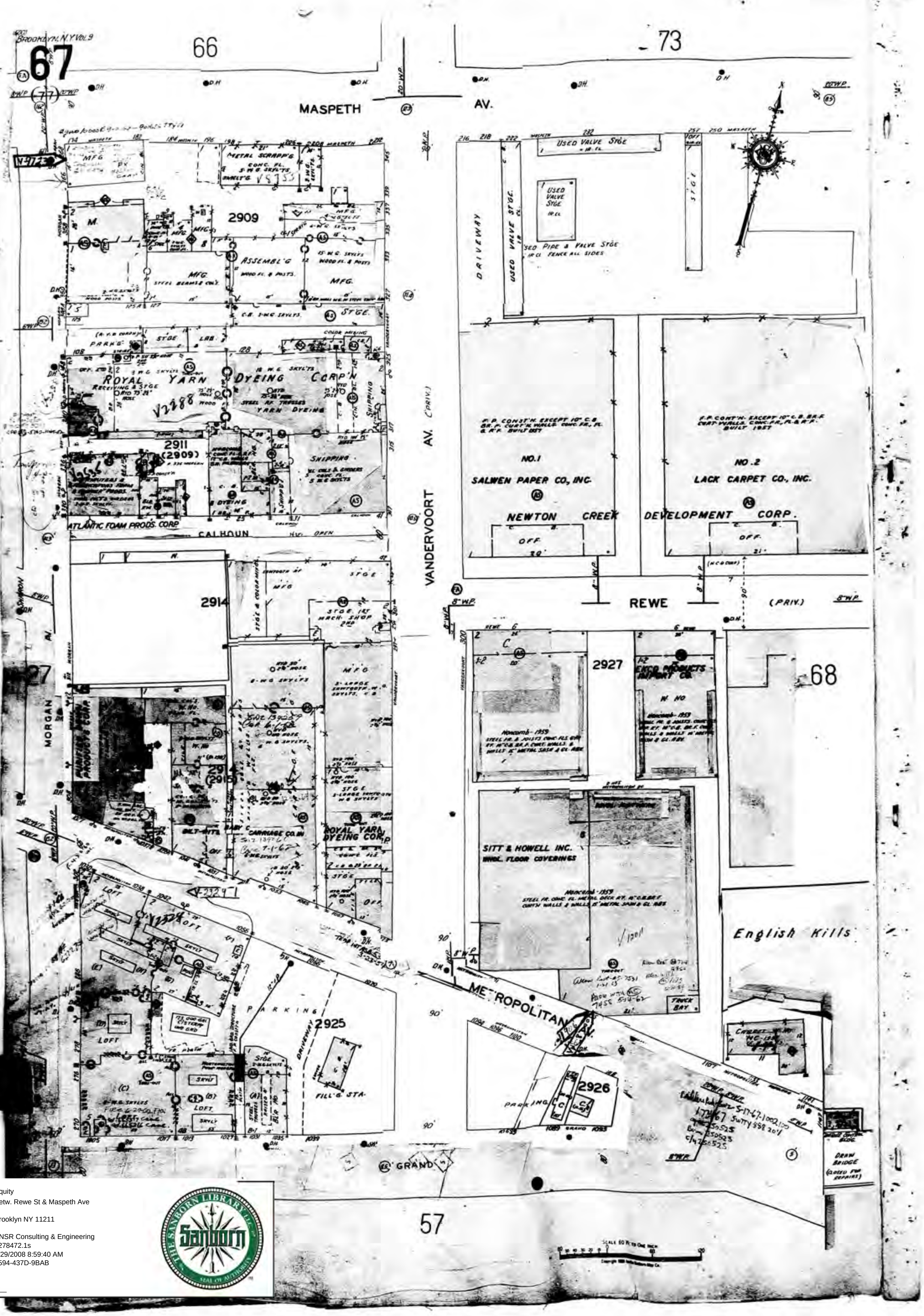


Site Name:	Equity
Address:	Betw. Rewe St & Maspeth Ave
City, ST, ZIP:	Brooklyn NY 11211
Client:	ENSR Consulting & Engineering
EDR Inquiry:	2278472.1s
Order Date:	7/29/2008 8:59:40 AM
Certification #	7594-437D-9BAB



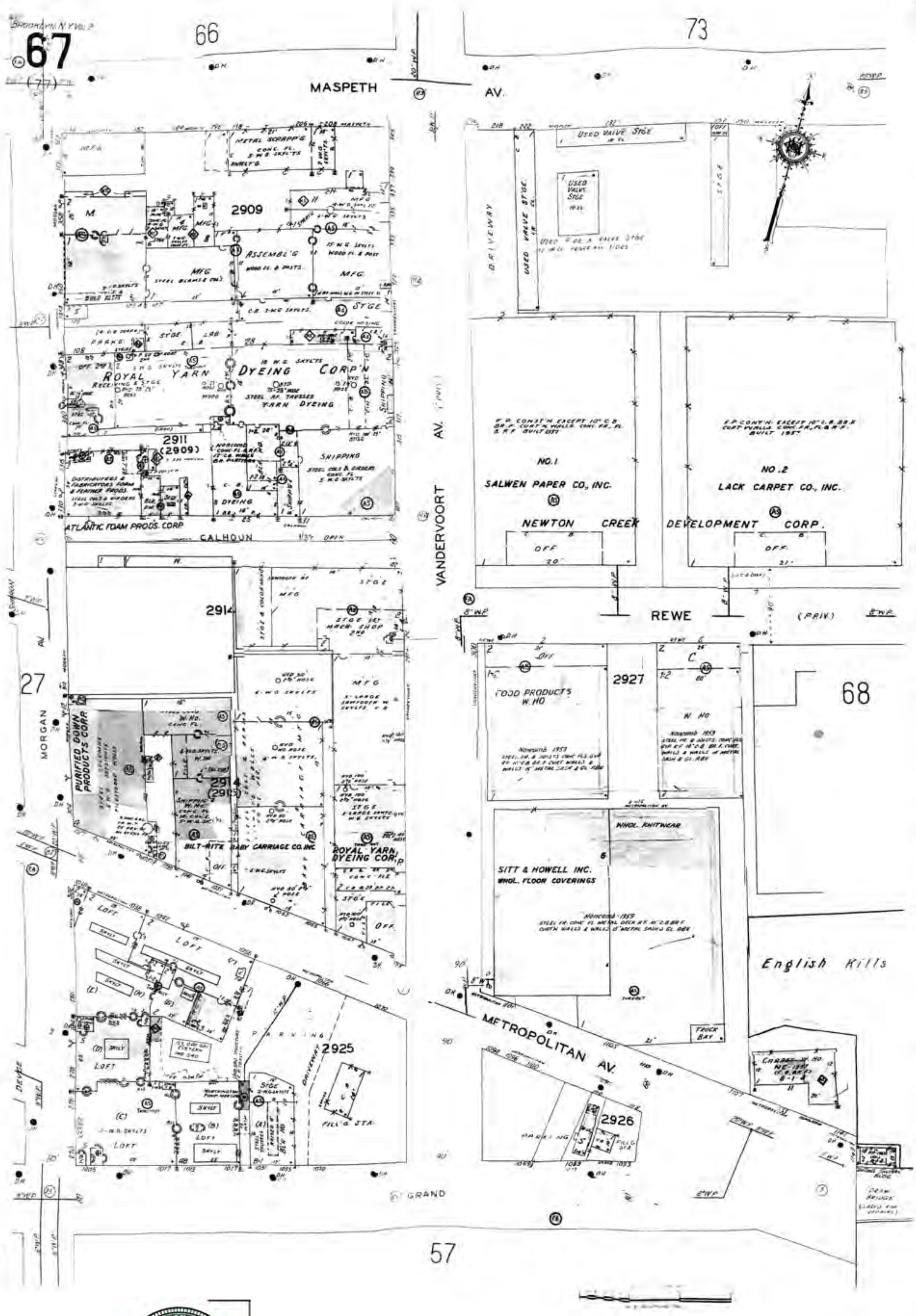
Certification # 7594-437D-9BAB

Site Name:	Equity
Address:	Betw. Rewe St & Maspeth Ave
City, ST, ZIP:	Brooklyn NY 11211
Client:	ENSR Consulting & Engineering
EDR Inquiry:	2278472.1s
Order Date:	7/29/2008 8:59:40 AM
Certification #	7594-437D-9BAB
Copyright:	1980



Certification # 7594-437D-9BAB

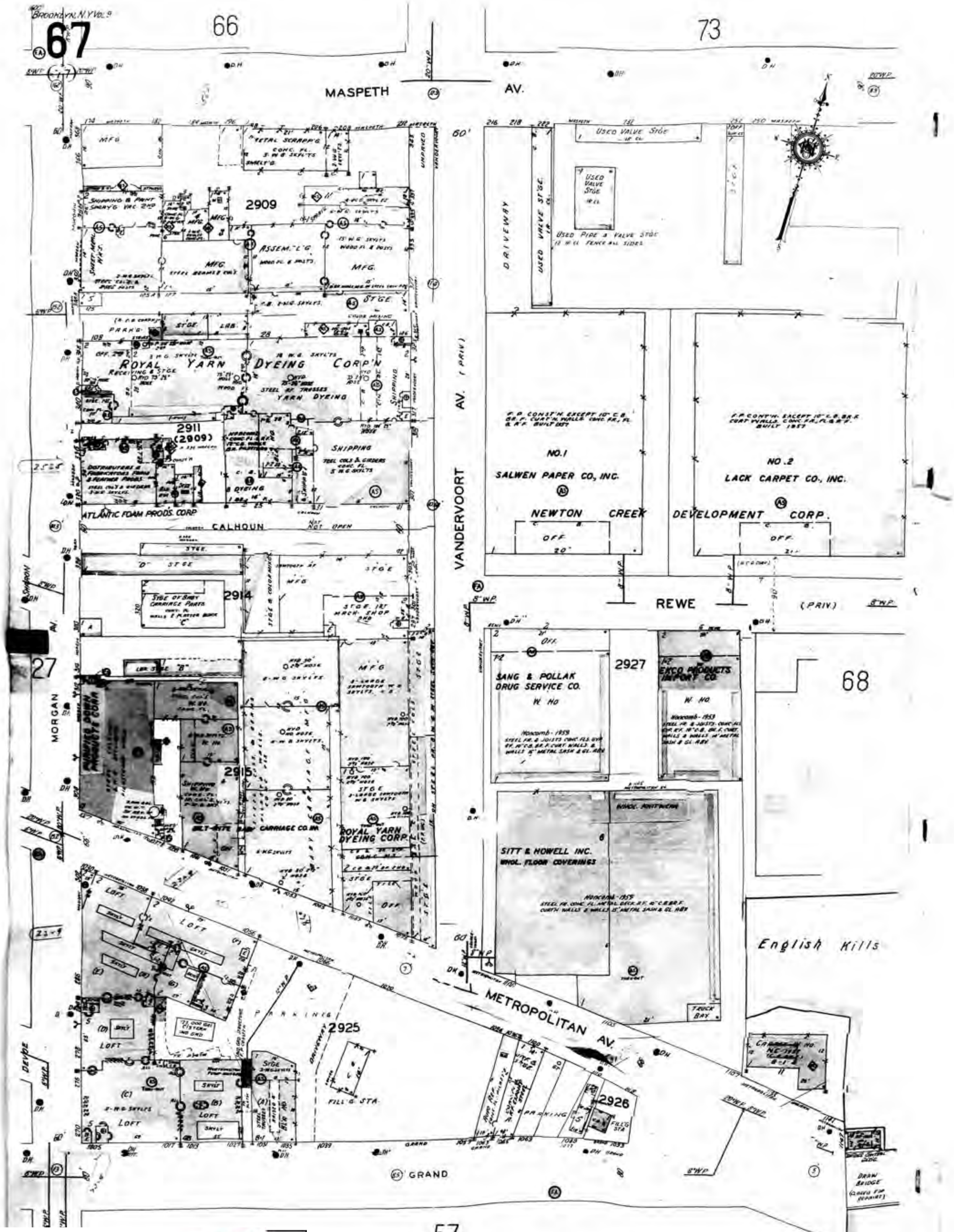
Site Name:	Equity
Address:	Betw. Rewe St & Maspeth Ave
City, ST, ZIP:	Brooklyn NY 11211
Client:	ENSR Consulting & Engineering
EDR Inquiry:	2278472.1s
Order Date:	7/29/2008 8:59:40 AM
Certification #	7594-437D-9BAB



The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by The Sanborn Library LLC, the copyright holder for the collection.

Certification # 7594-437D-9BAB

Site Name:	Equity
Address:	Betw. Rewe St & Maspeth Ave
City, ST, ZIP:	Brooklyn NY 11211
Client:	ENSR Consulting & Engineering
EDR Inquiry:	2278472.1s
Order Date:	7/29/2008 8:59:40 AM
Certification #	7594-437D-9BAB
Copyright:	1977



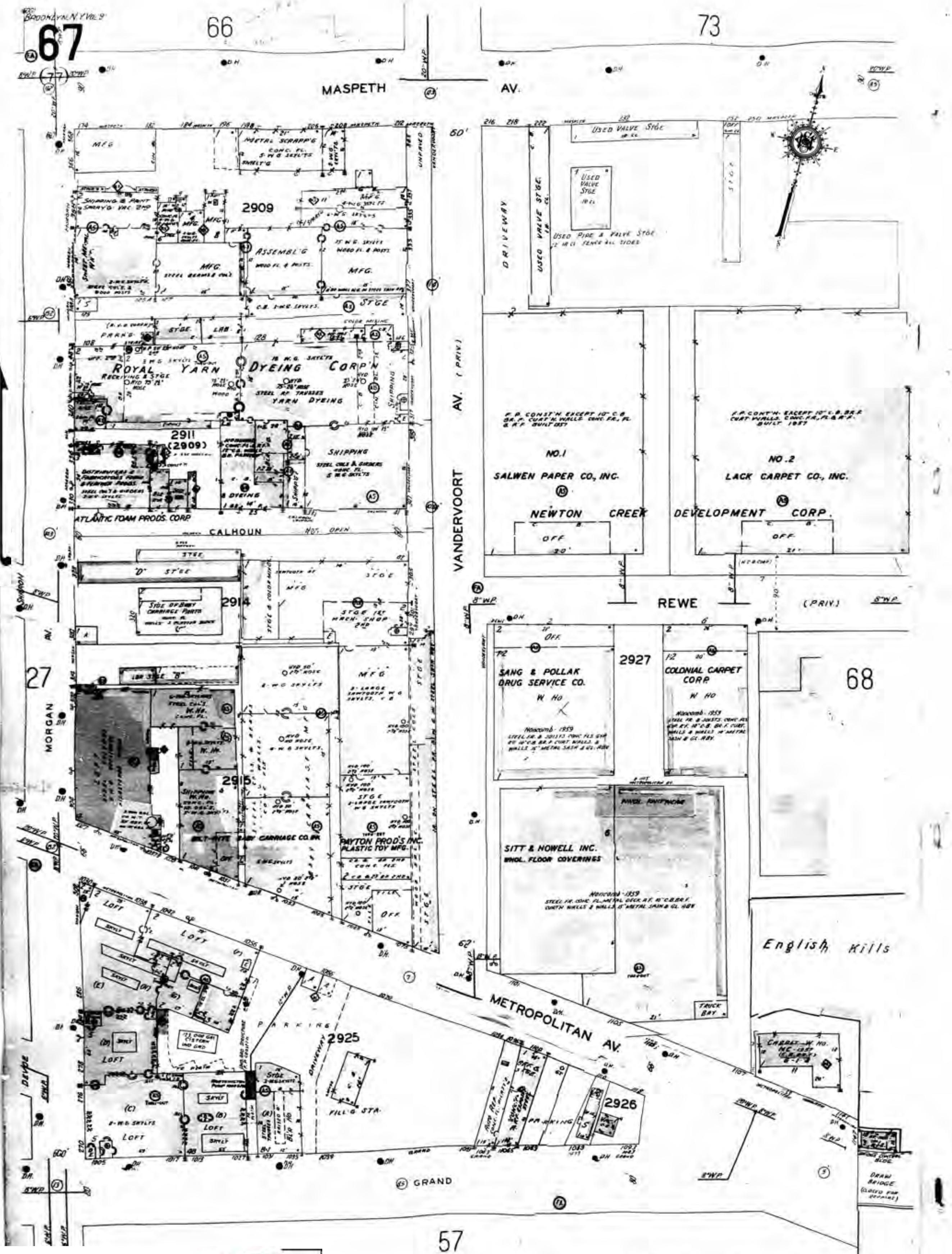
The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by The Sanborn Library LLC, the copyright holder for the collection.

Certification # 7594-437D-9BAB

Site Name:	Equity
Address:	Betw. Rewe St & Maspeth Ave
City, ST, ZIP:	Brooklyn NY 11211
Client:	ENSR Consulting & Engineering
EDR Inquiry:	2278472.1s
Order Date:	7/29/2008 8:59:40 AM
Certification #	7594-437D-9BAB
Copyright:	1968

The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by The Sanborn Library LLC, the copyright holder for the collection.

Certification # 7594-437D-9BAB

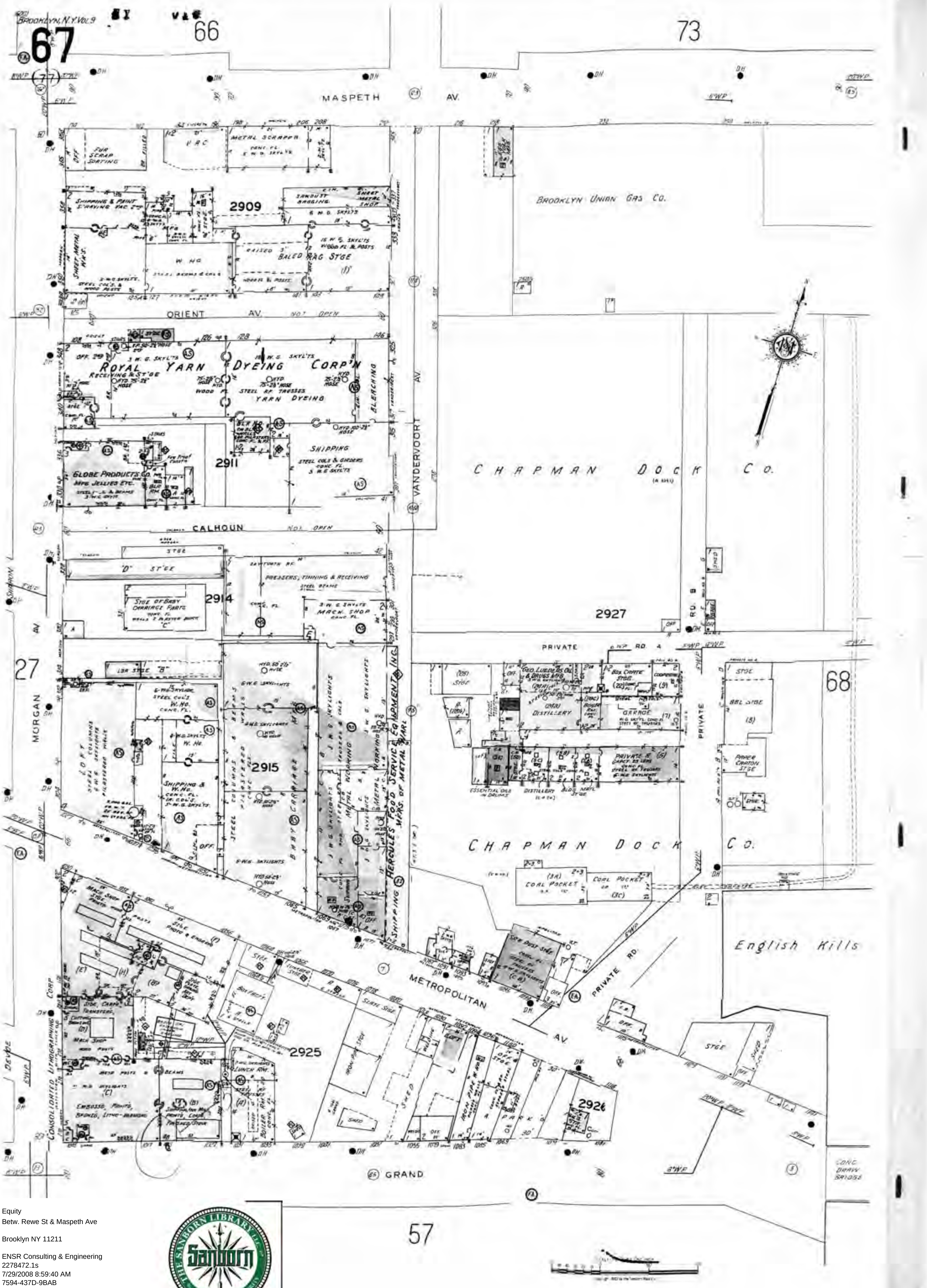


Site Name: Equity
Address: Betw. Rewe St & Maspeth Ave

City, ST, ZIP: Brooklyn NY 11211

Client: ENSR Consulting & Engineering
EDR Inquiry: 2278472.1s
Order Date: 7/29/2008 8:59:40 AM
Certification # 7594-437D-9BAB

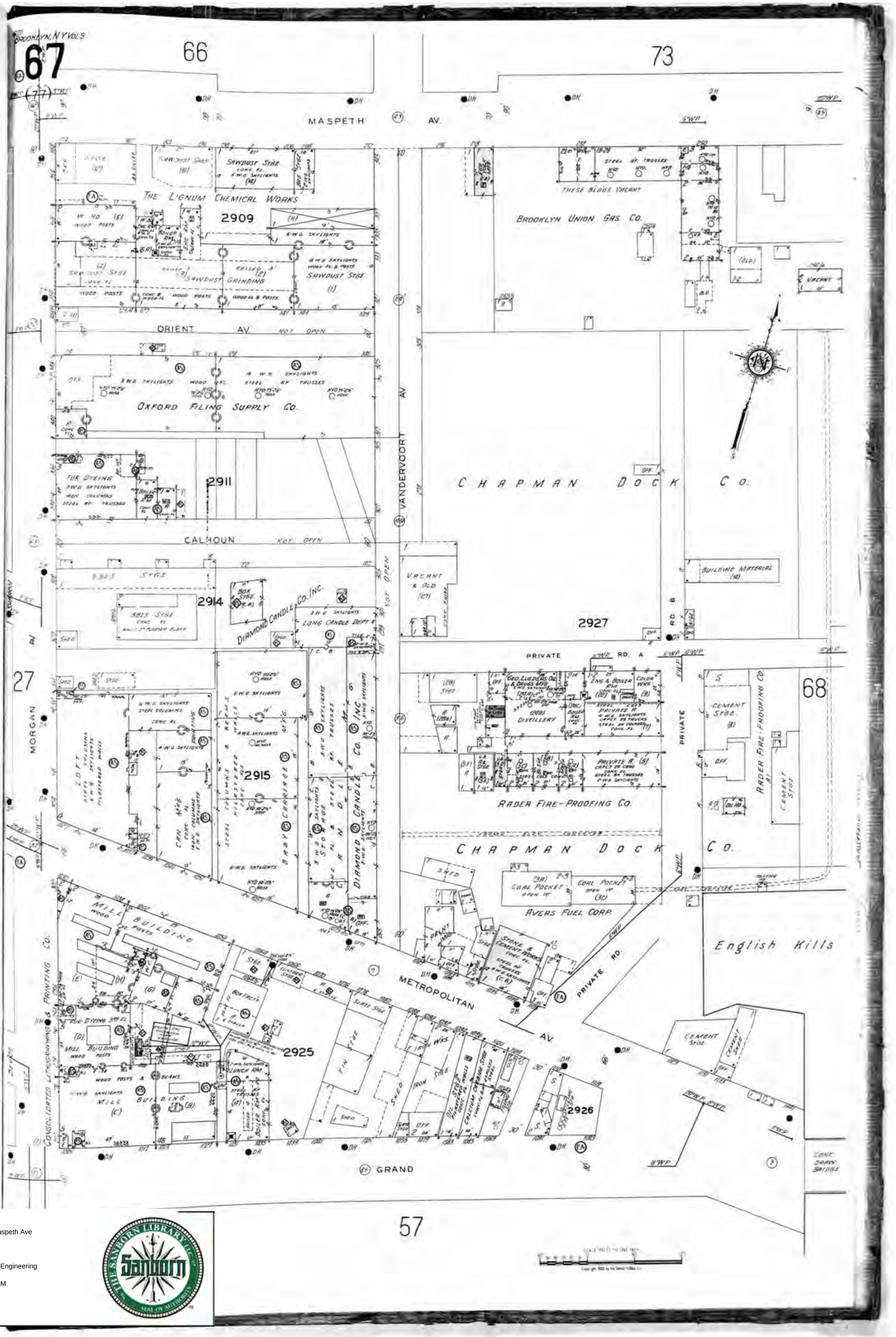
Certification # 7594-437D-9BAB



Site Name: Equity
Address: Betw. Rewe St & Maspeth Ave
City, ST, ZIP: Brooklyn NY 11211
Client: ENSR Consulting & Engineering
EDR Inquiry: 2278472.1s
Order Date: 7/29/2008 8:59:40 AM
Certification # 7594-437D-9BAB

The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by The Sanborn Library LLC, the copyright holder for the collection.

Certification # 7594-437D-9BAB

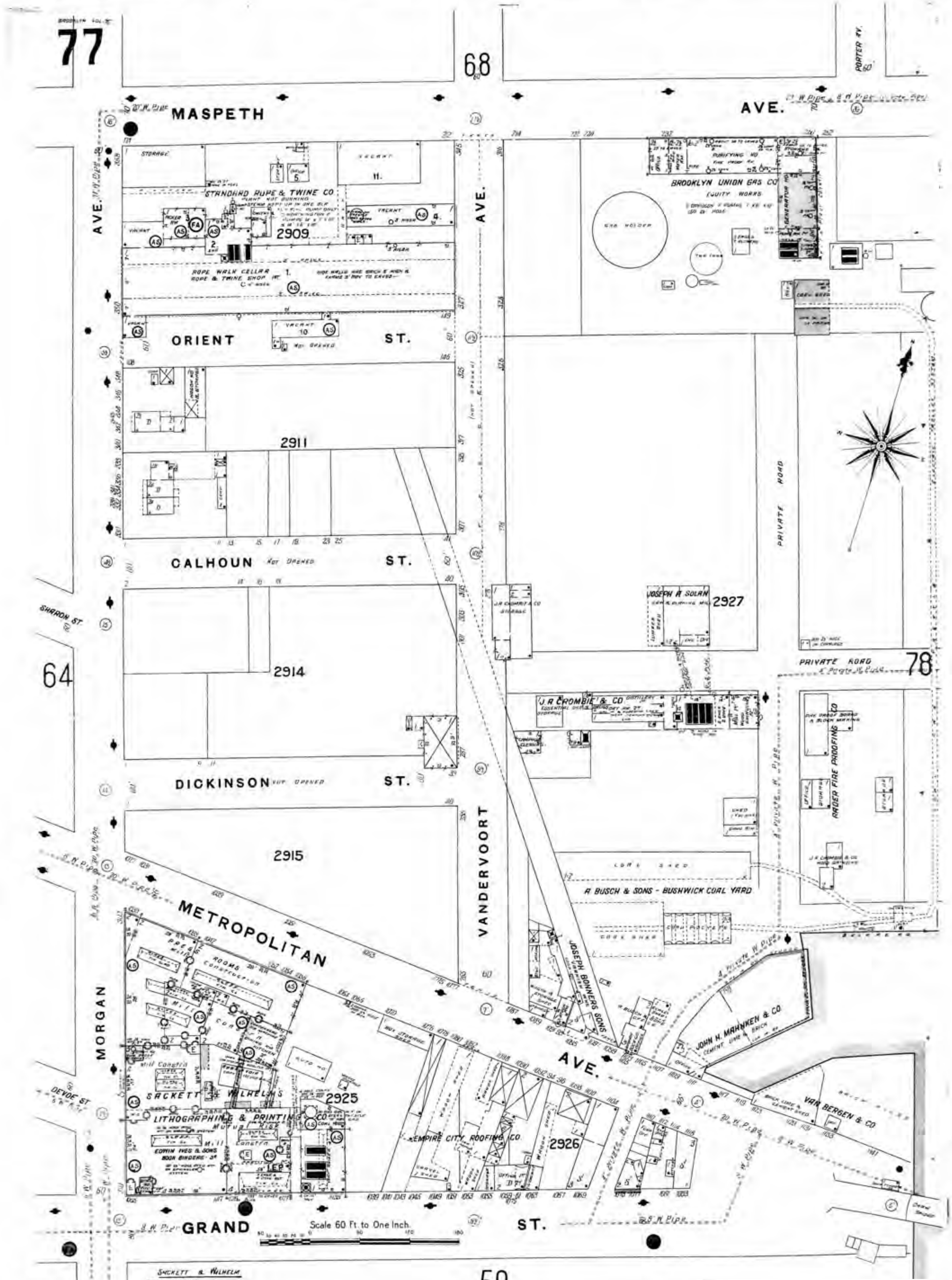


Site Name: Equity
Address: Betw. Rewe St & Maspeth Ave

City, ST, ZIP: Brooklyn NY 11211

Client: ENSR Consulting & Engineering
EDR Inquiry: 2278472.1s
Order Date: 7/29/2008 8:59:40 AM
Certification # 7594-437D-9BAB

Copyright: 1933



SACKETT & WILHELM

NIGHT WATCHMAN.
AUTO SPRINKLERS THRU'OUT BRICK BLDGS SUPPLIED FROM W. TANK CAP'Y 20,000 GALS OR FORCE PUMP FROM CITY WATER OR PUMPING FROM RESERVOIR CAP'Y 125,000 GALS. PUMP BELOW LEVEL OF RESERVOIR. FIRE PAILS & FIRE EXT'GRS THRO-OUT.

Certification # 7594-437D-9BAB

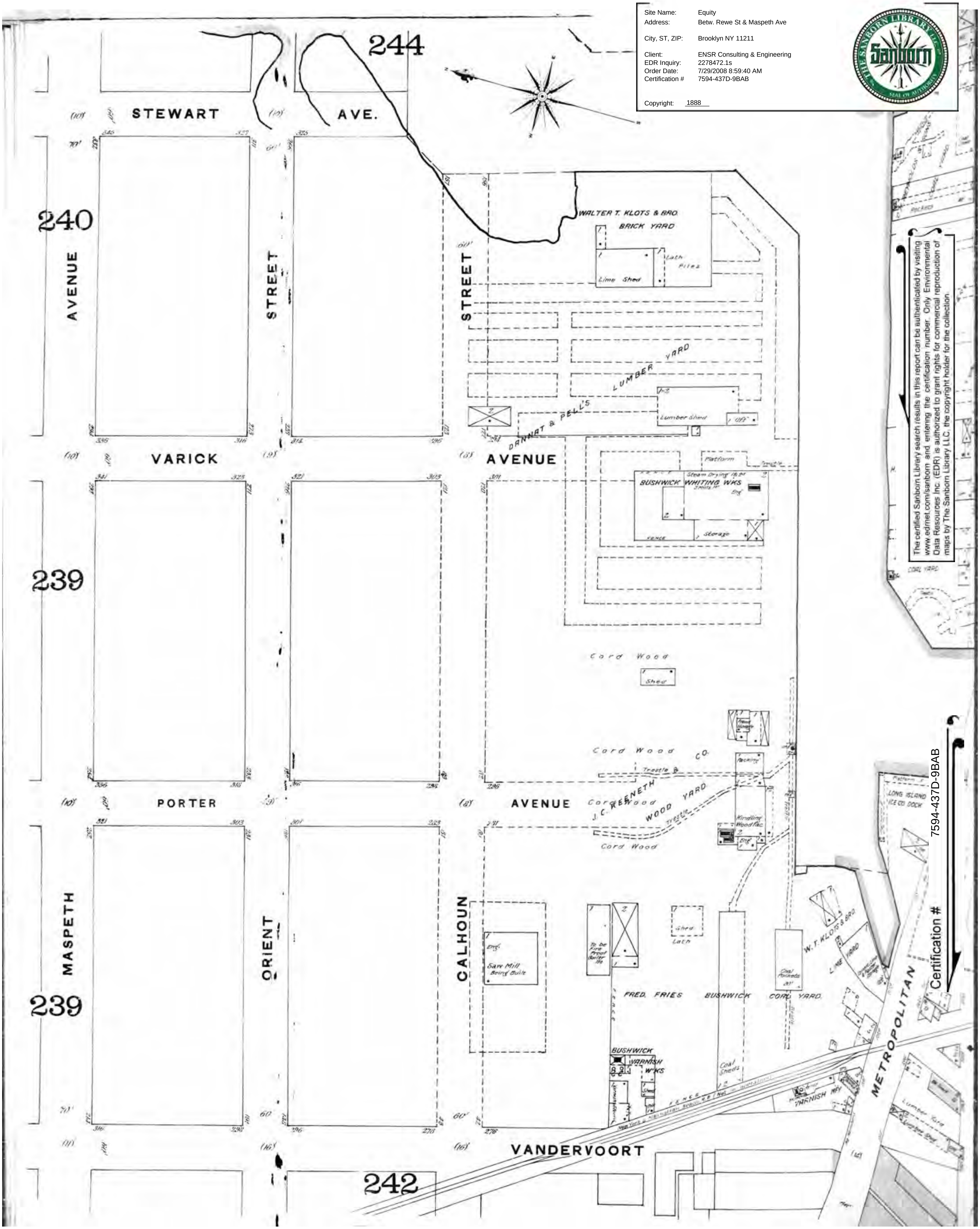
Site Name:	Equity
Address:	Betw. Rewe St & Maspeth Ave
City, ST, ZIP:	Brooklyn NY 11211
Client:	ENSR Consulting & Engineering
EDR Inquiry:	2278472.1s
Order Date:	7/29/2008 8:59:40 AM
Certification #	7594-437D-9BAB
Copyright:	1907

Site Name: Equity
Address: Betw. Rewe St & Maspeth Ave

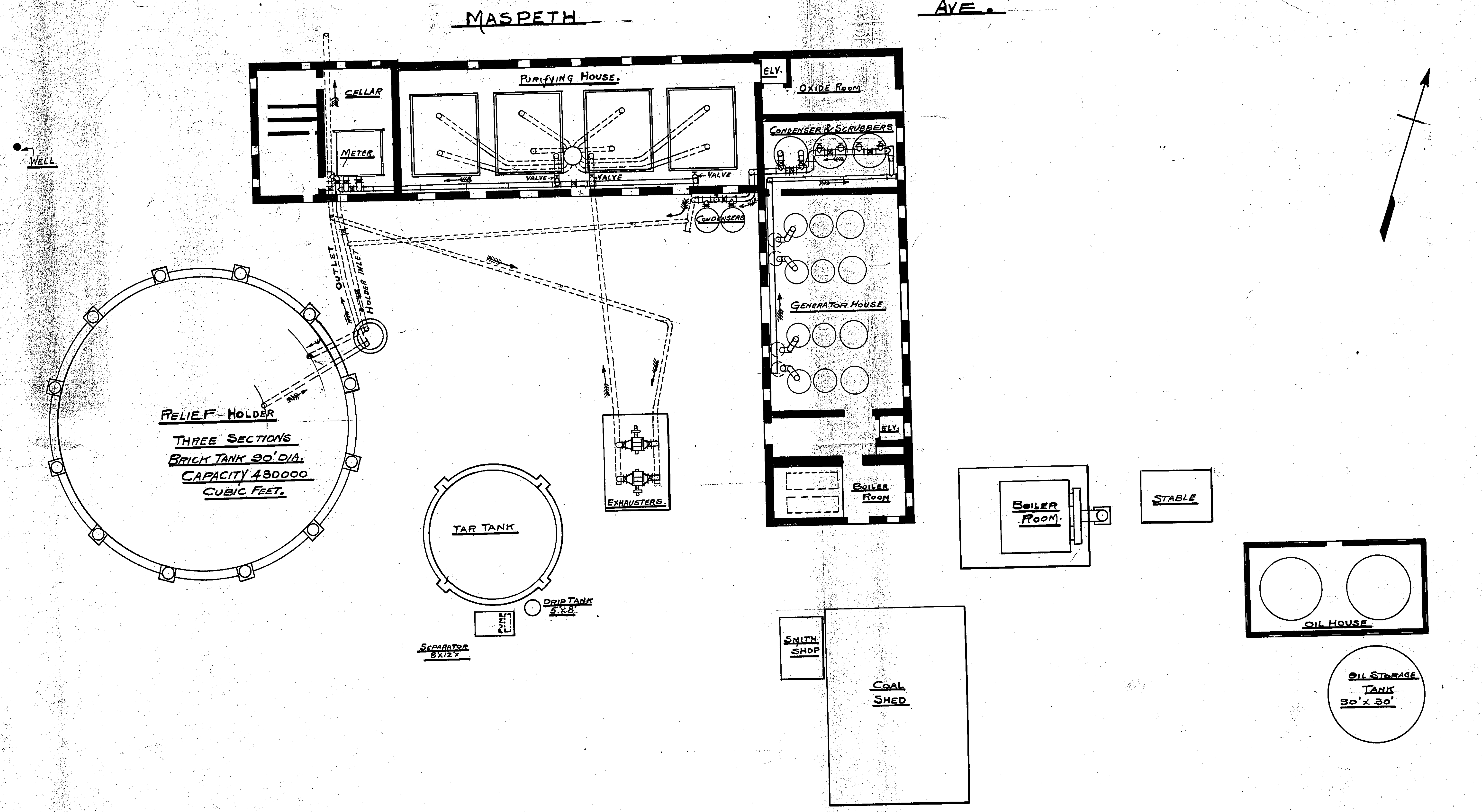
City, ST, ZIP: Brooklyn NY 11211

Client: ENSR Consulting & Engineering
EDR Inquiry: 2278472.1s
Order Date: 7/29/2008 8:59:40 AM
Certification # 7594-437D-9BAB

Copyright: 1888



Certification # 7594-437D-9BAB



BROOKLYN UNION GAS Co.
PLAN OF
EQUITY WORKS

SCALE 20' = 1"   JULY 27TH 1905

L.S. STILES.

APPROVED

CHIEF ENGINEER, E.D.

IN CONSTRUCTION FILE
GENERAL OFFICE BLDG.

new Line suggested 82-11"
71-8" this figure
accepted in Computing area. It was
accepted as it was found to be the least ~~foot~~ distance West of Office

Total area inside of dot and Dash irregular Line = 85261.75 sq ft

SEE 1-D-7

See 1-D-17

20
20
400 sq ft per rack

GIVE
F 3.89
H^1 4.15
H^2 9.83
H^3 12.40
H^4 4.15
I .42
.41

Take
F = 2.812
G^1 = 12.60
G^2 = 8.21
G^3 = 14.25
L 1.14
I .24
G^4 3.00
39.302

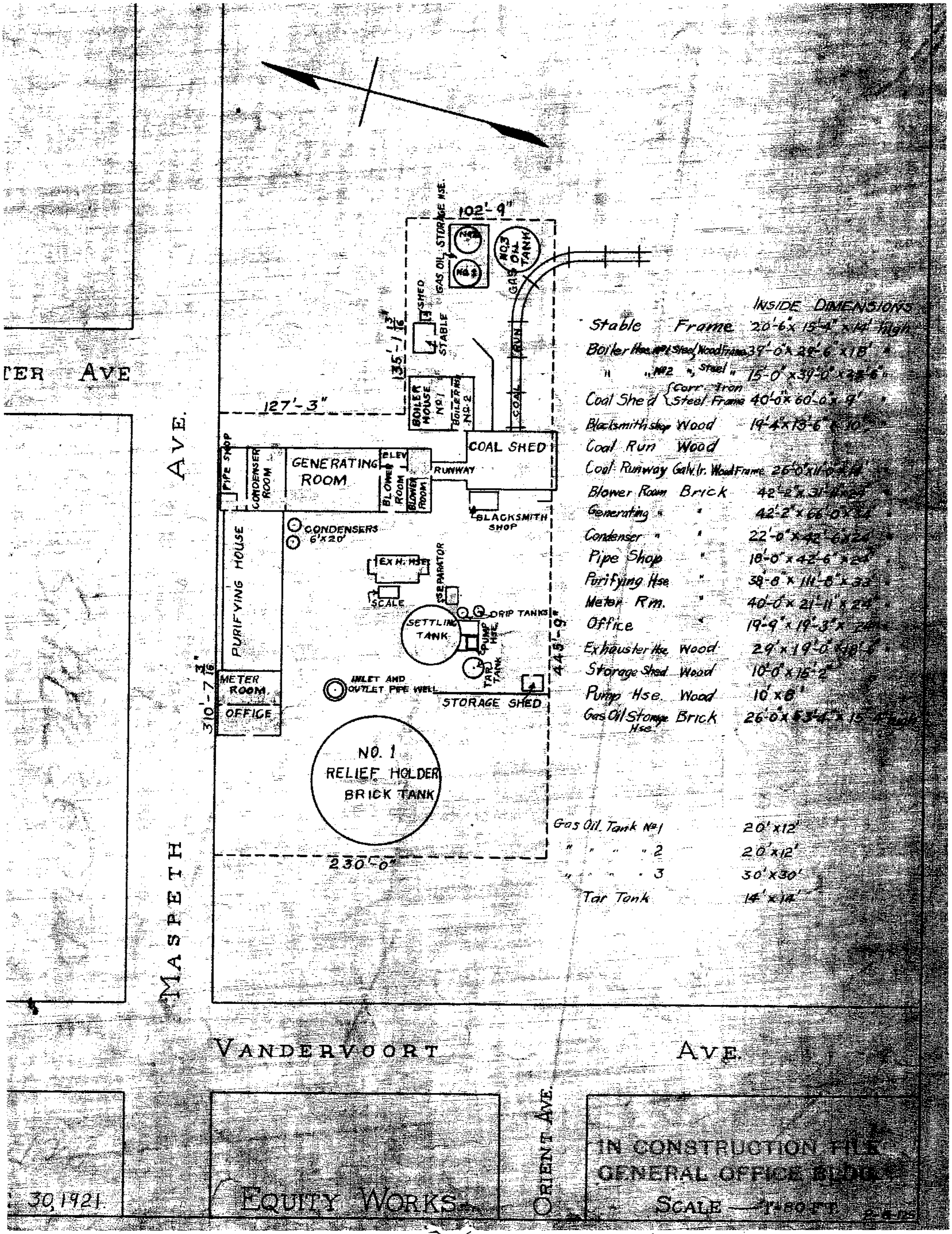
39.66
400
15864.00 give
15720.8 take
143.2 ft

39.302
400
15720.800 take

PLAN
OF
EQUITY GAS WORKS
BROOKLYN UNION GAS CO.
Scale 1" = 20'
JAN. 1893

D-99

IN CONSTRUCTION FILE
GEN E.BL



		INSIDE DIMENSIONS
Stable	Frame	20'-6" x 15'-4" x 14' High
Boiler Hse. No1	Steel, Wood Frame	39'-0" x 28'-6" x 18' "
" " No2	" Steel "	15'-0" x 39'-0" x 28'-6" "
Coal Shed	Corr. Iron Steel Frame	40'-0" x 60'-0" x 9' "
Blacksmith shop	Wood	19'-4" x 13'-6" x 10' "
Coal Run	Wood	
Coal Runway	Galv. Ir. Wood Frame	26'-0" x 11'-0" x [illegible]
Blower Room	Brick	42'-2" x 31'-[illegible] x [illegible] "
Generating "	"	42'-2" x 66'-0" x 34' "
Condenser "	"	22'-0" x 42'-6" x 24' "
Pipe Shop	"	18'-0" x 42'-6" x 24' "
Purifying Hse.	"	38'-8" x 111'-8" x 33' "
Meter Rm.	"	40'-0" x 21'-11" x 24' "
Office	"	19'-9" x 19'-3" x [illegible]
Exhauster Hse.	Wood	29' x 19'-0" x 10'-6" "
Storage Shed	Wood	10'-0" x 15'-2"
Pump Hse.	Wood	10' x 8'
Gas Oil Storage Hse.	Brick	26'-0" x 53'-4" x 15' [illegible] High

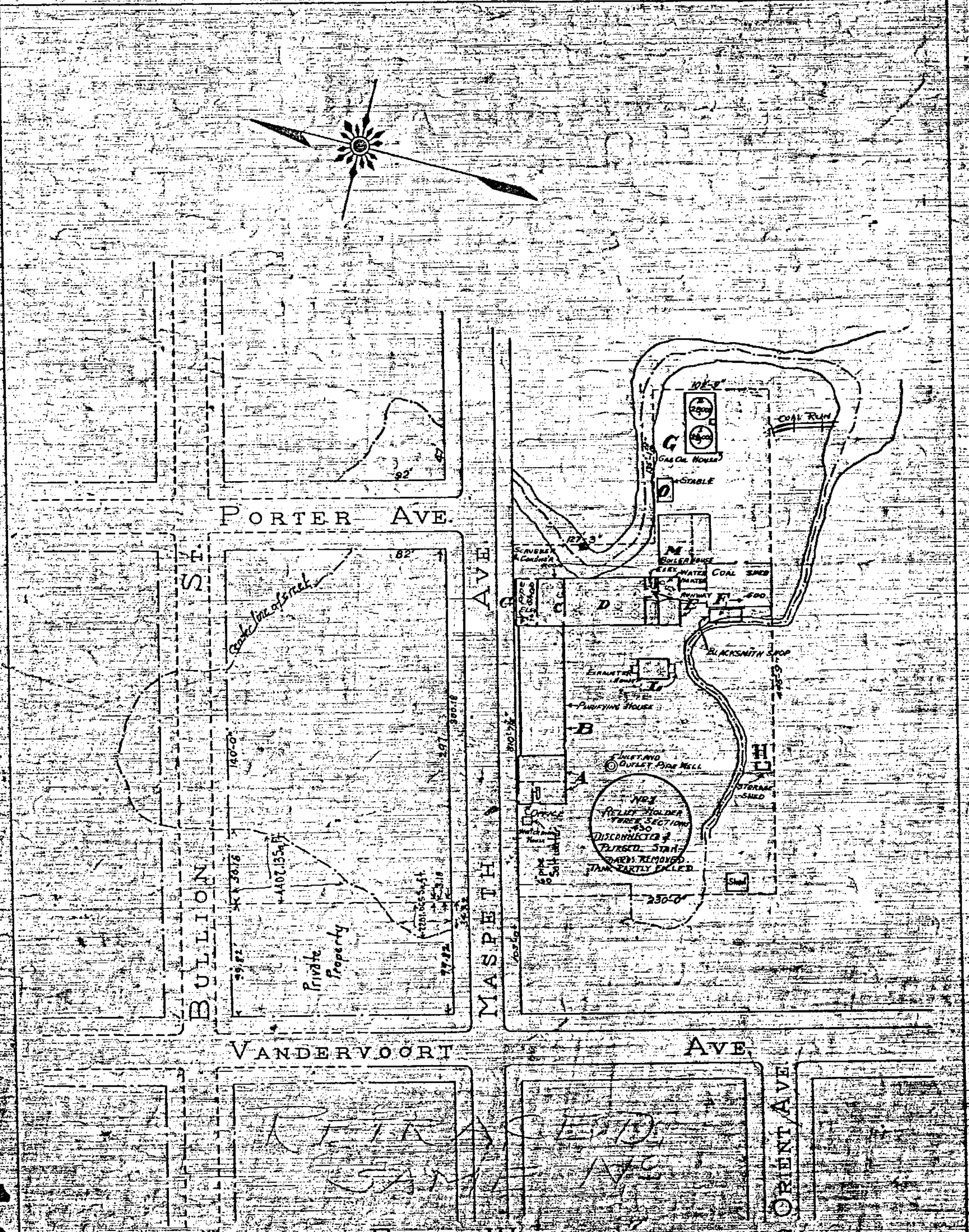
Gas Oil Tank No1	20' x 12'
" " " " 2	20' x 12'
" " " " 3	30' x 30'
Tar Tank	14' x 14'

30, 1921.

EQUITY WORKS

IN CONSTRUCTION FILE
GENERAL OFFICE BLDG.
SCALE 1" = 80 FT.

1G119



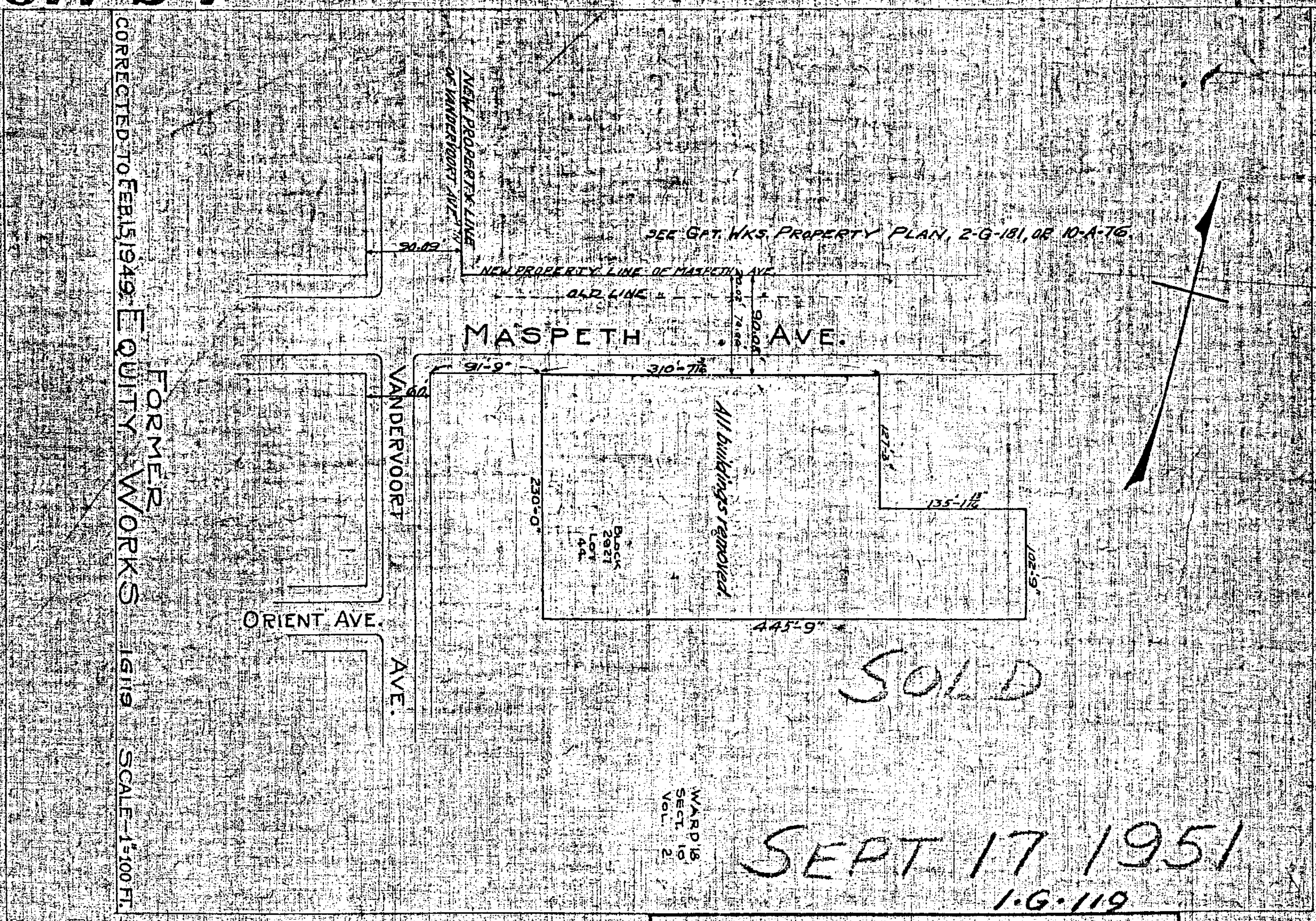
CORRECTED TO MAY 1, 1922 EQUITY WORKS

SCALE 1-100 FT.

IN CONSTRUCTION FILE
GENERAL OFFICE BLDG.

ch. W.W. Korze - Retraced by G. Lamarca
Ckd. H.K.

1G119



SOLD

SEPT 17 1951

1-G-119

PAR
OF
ST WK

THE BROOKLYN UNION GAS CO.

BROOKLYN, N.Y.

FORMER
EQUITY WORKS
SMALL PROPERTY PLAN

SCALE 1 in.=100 ft.	DATE June 23, 1909
Drawn by - R.A.Hedges Traced by - R.A.Hedges Checked by	Approved Chief Engr. Construction Engr.

1-G-119

Equity Works Manufactured Gas Plant
222 Maspeth Avenue
Brooklyn, NY 11211

Inquiry Number: 2348436.2
October 27, 2008

The EDR Aerial Photo Decade Package

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDRs professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

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

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report AS IS. Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Copyright 2008 by Environmental Data Resources, Inc. All rights reserved. Reproduction in any media or format, in whole or in part, of any report or map of Environmental Data Resources, Inc., or its affiliates, is prohibited without prior written permission.

EDR and its logos (including Sanborn and Sanborn Map) are trademarks of Environmental Data Resources, Inc. or its affiliates. All other trademarks used herein are the property of their respective owners.

Date EDR Searched Historical Sources:

Aerial Photography October 27, 2008

Target Property:

222 Maspeth Avenue
Brooklyn, NY 11211

Year	***Scale***	***Details***	***Source***
1954	Aerial Photograph. Scale: 1"=750'	Panel #: 2440073-F8/Flight Date: January 04, 1954	EDR
1966	Aerial Photograph. Scale: 1"=750'	Panel #: 2440073-F8/Flight Date: February 23, 1966	EDR
1975	Aerial Photograph. Scale: 1"=750'	Panel #: 2440073-F8/Flight Date: April 01, 1975	EDR
1984	Aerial Photograph. Scale: 1"=750'	Panel #: 2440073-F8/Flight Date: April 27, 1984	EDR
1994	Aerial Photograph. Scale: 1"=750'	Panel #: 2440073-F8/Flight Date: April 04, 1994	EDR
2006	Aerial Photograph. Scale: 1"=488'	Flight Year: 2006	EDR

INQUIRY #: 2348436.2

YEAR: 1954

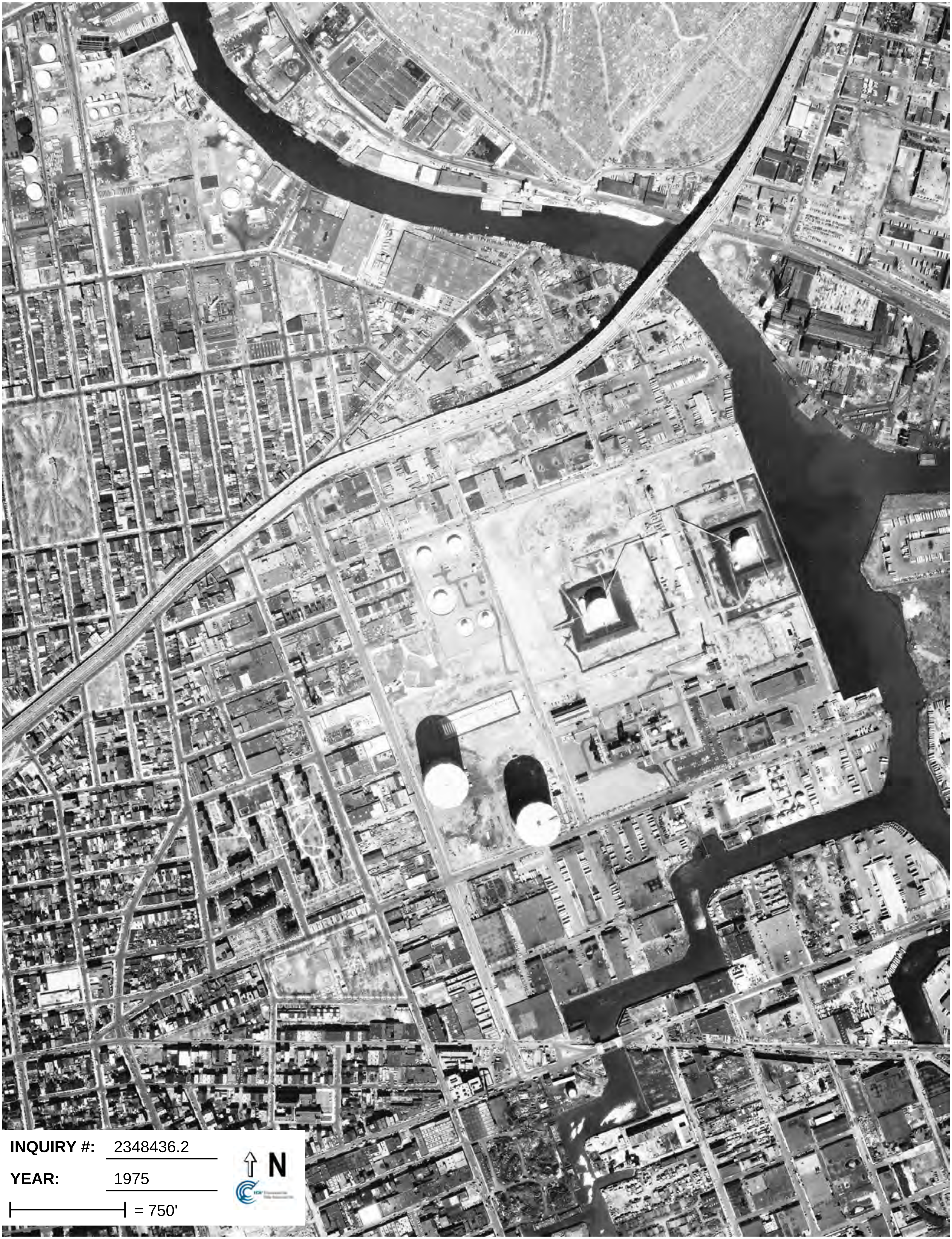
= 750'

N

INQUIRY #: 2348436.2

YEAR: 1966

= 750'



INQUIRY #: 2348436.2

YEAR: 1975

INQUIRY #: 2348436.2

YEAR: 1984

= 750'

N

INQUIRY #: 2348436.2

YEAR: 1994

INQUIRY #: 2348436.2

YEAR: 2006

= 488'

Appendix B

Previous Investigation Boring Logs

List of Previous Reports

Phase I Environmental Site Assessment, Cooper Tank Transfer Facility, 254 Maspeth Avenue, Brooklyn, New York, 11211. Gannett Fleming Engineers, PC October 2004.

Phase II Environmental Subsurface Investigations, Property Located at 254 Maspeth Avenue, Brooklyn, New York. EEA Inc., October 26, 2004.

Phase II Environmental Site Investigation, 252 Maspeth Avenue, Brooklyn, New York, 11211. Gannett Fleming Engineers, PC. May 12, 2005.

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

County Kings

Well Number K3504

COMPLETION REPORT—LONG ISLAND WELL

OWNER Cooper Tank & Welding Corp

ADDRESS 222 Maspeth Ave Brooklyn New York

LOCATION OF WELL same

DEPTH OF WELL BELOW SURFACE 78'

DEPTH TO GROUNDWATER FROM SURFACE 12'

CASINGS

DIAMETER 6 in. | in. | in. | in.

LENGTH 63 ft. | ft. | ft. | ft.

SEALING

CASINGS REMOVED

SCREENS

MAKE Houston

OPENINGS 20 Slot

DIAMETER 6 in. | in. | in. | in.

LENGTH 15 ft. | ft. | ft. | ft.

DEPTH TO TOP FROM TOP OF CASING 1'

PUMPING TEST

DATE

TEST OR PERMANENT PUMP?

DURATION OF TEST days | hours

MAXIMUM DISCHARGE 40 gallons per min.

STATIC LEVEL PRIOR TO TEST ft. | in. below top of casing

LEVEL DURING MAXIMUM PUMPING | in. below top of casing

MAXIMUM DRAWDOWN ft.

Approximate time of return to normal level after cessation of pumping hours min.

PUMP INSTALLED

TYPE Submercible

MAKE Grundfos

MODEL NUMBER 40-S-50-12

MOTIVE POWER Elec

MAKE Franklin

H.P. 5

CAPACITY 36 g.p.m. against | 300 ft. of discharge head

NUMBER OF BOWLS OR STAGES 12 | ft. of total head

DROP LINE

DIAMETER 2 in.

LENGTH 63 ft.

SUCTION LINE

DIAMETER in.

LENGTH ft.

METHOD OF DRILLING ☐ rotary ☐ cable tool ☒ other

USE OF WATER Dust Control

WORK STARTED 5/30/03

COMPLETED 5/30/03

DATE 7/26/03

DRILLER

REGISTRATION NO. 914

LOG

Ground Surface

EL. ft. above sea

ft.

TOP OF WELL

0-15 Sand & Boulders

15-30 Clay Sand

30-40 Clay

40-45 Very Hard Clay

45-80 Fine to Medium Sand

NOTE: Show log of well materials encountered, with depth below ground surface, water bearing beds and water levels in each, casings, screens, pump, additional pumping tests and other matters of interest. Describe repair job. See instructions as to Well Driller's Registration and Reports.

ORIGINAL—Environmental Conservation Copy

EEA, INC.

55 HILTON AVENUE, GARDEN CITY, NEW YORK

SOIL BORING REPORT LOG

DATE: 9/20/04	SHEET 1 OF 1
CLIENT: Spencer Realty Corp. & Copper Tank & Welding	LOCATION ID#
PROJECT LOCATION: 254 Maspeth Avenue	**B - 1**
REMARKS: Inside vacant lot	PROJECT #04729

DRILLING CONTRACTOR: TSDT, INC.	LOGGED BY FI	DRILLER PD/PR

EQUIPMENT	SOIL SAMPLER	HAMMER WEIGHT/FALL	Casing Type	Monitor Well Specification		DRILL RIG
		Direct				DRILL METHOD
TYPE	MACROCORE	Push				GEOPROBE LT 54 MACROCORE
SIZE	2 inch O.D.	GH 42				
SURFACE ELEVATION: NA		Surface Materials: Gravel				

WATER LEVEL (IN OPEN BOREHOLE): ~9 feet

DEPTH (fbg)	SAMPLE & TIME	RECOVERY (inches)	OVA (ppm)	MOISTURE	STRATA	SOIL – ROCK DESCRIPTION – CLASSIFICATION
0-4		36	0	Dry		Brown soil, red brick chips, asphalt chips and fine to medium grained, red SAND (fill). Typical asphalt odor; no staining.
4-8	*B-1(4-8')	36	0	Dry to		Same as above with lenses of greenish GRAVEL (parent material?). Typical asphalt odor and no staining.
5	1100			moist		
8-12	*B-1(8-12')	36	5.3	Wet		Black-gray, gravelly red brick chips and soil. Black-gray staining and moderate hydrocarbon odor. At 11', brown fine grained SAND and CLAY with moderate hydrocarbon odor.
	1000					
10						
						EOB @12'
15						
20						* soil sample collected for laboratory analysis
25						
30						

EEA, INC.

55 HILTON AVENUE, GARDEN CITY, NEW YORK

SOIL BORING REPORT LOG

DATE: 9/20/04	SHEET 1 OF 1
CLIENT: Spencer Realty Corp. & Copper Tank & Welding	LOCATION ID#
PROJECT LOCATION: 254 Maspeth Avenue	**B - 2**
REMARKS: Inside vacant lot	PROJECT #04729

DRILLING CONTRACTOR: TSDT, INC.	LOGGED BY FI	DRILLER PD/PR

EQUIPMENT	SOIL SAMPLER	HAMMER WEIGHT/FALL	Casing Type	Monitor Well Specification		DRILL RIG
		Direct				DRILL METHOD
TYPE	MACROCORE	Push				GEOPROBE LT 54 MACROCORE
SIZE	2 inch O.D.	GH 42				
SURFACE ELEVATION: NA		Surface Materials: Gravel				

WATER LEVEL (IN OPEN BOREHOLE): unknown

DEPTH (fbg)	SAMPLE & TIME	RECOVERY (inches)	OVA (ppm)	MOISTURE	STRATA	SOIL – ROCK DESCRIPTION – CLASSIFICATION
0-4	*B-2 (0-4')	12	0	Dry		Black soil, red brick chips and GRAVEL; remnants of wood pilings at 4'. Creosote odor and black staining.
	1030					
5						EOB @4'/Refusal @4' from wood pilings (several refusals)
10						
						* soil sample collected for laboratory analysis
15						
20						
25						
30						

EEA, INC.

55 HILTON AVENUE, GARDEN CITY, NEW YORK

SOIL BORING REPORT LOG

DATE: 9/20/04				SHEET 1 OF 1
CLIENT: Spencer Realty Corp. & Copper Tank & Welding				LOCATION ID#
PROJECT LOCATION: 254 Maspeth Avenue				**B - 3**
REMARKS: Inside vacant lot				PROJECT #04729
DRILLING CONTRACTOR:	TSDT, INC.	LOGGED BY FI	DRILLER	PD/PR

EQUIPMENT	SOIL SAMPLER	HAMMER WEIGHT/FALL	Casing Type	Monitor Well Specification		DRILL RIG
		Direct				DRILL METHOD
TYPE	MACROCORE	Push				GEOPROBE LT 54 MACROCORE
SIZE	2 inch O.D.	GH 42				
SURFACE ELEVATION: NA		Surface Materials: Gravel				

WATER LEVEL (IN OPEN BOREHOLE): unknown

DEPTH (fbg)	SAMPLE & TIME	RECOVERY (inches)	OVA (ppm)	MOISTURE	STRATA	SOIL – ROCK DESCRIPTION – CLASSIFICATION
0-4	*B-3 (0-4')	12	0	Dry		Brown fine to medium grained SAND and GRAVEL. No odor or staining.
	1115					
5						EOB @4'/Refusal @4' from wood pilings (several refusals)
10						
						* soil sample collected for laboratory analysis
15						
20						
25						
30						

EEA, INC.

55 HILTON AVENUE, GARDEN CITY, NEW YORK

SOIL BORING REPORT LOG

DATE: 9/20/04	SHEET 1 OF 1
CLIENT: Spencer Realty Corp. & Copper Tank & Welding	LOCATION ID#
PROJECT LOCATION: 254 Maspeth Avenue	**B - 4**
REMARKS: Inside vacant lot	PROJECT #04729

DRILLING CONTRACTOR: TSDT, INC.	LOGGED BY FI	DRILLER PD/PR

EQUIPMENT	SOIL SAMPLER	HAMMER WEIGHT/FALL	Casing Type	Monitor Well Specification		DRILL RIG
		Direct				DRILL METHOD
TYPE	MACROCORE	Push				GEOPROBE LT 54 MACROCORE
SIZE	2 inch O.D.	GH 42				
SURFACE ELEVATION: NA		Surface Materials: Gravel				

WATER LEVEL (IN OPEN BOREHOLE): unknown

DEPTH (fbg)	SAMPLE & TIME	RECOVERY (inches)	OVA (ppm)	MOISTURE	STRATA	SOIL – ROCK DESCRIPTION – CLASSIFICATION
0-4	*B-4 (0-2')	12	0	Dry		Brown soil, tan, medium grained SAND and GRAVEL with red brick chips. Typical odor and no staining.
	1130					
5						EOB @4'/Refusal @4' from wood pilings (several refusals)
10						
						* soil sample collected for laboratory analysis
15						
20						
25						
30						

EEA, INC.

55 HILTON AVENUE, GARDEN CITY, NEW YORK

SOIL BORING REPORT LOG

DATE: 9/20/04	SHEET 1 OF 1
CLIENT: Spencer Realty Corp. & Copper Tank & Welding	LOCATION ID#
PROJECT LOCATION: 254 Maspeth Avenue	**B - 5**
REMARKS: Inside vacant lot	PROJECT #04729

DRILLING CONTRACTOR: TSDT, INC.	LOGGED BY FI	DRILLER PD/PR

EQUIPMENT	SOIL SAMPLER	HAMMER WEIGHT/FALL	Casing Type	Monitor Well Specification		DRILL RIG
		Direct				DRILL METHOD
TYPE	MACROCORE	Push				GEOPROBE LT 54 MACROCORE
SIZE	2 inch O.D.	GH 42				
SURFACE ELEVATION: NA		Surface Materials: Gravel				

WATER LEVEL (IN OPEN BOREHOLE): unknown

DEPTH (fbg)	SAMPLE & TIME	RECOVERY (inches)	OVA (ppm)	MOISTURE	STRATA	SOIL – ROCK DESCRIPTION – CLASSIFICATION
0-4	*B-5 (0-4')	12	0	Dry		Brown soil, fine grained SAND and GRAVEL and asphalt chips. Typical odor and no staining.
	1200					
5						EOB @4'/Refusal @4'
10						
						* soil sample collected for laboratory analysis
15						
20						
25						
30						

EEA, INC.

55 HILTON AVENUE, GARDEN CITY, NEW YORK

SOIL BORING REPORT LOG

DATE: 9/20/04	SHEET 1 OF 1
CLIENT: Spencer Realty Corp. & Copper Tank & Welding	LOCATION ID#
PROJECT LOCATION: 254 Maspeth Avenue	**B - 6**
REMARKS: Inside vacant lot	PROJECT #04729

DRILLING CONTRACTOR:	TSDT, INC.	LOGGED BY	FI	DRILLER	PD/PR

EQUIPMENT	SOIL SAMPLER	HAMMER WEIGHT/FALL	Casing Type	Monitor Well Specification		DRILL RIG
		Direct				DRILL METHOD
TYPE	MACROCORE	Push				GEOPROBE LT 54 MACROCORE
SIZE	2 inch O.D.	GH 42				

SURFACE ELEVATION: NA

Surface Materials: Gravel

WATER LEVEL (IN OPEN BOREHOLE): unknown

DEPTH (fbg)	SAMPLE & TIME	RECOVERY (inches)	OVA (ppm)	MOISTURE	STRATA	SOIL – ROCK DESCRIPTION – CLASSIFICATION
0-4	*B-6 (0-4')	12	0	Dry to		Black soil, fine grained SAND and GRAVEL with asphalt chips, bricks and nails. Typical odor and possible staining (black).
	1230			moist		
5						EOB @4'/Refusal @4'
10						
						* soil sample collected for laboratory analysis
15						
20						
25						
30						

SOIL BORING LOG

Client: Aris Investment	Boring No.: B-1	Gannett Fleming, Inc. 480 Forest Avenue Locust Valley, NY 11560 (516) 671-8440
Project # : 44440.001	Sheet 1 of 1	
Site Location: 252 Maspeth Ave.	Date: 3/28/2005	
Drilling Co: Tri State	Location of boring (not to scale)	
Method: Hollow Stem Auger - Truck mounted Mobil B-57	9' from western property boundary	
Personnel: Brian Dortch	71' from northern property boundary	
Total Depth: 12' Depth to Water: 7'		

depth (feet)	PID (ppm)	Blow Counts	Sample ID	Depth (From-To)	Moisture Content	Recovery	Soil Classification	Remarks
				0-1'			Concrete	
1 2	4.0	12, 14, 9, 16		1-3'	slightly moist	2'	Black M soft SILT with wood fragments (Urban fill)	heavy staining and odor
3 4	5.5	13, 17, 21, 16	B-1 (3-7)	3-5'	moist	2'	Black M soft SILT with wood fragments (Urban fill)	heavy staining and odor
5 6	5.2	8, 16, 12, 9		5-7'	saturated	0.5'	Black M soft SILT with wood fragments (Urban fill)	heavy staining and odor
7 8	3.5	10, 7, 5, 2	B-1 (GW)	7-9'	saturated	1'	Black M soft SILT with wood fragments (Urban fill)	heavy staining and odor
9 10 11 12 13 14 15 16 17 18 19 20		3, 3, 7, 5		9-11'	saturated	1'	Black M soft SILT with wood fragments (Urban fill)	heavy staining and odor

SOIL BORING LOG

Client: Aris Investment	Boring No.: B-2		Gannett Fleming, Inc. 480 Forest Avenue Locust Valley, NY 11560 (516) 671-8440
Project # : 44440.001	Sheet 1 of 1		
Site Location: 252 Maspeth Ave.	Date: 3/28/2005		

Drilling Co: Tri State
Method: Hollow Stem Auger - Truck mounted Mobil B-57
Personnel: Brian Dortch
Total Depth: 10'   Depth to Water: 7.5'

Location of boring (not to scale)
11' from eastern property boundary
117' from northern property boundary

depth (feet)	PID (ppm)	Blow Counts	Sample ID	Depth (From-To)	Moisture Content	Recovery	Soil Classification	Remarks
0-2	0.0	7, 4, 8, 16		0-2'	moist	0.5'	Black M soft SILT with wood fragments (Urban fill)	heavy staining and odor
2-4	2.0	4, 4, 6, 8		2-4'	moist	1'	Black M soft SILT with wood fragments (Urban fill)	heavy staining and odor
4-6	1.0	4, 6, 8, 13	B-2 (4-8)	4-6'	moist	0.5'	Black M soft SILT with wood fragments (Urban fill)	heavy staining and odor
6-8	1.5	7, 9, 8, 13		6-8'	saturated	0.5'	Black M soft SILT with wood fragments (Urban fill)	heavy staining and odor
8-10	0.0	5, 7, 6, 12		8-10'	saturated	0.5'	Black M soft SILT with wood fragments (Urban fill)	heavy staining and odor
10-20								

SOIL BORING LOG

Client: Aris Investment
Project # : 44440.001
Site Location: 252 Maspeth Ave.
Drilling Co: Tri State
Method: Hollow Stem Auger - Truck mounted Mobil B-57
Personnel: Brian Dortch
Total Depth: 10'
Depth to Water: 8'

Boring No.: B-3
Sheet 1 of 1
Date: 3/28/2005

Gannett Fleming, Inc.
480 Forest Avenue
Locust Valley, NY 11560
(516) 671-8440

Location of boring (not to scale)
19' from western property boundary
141' from northern property boundary

depth (feet)	PID (ppm)	Blow Counts	Sample ID	Depth (From-To)	Moisture Content	Recovery	Soil Classification	Remarks
1	0.0	8, 12, 7, 7		0-2'	slightly moist	1'	Black M soft SILT with wood and stone fragments (Urban fill)	some staining and odor
2 3	0.5	5, 3, 7, 3	B-3 (2-8)	2-4'	moist	0.5'	Black M soft SILT with wood and plastic fragments (Urban fill)	some staining no odor
4 5	0.0	3, 3, 6, 3		4-6'	moist	0.0'	Black M soft SILT with wood fragments (Urban fill)	some staining no odor
6 7	1.3	7, 5, 12, 13		6-8'	moist	0.5'	Black M soft SILT with wood fragments (Urban fill)	some staining no odor
8 9 10 11 12 13 14 15 16 17 18 19 20	1.0	11, 13, 17, 21		8-10'	saturated	1'	Black M soft SILT with wood fragments (Urban fill)	some staining no odor

SOIL BORING LOG

Client: Aris Investment

Project # : 44440.001

Site Location: 252 Maspeth Ave.

Drilling Co: Tri State

Method: Hollow Stem Auger - Truck mounted Mobil B-57

Personnel: Brian Dortch

Total Depth: 12' Depth to Water: 9'

Boring No.: B-4

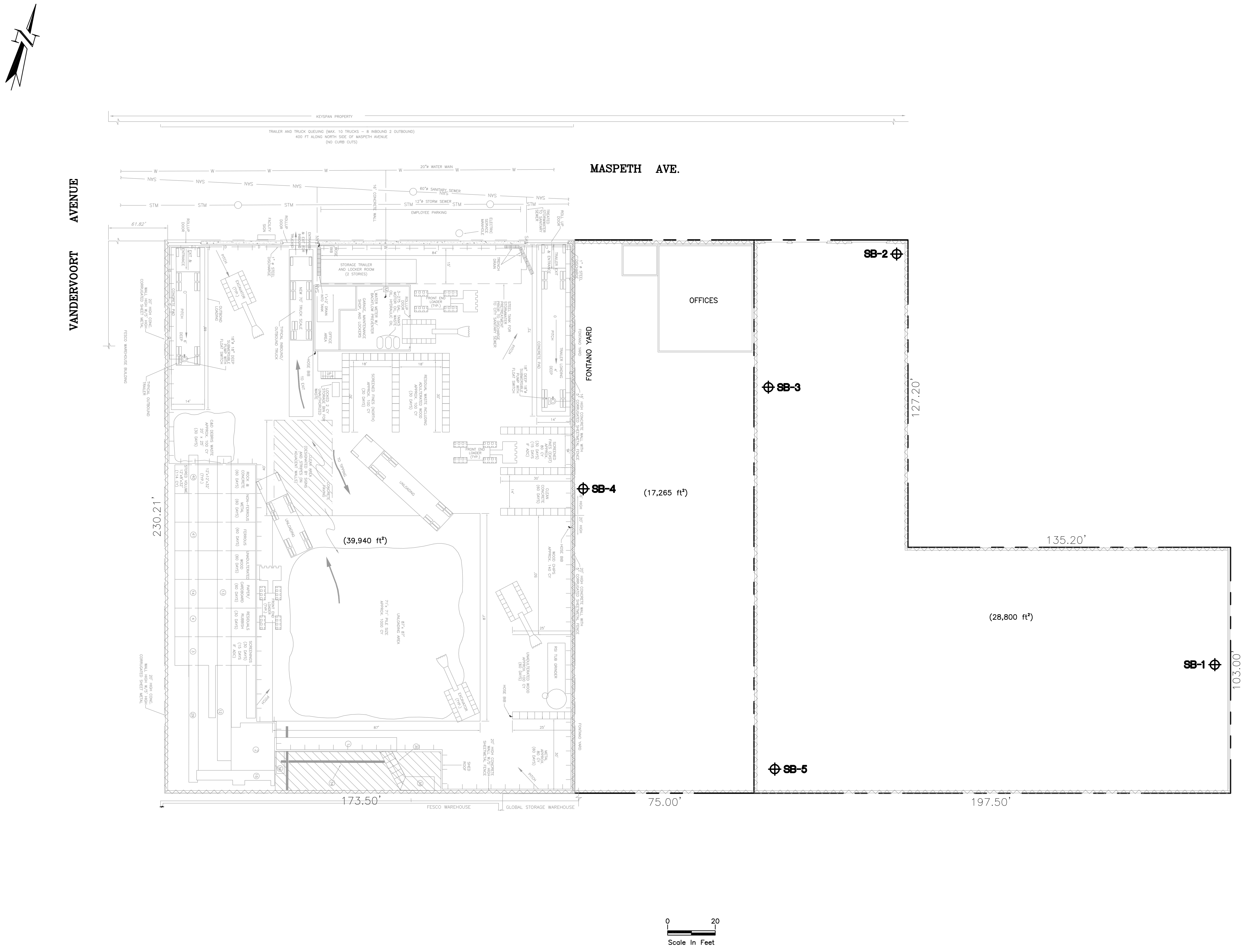
Sheet 1 of 1

Date: 3/28/2005

Gannett Fleming, Inc.
480 Forest Avenue
Locust Valley, NY 11560
(516) 671-8440

Location of boring (not to scale)
20' from eastern property boundary
51' from southern property boundary

depth (feet)	PID (ppm)	Blow Counts	Sample ID	Depth (From-To)	Moisture Content	Recovery	Soil Classification	Remarks
1 2	0.0	7, 9, 18, 12		0-2'	slightly moist	1'	Black M soft SILT with wood and brick fragments (Urban fill)	some staining and slight odor
3 4	2.5	23, 12, 9, 16	B-4 (2-6)	2-4'	slightly moist	1'	Black M soft SILT with wood and brick fragments (Urban fill)	some staining and slight odor
5 6	1.0	15, 13, 12, 9		4-6'	moist	1'	Black M soft SILT with wood and brick fragments (Urban fill)	some staining and slight odor
7 8	0.0	9, 7, 8, 12		6-8'	moist	1'	Black M soft SILT with wood and brick fragments (Urban fill)	some staining and slight odor
9 10 11 12 13 14 15 16 17 18 19 20	0.0	13, 9, 12, 12	B-4 (GW)	8-10'	saturated	1'	Black M soft SILT with wood and brick fragments (Urban fill)	some staining and slight odor



LEGEND

1	STOCK CONVEYOR
2	VIBRATORY SCREEN
3+4	SCREENING MACHINE
12	CHAIN CONVEYOR
13	BELT CONVEYOR
14	BELT CONVEYOR
15	CHAIN CONVEYOR
29	CHAIN CONVEYOR
33	SURGE FEEDER
34	TAKE AWAY CONVEYOR
35	FINGER SCREEN
36	BIN TO ACCEPT FINES DISCHARGE
40	STONE SEPARATOR
41	MAGNET
— — —	PROPERTY LINE
—STM—	STORM SEWER
—SAN—	SANITARY SEWER
⌐	HOSE BIB
▭	CONCRETE BLOCK WALL (3'x3'x3')
▨	CONC. WALL W/ CORRUGATED SHEET METAL FENCE
┴┴┴	MISTING SYSTEM
SB-2 ⊕	SOIL BORING LOCATION

NOTES:

1. SB-1, SB-2, SB-3, AND SB-5 ARE TO BE DRILLED TO A DEPTH OF 30 FEET
2. SB-4 TO BE DRILLED TO A DEPTH OF 40 FEET
3. CONTRACTOR TO RECORD WATER LEVEL
4. FACILITY LAYOUT AND UTILITY INFORMATION BASED ON SEPTEMBER 29, 1993 DRAWING BY CMS GROUP/SHAPIRO

PRELIMINARY

THIS DRAWING IS AND SHALL REMAIN THE PROPERTY OF GANNETT FLEMING ENGINEERS AND ARCHITECTS, P.C.; REUSE ON PROJECT EXTENSIONS OR ANY OTHER PROJECT, OR ALTERATIONS OR ADDITIONS TO THIS PROJECT SHALL BE AT THE USER'S SOLE RISK, AND WITHOUT LIABILITY TO GANNETT FLEMING ENGINEERS AND ARCHITECTS, P.C. UNAUTHORIZED ALTERATIONS OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW.

No.	DESCRIPTION	DATE	BY
	REVISIONS		

DRAWN AS	SCALE 1"=20'
DESIGNED FHI	JOB No. 44440.005
APPROVED FHI	DATE APR.2006

Gannett Fleming
ENGINEERS AND ARCHITECTS, P.C.
HARRISBURG, PENNSYLVANIA
LOCUST VALLEY, NEW YORK

PROJECT
NON PUTRESCIBLE SOLID WASTE TRANSFER STATION
COOPER TANK AND WELDING CORP.
BROOKLYN, NEW YORK

TITLE
PROPOSED SOIL BORING LOCATION PLAN

SHEET No.
1

34691-01.005 041406 PLOT SCALE =

DRILLER'S LOGS

BORING #: SB#2

Page# 1 of 1

DATE:	September 7, 2006		
SITE:	Cooper Tank and Welding 252-254 Maspeth Ave., Brooklyn, NY	CONSULTANT:	Gannett Flemings Locust Valley, NY
DEPTH DRILLED:	31 feet	DEPTH TO WATER:	8 feet Perched
CORING DEVICE:	2" X 24"	HAMMER WEIGHT:	140 lbs.
HAMMER DROP:	30 inches	WELL/BORING GROUTED :	NO
DRILLING METHOD:	Hollow Stem Auger 4 1/4"		
DRILLER:	C. Pedersen	HELPER:	A. Smith and E. Bedell

DEPTH FROM		DEPTH TO		RECOVERY	BLOWS / 6 INCHES	SAMPLE DESCRIPTION
0	ft	4	ft	Hand		Brown sand, medium to fine, 10% gravel
4	ft	6	ft	18 inches	2-5-9-8	Brown silty sand, fine, trace of gravel, (SM)
6	ft	9	ft	Auger Cuttings		Brown/black sand, medium to fine, 5% gravel
9	ft	11	ft	19 inches	5-12-29-10	Black silty sand, fine, 5% gravel, (SM), wet
11	ft	14	ft	Auger Cuttings		Black sand silty, medium to fine, 5% gravel, wet
14	ft	16	ft	24 inches	1-1-2-2	Grey black peat, very fine, (PT)
16	ft	19	ft	Auger Cuttings		Black sand, fine, wet
19	ft	21	ft	24 inches	2-3-2-2	Black/grey peat, very fine, (PT), wet
21	ft	24	ft	Auger Cuttings		Black sand oil medium to fine, wet
24	ft	26	ft	24 inches	2-5-7-8	Black /grey silty sand/peat, very fine, (PT)
26	ft	29	ft	Auger Cuttings		Black/grey peat, very fine, wet
29	ft	31	ft	20 inches	3-6-6-6	Black grey siltysand, very fine, (SM)

DRILLER'S LOGS

BORING #: SB#1

Page# 1 of 1

DATE: September 7, 2006

SITE: Cooper Tank and Welding
252-254 Maspeth Ave., Brooklyn, NY

CONSULTANT: Gannett Flemings
Locust Valley, NY

DEPTH DRILLED: 15 feet
CORING DEVICE: 2" X 24"
HAMMER DROP: 30 inches
DRILLING METHOD: Hollow Stem Auger 4 1/4"

DEPTH TO WATER: 8 feet Perched
HAMMER WEIGHT: 140 lbs.
WELL/BORING GROUTED : YES

DRILLER: C. Pedersen

HELPER: E. Bedell

DEPTH FROM		TO		RECOVERY	BLOWS / 6 INCHES	SAMPLE DESCRIPTION
0	ft	4	ft	Hand		Brown/black sand, fine, trace of gravel, construction debris
4	ft	6	ft	7 inches	7-4-3-7	Black sand/wood, fine, trace of gravel, fill
6	ft	9	ft	Auger Cuttings		Black sand, medium to fine, 10% gravel, construction debris
9	ft	11	ft	18 inches	13-19-14-5	Black/brown sand, medium to fine, 5% gravel, fill, wet, construction debris, wood, brick, concrete
11	ft	14	ft	Auger Cuttings		Black sand, medium to fine, 10% gravel, wet
14	ft	15	ft	0 inches	13-45-32-50/3"	No Spoon, wet, Refusal at 15'

Moved Hole

0	ft	13	ft	Hand / Auger Cuttings		Black/brown sand, medium to fine, 20% gravel, construction debris, Refusal at 13'

DRILLER'S LOGS

BORING #: SB#1 (3rd hole)

Page# 1 of 1

DATE: September 11, 2006

SITE: Cooper Tank and Welding
252-254 Maspeth Ave., Brooklyn, NY

CONSULTANT: Gannett Flemings
Locust Valley, NY

DEPTH DRILLED: 15 feet

CORING DEVICE: 2" X 24"

HAMMER DROP: 30 inches

DRILLING METHOD: Hollow Stem Auger 4 1/4"

DEPTH TO WATER: 9 feet

HAMMER WEIGHT: 140 lbs.

WELL/BORING GROUTED : YES

DRILLER: C. Pedersen

HELPER: E. Bedell and S. Pederser

DEPTH FROM		DEPTH TO		RECOVERY	SAMPLE DESCRIPTION
0	ft	14	ft	Hand / Auger Cuttings	Brown/black sand, fine, 10% gravel, wet at 9', strong odor, construction debris
14	ft	15	ft	Auger Cuttings	Refusal at 15'

DRILLER'S LOGS

BORING #: SB#5

Page# 1 of 1

DATE: September 11, 2006
SITE: Cooper Tank and Welding
252-254 Maspeth Ave., Brooklyn, NY
CONSULTANT: Gannett Flemings
Locust Valley, NY

DEPTH DRILLED: 31 feet
CORING DEVICE: 2" X 24"
HAMMER DROP: 30 inches
DRILLING METHOD: Hollow Stem Auger 4 1/4"
DEPTH TO WATER: 9 feet
HAMMER WEIGHT: 140 lbs.
WELL/BORING GROUTED : NO

DRILLER: C. Pedersen
HELPER: E. Bedell and S. Pederser

DEPTH						
FROM		TO		RECOVERY	BLOWS / 6 INCHES	SAMPLE DESCRIPTION
0	ft	4	ft	Hand		Brown sand, coarse to medium to fine, 10% gravel, construction debris
4	ft	6	ft	12 inches	7-6-21-4	Brown sand/fill, medium to fine, 10% gravel, fill
6	ft	9	ft	Auger Cuttings		Brown/black sand/fill, medium to fine, 10% gravel, odor
9	ft	11	ft	13 inches	7-6-3-3	Black silty sand, fine, 5% gravel, fill, wet, odor
11	ft	14	ft	Auger Cuttings		Black silty sand, fine, wet, odor
14	ft	16	ft	12 inches	2-2-Push	Black silty sand/peat, fine, trace of gravel, (PT), wet, oil on top of peat
16	ft	19	ft	Auger Cuttings		Black silty sand, fine, trace of gravel, wet
19	ft	21	ft	8 inches	1-Push	Black silty sand/peat, fine, (PT), wet
21	ft	24	ft	Auger Cuttings		Black silty sand, fine, wet
24	ft	26	ft	12 inches	2-2-3-4	Black/grey silty sand peat, fine, (SM) / (PT), wet
26	ft	29	ft	Auger Cuttings		Black sitly sand, fine, wet
29	ft	31	ft	15 inches	7-12-16-19	Grey silty sand, fine, (SM), strong odor

DRILLER'S LOGS

BORING #: SB#3

Page# 1 of 1

DATE: September 11, 2006

SITE: Cooper Tank and Welding
252-254 Maspeth Ave., Brooklyn, NY

CONSULTANT: Gannett Flemings
Locust Valley, NY

DEPTH DRILLED: 31 feet

CORING DEVICE: 2" X 24"

HAMMER DROP: 30 inches

DRILLING METHOD: Hollow Stem Auger 4 1/4"

DEPTH TO WATER: 9 feet

HAMMER WEIGHT: 140 lbs.

WELL/BORING GROUTED : NO

DRILLER: C. Pedersen

HELPER: E. Bedell and S. Pedersen

DEPTH FROM		DEPTH TO		RECOVERY	BLOWS / 6 INCHES	SAMPLE DESCRIPTION
0	ft	4	ft	Hand		Black/brown sand, medium to fine, 20% gravel, construction debris, fill
4	ft	6	ft	11 inches	7-5-5-8	Brown/black sand, medium to fine, 10% gravel, fill, wood / construction debris
6	ft	9	ft	Auger Cuttings		Black sand, fine, 10% gravel, construction debris / wood
9	ft	11	ft	13 inches	7-7-8-12	Black sand, coarse to medium to fine, 5% gravel, wet, fill
11	ft	14	ft	Auger Cuttings		Black sand, coarse to medium to fine, 5% gravel, wet
14	ft	16	ft	0 inches	1-1-1-2	No Recovery
16	ft	19	ft	Auger Cuttings		Black silty sand, fine, wet, odor
19	ft	21	ft	4 inches	2-2-2-1	Black silty sand, fine, (SM), wet, odor
21	ft	24	ft	Auger Cuttings		Black silty sand, fine, wet, odor
24	ft	26	ft	8 inches	2-2-2-5	Black/brown/grey peat/silty sand/clay, fine, (PT) / (SM), wet, odor
26	ft	29	ft	Auger Cuttings		Black sand, fine, wet, odor
29	ft	31	ft	13 inches	4-6-9-10	Grey/brown sand, fine, (SW), wet, strong odor / visible product

DRILLER'S LOGS

BORING #: SB#4

Page# 1 of 1

DATE: September 12, 2006
SITE: Cooper Tank and Welding
252-254 Maspeth Ave., Brooklyn, NY

CONSULTANT: Gannett Flemings
Locust Valley, NY

DEPTH DRILLED: 31 feet
CORING DEVICE: 2" X 24"
HAMMER DROP: 30 inches
DRILLING METHOD: Hollow Stem Auger 4 1/4"

DEPTH TO WATER: 9 feet
HAMMER WEIGHT: 140 lbs.
WELL/BORING GROUTED : NO

DRILLER: C. Pedersen

HELPER: A. Smith and S. Pedersen

DEPTH FROM		DEPTH TO		RECOVERY	BLOWS / 6 INCHES	SAMPLE DESCRIPTION
0	ft	4	ft	Hand		Black/brown garbage/fill, medium to fine, 10% gravel
4	ft	6	ft	14 inches	5-4-8-32	Black garbage/wood/plastic/ , fill
6	ft	9	ft	Auger Cuttings		Black sand/garbage, fine
9	ft	11	ft	0 inches	12-7-9-7	No Recovery
11	ft	14	ft	Auger Cuttings		Black sand/garbage, fine
14	ft	16	ft	12 inches	8-6-3-2	Black coal/ash, fine, fill, wet, odor
16	ft	19	ft	Auger Cuttings		Black sand, medium, wet
19	ft	21	ft	2 inches	6-5-4-5	Black coal/ash, fine, fill, wet, odor
21	ft	24	ft	Auger Cuttings		Black silty sand, fine, wet, strong odor
24	ft	26	ft	15 inches	2-3-4-6	Black/grey peat/clay, fine, (PT) / (SC), wet, odor
26	ft	29	ft	Auger Cuttings		Black silty sand, fine, wet, strong odor
29	ft	31	ft	24 inches	5-6-6-8	Grey sand, fine, (SW), wet

Appendix C

Field Sampling and Analytical Plan (FSAP)

Prepared for:
National Grid
287 Maspeth Avenue, Brooklyn, New York 11211

Field Sampling and Analytical Plan

Equity Former MGP Site
Brooklyn, New York
NYSDEC Site No.: 224050
Order on Consent Index #: A2-0552-0606

AECOM, Inc.
March 2009
Project No.: 01765-076

AECOM

Prepared for:
National Grid
287 Maspeth Avenue, Brooklyn, New York 11211

Field Sampling and Analytical Plan

Equity Former MGP Site
Brooklyn, New York
NYSDEC Site No.: 224050
Order on Consent Index #: A2-0552-0606

_________________________________ **for**
Prepared By: Caryn DeJesus, Project Scientist

____
Reviewed By: Peter S. Cox, PG, Senior Geologist

AECOM, Inc.
March 2009
Project No.: 01765-076

AECOM

Contents

List of Appendices

List of Tables

List of Figures

1.0 Introduction

This Field Sampling and Analytical Plan (FSAP) presents the methods and procedures to be used for performing the Remedial Investigation (RI) at the Equity former manufactured gas plant (MGP) site located at 222, 252 and 254 Maspeth Avenue in Brooklyn, Kings County, New York.

1.1 Overview of field activities

The following field activities will be performed as part of the RI:

- Test Pit Excavation – Three test pits will be excavated at the site with approximately 6 subsurface soil samples collected.
- Surface Soil Sampling – Surface soil samples will be collected from 5 of the planned soil boring locations.
- Soil Boring Installation – A total of 14 soil borings are planned (including 6 boring locations converted for monitoring well pair or monitoring well triplet installation) with approximately 38 subsurface soil samples collected.
- Monitoring Well Installation and Groundwater Sampling – Approximately 15 monitoring wells will be installed, including 6 water table wells (est. screen from 5 to 15 feet bgs), 6 intermediate zone wells (est. screen from 20 to 30 feet bgs), and 3 deep zone wells (est. screen from 40 to 50 feet bgs). Groundwater samples will be collected from the 15 new wells and the existing onsite well. A groundwater grab sample will also be collected from one of the soil borings.
- Aquifer Testing – Slug tests will be performed at 3 well locations.
- Soil Vapor Intrusion/Indoor Air Evaluation – One co-located sub-slab soil vapor and indoor air sample will be collected in the scale house building at the transfer facility (a total of two samples). An ambient air sample will also be collected adjacent to the scale house building.
- Surveying – The locations and elevations of the RI data points and important site features will be surveyed.

2.0 General field guidelines

2.1 Site hazards

Potential on-site surface hazards, such as sharp objects, overhead power lines, energized areas, vehicular traffic, and building hazards will be identified prior to initiation of the fieldwork. Generally, potential hazards at the site will be identified during a site reconnaissance by the project team on the first day of the investigation field activities. Additional safety measures to be undertaken for the work performed during the investigation are addressed in the Site-Specific Health and Safety Plan (HASP).

2.2 Underground utilities

Underground utilities, including electric lines, gas lines, storm and sanitary sewers, and communication lines will be identified prior to initiation of drilling and other subsurface work. Underground utility location will be accomplished as follows:

- All RI data points will be flagged or marked out with white paint.
- Dig Safely of New York (800) 272-4480 will be contacted to initiate the locating activities. New York State law requires that Dig Safely of New York be notified at least two working days, and not more than 10 working days, before subsurface work is conducted.
- Companies with subsurface utilities present will locate and mark out all subsurface utility lines.
- Geophysical methods will be used to further evaluate the potential presence of underground utilities in the area of each proposed investigation location.
- Subsurface investigation locations will be hand cleared to five feet below ground surface (bgs) prior to advancing borings with mechanized equipment.

2.3 Field log books

All field activities will be carefully documented in field log books. Entries will be of sufficient detail that a complete daily record of significant events, observations, and measurements is developed. The field log book will provide a legal record of the activities conducted at the site. Accordingly:

- Field books will be assigned a unique identification number.
- Field books will be bound with consecutively numbered pages.
- Field books will be controlled by the Site Manager while fieldwork is in progress.
- Entries will be written with waterproof ink.
- Entries will be signed and dated at the conclusion of each day of fieldwork.
- Erroneous entries made while fieldwork is in progress will be corrected by the field person that made the entries. Corrections will be made by drawing a line through the error, entering the correct information, and initialing the correction.
- Corrections necessary after departing the field will be made by the person who entered the original information. Corrections will be made by drawing a line through the error, entering the correct information, and initialing and dating the time of the correction.

At a minimum, daily field book entries will include the following information:

- Location of field activity;
- Date and time of entry;
- Names and titles of field team members on site and site contacts;
- Names, titles of any site visitors, as well as the date and time entering and leaving the site;
- Weather information, for example: temperature, cloud coverage, wind speed, and direction;
- Purpose of field activity;
- A detailed description of the fieldwork conducted;
- Sample media (soil, sediment, groundwater, etc.);
- Sample collection method;
- Number and volume of sample(s) taken;
- Description of sampling point(s);
- Volume of groundwater removed before sampling;
- Preservatives used;
- Analytical parameters;
- Date and time of collection;
- Sample identification number(s);
- Sample distribution (e.g., laboratory);
- Field observations;
- All field measurements made, such as volatile organic compounds (VOCs) using a PID, pH, temperature, conductivity, water level, etc.;
- References for all maps and photographs of the sampling site(s); and
- Information pertaining to sample documentation such as:
  - Bottle lot numbers;
  - Dates and method of sample shipments;
  - Chain-of-custody (COC) record numbers; and
  - Federal Express air bill number.

3.0 Field equipment decontamination and management of investigation-derived residuals

3.1 Decontamination area

A temporary decontamination area lined with polyethylene sheeting will be constructed on site for use during decontamination of the drilling and test pitting equipment. Water collected from the decontamination of activities will be collected in 55-gallon drums or a bulk tank and managed as described in Section 3.3.

3.2 Equipment decontamination

The following procedures will be used to decontaminate equipment used during the RI activities.

- All drilling equipment including the backhoe, bucket, and drilling rig; augers; bits; rods; tools; split-spoon samplers; and tremie pipes will be cleaned with a high-pressure, hot water pressure washing unit between investigation locations.
- Tools, drill rods, and augers will be placed on polyethylene plastic sheets following pressure washing. Direct contact with the ground will be avoided.
- The back of the drill rig and all tools, augers, and rods will be decontaminated at the completion of the work and prior to leaving the site.

3.2.1 Sampling equipment decontamination

Suggested Materials:

- Potable water;
- Phosphate-free detergent (such as Alconox™);
- Distilled water;
- Aluminum foil;
- Plastic/polyethylene sheeting;
- Plastic buckets and brushes; and
- Personal protective equipment (PPE) in accordance with the HASP.

Procedures:

- Prior to sampling, all non-dedicated sampling equipment (bowls, spoons, interface probes, etc.) will be washed with potable water and a phosphate-free detergent (such as Alconox™). Decontamination may take place at the sampling location as long as all liquids are contained in pails, buckets, etc.
- The sampling equipment will then be rinsed with potable water followed by a de-ionized water rinse.
- Between rinses, equipment will be placed on polyethylene sheets or aluminum foil, if necessary. At no time will washed equipment be placed directly on the ground.
- Equipment will be wrapped in polyethylene plastic or aluminum foil for storage or transportation from the designated decontamination area to the sampling location.

3.3 Management of investigation-derived residuals

3.3.1 Decontamination fluids

Hot water pressure wash and decontamination fluids will be collected in 55-gallon drums or a bulk tank. The storage drums or tank will be labeled as “pending analysis – investigation-derived residual decon water” and temporarily stored in a plastic-lined containment area pending characterization and proper disposal.

3.3.2 Drill cuttings

Drill cuttings will be contained in 55-gallon drums. The drums will be labeled as “pending analysis – investigation-derived residual – soil from drill cuttings” and temporarily stored in a plastic-lined containment area pending characterization and proper disposal.

3.3.3 Development and purge water

All development and purge water will be contained in 55-gallon drums or a bulk tank. The drums or tank will be labeled as “pending analysis - investigation derived residual development and purge water” and temporarily stored in a plastic-lined containment area pending characterization and proper disposal.

3.3.4 Personal protective equipment

All PPE will be placed in 55-gallon drums or a lined cardboard yard box for proper disposal.

3.3.5 Dedicated sampling equipment

All dedicated groundwater sampling equipment will be placed in 55-gallon drums for disposal.

4.0 Soil sampling and well installation procedures

4.1 Introduction

Surface and subsurface investigation activities to be conducted at the Equity former MGP site will consist of exploratory test pit excavation; the advancement of soil borings; collection of soil samples; and the installation of monitoring wells. These activities will require the use of the following equipment and material:

- Field book;
- Project plans;
- PPE in accordance with the HASP;
- Stakes, flagging and marking paint;
- Plastic bags for soil screening samples;
- Stainless steel or disposable bowls and spoons/spatulas;
- Tape measure;
- Decontamination supplies;
- Water level indicator;
- Electronic oil/water interface probe
- Clear polyethylene disposable bailers (NAPL confirmation in wells);
- Polyethylene disposable bailers (well development);
- Polypropylene rope (well development);
- Waterra™ pump or other purge pump (well development);
- Submersible electric pump (well development);
- Stainless steel or glass beakers (well development);
- Turbidity meter (well development);
- Temperature, conductivity, pH meter (well development).
- PID with a 10.2 or 10.6 eV lamp;
- Camera;
- Clear tape, duct tape;
- Laboratory sample bottles;
- Coolers and ice; and
- Shipping supplies.

Procedures for these activities are described in the following sections.

4.2 Soil Sampling

4.2.1 Test pit excavation

Test pits will be excavated using a rubber-tired or track backhoe. In the event deep excavations are anticipated, a track hoe will be utilized. Locations of test pits are specified in the RI Work Plan, and will be finalized in the field, based on the location of existing underground utilities. If the prospective test pit location is covered by concrete, the area will be saw-cut prior to excavation. During test pit investigation activities, personnel will stand upwind of the excavation area to the extent possible. Air monitoring and odor mitigation (if necessary) will be conducted in accordance with the Community Air Monitoring Project (CAMP) and HASP. Test pit materials will be photographed and logged for future reference. Material removed from the test pit will be placed on polyethylene sheeting. The location and size of the test pit will be measured and described in the field logbook.

Visually clean soils, such as surface soils, will be segregated from soils that may be impacted. The visually clean soils will be used to cover the impacted soils/source materials when placed back in the excavation. At a minimum, the top 2 feet of backfilled soil will be visually clean. The test pit will be backfilled as soon as possible after completion and in general prior to the cessation of activities at the end of the day. Following restoration of the excavation, the test pit will be staked/marked to facilitate subsequent location by surveying crews.

4.2.2 Soil borings

Soil borings will be advanced and sampled with a combination of either rotosonic drilling methods equipped with 4-inch diameter sampling cores or hollow-stem augers (HSAs) equipped with 2-inch or 3-inch diameter split-spoon samplers. In some instances, a direct-push (Geoprobe™) drilling rig equipped with 4-foot long, 2-inch diameter Macro-Core™ samplers may be used if there are access limitations. All drilling equipment will be decontaminated between each boring in accordance with methods specified in Section 3.2.

All locations will be properly abandoned following the collection of samples. Boreholes for the direct-push borings will be filled with bentonite chips. All rotosonic or auger soil borings not used for the construction of monitoring wells will be tremie grouted to the ground surface following the completion of the soil sampling to prevent cross-contamination of permeable zones. The borings will be filled using a cement/bentonite grout mixture with the following specifications:

- Bentonite will be powdered sodium montmorillonite furnished in moisture resistant sacks without additives.
- Cement shall be a low-alkaline Portland cement, Type I in conformance with ASTM C-150 and without additives.
- The cement/bentonite grout mixture shall be to the following proportion:
  - Three sacks (94 pounds) of Type I Portland cement;
  - 14 pounds of granular bentonite (5% mix); and
  - 25 gallons of water.

The cement will be mechanically mixed, above ground, with water from a potable water source. Bentonite will be added to ensure a lump-free consistency. The mixture will be pumped through a tremie pipe as the drill is being withdrawn.

4.2.3 Geologic logging methods

The field geologist will log borehole geology and headspace measurements, and any other observations (e.g., odors, NAPL, soil staining, etc.), in the field book and the Drilling Record shown in Figure 4-1, or similar form. Soil samples retrieved from the borehole/test pit will be visually described for: 1) percent recovery, 2) soil type, 3) color, 4) moisture content, 5) texture, 6) grain size and shape, 7) consistency, 8) visible evidence of staining or other hydrocarbon-related impacts, and 9) any other relevant observations. The descriptions will be in accordance with the Unified Soil Classification System (USCS) and the American Society for Testing and Materials (ASTM) guidelines. Descriptions will also follow National Grid's internal field description guidance (KeySpan 2005) included in Appendix A.

Immediately after describing the core/test pit wall, a representative soil sample will be placed in a re-sealable plastic (e.g., "ziplock") bag filled approximately half full. The bag will be labeled with the boring number and interval sampled. After allowing the bagged soil to warm the tip of the sample probe attached to the PID will be inserted into the bag to measure the headspace for organic vapors. Soil remaining after completion of sample description, collection, and field screening will be disposed of properly.

4.2.4 Collection of samples

The number and frequency of samples to be collected from each boring and the associated analytical parameters are summarized on Table 3-1 in the RI Work Plan. The sample locations, descriptions, and depths will be recorded on the borelogs in the field book.

Samples for laboratory analyses will be collected directly from the sampling spoon (test pits), acetate liners, split-spoons, or core barrel and placed into appropriate containers (for VOC analyses); homogenized (for non-VOC analyses); and compacted to minimize headspace and pore space. Soil used for headspace analysis will not be used for laboratory VOC analysis. The sampling equipment will be decontaminated between samples in accordance with procedures described in Section 3. Soil remaining after completion of sample description, collection, and field screening will be disposed of properly.

The sample containers will be labeled, placed in a laboratory-supplied cooler, and packed with ice. The coolers will then be shipped to the laboratory for analysis. COC procedures will be followed as outlined in the QAPP. If there is a delay of sample shipment due to insufficient samples to warrant overnight delivery, the samples will be stored in a cool, secure place with sufficient ice to maintain a temperature of 4° C.

4.3 Monitoring well installation and development

The following methods will be used for drilling, installing, and developing the monitoring wells;

4.3.1 Overburden monitoring well installation

Figure 4-2 illustrates the construction details for a typical overburden monitoring well. Specific details regarding the depth and anticipated screened interval of proposed monitoring wells is provided in Table 3-1 of the RI Work Plan. In general, monitoring wells will be installed according to the following specifications:

- The monitoring well borings will be advanced with either 4.25-inch inner diameter (ID) hollow-stem augers or 4-inch ID flush casing.
- Wells will be constructed with 2-inch ID, threaded, flush-joint, Schedule 40 PVC casings and screens.
- Screens will be 10-feet long with 0.01-inch slot openings (or 0.02-inch, if NAPL present) with a 2-foot DNAPL sump at the base. Alternative screen lengths up to 20 feet long may be used at the discretion of the field geologist and with the approval of NYSDEC, based on site conditions.

- The annulus around the screens will be backfilled with clean silica sand having appropriate size (e.g., Morie No. 1) to a minimum height of 2 feet above the top of the screen. Auger flights or casing will be withdrawn as sand is poured in a manner that will minimize hole collapse and bridging.
- A bentonite chip seal with a minimum thickness of 2 feet will be placed above the sand pack. The bentonite seal will be hydrated with clean, potable water before placement of grout above the seal layer.
- The remainder of the annular space will be filled with cement-bentonite grout to ground surface. The grout will be allowed to set for a minimum of 24 hours before wells are developed.
- Each monitoring well will be a flush-mounted installation with a locking cap.
- The concrete seal or pad will be sloped to channel water away from the well, and be deep enough to remain stable during freezing and thawing of the ground.
- The top of the PVC well casing and ground surface will be marked and surveyed to 0.01 foot, and the elevation will be determined relative to a fixed benchmark or datum.
- The measuring point on all wells will be on the innermost PVC casing.
- Monitoring well construction details will be recorded in the field book and on the Construction Log shown in Figure 4-3, or similar form.

- If commercially available nested wells are considered to sample multiple aquifer depth zones in the same borehole, they will be discussed with NYSDEC prior to installation.

4.3.2 Monitoring well development

- After a minimum of 24 hours after installation, the monitoring wells will be developed by surging and pumping. Surging will be performed periodically, across the lengths of screen in 2-foot increments prior to, at interim periods of pumping, and immediately before the final pumping. Pumping methods may include using a centrifugal, submersible, or peristaltic pump and dedicated polyethylene tubing, using a Waterra™ positive displacement pump and dedicated polyethylene tubing, or other methods at the discretion of the field geologist.
- Water levels will be measured in each well to the nearest 0.01 foot prior to development.
- The wells will be developed until the water in the well is reasonably free of visible sediment (50 NTU if possible or until pH, temperature, and specific conductivity stabilize). A portable nephelometer will be used to make the turbidity measurement.
- Development water will be contained in and properly disposed of.
- Following development, wells will be allowed to recover for at least 14 days before groundwater is purged and sampled. All monitoring well development will be performed or overseen by a field geologist and recorded in the field book.

5.0 Groundwater sampling procedures

5.1 Introduction

Procedures for obtaining samples of groundwater are described in this section. Groundwater samples will be collected using low-flow, low-stress purge and sampling methods.

Procedures for conducting aquifer conductivity testing are also described in this section. Aquifer conductivity testing will be done by using slug or pneumatic testing methods.

5.2 Groundwater grab sample collection

A grab groundwater sample will be collected from proposed boring SB-14, located outside and downgradient of the former relief holder. A grab sample is proposed instead of installation of a monitoring well because of the heavy truck traffic on this parcel that would quickly damage or destroy the well. The sample will be collected using a direct-push screen point sampler positioned approximately 10 to 15 feet bgs consistent with the proposed shallow well depths. A sample of the water in the borehole will be collected using a peristaltic pump connected to the down-hole screen point sampler following the general methods described in Section 5.3. The sample will be analyzed for the analytical parameters listed in Table 3-1 in Section 3 of the RI Work Plan.

5.3 Groundwater sampling

The number and frequency of the samples that will be collected for laboratory analysis from each well and the analytical parameters are listed in Table 3-1 in Section 3 of the RI Work Plan.

The following method will be used to collect groundwater samples from monitoring wells:

5.3.1 Required Equipment and Supplies

- Field book
- Project plans
- PPE in accordance with the HASP
- Electronic oil/water interface probe
- Disposable polyethylene bailers and low-flow sampling pump
- Polypropylene rope
- Temperature, conductivity, and pH meter
- Turbidity meter
- Flow-through cell
- Decontamination supplies
- Peristaltic or submersible pump capable of achieving low-flow rates (i.e., 0.5 liters per minute or less)
- Plastic tubing
- Plastic sheeting
- PID
- Clear tape, duct tape

- Coolers and ice
- Laboratory sample bottles
- Federal Express labels

5.3.2 Groundwater sampling method

5.3.2.1 Purging

- Prior to sampling, the static water level and thickness of any light non-aqueous phase liquid (LNAPL) or dense non-aqueous phase liquid (DNAPL) will be measured to the nearest 0.01 foot from the surveyed well elevation mark on the top of the PVC casing with a decontaminated oil/water interface probe. NAPL thickness will be confirmed using a clear bailer or a weighted string. The measurement will be recorded in the field book.
- The probe will be decontaminated between uses.
- Groundwater from the well will be purged until field parameters stabilize, up to three well volumes are removed, or 1 hour of continuous purging is performed. Field parameters are considered to be stable when three consecutive readings are within the stabilization criteria for that parameter. The stabilization criteria are as follows: 10% or below 10 NTUs for turbidity, 3% for conductivity and temperature, 0.1 unit for pH, and 10 mV for ORP. Purging will be conducted using the low-flow sampling technique specified by the USEPA Region 1 in its guidance document entitled “Low-Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells”.
- The flow rate measurement will be approximately 0.5 liter per minute or less.
- If a well goes dry before the required volumes are removed, it will be allowed to recover, purged a second time until dry or the required parameters are met, and sampled when it recovers sufficiently, in accordance with low-flow sampling protocol.
- Purge water will be managed and disposed of properly.

5.3.2.2 Sampling

- Samples will be collected using dedicated 1/4- or 3/8-inch polyethylene tubing and/or bailers.
- Prior to filling the sample bottles, the temperature, pH, conductivity, dissolved oxygen, and oxidation reduction potential (ORP) will be measured within a flow-through cell. Turbidity will be measured with a hand-held turbidity meter. All measurements will be recorded in the field book.
- Three 40-ml VOA vials with Teflon™ lined septa and hydrochloric acid as a preservative will be filled for analysis of VOCs. The VOA vials will be filled to ensure that no bubbles are in the sample. Two 1-liter amber glass sample bottles for SVOC analysis and two 1-liter amber glass bottles for PCB analysis will then be filled followed by a 500 milliliter (mL) plastic bottle preserved with nitric acid for the total metals analysis. An opaque, 500 mL plastic bottle, with sodium hydroxide added for preservative to achieve a pH of >12 will then be filled for the analysis of free cyanide.
- The sample containers will be labeled, placed in a laboratory-supplied cooler, and packed on ice (to maintain a temperature of 4ºC). The cooler will be shipped overnight or delivered to the laboratory for analysis.
- COC procedures will be followed as outlined in the QAPP.
- Well sampling data will be recorded on the Groundwater Sampling Record shown in Figure 5-1, or similar form.

5.4 Aquifer conductivity testing

Following groundwater sampling (and assuming that soil conditions are conducive, i.e. they do not recover too rapidly), conductivity tests (slug tests) will be performed at three well locations providing good lateral and vertical coverage at the Site.

Prior to any slug testing, “trial” slug tests will be performed to evaluate probable groundwater recovery characteristics at the wells. During aquifer testing, a background continuous water level survey (at least 24 hours) may also be performed at select wells to identify the potential effect of tidal influence or from the on-site pumping well. If the pre-screening evaluations show that slug tests are a viable method to evaluate aquifer conductivity at the site, the slug tests will be performed by slug removal or pneumatic testing methods and timing the equilibration to the static water level.

5.4.1 Required materials

Well records (boring, well logs, and well construction diagrams), if available

- Data logger(s)
- Transducer(s) with cable wire length sufficient to reach target depth and to reach from the well to the computer used to download data.
- Computer - with appropriate software and cables to download data from data logger
- Slugs (if not using pneumatic methods) - diameter is dependent upon well diameter; the slug length is dependent on the length of the water column in the well but should provide a minimum of 1 foot displacement of the water column
- Nylon string
- Pneumatic pump (if not using a slug)
- Water level meter or steel tape
- PPE in accordance with the HASP
- Equipment decontamination supplies
- Field logbook/standardized forms

5.4.2 Aquifer conductivity testing method

The general steps to be performed during pneumatic slug testing are as follows:

- Static water level will be measured to the nearest 0.01 foot.
- A pressure transducer, attached to a data logger, will be placed into the well and the water level allowed to equilibrate to static conditions.
- The water column in the well will be pressurized while simultaneously measuring and recording water levels with the pressure transducer and data logger until the water level has equilibrated (“falling head test”).
- The pressure in the well will then be rapidly removed and the water level will be measured and recorded (“rising head test”).
- Slug testing data will be recorded on the Hydraulic Conductivity Test Log shown in Figure 5-2, or similar form.

The data from these tests will be analyzed by AQTESOLV® according to the Bouwer and Rice method (1989) or equivalent methods to calculate average hydraulic conductivity values for the aquifer.

6.0 Sub-slab soil vapor/indoor air/ambient air sampling

A soil vapor intrusion survey will be performed at the Site since MGP-related compounds have been detected in samples collected from the site. The work will be performed in accordance with *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (NYSDOH, 2006) and the USEPA document entitled *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils, Office of Solid Waste and Emergency Response* (USEPA, 2002). Methods also are consistent with National Grid's Draft Standard Operating Procedure for Soil Vapor Intrusion Evaluations at National Grid MGP Sites in New York State. The proposed sampling plan consists of the collection of a total of one pair of co-located sub-slab soil vapor and indoor air samples collected in the scale house building, plus one ambient outdoor air sample and one sample duplicate.

A chemical inventory check will be performed within the scale house building to document current conditions with the regard to the storage of chemicals. The ambient air sample, indoor air sample, and sub-slab vapor samples will be collected concurrently.

The methods to be used for the collection of the sub-slab soil vapor samples, indoor air sample, and the ambient air sample are summarized as follows:

- The sub-slab soil vapor sample will be collected from immediately below the concrete floor slab of the scale house building, in accordance with NYSDEC Guidance.
- The sub-slab sampling implant will be installed by drilling a ¾-inch diameter hole through the concrete slab and placing Teflon tubing in the hole. An air-tight seal will be created by filling the space between the tubing and the concrete with hydrated bentonite clay or modeling clay.
- The integrity of the seals around the implants will be confirmed by placing a helium-filled "shroud" around the insertion points. One to three volumes of air will be purged at a rate not to exceed 0.2 liters per minute, and helium concentrations will be monitored using a portable helium meter (MARK Model 9822 Helium Detector, or equivalent), which will be pre-calibrated by the supplier according to the manufacturer's instructions. If helium is detected in the purged air from the sampling assembly at concentrations greater than 5% of the concentration in the shroud, the probe will either be resealed, or replaced, as appropriate. Figure 6-1 illustrates the equipment to be used during the helium gas testing.
- The indoor air sample will be co-located with the sub-slab soil vapor sample, and will be collected from a minimum of two-feet above the floor surface.
- The ambient air sample will be collected at a location determined to be upwind of the scale house building at time of sampling.
- The sub-slab soil vapor, indoor air, and ambient air sample will be collected as an integrated (not grab) sample. A laboratory-provided flow controller fixed to a negative pressure vessel (a batch certified clean 6-liter Summa™ canister) will be used to collect the integrated sample. The controller will be a fixed-rate flow controller and the approximate length of the sample time will be set by the laboratory. The flow controllers are fitted with an internal filter to prevent particulates from entering the Summa^{TM} Canister.
- The sample time for the canisters will be set to 8 hours. The collection of the samples in 6-liter canisters over an approximate 8-hour interval will ensure that the samples are collected at the rate specified by the NYSDOH (less than 0.2 liters per minute).
- The sample tubing will be attached to the sampling canister with Swagelok™ fittings.
- Prior to sampling, the initial vacuum in each canister will be checked prior to use to ensure mechanical integrity of the canister. The initial vacuum should be approximately 30 inches mercury (in. Hg).

- To start sampling, the canister ball valve is opened and the initial time and vacuum is recorded.
- The final vacuum should be between 10 and 4 in. Hg, with a target of 5 in. of Hg. The initial and final vacuum in each canister will be recorded on the laboratory chain-of-custody form to be returned to the laboratory with the samples. The gauges provided with the canisters are accurate only for “indication of change”, and are not sufficiently accurate to provide gauge-to-gauge comparisons. The final vacuum will also be measured in the laboratory.
- Following collection of the sample, the canister will be sealed by closing the ball valve and fitting on the canister inlet. The inlet will then be capped with a laboratory-provided threaded end cap.
- Following collection of the sample, the PID will be used to obtain a final reading from the probe assembly or tubing for the concentration of total organic vapors.
- The site name, sample identification, canister number, canister certification number, sampler’s name, sample times and date will be recorded on a tag that is attached to each canister.
- The air and soil vapor samples will be shipped overnight to a NY ELAP-certified laboratory for analysis.
- After the laboratory sample is collected, the sub-slab soil vapor sampling assembly will be removed and the concrete coring holes will be sealed and patched to match the existing grade.

The field sampling team will record all information regarding the sampling on field forms. Copies of the field forms that will be used are included as Figures 6-2 and 6-3. Information that will be recorded will include the following: sample identification, date and times of sample collection, sampling depth, identity of the field personnel, sampling methods and equipment, purge volumes and rates, tracer test results, and any other relevant observations made during the sampling. A NYSDOH indoor air quality questionnaire and building inventory form will also be filled out prior to indoor air sampling (Figure 6-4).

7.0 Air monitoring

7.1 Introduction

Two types of air monitoring will be performed during the site investigation: 1) work zone monitoring for protection of the workers performing the site investigation, and 2) community air monitoring at the perimeter of the work site for protection of the local community.

7.2 Breathing zone air monitoring during drilling and sampling

Monitoring of air in the breathing zone within the work site will be conducted periodically during all drilling and sampling activities.

- An organic vapor meter (OVM) equipped with a PID will be used to monitor for VOCs or other organic vapors in the breathing zone and borehole, and to screen the samples.
- Additional air monitoring may be required as specified in the site-specific HASP.

The PID readings will be recorded in the field book and on the boring log during drilling activities. The procedure for the PID operation and calibration is included in the HASP. Note that equipment calibration will be performed as often as needed to account for changing conditions or instrument readings. The minimum frequency of calibration is specified in the HASP; more frequent calibration will be performed if spurious readings are observed or there are other problems with the instruments.

7.3 Community air monitoring

Community air monitoring requires real-time monitoring for VOCs, particulates (i.e., dust), and MGP-related odors at the downwind perimeter of each designated work area when certain activities are in progress at impacted sites. The community air monitoring is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels for community air monitoring require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, community air monitoring helps to confirm that work activities do not spread contamination off site through the air.

The procedures and action levels for community air monitoring are presented in the CAMP that has been prepared for the RI at the Equity former MGP Site.

8.0 Field instruments and calibration

All field analytical equipment will be calibrated immediately prior to each day's use and more frequently if required. The calibration procedures will conform to manufacturer's standard instructions. This calibration will ensure that the equipment is functioning within the allowable tolerances established by the manufacturer and required by the project. All instrument calibrations will be documented in the project field book and in an instrument calibration log. Records of all instrument calibration will be maintained by the Field Team Leader. Copies of all of the instrument manuals will be maintained on site by the Field Team Leader. All changes to instrumentation will be noted in the field log book.

The following field instruments will be used during the investigation:

- PID
- Particulate monitors
- Multi-parameter meter (pH, specific conductivity, dissolved oxygen, oxidation reduction, and temperature meter)
- Turbidity meter

8.1 Portable photo-ionization detector (PID)

- The photo-ionization detector will be equipped with either a 10.2 or 10.6 eV lamp. In this configuration, the PID is capable of ionizing and detecting compounds that account for over 70% of the VOCs on the USEPA Target Compound List.
- Calibration must be performed at the beginning of each day of use with a standard calibration gas having a concentration of 100 parts per million of isobutylene. If the unit experiences abnormal perturbation or erratic readings, more frequent or additional calibration will be required.
- All calibration data must be recorded in the project field notebooks.
- A battery check must be completed at the beginning and end of each working day.
- All changes to the PID will be noted in the field notes (such as lamp or filter cleaning or replacement or change of instrument).

8.2 Multi-parameter meter

- Calibration of the meter (YSI or equivalent) must be performed at the start of each day of use, and after very high or low readings as required by this Plan, according to manufacturer's instructions.
- National Institute of Standards and Technology - traceable standard calibration solutions will be used (where applicable). At least one backup meter will also be present on-site in the event of a malfunction.
- The calibration data must be recorded in the project field book each time it is performed.

8.3 Turbidity meter

- The turbidity meter must be checked at the start of each day of use according to manufacturer's instructions.

9.0 Analytical program

9.1 Environmental sample analyses

The laboratory samples for each media and the chemical analyses to be performed are summarized in Table 3-1 of the RI Work Plan.

9.1.1 Soil analyses

The majority of the soil samples will be analyzed for the following parameters:

- VOC compounds by USEPA Method 8260B;
- Semi-volatile organic compounds (SVOCs) by USEPA Method 8270C;
- RCRA 8 metals by USEPA Method 6000-7000 Series; and
- Free Cyanide with extraction by USEPA Method 9013A and analysis by ASTM Method D4282-02 (microdiffusion).

A subset (approximately 20%) of the total number of soil samples will be analyzed for an expanded list of the following parameters:

- Full TCL VOCs by USEPA Method 8260B;
- Full TCL SVOCs by USEPA Method 8270C;
- TAL Metals by USEPA Method 6000-7000 Series;
- Free Cyanide with extraction by USEPA Method 9013A and analysis by ASTM Method D4282-02 (microdiffusion);
- TCL Pesticides by USEPA Method 8081A;
- TCL Herbicides by USEPA Method 8151A; and
- PCBs (as Aroclors) by USEPA Method 8082.

9.1.2 Groundwater analyses

Similar to soils, the majority of groundwater samples will be analyzed for the following parameters:

- VOC compounds by USEPA Method 8260B;
- SVOC compounds by USEPA Method 8270C;
- TAL Metals by USEPA Method 6000-7000 Series; and
- Free Cyanide with extraction by USEPA Method 9013A and analysis by ASTM Method D4282-02 (microdiffusion).

A subset (approximately 20%) of the total number of groundwater samples will be analyzed for an expanded list of the following parameters:

- Full TCL VOCs by USEPA Method 8260B;
- Full TCL SVOCs by USEPA Method 8270C;
- TAL Metals by USEPA Method 6000-7000 Series;

- Free Cyanide with extraction by USEPA Method 9013A and analysis by ASTM Method D4282-02 (microdiffusion);
- TCL Pesticides by USEPA Method 8081A;
- TCL Herbicides by USEPA Method 8151A; and
- PCBs (as Aroclors) by USEPA Method 8082.

9.1.3 Sub-slab soil vapor/indoor air/ambient air analyses

The sub-slab soil vapor, indoor air, and ambient air samples will be analyzed for VOCs by USEPA Method TO-15 (including naphthalene). The soil vapor samples will also be analyzed for helium by ASTM Method ASTM D-1945. In addition to the standard TO-15 list of compounds, several additional compounds will be analyzed for, including: 1,2,3-trimethyl benzene, 1-methylnaphthalene, 2-methylnaphthalene, tetramethylbenzene, indene, indane, thiophene , 2-methylpentane, isopentane, and 2,3-dimethylpentane.

9.1.4 Waste characterization/profiling

Sufficient samples (a minimum of two) will be collected during the investigation and analyzed for full RCRA Hazardous Characteristics testing to determine if materials exhibiting hazardous characteristics may be present at the site and to support waste disposal profiling purposes. The analyses to be performed may include, but not be limited to, the following, depending on the medium and the selected disposal facility:

- Total Metals by USEPA Method 6010B (Mercury 7470A);
- Total Petroleum Hydrocarbons (DRO and GRO) by USEPA Method 8015 modified;
- PCBs by USEPA Method 8082;
- TCLP ZHE Extraction by USEPA Method 1311;
- TCLP VOC by USEPA Method 8260B;
- TCLP SVOC by USEPA Method 8270C;
- TCLP RCRA Metals by USEPA Method 6010B (Mercury 7470A);
- Corrosivity by USEPA Method 9045C;
- Ignitability/Flashpoint by USEPA Method 1010A;
- Reactive Cyanide and Reactive Sulfide by USEPA SW-846 Chapter 7, Sections 7.3.3.2 and 7.3.4.2; and
- Total Organic Halogens – USEPA Method 9020B.

9.2 Field quality control samples

Field quality control samples will be collected and analyzed to document the accuracy and precision of the samples. The quality control samples are described as follows:

- Trip Blank: One trip blank will accompany each shipment of samples for VOC analysis sent to the laboratory. The trip blank will be analyzed to test for any contaminants introduced while samples are being stored or transported to the laboratory. The trip blanks will be analyzed for volatiles only.
- Field Equipment Blanks: The purpose of the equipment blank is to detect any contamination from sampling equipment, cross-contamination from previously sampled locations, and contamination caused by conditions at sampling locations (e.g., airborne contaminants). One equipment blank will be

collected for every 20 samples per medium collected during sampling with non-disposable sampling equipment. The samples will be collected by pouring analyte-free water, prepared in the laboratory, over decontaminated sampling equipment and collecting it in sample jars. The blanks will be collected in the vicinity of a sample location. This field blank will be analyzed for VOCs, SVOCs, PCBs, free cyanide, and TAL metals.

- Field Duplicates: Field duplicates are collected to determine the precision of the soil samples collected. This is achieved by homogenizing soil (for non-VOC analyses) and splitting it evenly between separate sample jars. Duplicate samples will be collected and analyzed for VOC, SVOCs, PCBs, free cyanide, and TAL metals. The minimum required number of field duplicates is one for every 20 samples.
- Matrix Spikes, and Matrix Spike Duplicates: These samples are laboratory quality control samples and will be completed as part of the laboratory analytical batch quality control. These samples will be collected in the same manner as the field duplicates. Both the matrix spike and matrix spike duplicate will be collected at the same sample location.

9.3 Sample location numbering system

- Surface soil samples will be numbered consecutively beginning with SS1 (if applicable).
- Subsurface soil borings will be numbered consecutively beginning with SB1 (soil borings) or MW1 (monitoring well borings). Individual samples will also be designated with a depth code (see below).
- Monitoring wells will be numbered consecutively beginning with MW1.

9.4 Sample identification

Each sample will be given a unique alphanumeric identifier in accordance with the following classification system:

Table 9-1 Sample Identification

LL* Sample Type	NN* Sample Number	N-N Depth Code	LL QC Identifier

Sample Type:	GW – Boring Groundwater Grab SB – Soil Boring SS – Surface Soil AMB – Ambient Air	MW – Monitoring Well SV – Soil Vapor IA – Indoor Air
Sample Number:	Number referenced to a sample location map.	
Depth Code:	Depth in feet of sample interval (0-0.5, 2-4, 10-12, etc.)	
QC Identifier:	TB – Trip Blank EB – Equipment Blank	MS – Matrix Spike MSD–Matrix Spike Duplicate MB – Matrix Blank

* L = Letter
* N = Number

Field duplicate samples will be assigned identifiers that do not allow the laboratory to distinguish them as field duplicates. Each sample container will be labeled prior to packing for shipment. The sample identifier, site name, date and time of sampling, and analytical parameters will be written on the label in waterproof ink and recorded in the field book.

9.5 Chain-of-custody

- A Chain-of-Custody (COC) record (Figure 9-1 or similar) will accompany the sample containers during selection and preparation at the laboratory, during shipment to the field, and during return shipment to the laboratory.
- The COC will include the sample identities of each sample container and the analytical parameters for each, and will list the field personnel that collected the samples, preservation method, the project name and number, the name of the analytical laboratory that will receive the samples, and the method of sample shipment.
- If samples are split and sent to different laboratories, such as to a specialty laboratory for fingerprint analysis, a copy of the COC record will be sent with each sample shipment.
- The COC will be completed by field personnel as samples are collected and packed for shipment.
- Erroneous markings will be crossed-out with a single line and initialed by the author.
- The REMARKS space will be used to indicate if the sample is a matrix spike, matrix spike duplicate, or matrix duplicate.
- Trip and field blanks will be listed on separate rows.
- After the samples have been collected and sample information has been listed on the COC form, the method of shipment, the shipping cooler identification number(s), and the shipper airbill number will be entered on the COC.
- Finally, a member of the sampling team will write his/her signature, the date, and time on the first RELINQUISHED BY space.
- One copy of the COC will be retained by sampling personnel. The other copy and the original will be sealed in a plastic bag and taped inside the lid of the shipping cooler.
- Sample shipments will be refrigerated at 4˚C, typically by packing with bagged ice, to preserve the samples during shipment.
- After the shipping cooler is closed, custody seals provided by the laboratory will be affixed to the latch and across the front and back of the cooler lid, and signed by the person relinquishing the samples to the shipper.
- The seal will be covered with clear tape, and the cooler lid will be secured by wrapping with packing tape.
- The cooler will be relinquished to the shipper, typically an overnight carrier.
- The COC seal must be broken to open the container. Breakage of the seals before receipt at the laboratory may indicate tampering. If tampering is apparent, the laboratory will contact the Project Manager, and the samples will not be analyzed until directed to do so.
- The samples must be delivered to the laboratory within 48 hours of collection.

9.6 Sample documentation

The field team leader will retain a copy of the COC, and, in addition, the field team leader will ensure that the following information about each sample is recorded in the field book:

- Sample identifier;
- Identification of sampled media (e.g., soil, sediment, groundwater);
- Sample location with respect to known reference point;
- Physical description of sample location;
- Field measurements, (e.g., pH, temperature, conductivity, and water levels);
- Date and time of collection;
- Sample collection method;
- Volume of groundwater purged before sampling;
- Number of sample containers;
- Analytical parameters;
- Preservatives used; and
- Shipping information:
  - Dates and method of sample shipments;
  - COC Record numbers;
  - Federal Express Air Bill numbers; and
  - Sample recipient (e.g., laboratory name).

Figures

AECOM

Figure 4-1

Boring/Well ID:________________

Page _______ of ________

Project Name:	Drilling Company:	Surface Comp:
Project Number:	Drilling Method:	Grout (bgs):
Date Pre-Cleared:	Rig Type:	Filter Pack (bgs):
Date Started Drilling:	Casing ID:	Riser (bgs):
Date Finished Drilling:	Water Level While Drilling (bgs):	Well Screen (bgs):
Logged By:	Total Depth of Boring (bgs):	Sump (bgs):

(Note: bgs = below ground surface)

Depth Range	Blow per 6 Inch	Re-covery ft/ft	PID	Lab Sample ID	USCS	Geologic Description Method:________________________________

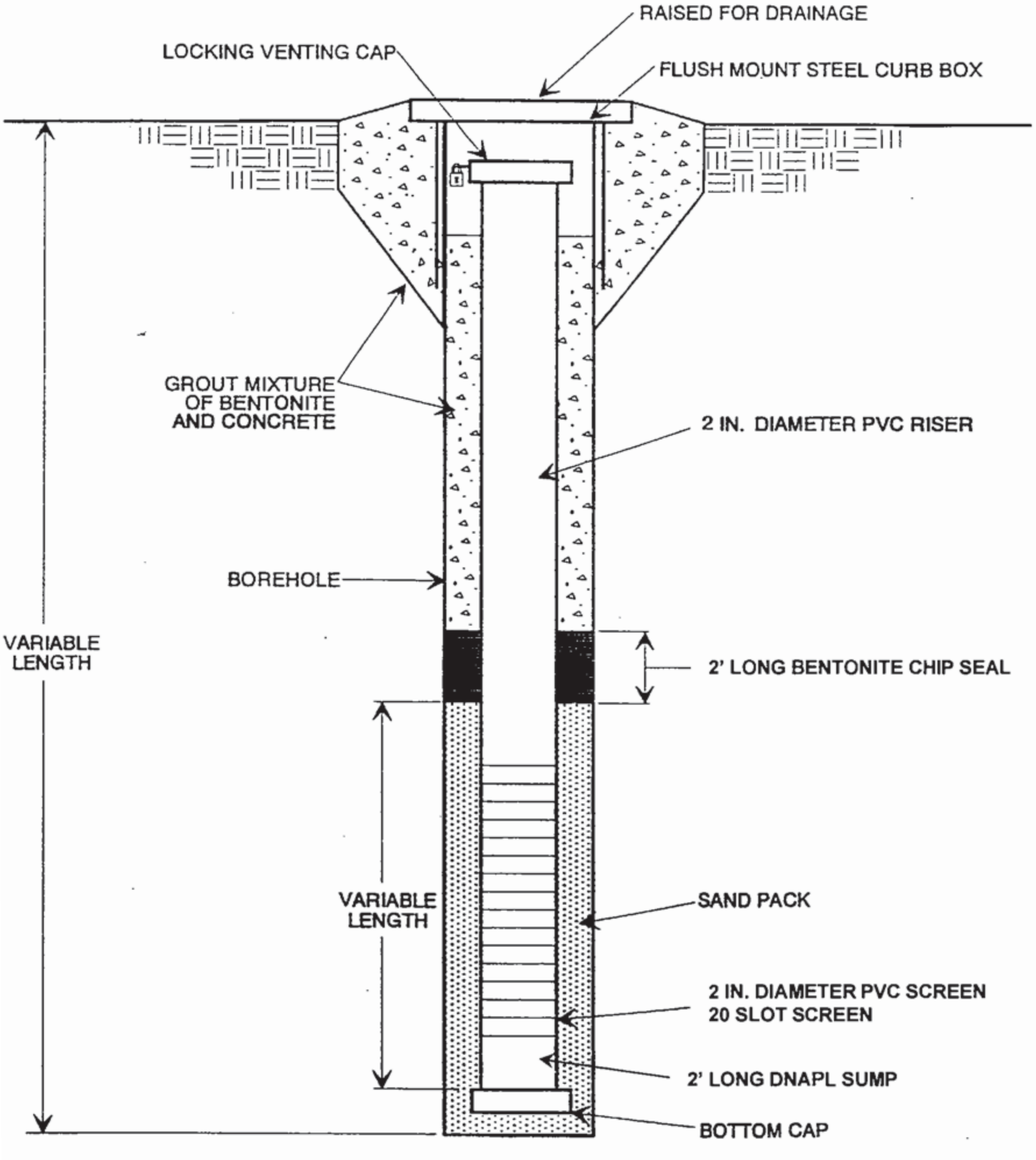
Lithology:

1.)	5.)
2.)	6.)
3.)	7.)
4.)	8.)

Comments:

Figure 4-2

TYPICAL MONITORING WELL CROSS SECTION



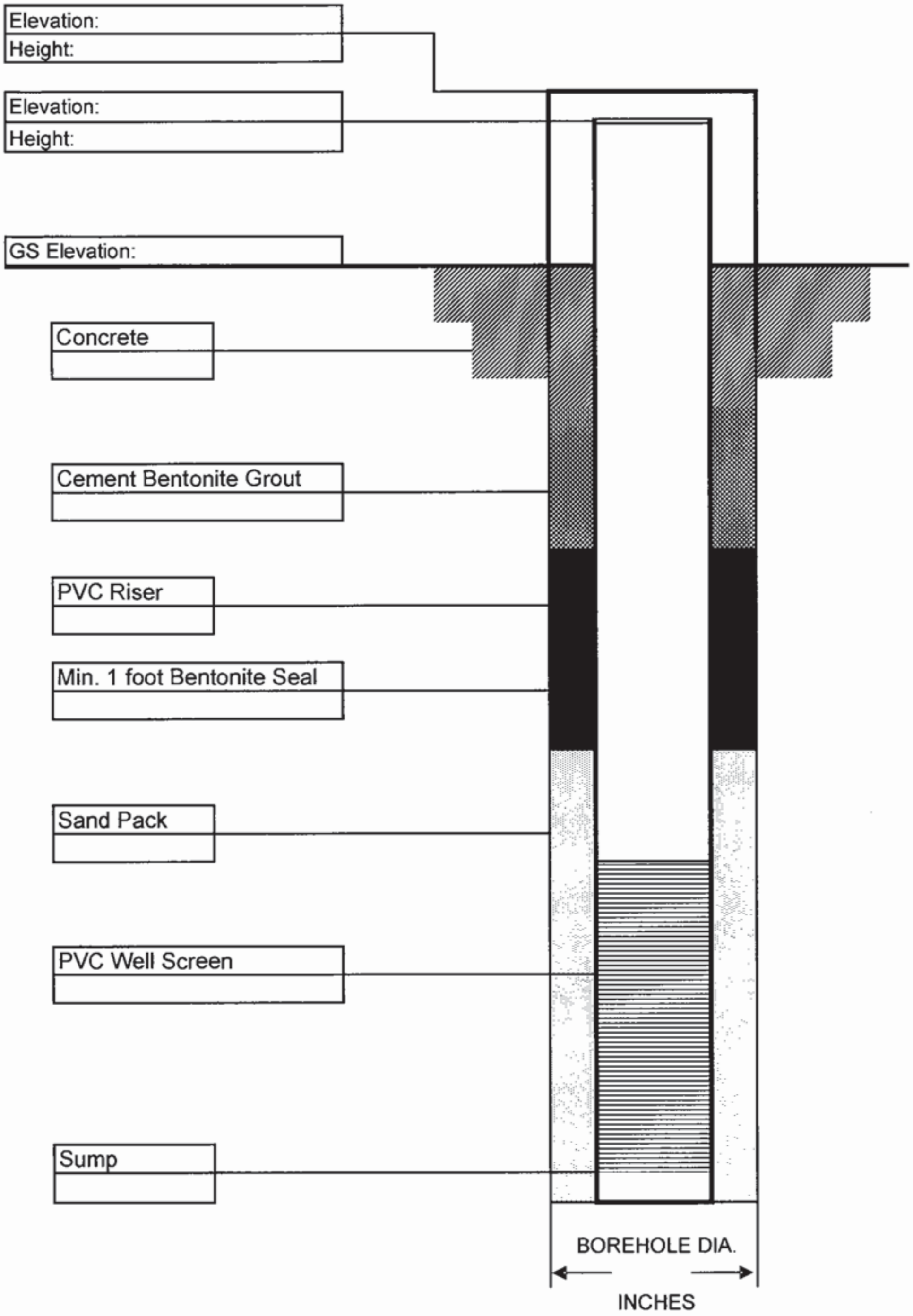
NOT TO SCALE

AECOM

Figure 4-3

WELL CONSTRUCTION LOG

WELL NO.:	FACILITY/SITE NAME:
PROJ. NO.:	CLIENT:
INSPECTOR:	DRILLING CONTACTOR:
DATE START:	DATE END:
LOCATION:	DRILLING METHOD:



PROTECTIVE CASING
Material:
Diameter:
Depth BGS:
Water Tight Seal:
Flushmount:
Weep hole:

GUARD POSTS
Material:
No. & Size:

SURFACE PAD
Composition:
Size:

RISER PIPE
Material:
Schedule:
Joint Type:
O-ring:
Diameter:

GROUT
Amt cement:
Amt bentonite:
Amt water:
Tremied:
Interval:

SEAL
Material:
Type:
Amount Used:
Interval:

FILTER PACK
Material:
Brand Name:
Amount Used:
Grain Size Dist.:
Interval:
Tremied:

SCREEN
Material:
Diameter:
Slot Size & Type:
Interval BGS:

SUMP
Interval BGS:
Bottom Cap:

BACKFILL PLUG
Material:
Setup/Hydration Time:

Figure 5-1

LOW-STRESS GROUND WATER SAMPLING FORM

Project Number: ______________________
Project Name: ______________________
Date: ______________________
Weather: ______________________

Well ID: ______________________
Sample ID: ______________________
Permit Number: ______________________
Well Condition: ______________________

PRE-PURGE INFORMATION

Protective Casing Diameter (inch): ______________
Inner Casing Diameter (inch): ______________
Inner Casing Material: ______________
Purge/Sample Method: ______________
Pump Intake Setting* (feet): ______________
PID/FID Reading of Well Headspace (ppm)
Before Cap Removal: ______________
After Cap Removal: ______________

Depth to Product* (feet): ______________
Initial Depth to Water* (feet): ______________
Product Thickness (feet): ______________
Depth to Top of Screen* (feet): ______________
Total Depth* (feet): ______________
Water Column (feet): ______________
Casing Volume (gal): ______________
DTW After Pump Installed: ______________

PURGING/SAMPLING INFORMATION

Time	Rate (gpm)	Gallons Purged	pH (SI Units)	Conductivity (µohms/cm)	Temp (°C)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	ORP (mv)	Depth to Water (ft)	Comments

Start Purge Date/Time: ______________
End Purge Date/Time: ______________
Total Volume Purged (gal): ______________
Depth to Water After Purge* (feet): ______________

Pre-Sample Depth to Water* (feet): ______________
Start Sample Date/Time: ______________
End Sample Date/Time: ______________
Sampler Names: ______________
____

Observations During Sampling (e.g. slow recharge, turbidity, odor, sheen, PID/FID readings):

____
____
____

AECOM

Figure 5-1

LOW-STRESS GROUND WATER SAMPLING FORM

Sampling Sequence:

Analysis	Method	Container	Number of Bottles	Preservative	Comments
Volatile Organics					
Base/neutrals					
TPH					
Total Metals					
Dissolved Metals					
Cyanide					
Sulfate and Chloride					
Nitrate and Ammonia					
Preserved Inorganics					
Non-Preserved Inorg					
Bacteria					

Complete those analyses that apply.

Stabilization Ranges
Dissolved Oxygen: +/- 10%
Turbidity: +/- 10%
Specific Conductance: +/- 3%
Temperature: +/-3 %
pH: +/- 0.1 unit
Redox Potential: +/- 10mv

* = Measured from top of inner casing
DTW - Depth to Water
Thermo Environmental Instruments Model 580s OVM w/ 10.2 ev bulb
Water Levels Measured with an Electronic Water Level Meter
Field parameter meter calibration results are recorded in the field book.

Figure 5-2

Well ID:

HYDRAULIC CONDUCTIVITY TEST LOG

Client: ____________ Date: ____________ Time: Start ______ am/pm
Project No: ____________ Finish ______ am/pm
Site Location: ____________
Weather Conds: ____________ Tester (s): ____________

1. WELL INFORMATION

a. Ref. Point Elev. ______
b. Static Depth to GW ______
c. Time of GW reading ______
d. Static GW Elev.(Ho) ______ (a-b)
e. Total Well Depth ______
f. Gravel Pack Diameter ______
g. Water Column Height ______ (e-b)
h. Casing Diameter ______
i. Screen Length ______
j. Geology of Screened Interval
______
______
______

2. SLUG INFORMATION (see back for volume calculation)

a. Slug Length ______
b. Slug Diameter ______

3. DATA COLLECTION

a. Method of Data Collection: Manual ______ (see back) Electronic ______

b.Transducer Information
Make ______
Model ______
Serial Number ______
Offset ______
Linearity ______
Scale ______
Coefficient ______
Diameter/Length ______

c. Data Logging Information
Make ______
Model ______
Serial Number ______
Mode ______ (linear or logarithmic)
Ref. Point (designation) ______ (TOC, Ground Surface, actual el
Ref. Point value (if elev.) ______
Positive numbers indicate increase or decrease in water level
(circle one)

4. HYDRAULIC TEST INFORMATION

Start Time	Test Type (rising, falling)	Electronic File Name	Comments	End Time

5. MANUAL WATER LEVEL READINGS (as needed for control)

Time	Location	Depth to Water	Time	Location	Depth to Water

Signature ____________ Date ____________

Q:\mw97\sops\7720\hydraulicconductivitytestlog.xls, page 1

Figure 5-2

6. EXPECTED WATER LEVEL DISPLACEMENT CALCULATION (optional)

a. Diameter of Slug (in) __________
b. Length of Slug (ft) __________
c. Volume/Linear ft of Slug (gal/ft from chart) __________
d. Volume of Slug (gal) __________ (b*c)
e. Diameter of Well (in) __________
f. Volume/Linear ft of Well (gal/ft from chart) __________
g. Expected Change in Water Level __________ (d/f)

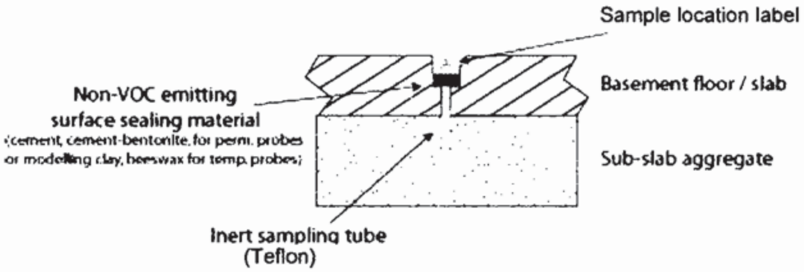
Volume / Linear Ft. of Pipe		
Diam. (in)	Gallon	Liter
0.25	0.0025	0.0097
0.375	0.0057	0.0217
0.5	0.0102	0.0386
0.75	0.0229	0.0869
1	0.0408	0.1544
1.25	0.0637	0.2413
1.5	0.0918	0.3475
2	0.1632	0.6178

Note: Water column height (1-g from front page) should be greater than transducer length plus length of slug, unless well geometry prohibits.

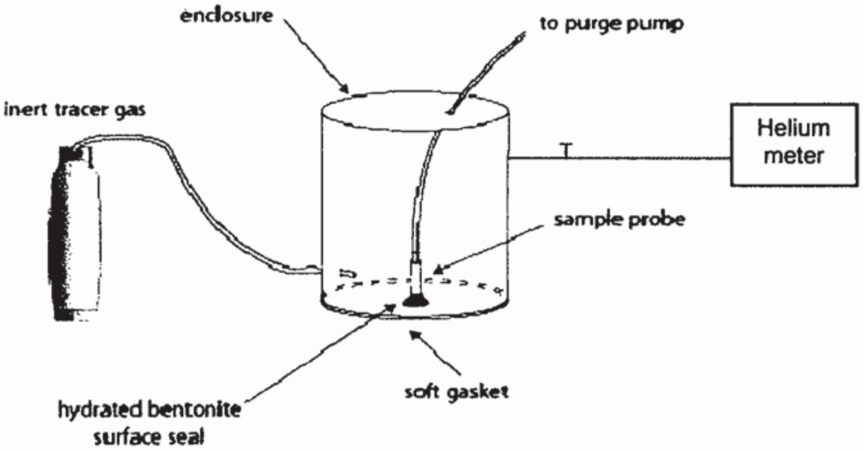
7. MANUAL WATER LEVEL MEASUREMENTS

Time (HH:MM)	Elapsed Time (min)	Depth to Water from TOC (ft)	Head, h (TOC - water depth)	h/Ho	Comments
	0			1	

q:\mw97\sops\7720\hydraulicconductivitytestlog.xls, page 2



TYPICAL SUB-SLAB SAMPLING PROBE SET UP



TYPICAL HELIUM TRACER TEST SET UP

AECOM

DATE. 9/5/06	DRWN. MLR

TYPICAL HELIUM TRACER AND SUB-SLAB

FIGURE 6-1

File: H:\18600\18600s057.dwg Layout: FIGURE 2-2 User: astenberg Plotted: Sep 19, 2005 4:00pm Xref's: 18600B001

FIGURE 6-2

Soil Gas Sampling Log Sheet
Sample ID_______________

Client:__________________
Project Name:____________
Project Number:__________
Date:____________
Sampler:_________________

Location:____
Canister Number:______________
Core Diameter:_____________ Core Material:________________
Core Length:_______________
Magnehelic Measurement: (Positive number indicates higher pressure in Core)________
Depth of Hand Auguring:____________
Soil Type:____
Method of Probe Advancement:____________________________
Depth of Probe Advancement:________ Length Probe is Retracted:_________

Time of Purging	PID Reading	Time of Purging	PID Reading
__________	__________	____________	__________
__________	__________	____________	__________
__________	__________	____________	__________
__________	__________	____________	__________
__________	__________	____________	__________

Starting Time:_____________ Starting Pressure:_________
Finish Time:_______________ Final Pressure:___________

Room Dimensions: Length:______ Width:_____ Height:_____

Comments:

Indoor Air/Ambient Air Sample
Sample ID____________________

Location:____
Sample ID:________________
Canister Number:___________
Starting Time:_____________ Starting Pressure:_________
Finish Time:_______________ Final Pressure:___________

Comments:

General Weather Conditions:____
Chemical Inventory:

FIGURE 6-3

FIELD SAMPLING DATA SHEET

(One Sample Per Data Sheet)

GENERAL:

PROJECT: ______________________ DATE(S) SAMPLED: ______________________

SITE: ______________________

LOCATION: ______________________ OPERATOR: ______________________

PID INSTRUMENT MODEL NO.: ______________ CALIBRATED BY: ______________

CGI INSTRUMENT MODEL NO.: ______________ CALIBRATED BY: ______________

TIME	**CGI READING (%)**	**PID READING (ppm)**	**DRAGER TUBE (ppm)**	**LOCATION**
1)				
2)				
3)				
4)				
5)				
6)				
7)				
8)				
9)				
10)				

CANISTER #	**LOCATION**	**TIME**

DATE/TIME	AMBIENT TEMPERATURE°	BAROMETRIC PRESSURE mm Hg	RELATIVE HUMIDITY %	COMMENTS

Data from meteorological station*

Figure 6-4

OSR-3

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL HEALTH ASSESSMENT
BUREAU OF TOXIC SUBSTANCE ASSESSMENT

INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY

This form must be completed for each residence involved in indoor air testing.

Preparer's Name ______________________________ Date Prepared ____________

Preparer's Affiliation ____________________________ Phone No. ____________

1. **OCCUPANT**

Name: ______________________________

Address: ____________________________

County: _____________________________

Home Phone No. ________ Office Phone No ________

2. **OWNER OR LANDLORD:**
(If different than occupant)

Name: ______________________________

Address: ____________________________

____

Phone No. ____________________________

A. <u>Building Construction Characteristics</u>

Type (circle appropriate responses): Single Family Multiple Dwelling Commercial Public School

Ranch
Raised Ranch
Split Level
Colonial
Mobile Home

2-Family
Duplex
Apartment House ________ Units
Number of floors ________
Other specify ______________

Residence Age ________ General Description of Building Construction Materials ______________

Is the building insulated? Yes / No How air tight is the building? ______________________

____

____

OSR-3 (continued)

B. Basement construction characteristics (circle all that apply):

1. Full basement, crawlspace, slab on grade, other ___________
2. Basement floor: concrete, dirt, other ________
3. Concrete floor: unsealed, painted, covered, with _________
4. Foundation walls: poured concrete, block, laid up stone, other ___________
5. The basement is: wet, damp, dry___ Sump present? y / n ______ Water in sump? y / n ______
6. The basement is: finished, unfinished ______________
7. Identify potential soil vapor entry points (e.g., cracks, utility ports, etc.)
   ____
8. Describe how air tight the basement is ____
   ____

C. HVAC (circle all that apply):

1. The type of heating system(s) used in this residence is/are:

   Hot Air Circulation | Heat Pump
   Hot Water Radiation | Unvented Kerosene Heater
   Steam Radiation | Wood stove
   Electric Baseboard | Other (specify)_________________________________

2. The type(s) of fuel(s) used is/are: Natural Gas, Fuel Oil, Electric, Wood, Coal Solar

   Other (specify)________________________________

3. Is the heating system's power plant located in the basement or another area? ________________
4. Is there air-conditioning? Yes / No Central Air or Window Units?

   Specify the location ______________________________

5. Are there air distribution ducts present? Yes / No
6. Describe the supply and cold air return duct work in the basement including whether there is a cold air return, the tightness of duct joints
   ____
   ____

Figure 6-4

OSR-3 (continued)

D. Potential Indoor Sources of Pollution

1. Has the house ever had a fire? Yes / No
2. Is there an attached garage? Yes / No
3. Is a vehicle normally parked in the garage? Yes / No
4. Is there a kerosene heater present? Yes / No
5. Is there a workshop, hobby or craft area in the residence? Yes / No
6. An inventory of all products used or stored in the home should be performed. Any products that contain volatile organic compounds or chemicals similar to the target compounds should be listed. The attached product inventory form should be used for this purpose.
7. Is there a kitchen exhaust fan? Yes / No Where is it vented? ____________________
8. Has the house ever been fumigated? If yes describe date, type and location of treatment.

____

E. Water and Sewage (Circle the appropriate response)

Source of Water

Public Water Drilled Well Driven Well Dug Well Other (Specify)______________

Water Well Specifications:

Well Diameter _______________________ Grouted or Ungrouted _________________

Well Depth _________________________ Type of Storage Tank _________________

Depth to Bedrock ____________________ Size of Storage Tank _________________

Feet of Casing _______________________ Describe type(s) of Treatment ___________

____

Water Quality:

Taste and/or odor problems? y / n If so, describe ____

How long has the taste and/or odor been present? _____________________________________

Sewage Disposal: Public Sewer Septic Tank Leach Field Other (Specify) _______________________

Distance from well to septic system___________Type of septic tank additive ____________________

Figure 6-4

OSR-3 (continued)

F. Plan View

Draw a plan view sketch for each floor of the residence and if applicable, indicate air sampling locations, possible indoor air pollution sources and PID meter readings.

Figure 6-4

OSR-3 (continued)

G. Potential Outdoor Sources of Pollution

Draw a sketch of the area surrounding the residence being sampled. If applicable, provide information on the spill location (if known), potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system if applicable, and a qualifying statement to help locate the site on a topographical map.

Figure 6-4

Household Products Inventory

Occupant / residence ______________________________

Investigator: ______________________ Date: ______________

Product description (dispenser, size, manufacturer …)	**VOC Ingredients**

FIGURE 9-1

Chain of Custody Record

№ 0476

AECOM

Project Name:	Project Number:
Send Report To:	Sampler (Print Name):
Address:	Sampler (Print Name):
	Shipment Method:
	Airbill Number:
Phone:	Laboratory Receiving:
Fax:	

Page ____ of ____

Purchase Order #: ____________

Field Sample ID	Sample Date	Sample Time	Sample Matrix	Number of Containers	Analysis Requested											Comments, Special Instructions, etc.	Lab Sample ID (to be completed by lab)

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Sample Custodian Remarks (Completed By Laboratory):

QA/QC Level	Turnaround	Sample Receipt	
		Total # Containers Received?	
Level I ☐	Routine ☐	COC Seals Present?	
Level II ☐	24 Hour ☐	COC Seals Intact?	
Level III ☐	1 Week ☐	Received Containers Intact?	
Other ☐	Other ______	Temperature?	

White: Lab Copy Yellow: PM Copy Pink: Field Copy Gold: PM/QA/QC Copy

Appendix A

Field Descriptions of Samples for Former Manufactured Gas Plant (MGP) Sites

Field Descriptions of Samples for Former Manufactured Gas Plant (MGP) Sites

Soil Sample Descriptions

It is important that descriptive qualifiers are consistently used to characterize degree and nature of contaminant impacts and visual-manual soil classification. The following presents some examples of descriptive qualifiers.

Soil Logging

- All soils are to be logged using the **Unified Soil Classification** (ASTM D 2488 field descriptions)
- **PID or FID** used to screen all soil samples (Jar Headspace method) – maximum readings should be recorded and included on the logs. PID/FID to be calibrated daily at a minimum
- **Moisture terms** are: Dry, Moist, and Wet
- **Color terms** - use geotechnical color charts - colors may be combined: e.g. red-brown. Color terms should be used to describe the “natural color” of the sample as opposed to staining caused by contamination (see below)
- **Log of each sample interval** should be prepared as follows:
  - **[Coarse Grained Example]** NARROWLY GRADED SAND (SP); mostly fine sand; <5% fines; red-brown, moist, environmental/depositional/geologic descriptions.
  - **[Fine Grained Example]** SANDY SILT (ML); heterogeneous till structure, nonplastic, ~30% fine to coarse, subangular sand; ~10% subangular fine gravel, max. size ~ 10 mm; brown; environmental/depositional/geologic descriptions.
- **Representativeness** – Soil logs should include particular notes if the field representative believes that there is a possibility the soil sample being described is not representative of the interval sampled.
- **Intervals for Description** – if using a 2’ (split spoon) or 4’ (Macro-core) long sampler – the field description should not necessarily be for the entire sample interval. It is important to look for, identify, and describe small-scale units and changes within each sample interval.

Description Of Contaminants

Visible Contamination Descriptors

- **Sheen** - iridescent petroleum-like sheen. Not to be used to describe a “bacterial sheen” which can be distinguished by its tendency to break up on the water surface at angles whereas petroleum sheen will be continuous and will not break up. A field test for sheen is to put a soil sample in a jar of water and shake the sample (jar shake test) , then observe the presence/absence of sheen on the surface of the water in the jar.
- **Stained** - used w/ color (i.e. black or brown stained) to indicate that the soil matrix is stained a color other than the natural (unimpacted) color of the soil.
- **Coated** - soil grains are coated with tar/free product – there is not sufficient free-phase material present to saturate the pore spaces.

- **Blebs** - observed discrete sphericals of tar/free product - but for the most part the soil matrix was not visibly contaminated or saturated. Typically this is residual product.
- **Saturated** - the entirety of the pore space for a sample is saturated with the tar/free product. Care should be taken to ensure that you're not observing water saturating the pore spaces if you use this term. Depending on viscosity, tar/free-phase saturated materials may freely drain from a soil sample.
- **Oil**. Used to characterize free and/or residual product that exhibits a distinct fuel oil or diesel fuel like odor; distinctly different from MGP-related odors/impacts.
- **Tar**. Used to describe free and/or residual product that exhibits a distinct "coal tar" type odor (e.g. naphthalene-like odor). Colors of product can be brown, black, reddish-brown, or gold.
- **Solid Tar**. Used to describe product that is solid or semi-solid phase. The magnitude of the observed solid tar should be described (e.g. discrete granules or a solid layer).
- **Purifier Material**. Purifier material is commonly brown/rust or blue/green wood chips or granular material. It is typically associated with a distinctive sulfur-like odor. Other colors may be present.

Olfactory Descriptors

Use terms such as " tar-like odor" or "naphthalene-like odor" or "fuel oil-like odor" that provide a qualitative description (opinion) as to the possible source of the odor.

Use modifiers such as strong, moderate, faint to indicate intensity of the observed odor.

DNAPL/LNAPL

A jar shake test should be performed to identify and determine whether observed tar/free-phase product is either denser or lighter than water. In addition, MGP residues can include both light and dense phases - this test can help determine if both light and dense phase materials are present at a particular location.

Viscosity of Free-Phase Product

If free-phase product/tar is present a qualitative description of viscosity should be made. Descriptors such as:

- Highly viscous (e.g. taffy-like)
- Viscous (e.g. No. 6 fuel oil or bunker crude like)
- Low viscosity (e.g. No. 2 fuel oil like)

Groundwater Sampling Observations

Any observations of sheen, blebs, free-phase product/tar, staining or coating of the sampling equipment, odor, etc. that made during sampling of groundwater are to be included in the groundwater sample collection log.

Appendix D

Quality Assurance Project Plan (QAPP)

Prepared for:
National Grid
Brooklyn, New York

Quality Assurance Project Plan

Equity Former MGP Site
Brooklyn, New York
NYSDEC Site No.: 224050
Order on Consent Index #: A2-0552-0606

AECOM, Inc.
March 2009
Document No.: 01765-076

Prepared for:
National Grid
Brooklyn, New York

Quality Assurance Project Plan

Equity Former MGP Site
Brooklyn, New York
NYSDEC Site No.: 224050
Order on Consent Index #: A2-0552-0606

Prepared By Jen Atkins

Reviewed By Greg Malzone

AECOM, Inc.
March 2009
Document No.: 01765-076

Contents

List of Tables

List of Figures

List of Acronyms

%R	Percent recovery
ASP	Analytical services program
ASTM	American Society for Testing Materials
CAMP	Community Air Monitoring Plan
CAR	Corrective Action Request
CLP	Contract laboratory program
COC	Chain of custody
CRDLs	Contract Required Detection Limits
CRQLs	Contract Required Quantitation Limits
DQOs	Data quality objectives
DUSR	Data Usability Summary Report
EDD	Electronic data deliverable
ELAP	Environmental Laboratory Accreditation Program
GC/MS	Gas Chromatography/Mass Spectroscopy
HASP	Health and safety plan
LIMS	Laboratory information management system
MDLs	Method detection limits
MGP	Manufactured gas plant
MS	Matrix spike
MSD	Matrix spike duplicate
NIST	National Institute of Standards and Technology
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PA	Preliminary assessment
PID	Photoionization detector
PQL	Practical quantitation limit
QA	Quality assurance
QAO	Quality assurance officer
QAPP	Quality Assurance Project Plan
QC	Quality control
RPD	Relative percent difference
RI	Remedial Investigation
SOPs	Standard operating procedures
SVOA	Semivolatile organic analysis
SVOCs	Semivolatile organic compounds
TCLP	Toxicity characteristics leaching procedure
USEPA	United States Environmental Protection Agency
VOA	Volatile organic analysis
VOCs	Volatile organic compounds

1.0 Introduction

This Quality Assurance Project Plan (QAPP) details the protocols and procedures that will be followed during the proposed Remedial Investigation (RI) that will occur at the Equity former manufactured gas plant (MGP) site. The purpose of these protocols and procedures is to ensure that all project activities will be performed in a manner consistent with the data quality objectives (DQOs) established for the project and all data collected in support of the RI are precise, accurate, representative, comparable, and complete.

1.1 Project description

The Equity former MGP site is located at 222, 252 and 254 Maspeth Avenue in Brooklyn, Kings County, New York 11211. The site is approximately two acres in size and consists of three parcels. The former MGP was operated by Brooklyn Union Gas Company (BUG), a predecessor company to National Grid, from about 1903 until approximately 1933. BUG maintained ownership of the property until approximately 1951. Subsequently, the site was used for storage (pipe and valves) for the period of 1965 to 1981, and appears to be vacant during the period of 1986 to 1988. The site appears to have been used as a solid waste transfer facility during the period of 1990 to the present under the ownership of various parties. The Greenpoint Energy Center, which is the location of the Greenpoint former MGP site, is located north of the Equity former MGP across Maspeth Avenue. The current land use of the site and surrounding areas includes industrial, manufacturing, transportation, utility and vacant land. The Equity former MGP is located approximately 900 feet north of English Kills which flows into Newtown Creek.

A Phase I Environmental Site Assessment (ESA) was conducted for the Cooper Tank Transfer Facility at 254 Maspeth Avenue (the eastern-most parcel of the site) in November 2004 (Gannett Fleming Engineers, 2004). Surficial soil staining was observed and a Phase II investigation was recommended to identify potential soil and groundwater impacts. A Phase II Environmental Site Investigation was subsequently conducted for 254 Maspeth Avenue in September 2004 (EEA, Inc., 2004). Six soil borings were advanced to approximately 12 feet below ground surface (feet bgs) and soils samples were collected. VOCs, SVOCs, and metals were detected in the soil samples.

A Phase II Environmental Site Investigation was conducted for 252 Maspeth Avenue (the central parcel of the site) in March 2005 (Gannett Fleming Engineers, 2005). Four borings were installed to depths of approximately 10 to 12 feet bgs and the borings were converted into temporary monitoring wells. Groundwater was encountered at approximately 7 to 9 feet bgs. Odors and stains were observed in the soils from these borings. VOCs, SVOCs and metals were detected in soil and groundwater.

Currently, the site is being investigated in accordance with Administrative Consent Order Index # A2-0552-0606 (as modified) between KeySpan (now National Grid) and the NYSDEC. The RI is designed to identify and investigate any potential areas of concern at the site.

1.2 Scope of work

The scope of work at the Site is described in the RI Work Plan dated March 2009. The following tasks will be performed as a part of the RI.

- Pre-investigation coordination (i.e., access agreements)
- Underground utility clearance
- Mobilization
- Surface/shallow subsurface soil sampling and analysis

- Soil boring advancement, subsurface soil sampling and analysis
- Excavation of test pits, soil sampling and analysis
- Monitoring well installation and development
- Groundwater sampling and analysis
- Aquifer slug testing at selected locations
- Sub-slab soil vapor, indoor air, and ambient air sampling and analysis
- Investigation-derived waste management
- Community air monitoring
- Site survey
- Data validation evaluation, and reporting

1.3 Data quality objectives

DQOs are qualitative and quantitative statements to ensure that data of known and appropriate quality are obtained during sampling and analysis activities. Data developed during the RI will be used to achieve the overall objectives of the project. These objectives are to:

- Identify and investigate potential MGP impacts at the Site and offsite. Specifically, to delineate the areal extent of MGP impacts, determine the surface and subsurface characteristics of the Site, identify sources of contamination, migration pathways, and potential human or ecological receptors at the Site and offsite. The DQOs for delineation data include the following items.
    - Data will identify MGP-related constituents in soil and groundwater.
    - Data will be collected using a systematic method to delineate the perimeter of MGP-related impacts.
    - Analytical methods will be of sufficient sensitivity that method detection limits (MDLs) and practical quantitation limits (PQLs) measure constituent concentrations at or below constituent NYSDEC guidance values.
- Perform a soil vapor and indoor air survey in accordance with New York State Department of Health (NYSDOH) Guidance for Evaluating Soil Vapor Intrusion in the State of New York. The DQOs for vapor intrusion data include the following items.
    - Data will identify MGP-related constituents in soil vapor and indoor air (if present).
    - Data will be collected using a systematic method to determine whether vapor intrusion of MGP-related impacts is occurring.
    - Analytical methods will be of sufficient sensitivity to meet a minimum PQL of at most one part per billion.

1.3.1 Data quality levels

There are five analytical levels of data quality which may be used to accomplish these Site objectives. They are typically designated as follows:

- Level I – Field screening or analysis using portable instruments, calibrated to non-compound specific standards
- Level II – Field analysis using portable instruments, calibrated to specific compounds

- Level III – Non-Contract Laboratory Program (CLP/ASP) laboratory methods
- Level IV – ASP-CLP Routine Analytical Services methods
- Level V – Non-standard analytical methods.

To meet the specific objectives of this project, Levels I and III data quality levels will be utilized.

1.3.1.1 Level I – field screening methods

These tests, which are quantitative and/or semi-quantitative, are classified as field screening evaluations, even though they typically are not used for site characterization purposes.

Soil and soil headspace screening will be conducted using a photoionization detector (PID) to determine the soil boring interval(s) that will be submitted for analytical laboratory analysis.

In addition, as part of the Health and Safety Plan (HASP) and the Community Air Monitoring Plan (CAMP), worker safety and ambient air quality may be monitored using one or more of a variety of field screening tests. Applicable equipment may include but not be limited to: a PID, Draeger tubes, and personal monitors to test for volatile organic vapors, or a combustible gas indicator to test for explosive potential. Worker health and safety requirements are specified in the HASP.

1.3.1.2 Level III – Non-Contract Laboratory Program (CLP/ASP) laboratory methods

Samples will be analyzed according to the required United States Environmental Protection Agency (USEPA) SW-846, ASTM, and USEPA Compendium air methods described in the most recent editions of the USEPA reference methods (see section 7.0). Data will be analyzed using Level III Non-Contract Laboratory Program (CLP/ASP) laboratory methods; however, the laboratory will provide Level IV data packages for all data including hazardous waste classification data. Laboratory data will be reported in the New York State Analytical Services Program (ASP) Category B deliverables format. This level of data quality will ensure the generation of legally and technically defensible data for project use. The laboratory performing the analysis of samples will be certified for the specific parameters pursuant to NYSDOH ELAP Certification program.

2.0 Project organization

This RI will be completed for National Grid by AECOM Environment, an environmental contractor (the Contractor), who will arrange for the drilling and analytical services and provide an onsite field representative to perform the soil logging, soil sampling, surveying, and groundwater sampling. The Contractor will also perform the data interpretation and reporting tasks.

Key contacts for this project are as follows:

National Grid Project Manager
Donald Campbell, P.G.
Telephone: (718) 963-5453
Fax: (718) 963-5611

Contractor Project Manager (AECOM Environment)
Peter Cox, P.G.
Telephone: (978) 589-3000
Fax: (978) 589-3705

Laboratory Representative
CHEMTECH
Joe Dockery
Telephone: (908) 789-8900

Laboratory Quality Assurance Officer (QAO)
CHEMTECH
Krupa Dubey
Telephone: (908) 789-8900

3.0 Quality assurance/quality control objectives for measurement of data

3.1 Introduction

The quality assurance and quality control (QA/QC) objectives for all measurement data include precision, accuracy, representativeness, completeness, and comparability. These objectives are defined in following subsections. They are formulated to meet the requirements of the USEPA SW-846. The analytical methods and their Contract Required Quantitation Limits (CRQLs) and Contract Required Detection Limits (CRDLs) are provided in Section 7.

3.2 Precision

Precision is an expression of the reproducibility of measurements of the same parameter under a given set of conditions. Specifically, it is a quantitative measurement of the variability of a group of measurements compared to their average value (USEPA, 1987). Precision is usually stated in terms of standard deviation, but other estimates such as the coefficient of variation (relative standard deviation), range (maximum value minus minimum value), relative range, and relative percent difference (RPD) are common.

For this project, field sampling precision will be determined by analyzing coded duplicate samples (labeled so that the laboratory does not recognize them as duplicates) for the same parameters, and then, during data validation (Section 8), calculating the RPD for field duplicate sample results.

Analytical precision will be determined by the laboratory by calculating the RPD for the results of the analysis of internal QC duplicates and matrix spike duplicates. The formula for calculating RPD is as follows:

$$RPD = \frac{|V1 - V2|}{(V1 + V2)/2} \times 100$$

where:

RPD= Relative Percent Difference

V1, V2 = The two values to be compared

|V1 - V2| = The absolute value of the difference between the two values

(V1 + V2)/2 = The average of the two values

For soil samples, the data quality objectives for analytical precision, calculated as the RPD between duplicate analyses, is presented in Table 3-1.

The same is presented for groundwater in Table 3-2 and air samples in Table 3-3.

Table 3-1 Quality Control Limits For Soil Samples

Analytical	Analytical Method (a)	Matrix Spike (MS) Compounds	Laboratory Accuracy and Precision			Surrogate Compounds	Surrogate Recovery (%)
			MS/MSD (b) Recovery (%)	MS/MSD RPD (c) (%)	LCS (d) Recovery (%)		
VOCs (e)	8260B	1,1-Dichloroethane	77-139	20	50-150	Toluene-d8	63-124
		Trichloroethene	81-129	20	82-113	Bromofluorobenzene	50-133
		Benzene	83-135	20	81-118	1,2-Dichloroethane-d4	54-142
		Toluene	79-140	20	81-115		
		Chlorobenzene	80-141	20	83-114		
SVOCs (f)	8270C	Phenol	42-105	20	48-96	Nitrobenzene-d5	28-110
		2-Chlorophenol	52-107	20	54-92	2-Fluorobiphenyl	32-109
		1,4-Dichlorobenzene	40-101	20	57-86	Terphenyl-d14	30-150
		N-Nitroso-di-n-propylamine	63-97	20	49-99	Phenol-d5	29-104
		1,2,4-Trichlorobenzene	42-98	20	57-93	2-Fluorophenol	23-104
		4-Chloro-3-methylphenol	60-100	20	57-92	2,4,6-Tribromophenol	24-112
		Acenaphthene	65-100	20	52-97		
		4-Nitrophenol	45-95	20	24-120		
		2,4-Dinitrotoluene	56-104	20	61-101		
		Pentachlorophenol	33-111	20	32-102		
		Pyrene	49-120	20	53-103		
PCBs (as Aroclors)	8082	Aroclor-1016	55-128	20	67-121	TCMX	44-141
		Aroclor-1260	58-140	20	78-128	DCB	34-145
Pesticides	8081A	4,4'-DDD	35-165	20	86-133	TCMX	30-158
		4,4'-DDE	50-144	20	80-130	DCB	30-161
		4,4'-DDT	23-170	20	72-141		
		Aldrin	57-145	20	84-133		
		alpha-BHC	37-154	20	81-136		
		beta-BHC	51-161	20	83-132		
		delta-BHC	43-159	20	77-131		
		gamma-BHC (Lindane)	48-159	20	83-135		
		alpha-Chlordane	44-156	20	88-132		
		gamma-Chlordane	61-147	20	87-135		

Analytical	Analytical Method [a]	Matrix Spike (MS) Compounds	Laboratory Accuracy and Precision			Surrogate Compounds	Surrogate Recovery (%)
			MS/MSD [b] Recovery (%)	MS/MSD RPD [c] (%)	LCS [d] Recovery (%)		
Pesticides (cont.)	8081A	Dieldrin	41-154	20	81-129		
		Endosulfan II	52-151	20	85-132		
		Endosulfan sulfate	32-162	20	76-135		
		Endrin	31-165	20	82-134		
		Endrin aldehyde	48-152	20	85-134		
		Endrin ketone	70-141	20	87-132		
		Heptachlor	41-155	20	85-132		
		Heptachlor epoxide	44-160	20	86-132		
		Methoxychlor	44-163	20	82-137		
		Toxaphene	50-150	20	50-150		
Herbicides	8151A	2,4,5-TP (Silvex)	47-128	20	47-128	2,4-DCAA	50-130
		2,4,5-T	72-130	20	72-130		
		2,4-D	55-122	20	55-122		
		2,4-DB	75-125	20	75-125		
Inorganics [h]	6010B	Inorganic Analyte	75-125 [i]	20 [j]	80-120	NA	NA
	6020		75-125 [i]	20 [j]	80-120	NA	NA
	7471A		75-125 [i]	20 [j]	80-120	NA	NA
	ASTM D4282-02 (free cyanide)		75-125 [i]	20 [j]	90-110	NA	NA

Notes

(a) Analytical Methods: USEPA SW-846, 3rd edition, Revision 1, November 1990, any subsequent revisions shall supersede this information

(b) Matrix Spike/Matrix Spike Duplicate

(c) Relative Percent Difference

(d) Laboratory Control Sample

(e) Target Compound List Volatile Organic Compounds

(f) Target Compound List Semivolatile Organic Compounds

(g) Limits are advisory only

(h) Target Analyte List Inorganics (metals and cyanide)

(i) Matrix spike only

(j) Laboratory duplicate RPD

NA - Not Applicable

Table 3-2 Quality Control Limits for Water Samples

Analytical	Analytical Method [(a)]	Matrix Spike Compounds	Laboratory Accuracy and Precision			Surrogate Compounds	Surrogate Recovery (%)
			MS/MSD [(b)] Recovery (%)	MS/MSD RPD [(c)] (%)	LCS [(d)] Recovery (%)		
VOCs [(e)]	8260B	1,1-Dichloroethane	55-139	20	55-139	Toluene-d8	83-117
		Trichloroethene	55-138	20	61-138	Bromofluorobenzene	74-123
		Benzene	85-121	20	66-125	1,2-Dichloroethane-d4	75-124
		Toluene	83-123	20	68-121		
		Chlorobenzene	85-119	20	70-122		
SVOCs [(f)]	8270C	Phenol	11-48	20	10-100	Nitrobenzene-d5	30-120
		2-Chlorophenol	35-99	20	41-91	2-Fluorobiphenyl	35-111
		1,4-Dichlorobenzene	49-88	20	53-91	Terphenyl-d14	26-135
		N-Nitroso-di-n-propylamine	55-127	20	54-116	Phenol-d5	30-77
		1,2,4-Trichlorobenzene	62-105	20	59-104	2-Fluorophenol	30-78
		4-Chloro-3-methylphenol	12-125	20	46-97	2,4,6-Tribromophenol	27-118
		Acenaphthene	68-99	20	63-101		
		4-Nitrophenol	10-89	20	10-78		
		2,4-Dinitrotoluene	61-99	20	67-106		
		Pentachlorophenol	39-107	20	33-100		
		Pyrene	72-112	20	64-108		
PCBs (as Aroclors)	8082	Aroclor-1016	30-150	20	65-126	TCMX	42-133
		Aroclor-1260	36-147	20	76-131	DCB	30-141
Pesticides	8081A	4,4'-DDD	55-177	20	86-134	TCMX	30-150
		4,4'-DDE	54-126	20	89-126	DCB	45-131
		4,4'-DDT	55-160	20	74-138		
		Aldrin	57-167	20	83-131		
		alpha-BHC	63-178	20	87-136		
		beta-BHC	50-150	20	88-131		
		delta-BHC	98-131	20	78-128		
		gamma-BHC (Lindane)	89-138	20	86-133		
		alpha-Chlordane	69-144	20	88-131		
		gamma-Chlordane	76-126	20	92-133		

Analytical	Analytical Method [(a)]	Matrix Spike Compounds	Laboratory Accuracy and Precision			Surrogate Compounds	Surrogate Recovery (%)
			MS/MSD [(b)] Recovery (%)	MS/MSD RPD [(c)] (%)	LCS [(d)] Recovery (%)		
Pesticides (cont.)	8081A	Dieldrin	72-136	20	81-132		
		Endosulfan I	84-127	20	91-132		
		Endosulfan II	79-138	20	90-129		
		Endosulfan sulfate	84-134	20	99-130		
		Endrin	75-143	20	87-130		
		Endrin aldehyde	62-160	20	95-133		
		Endrin ketone	87-135	20	90-130		
		Heptachlor	63-131	20	85-131		
		Heptachlor epoxide	82-125	20	89-132		
		Methoxychlor	76-161	20	88-139		
		Toxaphene	50-150	20	50-150		
Herbicides	8151A	2,4,5-TP (Silvex)	48-140	20	48-140	2,4-DCAA	45-140
		2,4,5-T	60-145	20	60-145		
		2,4-D	60-138	20	60-138		
		2,4-DB	75-125	20	75-125		
Inorganics [(h)]	6010B	Inorganic Analyte	75-125 [(i)]	20 [(j)]	80-120	NA	NA
	6020		75-125 [(i)]	20 [(j)]	80-120	NA	NA
	7470A		75-125 [(i)]	20 [(j)]	80-120	NA	NA
	ASTM D4282-02 (free cyanide)		75-125 [(i)]	20 [(j)]	90-110	NA	NA

Notes

(a) Analytical Methods: USEPA SW-846, 3rd edition, Revision 1, November 1990, any subsequent revisions shall supersede this information

(b) MS/MSD = Matrix Spike/Matrix Spike Duplicate

(c) RPD = Relative Percent Difference

(d) LCS = Laboratory Control Sample

(e) Target Compound List Volatile Organic Compounds

(f) Target Compound List Semivolatile Organic Compounds

(g) Limits are advisory only

(h) Target Analyte List Inorganics (metals and cyanide)

(i) Matrix spike only

(j) Laboratory duplicate RPD

NA - Not Applicable

Table 3-3 Quality Control Limits for Air Samples

Analytical Parameter	Analytical Method [(a)]	Analyte Compounds	LCS [(d)] Recovery (%)	Duplicate RPD [(c), (e)] (%)	Laboratory Accuracy and Precision			
					MS/MSD [(b)] Recovery (%)	MS/MSD RPD [(c)] (%)	Surrogate Compounds	Surrogate Recovery (%)
VOCs	TO-15 Mod.	Acetone	60-140	25	NA	NA	Toluene-d8 Bromofluorobenzene 1,2-Dichloroethane-d4	70-130 70-130 70-130
		Bromodichloromethane	60-140	25				
		Butadiene, 1,3-	60-140	25				
		Carbon Disulfide	60-140	25				
		Chloro-1-Propene, -3 (Allyl Chloride)	60-140	25				
		Chlorodibromomethane	60-140	25				
		Cumene	60-140	25				
		Dichloroethylene, Trans-1,2-	60-140	25				
		Dioxane, 1,4-	60-140	25				
		Hexane	60-140	25				
		Methyl Ethyl Ketone	60-140	25				
		Methyl Isobutyl Ketone	60-140	25				
		Methyl Tert-Butyl Ether (MTBE)	60-140	25				
		Naphthalene	60-140	25				
		Propylbenzene, N-	60-140	25				
		Tribromomethane (Bromoform)	60-140	25				
		Cyclohexane	60-140	25				
		2-Hexanone	60-140	25				
		4-Ethyltoluene	60-140	25				
		Ethanol	60-140	25				
		Heptane	60-140	25				
		2-Methylpentane	60-140	25				
		Isopentane	60-140	25				
		2,3-Dimethylpentane	60-140	25				
		2,2,4-Trimethylpentane	60-140	25				
		Indene	60-140	25				
		Indan	60-140	25				
		Thiopene	60-140	25				
		2-Propanol	60-140	25				
		Tetrahydrofuran	60-140	25				

Analytical Parameter	Analytical Method [(a)]	Analyte Compounds	LCS [(d)] Recovery (%)	Duplicate RPD [(c), (e)] (%)	Laboratory Accuracy and Precision			
					MS/MSD [(b)] Recovery (%)	MS/MSD RPD [(c)] (%)	Surrogate Compounds	Surrogate Recovery (%)
VOCs	TO-15 Mod.	Benzene	70-130	25	NA	NA	Toluene-d8 Bromofluorobenzene 1,2-Dichloroethane-d4	70-130 70-130 70-130
		Bromomethane	70-130	25				
		Carbon Tetrachloride	70-130	25				
		Chlorobenzene	70-130	25				
		Chloroethane	70-130	25				
		Chloroform	70-130	25				
		Dibromoethane, 1,2- (Ethylene Dibromide)	70-130	25				
		Dichlorobenzene, 1,2-	70-130	25				
		Dichlorobenzene, 1,3-	70-130	25				
		Dichlorobenzene, 1,4-	70-130	25				
		Dichlorodifluoromethane (Freon 12)	70-130	25				
		Dichloroethane, 1,1-	70-130	25				
		Dichloroethane, 1,2-	70-130	25				
		Dichloroethylene, 1,1-	70-130	25				
		Dichloroethylene, Cis-1,2-	70-130	25				
		Dichloromethane (Methylene Chloride)	70-130	25				
		Dichloropropane, 1,2-	70-130	25				
		Dichloropropene, Cis-1,3-	70-130	25				
		Dichloropropene, Trans-1,3-	70-130	25				
		1,2-Dichloro-1,1,2,2,-tetrafluoroethane	70-130	25				
		Ethyl Benzene	70-130	25				
		Fluorotrichloromethane (Freon 11)	70-130	25				
		Methyl Chloride	70-130	25				
		Styrene	70-130	25				
		Tetrachloroethane, 1,1,2,2-	70-130	25				
		Tetrachloroethylene (PCE)	70-130	25				
		Toluene	70-130	25				
		Trichloro-1,2,2-Trifluoroethane, 1,1,2-	70-130	25				
		Trichlorobenzene, 1,2,4-	70-130	25				

Analytical Parameter	Analytical Method [(a)]	Analyte Compounds	LCS [(d)] Recovery (%)	Duplicate RPD [(c), (e)] (%)	Laboratory Accuracy and Precision			
					MS/MSD [(b)] Recovery (%)	MS/MSD RPD [(c)] (%)	Surrogate Compounds	Surrogate Recovery (%)
VOCs	TO-15 Mod.	Trichloroethane, 1,1,1- Trichloroethane, 1,1,2- Trimethylbenzene, 1,3,5- Vinyl Chloride m,p-xylene o-xylene Hexachlorobutadiene alpha-chlorotoluene	70-130 70-130 70-130 70-130 70-130 70-130 70-130 70-130	25 25 25 25 25 25 25 25	NA	NA	Toluene-d8 Bromofluorobenzene 1,2-Dichloroethane-d4	70-130 70-130 70-130
Fixed Gas	ASTM D1945 Mod.	Helium	75-125	30	NA	NA	NA	NA

Notes

(a) USEPA, 1999. Compendium Method TO-15, Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially-Prepared-Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS). January 1999.

American Society of Testing Materials, 2003. D1945-03. Standard Test Method for Analysis of Natural Gas by Gas Chromatograph, 2003.

(b) Matrix Spike/Matrix Spike Duplicate

(c) Relative Percent Difference

(d) Laboratory Control Sample

(e) Laboratory duplicate RPD

NA - Not Applicable

3.3 Accuracy

Accuracy is a measure of the degree of agreement of a measured value with the true or expected value of the quantity of concern (Taylor, 1987), or the difference between a measured value and the true or accepted reference value. The accuracy of an analytical procedure is best determined by the analysis of a sample containing a known quantity of material, and is expressed as the percent of the known quantity which is recovered or measured. The recovery of a given analyte is dependent upon the sample matrix, method of analysis, and the specific compound or element being determined. The concentration of the analyte relative to the detection limit of the analytical method is also a major factor in determining the accuracy of the measurement. Concentrations of analytes which are close to the detection limits are less accurate because they are more affected by such factors as instrument "noise". Higher concentrations will not be as affected by instrument noise or other variables and thus will be more accurate.

Sampling accuracy may be determined through the assessment of the analytical results of field blanks and trip blanks for each sample set. Analytical accuracy is typically assessed by examining the percent recoveries of surrogate compounds that are added to each sample (organic analyses only), and the percent recoveries of matrix spike compounds added to selected samples and laboratory blanks. Additionally, initial and continuing calibrations must be established and be within method control limits. Instrument and method analytical accuracy can then be determined for any sample set.

Accuracy is normally measured as the percent recovery (%R) of a known amount of analyte, called a spike, added to a sample (matrix spike) or to a blank (blank spike). The %R is calculated as follows:

$$\%R = \frac{SSR - SR}{SA} \times 100$$

where:

%R = Percent recovery
SSR = Spike sample result: concentration of analyte obtained by analyzing the sample with the spike added
SR = Sample result: the background value, i.e., the concentration of the analyte obtained by analyzing the sample
SA = Spiked analyte: concentration of the analyte spike added to the sample

The acceptance limits for accuracy for each parameter are presented in Tables 3-1, 3-2, and 3-3.

3.4 Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is a qualitative parameter which is most concerned with the proper design of the sampling program (USEPA, 1987). Samples must be representative of the environmental media being sampled. Selection of sample locations and sampling procedures will incorporate consideration of obtaining the most representative sample possible.

Field and laboratory procedures will be performed in such a manner as to ensure, to the degree that is technically possible, that the data derived represents the in-place quality of the material sampled. Every effort will be made to ensure that chemical compounds will not be introduced into the sample via sample containers, handling, and analysis. Decontamination of sampling devices and digging equipment will be performed between samples as outlined in Appendix C of the RI Work Plan. Analysis of field blanks, trip blanks, and method blanks will also be performed to monitor for potential sample contamination from field and laboratory procedures.

The assessment of representativeness also must consider the degree of heterogeneity in the material from which the samples are collected. Sampling heterogeneity will be evaluated during data validation through the analysis of coded field duplicate samples. The analytical laboratory will also follow acceptable procedures to assure the samples are adequately homogenized prior to taking aliquots for analysis, so the reported results are representative of the sample received.

Chain-of-custody procedures will be followed to document that contamination of samples has not occurred during container preparation, shipment, and sampling. Details of blank, duplicate and chain-of-custody procedures are presented in Sections 4 and 5.

3.5 Completeness

Completeness is defined as the percentage of measurements made which are judged to be valid (USEPA, 1987). The QC objective for completeness is generation of valid data for at least 90 percent of the analyses requested. Completeness is defined as follows for all sample measurements:

$$\%C = \frac{V}{T} \times 100$$

where:

%C = Percent completeness
V = Number of measurements judged valid
T = Total number of measurements

3.6 Comparability

Comparability expresses the degree of confidence with which one data set can be compared to another (USEPA, 1987). The comparability of all data collected for this project will be ensured by:

- Using identified standard methods for both sampling and analysis phases of this project,
- Requiring traceability of all analytical standards and/or source materials to the USEPA or National Institute of Standards and Technology (NIST),
- Requiring that all calibrations be verified with an independently traceable standard from a source other than that used for calibration (if applicable),
- Using standard reporting units and reporting formats including the reporting of QC data,
- Performing a complete data validation on all of the analytical results, including the use of data qualifiers in all cases where appropriate,
- Requiring that all validation qualifiers be considered any time an analytical result is used for any purpose.

These steps will ensure all future users of either the data or the conclusions drawn from them will be able to judge the comparability of these data and conclusions.

4.0 Sampling program

4.1 Introduction

The sampling program will provide data concerning the presence and the nature and extent of contamination of groundwater, soil, soil vapor and air. This section presents sample collection procedures, sample container preparation procedures, sample preservation procedures, sample holding times, and field QC sample requirements. Sample matrices and the anticipated number of environmental and QC samples to be collected are given in Table 4-1. Actual numbers of samples may change based on field conditions.

4.2 Sample collection

Soil, groundwater, and air samples will be collected at the Site. The location and frequency of sampling and the methods selected for field procedures and laboratory analysis are described in detail in the RI Work Plan.

4.3 Sample container preparation and sample preservation

All sample containers will be new and will meet the specifications required by the USEPA. Copies of the sample container QC analyses will be provided by the laboratory for each container lot used for sample collection. The containers will be labeled and the appropriate preservatives will be added. The container requirements are shown in Tables 4-2, 4-3, and 4-4.

Samples shall be preserved according to the preservation techniques given in Tables 4-2 through 4-4. Preservatives will be added to the sample bottles by the laboratory prior to their shipment in sufficient quantities to ensure that proper sample pH is met. Following sample collection, the sample bottles should be placed on ice in the shipping cooler, cooled to 4 ± 2 ºC with ice, and delivered to the laboratory within 48 hours of collection. Chain-of-custody (COC) procedures are described in Section 5.

4.4 Sample holding times

The sample holding times for organic and inorganic parameters are given in Tables 4-2 through 4-4 and must be in accordance with the NYSDEC ASP requirements. Holding times for Toxicity Characteristic Leaching Procedure (TCLP) samples are given in Table 4-5. The NYSDEC ASP holding times must be strictly adhered to by the laboratory. Any holding time exceedances must be reported to National Grid.

4.5 Field quality control samples

To assess field sampling and decontamination performance, two types of "blanks" will be collected and submitted to the laboratory for analyses. In addition, the precision of field sampling procedures will be assessed by collecting coded field duplicates and matrix spike/matrix spike duplicates (MS/MSD). The blanks will include the following.

- Trip Blanks – A trip blank will be prepared before the sample containers are sent by the laboratory. The trip blank will consist of a 40-ml VOA vial containing distilled, deionized water, which accompanies the water sample bottles into the field and back to the laboratory. A trip blank will be included with each shipment of water samples for volatiles analysis. The trip blank will be analyzed for volatile organic compounds to assess any contamination from sampling, transport, storage, and internal laboratory procedures.

- Rinseate Blanks – Rinseate blanks will be taken at a minimum frequency of one per 20 field samples per sample matrix. Rinseate blanks are used to determine the effectiveness of the decontamination procedures for sampling equipment. It is a sample of reagent water provided by the laboratory that has passed through a decontaminated bailer or other sampling apparatus. It is usually collected as a last step in the decontamination procedure, prior to taking an environmental sample. The rinseate blank may be analyzed for all or some of the parameters of interest.

The duplicates collected to assess field sampling/laboratory precision and sample homogeneity will consist of the following.

- Coded Field Duplicate – To determine the representativeness of the sampling methods, coded field duplicates will be collected. The samples are termed "coded" because they will be labeled in such a manner that the laboratory will not be able to determine that they are field duplicate samples. This will eliminate any possible bias that could arise. Field duplicates will be taken at a minimum frequency of one per 20 field samples per sample matrix.

- Matrix Spike/Matrix Spike Duplicate (MS/MSD) – MS/MSD samples (MS/MSD for organics; MS and laboratory duplicate for inorganics) will be collected at a frequency of one pair per 20 field samples. MS/MSD samples are used to assess the effect of the sample matrix on the recovery of target compounds or target analytes. The advisory acceptance limits for MS/MSD %R and RPDs are given in Tables 3-1 and 3-2.

Table 4-1 Summary of Samples and Analyses

	Parameter	Analytical Method	Field Samples				QC Blanks		Total
			Field Samples	Field Duplicate	MS/MSD[b] (Total)	Sub-Total	Trip Blank	Rinse Blank	
Matrix [a]	TCL VOCs + 10	EPA SW 8260B (NY ASP OLM04.2)	5	1	1	7	1	1	9
	TCL SVOCs + 20	EPA SW 8270C (NY ASP OLM04.2)	5	1	1	7	-	1	8
	Free Cyanide	ASTM Method D4282-02 (Microdiffusion) (extraction by EPA Method 9013A)	5	1	1	7	-	1	8
	TAL Metals	EPA SW 6010B/6020/7471A Series (NY ASP ILM04.1)	5	1	1	7	-	1	8
	PCBs (as Aroclors)	EPA SW 8082 (NY ASP Category B)	5	1	1	7	-	1	8
	Pesticides	EPA SW 8081A (NY ASP Category B)	5	1	1	7	-	1	8
	Herbicides	EPA SW 8151A (NY ASP Category B)	5	1	1	7	-	1	8
Subsurface Soil Samples	VOCs	EPA SW 8260B (NY ASP OLM04.2)	34	2	2	38	2	2	42
	TCL VOCs + 10	EPA SW 8260B (NY ASP OLM04.2)	9	1	1	11	1	1	13
	SVOCs	EPA SW 8270C (NY ASP OLM04.2)	34	2	2	38	-	2	40
	TCL SVOCs + 20	EPA SW 8270C (NY ASP OLM04.2)	9	1	1	11	-	1	12
	Free Cyanide	ASTM Method D4282-02 (Microdiffusion) (extraction by EPA Method 9013A)	43	3	3	49	-	3	52
	RCRA 8 Metals	EPA SW 6010B/6020/7471A Series (NY ASP ILM04.1)	34	2	2	38	-	2	40
	TAL Metals	EPA SW 6010B/6020/7471A Series (NY ASP ILM04.1)	9	1	1	11	-	1	12
	PCBs (as Aroclors)	EPA SW 8082 (NY ASP Category B)	9	1	1	11	-	1	12
	Pesticides	EPA SW 8081A (NY ASP Category B)	9	1	1	11	-	1	12
	Herbicides	EPA SW 8151A (NY ASP Category B)	9	1	1	11	-	1	12
Groundwater Samples	VOCs	EPA SW 8260B (NY ASP OLM04.2)	11	-	-	11	-	-	11
	TCL VOCs + 10	EPA SW 8260B (NY ASP OLM04.2)	6	1	1	8	1	1	10
	SVOCs	EPA SW 8270C (NY ASP OLM04.2)	11	-	-	11	-	-	11
	TCL SVOCs + 20	EPA SW 8270C (NY ASP OLM04.2)	6	1	1	8	-	1	9
	Free Cyanide	ASTM Method D4282-02 (Microdiffusion) (extraction by EPA Method 9013A)	17	1	1	19	-	1	20
	RCRA 8 Metals	EPA SW 6010B/6020/7470A Series (NY ASP ILM04.1)	11	-	-	11	-	-	11

	Parameter	Analytical Method	Field Samples				QC Blanks		Total
			Field Samples	Field Duplicate	MS/MSD[b] (Total)	Sub-Total	Trip Blank	Rinse Blank	
Groundwater Samples (con.)	TAL Metals	EPA SW 6010B/6020/7470A Series (NY ASP ILM04.1)	6	1	1	8	-	1	9
	PCBs (as Aroclors)	EPA SW 8082 (NY ASP Category B)	6	1	1	8	-	1	9
	Pesticides	EPA SW 8081A (NY ASP Category B)	6	1	1	8	-	1	9
	Herbicides	EPA SW 8151A (NY ASP Category B)	6	1	1	8	-	1	9
Soil Gas Samples	VOCs + naphthalene	EPA TO-15 (expanded list)	1	1	-	2	1	-	3
Indoor Air	VOCs + naphthalene	EPA TO-15 (expanded list)	1	-	-	1	-	-	1
Ambient Air	VOCs + naphthalene + He	EPA TO-15 (expanded list)	1	-	-	1	-	-	1
Waste Characterization	TCLP VOCs	EPA SW 1311/8260B (NY ASP OLM04.2)	5	-	-	5	-	-	5
	TCLP SVOCs	EPA SW 1311/8270C (NY ASP OLM04.2)	5	-	-	5	-	-	5
	TCLP Metals	EPA SW 1311/6010B/7470A (NY ASP ILM04.1)	5	-	-	5	-	-	5
	Total PCBs	EPA SW 8082 (NY ASP Category B)	5	-	-	5	-	-	5
	Total Petroleum Hydrocarbons	DRO: EPA SW 8015 modified GRO: EPA SW 8015 modified	5	-	-	5	-	-	5
	Corrosivity	EPA SW Method 9045C	5	-	-	5	-	-	5
	Ignitability	EPA SW Method 1010A	5	-	-	5	-	-	5
	Reactive Cyanide and Sulfide	EPA SW Chapter 7, Sections 7.3.3.2 and 7.3.4.2	5	-	-	5	-	-	5
	Total Organic Halogens	EPA SW Method 9020B	5	-	-	5	-	-	5

Notes

TCL - Target Compound List

TAL - Target Analyte List

TCLP – Toxicity Characteristic Leaching Procedure

(a) Number of samples is approximate and for information purposes only.

(b) Matrix spike / matrix spike duplicate for organic analyses; matrix spike and laboratory duplicate for inorganic analysis.

Table 4-2 Soil and Waste Sample Containerization and Holding Times

Analysis	Bottle Type	Preservation [(a)]	Holding Time [(b)]
Volatile Organic Compounds (VOCs)	Wide-mouth glass w/ Teflon lined cap	Cool to 4ºC	10 days
Extractable Organic Compounds [(c)]	Wide-mouth glass w/ Teflon lined cap	Cool to 4ºC	10 days*
Metals	Wide-mouth plastic or glass	Cool to 4ºC	6 months, except mercury (26 days)
Cyanide	Wide-mouth plastic	Cool to 4ºC	10 days
TCLP Organic Compounds	Wide-mouth glass w/ Teflon lined cap	Cool to 4ºC	See Table 4-5
TCLP Metals	Wide-mouth plastic or glass	Cool to 4ºC	See Table 4-5
Total Petroleum Hydrocarbons (TPH)	DRO: Clear glass GRO: Clear glass	DRO: Cool to 4ºC GRO: Cool to 4ºC	DRO: 7 days to extraction/40 days to analysis GRO: 14 days
Corrosivity	Clear glass	None	Analyze ASAP
Ignitability	Clear glass	None	Analyze ASAP
Reactive Cyanide and Sulfide	Clear glass	None	Analyze ASAP
Total Organic Halogens	Amber glass	pH < 2 with H_2SO_4, Cool to 4ºC, Dark	28 days

Notes

(a) All samples to be preserved with ice during collection and transport

(b) Days from verified time of sample receipt (VTSR).

(c) Semivolatile organic compounds, PCBs, pesticides, herbicides.

* Sohxlet or sonication procedures for extraction and concentration of soil/waste samples for SVOCs must be completed within 5 days of VTSR. Sohxlet or sonication procedures for extraction and concentration of soil/sediment/waste samples for PCBs must be completed within 5 days of VTSR. Extracts of soil samples must be analyzed within 40 days of extraction.

Table 4-3 Water Sample Containerization and Holding Times

Analysis	Bottle Type	Preservation [(a)]	Holding Time [(b)]
Volatile Organic Compounds (VOCs)	(2) 40 mL glass vial with Teflon septum	Cool to 4ºC	10 days
Extractable Organic Compounds [(c)]	1000 mL glass w/ Teflon-lined cap	Cool to 4ºC	5 days*
Metals	1000 mL plastic bottle	Nitric Acid to pH < 2 Cool to 4ºC	6 months, except mercury (26 days)
Cyanide	500 mL plastic bottle	NaOH to pH > 12 Cool to 4ºC	10 days

Notes

(a) All samples to be preserved in ice during collection and transport.
(b) Days from validated time of sample receipt (VTSR)
(c) Semivolatile organic compounds, PCBs, pesticides, herbicides

* Continuous liquid-liquid extraction is the required extraction for water samples for SVOCs. Continuous liquid-liquid extraction and concentration of water samples for SVOC analysis must begin within 5 days and be completed within 7 days of VTSR. Extracts of water samples must be analyzed within 40 days of extraction.

Table 4-4 Soil Gas Sample Containerization and Holding Times

Analysis	Bottle Type	Preservation	Holding Time [(b)]
Volatile Organic Compounds (VOCs)	6 L Summa® canister (a)	NA	30 days
Fixed Gases (Helium)	6 L Summa® canister (a)	NA	30 days

Notes

(a) Stainless steel SUMMA® canisters must be certified clean by the laboratory using TO-15 § 8.4.1. The canisters will be delivered to the field with a pressure of 28-30” Hg. Canisters received with a vacuum pressure less than 25” Hg will not be used.

(b) Days from date of sample collection. The holding time for the TO-15 analysis is 30 days. The holding time for an evacuated canister is 30 days. After 30 days, unused canisters must be exchanged for recently cleaned canisters.

Table 4-5 TCLP[(a)] Sample Holding Times

Analytical Parameter	From: Sample Collection To: TCLP Extraction*	From: TCLP Extraction To: Preparative Extraction	From: Preparative Extraction To: Determinative Analysis
Volatiles	7 days	NA	7 days
Semivolatiles	5 days	7 days	40 days
PCBs (as Aroclors)	5 days	7 days	40 days
Mercury	5 days	NA	28 days
Metals (except Mercury)	180 days	NA	180 days

Notes:

NA - Not Applicable.

(a) Toxicity Characteristic Leaching Procedure.

*Times shown are from verified time of sample receipt (VSTR).

5.0 Sample tracking and custody

5.1 Introduction

This section presents sample custody procedures for both the field and laboratory. Implementation of proper custody procedures for samples collected in the field is the responsibility of field personnel. Both laboratory and field personnel involved in collection and transfer of samples will be trained as to the purpose and procedures for sample custody prior to implementation.

Evidence of sample traceability and integrity is provided by COC procedures. These procedures document the sample traceability from the selection and preparation of the sample containers by the laboratory, to sample collection, to sample shipment, to laboratory receipt and analysis. The sample custody flowchart is shown in Figure 5-1. A sample is considered to be in a person's custody if the sample is:

- In a person's possession,
- Maintained in view after possession is accepted and documented,
- Locked and tagged with Custody Seals so that no one can tamper with it after having been in physical custody,
- In a secured area which is restricted to authorized personnel.

5.2 Field sample custody

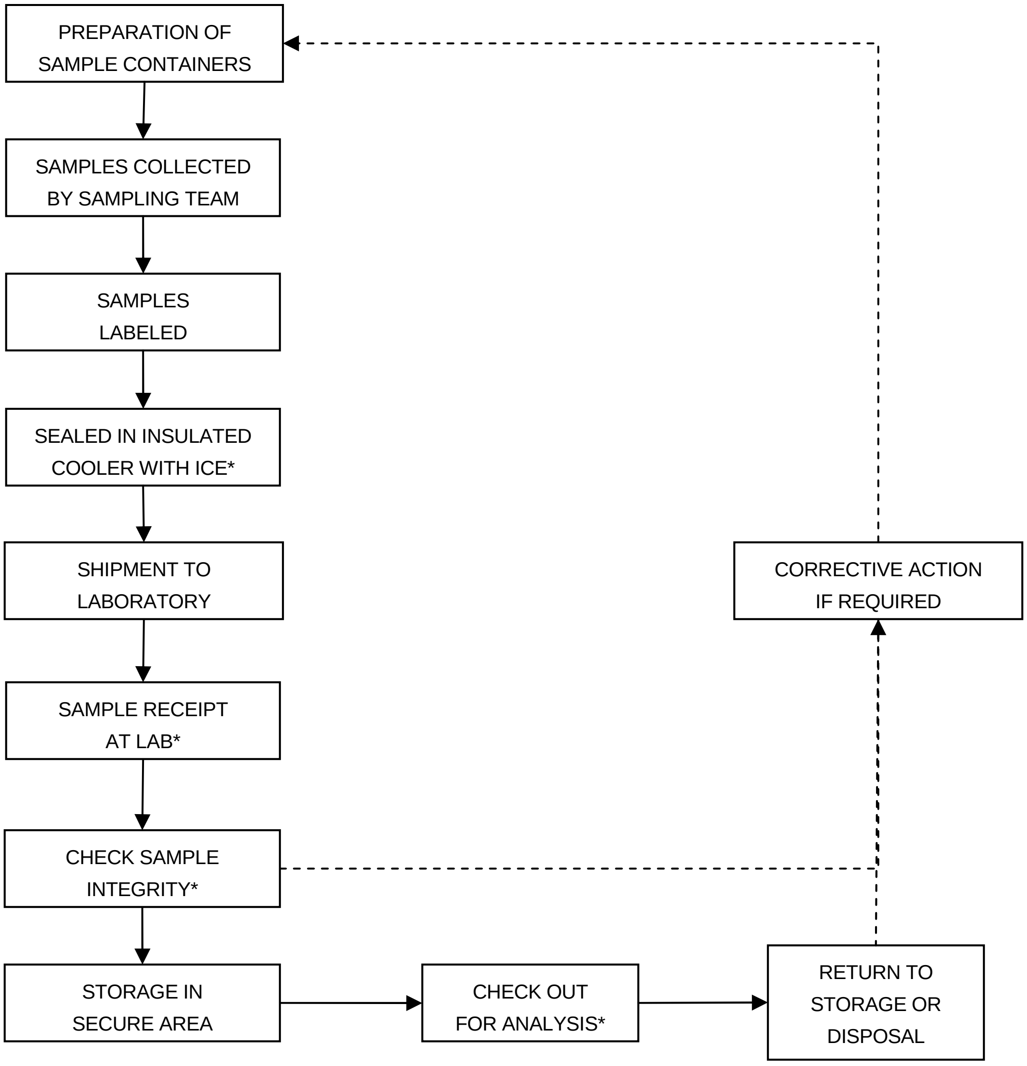
A COC record (Figure 5-2 or similar) accompanies the sample containers from selection and preparation at the laboratory, during shipment to the field for sample collection and preservation, and during the return to the laboratory. Triplicate copies of the COC must be completed for each sample set collected.

The COC lists the field personnel responsible for taking samples, the project name and number, the name of the analytical laboratory to which the samples are sent, and the method of sample shipment. The COC also lists a unique description of every sample bottle in the set. If samples are split and sent to different laboratories, a copy of the COC record will be sent with each sample.

The **REMARKS** space on the COC is used to indicate if the sample is a matrix spike, matrix spike duplicate, or any other sample information for the laboratory. Since they are not specific to any one sample point, trip and field blanks are indicated on separate rows. Once all bottles are properly accounted for on the form, a sampler will write his or her signature and the date and time on the first **RELINQUISHED BY** space. The sampler will also write the method of shipment, the shipping cooler identification number, and the shipper airbill number on the top of the COC. Errors in field records will be crossed out with a single line in ink and initialed by the author.

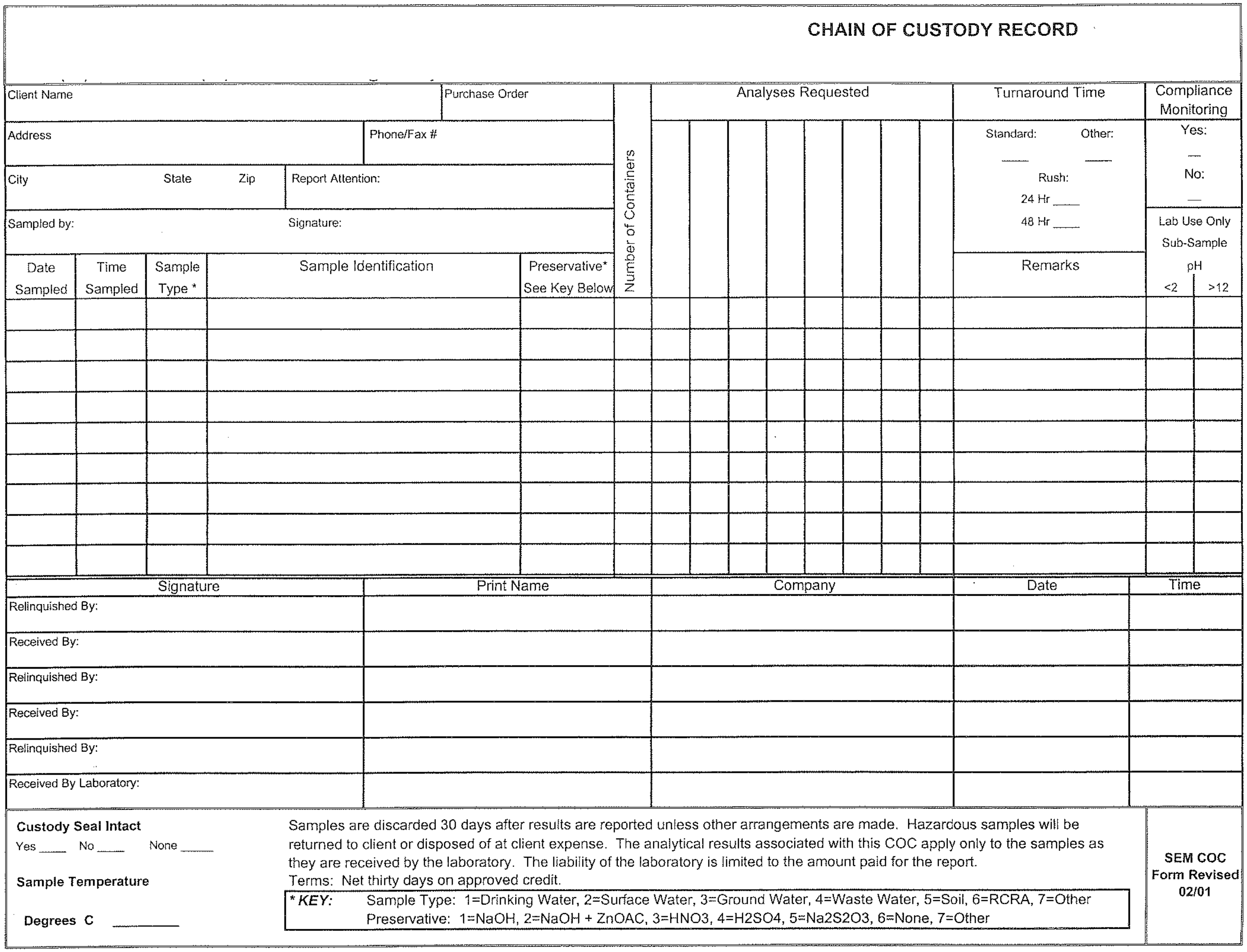
One copy of the COC is retained by sampling personnel and the other two copies are put into a sealable plastic bag and taped inside the lid of the shipping cooler. The cooler lid is closed, custody seals provided by the laboratory are affixed to the latch and across the back and front of the cooler lid, and the person relinquishing the samples signs their name across the seal. The seal is taped, and the cooler is wrapped tightly with clear packing tape. It is then relinquished by field personnel to personnel responsible for shipment, typically an overnight carrier. The COC seal must be broken to open the container. Breakage of the seals before receipt at the laboratory may indicate tampering. If tampering is apparent, the laboratory will contact the Project Manager, and the sample(s) will not be analyzed.

Figure 5-1 Sample Custody Flowdown



*Requires Sign-Off On Chain-Of-Custody.

Figure 5-2 Chain-Of-Custody Record



CHAIN OF CUSTODY RECORD

Client Name
Purchase Order
Address
Phone/Fax #
City State Zip
Report Attention:
Sampled by:
Signature:

Date Sampled	Time Sampled	Sample Type *	Sample Identification	Preservative* See Key Below	Number of Containers	Analyses Requested								Turnaround Time	Compliance Monitoring	
														Standard: ____ Other: ____ Rush: 24 Hr ____ 48 Hr ____	Yes: — No: — Lab Use Only Sub-Sample pH	
														Remarks	<2	>12

Signature	Print Name	Company	Date	Time
Relinquished By:				
Received By:				
Relinquished By:				
Received By:				
Relinquished By:				
Received By Laboratory:				

Custody Seal Intact
Yes ____ No ____ None _____

Sample Temperature

Degrees C ________

Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense. The analytical results associated with this COC apply only to the samples as they are received by the laboratory. The liability of the laboratory is limited to the amount paid for the report.
Terms: Net thirty days on approved credit.

** KEY:* Sample Type: 1=Drinking Water, 2=Surface Water, 3=Ground Water, 4=Waste Water, 5=Soil, 6=RCRA, 7=Other
Preservative: 1=NaOH, 2=NaOH + ZnOAC, 3=HNO3, 4=H2SO4, 5=Na2S2O3, 6=None, 7=Other

SEM COC
Form Revised
02/01

5.3 Laboratory sample custody

The Project Manager or Field Team Leader will notify the laboratory of upcoming field sampling activities and the subsequent shipment of samples to the laboratory. This notification will include information concerning the number and type of samples to be shipped as well as the anticipated date of arrival.

The following laboratory sample custody procedures will be used:

- The laboratory will designate a sample custodian who will be responsible for maintaining custody of the samples and for maintaining all associated records documenting that custody.
- Upon receipt of the samples, the custodian will check cooler temperature, and check the original COC documents and compare them with the labeled contents of each sample container for correctness and traceability. The sample custodian will sign the COC record and record the date and time received.
- Care will be exercised to annotate any labeling or descriptive errors. In the event of documentation or sample integrity issues, the laboratory will immediately contact the Project Manager or Field Team Leader as part of the corrective action process. A qualitative assessment of each sample container will be performed to note any anomalies, such as broken or leaking bottles. This assessment will be recorded as part of the incoming COC procedure.
- The soil, water, and air samples will be stored in a secured area until analyses commence, at a temperature of approximately 4 ± 2 ˚C if required.
- A laboratory tracking record will accompany the sample or sample fraction through final analysis for control.

A copy of the tracking record will accompany the laboratory report and will become a permanent part of the project records.

6.0 Calibration procedures

6.1 Field instruments

All field analytical equipment will be calibrated immediately prior to each day's use. The calibration procedures will conform to manufacturer's standard instructions and are described in the Appendix C of the RI Work Plan. This calibration will ensure that the equipment is functioning within the allowable tolerances established by the manufacturer and required by the project. Records of all instrument calibration will be maintained by the Field Team Leader. Copies of all the instrument manuals will be maintained onsite by the Field Team Leader.

Calibration procedures for instruments used for monitoring health and safety hazards (e.g., photoionization detector [PID] and explosimeter) are provided in the HASP. More frequent calibration may be needed depending on conditions encountered in the field.

6.2 Laboratory instruments

The laboratory will follow all calibration procedures and schedules as specified in the sections of the USEPA SW-846 and subsequent updates that apply to the instruments used for the analytical methods given in Section 7.

7.0 Analytical procedures

7.1 Introduction

Soil, water, and waste samples will be analyzed according to the USEPA SW-846 "*Test Methods for Evaluating Solid Waste*," November 1986, 3rd edition and subsequent updates. Air and soil gas samples will be analyzed according to the USEPA Compendium Method TO-15, *Determination of VOCs in Air Collected in Specially Prepared-Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS)*, January 1999 and helium (fixed gas) analyses will be performed using American Society for Testing Materials (ASTM), Method 1945 modified. The methods to be used for the laboratory analysis of water and soil samples are presented in Tables 7-1 and 7-2. The soil gas and ambient air samples will be analyzed by USEPA Method TO-15 as presented in Table 7-3. These methods were selected because they attain the quantitation limits and DQOs required by the project, which are compiled on Tables 7-1 through 7-3.

Table 7-1 Project Quantitation Limits for Soil and Water

CAS No.	Analysis/Compound	Method	Quantitation Limits		State of New York Standards	
			Water (µg/L)	Soil (µg/kg)	Water [(a)] (µg/L)	Soil [(b)] (µg/kg)
Volatile Organics						
71-55-6	1,1,1-Trichloroethane	SW8260B	5	5	5	800
79-34-5	1,1,2,2-Tetrachloroethane	SW8260B	5	5	5	600
79-00-5	1,1,2-Trichloroethane	SW8260B	5	5	1	
76-13-1	1,1,2-Trichlorotrifluoroethane	SW8260B	5	5	5	
75-34-3	1,1-Dichloroethane	SW8260B	5	5	5	200
75-35-4	1,1-Dichloroethene	SW8260B	5	5	5	400
120-82-1	1,2,4-Trichlorobenzene	SW8260B	5	5	5	3400
96-12-8	1,2-Dibromo-3-Chloropropane	SW8260B	5	5	0.04	
106-93-4	1,2-Dibromoethane	SW8260B	5	5	0.0006	
95-50-1	1,2-Dichlorobenzene	SW8260B	5	5	3	7900
107-06-2	1,2-Dichloroethane	SW8260B	5	5	0.6	100
78-87-5	1,2-Dichloropropane	SW8260B	5	5	1	
541-73-1	1,3-Dichlorobenzene	SW8260B	5	5	3	1600
106-46-7	1,4-Dichlorobenzene	SW8260B	5	5	3	8500
78-93-3	2-Butanone	SW8260B	25	25	50	300
591-78-6	2-Hexanone	SW8260B	25	25	50	
108-10-1	4-Methyl-2-Pentanone	SW8260B	25	25		1000
67-64-1	Acetone	SW8260B	25	25	50	200
71-43-2	Benzene	SW8260B	5	5	1	60
75-27-4	Bromodichloromethane	SW8260B	5	5	50	
75-25-2	Bromoform	SW8260B	5	5	50	
74-83-9	Bromomethane	SW8260B	5	5	5	
75-15-0	Carbon Disulfide	SW8260B	5	5		2700
56-23-5	Carbon Tetrachloride	SW8260B	5	5	5	600
108-90-7	Chlorobenzene	SW8260B	5	5	5	1700
75-00-3	Chloroethane	SW8260B	5	5	5	1900
67-66-3	Chloroform	SW8260B	5	5	7	300
74-87-3	Chloromethane	SW8260B	5	5	5	
156-59-2	cis-1,2-Dichloroethene	SW8260B	5	5	5	
10061-01-5	cis-1,3-Dichloropropene	SW8260B	5	5	0.4	
110-82-7	Cyclohexane	SW8260B	5	5		
124-48-1	Dibromochloromethane	SW8260B	5	5	50	
75-71-8	Dichlorodifluoromethane	SW8260B	5	5	5	
100-41-4	Ethyl Benzene	SW8260B	5	5	5	5500
98-82-8	Isopropylbenzene	SW8260B	5	5	5	
79-20-9	Methyl Acetate	SW8260B	5	5		
1634-04-4	Methyl tert-butyl Ether	SW8260B	5	5		
108-87-2	Methylcyclohexane	SW8260B	5	5		
75-09-2	Methylene Chloride	SW8260B	5	5	5	100
100-42-5	Styrene	SW8260B	5	5	930	
10061-02-6	t-1,3-Dichloropropene	SW8260B	5	5	0.4	
127-18-4	Tetrachloroethene	SW8260B	5	5	5	1400
108-88-3	Toluene	SW8260B	5	5	5	1500
156-60-5	trans-1,2-Dichloroethene	SW8260B	5	5	5	300
79-01-6	Trichloroethene	SW8260B	5	5	5	700
75-69-4	Trichlorofluoromethane	SW8260B	5	5	5	

CAS No.	Analysis/Compound	Method	Quantitation Limits		State of New York Standards	
			Water (µg/L)	Soil (µg/kg)	Water [a] (µg/L)	Soil [b] (µg/kg)
Volatile Organics (continued)						
75-01-4	Vinyl Chloride	SW8260B	5	5	2	200
136777-61-2	m/p-Xylenes	SW8260B	10	10	5	1200
95-47-6	o-Xylene	SW8260B	5	5	5	
Semivolatile Organics						
92-52-4	1',1-Biphenyl	SW8270C	10	330	5	
108-60-1	2,2'-oxybis(1-Chloropropane)	SW8270C	10	330	5	
95-95-4	2,4,5-Trichlorophenol	SW8270C	10	330		100
88-06-2	2,4,6-Trichlorophenol	SW8270C	10	330		
120-83-2	2,4-Dichlorophenol	SW8270C	10	330		400
105-67-9	2,4-Dimethylphenol	SW8270C	10	330		
51-28-5	2,4-Dinitrophenol	SW8270C	10	330		200
121-14-2	2,4-Dinitrotoluene	SW8270C	10	330	5	
606-20-2	2,6-Dinitrotoluene	SW8270C	10	330	5	1000
91-58-7	2-Chloronaphthalene	SW8270C	10	330	10	
95-57-8	2-Chlorophenol	SW8270C	10	330		800
91-57-6	2-Methylnaphthalene	SW8270C	10	330		36400
95-48-7	2-Methylphenol	SW8270C	10	330		100
88-74-4	2-Nitroaniline	SW8270C	10	330	5	430
88-75-5	2-Nitrophenol	SW8270C	10	330		330
91-94-1	3,3'-Dichlorobenzidine	SW8270C	10	330	5	n/a
65794-96-9	3+4-Methylphenols	SW8270C	10	330		900
99-09-2	3-Nitroaniline	SW8270C	10	330	5	500
534-52-1	4,6-Dinitro-2-methylphenol	SW8270C	10	330		
101-55-3	4-Bromophenyl-phenyl ether	SW8270C	10	330		
59-50-7	4-Chloro-3-methylphenol	SW8270C	10	330		240
106-47-8	4-Chloroaniline	SW8270C	10	330	5	220
7005-72-3	4-Chlorophenyl-phenyl ether	SW8270C	10	330		
100-01-6	4-Nitroaniline	SW8270C	10	330	5	
100-02-7	4-Nitrophenol	SW8270C	10	330		100
83-32-9	Acenaphthene	SW8270C	10	330	20	50000
208-96-8	Acenaphthylene	SW8270C	10	330		41000
98-86-2	Acetophenone	SW8270C	10	330		
120-12-7	Anthracene	SW8270C	10	330	50	50000
1912-24-9	Atrazine	SW8270C	10	330	7.5	
56-55-3	Benzo(a)anthracene	SW8270C	10	330	0.002	224
50-32-8	Benzo(a)pyrene	SW8270C	10	330	ND	61
205-99-2	Benzo(b)fluoranthene	SW8270C	10	330	0.002	1100
191-24-2	Benzo(g,h,i)perylene	SW8270C	10	330		50000
207-08-9	Benzo(k)fluoranthene	SW8270C	10	330	0.002	1100
100-52-7	Benzaldehyde	SW8270C	10	330		
111-91-1	bis(2-Chloroethoxy)methane	SW8270C	10	330	5	
111-44-4	bis(2-Chloroethyl)ether	SW8270C	10	330	1	
117-81-7	bis(2-Ethylhexyl)phthalate	SW8270C	10	330	5	50000
85-68-7	Butylbenzylphthalate	SW8270C	10	330	50	50000
105-60-2	Caprolactam	SW8270C	10	330		
86-74-8	Carbazole	SW8270C	10	330		
218-01-9	Chrysene	SW8270C	10	330	0.002	400
53-70-3	Dibenzo(a,h)anthracene	SW8270C	10	330		14

CAS No.	Analysis/Compound	Method	Quantitation Limits		State of New York Standards	
			Water (µg/L)	Soil (µg/kg)	Water (a) (µg/L)	Soil (b) (µg/kg)
Semivolatile Organics (continued)						
132-64-9	Dibenzofuran	SW8270C	10	330		6200
84-66-2	Diethylphthalate	SW8270C	10	330	50	7100
131-11-3	Dimethylphthalate	SW8270C	10	330	50	2000
84-74-2	Di-n-butylphthalate	SW8270C	10	330	50	8100
117-84-0	Di-n-octyl phthalate	SW8270C	10	330	50	50000
206-44-0	Fluoranthene	SW8270C	10	330	50	50000
86-73-7	Fluorene	SW8270C	10	330	50	50000
118-74-1	Hexachlorobenzene	SW8270C	10	330	0.04	410
87-68-3	Hexachlorobutadiene	SW8270C	10	330	0.5	
77-47-4	Hexachlorocyclopentadiene	SW8270C	10	330	5	
67-72-1	Hexachloroethane	SW8270C	10	330	5	
193-39-5	Indeno(1,2,3-cd)pyrene	SW8270C	10	330	0.002	3200
78-59-1	Isophorone	SW8270C	10	330	50	4400
91-20-3	Naphthalene	SW8270C	10	330	10	13000
98-95-3	Nitrobenzene	SW8270C	10	330	0.4	200
621-64-7	N-Nitroso-di-n-propylamine	SW8270C	10	330		
86-30-6	N-Nitrosodiphenylamine	SW8270C	10	330	50	
87-86-5	Pentachlorophenol	SW8270C	10	330		1000
85-01-8	Phenanthrene	SW8270C	10	330	50	50000
108-95-2	Phenol	SW8270C	10	330		30
129-00-0	Pyrene	SW8270C	10	330	50	50000
Metals						
7429-90-5	Aluminum	6010B / 6020	50	5000	2000	SB
7440-36-0	Antimony	6010B / 6020	25	2500	6	SB
7440-38-2	Arsenic	6010B / 6020	10	1000	50	7500
7440-39-3	Barium	6010B / 6020	50	5000	2000	300000
7440-41-7	Beryllium	6010B / 6020	3	300	3	160
7440-43-9	Cadmium	6010B / 6020	3	300	5	1000
7440-70-2	Calcium	6010B / 6020	1000	100000		SB
7440-47-3	Chromium	6010B / 6020	5	500	100	10000
7440-48-4	Cobalt	6010B / 6020	15	1500	5	30000
7440-50-8	Copper	6010B / 6020	10	1000	1000	25000
7439-89-6	Iron	6010B / 6020	50	5000	600	2000000
7439-92-1	Lead	6010B / 6020	6	600	50	400 (c)
7439-95-4	Magnesium	6010B / 6020	1000	100000	35000	SB
7439-96-5	Manganese	6010B / 6020	10	1000	600	SB
7440-02-0	Nickel	6010B / 6020	20	2000	200	13000
7440-09-7	Potassium	6010B / 6020	1000	100000		SB
7782-49-2	Selenium	6010B / 6020	10	1000	20	2000
7440-22-4	Silver	6010B / 6020	5	500	100	SB
7440-23-5	Sodium	6010B / 6020	1000	100000		SB
7440-28-0	Thallium	6010B / 6020	20	2000	0.5	SB
7440-62-2	Vanadium	6010B / 6020	20	2000		150000
7440-66-6	Zinc	6010B / 6020	20	2000	5000	20000
7439-97-6	Mercury	7471A	0.2	10	1.4	100
Inorganics						
n/a	Cyanide, Free	ASTM D4282-02 / 9013A	10	60		

CAS No.	Analysis/Compound	Method	Quantitation Limits		State of New York Standards	
			Water (µg/L)	Soil (µg/kg)	Water [(a)] (µg/L)	Soil [(b)] (µg/kg)
Pesticides						
72-54-8	4,4'-DDD	8081	0.05	1.7	0.3	2900
72-55-9	4,4'-DDE	8081	0.05	1.7	0.2	2100
50-29-3	4,4'-DDT	8081	0.2	1.7	0.2	2100
309-00-2	Aldrin	8081	0.05	1.7	ND	41
319-84-6	alpha-BHC	8081	0.05	1.7	0.01	110
319-85-7	beta-BHC	8081	0.2	1.7	0.04	200
319-86-8	delta-BHC	8081	0.05	1.7	0.04	300
58-89-9	gamma-BHC (Lindane)	8081	0.05	1.7	0.05	60
5103-71-9	alpha-Chlordane	8081	0.05	1.7		540
5566-34-7	gamma-Chlordane	8081	0.05	1.7		540
57-74-9	Chlordane	8081	0.5	17	0.05	540
60-57-1	Dieldrin	8081	0.05	1.7	0.004	44
959-98-8	Endosulfan I	8081	0.05	1.7		900
33213-65-9	Endosulfan II	8081	0.05	1.7		900
1031-07-8	Endosulfan sulfate	8081	0.05	1.7		1000
72-20-8	Endrin	8081	0.05	1.7	ND	100
7421-93-4	Endrin aldehyde	8081	0.05	1.7	5	
53494-70-5	Endrin ketone	8081	0.05	1.7	5	
76-44-8	Heptachlor	8081	0.05	1.7	0.04	100
1024-57-3	Heptachlor epoxide	8081	0.05	1.7	0.03	20
72-43-5	Methoxychlor	8081	0.05	1.7	35	
8001-35-2	Toxaphene	8081	0.5	17	0.06	
PCB's						
12674-11-2	Aroclor-1016	8082	0.5	17	0.09* Applies to the sum of the PCBs	1000 (total surface soil) 10000 (total subsurface soil)
11104-28-2	Aroclor-1221	8082	0.5	17		
11141-16-5	Aroclor-1232	8082	0.5	17		
53469-21-9	Aroclor-1242	8082	0.5	17		
12672-29-6	Aroclor-1248	8082	0.5	17		
11097-69-1	Aroclor-1254	8082	0.5	17		
11096-82-5	Aroclor-1260	8082	0.5	17		
37324-23-5	Aroclor-1262	8082	0.5	17		
11100-14-4	Aroclor-1268	8082	0.5	17		
Herbicides						
93-72-1	2,4,5-TP (Silvex)	8151	2	67	0.26	700
93-76-5	2,4,5-T	8151	2	67		1900
94-75-7	2,4-D	8151	2	67		500
94-82-6	2,4-DB	8151	2	67		

Notes:

N/A - Not Applicable

SB - soil background

ND - not detected

(a) - Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, NYSDEC, October 1993, reissued June 1998

(b) - Determination of Soil Cleanup Objectives and Cleanup Levels, NYSDEC, January 24, 1994

(c) - EPA Guidance on Residential Lead-Based Paint, Lead Contaminated Dust, and Lead Contaminated Soil, July 14, 1994

Table 7-2 Practical Quantitation Limits (PQLs) for TCLP

Compound	SW-846 Analysis	Water (µg/L)
TCLP Volatile Organic Compounds		
Benzene	1311 / 8260B	25
Carbon Tetrachloride	1311 / 8260B	25
Chloroform	1311 / 8260B	25
1,2-Dichloroethane	1311 / 8260B	25
1,1-Dichloroethene	1311 / 8260B	25
2-Butanone	1311 / 8260B	125
Tetrachloroethene	1311 / 8260B	25
Trichloroethene	1311 / 8260B	25
Vinyl Chloride	1311 / 8260B	25
TCLP Semivolatile Organic Compounds		
2-Methylphenol	1311 / 3510 / 8270B	10
3 & 4-Methylphenol	1311 / 3510 / 8270B	10
1,4-Dichlorobenzene	1311 / 3510 / 8270B	10
2,4-Dinitrotoluene	1311 / 3510 / 8270B	10
Hexachlorobutadiene	1311 / 3510 / 8270B	10
Hexachloroethane	1311 / 3510 / 8270B	10
Hexachlorobenzene	1311 / 3510 / 8270B	10
Nitrobenzene	1311 / 3510 / 8270B	10
Pentachlorophenol	1311 / 3510 / 8270B	10
Pyridine	1311 / 3510 / 8270B	10
2,4,5-Trichlorophenol	1311 / 3510 / 8270B	10
2,4,6-Trichlorophenol	1311 / 3510 / 8270B	10
TCLP Metals		
Arsenic	1311 / 3010 / 6010B	10
Barium	1311 / 3010 / 6010B	50
Cadmium	1311 / 3010 / 6010B	3
Chromium	1311 / 3010 / 6010B	5
Lead	1311 / 3010 / 6010B	6
Selenium	1311 / 3010 / 6010B	10
Silver	1311 / 3010 / 6010B	5
Mercury	7470A	0.2
TCLP Pesticides		
Chlordane	1311 / 8081A	0.5
Endrin	1311 / 8081A	0.05
Heptachlor (and its hydroxide)	1311 / 8081A	0.05
Lindane	1311 / 8081A	0.05
Methoxychlor	1311 / 8081A	0.05
Toxaphene	1311 / 8081A	0.5
TCLP Pesticides		
2,4-D	1311 / 8151A	2
2,4,5-TP Silvex	1311 / 8151A	2

Notes:

ND - Not Determined

Table 7-3 Project Quantitation Limits for Air

Analysis / Compound	Method	Quantitation Limits Soil Gas/Air (µg/M^3)
Fixed Gases		
Helium	ASTM D1945 mod.	16360 (0.01%)
Volatile Organics [1]		
Freon 12	TO-15 Mod.	0.81
Freon 114	TO-15 Mod.	1.14
Chloromethane	TO-15 Mod.	0.34
Vinyl Chloride	TO-15 Mod.	0.42
Bromomethane	TO-15 Mod.	0.63
Chloroethane	TO-15 Mod.	0.43
Freon 11	TO-15 Mod.	0.92
1,1-Dichloroethene	TO-15 Mod.	0.64
Freon 113	TO-15 Mod.	1.26
Methylene Chloride	TO-15 Mod.	0.56
1,1-Dichloroethane	TO-15 Mod.	0.66
cis-1,2-Dichloroethene	TO-15 Mod.	0.64
Chloroform	TO-15 Mod.	0.81
1,1,1-Trichloroethane	TO-15 Mod.	0.89
Carbon Tetrachloride	TO-15 Mod.	1.03
Benzene	TO-15 Mod.	0.52
1,2-Dichloroethane	TO-15 Mod.	0.66
Trichloroethene	TO-15 Mod.	0.89
1,2-Dichloropropane	TO-15 Mod.	0.76
cis-1,3-Dichloropropene	TO-15 Mod.	0.74
Toluene	TO-15 Mod.	0.61
trans-1,3-Dichloropropene	TO-15 Mod.	0.74
1,1,2-Trichloroethane	TO-15 Mod.	0.89
Tetrachloroethene	TO-15 Mod.	1.11
1,2-Dibromoethane (EDB)	TO-15 Mod.	1.26
Chlorobenzene	TO-15 Mod.	0.76
Ethyl Benzene	TO-15 Mod.	0.71
m,p-Xylene	TO-15 Mod.	0.71
o-Xylene	TO-15 Mod.	0.71
Styrene	TO-15 Mod.	0.69
1,1,2,2-Tetrachloroethane	TO-15 Mod.	1.13
1,3,5-Trimethylbenzene	TO-15 Mod.	0.81
1,2,4-Trimethylbenzene	TO-15 Mod.	0.81
1,3-Dichlorobenzene	TO-15 Mod.	0.98
1,4-Dichlorobenzene	TO-15 Mod.	0.98
alpha-Chlorotoluene	TO-15 Mod.	0.85
1,2-Dichlorobenzene	TO-15 Mod.	0.98
1,2,4-Trichlorobenzene	TO-15 Mod.	6.12
Hexachlorobutadiene	TO-15 Mod.	8.69
Propylene	TO-15 Mod.	1.4
1,3-Butadiene	TO-15 Mod.	1.77

Analysis / Compound	Method	Quantitation Limits Soil Gas/Air ($\mu g/M^3$)
Acetone	TO-15 Mod.	1.93
Carbon Disulfide	TO-15 Mod.	2.58
trans-1,2-Dichloroethene	TO-15 Mod.	3.22
2-Butanone (MEK)	TO-15 Mod.	2.42
Hexane	TO-15 Mod.	2.9
Tetrahydrofuran	TO-15 Mod.	2.42
Cyclohexane	TO-15 Mod.	2.74
1,4-Dioxane	TO-15 Mod.	2.9
Bromodichloromethane	TO-15 Mod.	5.47
4-Methyl-2-pentanone	TO-15 Mod.	3.38
2-Hexanone	TO-15 Mod.	3.38
Dibromochloromethane	TO-15 Mod.	6.92
Bromoform	TO-15 Mod.	8.37
4-Ethyltoluene	TO-15 Mod.	4.03
Ethanol	TO-15 Mod.	1.55
Methyl tert-butyl ether	TO-15 Mod.	2.9
Heptane	TO-15 Mod.	3.38
Naphthalene	TO-15 Mod.	4.35
2-Methylpentane	TO-15 Mod.	2.9
Isopentane	TO-15 Mod.	2.42
2,3-Dimethylpentane	TO-15 Mod.	3.38
2,2,4-Trimethylpentane	TO-15 Mod.	3.86
Indene	TO-15 Mod.	3.86
Indane	TO-15 Mod.	3.86
Thiophene	TO-15 Mod.	2.74
2-Propanol	TO-15 Mod.	1.93

Notes

(1) The final quantitation limit (QL) is adjusted to reflect the initial pressurization step, dilution required to bring target analyte levels into the calibration range, and/or minimize matrix interferences

Final QL = QL * DF, DF was assumed to be 1.61 for a 6-L Canister, with 5 in. Hg Final Canister Pressure.

8.0 Data reduction, assessment, and reporting

8.1 Data reduction

Data collected during the field investigation will be reduced in accordance with SW-846 protocols and reviewed by the laboratory QA personnel. The criteria used to identify and quantify the analytes will be those specified for the applicable methods in the USEPA SW-846 and subsequent updates.

8.2 Data quality assessment

NYSDEC recommends two levels of data review. The basic review is a Data Usability Summary Report (DUSR). Current NYSDEC policy is to require this level of review for analytical data from investigations on most sites. Full data validation is called for at sites where the data will be used in litigation, or where problems are expected with data quality (such as where matrix interference is expected to be significant). The laboratory deliverables (i.e., NYSDEC ASP Category B) are the same in both cases, and a DUSR can be upgraded to full validation at a later time if necessary. For this investigation a DUSR will be performed.

Based on the results of data assessment, the validated analytical results reported by the laboratory will be assigned one of the following USEPA-defined data usability qualifiers:

- U – Not detected at given value,
- UJ – Estimated not detected at given value,
- J – Estimated value,
- N – Presumptive evidence at the value given,
- R – Result not useable,
- No Flag – Result accepted without qualification.

Trained and experienced data assessors, who meet NYSDEC approval criteria, will perform the data review. Résumés of people who will perform the data validation and prepare the DUSR will be provided to NYSDEC for review and approval, upon request.

8.2.1 Data usability summary report

Data for this investigation will be evaluated and qualification applied in accordance with the *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*, USEPA-540-R-07-003, July 2007 and *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, EPA-540-R-04-004, October 2004, as they applied to the analytical methods employed. A DUSR will be generated in accordance with USEPA Region II guidelines.

The DUSR will include a review and an evaluation of all the analytical results. To ensure compliance with the analytical method protocols the following parameters will be reviewed:

- Chain-of-custody forms,
- Holding times,
- Initial and continuing calibrations,
- Blanks,
- Laboratory control standards and matrix spikes,

- Surrogate recoveries,
- Matrix interference checks,
- Field and laboratory duplicates,
- Sample data.

The DUSR will contain a description of the samples and parameters reviewed. Any deficiencies identified during the review will be noted and the effect on the generated data will be discussed. Any re-sampling or reanalysis recommendations will be then be made to the investigation's Project Manager. The results of the evaluation will be incorporated into the final investigative report.

8.2.2 Data validation

The determination to validate data will be made based on the presence of data anomalies, suspect data, or laboratory issues. Data will be validated and qualifications applied in accordance with *USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review*, USEPA-540-R-07-003, July 2007 and *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, EPA-540-R-04-004, October 2004, as they applied to the analytical methods employed. If applicable, a data validation report will be prepared and reviewed by the Quality Assurance Office (QAO) before issuance. The data validation report will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and COC procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method. A detailed assessment of each sample delivery group will follow. For each of the organic analytical methods, the following parameters will be assessed:

- Holding times,
- Instrument tuning,
- Instrument calibrations,
- Blank results,
- System monitoring compounds or surrogate recovery compounds (as applicable),
- Internal standard recovery results,
- MS and MSD results,
- Field duplicate results,
- Target compound identification,
- Result calculations,
- Pesticide cleanup (if applicable),
- Compound quantitation and reported detection limits,
- System performance,
- Results verification.

For each of the inorganic compounds, the following will be assessed:

- Holding times,
- Calibrations,
- Blank results,

- Interference check sample,
- Laboratory check samples,
- Duplicates,
- Matrix Spike(s),
- Furnace atomic absorption analysis QC,
- ICP serial dilutions,
- Results verification and reported detection limits,
- Result calculations.

8.3 Data reporting

The data package provided by the laboratory will contain all items discussed above in a NT ASP Category B “CLP-equivalent” format. Data quality issues will be discussed in a case narrative included with the data report. The completed copies of the COC records (both external and internal) accompanying each sample from time of initial bottle preparation to completion of analysis shall be attached to the analytical reports.

Two copies of the analytical data packages and an electronic data deliverable (EDD) will be provided by the laboratory approximately 30 days after receipt of a complete sample delivery group. The Project Manager will immediately arrange for filing one package. A second copy and the EDD will be used to generate summary tables. These tables will form the database for assessment of the site contamination condition.

The EDD format required is current format Earthsoft EQuIS® Environmental Data Management Software.

Each EDD must be formatted and copied using an MS-DOS operating system. To avoid transcription errors, data will be loaded directly into the ASCII format from the laboratory information management system (LIMS). If this cannot be accomplished, the consultant should be notified via letter of transmittal indicating that manual entry of data is required for a particular method of analysis. All EDDs must also undergo a QC check by the laboratory before delivery. The original data, tabulations, and electronic media are stored in a secure and retrievable fashion.

The Project Manager or Task Manager will maintain close contact with the QA reviewer to ensure all nonconformance issues are resolved prior to use of the data.

9.0 Internal quality control checks

QC procedures and checks are used to evaluate the precision and accuracy of analytical data. Field QC checks are used to identify potential problems associated with sample collection procedures. Laboratory QC checks are used to identify problems associated with sample preparation and analysis.

9.1 Field quality control checks

To check the quality of data from field sampling efforts, blanks and duplicate samples will be collected for analysis. Field duplicate and rinseate blank samples will be collected at a frequency of one in 20 samples. Trip blank samples will be analyzed at a frequency of one per each shipment of VOC samples. Field MS/MSD samples will be collected at a frequency of one in 20 samples. These samples will be treated as separate samples for identification, logging, and shipping purposes. Analytical results for blanks and duplicates will be reported with the field sample data.

9.2 Laboratory quality control checks

The analytical laboratory must have an implemented QC program documented in a QA manual to ensure the reliability and validity of the analysis performed at the laboratory. All analytical procedures are documented in writing as standard operating procedures (SOPs) and each SOP must include a QC section that addresses the minimum QC requirements for the procedure. The internal QC checks differ slightly for each individual procedure, but in general the QC requirements include the following:

- Method blanks,
- Reagent/preparation blanks (applicable to inorganic analysis),
- Instrument blanks,
- MS/MSDs ,
- Surrogate spikes (organic methods only),
- Analytical spike (applicable to graphite furnace analysis),
- Laboratory control samples,
- Internal standard areas for GC/MS analysis,
- Mass tuning for GC/MS analysis,
- Endrin/4,4'-DDT degradation checks for pesticide analysis,
- Second, dissimilar column confirmation for pesticide and polychlorinated biphenyl (PCB) analysis.

All data obtained will be properly recorded. The data package will include a full deliverable package capable of allowing the recipient to reconstruct QC information and compare it to QC acceptance criteria. The laboratory will reanalyze any samples associated with nonconforming quality control checks, if sufficient volume is available. It is expected that sufficient volumes/weights of samples will be collected to allow for reanalysis when necessary.

10.0 Performance and system audits and frequency

Two types of audit procedures are conducted during any environmental investigation: performance and system audits. These audits are performed on the laboratory as well as field activities. The laboratory and field auditors will be independent of the function they will be auditing. Audits will be documented and maintained by the respective Laboratory or Contractor Project Manager.

10.1 Performance audits

10.1.1 Laboratory performance audits

Laboratory performance audits are administered by the laboratory QA department on a periodic basis (e.g., semi-annually). The audit samples are used to monitor accuracy and identify and resolve problems in sample preparation and analysis techniques, which lead to the generation of nonconforming data.

The laboratory performance audits include verification of each analyst's record keeping, proper use and understanding of procedures, and accuracy evaluation. Corrective action will be taken for any performance failure noted.

10.1.2 Field performance audits

The QAO or designee will perform field performance audits of the field sample team on an annual basis at a minimum. The field team leader will review all field data. The analytical results of the field blanks and replicate samples are indirect audits of the level of performance of field activities. If a nonconformance is found in the evaluation of field QC data, corrective action will be taken to resolve the issue. The corrective action will be documented.

10.2 System audits

10.2.1 Laboratory system audits

Laboratory system audits will be conducted against the QA Manual and the administrative and method SOPs, by the laboratory QA department, on an annual basis. System audits are used to ensure that all aspects of the laboratory's QC program are implemented and effective. This involves a thorough review of all laboratory practices and documentation to confirm that work is performed according to project specifications.

Outside agency performance and system audits may be used to verify contract compliance or the laboratory's ability to meet requirements for analytical methods and documentation. Copies of current certifications and accreditations may be used in lieu of an audit by the Contractor Project Manager.

10.2.2 Field system audits

The QAO or designee shall perform field system audits of the field sampling team on an annual basis at a minimum. All field activities will be audited to ensure that the field work is being performed according to the approved work plans, QAPP, and method procedures. Accuracy, precision, and documentation clarity will be evaluated. Any time a deficiency is noted during an ongoing systems audit, the project manger or designee will inform the field staff immediately so that corrective actions may be implemented.

11.0 Preventive maintenance

11.1 Field instrument preventive maintenance

Written procedures will establish the schedule for servicing critical items in order to minimize the downtime of the measurement system(s). Field instruments will be checked and calibrated daily before use. Calibration checks will be documented on the field calibration log sheets. Critical spare parts such as tape and batteries will be kept on-site to reduce potential downtime. Backup instruments and equipment will be available on-site or within 1-day shipment to avoid delays in the field schedule.

11.2 Laboratory instrument preventive maintenance

Designated laboratory employees regularly perform routine scheduled maintenance and repair of all instruments. All maintenance that is performed is documented in the laboratory’s operating records. All laboratory instruments are maintained in accordance with manufacturer’s specifications. The laboratory’s QA Manual specifies the typical frequency with which components of key analytical instruments or equipment will be serviced.

11.3 Records

Logs shall be established to record maintenance and service. All maintenance records will be controlled and traceable to the designated equipment, instruments, tools, or gauges. Records produced shall be reviewed, maintained, and filed by the operators at the laboratories. The QAO may audit the field maintenance records to verify complete adherence to these procedures.

12.0 Corrective action

12.1 Introduction

The following procedures have been established to ensure that conditions adverse to quality, such as malfunctions, deficiencies, deviations, and errors, are promptly investigated, documented, and corrected.

12.2 Procedure description

When a significant condition adverse to quality is noted at site, laboratory, or subcontractor location, the cause of the condition will be determined and corrective action will be taken to preclude recurrence. Condition identification, cause, reference documents, and corrective action planned to be taken will be documented and reported to the QAO, Contractor Project Manager, Field Team Leader, and involved contractor management, at a minimum. Implementation of corrective action is verified by documented follow-up action.

All project personnel have the responsibility, as part of the normal work duties, to promptly identify, report, and investigate conditions adverse to quality. Corrective actions will be initiated as follows.

- When predetermined acceptance standards are not attained
- When procedure or data compiled are determined to be deficient
- When equipment or instrumentation is found to be faulty
- When samples and analytical test results are not clearly traceable
- When quality assurance requirements have been violated
- When designated approvals have been circumvented
- As a result of system and performance audit findings
- As a result of a management assessment
- As a result of laboratory/field comparison studies
- As required by USEPA SW-846 and subsequent updates, or by the NYSDEC ASP

Project management and staff, such as field investigation teams, remedial response planning personnel, and laboratory groups, will monitor on-going work performance in the normal course of daily responsibilities. Work may be audited at the sites, laboratories, or contractor locations. Activities or documents ascertained to be nonconforming with quality assurance requirements will be documented. Corrective actions will be mandated through audit finding sheets attached to the audit report. Audit findings are logged, maintained, and controlled by the Task Manager.

Personnel assigned to quality assurance functions will have the responsibility to issue and control Corrective Action Request (CAR) Forms (Figure 12-1 or similar). The CAR identifies the out-of-compliance condition, reference document(s), and recommended corrective action(s) to be administered. The CAR is issued to the personnel responsible for the affected item or activity. A copy is also submitted to the Contractor Project Manager. The individual to whom the CAR is addressed returns the requested response promptly to the QA personnel, affixing his/her signature and date to the corrective action block, after stating the cause of the conditions and corrective action to be taken. The QA personnel maintain the log for status of CARs, confirms the adequacy of the intended corrective action, and verifies its implementation. CARs will be retained in the project file.

Any project personnel may identify issues requiring corrective action; however, the QAO is responsible for documenting, numbering, logging, and verifying the closeout action. The Contractor Project Manager will be responsible for ensuring that all recommended corrective actions are implemented, documented, and approved.

Figure 12-1 Corrective Action Form

CORRECTIVE ACTION REQUEST

Number: __________________________ Date: ____________

TO: ____

You are hereby requested to take corrective actions indicated below and as otherwise determined by you to (a) resolve the noted condition and (b) to prevent it from recurring. Your written response is to be returned to the project quality assurance manager by _______________

CONDITION:

REFERENCE DOCUMENTS:

RECOMMENDED CORRECTIVE ACTIONS:

__________	______	__________	________	___________	________
Originator	Date	Approval	Date	Approval	Date

RESPONSE

CAUSE OF CONDITION

CORRECTIVE ACTION

(A) RESOLUTION

(B) PREVENTION

(C) AFFECTED DOCUMENTS

C.A. FOLLOW-UP:

CORRECTIVE ACTION VERIFIED BY: ____________________________

DATE:_____________

13.0 References

American Society of Testing Materials, 2003. D1945-03. *Standard Test Method for Analysis of Natural Gas by Gas Chromatograph,* 2003.

EEA Inc. 2004. Phase II Environmental Subsurface Investigations, 254 Maspeth Avenue, Brooklyn, New York. October 2004.

Gannett Fleming Engineers, PC (GFE), 2004. Phase I Environmental Site Assessment, Cooper Tank Transfer Facility, 254 Maspeth Avenue, Brooklyn, New York, 11211. Project # 44440.01. October 2004.

GFE, 2005. Phase II Environmental Site Investigation, 252 Maspeth Avenue, Brooklyn, New York, 11211. File # 44440.004. May 12, 2005.

Taylor, J. K., 1987. *Quality Assurance of Chemical Measurements*. Lewis Publishers, Inc., Chelsea, Michigan

United States Environmental Protection Agency (USEPA), 1986. SW-846 Test Method for Evaluating Solid Waste, Washington, D.C., November 1986,

USEPA, 1987. *Data Quality Objectives for Remedial Response Actions Activities: Development Process*, EPA/540/G-87/003, OSWER Directive 9355.0-7, Washington, D.C.

USEPA, 1999a. Compendium Method TO-15, Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS). January 1999.

USEPA, 1999b. *USEPA Contract Laboratory Program, National Functional Guidelines for Superfund Organic Methods Data Review*, July 2007.

USEPA, 2004. USEPA *Contract Laboratory Program, National Functional Guidelines for Inorganic Data Review*, October 2004.

Appendix E

Community Air Monitoring Plan (CAMP)

Prepared for:
National Grid
Brooklyn, New York

Community Air Monitoring Plan

Equity Former MGP Site
Brooklyn, New York
NYSDEC Site No.: 224050
Order on Consent Index #: A2-0552-0606

AECOM, Inc.
March 2009
Document No.: 01765-076

AECOM

Prepared for:
National Grid USA
Brooklyn, New York

Community Air Monitoring Plan

Equity Former MGP Site
Brooklyn, New York
NYSDEC Site No.: 224050
Order on Consent Index #: A2-0552-0606

Prepared By Jennifer L. Atkins, Project Engineer

Reviewed By Peter S. Cox, Project Manager

AECOM, Inc.
March 2009
Document No.: 01765-076

Contents

List of Appendices

List of Tables

1.0 Introduction

This document provides the Community Air Monitoring Plan (CAMP) that will be implemented during the Remedial Investigation (RI) of the Equity former manufactured gas plant (MGP) site located at 222 – 254 Maspeth Avenue in Brooklyn, New York. This site was the former location of a manufactured gas plant (MGP) that was operated by Brooklyn Union Gas Company (BUG), a predecessor company to National Grid USA (National Grid) from about 1903 to approximately 1933. This CAMP has been prepared by AECOM Environment (AECOM) on behalf of National Grid to present the methods and procedures that will be used to evaluate air quality in the immediate vicinity of investigation activities and provide protection to potential off-site receptors.

The Equity former MGP site is located at 222 – 254 Maspeth Avenue, Brooklyn, Kings County, New York 11211, northwest of the English Kills, between Grand Street and the Brooklyn Queens Expressway (Highway 278). The site is comprised of the following three parcels of land:

Block/Lot Number	Owner's Name	Operator's Name and Address	Status
Block 2927 Lot 44	222 Maspeth Avenue Inc.	222 Maspeth Avenue Brooklyn, NY 11215	Lot used as an active waste recycling/ waste transfer station. Currently one enclosed building housing offices and one open building (no walls, with roof) housing waste recycling operations are present on the lot. The lot is owned by Cooper Tank Recycling Co.
Block 2927 Lot 54	Giovanna Bordone	252 Maspeth Avenue Brooklyn, NY 11215	Currently one building is located on the lot (approximately 2,500 square feet). Used as a maintenance center for equipment. Currently leased by Cooper Tank Recycling Co.
Block 2927 Lot 57	254 Maspeth Ave, LLC.	254 Maspeth Avenue Brooklyn, NY 11215	Currently vacant land used for occasional storage of empty roll-offs and vehicle parking for Cooper Tank personnel working a 222 Maspeth Avenue.

The 222 Maspeth Avenue parcel is used as a active waste recycling / transfer station, and large volumes of truck traffic pass through this lot. As a result, the operator at this parcel (Cooper Tank Recycling, Co.) uses a dust suppression system with misting through and overhead system. Because of the heavy truck traffic on this parcel, the RI investigation activities are planned for off-hours (e.g. Sunday) when truck traffic will not be present.

Even though previous investigation activities were conducted on portions of the Equity site in 2004 and 2005 by the current site owners, the RI investigation associated with this CAMP is intended to address all three parcels.

The RI fieldwork proposed for the current site is described in *Remedial Investigation Work Plan, Equity Former MGP Site, Brooklyn, New York, NYSDEC Site No.: 224050* dated March 2009. The field investigation involves excavation of test pits, the installation of subsurface soil borings and monitoring wells, the collection of soil and groundwater samples, and collection of indoor air and soil gas samples.

The objectives of this CAMP are to:

- Ensure that the airborne concentrations of constituents of concern (COC) are minimized to protect human health and the environment
- Provide an early warning system so that potential emissions can be controlled on site at the source
- Measure and document the concentrations of airborne COC to confirm compliance with regulatory limits

The community air monitoring will be performed around the site perimeter, and will measure the concentrations of organic vapors and dust during all ground-intrusive activities (soil boring, well installations, and test pitting).

This CAMP is a companion document to AECOM's site-specific Health and Safety Plan (HASP). The HASP is a separate document and is directed primarily toward protection of on-site workers within the designated work zones.

2.0 Constituents of concern and action levels

The former MGP site is known to have subsurface impacts dating from the site's historical use as a MGP. As such, the constituents of concern are volatile and semi-volatile organic compounds (VOCs and SVOCs). The primary VOCs of concern are benzene, ethylbenzene, toluene, and xylene (BTEX compounds). VOCs are more volatile than SVOCs and are generally of greater concern when monitoring the air quality during MGP site investigations.

Airborne dust is also a concern and must be monitored and controlled due to its ability to co-transport adsorbed constituents and because of its nuisance properties.

Odors, though not necessarily indicative of high constituent concentrations, could create a nuisance (especially when working within or in close proximity to existing buildings and building entrances) and will be monitored and controlled to the extent practicable.

State and federal regulatory agencies have provided action levels for many of these constituents. The action levels are the allowable airborne concentrations above which respiratory protection or other health and safety controls are required. For work at the former MGP site, the following levels should not be exceeded for more than 15 consecutive minutes at the downwind perimeter of the site:

• Benzene	1 part per million (ppm)
• Total VOCs	5 ppm
• Dust	100 micrograms per cubic meter (µg/m^3)

The action levels cited here are above (in addition to) the background ambient (upwind) concentration.

3.0 Air monitoring equipment and methods

Air quality monitoring will be performed for total VOCs, benzene, and dust as outlined below.

Two perimeter locations will be established each day and an air monitoring technician will check the instrumentation at each of these locations frequently during the work. Typically there will be monitoring locations at one upwind site perimeter location and one downwind perimeter location. Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background conditions. Field personnel will be prepared to monitor multiple locations in the event that there is little wind or if the wind direction changes frequently.

The monitoring instruments will be calibrated at the start of each workday, and again during the day if the performance of an instrument is in question.

3.1 Volatile organic compounds and benzene monitoring

3.1.1 Ambient air monitoring

VOC monitoring will be performed using three field photoionization detectors (PIDs) (RAE Systems MiniRAE or equivalent). The monitoring instruments will be checked by a technician every 15 minutes, and the real-time measurements recorded. The PIDs will be equipped with an audible alarm to indicate exceedance of the action level.

If requested by the New York State Department of Environmental Conservation (NYSDEC), 15-minute running average concentrations may be calculated, which can then be compared to the action levels. If real-time measurements of total VOCs indicate that the action level is exceeded, the benzene concentration will also be determined at that location using benzene-specific colorimetric tubes.

PID measurements will be made at one upwind and one downwind location around the work area. The locations of the instruments may be changed during the day to adapt to changing wind directions.

3.2 Particulate (dust) monitoring

Particulate (dust) monitoring will be performed during intrusive activity (drilling, test pitting) at the Site. Two particulate monitors (TSI DustTrak or equivalent) will be used for continuous real-time dust monitoring. The monitoring instruments will be checked by a technician every 15 minutes, and the real-time measurements recorded. If requested by the on-site NYSDEC representative, a 15-minute average concentration may be determined.

Theoretically, ambient levels of dust could be a significant concern when working on the 222 Maspeth Avenue because of the heavy truck traffic through this parcel. However, investigation activities at this parcel are planned for off-shift hours when trucks will not be driving on-site. Therefore, no additional requirements for the monitoring of dust are considered necessary during these RI activities.

In addition, fugitive dust migration will be visually assessed during all work activities, and the observations recorded.

Measurements will be made at one upwind and one downwind location around the work area. The locations of the instruments may be changed during the day to adapt to changing wind directions.

4.0 Emission control plan

4.1 Ambient air

Odor, vapor, and dust control will be required for this project due to the close proximity of commercial buildings and public roadways and sidewalks. Table 1 provides a response chart for the monitoring and control of vapor emissions. Table 2 provides a list of emergency contacts.

- If the ambient air concentration of total VOC levels at the downwind perimeter of the work area or exclusion zone exceeds 5 ppm (or the benzene level exceeds 1 ppm) above background for the 15-minute average, work activities will be temporarily halted and monitoring continued. If the total organic vapor levels readily decreases (per instantaneous readings) below 5 ppm (and the benzene level drops below 1 ppm) over background, work activities can resume with continued monitoring.
- If total VOC levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm (or the benzene level persists over 1 ppm) over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions until the concentrations drop below the action levels, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.
- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities will be shutdown.

Site perimeter particulate concentrations will also be monitored continuously. In addition, dust migration will be visually assessed during all work activities.

- If the downwind particulate level is 100 $\mu g/m^3$ greater than the background (upwind perimeter) level for a 15-minute period, or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work may continue with dust suppression techniques provided that downwind particulate levels do not exceed 150 $\mu g/m^3$ above the upwind level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, downwind particulate levels are greater than 150 $\mu g/m^3$ above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind particulate concentration to within 150 $\mu g/m^3$ of the upwind level and in preventing visible dust migration.

Typical emission control measures may include:

- Apply water for dust suppression;
- Relocate operations, if applicable; and
- Reassess the existing control measures.

Table 1 Vapor Emission Response Chart

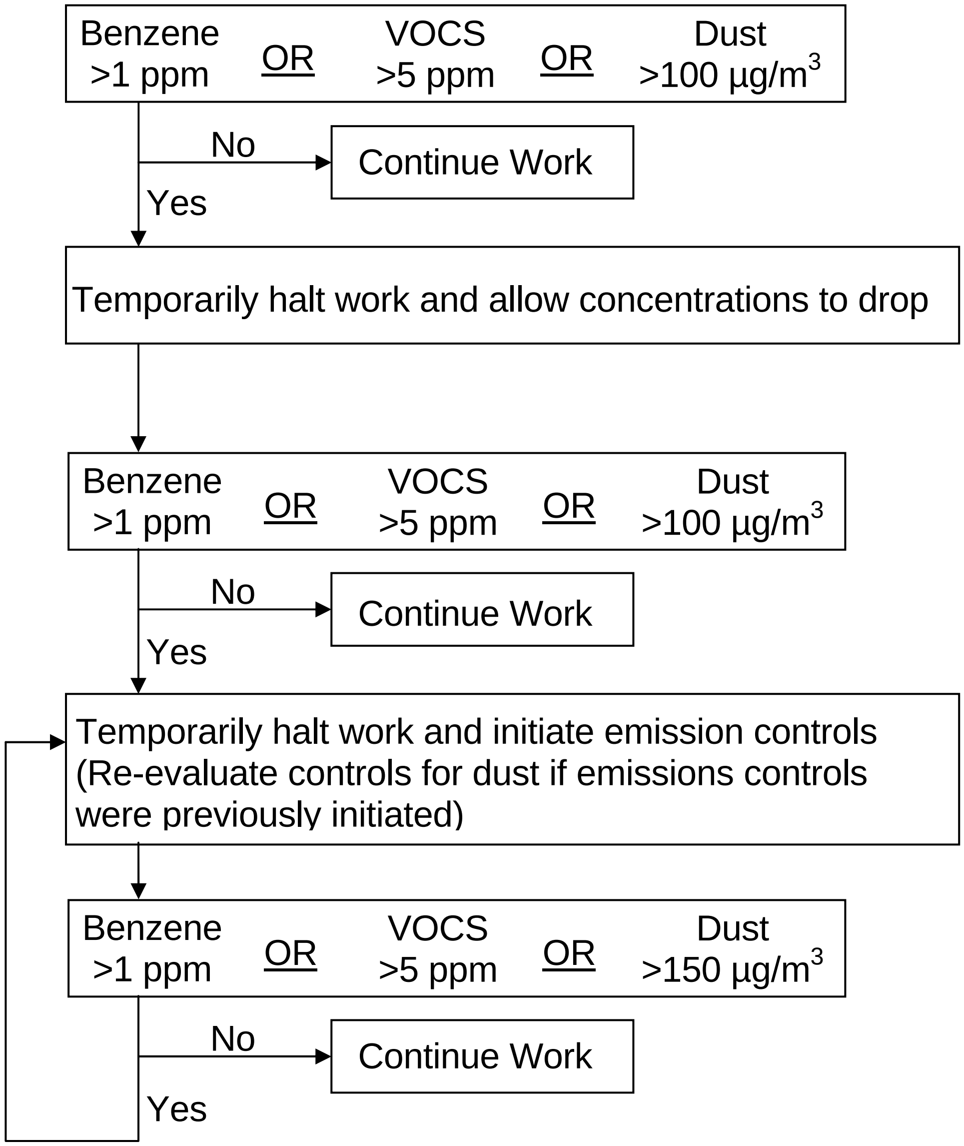


Table 2 Emergency Contacts and Telephone Numbers

Fire:	911	
Police:	911	
Ambulance:	911	
AECOM Environment Contacts	Pete Cox Kevin Katchel	(978) 764-4257 cell (610) 639-8860 cell
National Grid Contacts	Donald Campbell Tracey Bell	(973) 715-8447 cell (917) 886-9207 cell

5.0 Odor control procedures

This section outlines the procedures to be used to control odors that may be generated during the RI field activities. The investigation program will be conducted using two principal remedial investigation techniques that may generate odors: test pit excavations and subsurface soil borings/monitoring well installations. The remainder of this section is intended to provide site managers, representatives of NYSDEC and New York State Department of Health (NYSDOH), and the public with information summarizing typical odor control options, and to provide some guidance for their implementation. A description of potential sources of odors and methods to be used for odor control is presented in the following sections.

5.1 Potential sources of odors

Generally, the residuals encountered at former MGP sites are well defined. They are related to residual coal tar-like materials and petroleum, and principally contain VOCs, polynuclear aromatic hydrocarbons (PAHs), and a number of inorganic constituents, including metal-complexed cyanide compounds, and metals. Constituents of MGP tar or petroleum products can produce odor emissions during investigation activities when they are unearthed during in backhoe test pits and soil borings/well installations. When this occurs, VOCs and light-end SVOCs can volatilize into the ambient air. Some MGP residuals can cause distinctive odors that are similar to mothballs, roofing tar, or asphalt driveway sealer. However, the constituent concentrations generally associated with these odors are typically significantly less than levels that might pose a potential health risk. It is important to note that the CAMP will provide for continual monitoring of VOCs and dust during the fieldwork to monitor for any potential release of constituents which may pose a threat to health.

5.2 Odor monitoring

The field investigation personnel will record observations of odors generated during the implementation of the RI. When odors attributable to the uncovering of impacted media are generated in the work area during intrusive activities such as soil borings or excavation of test pits, observations will also be made at the down-wind limit of the former MGP site, in order to assess the potential for off-site odors. The down-wind odor monitoring will be performed in conjunction with the RI and dust monitoring program described in this CAMP.

Upon detection of odors at the site perimeter, site controls, starting in the work area, will be implemented. The site controls described in the following sections will be used to assist with odor mitigation to minimize, and to prevent where practicable, the off-site migration of odors. Due to the short distances between any work area at the site and the property line or nearby potential receptors, site controls will be implemented proactively when odors are detected in the breathing zone at any work area.

5.3 General site controls

Several general excavation or drilling procedure site controls that will be implemented include:

- Every effort will be made to minimize the amount of time that impacted material is exposed to ambient air at the site.
- For the test pit excavations, it may be possible to move some amount of soil around within the footprint of the test pit excavation in order to minimize the amount of soil removal and subsequent stockpiling of impacted soil at the ground surface. The use of in-excavation stockpiling of test pit soil will be evaluated on a case-by-case basis, and will only be performed with the approval of the NYSDEC field representative, and will be completed only if it does not impede the collection of subsurface soils or the full delineation of the subsurface features being investigated.

- Drill cuttings from the soil borings will be containerized as soon as possible during completion of each soil boring.
- Loading of excavated debris or soil that has been found by the site manager to be unsuitable material to return to test pits may generate odors. Every effort will be made to complete this work as quickly as possible and to keep these materials covered at all times.
- Meteorological conditions are also a factor in the generation and migration of odors. Some site activities may be limited to times when specific meteorological conditions prevail, such as when winds are blowing away from a specific receptor.

5.4 Secondary site controls

If substantial odors still present an issue following implementation of the above procedures, secondary controls will be enacted. The AECOM field representative will work through the applicable list of secondary controls until the perimeter odor issues are resolved. The AECOM field representative will work closely with National Grid and NYSDEC during this task, if present. Final selection of controls will be dependent on field conditions encountered. Secondary controls include the following:

- For stockpiled impacted soil, temporary tarps or polyethylene covers will be used to control odors.
- The placement of portable barriers close to small active source areas (test pits) can elevate the discharge point of emissions to facilitate dispersion and minimize the effect on downwind receptors. The barriers can be constructed using materials such as plastic “Jersey barriers”, or fence poles and visual barrier fabric/plastic. The barriers are placed as temporary two or three-sided structures around active test pit or other intrusive investigation areas, oriented such that the barriers are placed on the upwind and downwind sides of the source. If only one side of the source can be accessed, then the barrier should be placed on the downwind side.
- Two agents that can be sprayed over impacted soil have been determined to be effective in controlling emissions. They include odor suppressant solution (BioSolve™), and hydro-mulch. These agents may be used where tarps cannot be effectively deployed over the source material, or where tarps are ineffective in controlling odors:
  - BioSolve™ can provide immediate, localized control of odor emissions. Information regarding the preparation and use of BioSolve™ is provided in Appendix A.
  - Hydromulch - Although it is unlikely that it will be necessary, a modified hydromulch slurry may be used to cover inactive sources for extended periods of time (up to several days). The hydromulch, typically cellulose fibers (HydroSealR) is modified by mixing a tackifier (glue) with the mulch and water to form a slurry. It is applied using a standard hydroseed applicator to a thickness of ¼ inch. The material forms a sticky, cohesive, and somewhat flexible cover. Reapplication may be necessary if the applied layer becomes desiccated or begins to crack.

5.5 Record keeping and communication

Similar to readings recorded during the monitoring specified in the CAMP, all odor monitoring results will be recorded in the field log book or other air monitoring forms, and be available for review by the agencies.

The AECOM field representative, in consultation with National Grid, will also provide information on odor monitoring and odor management to residents of the neighborhood should they inquire. In the event that odors persist after these efforts, work will be temporarily discontinued until a mutually agreeable solution with National Grid, NYSDEC, and NYSDOH staff can be worked out which allows the work to be completed while minimizing the off-site transport of nuisance odors.

6.0 Documentation and reporting

Data generated during perimeter air monitoring will be recorded in field logs and summarized daily in spreadsheets. The electronic measurements from the PIDs and dust meters will be downloaded each day, reviewed, and archived. Exceedances of the action levels, if any, and the actions to be taken to mitigate the situations, will be discussed immediately with the on-site representatives. Summaries of all air monitoring data will be provided to NYSDEC as requested.

Appendix A

Vapor Suppression Information

BIOSOLVE®
Hydrocarbon Mitigation Technology

...Is Making A Difference!

VAPOR SUPPRESSION / ODOR CONTROL

BioSolve® offers a relatively simple and cost effective method of suppressing Odors and VOC release from soils, during excavation, loading, stockpiling, etc. The following guidelines will apply to the most common situations encountered on site.

In most cases a 3% BSW solution (1 part **BioSolve®** concentrate to 33 parts water) will be adequate to keep vapor emissions within acceptable limits and control fugitive odor problems on contact. Although, some sites may only require a 2% solution, up to a 6% solution may be recommended on sites with elevated levels or particularly difficult/ mixed stream contaminants are present.

The **BioSolve®** solution should be applied evenly to the soil surface in sufficient quantity to saturate the surface area. As a general rule, use 1-3 litres of **BioSolve®** solution to 1 square metre of surface area. (1 gallon of **BioSolve®** per solution will cover approximately 4-sq. yd. of soil surface area) **BioSolve®** is a water-based surfactant that will apply like water.

BioSolve®, in its concentrated form, is a viscous liquid material that must be diluted with water. A fluorescent red tracing dye is present in the formula allowing **BioSolve®** to be detected during application. Once diluted, **BioSolve®** can be applied with virtually any equipment that can spray water. **BioSolve®** will not harm equipment or clog pipes. For large sites, applicators such as water truck, portable agricultural sprayers, foam inductors & pressure sprayers can be used. For smaller jobs, garden sprayers, water extinguishers or a garden hose with a fertiliser attachment on the nozzle can be used effectively. This characteristic makes **BioSolve®** very adaptable and much most convenient to use in almost any situation. **BioSolve®** is equally effective when used with all types of water (soft, hard, salt or potable).

On stockpiled soil or other soil that will be left undisturbed, a single application of **BioSolve®** to the exposed surfaces may last up to 10 to 14 days or more (depending on environmental conditions). **BioSolve®,** when applied, will form a "cap" of clean soil. If the soil is not disturbed, via weather, movement, etc. this "cap" will remain functional. During excavation, loading or other movement of the soil, it may be required to spray an additional amount of **BioSolve®** to the freshly exposed surface area to keep emissions at an acceptable level.

In case of an extremely high level of emissions, or if the soil is heavily contaminated, it may be necessary to increase the strength of the **BioSolve®** solution or apply more solution per square metre to reduce emissions adequately. It is important that the site be monitored regularly and that the **BioSolve®** solution be reapplied if and when necessary to insure that VOC emissions and odors remain under control.

BioSolve® is packaged and readily available in 55 gallon (208 liter) drums, 5 gallon (19 liter) pails and in 4X1 gallon (3.8 liter X 4) cases. Contact The Westford Chemical Corporation® Toll Free @ 1-800-225-3909, via e-mail at info@biosolve.com or your Local BioSolve distributor for pricing.

BioSolve® should only be used in accordance with all regulatory rules and regulations.

This material is made available or use by professionals or persons having technical skill to be used at the own discretion and risk. These protocols are guidelines only and may need to be modified to site specific conditions. Nothing included herein is a warrantee or to be taken as a license to use **BioSolve** without the proper permits, approvals, etc. of the appropriate regulatory agencies, nor are the protocols provided as instructions for any specific application of **BioSolve**.

SOIL VAPOR SUPPRESSION UTILIZING BIOSOLVE

BioSolve is being utilized by numerous environmental consultants, response contractors, and fire departments to suppress VOC's & LEL's as well as problem odors. BioSolve encapsulates the source of the vapor rather than temporarily blanketing it like a foam or other physical barrier. Vapor reduction is so fast and effective that BioSolve is used to comply with the tough emission standards regulated by each State.

BioSolve offers a relatively simple and cost effective method of suppressing VOC vapor release from soils during excavation, loading, stockpiling… The following guidelines will apply to the most common situations encountered on site.

In most cases a 3% solution of BioSolve will be adequate to keep vapor emissions within acceptable limits. Dilute BioSolve concentrate with water at a ratio of 1 part BioSolve to 33 parts water to make a 3% solution.

The BioSolve solution should be applied evenly to the soil surface in sufficient quantity to dampen the surface well, (as a general rule, 1 gallon of BioSolve solution will cover approximately 4 sq. yd. of soil surface area). BioSolve is not a foam, it is a surfactant based product that will apply like water. The solution may be applied with a hand sprayer, high pressure power sprayer, water truck, etc., whichever method best suits the site and/or conditions.

NOTE: In the case of extremely high emission levels and/or very porous soil it may be necessary to increase the strength of the BioSolve solution (6%) or apply more per sq. yd. to reduce emissions adequately. On stockpiled soil or other soil that will be undisturbed, a single application of BioSolve to the exposed surfaces may last 10-14 days or more. During excavation, loading, or other movement of soil it may be necessary or required to spray each freshly exposed surface to keep emissions below acceptable levels.It is important that the site be monitored regularly and the BioSolve solution be reapplied if/when necessary to insure that vapor emissions remain at or below acceptable standards.

MATERIAL SAFETY DATA SHEET

THE WESTFORD CHEMICAL CORPORATION®
P.O. Box 798
Westford, Massachusetts 01886 USA

Phone: (978) 392-0689
Phone: (508) 878-5895
Emergency Phone-24 Hours: 1-800-225-3909

Fax: (978) 692-3487
Web Site: http://www.BioSolve.com
E-Mail: info@BioSolve.com

Ref. No.: 2001
Date: 1/1/2002

SECTION I - IDENTITY

Name:	**BioSolve®**
CAS #:	138757-63-8
Formula:	Proprietary
Chemical Family:	Water Based, Biodegradable, Wetting Agents & Surfactants
HMIS Code:	Health 1, Fire 0, Reactivity 0
HMIS Key:	4 = Extreme, 3 = High, 2 = Moderate, 1 = Slight, 0 = Insignificant

---

SECTION II - HAZARDOUS INGREDIENTS

Massachusetts Right to Know Law or 29 C.F.R. (Code of Federal Regulations) 1910.1000 require listing of hazardous ingredients.

This product does not contain any hazardous ingredients as defined by CERCLA, Massachusetts Right to Know Law and California's Prop. 65.

SECTION III - PHYSICAL - CHEMICAL CHARACTERISTICS

Boiling Point	: 265°F	Specific Gravity	: 1.00 +/-.01
Melting Point	: 32°F	Vapor Pressure mm/Hg	: Not Applicable
Surface Tension- 6% Solution	: 29.1 Dyne/cm at 25°C	Vapor Density Air = 1	: Not Applicable
Reactivity with Water	: No	Viscosity - Concentrate	: 490 Centipoise
Evaporation Rate	: >1 as compared to Water	Viscosity - 6% Solution	: 15 Centipoise
Appearance	: Clear Liquid unless Dyed	Solubility in Water	: Complete
Odor	: Pleasant Fragrance	pH	: 9.1+/-.3
Pounds per Gallon	: 8.38		

SECTION IV - FIRE AND EXPLOSION DATA

Special Fire Fighting Procedures	: None	Flammable Limit	: None
Unusual Fire and Explosion Hazards	: None	Auto Ignite Temperature	: None
Solvent for Clean-Up	: Water	Fire Extinguisher Media	: Not Applicable
Flash Point	: None		

SECTION V - SPECIAL PRECAUTIONS AND SPILL/LEAK PROCEDURES

Precautions to be taken in Handling and Storage: Use good normal hygiene.
Precautions to be taken in case of Spill or Leak -
Small spills, in an undiluted form, contain. Soak up with absorbent materials.
Large spills, in an undiluted form, dike and contain. Remove with vacuum truck or pump to storage/salvage vessel. Soak up residue with absorbent materials.
Waste Disposal Procedures -
Dispose in an approved disposal area or in a manner which complies with all local, state, and federal regulations.

SECTION VI - HEALTH HAZARDS

Threshold Limit Values: Not applicable
Signs and Symptoms of Over Exposure-
Acute : Moderate eye irritation. Skin: Causes redness, edema, drying of skin.
Chronic: Pre-existing skin and eye disorders may be aggravated by contact with this product.
Medical Conditions Generally Aggravated by Exposure: Unknown
Carcinogen: No
Emergency First Aid Procedures -
Eyes: Flush thoroughly with water for 15 minutes. Get medical attention.
Skin: Remove contaminated clothing. Wash exposed areas with soap and water. Wash clothing before reuse. Get medical attention if irritation develops.
Ingestion: Get medical attention.
Inhalation: None considered necessary.

SECTION VII - SPECIAL PROTECTION INFORMATION

Respiratory Protection	: Not necessary	Local Exhaust Required	: No
Ventilation Required	: Normal	Protective Clothing	: Gloves, safety glasses Wash clothing before reuse.

SECTION VIII - PHYSICAL HAZARDS

Stability	: Stable	Incompatible Substances	: None Known
Polymerization	: No	Hazardous Decomposition Products	: None Known

---

SECTION IX - TRANSPORT & STORAGE

DOT Class	: Not Regulated/Non Hazardous		
Freeze Temperature	: 28°F	Storage	: 35°F-120°F
Freeze Harm	: None (thaw & stir)	Shelf Life	: Unlimited Unopened

---

SECTION X - REGULATORY INFORMATION

The Information on this Material Safety Data Sheet reflects the latest information and data that we have on hazards, properties, and handling of this product under the recommended conditions of use. Any use of this product or method of application, which is not described on the Product label or in this Material Safety Data Sheet, is the sole responsibility of the user. This Material Safety Data Sheet was prepared to comply with the OSHA Hazardous Communication Regulation and Massachusetts Right to Know Law.

Appendix F

Health and Safety Plan (HASP)

Prepared for:
National Grid
Brooklyn, New York

HEALTH AND SAFETY PLAN

Remedial Investigation

Equity Former MGP Site
Brooklyn, New York
NYSDEC Site No.: 224050
Order on Consent Index #: A2-0552-060

AECOM Inc.
March 2009

Prepared for:
National Grid
Brooklyn, New York

HEALTH AND SAFETY PLAN

Remedial Investigation

Equity Former MGP Site
Brooklyn, New York
NYSDEC Site No.: 224050
Order on Consent Index #: A2-0552-060

Prepared By – Jennifer Atkins, Project Engineer

Reviewed By – Robert M. Poll, CIH, CSP
Northeast Region SH&E Manager

AECOM Inc.
March 2009

AECOM

Contents

List of Attachments

Attachment A – HASP Acknowledgement and Acceptance Form

Attachment B– Job Safety Analysis Form

Attachment C – Pre-Entry Briefing Attendance Sheet

Attachment D – Accident Investigation Report Form

1.0 Introduction

1.1 HASP applicability

This Health and Safety Plan (HASP) has been developed by AECOM Environment (AECOM). It establishes the health and safety procedures to minimize potential risk to AECOM and contractor personnel involved with implementing the Remedial Investigation (RI) at the Equity Former Manufactured Gas Plant (MGP) Site located at 222, 252 and 254 Maspeth Avenue in Brooklyn, New York. AECOM is conducting this investigation on behalf of National Grid USA (National Grid).

The provisions of this plan apply to AECOM personnel and AECOM subcontractor personnel who may potentially be exposed to safety and/or health hazards related to activities described in Section 3.0 of this document.

This HASP has been written to comply with the requirements of OSHA's Hazardous Waste Operations and Emergency Response Standard (29 CFR 1910.120). All activities covered by this HASP must be conducted in complete compliance with this HASP and with all applicable federal, state, and local health and safety regulations. All contractors and their subcontractors must conform to applicable guidance and regulations, as established by the regulatory agencies in the following documents:

- U.S. Department of Labor, Occupational Safety and Health Administration (OSHA), Code of Federal Regulations, Title 29 (29 CFR), Part 1910.120.
- U.S. Department of Labor, OSHA, 29 CFR, Part 1910.1200.
- U.S. Department of Labor, OSHA, 29 CFR, Part 1910 and Part 1926.
- National Institute for Occupational Safety and Health (NIOSH)/OSHA/U.S. Coast Guard (USCG)/EPA, Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, Publication No. 85-115, 1985.

Personnel covered by this HASP who cannot or will not comply will be excluded from site activities.

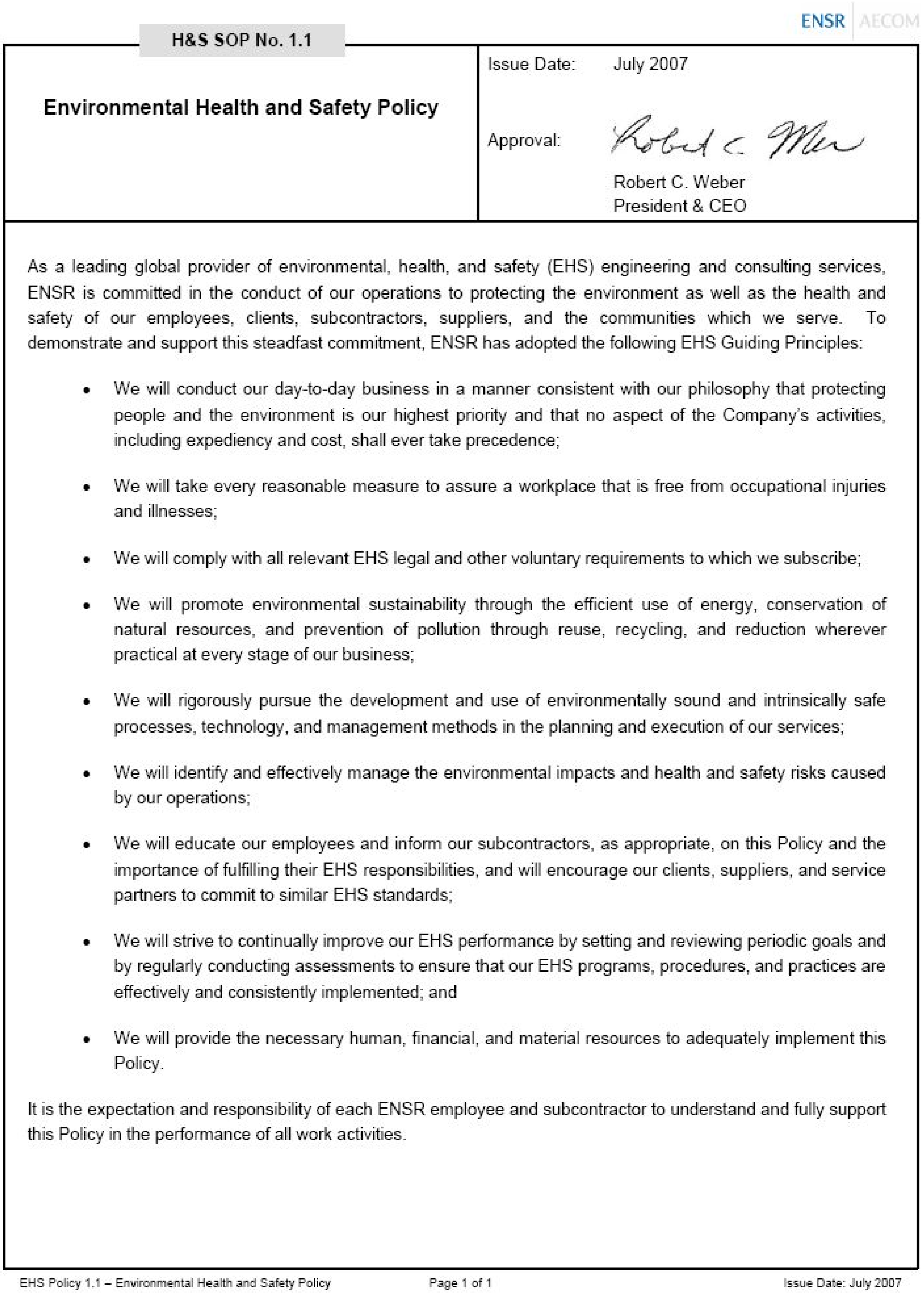
This plan will be distributed to each employee, including all contractor employees, involved with the proposed investigation activities. Each employee must sign a copy of the attached health and safety plan sign-off sheet (see Attachment A).

This HASP only pertains to the tasks that are listed in Section 3.0. A task -specific HASP or addendum to this HASP will be developed at a later date for any other subsequent investigative/remedial activities at this Site.

1.2 Health and safety expectations

1.2.1 AECOM Safety Policy

As a leading global provider of environmental, health, and safety (EHS) engineering and consulting services, AECOM is committed in the conduct of our operations to protecting the environment as well as the health and safety of our employees, clients, subcontractors, suppliers, and the communities which we serve. To demonstrate and support this steadfast commitment, AECOM has adopted nine EHS Guiding Principles. It is the expectation and responsibility of each AECOM employee to understand and fully support these Principles in the performance of all work activities. These principles are presented on the next page.



ENSR | AECOM

H&S SOP No. 1.1

Environmental Health and Safety Policy	Issue Date:	July 2007
	Approval:	Robert C. Weber President & CEO

As a leading global provider of environmental, health, and safety (EHS) engineering and consulting services, ENSR is committed in the conduct of our operations to protecting the environment as well as the health and safety of our employees, clients, subcontractors, suppliers, and the communities which we serve. To demonstrate and support this steadfast commitment, ENSR has adopted the following EHS Guiding Principles:

- We will conduct our day-to-day business in a manner consistent with our philosophy that protecting people and the environment is our highest priority and that no aspect of the Company's activities, including expediency and cost, shall ever take precedence;
- We will take every reasonable measure to assure a workplace that is free from occupational injuries and illnesses;
- We will comply with all relevant EHS legal and other voluntary requirements to which we subscribe;
- We will promote environmental sustainability through the efficient use of energy, conservation of natural resources, and prevention of pollution through reuse, recycling, and reduction wherever practical at every stage of our business;
- We will rigorously pursue the development and use of environmentally sound and intrinsically safe processes, technology, and management methods in the planning and execution of our services;
- We will identify and effectively manage the environmental impacts and health and safety risks caused by our operations;
- We will educate our employees and inform our subcontractors, as appropriate, on this Policy and the importance of fulfilling their EHS responsibilities, and will encourage our clients, suppliers, and service partners to commit to similar EHS standards;
- We will strive to continually improve our EHS performance by setting and reviewing periodic goals and by regularly conducting assessments to ensure that our EHS programs, procedures, and practices are effectively and consistently implemented; and
- We will provide the necessary human, financial, and material resources to adequately implement this Policy.

It is the expectation and responsibility of each ENSR employee and subcontractor to understand and fully support this Policy in the performance of all work activities.

1.2.2 Zero accident goal

The safety goal for this project is zero incidents and zero accidents, with work tasks designed to minimize or eliminate hazards to personnel, equipment, the environment and the general public. No individuals working at this site shall perform tasks that may endanger their own safety and health or that of others.

1.2.3 Stop work authority

Commitment to safety, health, and environmental excellence requires that all work proceed only after it is safe and environmentally sound to do so. The responsibility for ensuring that this takes place rests with every AECOM and contractor employee working at this project location. Effectively meeting these responsibilities depends upon open communication between individuals and their supervisors prior to work beginning, and – in certain cases – after safety, health and/or environmental issues are identified.

The safety and health of on-site personnel will take precedence over cost and schedule considerations for all project work. All AECOM personnel and AECOM contractors have the authority to STOP WORK if they see a potential or actual hazard that may threaten the safety of people or the environment. Upon stopping work, the AECOM Site Safety Officer (SSO) must be immediately notified and provided with information regarding the nature of the safety, health or environmental concern. The SSO will meet with the worker with the intent of resolving the worker’s concerns. Once the concerns are resolved to the satisfaction of the worker, work can proceed.

If the concerns are not resolved to the satisfaction of the worker and/or the SSO, work does not proceed. The AECOM Regional Health and Safety Manager (RHSM) will be contacted to obtain assistance in resolving the concerns. Using his/her expertise of safety, health, and environmental rules, regulations, and procedures, the AECOM RHSM will attempt to resolve the matter with all parties involved. Work will not resume until this criterion is met.

1.3 Organization/responsibility

The implementation of health and safety at this project location will be the shared responsibility of the AECOM Project Manager (PM), the Regional Health and Safety Manager (RHSM), Site Safety Officer (SSO), other field staff, and contractor personnel implementing the proposed scope of work.

1.3.1 AECOM project manager

The AECOM PM (Peter Cox) is responsible for ensuring that the overall objectives of the safety program established for this project are met. Some of the PM's specific responsibilities include:

- Assuring that all personnel to whom this HASP applies, including subcontractor personnel, have received a copy of it;
- Providing the RHSM with updated information regarding conditions at the Site and the scope of site work;
- Assigning a Site Safety Officer for the project and/or for each major field effort that occurs throughout the project;
- Providing adequate authority and resources to the SSO to allow for the successful implementation of all necessary safety procedures;
- Supporting the decisions made by the SSO and RHSM;

- Conducting regular project reviews and on-site visits to verify that the components of this safety program are being implemented and to identify any improvements that could be made to increase the project's safety success;
- Ensuring that JSA's have been prepared for the AECOM tasks being implemented and for any additional tasks that AECOM might perform that have not been addressed in this HASP;
- Maintaining regular communications with the SSO and, if necessary, the RHSM;
- Participating as a member of the accident/incident investigation team and ensuring that all identified corrective actions are implemented in a timely fashion;
- Verifying that all contractors selected by AECOM to work on this program have completed AECOM's environmental, health and safety questionnaire (EHSQ) form within the past year and have been deemed acceptable for the proposed scope of work; and,
- Coordinating the activities of all AECOM subcontractors and ensuring that they are aware of the pertinent health and safety requirements for this project.

1.3.2 AECOM regional health and safety manager

The AECOM RHSM (Robert Poll) is the individual responsible for the preparation, interpretation and modification of this HASP. Modifications to this HASP which may result in less stringent precautions cannot be undertaken by the PM or the SSO without the approval of the RHSM. Specific duties of the RHSM include:

- Writing, approving and amending the HASP for this project;
- Reviewing JSAs that are prepared prior to mobilizing for the various field events covered by this HASP as well as JSAs that are developed to manage change in the field;
- Advising the SSO on matters relating to health and safety;
- Recommending appropriate personal protective equipment (PPE) and safety equipment to protect personnel from potential site hazards;
- Conducting site visits to verify that the components of this HASP and the task-specific JSAs provide the necessary hazard control measures to ensure work is conducted safely and that the project's zero accident goal is achieved;
- Forming accident/incident teams and leading the accident/incident investigations and root cause analysis process; and,
- Maintaining regular contact with the SSO to evaluate site conditions and new information which might require modifications to the HASP.

1.3.3 AECOM site safety officer

AECOM field staff are responsible for implementing the safety requirements specified in this HASP. However, one AECOM employee will serve as the SSO. The PM will appoint a SSO for this program. The SSO will be on-site during all activities covered by this HASP. The SSO is responsible for enforcing the requirements of this HASP once work begins. The SSO has the authority to immediately correct all situations where noncompliance with this HASP is noted and to immediately stop work in cases where an immediate danger is perceived. Some of the SSO's specific responsibilities include:

- Assuring that all personnel to whom this HASP applies, including all subcontractors, have submitted a completed copy of the HASP receipt and acceptance form;
- Assuring that all personnel to whom this HASP applies attend and actively participate in a pre-entry briefing and daily safety meetings that are conducted during the implementation of site activities;

- Maintaining a high level of health and safety consciousness among employees implementing the proposed activities;
- Working directly with contractor's SSOs to develop job safety analysis (JSA) to effectively manage change associated with the performance of new work tasks not addressed in this HASP;
- Procuring and distributing the PPE and safety equipment needed for AECOM employees;
- Verifying that all PPE and health and safety equipment used by AECOM is in good working order;
- Verifying that AECOM contractors are prepared with the PPE and safety equipment required for this project;
- Performing the required environmental air monitoring during the proposed activities;
- Notifying the PM of all noncompliance situations and stopping work in the event that an immediate danger situation is perceived;
- Monitoring and controlling the safety performance of all personnel, in coordination with the contractor's SSO, to ensure that required safety and health procedures are being followed;
- Conducting accident/incident investigations and preparing accident/incident investigation reports in conjunction with AECOM's SSO and contractor representatives (if applicable);
- Conducting the pre-entry briefing and daily safety meetings in conjunction with the contractor's SSO; and,
- Initiating emergency response procedures, in coordination with the contractor's SSO, and in accordance with Section 11.0 of this HASP.

1.3.4 AECOM field personal

All AECOM field personnel covered by this HASP are responsible for following the health and safety procedures specified in this HASP and for performing their work in a safe and responsible manner. Some of the specific responsibilities of the field personnel are as follows:

- Reading the HASP in its entirety prior to the start of on-site work and bringing forth any questions or concerns regarding the content of the HASP to the AECOM PM or RHSM;
- Submitting a completed HASP Acceptance Form to the AECOM SSO prior to the start of work;
- Complying with the requirements of this HASP and the requests of the SSO;
- Attending and actively participating in the required pre-entry briefing and daily safety meetings that are conducted during the implementation of the program;
- Preparing JSAs that address the hazards associated with any new tasks that are performed on site;
- Stopping work in the event that an immediate danger situation is perceived; and,
- Reporting all accidents, injuries and illnesses, and near misses, regardless of their severity, to the SSO.

1.3.5 Contractors

Contractors working with AECOM to implement the proposed activities are responsible for:

- Reading the HASP in its entirety prior to the start of on-site work;
- Appointing an on-site safety coordinator to interface with the AECOM SSO;

- Attending and actively participating in the required pre-entry briefing prior to beginning on-site work and daily safety meetings that are conducted during the implementation of the program;
- Ensuring, via daily inspections, that their equipment is in good working order;
- Operating their equipment in a safe manner;
- Reporting all accidents, injuries and illnesses, and near misses, regardless of their severity, to the AECOM SSO;
- Stopping work in the event that an immediate danger situation is perceived;
- Providing AECOM with copies of material safety data sheets (MSDS) for all hazardous materials brought on-site; and,
- Providing all the required PPE and safety supplies to their employees.

1.4 Management of change/modification of the HASP

1.4.1 Management of change

The procedures in this HASP have been developed based on site history, previous site investigations and the proposed scope of work. Every effort has been made to address the chemical and physical hazards that may be encountered during the implementation of the proposed investigative activities. However, unanticipated site-specific conditions or situations may occur during the implementation of this project. Also, AECOM and their selected contractors may elect to perform certain tasks in a manner that is different from what was originally intended due to a change in field conditions. As such, this HASP must be considered ***a working document*** that is subject to change to meet the needs of this dynamic project.

AECOM and their selected contractors will complete a JSA when new tasks or different investigative techniques not addressed in the HASP are proposed. The use of new techniques will be reviewed and if new hazards are associated with the proposed changes, they will be documented on the JSA form. An effective control measure must also be identified for each new hazard. JSA forms will be reviewed by the SSO prior to being implemented. Once approved, the completed forms will be reviewed with all field staff during the daily safety meeting. A blank JSA form is presented as Attachment B.

1.4.2 HASP modification

Should significant information become available regarding potential on-site hazards, it may be necessary to modify this HASP. All proposed modifications to this HASP must be reviewed and approved by the RHSM before such modifications are implemented. Any significant modifications must be incorporated into the written document as addenda and the HASP must be reissued. The PM will ensure that all personnel covered by this HASP receive copies of all issued addenda. Sign-off forms will accompany each addendum and must be signed by all personnel covered by the addendum. Sign-off forms will be submitted to the PM. The HASP addenda should be distributed during the daily safety meeting so that they can be reviewed and discussed. Attendance forms will be collected during the meeting.

2.0 Site description and history

2.1 Site location

The Equity former MGP site is located at 222, 252 and 254 Maspeth Avenue in Brooklyn, Kings County, New York 11211. The site is approximately 2 acres in size and consists of the three parcels listed above. The Greenpoint Energy Center, which is the location of the Greenpoint former MGP site, is located north of the Equity former MGP across Maspeth Avenue. The current land use of the site and surrounding areas includes industrial, manufacturing, transportation, utility and vacant land. The Equity former MGP is located approximately 900 feet north of Newtown Creek.

2.2 Site history

The Equity former MGP was operated by Brooklyn Union Gas Company (BUG), a predecessor company to National Grid, from approximately 1903 until approximately 1933, according to a review of Sanborn Maps. The MGP consisted of one gas holder along with a few oil tanks and associated gas manufacture buildings. In the 1933 Sanborn map, the buildings associated with MGP operations are shown as vacant. By 1951, all buildings associated with the MGP had been removed. The 1977 Sanborn maps shows buildings that were used for storage of used valves and pipe.

A Phase I Environmental Site Assessment (ESA) was conducted for the Cooper Tank Transfer Facility at 254 Maspeth Avenue (the eastern-most parcel of the site) in November 2004 (Gannett Fleming Engineers, 2004). Surficial soil staining was observed and a Phase II investigation was recommended to identify potential soil and groundwater impacts. A Phase II Environmental Site Investigation was subsequently conducted for 254 Maspeth Avenue in September 2004 (EEA, Inc., 2004). Six soil borings were advanced to approximately 12 feet below ground surface (feet bgs) and soils samples were collected. VOCs, SVOCs, and metals were detected in the soil samples.

A Phase II Environmental Site Investigation was conducted for 252 Maspeth Avenue (the central parcel of the site) in March 2005 (Gannett Fleming Engineers, 2005). Four borings were installed to depths of approximately 10 to 12 feet bgs and the borings were converted into temporary monitoring wells. Groundwater was encountered at approximately 7 to 9 feet bgs. Odors and stains were observed in the soils from these borings. VOCs, SVOCs and metals were detected in soil and groundwater.

Current the site is being investigated in accordance with Administrative Consent Order Index # A2-0552-0606 (as modified) between KeySpan (now National Grid) and the NYSDEC. The RI is designed to identify and investigate any potential areas of concern at the site.

3.0 Scope of work

3.1 Purpose of investigation

The overall objective for the proposed remedial investigation is to complete the investigation of the Site and lay the groundwork for the selection of the Site remedy.

The key features of the former MGP to be investigated include:

- The former gas holder and settling tank located on the west side of the Site.
- The former oil tank and gas oil storage house on the east site of the Site.
- The site boundaries to the north and south.

3.2 Field investigation

The field activities being conducted during the proposed remedial investigation include:

- Advancement of subsurface soil borings to varying depths (estimated maximum 50 feet bgs) across the site using either rotosonic or hollow-stem auger drilling methods and possibly direct push drilling methods in areas with access limitations;
- Collection of surface soil and subsurface soil samples for field screening and laboratory analyses;
- Excavation of test pits and collection of soil samples for field screening and laboratory analyses;
- Conversion of select borings into overburden groundwater monitoring wells;
- Development of each newly installed groundwater monitoring well;
- Gauging of each newly installed groundwater monitoring well for non-aqueous phase liquids (NAPL) prior to sampling;
- Collection of groundwater samples from all newly installed monitoring wells using low-flow techniques with a peristaltic or submersible pump;
- Conducting hydraulic conductivity test (i.e. slug test) on at least three monitoring wells; and
- Collection of a sub-slab soil vapor sample from immediately below the concrete floor slab inside one on-site building.

4.0 Chemical hazard assessment and control

4.1 Chemical hazards

Typical wastes associated with former MGP operations could include volatile organic compounds (VOCs) such as benzene, toluene, ethylbenzene and xylenes (BTEX), polycyclic aromatic hydrocarbons (PAHs), tar-like materials, purifier box wastes (potentially containing cyanide complexes and compounds) and certain trace metals associated with ash and clinkers.

4.1.1 Volatile organic compounds

The VOCs associated with MGP wastes include BTEX. Exposure to the vapors of BTEX above their respective OSHA permissible exposure limits (PELs) may produce irritation of the mucous membranes of the upper respiratory tract, nose and mouth. Overexposure may also result in the depression of the central nervous system (CNS). Symptoms of such exposure include drowsiness, headache, fatigue and drunken-like behaviors.

Prolonged overexposure to benzene vapors has detrimental effects on the blood-forming system ranging from anemia to leukemia. The PEL for benzene is 1 part per million (ppm), as an 8 hour time-weighted average (TWA). The American Conference of Governmental Industrial Hygienists (ACGIH) recommends a threshold limit value (TLV) of 0.5 ppm. The OSHA PEL for ethylbenzene is 100 ppm, as an 8-hr TWA. The PEL for toluene is 200 ppm, as an 8-hr TWA; however, the ACGIH recommends a TLV of 10 ppm for toluene. Xylene is a flammable, colorless liquid with an OSHA PEL of 100 ppm, as an 8-hour TWA.

4.1.2 Polycyclic aromatic hydrocarbons

Typical coal gasification byproducts (coal tar) contain PAH compounds. PAH compounds are a family of multiple ring aromatic compounds commonly found in fossil fuels and formed from the incomplete combustion of organic materials. Repeated contact with PAH compounds may cause photosensitization of the skin, producing skin burns after subsequent exposure to ultra-violet light. Certain PAHs as a group are considered potential human carcinogens (CaPAH). OSHA regulates PAHs as coal tar pitch volatiles (CTPV) and has established a PEL for CTPV of 0.2 mg/m3, as an 8-hr TWA.

Of the PAH compounds typically present at MGP sites, naphthalene is typically present at higher concentrations than the other compounds. Naphthalene is easily detected due to its characteristic moth-ball like odor. The inhalation of high concentrations of naphthalene vapor may result in nausea, vomiting, abdominal pain and irritation of the bladder. Prolonged overexposure may result in renal shut down. The OSHA PEL for naphthalene, as an 8-hr TWA, is 10 ppm.

4.1.3 Oxide box wastes

Blue staining is the characteristic associated with the presence of oxide box wastes (ferrocyanide). Therefore, the presence of this material is very easily identified during field investigations. The cyanides associated with oxide box wastes are present in a form that is generally unavailable or complexed with metals such as iron, which makes the cyanide more stable. Thus, the reported effects of free cyanide are not applicable. OSHA has not established a PEL for ferro/ferri cyanide compounds. Similarly, the ACGIH has not recommended a TLV for these compounds.

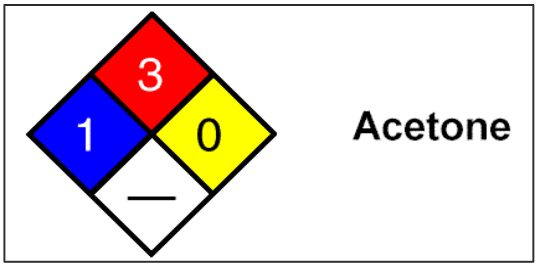
4.1.4 Metals

Lead is a common component of urban fill and soils present at industrial sites, such as former MGP and electrical generating sites. In general, the inhalation of metal dusts is irritating to the upper respiratory tract and nasal mucous membranes. Most metal dusts may cause dermatitis and/or eye irritation. The early symptoms of lead poisoning, as a result of overexposure (either through ingestion or inhalation) include fatigue, sleep disturbance, headache, aching bones and muscles, digestive irregularities, abdominal pains, and decreased appetite. Chronic overexposures to lead affect the CNS and male and female reproductive systems. Lead has also been identified as a fetotoxin. The OSHA PEL for inorganic lead is 50 micrograms per cubic meter (µg/m^3), as an 8-hr TWA.

4.2 Hazardous substances brought on-site by AECOM and/or contractors

A material safety data sheet (MSDS) must be available for each hazardous substance that AECOM or AECOM contractors bring on the property. This includes solutions/chemicals that will be used to decontaminate sampling equipment, fuels, and calibration gases for air monitoring equipment.

In addition, all containers of hazardous materials must be labeled in accordance with OSHA's Hazard Communication Standard. Either the original manufacturer’s label or an NFPA 704M label specific for the material (as shown at the right) is considered to be an acceptable label.



4.3 Chemical exposure and control

4.3.1 Chemical exposure potential

The proposed investigation locations were selected to target areas most likely to contain MGP residuals or delineate the extent of previously identified soil and groundwater impacts. As such, the field team should be prepared to encounter contamination during the proposed investigation of the property. The most likely routes of potential chemical exposure during the implementation of this field program include the following:

- Inhalation of VOC vapors and impacted dusts during soil boring advancement and well installation, as well as during the excavation of test pits and/or the installation of soil gas vapor probes.
- Direct dermal contact with potentially contaminated soils and groundwater during sampling.
- Direct dermal contact with NAPL (if encountered) during well gauging, the collection of NAPL samples and/or oil-saturated soil samples

4.3.2 Chemical Exposure Control

The potential chemical hazards associated with the proposed activities can be controlled in several ways, including:

- Direct-reading air monitoring instrumentation will be used, as described in Section 6.0 of this HASP, to determine the concentration of VOC vapors that may be present in the work area and in the employee’s breathing zone during intrusive site activities as described above. If necessary, respiratory protection, as defined in Section 7.2 of this HASP, may be donned to control employee exposure to the vapors of VOCs.
- Dusts from contaminated soils may be generated during intrusive site activities. If necessary, a light mist of water can be applied to the borehole or excavation to suppress dust generation. A MIE Data-

Ram total dust monitor, or its equivalent, will be used to monitor the effectiveness of these engineering controls and to determine if respiratory protection is required.

- Polyethylene sheeting will be placed over any soil stockpiles to prevent vapor release as well as dust generation.
- All work conducted inside buildings will be performed using electric drilling devices so that exhaust gases from internal combustion engines will not accumulate within any occupied tenant space or public access area.
- To avoid direct dermal contact with contaminated media, protective clothing, as described in Section 7.1, will be required when handling and collecting samples .
- Although highly unlikely, exposure to all of the contaminants of concern may occur via ingestion (hand-to-mouth transfer). The decontamination procedures described in Section 9.0 address personal hygiene issues that will limit the potential for contaminant ingestion.

5.0 Physical hazards and controls

The general safety procedures in this HASP have been developed to address the potential physical hazards associated with the implementation of this investigative program. Prior to site mobilization, JSAs will be developed by AECOM and/or AECOM's selected contractors for each field task to be executed during the overall proposed program. JSAs will be reviewed by the RHSM and Project Managers and appended to this HASP for all field staff to review and use as necessary.

While every effort has been made to address the potential chemical and physical hazards that may be encountered during the implementation of the proposed project activities, unanticipated site-specific conditions or situations may occur. As such, JSAs also will be used to manage change in the field. Site workers may elect to perform certain tasks in a manner different than what was originally intended due to a change in field conditions. Therefore, a JSA will be completed by AECOM or contractor staff when new tasks or different techniques not addressed in the HASP are proposed. The use of new techniques will be reviewed by the proposed field teams and any new hazards associated with the proposed changes will be documented on the JSA along with the proposed control measure for each of the identified hazards.

5.1 Utility hazards

5.1.1 Underground utilities

New York law requires that a utility clearance be performed at the site at least 48 hours prior to initiation of any subsurface work. The drilling and excavation contractors will contact NYC/LI One Call Dig Safely (1.800.272.4480) to request a mark-out of natural gas, electric, telephone, and cable television, in the proposed test pit and soil boring areas. Indoor sub-slab vapor sampling locations must also be included in this request. The contractor will also contact the local water and sewer authorities to request a mark out of any lines in the proposed work areas.

Public utility clearance organizations typically do not mark-out underground utility lines that are located on private property. As such, the contractor must exercise due diligence and try to identify the location of any private utilities at the work areas. Due diligence can be fulfilled in several ways, including:

- obtaining as-built drawings for the areas where subsurface work is being conducted from the property owner(s);
- visually reviewing each proposed subsurface work area with the property owner(s) or knowledgeable site representative(s);
- performing a geophysical survey to locate utilities or hiring a private line locating firm to determine the location of utility lines that are present at the property;
- identifying a no-drill/no-dig zone; or
- hand digging in the proposed subsurface locations if insufficient data is available to accurately determine the location of the utility lines.

For this program, following the NYC/LI One Call Dig Safely mark-out request and a review of all available site plans, AECOM will contact a private company to conduct a geophysical investigation to locate subsurface utility lines in the proposed investigative areas. As a final measure of due diligence to safely advance the proposed soil borings, the first five feet of each boring will be advanced using hand method or vacuum extraction methods.

5.1.2 Overhead utility hazards

Contractors must perform a site reconnaissance at each work location to identify all overhead lines located in and around the work areas and to determine if the minimum clearance requirements can be met. Any vehicle or mechanical equipment capable of having parts of its structure elevated (drill rig, crane etc.) near energized overhead lines shall be operated so that a clearance of at least 10 feet is maintained. If the voltage is higher than 50kV, the clearance shall be increased 4 inches for every 10kV over that voltage.

If the required clearance cannot be maintained at any work area at the site, additional precautions must be taken to ensure contact with the overhead lines does not occur. Options include, but may not be limited to, de-energizing the line or placing an insulating barrier over the line. Both of these options will require coordination with the owner of the lines in question.

5.2 Working inside buildings to conduct sub-slab vapor sampling

Following utility clearance, sub-slab soil vapor samples will be collected immediately below the concrete floor slabs of one on-site building. The soil vapor sampling point will be installed by drilling a ¾-inch diameter hole through the concrete slab.

AECOM representatives will work with the building owner to ensure that the sampling being conducted inside their properties will not interfere with ongoing operations but that will also ensure that sample integrity is maintained. If necessary, AECOM will set up a small exclusion zone around each indoor sampling area so employees of the facility as well as patrons and visitors do not trip, slip or fall over the sampling equipment or otherwise potentially interfere with the sampling process.

5.3 Slips, trips and fall hazards

5.3.1 Site conditions

On any work area, it is expected that the ground may be uneven. The ground surface may be unreliable due to settling. Surface debris may be present and wet or swampy areas may exist.

To avoid the potential for slip, trips and falls, employees must wear sturdy footwear. Additionally, employees should walk around, not over or on top of, debris or trash piles. When carrying equipment, identify a path that is clear of any obstructions. It may be necessary to remove obstacles to create a smooth, unobstructed access point to the work areas on site.

5.3.2 Good housekeeping

Maintaining a work environment that is free from accumulated debris is the key to preventing slip, trip and fall hazards at construction sites. Essential elements of good housekeeping include

- orderly placement of materials, tools and equipment;
- placing trash receptacles at appropriate locations for the disposal of miscellaneous rubbish;
- prompt removal and secure storage of items that are not needed to perform the immediate task at hand; and
- awareness on the part of all employees to walk around, not over or on, equipment that may have be stored in the work area.

The SSO will conduct regular inspections of each work area with the Contractor's SSO to verify that each drilling area is being maintained in an orderly fashion and that materials are being stored in the dedicated areas so that tripping hazards are minimized.

5.4 Traffic hazards

The proposed investigation areas include sidewalk right-of-ways and active truck loading-unloading areas. Because of the high potential for serious injury from traffic hazards, each daily safety meeting (see Section 10.3.2) will include a review of the day's traffic control measures along with other relevant safety topics.

5.4.1 Pedestrian Walkway on Vandervoort Avenue

AECOM will ensure that temporary pedestrian walkways are established when work is conducted on Vandervoort and Maspeth Avenues. The walkways will, to the extent possible, re-route pedestrians away from the drilling areas while still allowing access to the businesses in the area. AECOM will obtain the appropriate permits from the City and follow any requirements the City specifies for working in a public way.

5.4.2 Truck loading-unloading areas

The parcel at 222 Maspeth Avenue is used as a construction and demolition waste transfer station. In addition, this parcel is less than 1 acre in size. As such, truck traffic will be a significant hazard for the field team. To minimize the risks of truck traffic at this parcel, AECOM will attempt to schedule work for off-shift hours. However, when working in high traffic areas, the following precautions should be implemented so that on-site vehicles are aware of AECOM's presence:

- Notify the property owner of the proposed work location, dates of work and the anticipated work times. AECOM should suggest the possibility of a detour around the work area.
- All employees will wear an ANSI-approved Class II safety vest at all times.
- Create an exclusion zone around the work area by setting up traffic barriers and/or cones at least 50 feet in front of the work area. "Men at Work" signs should also be placed in a conspicuous area to warn others of your presence.
- Use a spotter where traffic flow is very high to provide additional warning to motorists of the field team's presence.

5.5 Concrete and asphalt cutting

It may be necessary to saw-cut or jack-hammer through concrete or asphalt to facilitate subsurface activities. Both pieces of equipment post hazards to the operator. Safe procedures for operating both pieces of equipment are provided below.

5.5.1 Saw-cutting

Prior to using the saw, the operator must inspect it to ensure controls and safety devices are working properly and are free of cracks/damage. Additionally, the operator must:

- Inspect the abrasive wheel for cracking, chipping and warping and replace if necessary.
- Make sure the new cutting wheel is rated for the spindle speed of the saw.
- Clear the work area of any debris before cutting.
- Not drop start the saw.

- Be sure the cutting wheel is clear of you and all other obstructions.
- Position your body so it is clear of the cutting wheel.
- Not attempt to start the saw in an existing cut.
- Not cut above shoulder height.

5.5.2 Jackhammering

Most pneumatic impact tools, such as jackhammers, receive their impact from a rapidly moving reciprocating piston driven by compressed air at about 90 p.s.i. pressure. Before operating the jackhammer,

- Read the operator's instruction manual before using the tool.
- Be sure electric models with a three-wire system are properly grounded, to reduce the risk of fire and electric shock. This is not necessary for double insulated models. Use a ground fault interrupter (GFI) for maximum safety protection.
- Be sure the extension cord for electric models is a size large enough for the distance from the receptacle to tool.
- On engine-driven, air models always fill the gas tank out of doors with engine shut off and cool. Never handle fuel while smoking or in the presence of sparks or open flame. Allow the engine to cool briefly if you need to refuel during operation.
- Always wear proper protective equipment including safety glasses, hearing protection and safety shoes with metatarsal protection.
- Insulated protective gloves with leather work gloves covering the insulated gloves should be worn when hammering in an area where the presence of underground electric lines is unknown or where lines have been located in close proximity to the hammering operation.
- Check all bits to see that they are sharp. If not, sharpen according to the manufacturer's recommendations. Always use eye protection when operating a grinder.
- Check the air hose connections from the compressor to the jackhammer. Most hoses have provisions for safety clips, at the coupling, to ensure the hose does not vibrate loose under pressure.
- Do not exceed manufacturers listed or recommended air pressure.
- Cover the hammer grips with rubber to reduce vibration and fatigue.

When operating the jackhammer,

- Always disconnect the electric power or air supply before inserting or removing tools.
- Be sure all tools are properly locked into the unit before operating.
- Keep all bystanders out of the work area.
- Prevent back injuries by using your leg muscles to lift the machine into operating position.
- Allow the tool to do the work by using a grip light enough to maintain control.
- Due to heavy vibration, take rest breaks as needed.
- If stopping work for a short period of time or for the day, unplug the electricity or stop the compressor.

5.6 Drilling hazards

A variety of drilling techniques may be used to install soil borings and groundwater monitoring wells including direct-push techniques using a Geoprobe™ rig, hollow-stem auger drilling and/or rotosonic drilling.

5.6.1 Geoprobe™ hazards

Use of the Geoprobe™ System to collect soil samples will require all personnel in the vicinity of the operating unit to wear steel-toed boots, hardhats, hearing protection, and safety eyewear. Personnel shall not remain in the vicinity of operating equipment unless it is required for their work responsibilities. Additionally, the following safety requirements must be adhered to:

- A remote vehicle ignition is located on the control panel of the Geoprobe™ unit. This allows the operator to start and stop the vehicle engine from the rear. This device must be tested prior to job initiation and periodically thereafter. All employees should be aware of how to access and operate the rear ignition.
- The driller must never leave the controls while the probe is being driven.
- Drillers, helpers, and geologists must secure all loose clothing when in the vicinity of drilling operations.
- The Geoprobe™ vehicle shall not be moved any distance with the probe in the extended position. Check for clearance at roof or the vehicle before folding the Geoprobe™ out of the carrier vehicle.
- Be sure the parking brake is set before probing.
- Never allow the derrick foot to be lifted more than 6" off of the ground surface.
- Deactivate hydraulics when adding or removing probe rods, anvils, or any tool in the hammer.
- Verify that all threaded parts are completely threaded together before probing.

5.6.2 Auger Drilling

Use of a drill rig to advance soil borings and install monitoring wells will require all personnel in the vicinity of the operating rig to wear steel-toed boots, hardhats, hearing protection and safety eyewear. Personnel shall not remain in the vicinity of operating equipment unless it is required for their work responsibilities. Additionally, the following safety requirements must be adhered to:

- All drill rigs and other machinery with exposed moving parts must be equipped with an operational emergency stop device. Drillers and geologists must be aware of the location of this device. This device must be tested prior to job initiation and periodically thereafter. The driller and helper shall not simultaneously handle augers unless there is a standby person to activate the emergency stop.
- The driller must never leave the controls while the tools are rotating unless all personnel are kept clear of rotating equipment.
- A long-handled shovel or equivalent must be used to clear drill cuttings away from the hole and from rotating tools. Hands and/or feet are not to be used for this purpose.
- A remote sampling device must be used to sample drill cuttings if the tools are rotating or if the tools are readily capable of rotating. Samplers must not reach into or near the rotating equipment. If personnel must work near any tools which could rotate, the driller must shut down the rig prior to initiating such work.
- Drillers, helpers and geologists must secure all loose clothing when in the vicinity of drilling operations.

- Only equipment which has been approved by the manufacturer may be used in conjunction with site equipment and specifically to attach sections of drilling tools together. Pins that protrude excessively from augers shall not be allowed
- No person shall climb the drill mast while tools are rotating.
- No person shall climb the drill mast without the use of ANSI-approved fall protection (approved belts, lanyards and a fall protection slide rail) or portable ladder which meets the requirements of OSHA standards.

5.6.3 Sonic Drilling

The hazards of sonic drilling are unique. The lead driller will review the JSAs the drilling firm has prepared for this type of drilling with the AECOM environmental technician overseeing the drilling during the morning safety meetings to ensure that the technician is aware of the hazards associated with sonic drilling oversight.

5.7 Excavation hazards

5.7.1 Working around machinery

Heavy equipment, including bobcats or excavators, will be used to excavate test pits. The use of such equipment poses a potential hazard to the support crew working around the equipment. Use of heavy equipment at the site requires AECOM employees working in the exclusion zone to wear ANSI-approved hard hats, steel-toed safety shoes/boots, safety glasses, hearing protection and ANSI-approved traffic vests.

AECOM employees will be conducting monitoring and sampling during test-pitting activities and may be located in close proximity to the operating machinery. When working around heavy equipment, employees should:

- make sure that the operator is aware of your presence/activities;
- stay in the operator's line of sight, don't work in his/her blind spot;
- develop a series of hand signals to facilitate communication with the operator;
- approach areas where equipment is operating from a direction visible to the operator;
- be aware of the swing radius of the excavator;
- do not walk or work underneath loads handled by digging equipment;
- do not ride in buckets of loaders; and,
- stand away from soil stockpile areas to avoid being struck by any spillage or falling materials

5.7.2 Trench/excavation cave-in or collapse

The expected depth of the test pits will exceed five feet ground surface (bgs). Due to the potential for cave-in and collapse, all samples collected from the test pits will be done so with a remote sampling device or collected directly from the bucket of the backhoe. This eliminates the need for employees to enter the excavation or trench. NO AECOM EMPLOYEE WILL ENTER A TEST PIT TO COLLECT ANY SAMPLES.

5.7.3 Open excavations

To the extent possible, all excavations should be backfilled as soon as possible after work is completed. If excavations are to be left open, the perimeter of the excavation will be marked with high-visibility snow fencing.

Additional protection, such as the use of metal plates, may be required by the facility, depending on where the open excavation is located.

5.8 Noise exposure

The use of drill rig or excavation equipment may expose the field team to noise levels that exceed the OSHA PEL of 90 dB for an 8-hour day. Exposure to noise can result in the following:

- Temporary hearing losses where normal hearing returns after a rest period;
- Interference with speech communication and the perception of auditory signals;
- Interference with the performance of complicated tasks; and
- Permanent hearing loss due to repeated exposure resulting in nerve destruction in the hearing organ.

Since personal noise monitoring will not be conducted during the proposed activities, employees must follow this general rule of thumb: If the noise levels are such that you must shout at someone 5 feet away from you, you need to be wearing hearing protection. Employees can wear either disposable earplugs or earmuffs but all hearing protection must have a minimum noise reduction rating (NRR) of 27 dB.

5.9 Hand and power tools

A variety of hand and power tools may be used during the proposed activities. The use of each can pose serious safety hazards to the user.

5.9.1 Hand tools

The greatest hazards posed by hand tools result from misuse and improper maintenance.

- When using hand tools be sure you have selected the right tool for the job. If a screwdriver is used as a chisel, the tip of the screwdriver may break or fly off, hitting the user or others.
- Inspect tools for damage such as mushroomed chisel heads or broken hammer handles. If jaws of a wrench are sprung, the wrench may slip. If a wooden handle is loose, splintered or cracked, the head of the tool may fly off.
- Do not use damaged tools.
- Be sure you know how to use the tool you are working with.

5.9.2 Using knives or blades

Geoprobe™ soil samples are contained within an acetate liner that must be cut open in order to retrieve the sample. As such, employees are at an increased risk of cutting themselves since a knife or blade is typically used to open the liner and the liner is often placed on an irregular or unstable work surface (i.e., the back of the Geoprobe™ van or the ground). However, a hooked knife is typically used to cut the liners open which will reduce the potential for being cut.

Additionally, a knife must be used to open boxes of materials or equipment and to cut groundwater sampling tubing. The only acceptable type of utility knife will be those with automatically retracting blades.

When using knives or blades, follow the safety precautions listed below:

- Keep your free hand out of the way when cutting.

- Secure whatever it is you are cutting, especially if it is located on an uneven surface.
- Use only sharp blades; dull blades require more force which results in less knife control.
- Pull the knife toward you; pulling motions are easier to manage.
- Don't put your knife in your pocket.
- Wear leather or Kevlar™ gloves when using knives or blades.

5.9.3 Power tools

To prevent hazards associated with the use of power tools, workers should observe the following general precautions:

- Never carry a tool by the cord or hose.
- Never yank the cord or the hose to disconnect it from the receptacle.
- Keep cords away from heat, oil and sharp edges.
- Disconnect tools when not using them, before servicing or cleaning them and when changing accessories such as blades, bits and cutters.
- If a tool is only temporarily being removed from the power source and the cord is not in the immediate control of the user, it is strongly suggested that a cord plug lockout be used to prevent the tool from accidentally being re-plugged in.
- Secure work with clamps or vise, freeing up both hands to operate the tool.
- Avoid accidental starting. Do not hold fingers on the switch button when carrying a plugged-in tool.
- Keep tools sharp and clean for best performance.
- Wear appropriate clothing. Loose clothing or jewelry can become caught in moving parts.
- Keep all guards in place.

5.9.4 Electric tools

A variety of power tools may also be used during the proposed activities. When using portable tools that are electrically powered, follow the safety precautions listed below:

- Check to see that electrical outlets used to supply power during field operations is of the three wire grounding type.
- Extension cords used for field operations should be of the three wire grounding type and designed for hard or extra-hard usage. This type of cord uses insulated wires within an inner insulated sleeve and will be marked S, ST, STO, SJ, SJO or SJTO.
- NEVER remove the ground plug blade to accommodate ungrounded outlets.
- Do not use extension cords as a substitute for fixed or permanent wiring. Do not run extension cords through openings in walls, ceilings or floors.
- Protect the cord from becoming damaged if the cord is run through doorways, windows or across pinch points.
- Examine extension and equipment cords and plugs prior to each use. Damaged cords with frayed insulation or exposed wiring and damaged plugs with missing ground blades MUST BE REMOVED from service immediately.

- All portable or temporary wiring which is used outdoors or in other potentially wet or damp locations must be connected to a circuit that is protected by a ground fault circuit interrupter (GFCI). GFCI's are available as permanently installed outlets, as plug-in adapters and as extension cord outlet boxes. DO NOT CONTINUE TO USE A PIECE OF EQUIPMENT OR EXTENSION CORD THAT CAUSES A GFCI TO TRIP.
- When working in flammable atmospheres, be sure that the electrical equipment being used is approved for use in Class I, Division I atmospheres.
- Do not touch a victim who is still in contact with current. Separate the victim from the source using a dry, nonmetallic item such as a broomstick or cardboard box. Be sure your hands are dry and you are standing on a dry surface. Turn off the main electrical power switch and then begin rescue efforts.

5.10 Generator safety

Generators may be needed to provide power to equipment being used on site. When using a generator, follow these safety guidelines:

- Make sure the wattage of the generator is sufficient for your project needs;
- Make sure the voltage rating of the generator matches the rating of the equipment you need to operate;
- Gasoline and its vapors may ignite if they come in contact with hot components or an electrical spark. Turn the generator off and make sure it has cooled down (i.e. 10-minutes) before re-fueling. Do not refuel when the generator is running or hot. Smoking is not permitted during refueling operations or in the vicinity of any diesel-fueled equipment;
- Properly ground the generator;
- Keep water away from the generator and protect it from rain; and
- Use a heavy-duty, three-prong, grounded extension cord;
- Use the generator in a well-ventilated area to prevent the accumulation of exhaust fumes.

5.11 Materials handling

5.11.1 Mechanical devices for safe lifting

All drums and containers of investigation-derived waste should be lifted and transported using drum dollies, hand carts, or other devices that remove the potential for employee back injury. This will also help reduce the potential for the containers to become ruptured or damaged during transport.

5.11.2 Back safety during manual lifting

The following precautions should be implemented when mechanical devices are not available to move materials:

- If mechanical devices are not available, ask another person to assist you.
- Bend at the knees, not the waist. Let your legs do the lifting.
- Do not twist while lifting.
- Bring the load as close to you as possible before lifting.
- Be sure the path you are taking while carrying a heavy object is free of obstructions and slip, trip and fall hazards.

5.12 Thermal stress

The proposed activities are scheduled for Spring 2009. However, since the exact dates of field work are not known, the hazards of both heat and cold stress are addressed in this HASP.

5.12.1 Heat stress

Types of heat stress

Heat related problems include **heat rash, fainting, heat cramps, heat exhaustion and heat stroke**. **Heat rash** can occur when sweat isn't allowed to evaporate, leaving the skin wet most of the time and making it subject to irritation. **Fainting** may occur when blood pools to lower parts of the body and as a result, does not return to the heart to be pumped to the brain. Heat related fainting often occurs during activities that require standing erect and immobile in the heat for long periods of time. **Heat cramps** are painful spasms of the muscles due to excessive salt loss associated with profuse sweating. **Heat exhaustion** results from the loss of large amounts of fluid and excessive loss of salt from profuse sweating. The skin will be clammy and moist and the affected individual may exhibit giddiness, nausea and headache.

Heat stroke occurs when the body's temperature regulatory system has failed. The skin is hot, dry, red and spotted. The affected person may be mentally confused and delirious. Convulsions could occur. EARLY RECOGNITION AND TREATMENT OF HEAT STROKE ARE THE ONLY MEANS OF PREVENTING BRAIN DAMAGE OR DEATH. A person exhibiting signs of heat stroke should be removed from the work area to a shaded area. The person should be soaked with water to promote evaporation. Fan the person's body to increase cooling.

Early Symptoms of Heat-Related Health Problems:

- decline in task performance
- un-coordination
- decline in alertness
- unsteady walk
- excessive fatigue
- reduced vigilance
- muscle cramps
- dizziness

Susceptibility to Heat Stress Increases due to:

- lack of physical fitness
- lack of acclimation
- increased age
- dehydration
- obesity
- drug or alcohol use
- sunburn
- infection

People unaccustomed to heat are particularly susceptible to heat fatigue. First timers in PPE need to gradually adjust to the heat.

The effect of personal protective equipment

Sweating normally cools the body as moisture is removed from the skin by evaporation. However, the wearing of certain personal protective equipment (PPE), particularly chemical protective coveralls (e.g., Tyvek), reduces the body's ability to evaporate sweat and thereby regulate heat buildup. The body's efforts to maintain an acceptable temperature can therefore become significantly impaired by the wearing of PPE.

Measures to avoid heat stress:

The following guidelines should be adhered to when working in hot environments:

- Establish work-rest cycles (short and frequent are more beneficial than long and seldom).
- Identify a shaded, cool rest area.
- Rotate personnel, alternative job functions.
- Water intake should be equal to the sweat produced. Most workers exposed to hot conditions drink less fluids than needed because of an insufficient thirst. DO NOT DEPEND ON THIRST TO SIGNAL WHEN AND HOW MUCH TO DRINK. For an 8-hour workday, 50 ounces of fluids should be drunk.
- Eat lightly salted foods or drink salted drinks such as Gatorade to replace lost salt.
- Save most strenuous tasks for non-peak heat hours such as the early morning or at night.
- Avoid alcohol during prolonged periods of heat. Alcohol will cause additional dehydration.
- Avoid double shifts and/or overtime.

The implementation and enforcement of the above mentioned measures will be the joint responsibility of the project manager, on-site field coordinator, and health and safety officer. Potable water and fruit juices should be made available each day for the field team.

Heat stress monitoring techniques

Site personnel should regularly monitor their heart rate as an indicator of heat strain by the following method: Check radial pulse rates by using fore-and middle fingers and applying light pressure to the pulse in the wrist for one minute at the beginning of each rest cycle. If the pulse rate exceeds 110 beat/minute, shorten the next work cycle by one-third and keep the rest period the same. If, after the next rest period, the pulse rate still exceeds 110 beats/minute, shorten the work cycle by one-third.

5.12.2 Cold stress

Types of cold stress

Cold injury is classified as either localized, as in frostbite, frostnip or chilblain; or generalized, as in hypothermia. The main factors contributing to cold injury are exposure to humidity and high winds, contact with wetness and inadequate clothing.

The likelihood of developing frostbite occurs when the face or extremities are exposed to a cold wind in addition to cold temperatures. The freezing point of the skin is about 30° F. When fluids around the cells of the body tissue freeze, skin turns white. This freezing is due to exposure to extremely low temperatures. As wind velocity increases, heat loss is greater and frostbite will occur more rapidly.

Symptoms of cold stress

The first symptom of frostbite is usually an uncomfortable sensation of coldness, followed by numbness. There may be a tingling, stinging or aching feeling in the effected area. The most vulnerable parts of the body are the nose, cheeks, ears, fingers and toes.

Symptoms of hypothermia, a condition of abnormally low body temperature, include uncontrollable shivering and sensations of cold. The heartbeat slows and may become irregular, the pulse weakens and the blood pressure changes. Pain in the extremities and severe shivering can be the first warning of dangerous exposure to cold.

Maximum severe shivering develops when the body temperature has fallen to 95^o F. Productive physical and mental work is limited when severe shivering occurs. Shivering is a serious sign of danger. Immediately remove any person who is shivering from the cold.

Methods to prevent cold stress

When the ambient temperature, or a wind chill equivalent, falls to below 40^o F (American Conference of Governmental Industrial Hygienists recommendation), site personnel who must remain outdoors should wear insulated coveralls, insulated boot liners, hard hat helmet liners and insulated hand protection. Wool mittens are more efficient insulators than gloves. Keeping the head covered is very important, since 40% of body heat can be lost when the head is exposed. If it is not necessary to wear a hard hat, a wool knit cap provides the best head protection. A facemask may also be worn.

Persons should dress in several layers rather than one single heavy outer garment. The outer piece of clothing should ideally be wind and waterproof. Clothing made of thin cotton fabric or synthetic fabrics such as polypropylene is ideal since it helps to evaporate sweat. Polypropylene is best at wicking away moisture while still retaining its insulating properties. Loosely fitting clothing also aids in sweat evaporation. Denim is not a good protective fabric. It is loosely woven which allows moisture to penetrate. Socks with a high wool content are best. If two pairs of socks are worn, the inner sock should be smaller and made of cotton, polypropylene or similar types of synthetic material that wick away moisture. If clothing becomes wet, it should be taken off immediately and a dry set of clothing put on.

If wind conditions become severe, it may become necessary to shield the work area temporarily. The SSO and the PM will determine if this type of action is necessary. Heated break trailers or a designated area that is heated should be available if work is performed continuously in the cold at temperatures, or equivalent wind chill temperatures, of 20^o F.

Dehydration occurs in the cold environment and may increase the susceptibility of the worker to cold injury due to significant change in blood flow to the extremities. Drink plenty of fluids, but limit the intake of caffeine.

6.0 Air monitoring

6.1 Work zone monitoring

There are two main potential routes of exposure to the compounds of concern. The vapor pressure of PAHs and metals is negligible. Therefore, the inhalation of PAH or metal vapors is not a concern. However, the inhalation of PAH and/or metal-impacted dusts is a concern as the potential for dust generation may occur during rotary drilling and test pitting, especially if site soils are dry. The VOCs associated with MGP wastes are volatile enough to pose a potential vapor hazard to those working in the immediate drilling and excavation areas. Therefore, monitoring in the worker's breathing zone will be conducted to ensure that the concentrations of total VOC vapors and airborne dusts, if any, are maintained at safe levels during all subsurface field investigations.

However, air monitoring at this site is complicated by the fact that the portion of the site at 222 Maspeth Avenue is an active demolition waste and debris transfer station. Large trucks are frequently entering and exiting this parcel to drop off or pick up loads and other heavy equipment is moving the materials around. This creates the potential for “background” VOC vapors from the truck exhaust and “background” dust from the loading and unloading of trucks and their driving on the unpaved surface. The operator of this facility currently utilizes their own water mist system to control on-site dust. To AECOM’s knowledge, they do not conduct their own air monitoring.

6.1.1 VOC monitoring/benzene

A photoionization detector (PID), such as a RaeSystems MiniRae 2000 PID equipped with a 10.6 ev lamp or equivalent, will be used to screen the breathing zone of employees during all subsurface investigations as site conditions warrant but no less than at least once every hour. If breathing zone concentrations of total VOCs are sustained (15 minutes) at 1 unit above background, a measurement will be made for the presence of benzene using a colorimetric detector tube. In the absence of benzene, respiratory protection will be donned if total VOC concentration is sustained at 10 units above background as indicated by the PID. If benzene is present at concentrations of 1 ppm or more as indicated by the colorimetric detector tube, respiratory protection will be donned. Requirements for respiratory protection are outlined in Section 7.2 of this HASP.

6.1.2 Dust monitoring

Dust control measures, as described in this HASP, will be implemented to prevent and/or control the concentration of airborne dust levels during the subsurface activities. A MIE Data-Ram total dust monitor, or its equivalent, will be used to monitor the effectiveness of these engineering controls and to determine if measures to mitigate the dust are effective and/or if respiratory protection is required.

An action level of 150 ug/m^3 has been established for total dust (sustained downwind at breathing zone for 15-minutes). The total dust monitor will be used to determine that total dust levels upwind and downwind of the work area.

6.2 Personal exposure monitoring

Personal exposure monitoring will not be conducted during the proposed remedial investigation.

6.3 Calibration and recordkeeping

Equipment used by AECOM will be calibrated in accordance with the quality assurance project plan and AECOM's standard operating procedures. The PID will be calibrated to an isobutylene-in-air mixture. The dust monitor will be zeroed daily. All calibrations will be recorded in a field notebook or separate equipment calibration sheets.

6.4 Community air monitoring program

The Community Air Monitoring Plan (CAMP) is provided as Appendix E in the Remedial Investigation Work Plan. The CAMP includes provisions for monitoring for VOCs and particulates (as total dust) at the downwind perimeter of each designated work area when subsurface investigative activities are taking place. The CAMP specifies action levels which require increased monitoring, corrective actions to abate emissions, and/or work shutdown during the proposed intrusive activities.

7.0 Personal protective equipment

Personal protective equipment (PPE) will be worn during these activities to prevent on-site personnel from being injured by the safety hazards posed by the site and/or the activities being performed. Given the congested and high traffic nature of the site, all workers will wear an ANSI-approved Class II safety vest at all times. In addition, chemical protective clothing will be worn to prevent direct dermal contact with the site's chemical contaminants.

7.1 Protective Clothing

PPE Item	Advance Soil Borings/Install Monitoring Wells	Excavation of Test Pits	Soil Sampling	Well Development and Water Level Gauging	Groundwater Sample Collection and Slug Testing	Sub-Slab Soil Vapor Sampling
Hard Hat	✓	✓	✓	If the facility requires such	If the facility requires such	If the facility requires such
Steel Toed Safety Shoes	✓	✓	✓	✓	✓	Waterproof if necessary
Safety Glasses with Sideshields	✓	✓	✓	✓	✓	✓
ANSI-approved Class II safety vest	✓	✓	✓	✓	✓	✓
Disposable nitrile gloves			✓	✓	✓	
Kevlar gloves	When handling drill rods		When cutting open acetate liners		When cutting tubing	When installing probes and cutting tubing
Hearing Protection	✓	✓	If working near operating rig or excavator			✓

7.2 Respiratory protection

As described in Section 6.1 of this HASP, direct reading instrumentation will be used to screen the breathing zone of employees during subsurface investigations and sampling activities. Exceedance of the following action limits will require that work be temporarily stopped and cause of the exceedance assessed. The operator of the facility will be consulted regarding modifications of their on-site activities or implementation of additional control measures during the investigation work. If the cause of the condition can be isolated such that the condition no longer persists or the activity that produced the exceedance can be modified to prevent future exceedance, then the work can continue in Level D PPE. If these alternatives cannot be realized then wearing of Level C respiratory protection will be required, as described below.

Contaminant	Action Limit (Sustained for 15 minutes)	Respirator Selection
Total VOCs (in the absence of benzene as determined by colorimetric indicator tube)	10 units on PID	Half-mask air-purifying respirator (APR) with organic vapor cartridges.
Benzene (as indicated by colorimetric indicator tube)	1 ppm to 10 ppm > 10 ppm	Half-mask air-purifying respirator (APR) with organic vapor cartridges. Suspend work and contact PM and RHSM.
Dust	150 µg/m^3	Apply light mist of water to borehole. If engineering controls are not sufficient, don half-mask APR with P-100 filters.

Level C Specification – Half-mask air-purifying respirator equipped with organic vapor cartridges and P-100 filters

All employees who are expected to wear respirators must have successfully passed a qualitative fit-test within the past year for the brand, model and size respirator they plan to wear for this program. Proof of medical clearance to wear respirator and current fit test documentation must be provided to the SSO upon arrival to the site.

7.3 Other safety equipment

The following additional safety items will be available at the site:

- Portable, hand-held eyewash bottles
- Personal hygiene materials, e.g., hand wipes, paper towels, etc.
- First aid kit
- Type A-B:C fire extinguisher (on drill rig)
- Portable phones/radios

If a trailer is provided onsite for employee occupation, it will be equipped with fire extinguishers, appropriate signage (e.g. “EXIT” and “No Smoking”), and will meet code/safety requirements for placement at the site.

8.0 Site control

8.1 Designation of zones

AECOM designates work areas or zones as suggested in the "Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities," NIOSH/OSHA/USCG/EPA, November 1985. They recommend that the areas surrounding each of the work areas to be divided into three zones:

- Exclusion or "Hot" Zone;
- Contamination Reduction Zone (CRZ); and
- Support Zone.

8.1.1 Exclusion zone

An exclusion zone will be established around each exterior and interior subsurface activity location as well as each sampling location. The perimeter of the exclusion zone will be marked with traffic barriers, traffic cones and/or caution tape. All personnel entering these areas must wear the prescribed level of protective equipment.

8.1.2 Contamination reduction zone

A mini-contamination reduction zone (CRZ) will be established immediately adjacent to each exclusion zone to facilitate prompt removal of contaminated PPE. This is where personnel will begin the sequential decontamination process when exiting the exclusion zone. To prevent cross contamination and for accountability purposes, all personnel will enter and leave the exclusion zone through the contamination reduction zone. Personnel will remove contaminated gloves and other disposable items in this area and place them in a plastic bag until they can be properly disposed of.

8.1.3 Support zone

At this site, the support zone will include the area outside of the exclusion zone.

8.2 General site safety practices

The following measures are designed to augment the specific health and safety guidelines provided in this plan.

- AECOM personnel should avoid working alone on remote sites. On most sites, client, subcontractor, or public personnel are generally nearby in case of an emergency or accident. AECOM personnel, through coordination, can rely upon these personnel for assistance in an emergency. If no one else is nearby, scheduled calls on a cell phone may be used to assure personal safety.
- Eating, drinking, chewing gum or tobacco, smoking or any practice that increases the probability of hand-to-mouth transfer and ingestion of materials is prohibited in the immediate work area and the decontamination zone.
- Smoking is prohibited in all work areas. Matches and lighters are not allowed in work areas.
- Hands and face must be thoroughly washed upon leaving the work area and before eating, drinking or any other activities.

- The use of alcohol or illicit drugs is prohibited during the conduct of field operations.
- All equipment must be decontaminated or properly discarded before leaving the site in accordance with the project work plan.

8.3 Project communications plan

A call-in protocol has been established for this program. This call-in procedure is MANDATORY as it is the primary mechanism being used to verify that all AECOM employees have safely arrived at, and safely exited, their work areas.

Similar to a float plan that is created each time a boat leaves dock, a communication plan will detail when the individual or remote field team will call into the PM as a way to verify that the individual/team has made it to their destination, is continuing to work in safe conditions, has left the job site and has arrived back home safely.

The PM will create a communication protocol, similar to that described above, that identifies when the individual or team will call-in to the Project Manager. The plan will also outline what the PM will do in the event that the individual/team does not call-in within 1/2 hr of the designated call-in time (PM calls individual/team) and what the response will be if the individual/team does not respond to the PMs call to the individual/team (contact client, property owner, local police or emergency responders).

9.0 Decontamination

9.1 Personal decontamination

Proper decontamination is required of all personnel before leaving the exclusion zone. Decontamination will occur within the contamination reduction zone. Disposable PPE, such as gloves, will be removed in the decontamination reduction zone and placed in garbage bags for disposal as general refuse.

Regardless of the type of decontamination system required, as a minimum, a container of potable water and liquid soap should be made available so employees can wash their hands and face before leaving the site for lunch or for the day. Employees should always wash their face and hands with soap and water before eating, smoking or drinking.

9.2 Sampling equipment

Prior to sampling, all non-dedicated sampling equipment (bowls, spoons, interface probes, *etc*.) will be either steam cleaned or washed with potable water and a phosphate-free detergent (such as Alconox™). Decontamination may take place at the sampling location as long as all liquids are contained in pails, buckets, *etc*. The sampling equipment will then be rinsed with potable water followed by a deionized water rinse. Between rinses, equipment will be placed on polyethylene sheets or aluminum foil if necessary. At no time will washed equipment be placed directly on the ground. Equipment will be wrapped in polyethylene plastic or aluminum foil for storage or transportation from the designated decontamination area to the sampling location.

9.3 Investigation derived waste

All investigative waste generated during the RI will be collected in properly labeled USDOT approved storage containers (55-gallon drums) or a small bulk roll-off container and grouped by environmental matrix (soil, water, plastic/PPE, construction debris) drill cuttings that are generated during this program will be drummed and labeled as investigation derived waste. Final disposal of this material will be determined after receipt of analytical data.

10.0 Medical monitoring and training requirements

10.1 Medical monitoring

All personnel performing activities covered by this HASP must be active participants in a medical monitoring program that complies with 29 CFR 1910.120(f). Each individual must have completed an annual surveillance examination and/or an initial baseline examination within the last year prior to performing any work on the site covered by this HASP.

10.2 Health and safety training

10.2.1 HAZWOPER

All personnel performing activities covered by this HASP must have completed the appropriate training requirements specified in 29 CFR 1910.120 (e). Each individual must have completed an annual 8-hour refresher training course and/or initial 40-hour training course within the last year prior to performing any work on the sites covered by this HASP.

On-site managers and supervisors directly responsible for supervising individuals engaged in hazardous waste operations must have completed the specified 8-hour managers training course. (Note that AECOM corporate policy requires that whenever three or more AECOM employees are performing work on the same site, at least one of these individuals must have completed the manager's training course.)

10.2.2 First aid/CPR

At least one member of the AECOM field team must be currently certified in First Aid and CPR. All AECOM staff currently certified to provide First Aid and CPR are trained in the provisions of AECOM's Exposure Control Plan for Bloodborne Pathogens and will be prepared to implement those provisions in the event of an on-site emergency.

10.2.3 Hazard communication

All employees working on site will be advised of the associated hazards and the methodology to be utilized to mitigate those hazards and prevent exposures. This information will be presented to personnel prior to initiation of any field activities. The following information regarding hazardous materials will be presented to site workers per OSHA's Hazard Communication Program:

- Chemical/physical hazards of site contaminants and decontamination solvents and other hazardous materials brought on site;
- Appropriate PPE for protection from exposure to site contaminants and decontamination solvents;
- Review of MSDS and discussion about where MSDSs will be maintained on site; and
- Container labeling requirements and review of the NFPA labeling system.

10.3 On-site safety meetings

10.3.1 Pre-entry briefing

A pre-entry briefing will be conducted by the SSO to review the specific requirements of this HASP prior to the commencement of on-site activities. Attendance of the pre-entry meeting is mandatory for all personnel covered by this HASP and must be documented on the attendance form provided in Attachment C. HASP sign-off sheets should also be collected at the time of the pre-entry briefing. All documentation should be maintained in the project file.

The pre-entry briefing must be completed for each new employee before they begin work at the site. Short safety refresher meetings will be conducted, as needed, throughout the duration of the project. Specific topics that will be discussed during the pre-entry briefing include:

- Discussion of site responsibilities and project expectations
- Review of site history and contaminants of concern
- Discussion of work scope
- Review of the potential chemical hazards associated with contaminants of concern and how these potential hazards will be controlled
- Review of air monitoring requirements and action limits
- Review of PPE and engineering control requirements
- Review of respiratory protection requirements during various phases of site work
- Discussion of the potential physical hazards associated with implementing scope of work
- Review of decontamination procedures
- Review of emergency egress and hospital location/directions

10.3.2 Daily Safety Meetings

Daily meetings will also be held by the AECOM and Contractor SSO to ensure that all workers are prepared for and knowledgeable of that day’s scope of work. Safety concerns will also be discussed at these meetings. Newly prepared JSAs will also be reviewed with the entire team. All AECOM and contractor field employees must be present and sign the attendance sheet.

11.0 Emergency response

11.1 General information

OSHA defines emergency response as any "response effort by employees from outside the immediate release area or by other designated responders (i.e., mutual-aid groups, local fire departments, etc.) to an occurrence which results, or is likely to result in an uncontrolled release of a hazardous substance." According to AECOM policy, AECOM personnel shall not participate in any emergency response where there are potential safety or health hazards (i.e., fire, explosion, or chemical exposure). AECOM response actions will be limited to evacuation and medical/first aid as described within this section below. As such this section is written to comply with the requirements of 29 CFR 1910.38 (a).

The basic elements of an emergency evacuation plan include:

- employee training
- alarm systems
- escape routes
- escape procedures
- critical operations or equipment
- rescue and medical duty assignments
- designation of responsible parties
- emergency reporting procedure
- methods to account for all employees after evacuation

11.2 Employee training

Employees must be instructed in the site-specific aspects of emergency evacuation. This information will be discussed during the pre-entry briefing. On-site refresher or update training is required anytime escape routes or procedures are modified or personnel assignments are changed.

11.3 Alarm system/emergency signals

An emergency communication system must be in effect at all sites. The most simple and effective emergency communication system in many situations will be direct verbal communications. Each site must be assessed at the time of initial site activity and periodically as the work progresses. Verbal communications must be supplemented anytime voices can not be clearly perceived above ambient noise levels *(i.e.,* noise from heavy equipment, drilling rigs, backhoes, *etc*.) and anytime a clear line-of-sight can not be easily maintained amongst all AECOM personnel because of distance, terrain or other obstructions.

Verbal communications will be adequate to warn employees of hazards associated with the immediate work area. The facility is occupied; however, AECOM will bring a portable phone to the site to ensure that communications with facility representatives and local emergency responders is maintained, when necessary.

11.4 Escape routes and procedures

All personnel on site are responsible for knowing the escape route from the site and where to assemble after evacuation. The escape route from each site work area will be via established access roads that lead to the entrance/exit to the site.

These routes will be developed as part of the initial site reconnaissance that will take place immediately after the pre-entry briefing. All personnel working on the project should participate in the site reconnaissance so they are aware of how to evacuate each work area.

11.5 Rescue and medical duty assignments

The phone numbers of the police and fire departments, ambulance service, local hospital, and AECOM representatives are provided in the emergency reference sheet. This sheet will be posted in the AECOM site vehicle.

In the event an injury or illness requires more than first aid treatment, the SSO will accompany the injured person to the medical facility and will remain with the person until release or admittance is determined. The escort will relay all appropriate medical information to the on-site project manager and the RHSM.

If the injured employee can be moved from the accident area, he or she will be brought to the CRZ where their PPE will be removed. If the person is suffering from a back or neck injury the person will not be moved and the requirements for decontamination do not apply. The SSO must familiarize the responding emergency personnel about the nature of the site and the injury. If the responder feels that the PPE can be cut away from the injured person's body, this will be done on-site. If this not feasible, decontamination will be performed after the injured person has been stabilized.

11.6 Designation of responsible parties

The SSO is responsible for initiating emergency response. In the event the SSO can not fulfill this duty, the alternate SSO will take charge. The SSO will coordinate all emergency response efforts with the contractor and the store manager, as necessary, and based on the level of the emergency.

11.7 Employee accounting method

The SSO is responsible for identifying all AECOM personnel on-site at all times. On small, short duration jobs this can be done informally as long as accurate accounting is possible.

11.8 Near miss/HSE observation reporting

A *Near Miss Incident* is defined as any undesired event that, under slightly different circumstances (e.g., timing, distance, chance, etc.) could have resulted in personal harm, property damage, an environmental release or any undesired loss of resources. In other words, a *Near Miss Incident* is a situation in which an accident almost occurred. The purpose of reporting, and following up on, *Near Miss Incidents* is the same as that for incidents that result in injuries, illnesses, property damage or environmental releases. TO PREVENT REOCCURRENCE.

By definition, a *Near Miss Incident* must result in an actual incident or event. Situations in which a hazard is identified and corrected before an incident occurs do not necessarily meet the definition of a *Near Miss Incident* and will be referred to in this program as *HSE Observations.* Reporting and following up on *HSE Observations* can also provide opportunities for learning and improvement in the same manner as reporting and following up on *Near Miss Incidents*.

All near misses and safety observations should be reported. Near Miss/HSE Observation Report forms will be available on each site for staff to use. These forms should be completed in the field and forwarded to your RHSM for review and corporate filing.

11.9 Accident reporting and investigation

Any incident (other than minor first aid treatment) resulting in injury, illness or property damage requires an accident investigation and report. The investigation should be conducted as soon as emergency conditions are under control. The purpose of the investigation is not to attribute blame but to determine the pertinent facts so that repeat or similar occurrences can be avoided. An AECOM accident investigation form is presented in Attachment D of this HASP. The injured AECOM employee's supervisor and the RHSM should be notified immediately of the injury.

If a subcontractor employee is injured, they are required to notify the AECOM SSO. Once the incident is under control, the subcontractor will submit a copy of their company's accident investigation report to the AECOM SSO.

Emergency References

Ambulance:	911
Fire:	911
Police:	911
Medical Services:	Wyckoff Heights Medical Center (ER services) 374 Stockholm St, Brooklyn, NY 718-963-7272

Directions:

1: Start out going WEST on MASPETH AVE toward VANDERVOORT AVE.

2: Turn LEFT onto VANDERVOORT AVE. (0.3 miles)

3: Turn LEFT onto GRAND ST. (0.1 miles)

4: GRAND ST becomes METROPOLITAN AVE. (0.1 miles)

5: Turn RIGHT onto VARICK AVE. (0.6 miles)

6: Turn LEFT onto IRVING AVE. (0.4 miles)

7: Turn LEFT onto STOCKHOLM ST. (0.2 miles)

8: End at 374 Stockholm St Brooklyn, NY 11237-4006

Total Time: 6 minutes

Total Distance: 1.7 miles

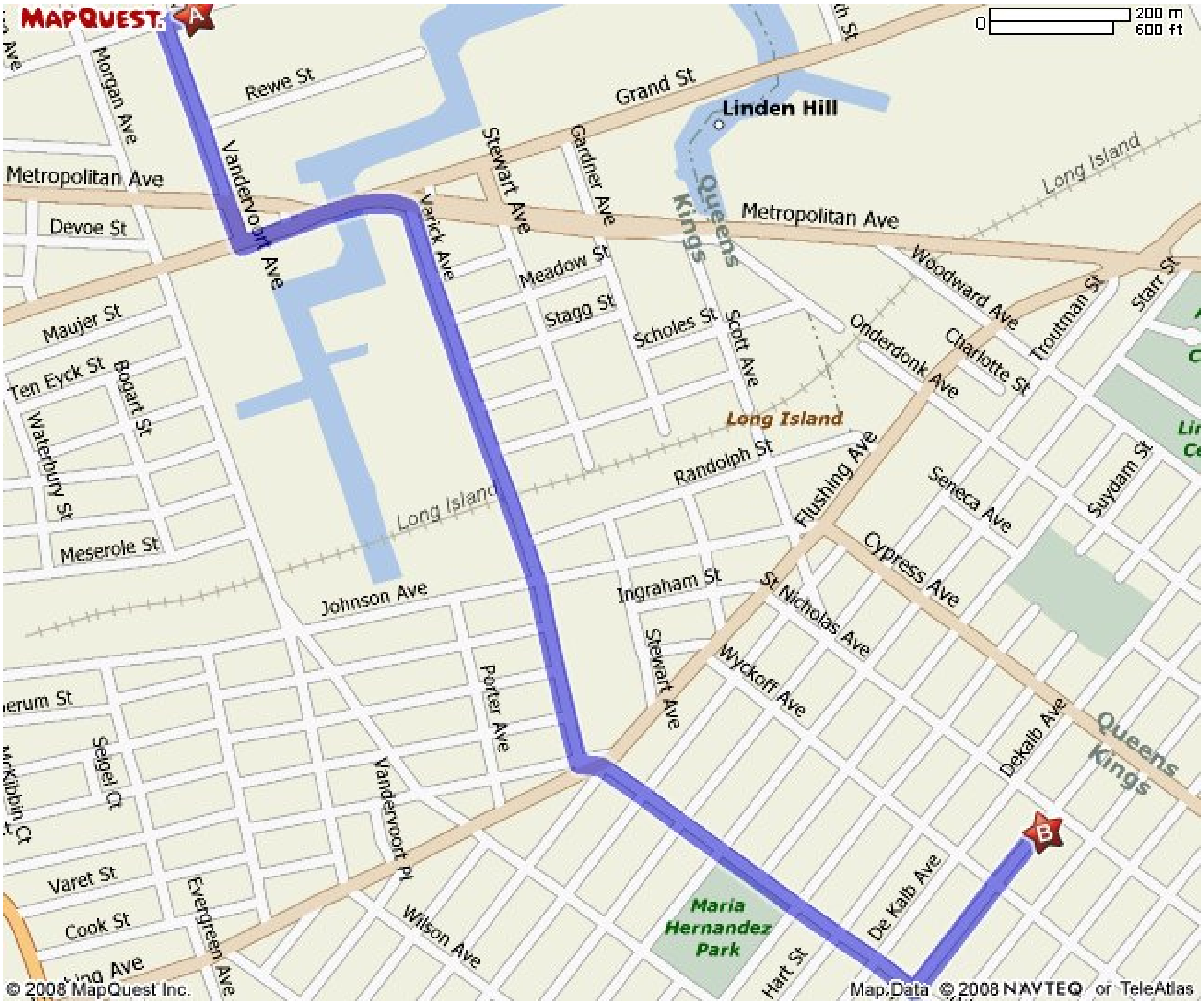
AECOM Project Representatives:

AECOM / Westford, MA	**978.589.3000**
- Peter Cox (PM)	x 3012
AECOM / Latham, NY	**518.951.2200**
- Robert Poll (RSM)	x 2242 Cell – 518.817.3089

Hospital Route from Site to Wyckoff Heights Medical Center

374 Stockholm St, Brooklyn, NY

718-963-7272



Attachment A

Health and Safety Plan Receipt and Acceptance Form

Health and Safety Plan Receipt and Acceptance Form

Site Investigation

Equity Former MGP Site

Brooklyn, New York

I have received a copy of the Health and Safety Plan prepared for the above referenced site, I have read and understand its content and I agree that I will abide by its requirements.

Name	Signature	Company	Date

Attachment B

Job Safety Analysis Form

AECOM

Job Safety Analysis

JSA Type: ☐ Investigation ☐ O&M ☐Office ☐ Construction ☐ Other

☐ New
☐ Revised

Date:

Work Activity:

Personal Protective Equipment (PPE):

Development Team	Position/Title	Reviewed By	Position/Title	Date

❶ Job Steps[1]	❷ Potential Hazards[2]	❸ Critical Actions[3]	STOP Stop Work Criteria
		•	•
		•	•
		•	•
		•	•
		•	•
		•	•
		•	•
		•	•
		•	•
		•	•
		•	•
		•	•
		•	•

1 – Target number of job steps: six to ten

2 – Codes for Potential Hazards:

Caught Between (CBT)	Contacted By (CB)	Caught On (CO)	Fall To Below (FB)	Overexertion (O)	Struck Against (SA)
Caught In (CI)	Contact With (CW)	Exposure (E)	Fall - Same Level (FS)	Release To (R)	Struck By (SB)

3 – Types of Critical Actions: Elimination, Engineering Controls, Safe Work Practice / SOP, Administrative Controls, and/or PPE.

4 – Stop Work Trigger: Condition or situation that would require work to be stopped and hazards re-assessed

Attachment C

Health and Safety Plan Pre-Entry Briefing and Daily Safety Meeting Attendance Form

Health and Safety Plan Pre-Entry Briefing and Daily Safety Meeting Attendance Form

Site Investigation

Equity Former MGP Site

Brooklyn, New York

Conducted by:		**Date Performed:**	
Topics Discussed:	1. Review of the content of the HASP (Required)		
	2.		
	3.		
	4.		

Printed Name	Signature	Representing

Attachment D

Supervisor's Accident Investigation Report Form

ATTACHMENT 8.1
Supervisor's Accident Investigation Report

Injured Employee ____________ Job Title ____________

Home Office ____________ Division/Department ____________

Date/Time of Accident ____________

Location of Accident ____________

Witnesses to the Accident ____________

Injury Incurred? ______ Nature of Injury ____________

____

Engaged in What Task When Injured? ____________

____

Will Lost Time Occur? ______ How Long? ______ Date Lost Time Began ____________

Were Other Persons Involved/Injured? ____________

How Did the Accident Occur? ____________

____

____

Why Did it Occur? ____________

____

____

What Could Be Done to Prevent Recurrence of the Accident? ____________

____

____

What Actions Have You Taken Thus Far to Prevent Recurrence? ____________

____

____

Supervisor's Name ____________ Signature: ____________ Date: ____________

Note: if the space provided on this form is insufficient, provide additional information on separate paper and attach. The completed accident investigation report must be submitted to the ENSR Regional Health and Safety Manager within three days of the occurrence of the accident.

Appendix G

Previous Investigation Reports (CD-ROM)

Gannett Fleming

GANNETT FLEMING ENGINEERS, PC
480 Forest Avenue
P.O. Box 707
Locust Valley, NY 11560-0707
Office: (516) 671-8440
Toll Free: (800) 249-3337
Fax: (516) 671-3349
www.gannettfleming.com

November 5, 2004
File # 44440.001

David Hillcoat
Cooper Tank and Welding Corp.
215 Moore Street
Brooklyn, New York 11206

Re: Phase I Environmental Site Assessment
254 Maspeth Avenue
Brooklyn, New York 11211

Dear Mr. Hillcoat:

Enclosed are two copies of the Phase I Environmental Site Assessment report for the 254 Maspeth Avenue property. Based on the Phase I ESA performed on the property, the following recognized environmental condition (REC) was identified:

- Surficial soil staining was observed on-site during the site inspection. The stained soil is considered a REC.

Gannett Fleming recommends that a Phase II investigation be performed to investigate potential soil and groundwater contamination due to the soil staining at the subject property.

The following sites present a *de minimis* environmental concern, and are not considered RECs but have the potential to impact the subject property by groundwater migration of off-site contamination. However, the shallow groundwater underlying the subject property has no known potable or other use.

- Six upgradient LTANK sites are listed as tank test failures or tank overfills. These sites lack a NYSDEC closure date.
- Review of the historical sanborn fire insurance maps revealed that the subject property and surrounding properties have a history as being utilized for manufacturing and industrial usage.

Continued...

Please call if you have any questions.

Very truly yours,

GANNETT FLEMING ENGINEERS, P.C.

Ivy Hidalgo-Olberding

IVY HIDALGO-OLBERDING
Environmental Scientist

STEPHEN R. HIX
Director, Environmental Services

R:\CLERICAL\PROJECTS\44400\44440\254 Maspeth Ave. Phase I ESA.doc

COOPER TANK AND WELDING CORP.
BROOKLYN, NEW YORK

PHASE I ENVIRONMENTAL SITE ASSESSMENT
COOPER TANK TRANSFER FACILITY
254 MASPETH AVENUE
BROOKLYN, NEW YORK 11211

PROJECT # 44440.01
OCTOBER 2004

Office Location:

GANNETT FLEMING

480 Forest Avenue

Locust Valley, New York 11560

Office Contacts:

Stephen Hix

Ivy Hidalgo-Olberding

(516) 671-8440

Offices Nationwide

CONTENTS

Page

FIGURES

APPENDICES

1.0 INTRODUCTION

1.1 Executive Summary of Findings

Cooper Tank and Welding Corp. retained Gannett Fleming Engineers, P.C. (Gannett Fleming) to conduct a Phase I Environmental Site Assessment (ESA) of the property located at 254 Maspeth Avenue, Brooklyn, New York. The site assessment was performed to evaluate environmental conditions on the property associated with historical property use and current operations to satisfy the requirements of the *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (ASTM Designation E1527-00).*

The property consists of an unimproved vacant fenced lot with an exposed bare soil surface. Overgrown vegetation surrounds a majority of the lot. The property is situated in a predominantly industrial/commercial area of Brooklyn, New York. The surrounding properties include a former Brooklyn Union Gas tank yard, industrial properties to the west, and warehouses to the east and south.

The subject property is not identified in any of the Federal or State databases.

Based on the Phase I ESA performed for the property, the following recognized environmental condition (REC) was identified:

- Surficial soil staining was observed on-site during the site inspection.

The following sites present a *de minimis* environmental concern, and are not considered RECs but have the potential to impact the subject property by groundwater migration of off-site contamination. However, the shallow groundwater underlying the subject property has no known potable or other use.

- Six upgradient LTANK sites are listed as tank test failures or tank overfills. These sites lack a NYSDEC closure date.

- Review of the historical sanborn fire insurance maps revealed that the subject property and surrounding properties have a history as being utilized for manufacturing and industrial usage.

No Non-ASTM related building issues were observed.

1.2 Purpose

Cooper Tank and Welding Corp. retained Gannett Fleming on October 12, 2004 to conduct a Phase I Environmental Site Assessment (ESA) of the property located at 254 Maspeth Avenue, Brooklyn, New York in accordance with ASTM E1527-00 protocol. The purpose of this Phase I ESA is to provide Cooper Tank and Welding Corp. with a description of any *recognized environmental conditions* (RECs) on the property.

As defined in ASTM E 1527-00, "the term *recognized environmental conditions* is defined as the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property". The term *recognized environmental conditions* does not include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

1.3 Involved Parties

The involved parties concerned with this report include the potential buyer and current owner of the subject property.

- Cooper Tank Welding Corp.,
- Spencer (1997) Investment Limited Partnership, and
- Bank of America

1.4 Scope of Work

The Phase I ESA tasks included a site reconnaissance, interviews, computer database search of environmental compliance records, and review of historical information. Environmental Data Resources, Inc. (EDR) of Southport, Connecticut conducted the database search in accordance with ASTM search distances.

Freedom of Information Act (FOIA) requests were sent to federal, state, and local regulatory agencies to determine the regulatory status of the property.

In order for the client to quantify the level of acceptable *business environmental risk* associated with this commercial real estate transaction, several non-ASTM scope items were considered. These consist of:

- Asbestos-containing materials;
- Radon;
- Lead-Based Paint; and
- Wetlands

The additional assessment was limited in nature consisting to a visual inspection and EDR report review.

2.0 GENERAL SITE CHARACTERISTICS

2.1 Property Location

The subject property is located at 254 Maspeth Avenue, Brooklyn, New York. The subject property is located in the USGS 7.5 minute quadrangle of Brooklyn, New York.

The property is located on the south side of Maspeth Avenue east of Vandervoort Avenue.

A site location map is presented in Figure 1.

2.2 Current Uses of Adjoining Properties

Maspeth Avenue and a former Brooklyn Union Gas tank yard bounds the Property to the north, a transfer station is located to the west, and warehouses to the south and east of the property.

2.3 Site Description and Current Site Uses of the Property/Operations

The subject property is currently occupied by Galasso Trucking Inc. and is used as a temporary storage lot for large machinery, roll-off trucks, HVAC units, refrigeration units, and a bulk petroleum storage tank.

The property is located in Kings County in a predominantly industrial/commercial area.

The subject property consists of an enclosed lot with an exposed bare soil surface.

3.0 ENVIRONMENTAL SETTING

3.1 Regional Physiographic Conditions

The subject property is approximately 14 feet above mean sea level. The general topographic and assumed hydraulic gradient at the property is to the southeast towards English Kills, which ultimately discharges to the East River.

No wetlands, surface water bodies, or other ecologically sensitive areas were identified on the subject property during the site reconnaissance.

3.2 Soil Conditions

Surficial soils in the area are generally loamy sands, silty loams, sandy loams and fine sandy loams.

Soil conditions typically underlying the industrial Brooklyn area surrounding the subject property are typically composed of fill materials. These fill materials generally consist of a heterogeneous mix of brick, wood chips, and asphalt. These materials generally have a higher level of contamination levels than a residential area would contain and may include poly aromatic hydrocarbons (PAH's).

3.3 Geologic Conditions

The subject Property is located in Kings County on western Long Island. In general the Property is underlain by a sequence Pleistocene and Cretaceous aged unconsolidated glacial deposits including sands, gravels, clays and silts. Of the four aquifers existing on Long Island only the Upper Glacial (water table) aquifer is evident at the subject Property. It consists of tills, outwash, glaciolacustrine, and marine deposits. This aquifer is in turn underlain by the

Pleistocene Gardiners Clay consisting of clays and silts and layers of sand and gravel. Bedrock is encountered at approximately 100 feet and is composed of crystalline metamorphic and igneous rocks consisting of muscovites, biotite schists, gneisses and granites and is found lying in a southeastward slope.

Site-specific groundwater depth and flow direction can only be determined by a focused hydrogeologic study, which is beyond the scope of this Phase I site assessment. However, groundwater in this area is cited to be at a depth of approximately 9 to 12 feet below grade based on information from United States Geological Survey (USGS) Fact Sheet #134-97 and the approximate site elevation provided by EDR.

4.0 RESULTS OF INVESTIGATION

4.1 Site Inspection Observations

Gannett Fleming representative Ivy Hidalgo-Olberding performed the property reconnaissance on October 14, 2004.

The subject property is currently utilized as a temporary storage lot for large machinery, roll-off trucks, HVAC units, refrigeration units, and a bulk petroleum storage tank.

4.2 Description of Structures, Roads, and Other Improvements on the Site

The lot is L shaped with an exposed bare soil surface. No improvements were observed during the site inspection.

No evidence of hazardous waste handling or disposal was observed during the site reconnaissance.

No evidence of poly-chlorinated biphenyls (PCB) containing materials such as transformers were identified during the site reconnaissance.

Site photographs of the property are presented in Appendix A.

4.3 Adjacent Site and Vicinity Observations

The surrounding properties include a former Brooklyn Union Gas tank yard located to the north of the property. A transfer station is located to the west, and industrial/commercial properties occupy the buildings to the west, and warehouses to the south.

4.4 Results of Regulatory Agency List Review and File Research

The subject property is not listed in any of the federal or state databases.

Regulatory Database Review

Environmental Data Resources, Inc. (EDR) of Southport, Connecticut was retained to provide a computerized database search of the project area in accordance with ASTM E1527-00 standards for search distance and accuracy. The EDR database search is included in Appendix B. The database output was reviewed to determine if the site appears on the following lists:

Federal List

- National Priorities List (Superfund)
- Proposed NPL
- Comprehensive Environmental Response Compensation & Liability
- Information System (CERCLIS)
- CERCLIS – No Further Remedial Action Planned (CERCLIS-NFRAP)
- Resource Conservation and Recovery Act (RCRA) Treatment, Storage and Disposal (TSD)
- RCRA Small and Large Quantity Hazardous Waste Generators (SQG, LQG)
- RCRA Corrective Action Activity (CORRACTS)
- Emergency Response Notification System (ERNS)
- Facility Index System (FINDS)
- Material Licensing Tracking System (MLTS)
- Superfund (CERCLA) Consent Decrees (CONSENT)
- Record of Decision (ROD)
- National Priorities List Deletions (Delisted NPL)
- Hazardous Materials Information Reporting System (HMIRS)
- Mines Master Index Files (MINES)
- Federal Superfund Liens (NPL Liens)
- PCB Activity Database System (PADS)

- Lisiting of Brownfields Sites (US BROWNFIELDS)
- Listing of Indian Reservations (INDIAN RESERV)
- Uranium Mill Tailing Sites (UMTRA)
- Department of Defense Sites (DOD)
- RCRA Administrative Action Tracking System (RAATS)
- Toxic Chemical Release Inventory System (TRIS)
- Toxic Substance Control Act (TSCA)
- Section Seven Tracking Systems (SSTS)
- Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA)/ Toxic Substances
- Control Act (TSCA) Tracking System (FTTS)

State List

- State Hazardous Waste Sites (SHWS)
- Permitted Solid Waste Disposal Facilities/Landfill (SWF/LF)
- Leaking Storage Tank Incidents (LTANKS)
- Registered Petroleum Bulk Storage Sites (UST/AST)
- Chemical Bulk Storage (CBS) Database (UST/AST)
- Voluntary Cleanup Program Applicants/Participants (VCP)
- Major Oil Storage Facility (MOSF)
- Registered Waste Tire Storage & Facility List (SWTIRE)
- Registered Recycling Facility List (SWRCY)
- New York Spills (NY SPILLS)
- Hazardous Substance Waste Disposal Site Inventory (HSWDS)
- Delisted Registry Sites (DEL SHWS)

Proprietary List

- Former Manufactured Gas Sites (Coal Gas)

Federal and State Database Sites

- Three CERCLIS sites have been identified within the ASTM search distance. The CERCLIS list includes sites that are either on or proposed to be on the National Priorities List. One site, *BCF Oil Refining, Inc.*, is located 1/4 - 1/2 mile downgradient (east-northeast) of the subject property. Two other sites are listed as No Further Remedial Action Planned (NFRAP), indicating that the no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require federal Superfund Action or NPL consideration. Since these sites are located downgradient from the subject property, environmental impacts to the subject property are not anticipated. These sites are not considered RECs.

- One RCRIS-LQG site has been identified within the ASTM search distance. The site is *Jos H Lowenstein & Sons Incorp.*, located 1/8 - 1/4 mile west-northwest of the subject property, which is presumed to be upgradient from the subject property. This site has been issued six violations all of which have been complied with. This site is not likely to impact the environmental conditions on the subject property and is not considered a REC.

- Seven RCRIS-SQG sites are identified within the ASTM search distance. These sites have been listed with either no violations or violations, which have been complied with. These sites are not anticipated to environmentally impact the subject property at this time and are not considered RECs.

- Two SHWS sites are listed within the ASTM search distance. These sites are as follows: *B.C.F. Oil Refining, Inc*, located 1/4-1/2 mile east-northeast of the subject property; and *Phelps Dodge Refining Corp.*, located 1/2-1 mile northeast of the subject property. Since these sites are either located cross/downgradient of the subject property or do not have any recorded violations, impacts to the subject property are not anticipated and are not considered RECs.

- Eleven SWF/LF sites are identified within the ASTM search distance. These sites have no recorded violations and impacts to the environmental conditions on the subject property are not likely. These sites are not considered RECs.

- Thirty LTANKS sites have been identified within the ASTM search distance. Of the thirty listed LTANK sites, fourteen sites are located down/cross-gradient of the subject property, not within the inferred groundwater flow path. Ten of the remaining sixteen sites have been listed as cleaned up to the satisfaction of NYSDEC and closed.

  Six sites are located upgradient or adjacent to the site, and are as follows:

Site Name	Location in Reference to Subject Property
Jos H Lowenstein & Son	0 to 1/8 mile west-northwest
Cooper Park Housing	1/8 to 1/4 mile west
287 Maspeth Ave	1/8 to 1/4 mile northeast
Greenpoint Energy Facility	1/8 to 1/4mile northeast
Sunoco S/S	1/4 to 1/2 mile west
308 Maujer Steet	1/4 to 1/2 mile south-southwest

  All six upgradient sites are listed as tank test failures or tank overfills without a listed NYSDEC closure date. Due to the lack of closure dates, and their presumed upgradient location, these sites could potentially be a source of contamination on the subject property. However, groundwater is not used as a potable water supply in this area. These sites present a *de minimis* environmental concern, and are not considered RECs.

- Ten UST sites are identified within the ASTM search distances. Three of the ten listed sites are located upgradient to the subject property. One of these is listed as closed the remaining two are: *Joseph H Lowenstein & Sons Inc.,* located 1/8 to 1/4 mile west-northwest and *Cooper Park,* located 1/8 to 1/4 mile to the west of the subject property.

The remaining seven listed UST sites are located downgradient to the subject property. The presence of registered storage tanks does not indicate an area of environmental concern unless the tanks have leaked product into the subsurface. Based on the database review there is no reason to conclude the storage tanks have had a negative impact on the subject property and are not considered RECs.

- Eight MOSF UST/AST sites were listed within the ASTM search distances. These registered onshore facilities or vessels may contain petroleum storage capacities of 400,000 gallons or greater. Since these sites are either located down or cross gradient to the subject property and currently listed as in compliance, these sites are not likely to affect the environmental conditions on the subject property and are not considered RECs.

- Three VCP/Brownfields sites were identified within the ASTM search distances. Two of these sites: *Greenpoint Energy Facility* and *Greenpoint Center,* located at 287 Maspeth Avenue are upgradient to the subject property and within the inferred groundwater flow path of the subject property. These sites could potentially be a source of contamination on the subject property. However, these sites are in the process of remediation and groundwater is not used as a potable water supply in this area. These sites present a *de minimis* environmental concern, and are not considered RECs.

- Two HSWDS sites are identified within the ASTM search distance. The three HSWDS sites are as follows: *Brooklyn Equity Works* located 0-1/8 mile east-northeast of the subject property on Maspeth and Morgan Avenues and *Greenpoint Energy Facility*, located 0-1/8 mile west of the subject property. Both sites were former coal gasification sites. By products from this industry includes hydrocarbons, which were found in the soils at these sites. The hydrocarbons at the Brooklyn Equity Works facility were reportedly removed when the facility was decommissioned in 1928. Due to the inferred groundwater flow path at the subject property, these sites could potentially be a source of contamination on the subject property. However, groundwater is not used as a potable water supply in this area and therefore, these sites present a *de minimis* environmental concern, and are not considered RECs.

- Seven NY Spills sites are located within the ASTM search distance. Four of these sites are listed as closed by NYSDEC and one site is located south and downgradient of the subject property. The two remaining sites are located at: *Maspeth Avenue/Vandervoort Avenue,* and *301 Vandervoort Avenue.* These sites are located upgradient or cross gradient to the subject property. Both these sites have surface releases that do not typically travel beyond the immediate vicinity of the spill area. Due to the nature of the release, impacts to the subject property are not expected and these sites are not considered RECs.

- One coal gas site was identified within the ASTM search radius. The site, *Settle Brothers Tannery,* is located 1/2 to 1 mile southeast downgradient of the subject property. Therefore, impacts to the subject property are not expected and this site is not considered a REC.

Regulatory File Review

Freedom of Information Act requests (FOIA) were sent to the United States Environmental Protection Agency (Region II), the New York State Department of Environmental Conservation (Region II), the New York City Department of Environmental Protection (NYCDEP), the New York City Department of Health (NYCDOH), New York City Department of Buildings (NYCBOD), and the New York City Fire Department (NYCFD).

- USEPA – Results of file search are pending.

- NYSDEC– Results of file search are pending.

- NYCDEP – Results of file search are pending.

- NYCDOH – Results of file search are pending.

- NYCBOD – Results of file search are pending.
- NYCFD – Results of file search are pending.

Copies of the requests and responses are included in Appendix E.

The agencies usually take six to eight weeks to process FOIA requests. Any relevant responses from the remaining regulatory agencies will be reviewed and forwarded upon receipt.

4.5 Results of Site History /Land Use Review

According to the Historical Sanborn Fire Insurance Maps, the subject property was vacant in the 1888 map, then developed since at least 1907 by Brooklyn Union Gas Co. through 1933. The property has been noted as vacant from 1951 through 1995.

4.5.1 Personal Interviews

An interview with Mr. Ray Kvedaras, general manager of the Copper Tank Transfer facility, was conducted as part of this Phase I ESA. Mr. Kvedaras explained the vacant lot is used as temporary storage space for large machinery.

4.5.2 Site Records Review

No records were reviewed at the time of site inspection.

4.5.3 Building Department Records Reviews

FOIA requests were submitted to the NYCDOB, results of the file search are pending.

4.5.4 Aerial Photograph Review

Aerial photographs were obtained and reviewed for the years 1954, 1966, 1975, 1984, and 1994. No RECs were established from the aerial photographs. Copies of the aerial photographs are provided in Appendix D.

4.5.5 Fire Insurance Map Review

In order to ascertain prior usage and ownership information at the above-mentioned property, requests were made to Environmental Data Resources (EDR) for Sanborn Fire Insurance Maps.

Sanborn Fire Insurance Maps from the years 1888, 1907, 1933, 1951, 1965, 1968, 1977, 1979, 1980, 1981, 1982, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1994, and 1995 were obtained and reviewed. The following is a summary of the subject and surrounding properties as depicted on the Sanborn Fire Insurance Maps:

1888 The subject property is vacant and shows no signs of development. Surrounding properties include: Bushwick varnish works on the corner of Calhoun Street and Grand Avenue to the south, to the south east is a lumber yard and a brickyard.

1907 The subject property is occupied by Brooklyn Union Gas Company, which contains a gas holding tank and two above ground tanks with unknown content. The surrounding properties consist of J.R. Crombie & Co. storage facility, Joseph A. Solan Saw and Planing Mill, J.A. Crombie & Co., and Rader Fire Proofing Co. to the south and, Standard Rope and Twine Co. to the west.

1933 The subject property is now vacant. The surrounding properties appear as the 1907 map with the development of Egg Yolk Mfg. on the western section of the subject block. The property occupied by J.R. Crombie & Co. and Joseph A. Solan on the 1907 map is occupied by Chapman Dock Co. The property to the west depicted as Standard Rope and Twine Co. on the 1907 map is occupied by The Lignum Chemical Works. The lots south of The Lignum Chemical Works are occupied by Oxford Filing Supply Co. and a fur dying facility.

1951 The subject property remains essentially the same as the 1933 map. The Lignum Chemical Works is occupied by Royal Yarn Dyeing Corp. and the fur dying facility is occupied by Globe Products Co.

1965 The subject property remains vacant. The property directly to the west is noted as storage. Properties further west are noted as valve storage facilities. Properties to the south are occupied by the Newtown Creek Development with the Salwen Paper Co, Inc and the Lack Carpet Co.

1968 The subject property and surrounding properties remains the same as the 1965 map.

1977 The subject property remains vacant. The surrounding properties to the west remain essentially the same as the 1951 map. The Chapman Dock Co. located south of the subject property is now occupied by Salwen Paper Co, Inc and Lack Carpet Co.

1979 The subject property and surrounding properties remain essentially the same as the 1977 map.

1980 The subject property and surrounding properties remain essentially the same as the 1979 map.

1981 The subject property and surrounding properties remain essentially the same as the 1977 map.

1982 The subject property and surrounding properties remain essentially the same as the 1981 map.

1986 The subject property block is now vacant with the exception of 252 Maspeth Avenue, which is still occupied by as a storage facility.

1987 The subject property and surrounding properties remain essentially the same as the 1986 map.

1988 The subject property and surrounding properties remain essentially the same as the 1987 map.

1989 The subject property is noted as utilized for garbage transfer storage. Surrounding properties remain essentially the same.

1990 The subject property and surrounding properties remain the same as the 1989 map.

1991 The subject property and surrounding properties remain the same as the 1990 map.

1992 The subject property and surrounding properties remain the same as the 1991 map.

1993 The subject property remains vacant; the property to the immediate west remains noted as storage, and the property at 222 Maspeth Avenue is noted as a garbage transfer storage facility. The surrounding properties remain essentially the same as the 1981 map.

In summary, the Sanborn Fire Insurance Maps indicate that the subject property was vacant in 1888, then developed since at least 1907 by Brooklyn Union Gas Co. through 1933. The property has been noted as vacant from 1951 through 1995. Surrounding property usage has been primarily manufacturing and industrial. Since the subject property and surrounding properties have a history as being utilized for manufacturing and industrial usage, the subject property may be impacted. However, the historic usage of the subject and surrounding properties present a *de minimis* environmental concern, and are not considered RECs but have the potential to impact the subject property by groundwater migration of off-site contamination.

Additionally, the shallow groundwater underlying the subject property has no known potable or other use.

Copies of the Sanborn Fire Insurance Maps are provided in Appendix C.

4.6 City Directory Abstract

Gannett Fleming obtained a City Directory Abstract from EDR in order to ascertain prior usage information for the subject property.

The Directory Abstract provided by EDR lists does not list subject property on any of the years. Listings were not provided for every year, and do not necessarily provide site ownership information. The surrounding properties are listed as: Schebler, Jos., Egg Yolk Manufacturer at 218 Maspeth Avenue and Phillip Carr, Bohner Varnish Co. at 221 Maspeth Avenue. Both of these properties are listed for the year 1934. For the address 222 Maspeth Avenue, Cooper Tank Transfer Station is listed in 1997 and Cooper Tank Transfer in 2000.

Copies of the City Directory Abstract are provided in Appendix C.

4.7 Synopsis of Previous Environmental Investigations

No previous environmental investigation reports were provided to Gannett Fleming.

4.8 Results of Suspect ACM Observations

The subject property was unimproved and no suspect ACM was observed.

4.9 Results of Radon Investigations

The subject property consists of a vacant temporary storage lot. No improved structures exist on the property; therefore radon would not be a concern pertaining to the environmental conditions of the site.

5.0 CONCLUSIONS

Gannett Fleming had performed this Phase I *Environmental Site Assessment* in conformance with the scope and limitations of ASTM Practice E 1527 for the property located at 254 Maspeth Avenue, Brooklyn, New York, the *subject property.* Any exceptions to, or deletions from, this practice are described in Section 7.0 of this report.

This assessment has revealed the following evidence of *recognized environmental condition* (REC) in connection with the subject property:

- Surficial soil staining was observed on-site during the site inspection indicative of vehicle or machinery equipment leaks of oils or other fluids.

Gannett Fleming recommends that a Phase II investigation be performed to investigate potential soil and groundwater contamination due to the soil staining at the subject property.

The following sites present a *de minimis* environmental concern, and are not considered RECs but have the potential to impact the subject property by groundwater migration of off-site contamination. However, the shallow groundwater underlying the subject property has no known potable or other use.

- Six upgradient LTANK sites are listed as tank test failures or tank overfills. These sites lack a NYSDEC closure date.

- Review of the historical sanborn fire insurance maps revealed that the subject property and surrounding properties have a history as being utilized for manufacturing and industrial usage.

6.0 RECOMMENDATIONS / COST ESTIMATES

Gannett Fleming recommends that a Phase II investigation be performed to investigate potential soil and groundwater contamination due to the current findings (stained soil) and the historical use of the subject property.

We are aware that a Phase II has been recently performed on the subject property by the owner, however, we have not received or reviewed the final report.

Our recommendations are to include a characterization of subsurface conditions at the site.

Additional inquiry would include Phase II soil borehole advancement and sample collection using a Geoprobe drill rig. We recommend that four boreholes be advanced to groundwater, and will be continuously sampled and field screened for the detection of any possible contamination. One grab soil sample will be collected from the bottom of each borehole or at the point demonstrating the most petroleum contamination. Two groundwater samples would also be collected from two of the four boreholes. Soil and groundwater samples will be collected using decontaminated equipment and submitted to a New York State Department of Health certified laboratory for analysis of volatile organic compounds (VOCs), semi-volatile compounds (SVOCs), metals, and polychlorinated biphenyls (PCBs).

Cost of Phase II Activities

Engineering Fee	$2,500
Drilling Fee	$1,500
Analytical Fee	$3,000
	$7,000

The fee assumes that the site work will be completed in one day, with four soil samples and two groundwater samples collected and submitted for a laboratory standard analytical turn-around-time of ten business days.

7.0 LIMITATIONS

This Phase I ESA report is based partially on information obtained from others and Gannett Fleming makes no representation or warranty concerning the accuracy or completeness of this information in describing site operations or environmental conditions. Some of the information presented in this report may be subject to varying interpretations and conclusions. The information contained in this report was developed from information available and conditions observed on the survey date. Gannett Fleming is not liable for financial or other losses or subsequent damage caused by or related to any use of this document.

This report was prepared for the sole use of Cooper Tank and Welding Corp. Any other distribution, without Gannett Fleming's written consent, is prohibited.

8.0 REFERENCES

Environmental Data Resources, *EDR Radius Map with GeoCheck,* 254 Maspeth Avenue, October 14, 2004.

Environmental Data Resources, *Aerial Photographs,* 254 Maspeth Avenue.

Environmental Data Resources, *Topographic Maps,* 254 Maspeth Avenue.

Environmental Data Resources, *Historical Sanborn Maps,* 254 Maspeth Avenue.

USGS *Water-Table Altitude in Kings and Queens Counties, New York, in March 1997* Fact Sheet.

USGS *Hydrogeologic Framework of Long Island, New York, 1989.*

USGS *Thickness and Hydrogeology of Aquifers and Confining Units Below the Upper Glacial Aquifer on Long Island, New York, 1987.*

USGS *Water-Table and Potentiometric-Surface Altitudes of the Upper Glacial, Magothy, and Lloyd Aquifers on Long Island, New York, in March-April 1997, with a Summary of Hydrogeologic Conditions, 1998.*

9.0 SIGNATURE AND QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONAL(S)

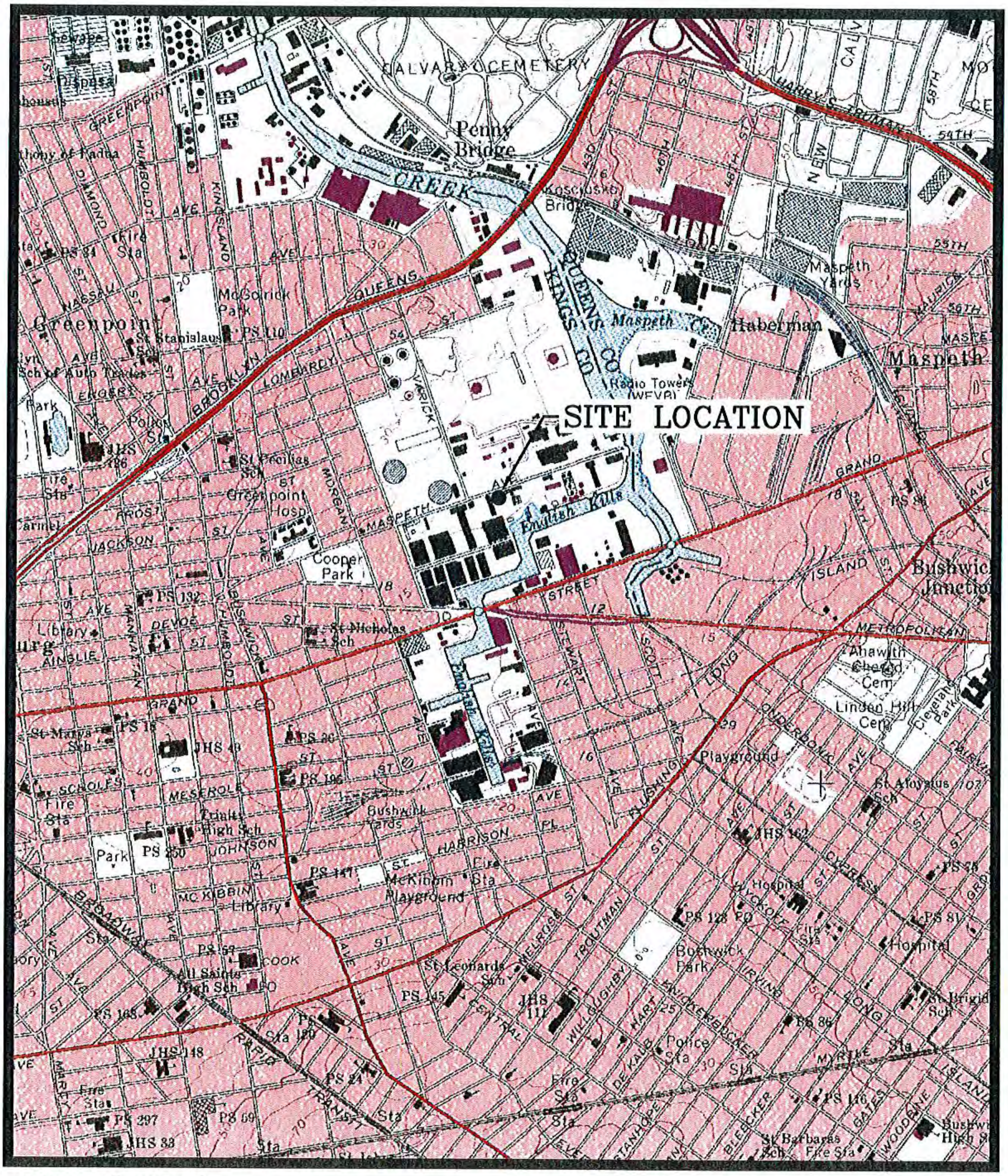
This Phase I Environmental Site Assessment has been prepared by:

IVY HIDALGO-OLBERDING
Environmental Scientist

STEPHEN R. HIX
Director, Environmental Services

FIGURE 1

254 MASPETH AVENUE
BROOKLYN, NEW YORK



SCALE 1"=2000'

U.S.G.S. 7.5 MINUTE QUADRANGLE
BROOKLYN, NEW YORK

LOCATION MAP

APPENDIX A

SITE PHOTOGRAPHS

254 MASPETH AVENUE

PHOTO LOG

View of property facing northwest surficial stains on soil

View of property facing south

254 MASPETH AVENUE

PHOTO LOG

View of property facing west with Refrigeration Unit and HVAC Unit

View of property facing east with crane and 5,000 gal UST

APPENDIX B	EDR SITE ASSESSMENT REPORT
APPENDIX C	SANBORN FIRE INSURANCE MAPS
APPENDIX D	AERIAL PHOTOGRAPHS

(SEE ATTACHED CD)

APPENDIX E

FREEDOM OF INFORMATION REQUESTS AND RESPONSES

Gannett Fleming

GANNETT FLEMING ENGINEERS
AND ARCHITECTS, P.C.
480 Forest Avenue
P.O. Box 707
Locust Valley, NY 11560-0707
Office: (516) 671-8440
Fax: (516) 671-3349
www.gannettfleming.com

November 1, 2004
File # 44440.001

Mr. William Hewitt
Regional Records Access Officer
New York State Department of
Environmental Conservation, Region II
47-40 21st Street
Long Island City, New York 10035

Re: Freedom of Information Request

Dear Mr. Hewitt:

Gannett Fleming requests copies of environmental files, records, and memoranda concerning the following property.

254 Maspeth Avenue
Brooklyn, New York 11211

This information should include:
1) past and present underground storage tank registration(s);
2) reported spills or releases of hazardous substances;
3) generation, storage, treatment, or disposal of hazardous substances;
4) past and present groundwater, surface water, and soil investigations; and
5) environmental permits/violations.

Please do not hesitate to call should you have any questions.

Very truly yours,

GANNETT FLEMING ENGINEERS AND ARCHITECTS, P.C.

Ivy Hidalgo - Olberding

IVY HIDALGO-OLBERDING
Project Manager

R:\CLERICAL\PROJECTS\44400\44440\254 Maspeth Ave Foil Requests.DOC

Gannett Fleming

GANNETT FLEMING ENGINEERS
AND ARCHITECTS, P.C.
480 Forest Avenue
P.O. Box 707
Locust Valley, NY 11560-0707
Office: (516) 671-8440
Fax: (516) 671-3349
www.gannettfleming.com

November 1, 2004
File # 44440.001

Ms. Maria Dooley
Freedom of Information Officer
New York City Department
of Environmental Protection
Bureau of Legal and Legislative Affairs
59-17 Junction Blvd., 19th Floor
Elmhurst, New York 11373-5107

Re: Freedom of Information Request

Dear Ms. Dooley:

Gannett Fleming requests copies of environmental files, records, and memoranda concerning the following property:

254 Maspeth Avenue
Brooklyn, New York 11211

This information should include:

1) past and present underground storage tank registration(s);
2) reported spills or releases of hazardous substances;
3) generation, storage, treatment, or disposal of hazardous substances;
4) past and present groundwater, surface water, and soil investigations; and
5) environmental permits/violations.

Please do not hesitate to call should you have any questions.

Very truly yours,

GANNETT FLEMING ENGINEERS AND ARCHITECTS, P.C.

Ivy Hidalgo-Olberd

IVY HIDALGO-OLBERDING
Project Manager

R:\CLERICAL\PROJECTS\44400\44440\254 Maspeth Ave Foil Requests.DOC

Gannett Fleming

**GANNETT FLEMING ENGINEERS
AND ARCHITECTS, P.C.**
480 Forest Avenue
P.O. Box 707
Locust Valley, NY 11560-0707
Office: (516) 671-8440
Fax: (516) 671-3349
www.gannettfleming.com

November 1, 2004
File # 44440.001

Mary O'Sullivan, Records Access Officer
New York City Fire Department, Legal Affairs
250 Livingston Street, Room 439
Brooklyn, New York 11201

Re: Freedom of Information Request

Dear Ms. O'Sullivan:

Gannett Fleming requests copies of environmental files, records, and memoranda concerning the following property:

254 Maspeth Avenue
Brooklyn, New York 11211

This information should include:
1) past and present underground storage tank registration(s);
2) reported spills or releases of hazardous substances;
3) generation, storage, treatment, or disposal of hazardous substances;
4) past and present groundwater, surface water, and soil investigations; and
5) environmental permits/violations.

Please do not hesitate to call should you have any questions.

Very truly yours,

GANNETT FLEMING ENGINEERS AND ARCHITECTS, P.C.

Ivy Hidalgo-Olberding

IVY HIDALGO-OLBERDING
Project Manager

R:\CLERICAL\PROJECTS\44400\44440\254 Maspeth Ave Foil Requests.DOC

Roger J. Banks, P.E. • Joseph G. Botchie, R.A. • Chester L. Allen, P.E.
Suite 2222, One Penn Plaza, 250 West 34th Street, New York, NY 10119-0002 • Office: (212) 967-9833 • Fax: (212) 268-6684

Gannett Fleming

GANNETT FLEMING ENGINEERS
AND ARCHITECTS, P.C.
480 Forest Avenue
P.O. Box 707
Locust Valley, NY 11560-0707
Office: (516) 671-8440
Fax: (516) 671-3349
www.gannettfleming.com

November 1, 2004
File # 44440.001

New York City Building Department
126-06 Queens Boulevard
Kew Gardens, New York 11415

Re: Freedom of Information Request

Dear Madam or Sir:

Gannett Fleming requests copies of environmental files, records, and memoranda concerning the following property:

254 Maspeth Avenue
Brooklyn, New York 11211

This information should include:
1) Certificate of Occupancy records;
2) building permit records;
3) county tax records and maps;
4) deed and lease records;
5) past and present underground storage tank registration(s);
6) reported spills or releases of hazardous substances;
7) generation, storage, treatment, or disposal of hazardous substances;
8) past and present groundwater, surface water, and soil investigations; and
9) environmental permits/violations.

Please do not hesitate to call should you have any questions.

Very truly yours,

GANNETT FLEMING ENGINEERS AND ARCHITECTS, P.C.

Ivy Hidalgo - Olberding

IVY HIDALGO-OLBERDING
Project Manager

R:\CLERICAL\PROJECTS\44400\44440\254 Maspeth Ave Foil Requests.DOC

Gannett Fleming

GANNETT FLEMING ENGINEERS AND ARCHITECTS, P.C.
480 Forest Avenue
P.O. Box 707
Locust Valley, NY 11560-0707
Office: (516) 671-8440
Fax: (516) 671-3349
www.gannettfleming.com

November 1, 2004
File # 44440.001

Ms. Patricia Caruso
New York City Department of Health
125 Worth Street
New York, New York 10013

Re: Freedom of Information Request

Dear Ms. Caruso:

Gannett Fleming requests copies of environmental files, records, and memoranda concerning the following property:

254 Maspeth Avenue
Brooklyn, New York 11211

This information should include:
1) past and present underground storage tank registration(s);
2) reported spills or releases of hazardous substances;
3) generation, storage, treatment, or disposal of hazardous substances;
4) past and present groundwater, surface water, and soil investigations; and
5) environmental permits/violations.

Please do not hesitate to call should you have any questions.

Very truly yours,

GANNETT FLEMING ENGINEERS AND ARCHITECTS, P.C.

Ivy Hidalgo-Olberding
IVY HIDALGO-OLBERDING
Project Manager

R:\CLERICAL\PROJECTS\44400\44440\254 Maspeth Ave Foil Requests.DOC

PHASE II ENVIRONMENTAL
SUBSURFACE INVESTIGATION
PROPERTY LOCATED AT
254 MASPETH AVENUE
BROOKLYN, NEW YORK

October 26, 2004
Project No.: 04729

Prepared for:

SPENCER REALTY CORPORATION	&	COPPER TANK & WELDING
2 GALASSO PLACE		215 MOORE STREET
MASPETH, NEW YORK		BROOKLYN, NEW YORK

EEA Inc.
55 Hilton Avenue
Garden City, New York 11530
(516) 746-4400
(212) 227-3200

PHASE II ENVIRONMENTAL SUBSURFACE INVESTIGATION
254 MASPETH AVENUE
BROOKLYN, NEW YORK

TABLE OF CONTENTS

EXECUTIVE SUMMARY

This investigation was completed based on EEA's proposal to perform a Phase II Subsurface Investigation (dated September 7, 2004) at 254 Maspeth Avenue in Brooklyn, New York. The subject property is a vacant lot approximately 28,000 square feet in area. A sampling and analysis program was designed to determine if prior and/or present uses on the subject property have impacted the subsurface soils and environment. The sampling and analysis plan consisted of soil quality testing using analytical test methods consistent with expected parameters and agency soil cleanup guidelines. The following presents an evaluation of our investigation.

Since the subject property is a vacant lot, a total of six (6) soil borings (B-1, B-2, B-3, B-4, B-5 and B-6) were advanced on-site in areas of access since the site was being used as a repository of trucks and other vehicle related parts. Soil samples were collected from soil boring B-1 from the 4 to 8 feet depth interval and the 8 to 12 feet depth interval to characterize subsurface conditions on-site. Soil samples were collected between the 0 to 4 feet depth interval in borings B-2, B-3, B-4, B-5 and B-6. Soil samples were collected and tested for volatile organic compounds (VOCs) using USEPA Method 8260, semi-volatile organic compounds via USEPA Method 8270 (STARS List) and the RCRA Metals. Laboratory analysis of soil samples detected SVOCs in all six borings above the New York State Department of Environmental Conservation's (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) soil cleanup criteria. Laboratory analysis of soil samples also detected various RCRA metals (arsenic, barium, cadmium, chromium and mercury) in all six borings above NYSDEC TAGM soil guidelines as well as above Eastern US Background levels for this region. There were also several detections for VOCs in two soil borings (B-2 and B-3), however the detection levels were well below NYSDEC TAGM soil cleanup guidelines.

This property is located in a commercial use area and the soils underlying the property are composed of fill material consisting of brick, wood chips and asphalt materials intermixed with sand, gravel and soil. This type of fill material is common in industrial areas of Brooklyn and New York City. These materials commonly show higher contamination levels than other areas. EEA finds similar results in other properties it has investigated in the region. Based on the findings, EEA has no recommendation for additional testing or remediation for the site.

The NYSDEC has developed the TAGM "guidelines" in order for DEC case managers to determine potential cleanup recommendations at various sites though out the state. The NYSDEC considers each site on a case-by-case basis in consideration of the property usage and its location to sensitive human, wildlife and environmental interests. Industrial/Commercial properties are treated differently than residential or environmentally-sensitive areas.

I. INTRODUCTION

a. Background

This investigation was completed based on EEA's proposal to perform a Phase II Subsurface Investigation (dated September 7, 2004) at 254 Maspeth Avenue in Brooklyn, New York. The subject property is a vacant lot, approximately 28,000 square feet in area. A sampling and analysis program was designed to determine if prior and/or present uses on the subject property have impacted the subsurface soils quality. The sampling and analysis plan consisted of soil testing using analytical test methods consistent with expected parameters and agency soil cleanup guidelines.

EEA initiated field activities September 20, 2004 and all Phase II activities were completed by that day. The site was located at 254 Maspeth Avenue in Brooklyn, New York (see Figure 1). This report summarizes the work performed, the results of the investigation, and the recommended remedial action.

II. SCOPE OF WORK PERFORMED

a. Health and Safety Plan

EEA uses a company Generic Health and Safety Plan for all investigative work relating to performing Phase II Environmental Subsurface Investigations. The HASP assigns responsibilities, establishes personal protection standards, recommends operating procedures, and provides for contingencies that may arise during performance of the assessment at the site. The protocols in the HASP apply to all personnel involved in the work activities including EEA, all outside subcontractors, client, or regulatory agencies present during the performance of the work. In addition, the following safety equipment is maintained on-site for responding to potential emergency situations: portable eyewash, ABC fire extinguisher, and first aid kit. Telephone numbers of emergency response units in the area are also posted where all those working at the site can easily see them. All personnel working at the site will also be required to receive training in respirator fitting, emergency procedures, equipment decontamination, and specific task procedures. All personnel involved with the collection of soil or water will have successfully completed the 40-hour OSHA Hazardous Materials Training Program.

b. Subsurface Utility Location, Permits and Bonding

EEA notified the New York City/Long Island One Call Center under the New York State Regulation Code 753 prior to initiating the work to identify the location of underground utilities in the vicinity of the proposed boring locations. Confirmation number 2580372 was assigned to the site. Any permits for soil boring were obtained from the local agencies. In addition, any license and permit bonding required was secured for the work.

c. Investigation Work Summary

All soil sampling was completed using a Geoprobe Model 54LT using the *Macrocore* soil sampling system. Samples were field screened for volatile organic vapors using an organic vapor meter (OVM).

d. Soil Sampling Summary

As specified in the Proposal, six (6) soil borings were advanced on-site; seven (7) soil samples were submitted for laboratory analysis. Soil samples were collected from soil boring B-1 from the 4 to 8 feet depth interval and the 8 to 12 feet depth interval to characterize subsurface conditions on-site. Soil samples were collected between the 0 to 4 feet depth interval in borings B-2, B-3, B-4, B-5 and B-6. The soil samples each boring transferred directly into sterilized laboratory glassware. The samples were sent to the laboratory and were tested for:

VOCs (USEPA Method 8260),
SVOCs (USEPA Method 8270 STARS List),
RCRA Metals

e. Site Characteristics

Soils at the site consisted of fill material up to 11 feet below grade (fbg) comprised of brown soil, red brick chips, asphalt chips, wood remnants, fine to medium grained sand, gravel and clay. Possibly native material was encountered in boring B-1 at 11 fbg comprised of fine-grained, brown sand and clay. Groundwater was also encountered at this one boring at approximately 9 fbg.

Kings County, the location of the site, is underlain by a sequence of unconsolidated deposits of Pleistocene and Cretaceous age, overlying a southward dipping bedrock. The thickness of these unconsolidated deposits ranges from a few hundreds feet in the northwestern sections of Long Island to 2,000 feet along the south shore barrier beaches. These deposits form the four aquifers and two confining units. The four aquifers are the upper glacial, the Jameco, the Magothy and the Lloyd. The upper glacial (water-table) aquifer, the only aquifer encountered on-site, consists of till, outwash, glaciolacustrine and marine deposits. Bedrock underlies the Cretaceous deposits and, in some areas, the Pleistocene deposits and constitutes the lower boundary of the Lloyd Aquifer. Bedrock is composed of crystalline metamorphic and igneous rocks, muscovite-biotite schist, gneiss and granite. Since bedrock is at depth in all areas of Long Island, no outcrops were encountered on-site.[1]

III. RESULTS OF LABORATORY ANALYSES

EcoTest Laboratories, Inc. (NYSDOH Certification #10320) prepared the results of the soil samples. Tables 1, 2 and 3 present a summary of the results and a comparison to New York State Department of Environmental Conservation (NYSDEC) STARS Memo #1 and Technical and Administrative Guidance Manual (TAGM) cleanup guidelines. The chain-of-custody records, as well as the analytical laboratory data sheets, are presented in the Appendix to this report.

The soil sample collection locations are presented in Figure 1. The soil boring report logs present the field observations made at each soil boring location are also presented in the Appendix to this report. Site photographs were taken during field activities and are presented in the Appendix.

IV. FINDINGS AND CONCLUSIONS

a. Soil Sampling Summary

Laboratory analysis of soil samples detected SVOCs in all six borings above the New York State Department of Environmental Conservation's (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) soil cleanup criteria (see Table 2). Laboratory analysis of soil samples also detected various RCRA metals (arsenic, barium, cadmium, chromium and mercury) in all six borings above NYSDEC TAGM soil guidelines as well as above Eastern US Background levels for this region (see Table 3). There were also several detections for VOCs in two soil borings (B-2 and B-3), however the detection levels were well below NYSDEC TAGM soil cleanup guidelines (see Table 1).

V. RECOMMENDATIONS

This property is located in a commercial use area and the soils underlying the property are composed of fill material consisting of brick, wood chips and asphalt materials intermixed with sand, gravel and soil. This type of fill material is common in industrial areas of Brooklyn and New York City. These materials commonly show higher contamination levels than other areas. EEA finds similar results in other properties it has investigated in the region. Based on the findings, EEA has no recommendation for additional testing or remediation for the site.

The NYSDEC has developed the TAGM "guidelines" in order for DEC case managers to determine potential cleanup recommendations at various sites though out the state. The NYSDEC considers each site on a case-by-case basis in consideration of the property usage and its location to sensitive human, wildlife and environmental interests.

VI. SAMPLING METHODOLOGY

a. Quality Assurance and Quality Control QA/QC Plan

EEA implements a QA/QC Plan to ensure sample integrity and avoid contamination and/or cross-contamination of samples. All sampling equipment is cleaned before each sample is collected. When petroleum hydrocarbon contamination is encountered, all equipment is steam-cleaned. The following procedures are followed in the decontamination process:

Step 1: Steam clean equipment.
Step 2: Scrub with a bristle brush using a non-phosphate detergent (such as Alconox).
Step 3: Rinse with hot tap water.
Step 4: Rinse twice with deionized water.
Step 5: Air dry.
Step 6 Nitric Acid (5%) solution rinse (if sampling for metals)
Step 7: Rinse twice with deionized water.
Step 8: Air dry.

VII QUALIFICATIONS

EEA, Inc. is an environmental consulting firm that has undertaken environmental pollution investigations, development feasibility studies, and environmental site assessment studies since 1979. These site evaluation studies have been prepared for major lenders, public corporations, businesses, developers and governmental agencies. Approximately 4,000 parcels have been evaluated in the metropolitan New York-New Jersey area during the past twenty years, ranging from Phase I Environmental Site Assessments to comprehensive subsurface hazardous material investigations and testing programs. EEA also prepares bid specifications for remedial cleanup actions and supervises site cleanup.

EEA's principals and senior managers for the hazardous waste investigations each have over 20 years experience in environmental consulting, with established credentials in the field.

Individual qualifications of EEA personnel, including specific credentials of persons involved in the preparation of this report can be provided upon request.

VIII. DISCLAIMER

This report is for use by Spencer Realty Corporation and by Copper Tank & Welding and is only to be used as a guide in determining the potential for contamination by toxic or hazardous materials on the subject property at the time of the site visit. This Phase II Environmental

Subsurface Investigation was undertaken in accordance with generally accepted protocols, including ASTM Standards Related to the Phase II Environmental Site Assessment Process. This Phase II Investigation is based principally on the review of historic and regulatory records (made available within a reasonable time period), relating to past occupants and usage of the subject property, as well as activities at nearby sites, and upon a visual assessment of the subject property, and makes no determinations with respect to portions of the subject property and its structures which were not inspected. Our professional services have been performed using that degree of care and skill ordinarily exercised under similar circumstances by reputable qualified professionals practicing in this or similar situations. The interpretation of the field data is based on good judgment and experience. However, no matter how qualified the professional or detailed the investigation, subsurface conditions cannot always be predicted beyond the points of actual sampling and testing. No other warranty, expressed or implied, is made to the professional advice included in this report.

Any and all liability on the part of EEA, Inc. shall be limited solely to EEA's professional liability insurance (errors and omissions coverage of one million dollars). EEA, Inc. shall have no liability for any other damages, whether consequential, compensatory, punitive, or special, arising out of, incidental to, or as a result of, this assessment. EEA, Inc. assumes no liability for the use of this report by any person or entity other than the institution and/or entities or persons for whom it has been prepared.

TABLE 1
SOIL ANALYTICAL RESULTS: VOLATILE ORGANIC COMPOUNDS
254 MASPETH AVENUE
BROOKLYN, NEW YORK

	Sample ID & Sample Depth	B-1 (8-12')	B-2 (0-4')	B-1 (4-8')	B-3 (0-4')	B-4 (0-2')	B-5 (0-4')	B-6 (0-4')
	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	Sampling Date	9/20/2004	9/20/2004	9/20/2004	9/20/2004	9/20/2004	9/20/2004	9/20/2004
VOLATILE ORGANIC COMPOUNDS (ug/Kg)	**NYSDEC Soil Cleanup Objectives (TAGM) (ug/Kg)**	**USEPA METHOD 8260**						
1,1 Dichloroethane	200	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
1,1 Dichloroethene	400	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
1,1-Dichloropropene	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
1,2 Dibromoethane	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
1,2 Dichlorobenzene (v)	7,900	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
1,2 Dichloroethane	200	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
1,2 Dichloropropane	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
1,3 Dichlorobenzene (v)	1,600	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
1,3-Dichloropropane	300	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
1,4 Dichlorobenzene (v)	8,500	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
111 Trichloroethane	800	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
1112Tetrachloroethane	600	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
112 Trichloroethane	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
1122Tetrachloroethane	600	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
123-Trichlorobenzene	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
123-Trichloropropane	400	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
124-Trichlorobenzene (v)	3,400	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
124-Trimethylbenzene	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
1245 Tetramethylbenzene	NE	< 24	**37**	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
135-Trimethylbenzene	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
2,2-Dichloropropane	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
2-Chlorotoluene	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
4-Chlorotoluene	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Acetone	200	< 240	**69**	< 54	< 55	< 54	< 53	< 56
Benzene	60	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Bromobenzene	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Bromochloromethane	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Bromodichloromethane	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Bromoform	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Bromomethane	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
c-1,2-Dichloroethene	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
c-1,3Dichloropropene	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Carbon Tetrachloride	600	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Chlorobenzene	1,700	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Chlorodibromomethane	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Chlorodifluoromethane	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Chloroethane	1,900	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Chloroform	300	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Chloromethane	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Dibromochloropropane	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Dibromomethane	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Dichlordifluomethane	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Ethyl Benzene	5,500	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Freon 113	6,000	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Hexachlorobutadiene	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Isopropylbenzene	NE	< 24	**15**	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
m + p Xylene	1,200	< 48	< 12	< 11	< 11	< 11	< 11	< 11
Methyl Ethyl Ketone	NE	< 240	< 58	< 54	< 55	< 54	< 53	< 56
Methylene Chloride	100	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Methylisobutylketone	NE	< 240	< 58	< 54	< 55	< 54	< 53	< 56
n-Butylbenzene	NE	< 24	**7**	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
n-Propylbenzene	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Naphthalene(v)	NE	< 24	< 5.8	< 5.4	**38**	< 5.4	< 5.3	< 5.6
o Xylene	1,200	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
p Diethylbenzene	NE	< 24	**7**	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
p-Ethyltoluene	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
p-Isopropyltoluene	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
sec-Butylbenzene	NE	< 24	**16**	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Styrene	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
t-1,2-Dichloroethene	300	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
t-1,3Dichloropropene	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
ter.ButylMethylEther	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
tert-Butylbenzene	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Tetrachloroethene	1,400	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Toluene	1,500	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Trichloroethene	700	< 24	< 5.8	< 5.4	< 5.5	**14**	< 5.3	< 5.6
Trichlorofluomethane	NE	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6
Vinyl Chloride	200	< 24	< 5.8	< 5.4	< 5.5	< 5.4	< 5.3	< 5.6

Notes:

< = Analyte not detected above the Laboratory Reporting Limit (detection limit noted)
NYSDEC = New York State Department of Environmental Conservation
TAGM = Technical and Administrative Guidance Memorandum
NE = TAGM guidelines Not Established

Bold	indicates analytes detected above the Laboratory Reporting Limit
Shade	indicated analytes detected above the TAGM guidelines

TABLE 2
SOIL ANALYTICAL RESULTS: SEMI-VOLATILE ORGANIC COMPOUNDS
254 MASPETH AVENUE
BROOKLYN, NEW YORK

	Sample ID & Sample Depth	B-1 (8-12')	B-2 (0-4')	B-1 (4-8')	B-3 (0-4')	B-4 (0-2')	B-5 (0-4')	B-6 (0-4')
	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	Sampling Date	9/20/2004	9/20/2004	9/20/2004	9/20/2004	9/20/2004	9/20/2004	9/20/2004
SEMI-VOLATILE ORGANIC COMPOUNDS (ug/Kg)	**NYSDEC Soil Cleanup Objectives (TAGM) (ug/Kg)**	**USEPA METHOD 8270 (STARS LIST)**						
Acenaphthene	50,000	< 360	**2,800**	< 330	**2,100**	**960**	< 320	**330**
Anthracene	50,000	**1,700**	**5,600**	**720**	**5,800**	**2,600**	**510**	**1,300**
Benzo(a)anthracene	224	**2,900**	**14,000**	**2,500**	**20,000**	**6,000**	**2,600**	**6,600**
Benzo(a)pyrene	61	**1,700**	**11,000**	**1,800**	**15,000**	**4,700**	**2,100**	**4,800**
Benzo(b)fluoranthene	1,100	**1,400**	**12,000**	**1,600**	**14,000**	**4,300**	**2,100**	**5,600**
Benzo(ghi)perylene	50,000	**750**	**3,300**	**1,000**	**8,000**	**1,600**	**980**	**1,900**
Benzo(k)fluoranthene	1,100	**1,400**	**12,000**	**1,600**	**14,000**	**4,300**	**2,100**	**5,600**
Chrysene	400	**2,400**	**1,400**	**2,500**	**18,000**	**5,700**	**2,400**	**6,800**
Dibenzo(a,h)anthracene	14	< 360	**1,100**	< 330	**1,500**	**480**	**350**	**720**
Fluoranthene	50,000	**8,900**	**30,000**	**4,800**	**40,000**	**11,000**	**3,900**	**10,000**
Fluorene	50,000	< 360	**4,300**	< 330	**1,900**	**1,600**	< 320	**330**
Indeno(1,2,3-cd)pyrene	3,200	**580**	**3,000**	**880**	**7,100**	**1,500**	**850**	**1,600**
Naphthalene(sv)	13,000	< 360	**2,700**	< 330	**680**	**720**	**330**	**380**
Phenanthrene	50,000	**4,800**	**9,900**	**3,600**	**16,000**	**9,300**	**1,500**	**5,800**
Pyrene	50,000	**9,900**	**36,000**	**5,500**	**42,000**	**14,000**	**4,800**	**14,000**

Notes:
< = Analyte not detected above the Laboratory Reporting Limit (detection limit noted)
NYSDEC = New York State Department of Environmental Conservation
TAGM = Technical and Administrative Guidance Memorandum
NE = TAGM guidelines Not Established
Bold indicates analytes detected above the Laboratory Reporting Limit
Shade indicated analytes detected above the TAGM guidelines

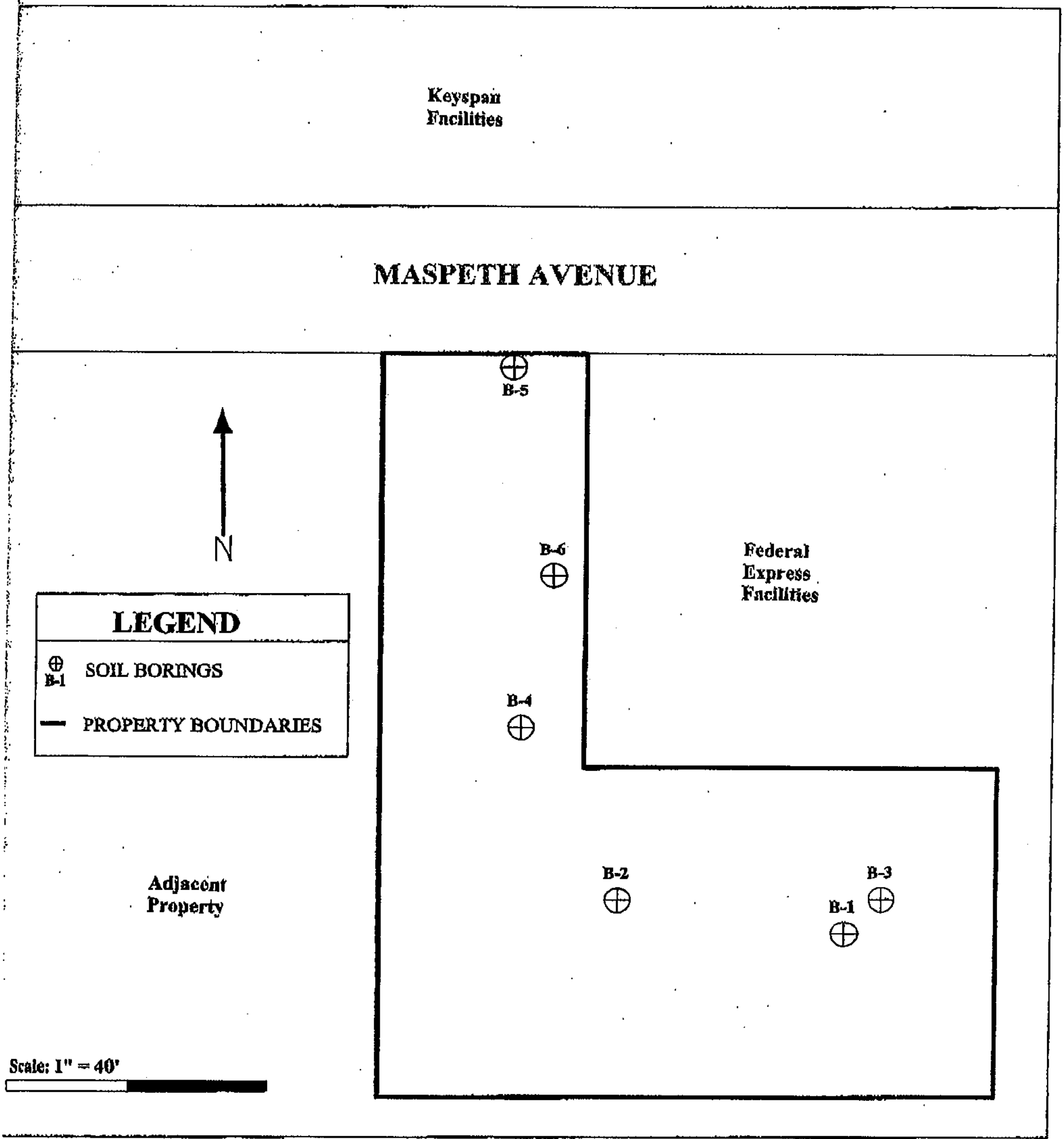
TABLE 3
SOIL ANALYTICAL RESULTS: RCRA METALS
254 MASPETH AVENUE
BROOKLYN, NEW YORK

Sample ID & Sample Depth	B-1 (8-12')	B-2 (0-4')	B-1 (4-8')	B-3 (0-4')	B-4 (0-2')	B-5 (0-4')	B-6 (0-4')
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sampling Date	9/20/2004	9/20/2004	9/20/2004	9/20/2004	9/20/2004	9/20/2004	9/20/2004

RCRA METALS (mg/Kg)	**NYSDEC Soil Cleanup Objectives (TAGM) (mg/Kg)**	**Eastern USA Background (mg/Kg)**	**USEPA METHOD 6010, 7470A & 7740**						
Arsenic	7.5 or SB	3 to 12	< 1.2	**12**	**2.1**	**18**	**3.8**	**4.4**	**17**
Barium	300 or SB	15-600	**35**	**370**	**130**	**300**	**150**	**150**	**270**
Cadmium	1 or SB	0.1 to 1	**0.68**	**2.9**	**1**	**3.3**	**1.7**	**1.8**	**4**
Chromium	10 or SB	1.5 to 40	**8.8**	**36**	**16**	**35**	**37**	**27**	**33**
Lead	SB (500)	200 to 500	**56**	**450**	**280**	**420**	**250**	**330**	**430**
Mercury	0.1	0.001 to 0.2	**0.12**	**0.41**	**0.37**	**0.82**	**0.34**	**0.31**	**0.56**
Selenium	2 or SB	0.1-3.9	**0.74**	**0.47**	< 0.43	**1**	**0.67**	< 0.43	**0.73**
Silver	SB	NE	< 0.6	< 0.58	< 0.54	< 0.55	< 0.54	< 0.53	< 0.56

Notes:

< = Analyte not detected above the Laboratory Reporting Limit (detection limit noted)
NYSDEC = New York State Department of Environmental Conservation
TAGM = Technical and Administrative Guidance Memorandum
NE = TAGM guidelines Not Established
Bold indicates analytes detected above the Laboratory Reporting Limit
Shade indicated analytes detected above the TAGM guidelines



EEA, Inc.

55 Hilton Avenue
Garden City, New York
(516) 746-4400

Figure 1: Site Location Plan
254 Maspeth Avenue
Brooklyn, New York

Job No.: 04729

Drawn By: FI

Date: 10/14/04

APPENDIX A

CHAIN-OF CUSTODY

ECOTEST LABORATORIES, INC. • ENVIRONMENTAL TESTING
377 Sheffield Avenue, North Babylon, New York 11703
(631) 422-5777 • FAX (631) 422-5770 • Email: ecotestlab@aol.com

CHAIN OF CUSTODY RECORD

Client: EEA, Inc.
Address: 55 Hilton Ave
Garden City, NY
Phone: 516-746-4400 FAX: 516-746-4432
Person receiving report: F. Islam
Sampled by: FI, NJR
Source: 254 Maspeth Ave, Bklyn, NY
Job No.: EEA 04729

MATRIX (Soil, Water, etc.)	COLLECTED DATE	COLLECTED TIME	SAMPLE IDENTIFICATION	TOTAL NUMBER OF CONTAINERS	USEPA Method 8260	USEPA Method 8270BN (STARS)	RCRA 8 Metals								QC Pkg Type (If Required)	Accelerated Turnaround Date Required	REMARKS-TESTS REQUIRED
Soil	9/20/04	1000	B-1 (8-12')	2	X	X	X										Corner of L
Soil	9/20/04	1030	B-2 (0-4')	2	X	X	X										Middle of
Soil	9/20/04	1100	B-1 (4-8')	2	X	X	X										
Soil	9/20/04	1115	B-3 (0-4')	2	X	X	X										
Soil	9/20/04	1130	B-4 (0-2')	2	X	X	X										
Soil	9/20/04	1200	B-5 (0-4')	2	X	X	X										
Soil	9/20/04	1230	B-6 (0-4')	2	X	X	X										

Relinquished by: *(Signature)* Representing:	DATE/TIME 9/20 1358	SEAL INTACT? YES NO NA	Received by: *(Signature)* Representing:	Relinquished by: *(Signature)* Representing:	DATE/TIME	SEAL INTACT? YES NO NA	Received by: *(Signature)* Representing:
Relinquished by: *(Signature)* Representing:	DATE/TIME	SEAL INTACT? YES NO NA	Received by: *(Signature)* Representing:	Relinquished by: *(Signature)* Representing:	DATE/TIME	SEAL INTACT? YES NO NA	Received by: *(Signature)* Representing:

APPENDIX B

LABORATORY ANALYTICAL REPORT

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.01 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1000
MATRIX:Soil SAMPLE: B-1 (8-12')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Dichlordifluoromethane	ug/Kg	< 24		09/24/04	23.809	EPA8260
Chloromethane	ug/Kg	< 24		09/24/04	23.809	EPA8260
Vinyl Chloride	ug/Kg	< 24		09/24/04	23.809	EPA8260
Bromomethane	ug/Kg	< 24		09/24/04	23.809	EPA8260
Chloroethane	ug/Kg	< 24		09/24/04	23.809	EPA8260
Trichlorofluoromethane	ug/Kg	< 24		09/24/04	23.809	EPA8260
Dichloroethene	ug/Kg	< 24		09/24/04	23.809	EPA8260
Methylene Chloride	ug/Kg	< 24		09/24/04	23.809	EPA8260
t-1,2-Dichloroethene	ug/Kg	< 24		09/24/04	23.809	EPA8260
1,1 Dichloroethane	ug/Kg	< 24		09/24/04	23.809	EPA8260
2,2-Dichloropropane	ug/Kg	< 24		09/24/04	23.809	EPA8260
c-1,2-Dichloroethene	ug/Kg	< 24		09/24/04	23.809	EPA8260
Bromochloromethane	ug/Kg	< 24		09/24/04	23.809	EPA8260
Chloroform	ug/Kg	< 24		09/24/04	23.809	EPA8260
111 Trichloroethane	ug/Kg	< 24		09/24/04	23.809	EPA8260
Carbon Tetrachloride	ug/Kg	< 24		09/24/04	23.809	EPA8260
1,1-Dichloropropene	ug/Kg	< 24		09/24/04	23.809	EPA8260
Benzene	ug/Kg	< 24		09/24/04	23.809	EPA8260
1,2 Dichloroethane	ug/Kg	< 24		09/24/04	23.809	EPA8260
Trichloroethylene	ug/Kg	< 24		09/24/04	23.809	EPA8260
1,2 Dichloropropane	ug/Kg	< 24		09/24/04	23.809	EPA8260
Dibromomethane	ug/Kg	< 24		09/24/04	23.809	EPA8260
Bromodichloromethane	ug/Kg	< 24		09/24/04	23.809	EPA8260
c-1,3Dichloropropene	ug/Kg	< 24		09/24/04	23.809	EPA8260
Toluene	ug/Kg	< 24		09/24/04	23.809	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. **ENVIRONMENTAL TESTING**
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.01 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1000
MATRIX:Soil SAMPLE: B-1 (8-12')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
t-1,3Dichloropropene	ug/Kg	< 24		09/24/04	23.809	EPA8260
112 Trichloroethane	ug/Kg	< 24		09/24/04	23.809	EPA8260
Tetrachloroethene	ug/Kg	< 24		09/24/04	23.809	EPA8260
1,3-Dichloropropane	ug/Kg	< 24		09/24/04	23.809	EPA8260
Chlorodibromomethane	ug/Kg	< 24		09/24/04	23.809	EPA8260
1 2 Dibromoethane	ug/Kg	< 24		09/24/04	23.809	EPA8260
[illegible]orobenzene	ug/Kg	< 24		09/24/04	23.809	EPA8260
Ethyl Benzene	ug/Kg	< 24		09/24/04	23.809	EPA8260
1112Tetrachloroethane	ug/Kg	< 24		09/24/04	23.809	EPA8260
m + p Xylene	ug/Kg	< 48		09/24/04	47.619	EPA8260
o Xylene	ug/Kg	< 24		09/24/04	23.809	EPA8260
Styrene	ug/Kg	< 24		09/24/04	23.809	EPA8260
Bromoform	ug/Kg	< 24		09/24/04	23.809	EPA8260
Isopropylbenzene	ug/Kg	< 24		09/24/04	23.809	EPA8260
Bromobenzene	ug/Kg	< 24		09/24/04	23.809	EPA8260
1122Tetrachloroethane	ug/Kg	< 24		09/24/04	23.809	EPA8260
123-Trichloropropane	ug/Kg	< 24		09/24/04	23.809	EPA8260
n-Propylbenzene	ug/Kg	< 24		09/24/04	23.809	EPA8260
2-Chlorotoluene	ug/Kg	< 24		09/24/04	23.809	EPA8260
135-Trimethylbenzene	ug/Kg	< 24		09/24/04	23.809	EPA8260
4-Chlorotoluene	ug/Kg	< 24		09/24/04	23.809	EPA8260
tert-Butylbenzene	ug/Kg	< 24		09/24/04	23.809	EPA8260
124-Trimethylbenzene	ug/Kg	< 24		09/24/04	23.809	EPA8260
sec-Butylbenzene	ug/Kg	< 24		09/24/04	23.809	EPA8260
p-Isopropyltoluene	ug/Kg	< 24		09/24/04	23.809	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.01 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1000
MATRIX:Soil SAMPLE: B-1 (8-12')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
1,3 Dichlorobenzene (v)	ug/Kg	< 24		09/24/04	23.809	EPA8260
1,4 Dichlorobenzene (v)	ug/Kg	< 24		09/24/04	23.809	EPA8260
n-Butylbenzene	ug/Kg	< 24		09/24/04	23.809	EPA8260
1,2 Dichlorobenzene (v)	ug/Kg	< 24		09/24/04	23.809	EPA8260
Dibromochloropropane	ug/Kg	< 24		09/24/04	23.809	EPA8260
124-Trichlorobenzene (v)	ug/Kg	< 24		09/24/04	23.809	EPA8260
achlorobutadiene	ug/Kg	< 24		09/24/04	23.809	EPA8260
Naphthalene(v)	ug/Kg	< 24		09/24/04	23.809	EPA8260
123-Trichlorobenzene	ug/Kg	< 24		09/24/04	23.809	EPA8260
ter.ButylMethylEther	ug/Kg	< 24		09/24/04	23.809	EPA8260
p-Ethyltoluene	ug/Kg	< 24		09/24/04	23.809	EPA8260
Freon 113	ug/Kg	< 24		09/24/04	23.809	EPA8260
1245 Tetramethylbenz	ug/Kg	< 24		09/24/04	23.809	EPA8260
Acetone	ug/Kg	< 240		09/24/04	238.09	EPA8260
Methyl Ethyl Ketone	ug/Kg	< 240		09/24/04	238.09	EPA8260
Methylisobutylketone	ug/Kg	< 240		09/24/04	238.09	EPA8260
Chlorodifluoromethane	ug/Kg	< 24		09/24/04	23.809	EPA8260
p Diethylbenzene	ug/Kg	< 24		09/24/04	23.809	EPA8260
% Solids		84		09/21/04	0.1	SM182540G

cc:

LRL=Laboratory Reporting Limit

REMARKS: Elevated detection level due to interference in sample.

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.01 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1000
MATRIX:Soil SAMPLE: B-1 (8-12')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Naphthalene(sv)	ug/Kg	< 360		09/23/04	357.14	EPA8270
Acenaphthene	ug/Kg	< 360		09/23/04	357.14	EPA8270
Fluorene	ug/Kg	< 360		09/23/04	357.14	EPA8270
Phenanthrene	ug/Kg	4800		09/23/04	357.14	EPA8270
Anthracene	ug/Kg	1700		09/23/04	357.14	EPA8270
Fluoranthene	ug/Kg	8900		09/23/04	357.14	EPA8270
rene	ug/Kg	9900		09/23/04	357.14	EPA8270
Benzo(a)anthracene	ug/Kg	2900		09/23/04	357.14	EPA8270
Chrysene	ug/Kg	2400		09/23/04	357.14	EPA8270
Benzo(b)fluoranthene	ug/Kg	1400	#	09/23/04	357.14	EPA8270
Benzo(k)fluoranthene	ug/Kg	1400	#	09/23/04	357.14	EPA8270
Benzo(a)pyrene	ug/Kg	1700		09/23/04	357.14	EPA8270
Indeno(1,2,3-cd)pyrene	ug/Kg	580		09/23/04	357.14	EPA8270
Dibenzo(a,h)anthracene	ug/Kg	< 360		09/23/04	357.14	EPA8270
Benzo(ghi)perylene	ug/Kg	750		09/23/04	357.14	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS: #Total = 2800 ug/Kg, unable to separate isomers.

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.01 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1000
MATRIX:Soil SAMPLE: B-1 (8-12')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Arsenic as As	mg/Kg	< 1.2		09/22/04	1.1904	EPA6010
Barium as Ba	mg/Kg	35		09/22/04	0.5952	EPA6010
Cadmium as Cd	mg/Kg	0.68		09/22/04	0.5952	EPA6010
Chromium as Cr	mg/Kg	8.8		09/22/04	0.5952	EPA6010
Lead as Pb	mg/Kg	56		09/22/04	0.5952	EPA6010
Mercury as Hg	mg/Kg	0.12		09/22/04	0.0059	EPA7470A
Selenium as Se	mg/Kg	0.74		10/01/04	0.4761	EPA7740
Silver as Ag	mg/Kg	< 0.60		09/22/04	0.5952	EPA6010

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. ***ENVIRONMENTAL TESTING***
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.02 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1030
MATRIX:Soil SAMPLE: B-2 (0-4')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Dichlordifluoromethane	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
Chloromethane	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
Vinyl Chloride	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
Bromomethane	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
Chloroethane	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
Trichlorofluoromethane	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
[illegible] Dichloroethene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
Methylene Chloride	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
t-1,2-Dichloroethene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
1,1 Dichloroethane	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
2,2-Dichloropropane	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
c-1,2-Dichloroethene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
Bromochloromethane	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
Chloroform	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
111 Trichloroethane	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
Carbon Tetrachloride	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
1,1-Dichloropropene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
Benzene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
1,2 Dichloroethane	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
Trichloroethylene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
1,2 Dichloropropane	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
Dibromomethane	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
Bromodichloromethane	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
c-1,3Dichloropropene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
Toluene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. **ENVIRONMENTAL TESTING**
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.02 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1030
MATRIX:Soil SAMPLE: B-2 (0-4')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
t-1,3Dichloropropene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
112 Trichloroethane	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
Tetrachloroethene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
1,3-Dichloropropane	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
Chlorodibromomethane	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
1,2 Dibromoethane	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
orobenzene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
Ethyl Benzene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
1112Tetrachloroethane	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
m + p Xylene	ug/Kg	< 12		09/24/04	11.627	EPA8260
o Xylene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
Styrene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
Bromoform	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
Isopropylbenzene	ug/Kg	15		09/24/04	5.8139	EPA8260
Bromobenzene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
1122Tetrachloroethane	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
123-Trichloropropane	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
n-Propylbenzene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
2-Chlorotoluene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
135-Trimethylbenzene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
4-Chlorotoluene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
tert-Butylbenzene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
124-Trimethylbenzene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
sec-Butylbenzene	ug/Kg	16		09/24/04	5.8139	EPA8260
p-Isopropyltoluene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 37292 NYSDOH ID # 10320

ECOTEST LABORATORIES, INC. **ENVIRONMENTAL TESTING**
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.02 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1030
MATRIX:Soil SAMPLE: B-2 (0-4')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
1,3 Dichlorobenzene (v)	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
1,4 Dichlorobenzene (v)	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
n-Butylbenzene	ug/Kg	7.0		09/24/04	5.8139	EPA8260
1,2 Dichlorobenzene (v)	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
Dibromochloropropane	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
124-Trichlorobenzene (v)	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
H xachlorobutadiene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
N phthalene(v)	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
123-Trichlorobenzene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
ter.ButylMethylEther	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
p-Ethyltoluene	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
Freon 113	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
1245 Tetramethylbenz	ug/Kg	37		09/24/04	5.8139	EPA8260
Acetone	ug/Kg	69		09/24/04	58.139	EPA8260
Methyl Ethyl Ketone	ug/Kg	< 58		09/24/04	58.139	EPA8260
Methylisobutylketone	ug/Kg	< 58		09/24/04	58.139	EPA8260
Chlorodifluoromethane	ug/Kg	< 5.8		09/24/04	5.8139	EPA8260
p Diethylbenzene	ug/Kg	7.0		09/24/04	5.8139	EPA8260
% Solids		86		09/21/04	0.1	SM182540G

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.02 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1030
MATRIX:Soil SAMPLE: B-2 (0-4')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Naphthalene(sv)	ug/Kg	2700		09/23/04	348.83	EPA8270
Acenaphthene	ug/Kg	2800		09/23/04	348.83	EPA8270
Fluorene	ug/Kg	4300		09/23/04	348.83	EPA8270
Phenanthrene	ug/Kg	9900		09/23/04	348.83	EPA8270
Anthracene	ug/Kg	5600		09/23/04	348.83	EPA8270
Fluoranthene	ug/Kg	30000		09/23/04	348.83	EPA8270
Pyrene	ug/Kg	36000		09/23/04	3488.3	EPA8270
Benzo(a)anthracene	ug/Kg	14000		09/23/04	348.83	EPA8270
Chrysene	ug/Kg	1400		09/23/04	348.83	EPA8270
Benzo(b)fluoranthene	ug/Kg	12000	#	09/23/04	348.83	EPA8270
Benzo(k)fluoranthene	ug/Kg	12000	#	09/23/04	348.83	EPA8270
Benzo(a)pyrene	ug/Kg	11000		09/23/04	348.83	EPA8270
Indeno(1,2,3-cd)pyrene	ug/Kg	3000		09/23/04	348.83	EPA8270
Dibenzo(a,h)anthracene	ug/Kg	1100		09/23/04	348.83	EPA8270
Benzo(ghi)perylene	ug/Kg	3300		09/23/04	348.83	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS: #Total =24000 ug/Kg, unable to separate isomers.

DIRECTOR

ECOTEST LABORATORIES, INC. **ENVIRONMENTAL TESTING**

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.02 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1030
MATRIX:Soil SAMPLE: B-2 (0-4')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Arsenic as As	mg/Kg	12		09/22/04	0.5813	EPA6010
Barium as Ba	mg/Kg	370		09/23/04	2.9069	EPA6010
Cadmium as Cd	mg/Kg	2.9		09/22/04	0.5813	EPA6010
Chromium as Cr	mg/Kg	36		09/22/04	0.5813	EPA6010
Lead as Pb	mg/Kg	450		09/22/04	0.5813	EPA6010
Mercury as Hg	mg/Kg	0.41		09/22/04	0.0290	EPA7470A
Selenium as Se	mg/Kg	0.47		10/01/04	0.4651	EPA7740
Silver as Ag	mg/Kg	< 0.58		09/22/04	0.5813	EPA6010

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. **ENVIRONMENTAL TESTING**
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.03 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1100
MATRIX:Soil SAMPLE: B-1 (4-8')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Dichlordifluoromethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Chloromethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Vinyl Chloride	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Bromomethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Chloroethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Trichlorofluoromethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
1 Dichloroethene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
thylene Chloride	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
t-1,2-Dichloroethene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
1,1 Dichloroethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
2,2-Dichloropropane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
c-1,2-Dichloroethene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Bromochloromethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Chloroform	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
111 Trichloroethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Carbon Tetrachloride	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
1,1-Dichloropropene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Benzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
1,2 Dichloroethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Trichloroethylene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
1,2 Dichloropropane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Dibromomethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Bromodichloromethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
c-1,3Dichloropropene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Toluene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.03 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1100
MATRIX:Soil SAMPLE: B-1 (4-8')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
t-1,3Dichloropropene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
112 Trichloroethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Tetrachloroethene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
1,3-Dichloropropane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Chlorodibromomethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
1,2 Dibromoethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Chlorobenzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Ethyl Benzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
1112Tetrachloroethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
m + p Xylene	ug/Kg	< 11		09/24/04	10.869	EPA8260
o Xylene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Styrene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Bromoform	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Isopropylbenzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Bromobenzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
1122Tetrachloroethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
123-Trichloropropane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
n-Propylbenzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
2-Chlorotoluene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
135-Trimethylbenzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
4-Chlorotoluene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
tert-Butylbenzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
124-Trimethylbenzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
sec-Butylbenzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
p-Isopropyltoluene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.03 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1100
MATRIX:Soil SAMPLE: B-1 (4-8')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
1,3 Dichlorobenzene (v)	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
1,4 Dichlorobenzene (v)	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
n-Butylbenzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
1,2 Dichlorobenzene (v)	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Dibromochloropropane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
124-Trichlorobenzene (v)	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
xachlorobutadiene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
phthalene(v)	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
123-Trichlorobenzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
ter.ButylMethylEther	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
p-Ethyltoluene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Freon 113	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
1245 Tetramethylbenz	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Acetone	ug/Kg	< 54		09/24/04	54.347	EPA8260
Methyl Ethyl Ketone	ug/Kg	< 54		09/24/04	54.347	EPA8260
Methylisobutylketone	ug/Kg	< 54		09/24/04	54.347	EPA8260
Chlorodifluoromethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
p Diethylbenzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
% Solids		92		09/21/04	0.1	SM182540G

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.03 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1100
MATRIX:Soil SAMPLE: B-1 (4-8')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Naphthalene(sv)	ug/Kg	< 330		09/23/04	326.08	EPA8270
Acenaphthene	ug/Kg	< 330		09/23/04	326.08	EPA8270
Fluorene	ug/Kg	< 330		09/23/04	326.08	EPA8270
Phenanthrene	ug/Kg	3600		09/23/04	326.08	EPA8270
Anthracene	ug/Kg	720		09/23/04	326.08	EPA8270
Fluoranthene	ug/Kg	4800		09/23/04	326.08	EPA8270
Pyrene	ug/Kg	5500		09/23/04	326.08	EPA8270
Benzo(a)anthracene	ug/Kg	2500		09/23/04	326.08	EPA8270
Chrysene	ug/Kg	2500		09/23/04	326.08	EPA8270
Benzo(b)fluoranthene	ug/Kg	1600	#	09/23/04	326.08	EPA8270
Benzo(k)fluoranthene	ug/Kg	1600	#	09/23/04	326.08	EPA8270
Benzo(a)pyrene	ug/Kg	1800		09/23/04	326.08	EPA8270
Indeno(1,2,3-cd)pyrene	ug/Kg	880		09/23/04	326.08	EPA8270
Dibenzo(a,h)anthracene	ug/Kg	< 330		09/23/04	326.08	EPA8270
Benzo(ghi)perylene	ug/Kg	1000		09/23/04	326.08	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS: #Total = 3200 ug/Kg, unable to separate isomers.

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.03 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1100
MATRIX:Soil SAMPLE: B-1 (4-8')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Arsenic as As	mg/Kg	2.1		09/22/04	1.0869	EPA6010
Barium as Ba	mg/Kg	130		09/22/04	0.5434	EPA6010
Cadmium as Cd	mg/Kg	1.0		09/22/04	0.5434	EPA6010
Chromium as Cr	mg/Kg	16		09/22/04	0.5434	EPA6010
Lead as Pb	mg/Kg	280		09/22/04	0.5434	EPA6010
Mercury as Hg	mg/Kg	0.37		09/22/04	0.0271	EPA7470A
Selenium as Se	mg/Kg	< 0.43		09/30/04	0.4347	EPA7740
Silver as Ag	mg/Kg	< 0.54		09/22/04	0.5434	EPA6010

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 37300 NYSDOH ID # 10320

ECOTEST LABORATORIES, INC. **ENVIRONMENTAL TESTING**
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.04 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1115
MATRIX:Soil SAMPLE: B-3 (0-4')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Dichlordifluoromethane	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Chloromethane	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Vinyl Chloride	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Bromomethane	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Chloroethane	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Trichlorofluoromethane	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
1 Dichloroethene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Methylene Chloride	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
t-1,2-Dichloroethene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
1,1 Dichloroethane	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
2,2-Dichloropropane	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
c-1,2-Dichloroethene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Bromochloromethane	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Chloroform	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
111 Trichloroethane	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Carbon Tetrachloride	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
1,1-Dichloropropene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Benzene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
1,2 Dichloroethane	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Trichloroethylene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
1,2 Dichloropropane	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Dibromomethane	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Bromodichloromethane	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
c-1,3Dichloropropene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Toluene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 37301 NYSDOH ID # 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.04 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1115
MATRIX:Soil SAMPLE: B-3 (0-4')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
t-1,3Dichloropropene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
112 Trichloroethane	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Tetrachloroethene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
1,3-Dichloropropane	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Chlorodibromomethane	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
1,2 Dibromoethane	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Chlorobenzene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Ethyl Benzene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
12Tetrachloroethane	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
m + p Xylene	ug/Kg	< 11		09/24/04	10.989	EPA8260
o Xylene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Styrene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Bromoform	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Isopropylbenzene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Bromobenzene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
1122Tetrachloroethane	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
123-Trichloropropane	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
n-Propylbenzene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
2-Chlorotoluene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
135-Trimethylbenzene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
4-Chlorotoluene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
tert-Butylbenzene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
124-Trimethylbenzene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
sec-Butylbenzene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
p-Isopropyltoluene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.04 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1115
MATRIX:Soil SAMPLE: B-3 (0-4')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
1,3 Dichlorobenzene (v)	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
1,4 Dichlorobenzene (v)	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
n-Butylbenzene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
1,2 Dichlorobenzene (v)	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Dibromochloropropane	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
124-Trichlorobenzene (v)	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Hexachlorobutadiene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Naphthalene(v)	ug/Kg	38		09/24/04	5.4945	EPA8260
[illegible]3-Trichlorobenzene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
ter.ButylMethylEther	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
p-Ethyltoluene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Freon 113	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
1245 Tetramethylbenz	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
Acetone	ug/Kg	< 55		09/24/04	54.945	EPA8260
Methyl Ethyl Ketone	ug/Kg	< 55		09/24/04	54.945	EPA8260
Methylisobutylketone	ug/Kg	< 55		09/24/04	54.945	EPA8260
Chlorodifluoromethane	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
p Diethylbenzene	ug/Kg	< 5.5		09/24/04	5.4945	EPA8260
% Solids		91		09/21/04	0.1	SM182540G

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. **ENVIRONMENTAL TESTING**
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.04 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1115
MATRIX:Soil SAMPLE: B-3 (0-4')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Naphthalene(sv)	ug/Kg	680		09/23/04	329.67	EPA8270
Acenaphthene	ug/Kg	2100		09/23/04	329.67	EPA8270
Fluorene	ug/Kg	1900		09/23/04	329.67	EPA8270
Phenanthrene	ug/Kg	16000		09/23/04	329.67	EPA8270
Anthracene	ug/Kg	5800		09/23/04	329.67	EPA8270
Fluoranthene	ug/Kg	40000		09/23/04	3296.7	EPA8270
Pyrene	ug/Kg	42000		09/23/04	3296.7	EPA8270
nzo(a)anthracene	ug/Kg	20000		09/23/04	329.67	EPA8270
Chrysene	ug/Kg	18000		09/23/04	329.67	EPA8270
Benzo(b)fluoranthene	ug/Kg	14000	#	09/23/04	3296.7	EPA8270
Benzo(k)fluoranthene	ug/Kg	14000	#	09/23/04	3296.7	EPA8270
Benzo(a)pyrene	ug/Kg	15000		09/23/04	3296.7	EPA8270
Indeno(1,2,3-cd)pyrene	ug/Kg	7100		09/23/04	3296.7	EPA8270
Dibenzo(a,h)anthracene	ug/Kg	1500	*	09/23/04	329.67	EPA8270
Benzo(ghi)perylene	ug/Kg	8000		09/23/04	3296.7	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS: #Total =28000 ug/Kg, unable to separate isomers.
*Estimated due to low internal standard recovery, *44%. Low recovery due to interference. QC limit is 50%.

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.04 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1115
MATRIX:Soil SAMPLE: B-3 (0-4')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Arsenic as As	mg/Kg	18		09/22/04	0.5494	EPA6010
Barium as Ba	mg/Kg	300		09/23/04	2.7472	EPA6010
Cadmium as Cd	mg/Kg	3.3		09/22/04	0.5494	EPA6010
Chromium as Cr	mg/Kg	35		09/22/04	0.5494	EPA6010
Lead as Pb	mg/Kg	420		09/22/04	0.5494	EPA6010
Mercury as Hg	mg/Kg	0.82		09/22/04	0.0549	EPA7470A
Selenium as Se	mg/Kg	1.0		10/01/04	0.4395	EPA7740
ver as Ag	mg/Kg	< 0.55		09/22/04	0.5494	EPA6010

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.05 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1130
MATRIX:Soil SAMPLE: B-4 (0-2')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Dichlordifluoromethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Chloromethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Vinyl Chloride	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Bromomethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Chloroethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Trichlorofluoromethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
1,1 Dichloroethene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
thylene Chloride	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
t-1,2-Dichloroethene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
1,1 Dichloroethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
2,2-Dichloropropane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
c-1,2-Dichloroethene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Bromochloromethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Chloroform	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
111 Trichloroethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Carbon Tetrachloride	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
1,1-Dichloropropene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Benzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
1,2 Dichloroethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Trichloroethylene	ug/Kg	14		09/24/04	5.4347	EPA8260
1,2 Dichloropropane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Dibromomethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Bromodichloromethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
c-1,3Dichloropropene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Toluene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. **ENVIRONMENTAL TESTING**
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.05 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1130
MATRIX:Soil SAMPLE: B-4 (0-2')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
t-1,3Dichloropropene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
112 Trichloroethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Tetrachloroethene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
1,3-Dichloropropane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Chlorodibromomethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
1,2 Dibromoethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Chlorobenzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
hyl Benzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
1112Tetrachloroethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
m + p Xylene	ug/Kg	< 11		09/24/04	10.869	EPA8260
o Xylene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Styrene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Bromoform	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Isopropylbenzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Bromobenzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
1122Tetrachloroethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
123-Trichloropropane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
n-Propylbenzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
2-Chlorotoluene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
135-Trimethylbenzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
4-Chlorotoluene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
tert-Butylbenzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
124-Trimethylbenzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
sec-Butylbenzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
p-Isopropyltoluene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.05 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1130
MATRIX:Soil SAMPLE: B-4 (0-2')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
1,3 Dichlorobenzene (v)	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
1,4 Dichlorobenzene (v)	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
n-Butylbenzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
1,2 Dichlorobenzene (v)	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Dibromochloropropane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
124-Trichlorobenzene (v)	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Hexachlorobutadiene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Naphthalene(v)	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
123-Trichlorobenzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
ter.ButylMethylEther	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
p-Ethyltoluene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Freon 113	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
1245 Tetramethylbenz	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
Acetone	ug/Kg	< 54		09/24/04	54.347	EPA8260
Methyl Ethyl Ketone	ug/Kg	< 54		09/24/04	54.347	EPA8260
Methylisobutylketone	ug/Kg	< 54		09/24/04	54.347	EPA8260
Chlorodifluoromethane	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
p Diethylbenzene	ug/Kg	< 5.4		09/24/04	5.4347	EPA8260
% Solids		92		09/21/04	0.1	SM182540G

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.05 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1130
MATRIX:Soil SAMPLE: B-4 (0-2')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Naphthalene(sv)	ug/Kg	720		09/23/04	326.08	EPA8270
Acenaphthene	ug/Kg	960		09/23/04	326.08	EPA8270
Fluorene	ug/Kg	1600		09/23/04	326.08	EPA8270
Phenanthrene	ug/Kg	9300		09/23/04	326.08	EPA8270
Anthracene	ug/Kg	2600		09/23/04	326.08	EPA8270
Fluoranthene	ug/Kg	11000		09/23/04	326.08	EPA8270
rene	ug/Kg	14000		09/23/04	326.08	EPA8270
Benzo(a)anthracene	ug/Kg	6000		09/23/04	326.08	EPA8270
Chrysene	ug/Kg	5700		09/23/04	326.08	EPA8270
Benzo(b)fluoranthene	ug/Kg	4300	#*	09/23/04	326.08	EPA8270
Benzo(k)fluoranthene	ug/Kg	4300	#*	09/23/04	326.08	EPA8270
Benzo(a)pyrene	ug/Kg	4700	*	09/23/04	326.08	EPA8270
Indeno(1,2,3-cd)pyrene	ug/Kg	1500	*	09/23/04	326.08	EPA8270
Dibenzo(a,h)anthracene	ug/Kg	480	*	09/23/04	326.08	EPA8270
Benzo(ghi)perylene	ug/Kg	1600	*	09/23/04	326.08	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS: #Total = 8600 ug/Kg, unable to separate isomers.
*Estimated due to low internal standard recovery, *45%. Low recovery due to interference. QC limit is 50%.

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.05 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1130
MATRIX:Soil SAMPLE: B-4 (0-2')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Arsenic as As	mg/Kg	3.8		09/22/04	1.0869	EPA6010
Barium as Ba	mg/Kg	150		09/22/04	0.5434	EPA6010
Cadmium as Cd	mg/Kg	1.7		09/22/04	0.5434	EPA6010
Chromium as Cr	mg/Kg	37		09/22/04	0.5434	EPA6010
Lead as Pb	mg/Kg	250		09/22/04	0.5434	EPA6010
Mercury as Hg	mg/Kg	0.34		09/22/04	0.0271	EPA7470A
Selenium as Se	mg/Kg	0.67		10/01/04	0.4347	EPA7740
Silver as Ag	mg/Kg	< 0.54		09/22/04	0.5434	EPA6010

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.06 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1200
MATRIX:Soil SAMPLE: B-5 (0-4')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Dichlordifluoromethane	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
Chloromethane	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
Vinyl Chloride	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
Bromomethane	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
Chloroethane	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
Trichlorofluoromethane	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
1,1 Dichloroethene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
Methylene Chloride	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
t-1,2-Dichloroethene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
1,1 Dichloroethane	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
2,2-Dichloropropane	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
c-1,2-Dichloroethene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
Bromochloromethane	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
Chloroform	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
111 Trichloroethane	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
Carbon Tetrachloride	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
1,1-Dichloropropene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
Benzene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
1,2 Dichloroethane	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
Trichloroethylene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
1,2 Dichloropropane	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
Dibromomethane	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
Bromodichloromethane	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
c-1,3Dichloropropene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
Toluene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. **ENVIRONMENTAL TESTING**

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.06 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1200
MATRIX:Soil SAMPLE: B-5 (0-4')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
t-1,3Dichloropropene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
112 Trichloroethane	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
Tetrachloroethene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
1,3-Dichloropropane	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
Chlorodibromomethane	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
1,2 Dibromoethane	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
lorobenzene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
hyl Benzene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
1112Tetrachloroethane	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
m + p Xylene	ug/Kg	< 11		09/24/04	10.638	EPA8260
o Xylene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
Styrene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
Bromoform	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
Isopropylbenzene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
Bromobenzene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
1122Tetrachloroethane	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
123-Trichloropropane	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
n-Propylbenzene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
2-Chlorotoluene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
135-Trimethylbenzene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
4-Chlorotoluene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
tert-Butylbenzene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
124-Trimethylbenzene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
sec-Butylbenzene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
p-Isopropyltoluene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. **ENVIRONMENTAL TESTING**
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.06 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1200
MATRIX:Soil SAMPLE: B-5 (0-4')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
1,3 Dichlorobenzene (v)	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
1,4 Dichlorobenzene (v)	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
n-Butylbenzene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
1,2 Dichlorobenzene (v)	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
Dibromochloropropane	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
124-Trichlorobenzene (v)	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
xachlorobutadiene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
phthalene(v)	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
123-Trichlorobenzene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
ter.ButylMethylEther	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
p-Ethyltoluene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
Freon 113	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
1245 Tetramethylbenz	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
Acetone	ug/Kg	< 53		09/24/04	53.191	EPA8260
Methyl Ethyl Ketone	ug/Kg	< 53		09/24/04	53.191	EPA8260
Methylisobutylketone	ug/Kg	< 53		09/24/04	53.191	EPA8260
Chlorodifluoromethane	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
p Diethylbenzene	ug/Kg	< 5.3		09/24/04	5.3191	EPA8260
% Solids		94		09/21/04	0.1	SM182540G

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. **ENVIRONMENTAL TESTING**
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.06 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1200
MATRIX:Soil SAMPLE: B-5 (0-4')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Naphthalene(sv)	ug/Kg	330		09/23/04	319.14	EPA8270
Acenaphthene	ug/Kg	< 320		09/23/04	319.14	EPA8270
Fluorene	ug/Kg	< 320		09/23/04	319.14	EPA8270
Phenanthrene	ug/Kg	1500		09/23/04	319.14	EPA8270
Anthracene	ug/Kg	510		09/23/04	319.14	EPA8270
Fluoranthene	ug/Kg	3900		09/23/04	319.14	EPA8270
Pyrene	ug/Kg	4800		09/23/04	319.14	EPA8270
Benzo(a)anthracene	ug/Kg	2600		09/23/04	319.14	EPA8270
Chrysene	ug/Kg	2400		09/23/04	319.14	EPA8270
Benzo(b)fluoranthene	ug/Kg	2100	#	09/23/04	319.14	EPA8270
Benzo(k)fluoranthene	ug/Kg	2100	#	09/23/04	319.14	EPA8270
Benzo(a)pyrene	ug/Kg	2100		09/23/04	319.14	EPA8270
Indeno(1,2,3-cd)pyrene	ug/Kg	850		09/23/04	319.14	EPA8270
Dibenzo(a,h)anthracene	ug/Kg	350		09/23/04	319.14	EPA8270
Benzo(ghi)perylene	ug/Kg	980		09/23/04	319.14	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS: #Total = 4200 ug/Kg, unable to separate isomers.

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.06 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1200
MATRIX:Soil SAMPLE: B-5 (0-4')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Arsenic as As	mg/Kg	4.4		09/22/04	1.0638	EPA6010
Barium as Ba	mg/Kg	150		09/22/04	0.5319	EPA6010
Cadmium as Cd	mg/Kg	1.8		09/22/04	0.5319	EPA6010
Chromium as Cr	mg/Kg	27		09/22/04	0.5319	EPA6010
Lead as Pb	mg/Kg	330		09/22/04	0.5319	EPA6010
Mercury as Hg	mg/Kg	0.31		09/22/04	0.0265	EPA7470A
Selenium as Se	mg/Kg	< 0.43		10/01/04	0.4255	EPA7740
Silver as Ag	mg/Kg	< 0.53		09/22/04	0.5319	EPA6010

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.07 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1230
MATRIX:Soil SAMPLE: B-6 (0-4')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Dichlordifluoromethane	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
Chloromethane	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
Vinyl Chloride	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
Bromomethane	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
Chloroethane	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
Trichlorofluoromethane	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
1 1 Dichloroethene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
hylene Chloride	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
t-1,2-Dichloroethene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
1,1 Dichloroethane	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
2,2-Dichloropropane	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
c-1,2-Dichloroethene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
Bromochloromethane	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
Chloroform	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
111 Trichloroethane	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
Carbon Tetrachloride	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
1,1-Dichloropropene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
Benzene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
1,2 Dichloroethane	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
Trichloroethylene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
1,2 Dichloropropane	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
Dibromomethane	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
Bromodichloromethane	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
c-1,3Dichloropropene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
Toluene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.07 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1230

MATRIX:Soil SAMPLE: B-6 (0-4')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
t-1,3Dichloropropene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
112 Trichloroethane	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
Tetrachloroethene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
1,3-Dichloropropane	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
Chlorodibromomethane	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
1,2 Dibromoethane	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
Chlorobenzene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
[illegible]yl Benzene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
1112Tetrachloroethane	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
m + p Xylene	ug/Kg	< 11		09/24/04	11.111	EPA8260
o Xylene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
Styrene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
Bromoform	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
Isopropylbenzene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
Bromobenzene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
1122Tetrachloroethane	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
123-Trichloropropane	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
n-Propylbenzene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
2-Chlorotoluene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
135-Trimethylbenzene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
4-Chlorotoluene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
tert-Butylbenzene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
124-Trimethylbenzene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
sec-Butylbenzene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
p-Isopropyltoluene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. ***ENVIRONMENTAL TESTING***
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.07 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1230
MATRIX:Soil SAMPLE: B-6 (0-4')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
1,3 Dichlorobenzene (v)	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
1,4 Dichlorobenzene (v)	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
n-Butylbenzene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
1,2 Dichlorobenzene (v)	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
Dibromochloropropane	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
124-Trichlorobenzene (v)	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
Hexachlorobutadiene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
N[illegible]phthalene(v)	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
1[illegible]3-Trichlorobenzene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
ter.ButylMethylEther	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
p-Ethyltoluene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
Freon 113	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
1245 Tetramethylbenz	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
Acetone	ug/Kg	< 56		09/24/04	55.555	EPA8260
Methyl Ethyl Ketone	ug/Kg	< 56		09/24/04	55.555	EPA8260
Methylisobutylketone	ug/Kg	< 56		09/24/04	55.555	EPA8260
Chlorodifluoromethane	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
p Diethylbenzene	ug/Kg	< 5.6		09/24/04	5.5555	EPA8260
% Solids		90		09/21/04	0.1	SM182540G

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. ENVIRONMENTAL TESTING
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777 • FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.07 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1230
MATRIX:Soil SAMPLE: B-6 (0-4')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Naphthalene(sv)	ug/Kg	380		09/23/04	333.33	EPA8270
Acenaphthene	ug/Kg	330		09/23/04	333.33	EPA8270
Fluorene	ug/Kg	330		09/23/04	333.33	EPA8270
Phenanthrene	ug/Kg	5800		09/23/04	333.33	EPA8270
Anthracene	ug/Kg	1300		09/23/04	333.33	EPA8270
Fluoranthene	ug/Kg	10000		09/23/04	333.33	EPA8270
Pyrene	ug/Kg	14000		09/23/04	333.33	EPA8270
Benzo(a)anthracene	ug/Kg	6600		09/23/04	333.33	EPA8270
Chrysene	ug/Kg	6800		09/23/04	333.33	EPA8270
Benzo(b)fluoranthene	ug/Kg	5600	#*	09/23/04	333.33	EPA8270
Benzo(k)fluoranthene	ug/Kg	5600	#*	09/23/04	333.33	EPA8270
Benzo(a)pyrene	ug/Kg	4800	*	09/23/04	333.33	EPA8270
Indeno(1,2,3-cd)pyrene	ug/Kg	1600	*	09/23/04	333.33	EPA8270
Dibenzo(a,h)anthracene	ug/Kg	720	*	09/23/04	333.33	EPA8270
Benzo(ghi)perylene	ug/Kg	1900	*	09/23/04	333.33	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS: #Total =11200 ug/Kg, unable to separate isomers.
*Estimated due to low internal standard recovery, *37%. Low recovery due to interference. QC limit is 50%.

DIRECTOR

rn = 37319 NYSDOH ID # 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.244046.07 10/05/04

Energy & Environmental Analysts, Inc.
55 Hilton Avenue
Garden City, NY 11530
ATTN: Fariha Islam PO#:

SOURCE OF SAMPLE: 254 Maspeth Avenue, Brooklyn, EEA#04729
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:09/20/04 RECEIVED:09/20/04
TIME COL'D:1230
MATRIX:Soil SAMPLE: B-6 (0-4')

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Arsenic as As	mg/Kg	17		09/22/04	0.5555	EPA6010
Barium as Ba	mg/Kg	270		09/23/04	2.7777	EPA6010
Cadmium as Cd	mg/Kg	4		09/22/04	0.5555	EPA6010
Chromium as Cr	mg/Kg	33		09/22/04	0.5555	EPA6010
Lead as Pb	mg/Kg	430		09/22/04	0.5555	EPA6010
Mercury as Hg	mg/Kg	0.56		09/22/04	0.0277	EPA7470A
Selenium as Se	mg/Kg	0.73		09/30/04	0.4444	EPA7740
ver as Ag	mg/Kg	< 0.56		09/22/04	0.5555	EPA6010

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

APPENDIX C

SOIL BORING LOG REPORTS

EEA, INC.

55 HILTON AVENUE, GARDEN CITY, NEW YORK

SOIL BORING REPORT LOG

DATE: 9/20/04	SHEET 1 OF 1
CLIENT: Spencer Realty Corp. & Copper Tank & Welding	LOCATION ID#
PROJECT LOCATION: 254 Maspeth Avenue	**B - 1**
REMARKS: Inside vacant lot	PROJECT #04729

DRILLING CONTRACTOR:	TSDT, INC.	LOGGED BY	FI	DRILLER	PD/PR

EQUIPMENT	SOIL SAMPLER	HAMMER WEIGHT/FALL	Casing Type	Monitor Well Specification		DRILL RIG
		Direct				DRILL METHOD
TYPE	MACROCORE	Push				GEOPROBE LT 54 MACROCORE
SIZE	2 inch O.D.	GH 42				
SURFACE ELEVATION: NA		Surface Materials: Gravel				

WATER LEVEL (IN OPEN BOREHOLE): ~9 feet

DEPTH (fbg)	SAMPLE & TIME	RECOVERY (inches)	OVA (ppm)	MOISTURE	STRATA	SOIL – ROCK DESCRIPTION – CLASSIFICATION
0-4		36	0	Dry		Brown soil, red brick chips, asphalt chips and fine to medium grained, red SAND (fill). Typical asphalt odor; no staining.
4-8	*B-1(4-8’)	36	0	Dry to		Same as above with lenses of greenish GRAVEL (parent material?). Typical asphalt odor and no staining.
5	1100			moist		
8-12	*B-1(8-12’)	36	5.3	Wet		Black-gray, gravelly red brick chips and soil. Black-gray staining and moderate hydrocarbon odor. At 11’, brown fine grained SAND and CLAY with moderate hydrocarbon odor.
	1000					
10						
						EOB @12’
15						
20						* soil sample collected for laboratory analysis
25						
30						

EEA, INC.

55 HILTON AVENUE, GARDEN CITY, NEW YORK

SOIL BORING REPORT LOG

DATE: 9/20/04		SHEET 1 OF 1
CLIENT: Spencer Realty Corp. & Copper Tank & Welding		LOCATION ID#
PROJECT LOCATION: 254 Maspeth Avenue		**B - 2**
REMARKS: Inside vacant lot		PROJECT #04729
DRILLING CONTRACTOR: TSDT, INC.	LOGGED BY FI	DRILLER PD/PR

EQUIPMENT	SOIL SAMPLER	HAMMER WEIGHT/FALL	Casing Type	Monitor Well Specification		DRILL RIG
		Direct				DRILL METHOD
TYPE	MACROCORE	Push				GEOPROBE LT 54 MACROCORE
SIZE	2 inch O.D.	GH 42				
SURFACE ELEVATION: NA		Surface Materials: Gravel				

WATER LEVEL (IN OPEN BOREHOLE): unknown

DEPTH (fbg)	SAMPLE & TIME	RECOVERY (inches)	OVA (ppm)	MOISTURE	STRATA	SOIL – ROCK DESCRIPTION – CLASSIFICATION
0-4	*B-2 (0-4')	12	0	Dry		Black soil, red brick chips and GRAVEL; remnants of wood pilings at 4'. Creosote odor and black staining.
	1030					
5						EOB @4'/Refusal @4' from wood pilings (several refusals)
10						
						* soil sample collected for laboratory analysis
15						
20						
25						
30						

EEA, INC.

55 HILTON AVENUE, GARDEN CITY, NEW YORK

SOIL BORING REPORT LOG

DATE: 9/20/04	SHEET 1 OF 1
CLIENT: Spencer Realty Corp. & Copper Tank & Welding	LOCATION ID#
PROJECT LOCATION: 254 Maspeth Avenue	**B - 3**
REMARKS: Inside vacant lot	PROJECT #04729

DRILLING CONTRACTOR: TSDT, INC.	LOGGED BY FI	DRILLER PD/PR

EQUIPMENT	SOIL SAMPLER	HAMMER WEIGHT/FALL	Casing Type	Monitor Well Specification		DRILL RIG
		Direct				DRILL METHOD
TYPE	MACROCORE	Push				GEOPROBE LT 54 MACROCORE
SIZE	2 inch O.D.	GH 42				

SURFACE ELEVATION: NA	Surface Materials: Gravel

WATER LEVEL (IN OPEN BOREHOLE): unknown

DEPTH (fbg)	SAMPLE & TIME	RECOVERY (inches)	OVA (ppm)	MOISTURE	STRATA	SOIL – ROCK DESCRIPTION – CLASSIFICATION
0-4	*B-3 (0-4’)	12	0	Dry		Brown fine to medium grained SAND and GRAVEL. No odor or staining.
	1115					
5						EOB @4’/Refusal @4’ from wood pilings (several refusals)
10						
						* soil sample collected for laboratory analysis
15						
20						
25						
30						

EEA, INC.

55 HILTON AVENUE, GARDEN CITY, NEW YORK

SOIL BORING REPORT LOG

DATE: 9/20/04		SHEET 1 OF 1
CLIENT: Spencer Realty Corp. & Copper Tank & Welding		LOCATION ID#
PROJECT LOCATION: 254 Maspeth Avenue		**B - 4**
REMARKS: Inside vacant lot		PROJECT #04729
DRILLING CONTRACTOR: TSDT, INC.	LOGGED BY FI	DRILLER PD/PR

EQUIPMENT	SOIL SAMPLER	HAMMER WEIGHT/FALL	Casing Type	Monitor Well Specification		DRILL RIG
		Direct				DRILL METHOD
TYPE	MACROCORE	Push				GEOPROBE LT 54 MACROCORE
SIZE	2 inch O.D.	GH 42				
SURFACE ELEVATION: NA		Surface Materials: Gravel				
WATER LEVEL (IN OPEN BOREHOLE): unknown						

DEPTH (fbg)	SAMPLE & TIME	RECOVERY (inches)	OVA (ppm)	MOISTURE	STRATA	SOIL – ROCK DESCRIPTION – CLASSIFICATION
0-4	*B-4 (0-2')	12	0	Dry		Brown soil, tan, medium grained SAND and GRAVEL with red brick chips. Typical odor and no staining.
	1130					
5						EOB @4'/Refusal @4' from wood pilings (several refusals)
10						
						* soil sample collected for laboratory analysis
15						
20						
25						
30						

EEA, INC.

55 HILTON AVENUE, GARDEN CITY, NEW YORK

SOIL BORING REPORT LOG

DATE: 9/20/04	SHEET 1 OF 1
CLIENT: Spencer Realty Corp. & Copper Tank & Welding	LOCATION ID#
PROJECT LOCATION: 254 Maspeth Avenue	**B - 5**
REMARKS: Inside vacant lot	PROJECT #04729

DRILLING CONTRACTOR: TSDT, INC.	LOGGED BY FI	DRILLER PD/PR

EQUIPMENT	SOIL SAMPLER	HAMMER WEIGHT/FALL	Casing Type	Monitor Well Specification		DRILL RIG
		Direct				DRILL METHOD
TYPE	MACROCORE	Push				GEOPROBE LT 54 MACROCORE
SIZE	2 inch O.D.	GH 42				
SURFACE ELEVATION: NA		Surface Materials: Gravel				

WATER LEVEL (IN OPEN BOREHOLE): unknown

DEPTH (fbg)	SAMPLE & TIME	RECOVERY (inches)	OVA (ppm)	MOISTURE	STRATA	SOIL – ROCK DESCRIPTION – CLASSIFICATION
0-4	*B-5 (0-4')	12	0	Dry		Brown soil, fine grained SAND and GRAVEL and asphalt chips. Typical odor and no staining.
	1200					
5						EOB @4'/Refusal @4'
10						
						* soil sample collected for laboratory analysis
15						
20						
25						
30						

EEA, INC.

55 HILTON AVENUE, GARDEN CITY, NEW YORK

SOIL BORING REPORT LOG

DATE: 9/20/04	SHEET 1 OF 1
CLIENT: Spencer Realty Corp. & Copper Tank & Welding	LOCATION ID#
PROJECT LOCATION: 254 Maspeth Avenue	**B - 6**
REMARKS: Inside vacant lot	PROJECT #04729

DRILLING CONTRACTOR: TSDT, INC.	LOGGED BY FI	DRILLER PD/PR

EQUIPMENT	SOIL SAMPLER	HAMMER WEIGHT/FALL	Casing Type	Monitor Well Specification		DRILL RIG
		Direct				DRILL METHOD
TYPE	MACROCORE	Push				GEOPROBE LT 54 MACROCORE
SIZE	2 inch O.D.	GH 42				
SURFACE ELEVATION: NA		Surface Materials: Gravel				

WATER LEVEL (IN OPEN BOREHOLE): unknown

DEPTH (fbg)	SAMPLE & TIME	RECOVERY (inches)	OVA (ppm)	MOISTURE	STRATA	SOIL – ROCK DESCRIPTION – CLASSIFICATION
0-4	*B-6 (0-4')	12	0	Dry to		Black soil, fine grained SAND and GRAVEL with asphalt chips, bricks and nails. Typical odor and possible staining (black).
	1230			moist		
5						EOB @4'/Refusal @4'
10						
						* soil sample collected for laboratory analysis
15						
20						
25						
30						

APPENDIX D

SITE PHOTOGRAPHS

Site Photographs

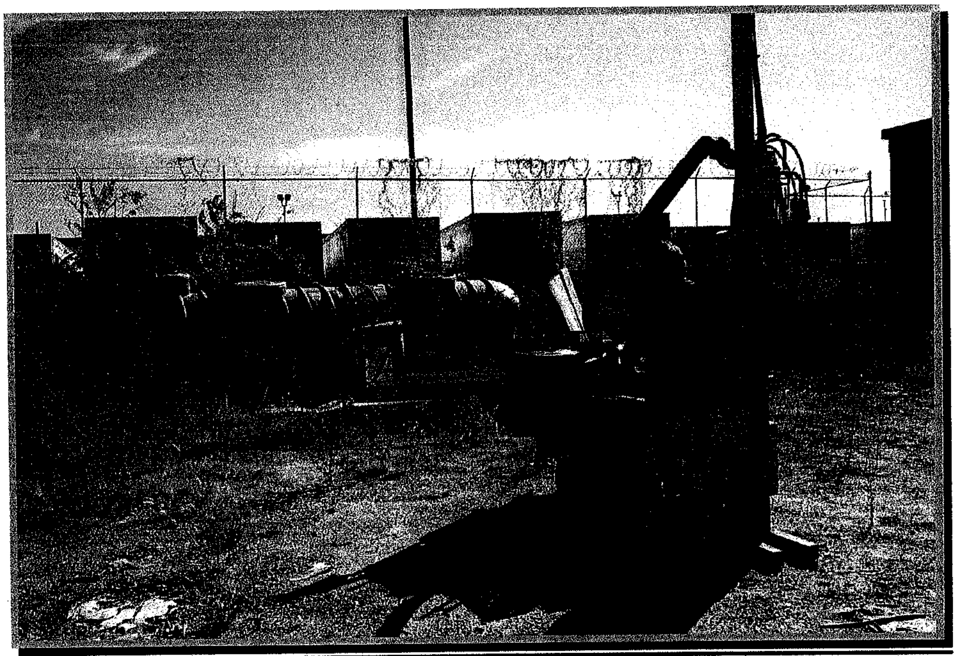


Photo 1: Advancement of soil boring B-1 on the subject property.

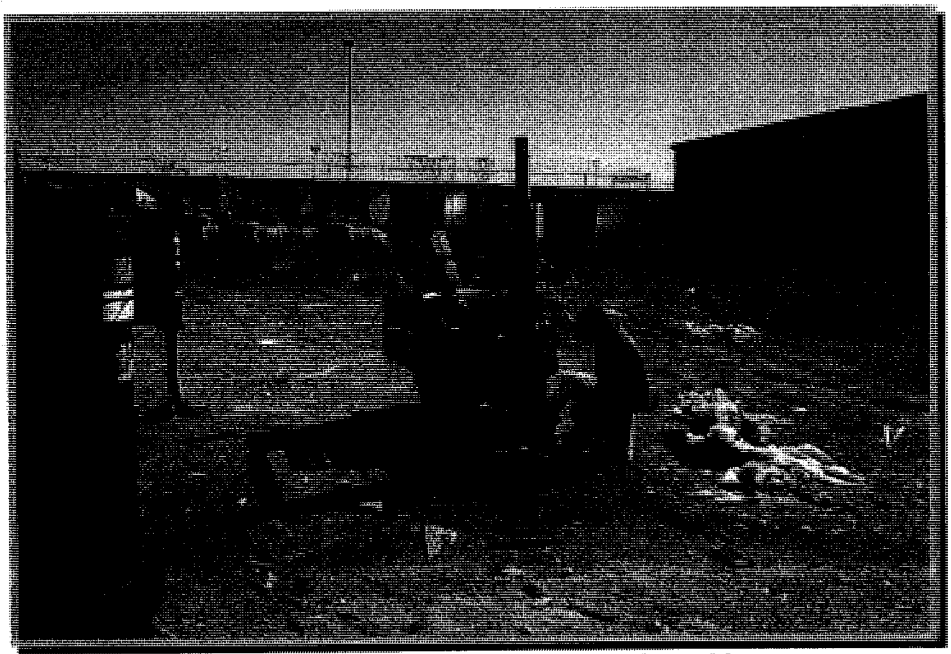


Photo 2: Advancement of soil boring B-2 on the subject property.

Site Photographs

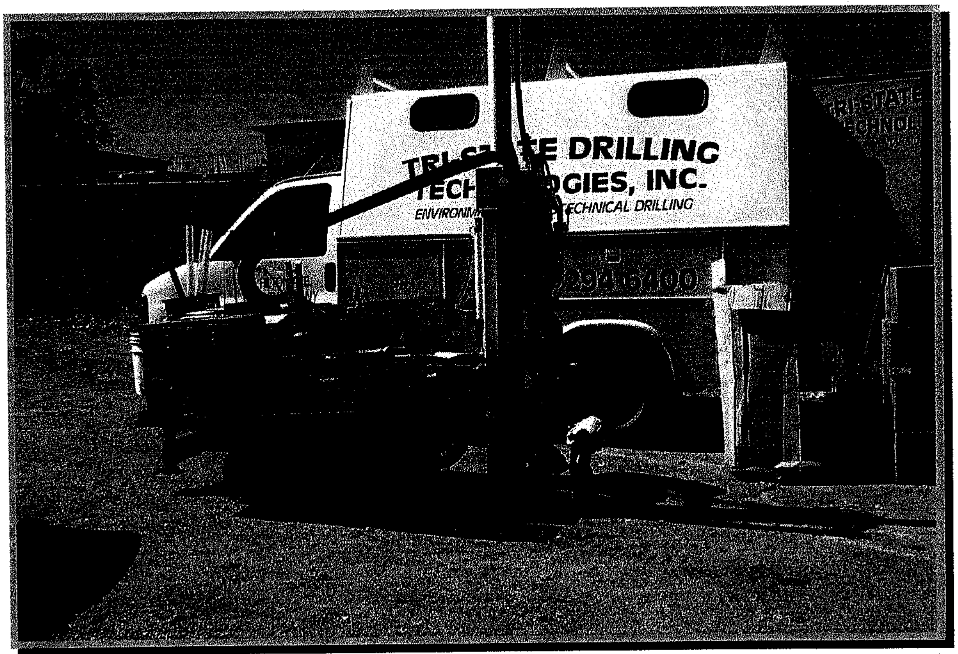


Photo 3: Advancement of soil boring B-4 on the subject property.

Photo 4: Advancement of soil boring B-5 on the subject property.

Gannett Fleming

GANNETT FLEMING ENGINEERS, PC
480 Forest Avenue
P.O. Box 707
Locust Valley, NY 11560-0707
Office: (516) 671-8440
Toll Free: (800) 249-3337
Fax: (516) 671-3349
www.gannettfleming.com

May 12, 2005
File # 44440.004

David Hillcoat
Cooper Tank and Welding Corp.
215 Moore Street
Brooklyn, New York 11206

Re: Phase II Environmental Site Investigation
252 Maspeth Avenue
Brooklyn, New York 11211

Dear Mr. Hillcoat:

The purpose of this Environmental Site Investigation is to establish a baseline of potential subsurface contaminants present on-site due to historical use of the property. The scope of work was based upon review of historical information of the surrounding properties, visual inspection of the site and consisted of advancing soil borings, collecting and analyzing soil and groundwater samples. The following letter report summarizes the finding and conclusions based on the activities performed on March 28, 2005 at the subject property, located at 252 Maspeth Avenue, in Brooklyn, NY (Site). A Site Plan with boring locations is provided as Figure 1.

Site Background

GF reviewed historical Sanborn maps and determined that the Site and surrounding area had been used as part of the Brooklyn Union Gas facility from about 1907 through 1965. The Site was noted to operate as a storage facility on the 1968 through 1995 maps. However, the type of storage is not mentioned on any of the maps. The Site was recently used as a solid waste transfer station (Fontana Transfer Station) and is currently vacant. Structures observed on the property include a small vacant office shed, 7 empty roll-off containers, and pieces of large machinery.

Inferred groundwater flow is southerly, discharging into the English Kills. Relative to groundwater flow, boring B-1 was selected as the up-gradient location and boring B-4 as the down-gradient location. Soil boring locations were selected to establish general subsurface conditions on-site and were also contingent upon on-site utility clearance, heavy machinery, and/or equipment storage.

Environmental Site Investigation

Borehole Advancement and Soil Sampling

The use of Geoprobe® technology for soil boring advancement was not considered after reviewing investigative reports performed on surrounding properties. Attempted areas of soil

Continued . . .

boring advancements in the adjacent property encountered refusal reportedly due to the presence of heavy timbers.

On March 28, 2005, Tri-State Drilling advanced four borings (B-1 through B-4) to total depths of approximately 10 to 12 feet below grade surface using a truck mounted Mobil B-57 hollow stem auger drill rig. Groundwater was encountered approximately seven to nine feet below grade. Soil samples were collected from depth interval that demonstrated the most contamination or from the soil interval immediately above the groundwater interface. This was accomplished with the aid of a steel split-spoon core barrel and a 140-pound, down-hole hammer. Prior to sampling, each split-spoon core barrel sampler was opened and Gannett Fleming personnel recorded lithology and field screened soil samples for organic vapors using a photo-ionization detector (PID). The PID readings are summarized in the geologic boring logs provided as Appendix A.

A composite soil sample was made from multiple two-foot intervals due to limited recovery of soil in the split-spoon core barrel sampler. Soil samples were collected and placed in laboratory-supplied glassware, packed in ice, shipped to EcoTest Laboratories and analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) polyaromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and 13 Priority Pollutant Metals plus Barium.

Boring B-1
Odors and stains were observed in the samples collected at boring B-1. PID readings varied from 3.5 parts per million (ppm) at the 7-9 foot interval to 5.5 ppm at the 3-5 foot interval. A composite soil sample was obtained from 3 to 7 feet below grade based on the higher PID reading and groundwater encountered at approximately 7 feet below grade.

Boring B-2
Odors and stains were observed in the samples collected at boring B-2. PID readings varied from 0.0 ppm at the 0-2 foot and 8-10 foot intervals to 2.0 ppm at the 2-4 foot interval. A composite soil sample was obtained from 4 to 8 feet below grade based on the PID readings and groundwater encountered at approximately 7.5 feet below grade.

Boring B-3
Odors and stains were observed in the samples collected at boring B-3. PID readings varied from 0.0 ppm at the 0-2 foot and 4-6 foot intervals to 1.3 ppm at the 6-8 foot interval. A composite soil sample was obtained from 2 to 8 feet below grade based on the PID readings and groundwater encountered at approximately 8 feet below grade.

Boring B-4
Odors and stains were observed in the samples collected at boring B-4. PID readings varied from 0.0 ppm at the 0-2 foot, 6-8 foot, and 8-10 foot intervals to 2.5 ppm at the 2-4 foot interval. A composite soil sample was obtained from 2 to 6 feet below grade based on the PID readings.

Continued . . .

Groundwater Sampling

Tri-State Drillers installed new temporary PVC well casing within borings B-1 and B-4 to a depth of approximately 12 feet below grade. The well casing was screened the entire depth to ensure that a representative groundwater sample could be obtained. GF manually collected one groundwater sample from each of these two temporary monitoring wells using dedicated tubing equipped with a check value.

Groundwater samples were placed in laboratory-supplied glassware, packed in ice and shipped to EcoTest Laboratories and analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polyaromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and 13 Priority pollutant metals plus barium.

Findings

Soil

Soil analytical results were compared to the NYSDEC *Technical and Administrative Guidance Memorandum* (TAGM) *4046: Determination of Soil Cleanup Objectives and Levels.*

- VOCs – Several VOCs were detected in each of the four soil samples at concentrations below the NYSDEC TAGM , however; concentrations did not exceed NYSDEC Recommended Soil Cleanup Objectives (RSCOs) with the following exceptions:
  - naphthalene was reported within the soil sample from boring B-3 at a value of 40,000 ppb exceeding the RSCO of 1300 ppb;
  - M+P xylene was reported within the soil sample from boring B-4 at a value of 1300 ppb exceeding the RSCO of 1200 ppb.

- SVOCs – The analyzed list of SVOCs were detected in all four soil samples with the exception of acenapthylene within each of the four soil samples and 2-methylnapthalene within borings B-1 and B-2. Concentrations of the detected SVOCs varied with reported values below the laboratory methodology's minimal detection limit (MDL) to above the RSCO values.

- PCBs were not detected in the four analyzed soil samples with the exception of Aroclor 1254 which was reported at concentrations below the NYSDEC TAGM RSCO level of 10,000 ppb.

- Heavy metals – The analyzed list of heavy metals were detected in each of the four analyzed soil samples with the exceptions of antimony, selenium, and thallium which were reported as non-detected in each sample. Concentrations varied with the

Continued . . .

compounds from below the laboratory methodology's MDL to above the RSCO. Beryllium, copper, and zinc exceeded the RSCO in all four samples analyzed. Barium, cadmium, chromium, nickel, and silver were not detected or were detected at concentrations below the RSCO or site background (SB). Lead was detected in the soil samples from all four borings and exceeded the RSCO of 500 ppm at B-3 with a concentration of 700 ppm. Mercury was detected in the soil samples from all four borings and exceeded the RSCO of 0.1 ppm at boring B-1 with a concentration of 0.16 ppm and at boring B-3 with a concentration of 0.34 ppm. Arsenic was detected in the soil samples from all four borings and exceeded the RSCO of 7.5 ppm and SB of 3-12 ppm at B-3 with a concentration of 46 ppm.

Soil analytical results are summarized in Tables 1 through 4 and laboratory analytical data sheets are provided as Appendix B.

Groundwater

Groundwater analytical results were compared to NYSDEC Technical and Operational Guidance Series guidance values (TOGS).

- VOCs – Acetone and naphthalene were detected within the groundwater sample at B-1 (GW) below the NYSDEC TOGS guidance value. Benzene was detected in the groundwater sample collected from at B-1 (GW) with a concentration of 1 ppb which slightly exceedd the NYSDEC TOGS value of 0.7ppb. 1,2,4 trimethylbenzene, acetone, ethyl benzene, o-xylene, p-isopropyltoluene, and toluene were detected in the groundwater sample from B-4 (GW) below the NYSDEC TOGS values. M+p xylene and naphthalene were detected in the groundwater sample from B-4 (GW) at a concentration of 7.0 ppb and 84 ppb, respectively, exceeding the respective TOGS guidance values of 5.0 ppb and 10.0 ppb. No other VOCs were detected.

- SVOCs – Acenapthene was detected in the groundwater sample from B-1 (GW), and phenanthrene and pyrene were detected in the groundwater sample from B-4 (GW) below the NYSDEC TOGS values. Naphthalene was detected within the groundwater sample at B-4 (GW) at a concentration of 13 ppb slightly exceeding the NYSDEC TOGS guidance value of 10 ppb. No other SVOCs were detected.

- PCBs were not detected in the groundwater sample collected at B-1(GW) or B-4 (GW) with the exception of Aroclor 1260 which was detected in the groundwater sample collected from B-4(GW) at a concentration of 0.09 ppb slightly exceeding the NYSDEC TOGS guidance value of 2.0 ppb.

- Heavy metals were detected in the groundwater samples collected with the exception of antimony, silver, and thallium. Arsenic, barium, beryllium, cadmium, chromium, cooper, lead, mercury, nickel, selenium, and zinc exceeded the NYSDEC TOGS

Continued . . .

- guidance values within the groundwater sample at B-1 (GW). Beryllium and cadmium were not detected at B-4 (GW). However, arsenic, barium, chromium, copper, lead, mercury, nickel, selenium, and zinc exceeded the NYSDEC TOGS guidance values at B-4 (GW).

Groundwater analytical results are summarized in Tables 5 through 8 and laboratory analytical data sheets are provided as Appendix B.

Conclusions

The findings of this site investigation will be used to establish a quality baseline of subsurface conditions on-site prior to Cooper Tank and Welding Inc. obtaining a lease for the Property. The findings of this investigation indicate that the subsurface soil has been impacted potentially by historical site operations and several soil quality parameters exceed the NYSDEC cleanup objectives.

Soil and groundwater quality found on-site are a generalized representation of the historical and industrial use of the property. Several groundwater quality parameters exceed NYSDEC guidance values, however, it was not within this scope of work to determine if historical site activities contributed to this impact. Soil handling and excavation will require proper handling, transport, and disposal procedures as well as proper health and safety protocol. Any direct contact with the groundwater appears remote at present, however, should dewatering activities be planned proper handling, disposal, treatment, health and safety protocol will be required.

If you have any questions or require additional information, please feel free to contact the undersigned.

Very truly yours,

GANNETT FLEMING ENGINEERS, P.C.

Ivy Hidalgo-Olberding

IVY HIDALGO-OLBERDING
Project Manager, Environmental Scientist

Stephen Hix

STEPHEN R. HIX
Director, Environmental Services

R:\PROJECTS\44000\44440\44440.001 Cooper Tank Audits\252 Maspeth Ave\Cooper Letter report. final.doc

TABLES

TABLE 1

COOPER TANK
252 MASPETH AVENUE
MASPETH, NEW YORK

ANALYTICAL RESULTS OF VOLATILE ORGANIC COMPOUNDS IN SOIL

Compound	NYSDEC TAGM	B-1 (3-7)	B-2 (4-8)	B-3 (2-8)	B-4 (2-6)
Date:		3/28/2005	3/28/2005	3/28/2005	3/28/2005
1,1 Dichloroethane	200	<6.7	<6.9	<140	<6.9
1,1 Dichloroethene	400	<6.7	<6.9	<140	<6.9
1,1 Dichloropropene	---	<6.7	<6.9	<140	<6.9
1,2 Dibromoethane	---	<6.7	<6.9	<140	<6.9
1,2 Dichlorobenzene (v)	7900	<6.7	<6.9	<140	<6.9
1,2 Dichloroethane	100	<6.7	<6.9	<140	<6.9
1,2 Dichloropropane	---	<6.7	<6.9	<140	<6.9
1,3 Dichlorobenzene (v)	1600	<6.7	<6.9	<140	<6.9
1,3 Dichloropropane	300	<6.7	<6.9	<140	<6.9
1,4 Dichlorobenzene (v)	8500	29	6.9	<140	29
1,1,1 Trichloroethane	800	<6.7	<6.9	<140	<6.9
1,1,1,2 Tetrachloroethane	---	<6.7	<6.9	<140	<6.9
1,1,2 Trichloroethane	---	<6.7	<6.9	<140	<6.9
1,1,2,2 Tetrachloroethane	600	<6.7	<6.9	<140	<6.9
1,2,3 Trichlorobenzene	---	<6.7	<6.9	<140	<6.9
1,2,3-Trichloropropane	400	<6.7	<6.9	<140	<6.9
1,2,4 Trichlorobenzene (v)	3400	<6.7	6.9	<140	<6.9
1,2,4 Trimethylbenzene	---	160	22	430	400
1,2,4,5 Tetramethylbenzene	---	37	75	<140	54
1,3,5 Trimethylbenzene	3300	59	9.7	200	170
2,2 Dichloropropane	---	<6.7	<6.9	<140	<6.9
2-Chlorotoluene	---	<6.7	<6.9	<140	<6.9
4-Chlorotoluene	---	<6.7	<6.9	<140	<6.9
Acetone	200	<67	<69	<1,400	79
Benzene	60	<6.7	<6.9	<140	9.7
Bromobenzene	600	8	<6.9	<140	<6.9
Bromochloromethane	---	<6.7	<6.9	<140	<6.9
Bromodichloromethane	---	<6.7	<6.9	<140	<6.9
Bromoform	---	<6.7	<6.9	<140	<6.9
Bromomethane	---	<6.7	<6.9	<140	<6.9
cis-1,2-Dichloroethene	250	<6.7	<6.9	<140	<6.9
cis-1,3 Dichloropropene	300	<6.7	<6.9	<140	<6.9
Carbon Tetrachloride	600	<6.7	<6.9	<140	<6.9
Chlorobenzene	1700	<6.7	<6.9	<140	<6.9
Chlorodibromomethane	---	<6.7	<6.9	<140	<6.9

NOTES:

All units are in µg/kg (parts-per-billion)
--- No standard or guidance value available
Values in bold exceed the NYSDEC TAGM Recommended Soil Cleanup Objective

NYSDEC - New York State Department of Environmental Conservation
TAGM - Technical and Administrative Guidance Memorandum #4046

TABLE 1

COOPER TANK
252 MASPETH AVENUE
MASPETH, NEW YORK

ANALYTICAL RESULTS OF VOLATILE ORGANIC COMPOUNDS IN SOIL

Compound	NYSDEC TAGM	B-1 (3-7)	B-2 (4-8)	B-3 (2-8)	B-4 (2-6)
Date:		3/28/2005	3/28/2005	3/28/2005	3/28/2005
Chlorodifluoromethane	---	<6.7	<6.9	<140	<6.9
Chloroethane	1900	<6.7	<6.9	<140	<6.9
Chloroform	300	<6.7	<6.9	<140	<6.9
Chloromethane	---	<6.7	<6.9	<140	<6.9
Dibromochloropropane	---	<6.7	<6.9	<140	<6.9
Dibromomethane	---	<6.7	<6.9	<140	<6.9
Dichlorodifluoromethane	---	<6.7	<6.9	<140	<6.9
Ethyl Benzene	5500	81	<6.9	330	460
Freon 113	6000	<6.7	<6.9	<140	<6.9
Hexachlorobutadiene	---	<6.7	<6.9	<140	<6.9
Isopropylbenzene	2300	49	54	190	93
m+p Xylene	1200	97	<14	560	**1300**
Methyl Ethyl Ketone	300	<67	<69	<1,400	<69
Methylene Chloride	100	<6.7	<6.9	<140	<6.9
Methyl Isobutyl Ketone	---	<67	<69	<1,400	<69
Methyl tert-butyl Ether (MTBE)	---	<6.7	<6.9	<140	<6.9
n-Butylbenzene	10000	<6.7	14	<140	50
n-Propylbenzene	3700	28	24	<140	50
Naphthalene(v)	1300	410	49	**40,000**	640
o Xylene	1200	47	<6.9	290	460
p-Diethylbenzene	---	<6.7	47	<140	<6.9
p-Ethyltoluene	---	81	9.7	230	180
p-Isopropyltoluene	10000	120	19	390	390
sec-Butylbenzene	10000	17	29	<140	32
Styrene	---	<6.7	<6.9	<140	<6.9
trans-1,2-Dichloroethene	300	<6.7	<6.9	<140	<6.9
trans-1,3 Dichloropropene	300	<6.7	<6.9	290	<6.9
tert-Butylbenzene	10000	<6.7	11	<140	<6.9
Tetrachloroethene	1400	6.7	<6.9	<140	11
Toluene	1500	49	<6.9	200	360
Trichloroethylene	---	<6.7	<6.9	<140	<6.9
Trichlorofluoromethane	---	<6.7	<6.9	<140	<6.9
Vinyl Chloride	200	<6.7	<6.9	<140	<6.9

NOTES:

All units are in µg/kg (parts-per-billion)
--- No standard or guidance value available
Values in bold exceed the NYSDEC TAGM Recommended Soil Cleanup Objective

NYSDEC - New York State Department of Environmental Conservation
TAGM - Technical and Administrative Guidance Memorandum #4046

TABLE 2

COOPER TANK
252 MASPETH AVENUE
MASPETH, NEW YORK

ANALYTICAL RESULTS OF SEMI-VOLATILE ORGANIC COMPOUNDS IN SOIL

Compound	NYSDEC TAGM	B-1 (3-7)	B-2 (4-8)	B-3 (2-8)	B-4 (2-6)
Date:		3/28/2005	3/28/2005	3/28/2005	3/28/2005
2-Methylnaphthalene	36,400	<400	<420	8,100	580
Acenaphthene	50,000	1,300	2,100	9,600	960
Acenaphthylene	41,000	<400	<420	<430	<420
Anthracene	50,000	2,500	3,200	8,100	1,700
Benzo(a)anthracene	224	**4,000**	**4,400**	**6,400J**	**4,700J**
Benzo(a)pyrene	61	**2,900**	**3,800J**	**5,100J**	**3,600J**
Benzo(b)fluoranthene	1,100	**3,500**	**4300J**	**5,600J**	**4,300J**
Benzo(ghi)perylene	50,000	1,300	1,700J	2,700J	2,100J
Benzo(k)fluoranthene	1,100	**3,500**	**4,300J**	**5,600J**	**4,300J**
Chrysene	400	**3,900**	**4,200**	**6,400J**	**5,300J**
Dibenzo(a,h)anthracene	14	**400**	**500J**	**860J**	**600J**
Fluoranthene	50,000	8,000	10,000	12,000	6,700
Fluorene	50,000	1,300	2,200	8,600	1,100
Indeno(1,2,3-cd)pyrene	32,000	1,500	2,100J	3,300J	2,100J
Naphthalene(sv)	13,000	750	860	**30,000**	1,800
Phenanthrene	50,000	9,100	4,300	29,000	8,500
Pyrene	50,000	11,000	15,000	27,000J	19,000J

NOTES:

All units are in µg/kg (parts-per-billion)
--- No standard or guidance value available
Values in bold exceed the NYSDEC TAGM Recommended Soil Cleanup Objective
J - Estimated value due to low recovery

NYSDEC - New York State Department of Environmental Conservation
TAGM - Technical and Administrative Guidance Memorandum #4046

TABLE 3

COOPER TANK
252 MASPETH AVENUE
MASPETH, NEW YORK

ANALYTICAL RESULTS OF POLY-CHLORINATED BIPHENYLS IN SOIL

Compound	NYSDEC TAGM	B-1 (3-7)	B-2 (4-8)	B-3 (2-8)	B-4 (2-6)
Date:		3/28/2005	3/28/2005	3/28/2005	3/28/2005
Aroclor 1016	10,000	<53	<56	<57	<56
Aroclor 1221	10,000	<53	<56	<57	<56
Aroclor 1232	10,000	<53	<56	<57	<56
Aroclor 1242	10,000	<53	<56	<57	<56
Aroclor 1248	10,000	<53	<56	<57	<56
Aroclor 1254	10,000	210	2,600	970	900
Aroclor 1260	10,000	<53	<56	<57	<56

NOTES:

All units are in µg/kg (parts-per-billion)

Values in bold exceed the NYSDEC TAGM Recommended Soil Cleanup Objective

NYSDEC - New York State Department of Environmental Conservation

TAGM - Technical and Administrative Guidance Memorandum #4046

TABLE 4

COOPER TANK
252 MASPETH AVENUE
MASPETH, NEW YORK

ANALYTICAL RESULTS OF METALS IN SOIL

Compound	NYSDEC TAGM	B-1 (3-7)	B-2 (4-8)	B-3 (2-8)	B-4 (2-6)
Date:		3/28/2005	3/28/2005	3/28/2005	3/28/2005
Antimony	SB (N/A)	<2.7	<2.8	<2.9	<2.8
Arsenic	7.5 or SB (3-12**)	5.1	5.3	**46**	**4.7**
Barium	300 or SB (15-600)	210	170	160	220
Beryllium	0.16 or SB (0-1.75)	**0.28**	**0.35**	**0.71**	**0.29**
Cadmium	10	1.7	1.9	0.46	2.2
Chromium	50	20	17	37	24
Copper	25 or SB (1-50)	**37**	**54.0**	**160**	**140**
Lead	SB (200-500)	200	380	**760**	460
Mercury	0.1	**0.16**	0.0069	**0.34**	0.056
Nickel	13 or SB (0.5-25)	13	12	13	13
Selenium	2 or SB (0.1-3.9)	<0.53	<0.56	<0.57	<0.56
Silver	SB (N/A)	0.75	0.96	<0.71	1.2
Thallium	SB (N/A)	<2.7	<2.8	<2.9	<2.8
Zinc	20 or SB (9-50)	**440**	**460**	**690**	**1100**

NOTES:

All units are in mg/kg (parts-per-million)
Values in bold exceed the NYSDEC TAGM Recommended Soil Cleanup Objective

NYSDEC - New York State Department of Environmental Conservation
TAGM - Technical and Administrative Guidance Memorandum #4046
SB - Site background
** New York State background
N/A not available

TABLE 5

COOPER TANK
252 MASPETH AVENUE
MASPETH, NEW YORK

ANALYTICAL RESULTS OF VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER

Compound	NYSDEC TOGS**	B-1 (GW)	B-4 (GW)
Date:		3/28/2005	3/28/2005
1,1 Dichloroethane	5	<1	<1
1,1 Dichloroethene	5	<1	<1
1,1 Dichloropropene	---	<1	<1
1,2 Dibromoethane	---	<1	<1
1,2 Dichlorobenzene (v)	3	<1	<1
1,2 Dichloroethane	0.6	<1	<1
1,2 Dichloropropane	1	<1	<1
1,3 Dichlorobenzene (v)	3	<1	<1
1,3 Dichloropropane	5	<1	<1
1,4 Dichlorobenzene (v)	3	<1	<1
1,1,1 Trichloroethane	5	<1	<1
1,1,1,2 Tetrachloroethane	5	<1	<1
1,1,2 Trichloroethane	1	<1	<1
1,1,2,2 Tetrachloroethane	5	<1	<1
1,2,3 Trichlorobenzene	5	<1	<1
1,2,3-Trichloropropane	0.04	<1	<1
1,2,4 Trichlorobenzene (v)	5	<1	<1
1,2,4 Trimethylbenzene	5	<1	1
1,2,4,5 Tetramethylbenzene	5	<1	<1
1,3,5 Trimethylbenzene	5	<1	<1
2,2 Dichloropropane	5	<1	<1
2-Chlorotoluene	5	<1	<1
4-Chlorotoluene	5	<1	<1
Acetone	50	12	18
Benzene	0.7	**1**	<1
Bromobenzene	5	<1	<1
Bromochloromethane	5	<1	<1
Bromodichloromethane	50	<1	<1
Bromoform	50	<1	<1
Bromomethane	5	<1	<1
cis-1,2-Dichloroethene	5	<1	<1
cis-1,3 Dichloropropene	0.4	<1	<1
Carbon Tetrachloride	5	<1	<1
Chlorobenzene	5	<1	<1

NOTES:

All units are µg/L (parts-per-billion)
--- No standard or guidance value available
Values in bold exceed the NYSDEC Guidance Values

**NYSDEC Technical and Operational Guidance Series (1.1.1)
Ambient Water Quality Standards and Guidance Values
and Groundwater Effluent Limitations June 1998

TABLE 5

COOPER TANK
252 MASPETH AVENUE
MASPETH, NEW YORK

ANALYTICAL RESULTS OF VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER

Compound	NYSDEC TOGS**	B-1 (GW)	B-4 (GW)
Date:		3/28/2005	3/28/2005
Chlorodibromomethane	---	<1	<1
Chlorodifluoromethane	---	<1	<1
Chloroethane	5	<1	<1
Chloroform	7	<1	<1
Chloromethane	---	<1	<1
Dibromochloropropane	0.04	<1	<1
Dibromomethane	5	<1	<1
Dichlorodifluoromethane	5	<1	<1
Ethyl Benzene	5	<1	**2**
Freon 113	---	<1	<1
Hexachlorobutadiene	0.5	<1	<1
Isopropylbenzene	5	<1	<1
m+p Xylene	5	<2	**7**
Methyl Ethyl Ketone	---	<10	<10
Methylene Chloride	5	<1	<1
Methyl Isobutyl Ketone	---	<10	<10
Methyl tert-butyl Ether (MTBE)	---	<1	<1
n-Butylbenzene	5	<1	<1
n-Propylbenzene	5	<1	<1
Naphthalene(v)	10	3	**84**
o Xylene	5	<1	**4**
p Diethylbenzene	---	<1	<1
p-Ethyltoluene	---	<1	<1
p-Isopropyltoluene	5	<1	5
sec-Butylbenzene	5	<1	<1
Styrene	5	<1	<1
trans-1,2-Dichloroethene	5	<1	<1
trans-1,3 Dichloropropene	0.4	<1	<1
tert-Butylbenzene	5	<1	<1
Tetrachloroethene	5	<1	<1
Toluene	5	<1	**4**
Trichloroethylene	---	<1	<1
Trichlorofluoromethane	5	<1	<1
Vinyl Chloride	2	<1	<1

NOTES:

All units are µg/L (parts-per-billion)

--- No standard or guidance value available

Values in bold exceed the NYSDEC Guidance Values

**NYSDEC Technical and Operational Guidance Series (1.1.1)
Ambient Water Quality Standards and Guidance Values
and Groundwater Effluent Limitations June 1998

TABLE 6

COOPER TANK
252 MASPETH AVENUE
MASPETH, NEW YORK

ANALYTICAL RESULTS OF SEMI-VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER

Compound	NYSDEC TOGS**	B-1 (GW)	B-4 (GW)
Date:		3/28/2005	3/28/2005
2-Methylnaphthalene	---	<1	<10
Acenaphthene	20	1	<10
Acenaphthylene	---	<1	<10
Anthracene	50	<1	<10
Benzo(a)anthracene	0.002	<1	<10
Benzo(a)pyrene	ND	<1	<10
Benzo(b)fluoranthene	0.002	<1	<10
Benzo(ghi)perylene	0.002	<1	<10
Benzo(k)fluoranthene	0.002	<1	<10
Chrysene	0.002	<1	<10
Dibenzo(a,h)anthracene	50	<1	<10
Fluoranthene	50	<1	21
Fluorene	50	<1	<10
Indeno(1,2,3-cd)pyrene	0.002	<1	<10
Naphthalene(sv)	10	<1	**13**
Phenanthrene	50	<1	31
Pyrene	50	<1	18

NOTES:

All units are µg/L (parts-per-billion)

--- No standard or guidance value available

Values in bold exceed NYSDEC TOGS Guidance Values

ND-Non Detectable concentration by approved analytical methods

**NYSDEC Technical and Operational Guidance Series (1.1.1)
Ambient Water Quality Standards and Guidance Values
and Groundwater Effluent Limitations June 1998

TABLE 7

COOPER TANK
252 MASPETH AVENUE
MASPETH, NEW YORK

ANALYTICAL RESULTS OF POLY-CHLORINATED BIPHENYLS IN GROUNDWATER

Compound	NYSDEC TOGS**	B-1 (GW)	B-4 (GW)
Date:		3/28/2005	3/28/2005
Aroclor 1016	0.09	< 1	< 1
Aroclor 1221	0.09	< 1	< 1
Aroclor 1232	0.09	< 1	< 1
Aroclor 1242	0.09	< 1	< 1
Aroclor 1248	0.09	< 1	< 1
Aroclor 1254	0.09	< 1	< 1
Aroclor 1260	0.09	< 1	**2**

NOTES:

All units are µg/L (parts-per-billion)

--- No standard or guidance value available

Values in bold exceed NYSDEC TOGS Guidance Values

**NYSDEC Technical and Operational Guidance Series (1.1.1)
Ambient Water Quality Standards and Guidance Values
and Groundwater Effluent Limitations June 1998

TABLE 8

COOPER TANK
252 MASPETH AVENUE
MASPETH, NEW YORK

ANALYTICAL RESULTS OF METALS IN GROUNDWATER

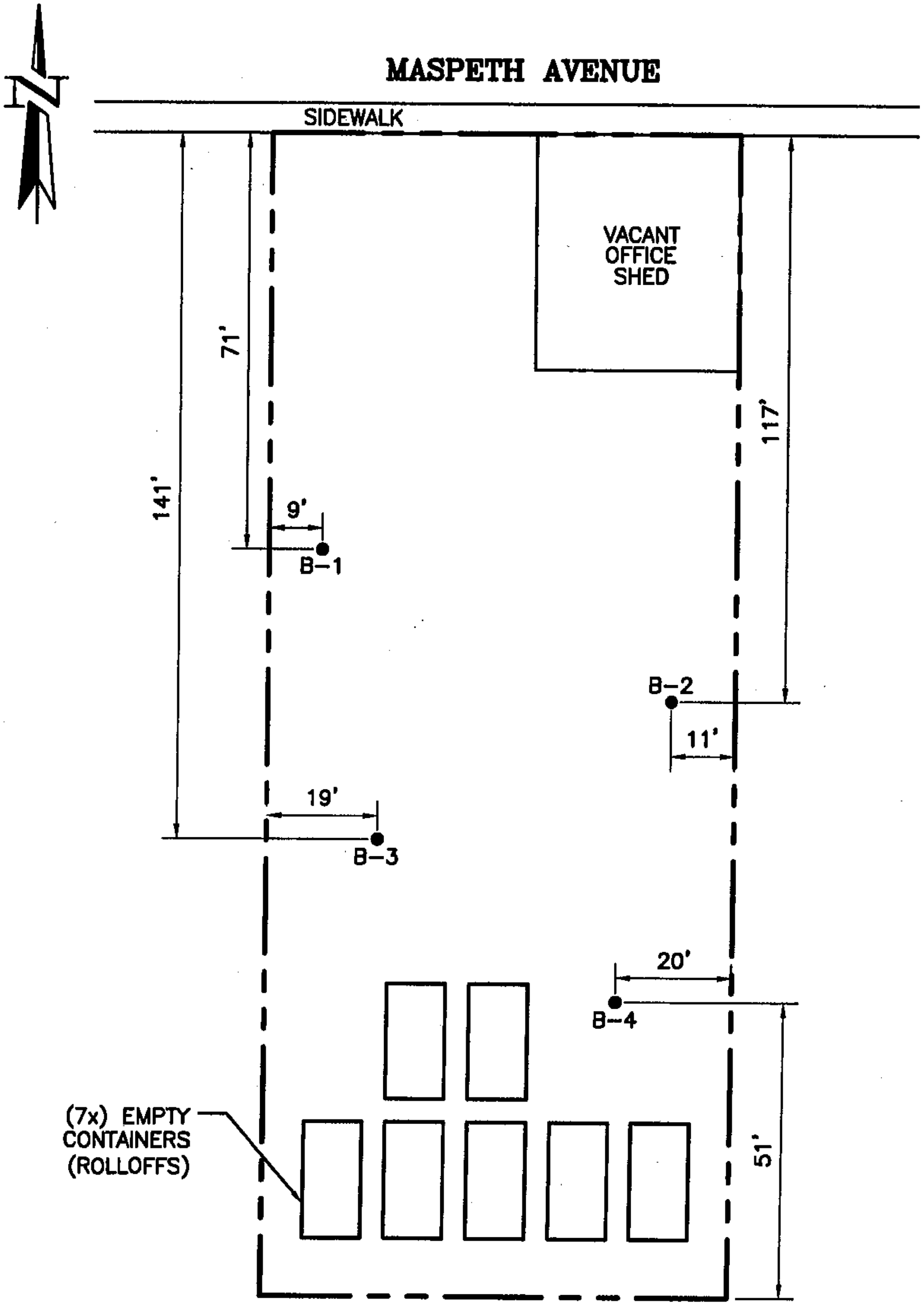
Compound	NYSDEC TOGS**	B-1 (GW)	B-4 (GW)
Date:		3/28/2005	3/28/2005
Antimony	0.003	<0.5	<0.5
Arsenic	0.025	**2.3**	**1.2**
Barium	1.0	**39**	**23**
Beryllium	0.003	**0.06**	<0.05
Cadmium	0.005	**0.52**	<0.25
Chromium	0.05	**3.3**	**2.5**
Copper	0.2	**45**	**21**
Lead	0.025	**130**	**44**
Mercury	0.0007	**0.26**	**0.079**
Nickel	0.1	**2.6**	**2.2**
Selenium	0.01	**0.16**	**0.14**
Silver	0.05	<0.25	<0.25
Thallium	0.0005	<0.5	<0.5
Zinc	2.0	**130**	**49.0**

NOTES:

All units are mg/L (parts-per-million)
--- No standard or guidance value available
Values in bold exceed NYSDEC TOGS Guidance Values

**NYSDEC Technical and Operational Guidance Series (1.1.1)
Ambient Water Quality Standards and Guidance Values
and Groundwater Effluent Limitations June 1998

FIGURE 1



NOT TO SCALE

LEGEND

● BORING LOCATION

SITE PLAN
COOPER TANK
252 MASPETH AVENUE
BROOKLYN, NEW YORK

S44440A-004
042905

APPENDIX A

BORING LOGS

SOIL BORING LOG

Client: Aris Investment	Boring No.: B-1	Gannett Fleming, Inc. 480 Forest Avenue Locust Valley, NY 11560 (516) 671-8440
Project # : 44440.001	Sheet 1 of 1	
Site Location: 252 Maspeth Ave.	Date: 3/28/2005	
Drilling Co: Tri State Method: Hollow Stem Auger - Truck mounted Mobil B-57 Personnel: Brian Dortch Total Depth: 12' Depth to Water: 7'	Location of boring (not to scale) 9' from western property boundary 71' from northern property boundary	

depth (feet)	PID (ppm)	Blow Counts	Sample ID	Depth (From-To)	Moisture Content	Recovery	Soil Classification	Remarks
0				0-1'			Concrete	
1	4.0	12, 14, 9, 16		1-3'	slightly moist	2'	Black M soft SILT with wood fragments (Urban fill)	heavy staining and odor
2								
3	5.5	13, 17, 21, 16	B-1 (3-7)	3-5'	moist	2'	Black M soft SILT with wood fragments (Urban fill)	heavy staining and odor
4								
5	5.2	8, 16, 12, 9		5-7'	saturated	0.5'	Black M soft SILT with wood fragments (Urban fill)	heavy staining and odor
6								
7	3.5	10, 7, 5, 2	B-1 (GW)	7-9'	saturated	1'	Black M soft SILT with wood fragments (Urban fill)	heavy staining and odor
8								
9		3, 3, 7, 5		9-11'	saturated	1'	Black M soft SILT with wood fragments (Urban fill)	heavy staining and odor
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

SOIL BORING LOG

Client: Aris Investment

Boring No.: B-2

Project # : 44440.001

Sheet 1 of 1

Site Location: 252 Maspeth Ave.

Date: 3/28/2005

Gannett Fleming, Inc.
480 Forest Avenue
Locust Valley, NY 11560
(516) 671-8440

Drilling Co: Tri State
Method: Hollow Stem Auger - Truck mounted Mobil B-57
Personnel: Brian Dortch
Total Depth: 10'
Depth to Water: 7.5'

Location of boring (not to scale)

11' from eastern property boundary
117' from northern property boundary

depth (feet)	PID (ppm)	Blow Counts	Sample ID	Depth (From-To)	Moisture Content	Recovery	Soil Classification	Remarks
1 2	0.0	7, 4, 8, 16		0-2'	moist	0.5'	Black M soft SILT with wood fragments (Urban fill)	heavy staining and odor
3 4	2.0	4, 4, 6, 8		2-4'	moist	1'	Black M soft SILT with wood fragments (Urban fill)	heavy staining and odor
5 6	1.0	4, 6, 8, 13	B-2 (4-8)	4-6'	moist	0.5'	Black M soft SILT with wood fragments (Urban fill)	heavy staining and odor
7 8	1.5	7, 9, 8, 13		6-8'	saturated	0.5'	Black M soft SILT with wood fragments (Urban fill)	heavy staining and odor
9 10 11 12 13 14 15 16 17 18 19 20	0.0	5, 7, 6, 12		8-10'	saturated	0.5'	Black M soft SILT with wood fragments (Urban fill)	heavy staining and odor

SOIL BORING LOG

Client: Aris Investment
Project # : 44440.001
Site Location: 252 Maspeth Ave.
Drilling Co: Tri State
Method: Hollow Stem Auger - Truck mounted Mobil B-57
Personnel: Brian Dortch
Total Depth: 10'
Depth to Water: 8'

Boring No.: B-3
Sheet 1 of 1
Date: 3/28/2005

Gannett Fleming, Inc.
480 Forest Avenue
Locust Valley, NY 11560
(516) 671-8440

Location of boring (not to scale)
19' from western property boundary
141' from northern property boundary

depth (feet)	PID (ppm)	Blow Counts	Sample ID	Depth (From-To)	Moisture Content	Recovery	Soil Classification	Remarks
1 2	0.0	8, 12, 7, 7		0-2'	slightly moist	1'	Black M soft SILT with wood and stone fragments (Urban fill)	some staining and odor
3 4	0.5	5, 3, 7, 3	B-3 (2-8)	2-4'	moist	0.5'	Black M soft SILT with wood and plastic fragments (Urban fill)	some staining no odor
5 6	0.0	3, 3, 6, 3		4-6'	moist	0.0'	Black M soft SILT with wood fragments (Urban fill)	some staining no odor
7 8	1.3	7, 5, 12, 13		6-8'	moist	0.5'	Black M soft SILT with wood fragments (Urban fill)	some staining no odor
9 10 11 12 13 14 15 16 17 18 19 20	1.0	11, 13, 17, 21		8-10'	saturated	1'	Black M soft SILT with wood fragments (Urban fill)	some staining no odor

SOIL BORING LOG

Client: Aris Investment	Boring No.: B-4	Gannett Fleming, Inc. 480 Forest Avenue Locust Valley, NY 11560 (516) 671-8440
Project # : 44440.001	Sheet 1 of 1	
Site Location: 252 Maspeth Ave.	Date: 3/28/2005	

Drilling Co: Tri State

Method: Hollow Stem Auger - Truck mounted Mobil B-57

Personnel: Brian Dortch

Total Depth: 12' Depth to Water: 9'

Location of boring (not to scale)

20' from eastern property boundary

51' from southern property boundary

depth (feet)	PID (ppm)	Blow Counts	Sample ID	Depth (From-To)	Moisture Content	Recovery	Soil Classification	Remarks
0–2	0.0	7, 9, 18, 12		0-2'	slightly moist	1'	Black M soft SILT with wood and brick fragments (Urban fill)	some staining and slight odor
2–4	2.5	23, 12, 9, 16	B-4 (2-6)	2-4'	slightly moist	1'	Black M soft SILT with wood and brick fragments (Urban fill)	some staining and slight odor
4–6	1.0	15, 13, 12, 9		4-6'	moist	1'	Black M soft SILT with wood and brick fragments (Urban fill)	some staining and slight odor
6–8	0.0	9, 7, 8, 12		6-8'	moist	1'	Black M soft SILT with wood and brick fragments (Urban fill)	some staining and slight odor
8–20	0.0	13, 9, 12, 12	B-4 (GW)	8-10'	saturated	1'	Black M soft SILT with wood and brick fragments (Urban fill)	some staining and slight odor

Depth scale: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

APPENDIX B

LABORATORY ANALYTICAL DATA SHEETS

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.01 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1030
MATRIX:Soil SAMPLE: B-1 (3-7)

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Dichlordifluoromethane	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
Chloromethane	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
Vinyl Chloride	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
Bromomethane	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
Chloroethane	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
Trichlorofluoromethane	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
1,1 Dichloroethene	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
Methylene Chloride	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
t-1,2-Dichloroethene	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
1,1 Dichloroethane	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
2,2-Dichloropropane	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
c-1,2-Dichloroethene	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
Bromochloromethane	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
Chloroform	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
111 Trichloroethane	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
Carbon Tetrachloride	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
1,1-Dichloropropene	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
Benzene	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
1,2 Dichloroethane	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
Trichloroethene	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
1,2 Dichloropropane	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
Dibromomethane	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
Bromodichloromethane	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
c-1,3Dichloropropene	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
Toluene	ug/Kg	49		03/29/05	6.6666	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.01 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1030
MATRIX:Soil SAMPLE: B-1 (3-7)

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
t-1,3Dichloropropene	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
112 Trichloroethane	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
Tetrachloroethene	ug/Kg	6.7		03/29/05	6.6666	EPA8260
1,3-Dichloropropane	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
Chlorodibromomethane	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
1,2 Dibromoethane	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
Chlorobenzene	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
Ethyl Benzene	ug/Kg	81		03/29/05	6.6666	EPA8260
1112Tetrachloroethane	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
m + p Xylene	ug/Kg	97		03/29/05	13.333	EPA8260
o Xylene	ug/Kg	47		03/29/05	6.6666	EPA8260
Styrene	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
Bromoform	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
Isopropylbenzene	ug/Kg	49		03/29/05	6.6666	EPA8260
Bromobenzene	ug/Kg	8		03/29/05	6.6666	EPA8260
1122Tetrachloroethane	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
123-Trichloropropane	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
n-Propylbenzene	ug/Kg	28		03/29/05	6.6666	EPA8260
2-Chlorotoluene	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
135-Trimethylbenzene	ug/Kg	59		03/29/05	6.6666	EPA8260
4-Chlorotoluene	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
tert-Butylbenzene	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
124-Trimethylbenzene	ug/Kg	160		03/29/05	6.6666	EPA8260
sec-Butylbenzene	ug/Kg	17		03/29/05	6.6666	EPA8260
p-Isopropyltoluene	ug/Kg	120		03/29/05	6.6666	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR______

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.01 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1030
MATRIX:Soil SAMPLE: B-1 (3-7)

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
1,3 Dichlorobenzene (v)	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
1,4 Dichlorobenzene (v)	ug/Kg	29		03/29/05	6.6666	EPA8260
n-Butylbenzene	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
1,2 Dichlorobenzene (v)	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
Dibromochloropropane	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
124-Trichlorobenzene (v)	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
Hexachlorobutadiene	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
Naphthalene(v)	ug/Kg	410		03/29/05	6.6666	EPA8260
123-Trichlorobenzene	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
ter.ButylMethylEther	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
p-Ethyltoluene	ug/Kg	81		03/29/05	6.6666	EPA8260
Freon 113	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
1245 Tetramethylbenz	ug/Kg	37		03/29/05	6.6666	EPA8260
Acetone	ug/Kg	< 67		03/29/05	66.666	EPA8260
Methyl Ethyl Ketone	ug/Kg	< 67		03/29/05	66.666	EPA8260
Methylisobutylketone	ug/Kg	< 67		03/29/05	66.666	EPA8260
Chlorodifluoromethane	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
p Diethylbenzene	ug/Kg	< 6.7		03/29/05	6.6666	EPA8260
% Solids		75		03/30/05	0.1	SM182540G

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.01 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1030
MATRIX:Soil SAMPLE: B-1 (3-7)

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Naphthalene(sv)	ug/Kg	750		04/01/05	400	EPA8270
2-Methylnaphthalene	ug/Kg	< 400		04/01/05	400	EPA8270
Acenaphthylene	ug/Kg	< 400		04/01/05	400	EPA8270
Acenaphthene	ug/Kg	1300		04/01/05	400	EPA8270
Fluorene	ug/Kg	1300		04/01/05	400	EPA8270
Phenanthrene	ug/Kg	9100		04/01/05	400	EPA8270
Anthracene	ug/Kg	2500		04/01/05	400	EPA8270
Fluoranthene	ug/Kg	8000		04/01/05	400	EPA8270
Pyrene	ug/Kg	11000		04/01/05	400	EPA8270
Benzo(a)anthracene	ug/Kg	4000		04/01/05	400	EPA8270
Chrysene	ug/Kg	3900		04/01/05	400	EPA8270
Benzo(b)fluoranthene	ug/Kg	3500	#	04/01/05	400	EPA8270
Benzo(k)fluoranthene	ug/Kg	3500	#	04/01/05	400	EPA8270
Benzo(a)pyrene	ug/Kg	2900		04/01/05	400	EPA8270
Indeno(1,2,3-cd)pyrene	ug/Kg	1500		04/01/05	400	EPA8270
Dibenzo(a,h)anthracene	ug/Kg	400		04/01/05	400	EPA8270
Benzo(ghi)perylene	ug/Kg	1300		04/01/05	400	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS: #Total = 7000 ug/Kg, unable to separate isomers.

DIRECTOR

LAB NO.251023.01 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1030
MATRIX:Soil SAMPLE: B-1 (3-7)

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Aroclor 1016	ug/Kg	< 53		04/02/05	53.333	EPA8082
Aroclor 1221	ug/Kg	< 53		04/02/05	53.333	EPA8082
Aroclor 1232	ug/Kg	< 53		04/02/05	53.333	EPA8082
Aroclor 1242	ug/Kg	< 53		04/02/05	53.333	EPA8082
Aroclor 1248	ug/Kg	< 53		04/02/05	53.333	EPA8082
Aroclor 1254	ug/Kg	210		04/02/05	53.333	EPA8082
Aroclor 1260	ug/Kg	< 53		04/02/05	53.333	EPA8082

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.01 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1030
MATRIX:Soil SAMPLE: B-1 (3-7)

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Antimony as Sb	mg/Kg	< 2.7		04/01/05	2.6666	EPA6010
Arsenic as As	mg/Kg	5.1		04/01/05	1.3333	EPA6010
Beryllium as Be	mg/Kg	0.28		04/01/05	0.1333	EPA6010
Cadmium as Cd	mg/Kg	1.7		04/01/05	0.6666	EPA6010
Chromium as Cr	mg/Kg	20		04/01/05	0.6666	EPA6010
Copper as Cu	mg/Kg	37		04/01/05	1.3333	EPA6010
Lead as Pb	mg/Kg	200		04/01/05	0.6666	EPA6010
Mercury as Hg	mg/Kg	0.16		03/31/05	0.0066	EPA7470A
Nickel as Ni	mg/Kg	13		04/01/05	1.3333	EPA6010
Selenium as Se	mg/Kg	< 0.53		03/31/05	0.5333	EPA7740
Silver as Ag	mg/Kg	0.75		04/01/05	0.6666	EPA6010
Thallium as Tl	mg/Kg	< 2.7		04/01/05	2.6666	EPA6010
Zinc as Zn	mg/Kg	440		04/01/05	1.3333	EPA6010
Barium as Ba	mg/Kg	210		04/01/05	0.6666	EPA6010

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.02 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1130
MATRIX:Soil SAMPLE: B-2 (4-8)

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAI METHOD
Dichlordifluoromethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Chloromethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Vinyl Chloride	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Bromomethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Chloroethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Trichlorofluoromethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
1,1 Dichloroethene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Methylene Chloride	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
t-1,2-Dichloroethene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
1,1 Dichloroethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
2,2-Dichloropropane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
c-1,2-Dichloroethene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Bromochloromethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Chloroform	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
111 Trichloroethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Carbon Tetrachloride	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
1,1-Dichloropropene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Benzene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
1,2 Dichloroethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Trichloroethene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
1,2 Dichloropropane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Dibromomethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Bromodichloromethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
c-1,3Dichloropropene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Toluene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

LAB NO.251023.02 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1130
MATRIX:Soil SAMPLE: B-2 (4-8)

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
t-1,3Dichloropropene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
112 Trichloroethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Tetrachloroethene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
1,3-Dichloropropane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Chlorodibromomethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
1,2 Dibromoethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Chlorobenzene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Ethyl Benzene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
1112Tetrachloroethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
m + p Xylene	ug/Kg	< 14		03/29/05	13.888	EPA8260
o Xylene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Styrene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Bromoform	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Isopropylbenzene	ug/Kg	54		03/29/05	6.9444	EPA8260
Bromobenzene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
1122Tetrachloroethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
123-Trichloropropane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
n-Propylbenzene	ug/Kg	24		03/29/05	6.9444	EPA8260
2-Chlorotoluene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
135-Trimethylbenzene	ug/Kg	9.7		03/29/05	6.9444	EPA8260
4-Chlorotoluene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
tert-Butylbenzene	ug/Kg	11		03/29/05	6.9444	EPA8260
124-Trimethylbenzene	ug/Kg	22		03/29/05	6.9444	EPA8260
sec-Butylbenzene	ug/Kg	29		03/29/05	6.9444	EPA8260
p-Isopropyltoluene	ug/Kg	19		03/29/05	6.9444	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.02 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560

ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1130
MATRIX:Soil SAMPLE: B-2 (4-8)

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
1,3 Dichlorobenzene (v)	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
1,4 Dichlorobenzene (v)	ug/Kg	6.9		03/29/05	6.9444	EPA8260
n-Butylbenzene	ug/Kg	14		03/29/05	6.9444	EPA8260
1,2 Dichlorobenzene (v)	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Dibromochloropropane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
124-Trichlorobenzene (v)	ug/Kg	6.9		03/29/05	6.9444	EPA8260
Hexachlorobutadiene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Naphthalene(v)	ug/Kg	49		03/29/05	6.9444	EPA8260
123-Trichlorobenzene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
ter.ButylMethylEther	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
p-Ethyltoluene	ug/Kg	9.7		03/29/05	6.9444	EPA8260
Freon 113	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
1245 Tetramethylbenz	ug/Kg	75		03/29/05	6.9444	EPA8260
Acetone	ug/Kg	< 69		03/29/05	69.444	EPA8260
Methyl Ethyl Ketone	ug/Kg	< 69		03/29/05	69.444	EPA8260
Methylisobutylketone	ug/Kg	< 69		03/29/05	69.444	EPA8260
Chlorodifluoromethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
p Diethylbenzene	ug/Kg	47		03/29/05	6.9444	EPA8260
% Solids		72		03/30/05	0.1	SM182540G

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.02 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1130
MATRIX:Soil SAMPLE: B-2 (4-8)

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Naphthalene(sv)	ug/Kg	860		04/01/05	416.66	EPA8270
2-Methylnaphthalene	ug/Kg	< 420		04/01/05	416.66	EPA8270
Acenaphthylene	ug/Kg	< 420		04/01/05	416.66	EPA8270
Acenaphthene	ug/Kg	2100		04/01/05	416.66	EPA8270
Fluorene	ug/Kg	2200		04/01/05	416.66	EPA8270
Phenanthrene	ug/Kg	4300		04/01/05	416.66	EPA8270
Anthracene	ug/Kg	3200		04/01/05	416.66	EPA8270
Fluoranthene	ug/Kg	10000		04/01/05	416.66	EPA8270
Pyrene	ug/Kg	15000		04/01/05	416.66	EPA8270
Benzo(a)anthracene	ug/Kg	4400		04/01/05	416.66	EPA8270
Chrysene	ug/Kg	4200		04/01/05	416.66	EPA8270
Benzo(b)fluoranthene	ug/Kg	4300	#*	04/01/05	416.66	EPA8270
Benzo(k)fluoranthene	ug/Kg	4300	#*	04/01/05	416.66	EPA8270
Benzo(a)pyrene	ug/Kg	3800	*	04/01/05	416.66	EPA8270
Indeno(1,2,3-cd)pyrene	ug/Kg	2100	*	04/01/05	416.66	EPA8270
Dibenzo(a,h)anthracene	ug/Kg	500	*	04/01/05	416.66	EPA8270
Benzo(ghi)perylene	ug/Kg	1700	*	04/01/05	416.66	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS: #Total =8600 ug/Kg, unable to separate isomers.
*Estimated due to low internal standard, *35%. Low recovery due to interference. QC limit is 50%.

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.02 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1130
MATRIX:Soil SAMPLE: B-2 (4-8)

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Aroclor 1016	ug/Kg	< 56		04/02/05	55.555	EPA8082
Aroclor 1221	ug/Kg	< 56		04/02/05	55.555	EPA8082
Aroclor 1232	ug/Kg	< 56		04/02/05	55.555	EPA8082
Aroclor 1242	ug/Kg	< 56		04/02/05	55.555	EPA8082
Aroclor 1248	ug/Kg	< 56		04/02/05	55.555	EPA8082
Aroclor 1254	ug/Kg	2600		04/04/05	555.55	EPA8082
Aroclor 1260	ug/Kg	< 56		04/02/05	55.555	EPA8082

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6834 NYSDOH ID # 10320

LAB NO.251023.02 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1130
MATRIX:Soil SAMPLE: B-2 (4-8)

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Antimony as Sb	mg/Kg	< 2.8		04/01/05	2.7777	EPA6010
Arsenic as As	mg/Kg	5.3		04/01/05	1.3888	EPA6010
Beryllium as Be	mg/Kg	0.35		04/01/05	0.1388	EPA6010
Cadmium as Cd	mg/Kg	1.9		04/01/05	0.6944	EPA6010
Chromium as Cr	mg/Kg	17		04/01/05	0.6944	EPA6010
Copper as Cu	mg/Kg	54		04/01/05	1.3888	EPA6010
Lead as Pb	mg/Kg	380		04/01/05	0.6944	EPA6010
Mercury as Hg	mg/Kg	< 0.0069		03/31/05	0.0069	EPA7470A
Nickel as Ni	mg/Kg	12		04/01/05	1.3888	EPA6010
Selenium as Se	mg/Kg	< 0.56		04/01/05	0.5555	EPA7740
Silver as Ag	mg/Kg	0.96		04/01/05	0.6944	EPA6010
Thallium as Tl	mg/Kg	< 2.8		04/01/05	2.7777	EPA6010
Zinc as Zn	mg/Kg	460		04/01/05	1.3888	EPA6010
Barium as Ba	mg/Kg	170		04/01/05	0.6944	EPA6010

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR____________________

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.03 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1215
MATRIX:Soil SAMPLE: B-3 (2-8)

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICA METHOD
Dichlordifluoromethane	ug/Kg	< 140		04/01/05	142.85	EPA8260
Chloromethane	ug/Kg	< 140		04/01/05	142.85	EPA8260
Vinyl Chloride	ug/Kg	< 140		04/01/05	142.85	EPA8260
Bromomethane	ug/Kg	< 140		04/01/05	142.85	EPA8260
Chloroethane	ug/Kg	< 140		04/01/05	142.85	EPA8260
Trichlorofluoromethane	ug/Kg	< 140		04/01/05	142.85	EPA8260
1,1 Dichloroethene	ug/Kg	< 140		04/01/05	142.85	EPA8260
Methylene Chloride	ug/Kg	< 140		04/01/05	142.85	EPA8260
t-1,2-Dichloroethene	ug/Kg	< 140		04/01/05	142.85	EPA8260
1,1 Dichloroethane	ug/Kg	< 140		04/01/05	142.85	EPA8260
2,2-Dichloropropane	ug/Kg	< 140		04/01/05	142.85	EPA8260
c-1,2-Dichloroethene	ug/Kg	< 140		04/01/05	142.85	EPA8260
Bromochloromethane	ug/Kg	< 140		04/01/05	142.85	EPA8260
Chloroform	ug/Kg	< 140		04/01/05	142.85	EPA8260
111 Trichloroethane	ug/Kg	< 140		04/01/05	142.85	EPA8260
Carbon Tetrachloride	ug/Kg	< 140		04/01/05	142.85	EPA8260
1,1-Dichloropropene	ug/Kg	< 140		04/01/05	142.85	EPA8260
Benzene	ug/Kg	< 140		04/01/05	142.85	EPA8260
1,2 Dichloroethane	ug/Kg	< 140		04/01/05	142.85	EPA8260
Trichloroethene	ug/Kg	< 140		04/01/05	142.85	EPA8260
1,2 Dichloropropane	ug/Kg	< 140		04/01/05	142.85	EPA8260
Dibromomethane	ug/Kg	< 140		04/01/05	142.85	EPA8260
Bromodichloromethane	ug/Kg	< 140		04/01/05	142.85	EPA8260
c-1,3Dichloropropene	ug/Kg	< 140		04/01/05	142.85	EPA8260
Toluene	ug/Kg	200		04/01/05	142.85	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS: Elevated Laboratory Reporting Limits (LRL) due to interference in sample.

DIRECTOR

LAB NO.251023.03 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1215
MATRIX:Soil SAMPLE: B-3 (2-8)

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
t-1,3Dichloropropene	ug/Kg	< 140		04/01/05	142.85	EPA8260
112 Trichloroethane	ug/Kg	< 140		04/01/05	142.85	EPA8260
Tetrachloroethene	ug/Kg	< 140		04/01/05	142.85	EPA8260
1,3-Dichloropropane	ug/Kg	< 140		04/01/05	142.85	EPA8260
Chlorodibromomethane	ug/Kg	< 140		04/01/05	142.85	EPA8260
1,2 Dibromoethane	ug/Kg	< 140		04/01/05	142.85	EPA8260
Chlorobenzene	ug/Kg	< 140		04/01/05	142.85	EPA8260
Ethyl Benzene	ug/Kg	330		04/01/05	142.85	EPA8260
1112Tetrachloroethane	ug/Kg	< 140		04/01/05	142.85	EPA8260
m + p Xylene	ug/Kg	560		04/01/05	285.71	EPA8260
o Xylene	ug/Kg	290		04/01/05	142.85	EPA8260
Styrene	ug/Kg	< 140		04/01/05	142.85	EPA8260
Bromoform	ug/Kg	< 140		04/01/05	142.85	EPA8260
Isopropylbenzene	ug/Kg	190		04/01/05	142.85	EPA8260
Bromobenzene	ug/Kg	< 140		04/01/05	142.85	EPA8260
1122Tetrachloroethane	ug/Kg	< 140		04/01/05	142.85	EPA8260
123-Trichloropropane	ug/Kg	< 140		04/01/05	142.85	EPA8260
n-Propylbenzene	ug/Kg	< 140		04/01/05	142.85	EPA8260
2-Chlorotoluene	ug/Kg	< 140		04/01/05	142.85	EPA8260
135-Trimethylbenzene	ug/Kg	200		04/01/05	142.85	EPA8260
4-Chlorotoluene	ug/Kg	< 140		04/01/05	142.85	EPA8260
tert-Butylbenzene	ug/Kg	< 140		04/01/05	142.85	EPA8260
124-Trimethylbenzene	ug/Kg	430		04/01/05	142.85	EPA8260
sec-Butylbenzene	ug/Kg	< 140		04/01/05	142.85	EPA8260
p-Isopropyltoluene	ug/Kg	390		04/01/05	142.85	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS: Elevated Laboratory Reporting Limits (LRL) due to interference in sample.

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.03 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1215
MATRIX:Soil SAMPLE: B-3 (2-8)

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
1,3 Dichlorobenzene (v)	ug/Kg	< 140		04/01/05	142.85	EPA8260
1,4 Dichlorobenzene (v)	ug/Kg	< 140		04/01/05	142.85	EPA8260
n-Butylbenzene	ug/Kg	< 140		04/01/05	142.85	EPA8260
1,2 Dichlorobenzene (v)	ug/Kg	< 140		04/01/05	142.85	EPA8260
Dibromochloropropane	ug/Kg	< 140		04/01/05	142.85	EPA8260
124-Trichlorobenzene (v)	ug/Kg	< 140		04/01/05	142.85	EPA8260
Hexachlorobutadiene	ug/Kg	< 140		04/01/05	142.85	EPA8260
Naphthalene(v)	ug/Kg	40000		03/29/05	714.28	EPA8260
123-Trichlorobenzene	ug/Kg	< 140		04/01/05	142.85	EPA8260
ter.ButylMethylEther	ug/Kg	< 290		04/01/05	142.85	EPA8260
p-Ethyltoluene	ug/Kg	230		04/01/05	142.85	EPA8260
Freon 113	ug/Kg	< 140		04/01/05	142.85	EPA8260
1245 Tetramethylbenz	ug/Kg	< 140		04/01/05	142.85	EPA8260
Acetone	ug/Kg	< 1400		04/01/05	1428.5	EPA8260
Methyl Ethyl Ketone	ug/Kg	< 1400		04/01/05	1428.5	EPA8260
Methylisobutylketone	ug/Kg	< 1400		04/01/05	1428.5	EPA8260
Chlorodifluoromethane	ug/Kg	< 140		04/01/05	142.85	EPA8260
p Diethylbenzene	ug/Kg	< 140		04/01/05	142.85	EPA8260
% Solids		70		03/30/05	0.1	SM182540G

cc:

LRL=Laboratory Reporting Limit

REMARKS: Elevated Laboratory Reporting Limits (LRL) due to interference in sample.

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.03 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1215
MATRIX:Soil SAMPLE: B-3 (2-8)

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Naphthalene(sv)	ug/Kg	30000		04/01/05	428.57	EPA8270
2-Methylnaphthalene	ug/Kg	8100		04/01/05	428.57	EPA8270
Acenaphthylene	ug/Kg	< 430		04/01/05	428.57	EPA8270
Acenaphthene	ug/Kg	9600		04/01/05	428.57	EPA8270
Fluorene	ug/Kg	8600		04/01/05	428.57	EPA8270
Phenanthrene	ug/Kg	29000		04/01/05	428.57	EPA8270
Anthracene	ug/Kg	8100		04/01/05	428.57	EPA8270
Fluoranthene	ug/Kg	12000		04/01/05	428.57	EPA8270
Pyrene	ug/Kg	27000	*	04/01/05	428.57	EPA8270
Benzo(a)anthracene	ug/Kg	6400	*	04/01/05	428.57	EPA8270
Chrysene	ug/Kg	6400	*	04/01/05	428.57	EPA8270
Benzo(b)fluoranthene	ug/Kg	5600	#**	04/01/05	428.57	EPA8270
Benzo(k)fluoranthene	ug/Kg	5600	#**	04/01/05	428.57	EPA8270
Benzo(a)pyrene	ug/Kg	5100	**	04/01/05	428.57	EPA8270
Indeno(1,2,3-cd)pyrene	ug/Kg	3300	**	04/01/05	428.57	EPA8270
Dibenzo(a,h)anthracene	ug/Kg	860	**	04/01/05	428.57	EPA8270
Benzo(ghi)perylene	ug/Kg	2700	**	04/01/05	428.57	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS: #Total =11200 ug/Kg, unable to separate isomers.
*,**Estimated due to low internal standard, *35% & **28%.
Low recovery due to interference. QC limit is 50%.

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.03 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1215
MATRIX:Soil SAMPLE: B-3 (2-8)

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Aroclor 1016	ug/Kg	< 57		04/02/05	57.142	EPA8082
Aroclor 1221	ug/Kg	< 57		04/02/05	57.142	EPA8082
Aroclor 1232	ug/Kg	< 57		04/02/05	57.142	EPA8082
Aroclor 1242	ug/Kg	< 57		04/02/05	57.142	EPA8082
Aroclor 1248	ug/Kg	< 57		04/02/05	57.142	EPA8082
Aroclor 1254	ug/Kg	970		04/04/05	285.71	EPA8082
Aroclor 1260	ug/Kg	< 57		04/02/05	57.142	EPA8082

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.03 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1215
MATRIX:Soil SAMPLE: B-3 (2-8)

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Antimony as Sb	mg/Kg	< 2.9		03/31/05	2.8571	EPA6010
Arsenic as As	mg/Kg	46		04/01/05	7.1428	EPA6010
Beryllium as Be	mg/Kg	0.71		04/01/05	0.7142	EPA6010
Cadmium as Cd	mg/Kg	0.46		04/01/05	3.5714	EPA6010
Chromium as Cr	mg/Kg	37		04/01/05	3.5714	EPA6010
Copper as Cu	mg/Kg	160		04/01/05	7.1428	EPA6010
Lead as Pb	mg/Kg	760		04/01/05	3.5714	EPA6010
Mercury as Hg	mg/Kg	0.34		03/31/05	0.0285	EPA7470A
Nickel as Ni	mg/Kg	13		04/01/05	7.1428	EPA6010
Selenium as Se	mg/Kg	< 0.57		04/01/05	0.5714	EPA7740
Silver as Ag	mg/Kg	< 0.71		03/31/05	0.7142	EPA6010
Thallium as Tl	mg/Kg	< 2.9		03/31/05	2.8571	EPA6010
Zinc as Zn	mg/Kg	690		04/01/05	7.1428	EPA6010
Barium as Ba	mg/Kg	160		04/01/05	3.5714	EPA6010

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6841 NYSDOH ID # 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.04 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1300
MATRIX:Soil SAMPLE: B-4 (2-6)

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Dichlordifluoromethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Chloromethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Vinyl Chloride	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Bromomethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Chloroethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Trichlorofluoromethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
1,1 Dichloroethene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Methylene Chloride	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
t-1,2-Dichloroethene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
1,1 Dichloroethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
2,2-Dichloropropane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
c-1,2-Dichloroethene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Bromochloromethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Chloroform	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
111 Trichloroethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Carbon Tetrachloride	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
1,1-Dichloropropene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Benzene	ug/Kg	9.7		03/29/05	6.9444	EPA8260
1,2 Dichloroethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Trichloroethene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
1,2 Dichloropropane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Dibromomethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Bromodichloromethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
c-1,3Dichloropropene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Toluene	ug/Kg	360		03/29/05	6.9444	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6842 NYSDOH ID # 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.04 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1300
MATRIX:Soil SAMPLE: B-4 (2-6)

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
t-1,3Dichloropropene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
112 Trichloroethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Tetrachloroethene	ug/Kg	11		03/29/05	6.9444	EPA8260
1,3-Dichloropropane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Chlorodibromomethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
1,2 Dibromoethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Chlorobenzene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Ethyl Benzene	ug/Kg	460		03/29/05	6.9444	EPA8260
1112Tetrachloroethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
m + p Xylene	ug/Kg	1300		03/29/05	13.888	EPA8260
o Xylene	ug/Kg	460		03/29/05	6.9444	EPA8260
Styrene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Bromoform	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Isopropylbenzene	ug/Kg	93		03/29/05	6.9444	EPA8260
Bromobenzene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
1122Tetrachloroethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
123-Trichloropropane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
n-Propylbenzene	ug/Kg	50		03/29/05	6.9444	EPA8260
2-Chlorotoluene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
135-Trimethylbenzene	ug/Kg	170		03/29/05	6.9444	EPA8260
4-Chlorotoluene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
tert-Butylbenzene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
124-Trimethylbenzene	ug/Kg	400		03/29/05	6.9444	EPA8260
sec-Butylbenzene	ug/Kg	32		03/29/05	6.9444	EPA8260
p-Isopropyltoluene	ug/Kg	390		03/29/05	6.9444	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

LAB NO.251023.04 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1300
MATRIX:Soil SAMPLE: B-4 (2-6)

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
1,3 Dichlorobenzene (v)	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
1,4 Dichlorobenzene (v)	ug/Kg	29		03/29/05	6.9444	EPA8260
n-Butylbenzene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
1,2 Dichlorobenzene (v)	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Dibromochloropropane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
124-Trichlorobenzene (v)	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Hexachlorobutadiene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
Naphthalene(v)	ug/Kg	640		03/29/05	6.9444	EPA8260
123-Trichlorobenzene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
ter.ButylMethylEther	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
p-Ethyltoluene	ug/Kg	180		03/29/05	6.9444	EPA8260
Freon 113	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
1245 Tetramethylbenz	ug/Kg	54		03/29/05	6.9444	EPA8260
Acetone	ug/Kg	79		03/29/05	69.444	EPA8260
Methyl Ethyl Ketone	ug/Kg	< 69		03/29/05	69.444	EPA8260
Methylisobutylketone	ug/Kg	< 69		03/29/05	69.444	EPA8260
Chlorodifluoromethane	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
p Diethylbenzene	ug/Kg	< 6.9		03/29/05	6.9444	EPA8260
% Solids		72		03/30/05	0.1	SM182540G

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.04 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1300
MATRIX:Soil SAMPLE: B-4 (2-6)

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAI METHOD
Naphthalene(sv)	ug/Kg	1800		04/01/05	416.66	EPA8270
2-Methylnaphthalene	ug/Kg	580		04/01/05	416.66	EPA8270
Acenaphthylene	ug/Kg	< 420		04/01/05	416.66	EPA8270
Acenaphthene	ug/Kg	960		04/01/05	416.66	EPA8270
Fluorene	ug/Kg	1100		04/01/05	416.66	EPA8270
Phenanthrene	ug/Kg	8500		04/01/05	416.66	EPA8270
Anthracene	ug/Kg	1700		04/01/05	416.66	EPA8270
Fluoranthene	ug/Kg	6700		04/01/05	416.66	EPA8270
Pyrene	ug/Kg	19000	*	04/01/05	416.66	EPA8270
Benzo(a)anthracene	ug/Kg	4700	*	04/01/05	416.66	EPA8270
Chrysene	ug/Kg	5300	*	04/01/05	416.66	EPA8270
Benzo(b)fluoranthene	ug/Kg	4300	#**	04/01/05	416.66	EPA8270
Benzo(k)fluoranthene	ug/Kg	4300	#**	04/01/05	416.66	EPA8270
Benzo(a)pyrene	ug/Kg	3600	**	04/01/05	416.66	EPA8270
Indeno(1,2,3-cd)pyrene	ug/Kg	2100	**	04/01/05	416.66	EPA8270
Dibenzo(a,h)anthracene	ug/Kg	600	**	04/01/05	416.66	EPA8270
Benzo(ghi)perylene	ug/Kg	2100	**	04/01/05	416.66	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS: #Total = 8600 ug/Kg, unable to separate isomers.
*,**Estimated due to low internal standard, *39% & **30%.
Low recovery due to interference. QC limit is 50%.

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.04 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1300
MATRIX:Soil SAMPLE: B-4 (2-6)

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Aroclor 1016	ug/Kg	< 56		04/02/05	55.555	EPA8082
Aroclor 1221	ug/Kg	< 56		04/02/05	55.555	EPA8082
Aroclor 1232	ug/Kg	< 56		04/02/05	55.555	EPA8082
Aroclor 1242	ug/Kg	< 56		04/02/05	55.555	EPA8082
Aroclor 1248	ug/Kg	< 56		04/02/05	55.555	EPA8082
Aroclor 1254	ug/Kg	900		04/04/05	277.77	EPA8082
Aroclor 1260	ug/Kg	< 56		04/02/05	55.555	EPA8082

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.04 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1300
MATRIX:Soil SAMPLE: B-4 (2-6)

Results reported on a dry weight basis

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Antimony as Sb	mg/Kg	< 2.8		03/31/05	2.7777	EPA6010
Arsenic as As	mg/Kg	4.7		04/01/05	1.3888	EPA6010
Beryllium as Be	mg/Kg	0.29		04/01/05	0.1388	EPA6010
Cadmium as Cd	mg/Kg	2.2		04/01/05	0.6944	EPA6010
Chromium as Cr	mg/Kg	24		04/01/05	0.6944	EPA6010
Copper as Cu	mg/Kg	140		04/01/05	1.3888	EPA6010
Lead as Pb	mg/Kg	460		04/01/05	0.6944	EPA6010
Mercury as Hg	mg/Kg	0.056		03/31/05	0.0069	EPA7470A
Nickel as Ni	mg/Kg	13		04/01/05	1.3888	EPA6010
Selenium as Se	mg/Kg	< 0.56		04/01/05	0.5555	EPA7740
Silver as Ag	mg/Kg	1.2		04/01/05	0.6944	EPA6010
Thallium as Tl	mg/Kg	< 2.8		03/31/05	2.7777	EPA6010
Zinc as Zn	mg/Kg	1100		04/01/05	1.3888	EPA6010
Barium as Ba	mg/Kg	220		04/01/05	0.6944	EPA6010

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6847 NYSDOH ID # 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.05 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1030
MATRIX:Water SAMPLE: B-1 (GW)

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Dichlordifluoromethane	ug/L	< 1		03/30/05	1	EPA8260
Chloromethane	ug/L	< 1		03/30/05	1	EPA8260
Vinyl Chloride	ug/L	< 1		03/30/05	1	EPA8260
Bromomethane	ug/L	< 1		03/30/05	1	EPA8260
Chloroethane	ug/L	< 1		03/30/05	1	EPA8260
Trichlorofluoromethane	ug/L	< 1		03/30/05	1	EPA8260
1,1 Dichloroethene	ug/L	< 1		03/30/05	1	EPA8260
Methylene Chloride	ug/L	< 1		03/30/05	1	EPA8260
t-1,2-Dichloroethene	ug/L	< 1		03/30/05	1	EPA8260
1,1 Dichloroethane	ug/L	< 1		03/30/05	1	EPA8260
2,2-Dichloropropane	ug/L	< 1		03/30/05	1	EPA8260
c-1,2-Dichloroethene	ug/L	< 1		03/30/05	1	EPA8260
Bromochloromethane	ug/L	< 1		03/30/05	1	EPA8260
Chloroform	ug/L	< 1		03/30/05	1	EPA8260
111 Trichloroethane	ug/L	< 1		03/30/05	1	EPA8260
Carbon Tetrachloride	ug/L	< 1		03/30/05	1	EPA8260
1,1-Dichloropropene	ug/L	< 1		03/30/05	1	EPA8260
Benzene	ug/L	1		03/30/05	1	EPA8260
1,2 Dichloroethane	ug/L	< 1		03/30/05	1	EPA8260
Trichloroethene	ug/L	< 1		03/30/05	1	EPA8260
1,2 Dichloropropane	ug/L	< 1		03/30/05	1	EPA8260
Dibromomethane	ug/L	< 1		03/30/05	1	EPA8260
Bromodichloromethane	ug/L	< 1		03/30/05	1	EPA8260
c-1,3Dichloropropene	ug/L	< 1		03/30/05	1	EPA8260
Toluene	ug/L	< 1		03/30/05	1	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

LAB NO.251023.05 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1030
MATRIX:Water SAMPLE: B-1 (GW)

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
t-1,3Dichloropropene	ug/L	< 1		03/30/05	1	EPA8260
112 Trichloroethane	ug/L	< 1		03/30/05	1	EPA8260
Tetrachloroethene	ug/L	< 1		03/30/05	1	EPA8260
1,3-Dichloropropane	ug/L	< 1		03/30/05	1	EPA8260
Chlorodibromomethane	ug/L	< 1		03/30/05	1	EPA8260
1,2 Dibromoethane	ug/L	< 1		03/30/05	1	EPA8260
Chlorobenzene	ug/L	< 1		03/30/05	1	EPA8260
Ethyl Benzene	ug/L	< 1		03/30/05	1	EPA8260
1112Tetrachloroethane	ug/L	< 1		03/30/05	1	EPA8260
m + p Xylene	ug/L	< 2		03/30/05	2	EPA8260
o Xylene	ug/L	< 1		03/30/05	1	EPA8260
Styrene	ug/L	< 1		03/30/05	1	EPA8260
Bromoform	ug/L	< 1		03/30/05	1	EPA8260
Isopropylbenzene	ug/L	< 1		03/30/05	1	EPA8260
Bromobenzene	ug/L	< 1		03/30/05	1	EPA8260
1122Tetrachloroethane	ug/L	< 1		03/30/05	1	EPA8260
123-Trichloropropane	ug/L	< 1		03/30/05	1	EPA8260
n-Propylbenzene	ug/L	< 1		03/30/05	1	EPA8260
2-Chlorotoluene	ug/L	< 1		03/30/05	1	EPA8260
135-Trimethylbenzene	ug/L	< 1		03/30/05	1	EPA8260
4-Chlorotoluene	ug/L	< 1		03/30/05	1	EPA8260
tert-Butylbenzene	ug/L	< 1		03/30/05	1	EPA8260
124-Trimethylbenzene	ug/L	< 1		03/30/05	1	EPA8260
sec-Butylbenzene	ug/L	< 1		03/30/05	1	EPA8260
p-Isopropyltoluene	ug/L	< 1		03/30/05	1	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.05 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1030
MATRIX:Water SAMPLE: B-1 (GW)

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
1,3 Dichlorobenzene (v)	ug/L	< 1		03/30/05	1	EPA8260
1,4 Dichlorobenzene (v)	ug/L	< 1		03/30/05	1	EPA8260
n-Butylbenzene	ug/L	< 1		03/30/05	1	EPA8260
1,2 Dichlorobenzene (v)	ug/L	< 1		03/30/05	1	EPA8260
Dibromochloropropane	ug/L	< 1		03/30/05	1	EPA8260
124-Trichlorobenzene (v)	ug/L	< 1		03/30/05	1	EPA8260
Hexachlorobutadiene	ug/L	< 1		03/30/05	1	EPA8260
Naphthalene(v)	ug/L	3		03/30/05	1	EPA8260
123-Trichlorobenzene	ug/L	< 1		03/30/05	1	EPA8260
ter.ButylMethylEther	ug/L	< 1		03/30/05	1	EPA8260
p-Ethyltoluene	ug/L	< 1		03/30/05	1	EPA8260
Freon 113	ug/L	< 1		03/30/05	1	EPA8260
1245 Tetramethylbenz	ug/L	< 1		03/30/05	1	EPA8260
Acetone	ug/L	12		03/30/05	10	EPA8260
Methyl Ethyl Ketone	ug/L	< 10		03/30/05	10	EPA8260
Methylisobutylketone	ug/L	< 10		03/30/05	10	EPA8260
Chlorodifluoromethane	ug/L	< 1		03/30/05	1	EPA8260
p Diethylbenzene	ug/L	< 1		03/30/05	1	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.05 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1030
MATRIX:Water SAMPLE: B-1 (GW)

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Naphthalene(sv)	ug/L	< 1		03/31/05	1	EPA8270
2-Methylnaphthalene	ug/L	< 1		03/31/05	1	EPA8270
Acenaphthylene	ug/L	< 1		03/31/05	1	EPA8270
Acenaphthene	ug/L	1		03/31/05	1	EPA8270
Fluorene	ug/L	< 1		03/31/05	1	EPA8270
Phenanthrene	ug/L	< 1		03/31/05	1	EPA8270
Anthracene	ug/L	< 1		03/31/05	1	EPA8270
Fluoranthene	ug/L	< 1		03/31/05	1	EPA8270
Pyrene	ug/L	< 1		03/31/05	1	EPA8270
Benzo(a)anthracene	ug/L	< 1		03/31/05	1	EPA8270
Chrysene	ug/L	< 1		03/31/05	1	EPA8270
Benzo(b)fluoranthene	ug/L	< 1		03/31/05	1	EPA8270
Benzo(k)fluoranthene	ug/L	< 1		03/31/05	1	EPA8270
Benzo(a)pyrene	ug/L	< 1		03/31/05	1	EPA8270
Indeno(1,2,3-cd)pyrene	ug/L	< 1		03/31/05	1	EPA8270
Dibenzo(a,h)anthracene	ug/L	< 1		03/31/05	1	EPA8270
Benzo(ghi)perylene	ug/L	< 1		03/31/05	1	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.05 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1030
MATRIX:Water SAMPLE: B-1 (GW)

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Aroclor 1016	ug/L	< 1		04/02/05	1	EPA608
Aroclor 1221	ug/L	< 1		04/02/05	1	EPA608
Aroclor 1232	ug/L	< 1		04/02/05	1	EPA608
Aroclor 1242	ug/L	< 1		04/02/05	1	EPA608
Aroclor 1248	ug/L	< 1		04/02/05	1	EPA608
Aroclor 1254	ug/L	< 1		04/02/05	1	EPA608
Aroclor 1260	ug/L	< 1		04/02/05	1	EPA608

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6852 NYSDOH ID # 10320

LAB NO.251023.05 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1030
MATRIX:Water SAMPLE: B-1 (GW)

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Antimony as Sb	mg/L	< 0.5		04/01/05	0.5	EPA200.7
Arsenic as As	mg/L	2.3		04/01/05	0.25	EPA200.7
Beryllium as Be	mg/L	0.06		04/01/05	0.05	EPA200.7
Cadmium as Cd	mg/L	0.52		04/01/05	0.25	EPA200.7
Chromium as Cr	mg/L	3.3		04/01/05	0.25	EPA200.7
Copper as Cu	mg/L	45		04/01/05	0.5	EPA200.7
Lead as Pb	mg/L	130		04/01/05	0.25	EPA200.7
Mercury as Hg	mg/L	0.26		03/31/05	0.01	EPA245.2
Nickel as Ni	mg/L	2.6		04/01/05	0.5	EPA200.7
Selenium as Se	mg/L	0.16		04/01/05	0.08	EPA200.9
Silver as Ag	mg/L	< 0.25		04/01/05	0.25	EPA200.7
Thallium as Tl	mg/L	< 0.5		04/01/05	0.5	EPA200.7
Zinc as Zn	mg/L	130		04/01/05	0.5	EPA200.7
Barium as Ba	mg/L	39		04/01/05	0.25	EPA200.7

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.06 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1315
MATRIX:Water SAMPLE: B-4 (GW)

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Dichlordifluoromethane	ug/L	< 1		03/30/05	1	EPA8260
Chloromethane	ug/L	< 1		03/30/05	1	EPA8260
Vinyl Chloride	ug/L	< 1		03/30/05	1	EPA8260
Bromomethane	ug/L	< 1		03/30/05	1	EPA8260
Chloroethane	ug/L	< 1		03/30/05	1	EPA8260
Trichlorofluoromethane	ug/L	< 1		03/30/05	1	EPA8260
1,1 Dichloroethene	ug/L	< 1		03/30/05	1	EPA8260
Methylene Chloride	ug/L	< 1		03/30/05	1	EPA8260
t-1,2-Dichloroethene	ug/L	< 1		03/30/05	1	EPA8260
1,1 Dichloroethane	ug/L	< 1		03/30/05	1	EPA8260
2,2-Dichloropropane	ug/L	< 1		03/30/05	1	EPA8260
c-1,2-Dichloroethene	ug/L	< 1		03/30/05	1	EPA8260
Bromochloromethane	ug/L	< 1		03/30/05	1	EPA8260
Chloroform	ug/L	< 1		03/30/05	1	EPA8260
111 Trichloroethane	ug/L	< 1		03/30/05	1	EPA8260
Carbon Tetrachloride	ug/L	< 1		03/30/05	1	EPA8260
1,1-Dichloropropene	ug/L	< 1		03/30/05	1	EPA8260
Benzene	ug/L	< 1		03/30/05	1	EPA8260
1,2 Dichloroethane	ug/L	< 1		03/30/05	1	EPA8260
Trichloroethene	ug/L	< 1		03/30/05	1	EPA8260
1,2 Dichloropropane	ug/L	< 1		03/30/05	1	EPA8260
Dibromomethane	ug/L	< 1		03/30/05	1	EPA8260
Bromodichloromethane	ug/L	< 1		03/30/05	1	EPA8260
c-1,3Dichloropropene	ug/L	< 1		03/30/05	1	EPA8260
Toluene	ug/L	4		03/30/05	1	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

rn = 6854 NYSDOH ID # 10320

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*
377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770
Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.06 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1315
MATRIX:Water SAMPLE: B-4 (GW)

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
t-1,3Dichloropropene	ug/L	< 1		03/30/05	1	EPA8260
112 Trichloroethane	ug/L	< 1		03/30/05	1	EPA8260
Tetrachloroethene	ug/L	< 1		03/30/05	1	EPA8260
1,3-Dichloropropane	ug/L	< 1		03/30/05	1	EPA8260
Chlorodibromomethane	ug/L	< 1		03/30/05	1	EPA8260
1,2 Dibromoethane	ug/L	< 1		03/30/05	1	EPA8260
Chlorobenzene	ug/L	< 1		03/30/05	1	EPA8260
Ethyl Benzene	ug/L	2		03/30/05	1	EPA8260
1112Tetrachloroethane	ug/L	< 1		03/30/05	1	EPA8260
m + p Xylene	ug/L	7		03/30/05	2	EPA8260
o Xylene	ug/L	4		03/30/05	1	EPA8260
Styrene	ug/L	< 1		03/30/05	1	EPA8260
Bromoform	ug/L	< 1		03/30/05	1	EPA8260
Isopropylbenzene	ug/L	< 1		03/30/05	1	EPA8260
Bromobenzene	ug/L	< 1		03/30/05	1	EPA8260
1122Tetrachloroethane	ug/L	< 1		03/30/05	1	EPA8260
123-Trichloropropane	ug/L	< 1		03/30/05	1	EPA8260
n-Propylbenzene	ug/L	< 1		03/30/05	1	EPA8260
2-Chlorotoluene	ug/L	< 1		03/30/05	1	EPA8260
135-Trimethylbenzene	ug/L	< 1		03/30/05	1	EPA8260
4-Chlorotoluene	ug/L	< 1		03/30/05	1	EPA8260
tert-Butylbenzene	ug/L	< 1		03/30/05	1	EPA8260
124-Trimethylbenzene	ug/L	1		03/30/05	1	EPA8260
sec-Butylbenzene	ug/L	< 1		03/30/05	1	EPA8260
p-Isopropyltoluene	ug/L	5		03/30/05	1	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.06 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1315
MATRIX:Water SAMPLE: B-4 (GW)

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
1,3 Dichlorobenzene (v)	ug/L	< 1		03/30/05	1	EPA8260
1,4 Dichlorobenzene (v)	ug/L	< 1		03/30/05	1	EPA8260
n-Butylbenzene	ug/L	< 1		03/30/05	1	EPA8260
1,2 Dichlorobenzene (v)	ug/L	< 1		03/30/05	1	EPA8260
Dibromochloropropane	ug/L	< 1		03/30/05	1	EPA8260
124-Trichlorobenzene (v)	ug/L	< 1		03/30/05	1	EPA8260
Hexachlorobutadiene	ug/L	< 1		03/30/05	1	EPA8260
Naphthalene(v)	ug/L	84		03/30/05	1	EPA8260
123-Trichlorobenzene	ug/L	< 1		03/30/05	1	EPA8260
ter.ButylMethylEther	ug/L	< 1		03/30/05	1	EPA8260
p-Ethyltoluene	ug/L	< 1		03/30/05	1	EPA8260
Freon 113	ug/L	< 1		03/30/05	1	EPA8260
1245 Tetramethylbenz	ug/L	< 1		03/30/05	1	EPA8260
Acetone	ug/L	18		03/30/05	10	EPA8260
Methyl Ethyl Ketone	ug/L	< 10		03/30/05	10	EPA8260
Methylisobutylketone	ug/L	< 10		03/30/05	10	EPA8260
Chlorodifluoromethane	ug/L	< 1		03/30/05	1	EPA8260
p Diethylbenzene	ug/L	< 1		03/30/05	1	EPA8260

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR____________________

LAB NO.251023.06 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1315
MATRIX:Water SAMPLE: B-4 (GW)

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Naphthalene(sv)	ug/L	13		04/01/05	10	EPA8270
2-Methylnaphthalene	ug/L	< 10		04/01/05	10	EPA8270
Acenaphthylene	ug/L	< 10		04/01/05	10	EPA8270
Acenaphthene	ug/L	< 10		04/01/05	10	EPA8270
Fluorene	ug/L	< 10		04/01/05	10	EPA8270
Phenanthrene	ug/L	31		04/01/05	10	EPA8270
Anthracene	ug/L	< 10		04/01/05	10	EPA8270
Fluoranthene	ug/L	21		04/01/05	10	EPA8270
Pyrene	ug/L	18		04/01/05	10	EPA8270
Benzo(a)anthracene	ug/L	< 10		04/01/05	10	EPA8270
Chrysene	ug/L	< 10		04/01/05	10	EPA8270
Benzo(b)fluoranthene	ug/L	< 10		04/01/05	10	EPA8270
Benzo(k)fluoranthene	ug/L	< 10		04/01/05	10	EPA8270
Benzo(a)pyrene	ug/L	< 10		04/01/05	10	EPA8270
Indeno(1,2,3-cd)pyrene	ug/L	< 10		04/01/05	10	EPA8270
Dibenzo(a,h)anthracene	ug/L	< 10		04/01/05	10	EPA8270
Benzo(ghi)perylene	ug/L	< 10		04/01/05	10	EPA8270

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.06 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1315
MATRIX:Water SAMPLE: B-4 (GW)

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Aroclor 1016	ug/L	< 1		04/02/05	1	EPA608
Aroclor 1221	ug/L	< 1		04/02/05	1	EPA608
Aroclor 1232	ug/L	< 1		04/02/05	1	EPA608
Aroclor 1242	ug/L	< 1		04/02/05	1	EPA608
Aroclor 1248	ug/L	< 1		04/02/05	1	EPA608
Aroclor 1254	ug/L	< 1		04/02/05	1	EPA608
Aroclor 1260	ug/L	2		04/02/05	1	EPA608

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR

ECOTEST LABORATORIES, INC. *ENVIRONMENTAL TESTING*

377 SHEFFIELD AVE. • N. BABYLON, N.Y. 11703 • (631) 422-5777• FAX (631) 422-5770

Email: ecotestlab@aol.com Website: www.ecotestlabs.com

LAB NO.251023.06 04/06/05

Gannett Fleming, Incorporated
P.O. Box 707
Locust Valley, NY 11560
ATTN: Ivy Hidalgo PO#:

SOURCE OF SAMPLE: Cooper Tank, #44440.000
SOURCE OF SAMPLE:
COLLECTED BY: Client DATE COL'D:03/28/05 RECEIVED:03/29/05
TIME COL'D:1315
MATRIX:Water SAMPLE: B-4 (GW)

ANALYTICAL PARAMETERS	UNITS	RESULT	FLAG	DATE OF ANALYSIS	LRL	ANALYTICAL METHOD
Antimony as Sb	mg/L	< 0.5		04/01/05	0.5	EPA200.7
Arsenic as As	mg/L	1.2		04/01/05	0.25	EPA200.7
Beryllium as Be	mg/L	< 0.05		04/01/05	0.05	EPA200.7
Cadmium as Cd	mg/L	< 0.25		04/01/05	0.25	EPA200.7
Chromium as Cr	mg/L	2.5		04/01/05	0.25	EPA200.7
Copper as Cu	mg/L	21		04/01/05	0.5	EPA200.7
Lead as Pb	mg/L	44		04/01/05	0.25	EPA200.7
Mercury as Hg	mg/L	0.079		03/31/05	0.004	EPA245.2
Nickel as Ni	mg/L	2.2		04/01/05	0.5	EPA200.7
Selenium as Se	mg/L	0.14		04/01/05	0.04	EPA200.9
Silver as Ag	mg/L	< 0.25		04/01/05	0.25	EPA200.7
Thallium as Tl	mg/L	< 0.5		04/01/05	0.5	EPA200.7
Zinc as Zn	mg/L	49		04/01/05	0.5	EPA200.7
Barium as Ba	mg/L	23		04/01/05	0.25	EPA200.7

cc:

LRL=Laboratory Reporting Limit

REMARKS:

DIRECTOR