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SUMMARY OF INVESTIGATION ACTIVITIES

Empire State Varnish Co., Inc.
38 Varick Street
Greenpoint, Brooklyn, New York

Prepared for

EXXONMOBIL REFINING AND SUPPLY COMPANY
400 Kingsland Avenue
Greenpoint, Brooklyn, New York

ROUX ASSOCIATES, INC.

Environmental Consulting & Management

ROUX

209 Shafter Street, Islandia, New York 11749 ♦ 631-232-2600

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1.0 INTRODUCTION

This report presents a summary of investigation activities performed by Roux Associates, Inc. (Roux Associates) on behalf of ExxonMobil Refining and Supply Company (ExxonMobil) that were completed to evaluate the environmental conditions present beneath the Empire State Varnish Co., Inc. property (Empire Property) located at 38 Varick Street in Greenpoint, Brooklyn, New York. Roux Associates conducted these investigation activities (the Investigation) during December 2006 and January 2007, in accordance with the Roux Associates' January 14, 2006 Scope of Work for Proposed Investigation Activities, which was conditionally approved by the Empire State Varnish Co., Inc. (Empire) and the New York State Department of Environmental Conservation (NYSDEC). Minor modifications to the January 2006 Scope of Work were requested by the above mentioned parties and completed by Roux Associates. These modifications are further detailed in Section 3.1.

In accordance with the January 2006 Scope of Work and the requirements of the NYSDEC, this Investigation report provides the following:

- An overview of the Empire Property background and history, including a summary of past investigation activities and historic operations performed at the Empire Property,
- A comprehensive assessment of the geology, hydrogeology, and subsurface conditions beneath the Empire Property;
- An evaluation of the extent of impacted soil and groundwater beneath the Empire Property; and
- An evaluation of the potential for the installation of recovery wells within the Empire Property to enhance the ongoing recovery of free-product from the free-product plume (Off-Site Plume) underlying the Empire Property and the surrounding Greenpoint Area.

Numerous investigations have been completed within the Greenpoint area surrounding the Empire Property. Knowledge of historic environmental impacts in the surrounding area will be taken into account as part of this assessment of the Empire Property. Therefore, the focus of this report will be to provide a general overview of the subsurface conditions and free-product/petroleum impacts beneath the areas adjacent to the Empire Property, followed by a presentation of the data collected from the Empire Property and analyses of the subsurface conditions and free-product/petroleum impacts beneath the Empire Property. In order to

accomplish these objectives, investigation activities were divided into several tasks. These tasks included the following:

1. Summary of historic operations within the Empire Property, based on available information;

2. Completion of eight soil borings, ranging in depth from 23 to 72 feet below land surface (ft-bls);

3. Installation, development, surveying, and gauging of three monitoring wells, which were gauged together with the monitoring wells within the surrounding Greenpoint area;

4. Completion and analysis of soil and groundwater samples collected from the Empire property;

5. Collection of free-product samples from wells within the Empire Property for characterization of hydrocarbon and fluid properties;

6. Assessment of environmental conditions that are present within the aboveground structures within the Empire Property; and

7. Completion of a free-product recovery pilot test.

The data developed from each of these tasks were used to define the hydrogeologic conditions, the occurrence of free-product/petroleum impacts, and environmental conditions beneath the Empire Property.

All of the above tasks were completed in accordance with Roux Associates' Standard Operating Procedures (SOPs) and health and safety protocols, as well as ExxonMobil's Operations Integrity Management System (OIMS).

The remainder of this report is separated into the following sections:

- Section 2.0 contains historic background information on the Empire Property;
- Section 3.0 contains detailed descriptions of the field activities performed in completing the Investigation scope of work;
- Section 4.0 presents an analysis of the results of the Investigation and environmental conditions beneath the Empire Property; and

- Section 5.0 summarizes the Investigation results and presents conclusions regarding the extent of impacted environmental conditions, and remediation potential of free-product beneath the Empire Property.

Tables, figures, plates, and appendices documenting and summarizing the Investigation are attached at the end of the report. The appendices include monitoring well logs (Appendix A), laboratory analytical data (Appendix B), hydrocarbon characterization results (Appendix C), and asbestos analytical data (Appendix D).

2.0 SITE BACKGROUND

This section provides a summary of the background and historic operations that were conducted at the Empire Property.

2.1 General Site Information

The Empire Property is located in Tax Block 2664, Lots 9 and 25, of Greenpoint, the northernmost section of the Borough of Brooklyn, New York City, New York (Figure 1). The Empire Property is part of the surrounding commercial / industrial area and is approximately ¾ of an acre, extending from Varick Street, near the intersection of Varick Street and Nassau Avenue, north to Bridgewater Street. Topographic elevations (i.e., land surface) are approximately 24 feet above mean sea level (amsl) along Bridgewater Street and rise gradually to approximately 34 feet amsl in the southeast corner of the Empire Property. The extents of the Empire Property are shown in Figure 2.

The entire property has been operated by Empire for the purpose of production and sale of paint and varnish since the 1930s. The production process includes the heating and mixing of natural or synthetic resins with a vegetable (i.e., soybean and linseed) oil and/or a volatile solvent (i.e., mineral spirits). Empire stores all variations of their products from the raw to the finished materials on the premises (Ca Rich, 2005).

2.2 Regulatory Requirements

The NYSDEC issued Empire a Consent Order under The Resource Conservation and Recovery Act (RCRA) on November 16, 2005. Empire was presented with violations pertaining to the failure to maintain proper records and failure to properly store, label, and handle the hazardous waste present at the Empire Property. Empire was required to pay a penalty, consolidate and dispose of a large quantity of hazardous waste material from within the Empire Property, and implement a closure plan for the property (NYSDEC, 2005). This Report, together with the cover letter prepared by Ca Rich Consultants, Inc. (Ca Rich), is being submitted to the NYSDEC Division of Remediation for review to address the Departments requirements for formal Closure of the Empire Facility.

2.3 Regional Environmental Conditions

The Empire Property overlies a larger region of remediation that extends over a significant portion of the eastern section of Greenpoint. The area to the southeast, south and west of the Empire Property is part of the Greenpoint Remediation Project. The remediation and investigation of a free-product plume in this area (Off-Site Area) is currently being performed by Roux Associates on behalf of ExxonMobil. Peerless Importers, Inc. currently operates a wholesale spirit distribution facility in the area to the north of the Empire Property. The remediation and investigation of free-product accumulations within the Peerless Importer's property is currently being performed by Scientific International Applications Corporation (SAIC) on behalf of Chevron-Texaco (Roux Associates, 2004).

2.4 Historic Operations at the Empire Property

Current and historic information was based on personnel correspondence with Richard Stark (the President of Empire), available Sanborn Insurance maps, a memorandum of historical Site uses and a Site Plan dated December 6, 2006 prepared by Empire State Varnish Co., and a summary of operations as presented by Ca Rich in their October 11, 2005 Summary of Environmental Conditions.

The Empire Property was utilized to produce paint and varnish since the 1930's, which included processing natural and synthetic resins, vegetable oils, and volatile solvents (typically mineral spirits). The arrangement and operation of the Empire Property has not changed significantly since the 1940's. Figure 2 depicts a 1951 Sanborn map overlain on the current property. The entire property is covered by concrete or existing buildings with the exception of a small grass area within the western portion of the Upper Yard. The property can be broken down into the following four different areas and uses:

- Upper Yard: This area is located adjacent to Varick Street and contains three storage sheds The open space and sheds within the Upper Yard were utilized for storage of non-hazardous resins, vegetable oils, and asphalt from the 1940s through the 1990s. From the 1990s through approximately 2004, the areas were utilized for the staging of off spec varnishes prior to their sale or removal as hazardous waste.

- Main Production: Slightly lower in elevation is the main production area located directly north of the Upper Yard. This area contains a number of buildings and sheds including, offices, a laboratory, a boiler room, mixing department, storage shed, and varnish cook

house. Since the 1940s, these areas were utilized for the cooking, mixing, storage, and loading of miscellaneous vegetable oils, resins, and varnishes.

- Lower Yard: This area contains three storage rooms, a paint manufacturing room, and a tank wagon. The storage rooms and paint manufacturing room contained paint ingredients (i.e., liquid resins and pigments) and finished paints since the 1960s (Stark, 2006).

- Tank Farm Area: This area contains one building which houses 28 aboveground storage tanks (ASTs), ranging in capacity from 462 to 3,290 gallons. The tanks historically contained resins and varnishs and are currently being emptied and cleaned by Empire. There are also 17 underground storage tanks (USTs) located adjacent to the AST building, which historically contained mineral spirits until the early 1980s and contained mixtures of vegetable oil and water until the early 1990s. The USTs have not been utilized since the early 1990's and currently only contain residual amounts of vegetable oil and water (Stark, 2006).

- ASTs, Kettles and Containers: In addition to the tank room, there are 11 individual ASTs throughout the Empire Property, ranging in capacity from 375 to 1,500 gallons, which contained residual amounts of varnish, resin, and solvents or are empty. In addition to the above-mentioned tanks, there are 26 portable kettles that are present throughout the Property. These kettles were and are used for mixing and cooking the varnishes and currently have a substantial amount of residual, dried material coating the steel kettles. Through the various storerooms and sheds, there are a large quantity of small containers ranging in capacity from a few ounces to 5 gallons. These containers contain everything from the raw materials to the final versions of the paint and varnish products (Stark, 2006).

3.0 FIELD INVESTIGATION ACTIVITIES

The field investigation tasks performed by Roux Associates included: implementation of a geophysical survey; completion of a soil boring program; monitoring well installation and gauging; soil, groundwater, and free-product sampling and analysis; hazardous material survey; and free-product recovery evaluation. All field activities were completed in accordance with the scope of work presented in Roux Associates' April 10, 2004 proposal to ExxonMobil and according to modifications described in Section 3.1.

3.1 Modifications to the Scope of Work

Roux Associates conducted a majority of the Investigation in accordance with the Roux Associates' January 14, 2006 Scope of Work. Minor modifications were requested by Ca Rich on behalf of Empire and by the NYSDEC. Also, modifications were made due to difficult field conditions that were encountered during the Investigation.

Ca Rich requested that shallow subsurface samples (i.e., less than 2 ft-bls) be collected to better determine if hazardous levels of contamination were present directly beneath the concrete slab. It was also requested that all of the soil borings be grouted to land surface. If the soil boring location was to be completed as a monitoring well, the borings would be grouted up to the bottom of the screened zone. Ca Rich's requests were incorporated into the Investigation, as further described in Section 3.3.

The NYSDEC requested that following the installation, groundwater from each of the new monitoring wells and one existing downgradient monitoring well, MW-27 (located off-site), be sampled and analyzed. Roux Associates sampled each of the new monitoring wells and MW-27, as further described in Section 3.4.

Prior to initiating the Investigation activities, Roux Associates, on behalf of ExxonMobil, installed additional monitoring wells within the surrounding Greenpoint area as part of ongoing investigation activities associated with the Greenpoint Remediation Project. Therefore, the proposed monitoring wells were given different designations then originally proposed. Monitoring well MW-79 (from the Scope of Work) was renamed MW-90, MW-80 (from the

Scope of Work) was renamed MW-93, and MW-81 (from the Scope of Work) was renamed MW-94. The final locations of these wells are shown in Figure 2.

During the completion of the soil borings and installation of monitoring wells, the drilling augers encountered refusal at multiple locations due to manmade and natural obstructions within the subsurface. There was a concrete pad present at approximately two ft-bls along the northern portion of the Tank Farm area, which was assumed to be associated with the USTs in this area. Therefore, monitoring well MW-94 was installed at the original proposed location of SB-5. During the installation of MW-94, a natural obstruction was encountered at 27 ft-bls, which restricted the final depth of the monitoring well. The location of monitoring well MW-90 and soil boring SB-3 were switched so that MW-90 could be utilized during the free-product pilot study without being located within a high traffic area.

Although the Scope of Work was developed to evaluate the subsurface environmental conditions beneath the Empire Property, a hazardous material survey was conducted throughout the aboveground structures within the Empire Property. An asbestos survey and sampling program, as well as a waste inventory of known and unknown chemicals onsite, were conducted at the Empire Property.

3.2 Geophysical Survey and Utility Clearance Activities

A geophysical survey was performed prior to the initiation of any intrusive activities to assess the locations of potential underground tanks, piping and utilities beneath the Empire Property. The geophysical subcontractor, NAEVA Geophysics, Inc. (NAEVA), employed electromagnetic metal (EM) detectors and utility locating equipment to locate the potential subsurface apparatuses. Anomalies were further investigated using a handheld metal detector to confirm locations and estimate approximate dimensions. The areas were surveyed with radio frequency signals and electromagnetic fields to delineate any metallic utility lines. Detected utilities and subsurface features were marked on the ground using the applicable American Public Works Association (APWA) color code.

Throughout the Empire Propert,y there are a large quantity of metal containers (e.g., tanks, drums, and corrugated metal) and piping. The property is also underlain by reinforced concrete

that is approximately 6 inches thick. The presence of the metal objects at the surface and the design of the underlying concrete pad interfered with utilizing geophysical methods to detect potential underground apparatuses. The geophysical survey had only limited success in identifying the underground tanks and piping.

The geophysical data was processed and is shown on Figure 3. Based upon the historic information derived from the Sanborn map and the geophysical data, the location of the proposed soil borings were slightly modified to avoid encountering subsurface utilities during the intrusive activities. In accordance with ExxonMobil pre-drilling protocols, utility clearance activities were conducted at each of these soil boring locations to verify the absence of utilities prior to commencing soil boring/drilling activities. Aquifer Drilling and Testing, Inc. (ADT) conducted utility clearances activities under the supervision of a Roux Associates field hydrogeologist. Each utility clearance was performed by excavating a two-foot long by two-foot wide area, down to a minimum of five ft-bls using the non-intrusive Vactron™ technology. The utility clearance for MW-90 was completed to a depth of 8 ft-bls because it was within the vicinity of the USTs, which is a Critical Zone as defined by the ExxonMobil Subsurface Clearance Protocol.

For locations where the existing surface was composed of concrete, a two-foot long by two-foot wide area of the asphalt/concrete was sawcut and removed prior to excavation. After the target depth of the excavation had been attained, the excavation was backfilled with the excavated material and temporarily patched with asphalt. Any excess soil resulting from the utility clearance activities was drummed, labeled, and temporarily staged within the Upper Yard prior to being disposed of via an ExxonMobil-approved waste transporter, Casie ProTank.

One soil sample was collected from approximately 1 to 2 ft-bls during the completion of each utility clearance. All soil samples selected for analyses were sent to Accutest Laboratories, which is an ExxonMobil-approved laboratory and is Environmental Laboratory Approval Program (ELAP) certified by the New York State Department of Health. The soil samples collected from the shallow subsurface were analyzed for volatile organic compounds (VOCs) (Full List), semi-volatile organic compounds (SVOCs) (Full List), metals (Target Compound List [TCL]), and the full list of toxicity characteristics leaching procedure (TCLP) analyses (VOCs, SVOCs, metals, pesticides, and herbicides).

3.3 Soil Boring Completion

A total of eight soil borings were completed during the Investigation to verify the geological conditions present beneath the Empire Property and to identify the presence of petroleum-impacted soils, if any. Five of the soil borings (SB-1 through SB-6) were completed using a direct-push track-mounted unit utilizing Geoprobe® methods and three soil borings (MW-90, MW-93 and MW-94) were completed utilizing hollow-stem drilling methods prior to monitoring well installation. Locations of the new soil borings/monitoring wells are shown in Figure 2.

With the exception of the interval between land surface and five feet below land surface (i.e., 0 to 5 feet), five of the soil borings (SB-1 through SB-5) were advanced continuously until the depth that the free-product plume or water table was encountered. Continuous Macrocore samples were collected from land surface to the bottom of the borehole to obtain lithologic and soil screening data. Three of the soil borings (MW-90, MW-93, and MW-94) were advanced continuously until the depth that the augers achieved refusal, with final depths ranging from 27 to 72 ft-bls. Continuous split-spoon samples were collected from land surface to the bottom of the borehole to obtain lithologic and soil screening data throughout the borehole. The Macrocore/split-spoon samples were examined for evidence of impacts (i.e., staining, odor) and were screened for the presence of VOCs using a photoionization detector (PID).

At each boring location, one soil sample was collected from the interval directly above the water-table or from the interval with the highest PID readings. The soil samples were analyzed for VOCs (Full List), SVOCs (Full List), and metals (TCL). Each soil boring not completed as a monitoring well was grouted to grade using bentonite grout slurry and finished with a concrete patch at grade level.

3.4 Monitoring Well Installation

Three monitoring wells (MW-90, MW-93 and MW-94) were installed in the Empire Property. The monitoring wells were used to verify the hydrogeological conditions present beneath the Empire Property and to identify petroleum-impacted soils. Monitoring well installation was performed by ADT under the supervision of a Roux Associates field hydrogeologist. All activities completed during the investigation were performed in accordance with Roux

Associates' SOPs and health and safety protocols and ExxonMobil's Operations Integrity Management System (OIMS).

The monitoring wells were installed following the completion of a soil boring at the same location. Hollow-stem auger drilling methods were utilized for installation of all monitoring wells. Monitoring wells were constructed of 4-inch diameter schedule 40 polyvinyl chloride (PVC) and 0.05-inch (50-slot) V-shaped continuous wrapped screens. This non-typical screen design was utilized to enhance the potential for free-product migration into the monitoring well and maximize the efficiency of the free-product recovery pilot test.

Monitoring wells were constructed such that their screens were set five feet above and ten feet below the water-table as measured during drilling, with the exception of monitoring well MW-94. MW-94 could only be constructed with five feet of screen within the saturated portion of the formation due to refusal during drilling. A gravel pack consisting of No. 2 Morie sand was placed around the well screen and casing, from the bottom of the boring to approximately two feet above the top of the screen. Approximately two feet of bentonite pellets were placed above the sand pack and were given ample time to hydrate (i.e., expand) before filling the remainder of the well annulus to land surface with bentonite grout. Monitoring well depths range from 27 to 45 ft-bls. Monitoring well construction logs are presented in Appendix A. Soil cuttings were collected, drummed, labeled, and temporarily staged within the Upper Yard prior to being disposed of via an ExxonMobil-approved waste transporter, Casie ProTank.

Monitoring wells were developed to enhance the hydraulic connection between the screen and the surrounding formation on all monitoring wells. Well development was performed by ADT under the supervision of a Roux Associates field hydrogeologist and included mechanical surging with a surge block and pumping with a submersible pump. Well development continued until a minimum of 10 casing volumes were purged from the well or until the well purge water exhibited acceptable levels of turbidity. All fluids resulting from developing procedures were collected temporarily in 55-gallon drums and subsequently labeled and temporarily staged within the Upper Yard prior to being disposed of via an ExxonMobil-approved waste transporter, Casie ProTank.

A New York State licensed surveyor from Angle of Attack Land Surveying, LLC of New York surveyed each monitoring well in order to establish horizontal and vertical coordinates. All horizontal coordinates were measured in feet relative to the New York State Plane Coordinates System, Long Island Zone, North American Datum of 1983 (NAD 83). All vertical coordinates (elevations) were measured in feet relative to the National Geodetic Vertical Datum of 1929 (NGVD 29). Land surface and measuring point (top of casing) elevations, as well as horizontal and vertical coordinates, were surveyed for each monitoring well and are shown in Table 1.

3.5 Monitoring Well Gauging and Sampling

On January 18, 2007, the three newly installed monitoring wells (MW-90, MW-93, and MW-94) and existing monitoring wells located within the surrounding area that are part of the Greenpoint Remediation Project were gauged for free-product thickness and groundwater elevation measurements using a sonic interface probe (Table 1). Data collected during this gauging event was used to develop a comprehensive groundwater flow (Figure 4) and free-product thickness map (Figure 5). Groundwater elevations have been corrected, where necessary, for the presence of free-product. To more accurately determine the elevation of the water-table, free-product was sampled from monitoring well MW-90 to apply free-product density corrections to the calculated hydraulic head. At the time of sampling, only MW-90 contained a sufficient accumulation of free-product for sample collection.

Samples of groundwater were collected from the newly installed monitoring wells within the Empire Property and existing monitoring well MW-27, which is located directly downgradient of the property. Groundwater samples were collected for analysis to characterize the contamination present within the groundwater beneath the Empire Property and to identify probable sources of contamination. Accutest Laboratories analyzed samples of groundwater for VOCs, SVOCs, total petroleum hydrocarbons (TPH), and total metals.

3.6 Free-Product Characterization

A representative sample of free-product was collected from monitoring well MW-90 and submitted to Torkelson Geochemistry for analysis to determine hydrocarbon characteristics and fluid properties. The sample was analyzed for density (specific gravity), viscosity, surface

tension (air/water and air/NAPL), interfacial tension (oil/water), and hydrocarbon characterization (gas chromatographs).

3.7 Passive Free-Product Recovery Pilot Test

A passive free-product recovery pilot test was initiated following the development of monitoring well MW-90. A SpillBuster-type free-product recovery pump was installed on January 16, 2007 and operated until February 2, 2007. The SpillBuster unit consists of a control panel, a product probe/pump assembly, and a small-motorized reel assembly (auto-seeking device) located at the top of the wellhead. The unit automatically raises and lowers the probe/pump assembly to follow the oil/water interface based on sensors located just below the pump intake. The auto-seeking device allows the pump intake to automatically follow the elevation of the oil/water interface as it fluctuates.

The recovered free-product was pumped through polyethylene tubing with secondary containment to a 55-gallon drum. The drum was located within a 90-gallon overpack drum to provide secondary containment. The drum was fitted with a high-level shut-off float to signal the SpillBuster unit to stop pumping when the drum was full. The unit was inspected on a daily basis to ensure proper operation and to log recovery data in order to evaluate the effectiveness of recovery.

3.8 Additional Environmental Conditions

An asbestos survey was conducted by Airtek Environmental Corporation (Airtek) on December 17, 2006 to further characterize the environmental conditions that existed at the Empire Property. The survey was conducted to develop asbestos abatement specifications for any asbestos abatement required to support the demolition of the structures at the Empire Property. Following the asbestos survey, suspected asbestos containing material (ACM) was sampled by Airtek on January 18 and 19, 2007. The samples were analyzed by an ELAP laboratory accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). Friable bulk samples were analyzed via Polarized Light Microscopy (PLM) and non-friable organically bound materials (NOB) bulk samples that were found to contain less than 1% asbestos by (PLM) were re-analyzed, as required by NYS law, by Transmission Electron Microscopy (TEM). The sampling results can then be used to develop an abatement plan.

As referenced in Empire's Consent Order, all of the hazardous material present within the Empire Property is required to be properly identified and disposed at a licensed off-site facility. The removal of all non-hazardous material associated with the operations at the Empire Property will also be accomplished in order to clear the property for future uses. On January 11, 2007, Rivers Environmental conducted an inventory of all the hazardous and non-hazardous waste present within the Empire Property. Currently, a complete inventory of the Empire Property is not possible, because Empire is actively receiving, processing, and transporting materials as part of ongoing operations. As such, the inventory was not completed in a manner to identify every drum and container present, but to provide an overall scope of work that would be required to properly dispose of the hazardous and non-hazardous materials present at the property.

4.0 GEOLOGIC CONDITIONS AND ANALYTICAL RESULTS

Geologic and hydrogeologic conditions play an important role in the occurrence and migration of a free-product plume. In this section, a detailed description of the geologic conditions and layers beneath the Empire Property, will first be presented, followed by a discussion of soil and groundwater quality within the Empire Property.

4.1 Geologic Conditions

The geologic conditions beneath the Greenpoint area have been described in several remedial investigations. These previous investigations characterized the hydrogeologic conditions based on data obtained during the completion of soil borings, drilling, installation of monitoring wells, and reviews of published and unpublished reports regarding the surrounding areas. The geologic conditions within the unconsolidated deposits beneath the Greenpoint area, and the Empire Property in particular, based on these descriptions and those provided by the Investigation, are summarized below.

4.1.1 Regional Geology

The unconsolidated deposits of western Long Island, in vertical ascending order, include the Cretaceous Raritan and Magothy Formations, Pleistocene Jameco Gravel, Gardiners Clay and glacial drift, and recent fill material. These deposits are underlain by Precambrian bedrock. The bedrock surface, which is exposed in northwest Queens County, slopes to the southeast at approximately 80 feet per mile. The overlying unconsolidated deposits form a southward dipping wedge with a maximum thickness of about 800 feet in southeast Kings County (Buxton *et al*, 1981).

The Lloyd Sand member of the Raritan Formation and the Magothy Formation underlie the majority of Long Island and comprise important regional aquifers. However, these aquifers are not present beneath the Empire Property. The primary aquifer present within the Greenpoint area resides within the glacial drift deposits and is known as the Upper Glacial Aquifer (Buxton *et al*, 1981). In order to be consistent with previous remedial investigations described herein, this aquifer has been termed the regional aquifer and will be identified as such for the remainder of this report.

4.1.2 Local Geology

The unconsolidated deposits underlying the Greenpoint Area consist primarily of glacially-deposited sediments (glacial drift), marine clays/silts, and artificial fill. The glacial drift includes both glacial till and glacial outwash, where the glacial outwash typically overlies the glacial till, and anthropogenic fill overlies all of the natural deposited materials.

Beneath the Empire Property, the deposit of glacial outwash is extensive and consists of a well-graded deposit of medium to coarse-grained sand with some occasional silt, fine sand, and gravel. In the vicinity of Bridgewater Street and the majority of the entire Greenpoint Area is a layer of low permeability immediately overlying the glacial outwash deposits. Based on the monitoring well/soil boring logs available, this layer is composed of silty sands within the northern portion of the Empire Property. However, this layer was not observed underlying the entire Empire Property, specifically in the area surrounding monitoring well MW-94.

Overlying this fine-grained deposit is fill material that was placed to facilitate the growing industry in the mid-1800s. The fill occurs at the surface throughout the Empire Property, with a maximum observed thickness of approximately 13 feet.

4.2 Groundwater Flow

As indicated above in Section 4.1, groundwater primarily occurs within the upper glacial aquifer, or regional aquifer, beneath the Greenpoint Area. The hydraulic gradient beneath the Empire Property is relatively flat and is controlled by the pumping conditions of ExxonMobil's Off-Site Recovery System recovery wells, which are located to the east and south of the Empire Property.

Groundwater flow in the Empire Property under static conditions is generally towards Newtown Creek. Under pumping conditions, the depression in the groundwater causes a reversal of the natural groundwater flow along the northern boundary of the Empire Property (i.e., Bridgewater Street). As indicated on Figure 4, localized cones of groundwater depression are present in the vicinity of the Off-Site System recovery wells during normal Off-Site System operation. Figure 4 also indicates that the Off-Site System is exerting hydraulic control over the flow of groundwater to Newtown Creek. The effect of the system recovery wells, however, appears to

be limited by the high transmissivity of the aquifer, as indicated by the relatively flat hydraulic gradient present beneath the Empire Property.

4.3 Soil Quality

The Empire Property has historically been operated as an industrial/commercial property that contained hazardous materials and is it likely that the property will continue to be zoned as a commercial property. Based upon this information and informal conversations with the NYSDEC case manager, it has been determined that soil quality should be compared to the NYSDEC Restricted Commercial Use Soil Cleanup Objectives of the revised Title 6 of the New York Code of Rule and Regulations (6 NYCRR) Part 375 (Part 375) dated December 14 2006. This comparison enables identification of areas that may pose a potential risk under a restricted commercial land use scenario. Final application of these criteria would be subject to NYSDEC approval and would also require recording of a land use restriction for the property as part any final property remedy.

The soil samples that were analyzed by TCLP were compared to USEPA Regulatory Limits to evaluate whether the shallow soils may need to be handled as hazardous waste if excavated. The laboratory analytical soil data is enclosed in Appendix B.

VOCs

Only one soil sample collected during the Investigation had exceedances of VOCs greater than the Restricted Commercial Use cleanup criteria. The soil sample collected from MW-90 at 29-31 ft-bls had exceedances of petroleum-related compounds, but based upon free-product elevations observed within the monitoring well, it was determined that this soil sample was collected within the free-product saturated zone. A summary of laboratory analytical results for VOCs in soil samples collected during the Investigation is presented in Table 2 and the locations of samples exceeding the respective soil criteria are shown in Figure 6.

SVOCs

Four soil samples collected during the Investigation had exceedances of SVOCs greater than the Restricted Commercial Use cleanup criteria. Exceedances were detected within the shallow soil samples (i.e., 1-2 ft-bls) of soil SB-1, SB-5, and MW-93, as well as the deeper sample

(i.e., 12.5-15 ft-bls) collected at SB-5. Polycyclic Aromatic Hydrocarbons (PAHs) were the only SVOCs that were detected at concentrations that exceeded the soil criteria and the highest concentrations were detected at SB-1 and the SB-5. A summary of laboratory analytical results for SVOCs in soil samples collected during the Investigation is presented in Table 3 and the locations of samples exceeding the respective soil criteria are shown in Figure 7.

Metals

Seven soil samples collected during the Investigation had exceedances of metals greater than the Restricted Commercial Use cleanup criteria. Exceedances of metals were detected within the shallow soil samples of soil SB-1, SB-2, SB-4, MW-90, MW-93 and MW-94, as well as the deeper sample collected at SB-5. Metals detected at concentrations exceeding the soil criteria included arsenic, barium, copper, lead and mercury, with the highest concentrations detected at SB-1 and the SB-5. A summary of laboratory analytical results for metals in soil samples collected during the Investigation are presented in Table 4 and the locations of samples exceeding the respective soil criteria are shown in Figure 8.

TCLP

No soil samples collected during the Investigation had exceedances of VOCs, SVOCs, metals or pesticides greater than the USEPA Regulatory Limits. A summary of laboratory analytical results for TCLP VOCs, SVOCs, metals or pesticides in soil samples collected during the Investigation are presented in Tables 5 through 8, respectively.

Soil Quality Summary

The major findings regarding soil quality are summarized below.

- VOCs were not detected at concentrations above the Restricted Commercial Use criteria in any of the soil samples collected, except for in the vicinity of the free-product plume.
- SVOCs and metals were detected at concentrations greater than the Restricted Commercial Use criteria with the highest concentrations present in the vicinity of SB-1 and SB-5, typically in the shallow subsurface.
- TCLP results for the samples indicate that excavated soil would not exceed criteria for classification as hazardous waste.

4.4 Groundwater Quality

All of the groundwater samples collected from monitoring wells during this investigation were compared to the respective NYSDEC Ambient Water Quality Standards and Guidance Values (AWQSGV). Free-product was observed within monitoring wells MW-90 and MW-93, and as observed in Figure 5, the Off-Site Plume is present within a majority of the Empire Property. The laboratory analytical groundwater data are enclosed in Appendix B.

VOCs

All of the groundwater samples had exceedances of VOCs greater than the AWQSGV, with the highest concentrations detected in samples collected from monitoring wells MW-90 and MW-93. The majority of the VOCs that were detected at concentrations exceeding their respective criteria were petroleum-related compounds. In addition, chlorinated solvents, specifically 1,1,1-trichloroethane (TCA), 1,1-dichloroethane (DCA), and 1,1-dichloroethene (DCE), were detected in the groundwater sample collected from monitoring well MW-90 at concentrations exceeding the AWQSGVs. Of these chlorinated compounds, TCA is the only compound that has not been detected within any other historic groundwater sample collected by Roux Associates throughout within the Greenpoint area. A summary of laboratory analytical results for VOCs in groundwater samples collected during the Investigation is presented in Table 9 and the locations of samples exceeding the respective groundwater criteria are shown in Figure 9.

SVOCs

All of the groundwater samples had exceedances of SVOCs greater than the AWQSGV, with the highest concentrations detected in samples collected from monitoring wells MW-90 and MW-93. A summary of laboratory analytical results for SVOCs in groundwater samples collected during the Investigation is presented in Table 10 and the locations of samples exceeding the respective groundwater criteria are shown in Figure 10.

Metals

All of the groundwater samples had exceedances of metals greater than the AWQSGV, with the highest concentrations detected in samples collected from monitoring wells MW-27 and MW-94. The metals detected at concentrations exceeding the groundwater criteria included barium, cadmium, copper, manganese, and sodium. It has been well documented that saline intrusion has

occurred throughout a majority of Brooklyn and it is likely that this is the cause of the elevated manganese and sodium concentrations (Roux Associates, 2003). The barium, copper, and cadmium have been detected at similar concentrations in some of the historic groundwater samples collected by Roux Associates within the Greenpoint area. A summary of laboratory analytical results for metals in groundwater samples collected during the Investigation is presented in Table 11 and the locations of samples exceeding the respective groundwater criteria are shown in Figure 11.

TPH

TPH analysis was completed for all groundwater samples collected. TPH concentrations ranged from 1.9 micrograms per liter (µg/l) (at MW-27) to 63.6 µg/l (at MW-93). The laboratory analytical results for TPH in groundwater samples collected during the Investigation are presented in Tables 12.

Groundwater Quality Summary

The major findings regarding groundwater quality are summarized below.

- VOCs and SVOCs related to petroleum impacts were detected at concentrations above the NYSDEC AWQSGV in all of the groundwater samples collected. These results are typical of groundwater in such close proximity to free-product composed primarily of lighter distillates, as is typical of the Off-Site Plume.

- TCA was also present within the groundwater beneath the southern portion of the Empire Property at a concentration exceeding the NYSDEC AWQSGVs. TCA is the only compound that has not been detected within any other historic groundwater sample collected by Roux Associates within the Greenpoint area. However, TCA was not detected in any of the shallow soils at the Site and at this point does not appear to be attributable to Empire's varnish operations. Additional testing of the shallow soils beneath the Site is planned during the upcoming Site Closure activities.

4.5 Free-Product Occurrence and Characteristics

Free-product accumulations beneath the Empire Property are part of a larger free-product plume that extends to the east, west, and south of the property. These accumulations of free-product are collectively referred to as a whole as the Off-Site Plume, which is currently being actively remediated as part of the Greenpoint Remediation Project. The Off-Site Plume is present beneath the majority of the Empire Property, with the northern boundary of the plume present within the property, approximately 100 feet south of Bridgewater Street. The horizontal and

vertical extent of the Off-Site Plume beneath the Empire Property is shown in Figure 5. The average free-product thickness beneath the Empire Property is approximately 1.5 feet, based upon the observed free-product thickness within monitoring well MW-93 and the monitoring wells in the vicinity of the Empire Property.

Based upon observations made during the completion of soil borings SB-4 and SB-5, monitoring well MW-94 and existing data from monitoring well MW-27 / former monitoring well MW-6, there is a relatively low-permeability deposit present along Bridgewater Street. This relatively low permeability deposit has restricted the migration of free-product in the area and, as mentioned above, defines the northern extent of free-product beneath the Empire Property and the Off-Site Plume.

Although only trace amounts of free-product were observed within monitoring well MW-93, free-product was observed in surrounding monitoring wells and free-product saturated soil was observed during the installation of the monitoring well.

The composition of the free-product beneath the Empire Property is very similar to the surrounding Off-Site Plume and is made up primarily of light-end distillates, with some middle and heavier distillates, and the free-product density and viscosity average about 0.79 g/cm^3 and 0.99 centipoise, respectively, based on the analysis of the free-product sample obtained from MW-90. Results from the geochemical fluid analysis and hydrocarbon characterization analyses are included in Appendix C.

4.6 Evaluation of Free-Product Recovery within the Empire Property

A free-product recovery pilot test was initiated on January 8, 2007 and continued through February 2, 2007. A SpillBuster^{TM} product-only recovery system was installed in the newly installed monitoring well MW-90 and was monitored for product recovery effectiveness. During the pilot test, the product-only pumps recovered 53 gallons of product. The average recovery rate for the product-only recovery system installed in MW-90 during the pilot test was approximately 5 gallons per day. Due to ongoing investigation activities, including sampling and gauging, this recovery operation was disturbed periodically during the pilot test. Minor adjustments were made to the recovery system in an effort to boost the recovery, but overall the

recovery rate remained relatively steady. Based upon trends observed during this free-product recovery test, free-product saturation, and geologic conditions in the vicinity of monitoring well MW-90, it is anticipated that free-product recovery efforts in this area would be effective.

4.7 Aboveground Environmental Conditions

The results of the asbestos survey indicated that only a limited amount of the building and equipment materials contained asbestos materials. Based upon the analytical samples collected during the survey, it was determined approximately 61 linear feet of piping insulation within the laboratory and boiler plant contained asbestos material. Although not sampled due to access restrictions, the boiler insulation, skylight caulking, and AST building roof are anticipated to contain asbestos material based on their nature and a visual inspection. Prior to demolition of any of these structures, it is recommended that they be sampled to determine if they contain asbestos material. Those structures that do contain asbestos material should be removed as part of an asbestos abatement program by a New York State licensed asbestos project monitor to oversee the work practices of the asbestos removal contractor. The laboratory analytical asbestos data is enclosed in Appendix D.

A complete inventory of the Empire Property was not performed because a majority of the drums and containers were not properly labeled and their contents would only be able to be determined with analytical testing or specific product knowledge, which was beyond the scope of this assessment. However, based upon conversations with Richard Stark of Empire, a substantial number of these containers are known to contain non-hazardous materials, some of which will be sold to other manufacturers. In addition, Empire is actively receiving, processing, and transporting materials as part of ongoing operations. As such, the inventory was not completed in a manner that would identify every drum and container present. The inventory performed, however, does provide an overall scope of work that would be required to be completed to properly dispose of the hazardous and non-hazardous materials present at the property. In addition to the previously mentioned ASTs and USTs, there are approximately two hundred (200) 55-gallon drums, one hundred (100) 5-gallon buckets, and over 500 small volume containers within the Empire Property. A majority of these containers would have to be considered to be hazardous material due to their anticipated flammable nature.

5.0 SUMMARY AND CONCLUSIONS

The objectives of this Investigation were to further define hydrogeological conditions, free-product occurrence (where present), and environmental conditions beneath the Empire Property. A summary of the investigation tasks performed to complete these objectives and conclusions regarding the investigation results are provided below.

A total of five soil borings and three new monitoring wells were completed to assist in the evaluation of the areal and vertical extents of the free-product accumulations beneath the Empire Property. Lithologic data derived from the soil boring logs, the new monitoring well logs, and pre-existing monitoring and recovery well logs were used to refine the extents of the major hydrogeologic units present within the Empire Property and their impact on the mobility of free-product in the subsurface. Groundwater elevations and apparent free-product thicknesses were measured for all new and pre-existing monitoring wells to determine the extent of mobile free-product present within the Empire Property. In addition, soil and groundwater samples were collected and analyzed to determine the extent of impacted soil beneath the Empire Property.

The data collected during this investigation, supplemented by historic geographical information, indicates that the Empire Property is underlain by glacial outwash deposits consisting of medium-grained sands, intermingled with deposits of finer-grained materials. These finer-grained deposits were specifically identified in the vicinity of monitoring well MW-94 and soil boring SB-5. This low-permeability material has dictated the migration of free-product throughout the Greenpoint area and locally has created isolated areas where the Off-Site Plume is not present beneath the Empire Property. With this exception, the Off-Site Plume underlies a majority of the Empire Property.

Based on the analytical soil data, SVOCs and metals were detected at concentrations greater than the NYSDEC Restricted Commercial Use criteria in the shallow subsurface beneath the Site, with the highest concentrations present in the vicinity of SB-1 and SB-5. TCLP results for the samples indicate that excavated soil would not exceed criteria for classification as hazardous waste. Although only limited soil contamination was detected during this Investigation, the subsurface beneath some of the on-site buildings that actively store and processing areas within the Empire Property were not sampled. It is anticipated that additional investigation and

sampling activities will be performed during Site Closure and redevelopment to further evaluate the soil beneath these high-risk areas.

Based on the analytical groundwater data, VOCs and SVOCs related to petroleum impacts are present at concentrations above the NYSDEC AWQSGV in the groundwater underlying the Empire Property. However, the Off-Site Plume underlies the majority of the Empire Property and these results typical of groundwater in such close proximity to free-product comprised of lighter distillates, as the Off-Site Plume is. In addition, chlorinated solvents, specifically TCA, DCA, and DCE were also detected within the groundwater beneath the Empire Property at concentrations exceeding the NYSDEC AWQSGVs. TCA is the only compound that has not been detected within any other historic groundwater sample collected by Roux Associates throughout within the Greenpoint area.

The geologic and free-product thickness data collected during this investigation indicated that the mobility and recoverability of free-product beneath the property would likely be good. This was confirmed qualitatively by the product-only recovery pilot test that yielded an average recovery rate similar to other product-only recovery activities currently being conducted within the Off-Site Area. Therefore, Remedial Engineering anticipates that free-product recovery efforts in this area would be effective.

In addition to the aforementioned subsurface environmental conditions, the Empire Property contains minor amounts of asbestos materials and a limited quantity of non-hazardous and potentially hazardous wastes that should be properly disposed at an off-site facility.

Respectively Submitted,

ROUX ASSOCIATES, INC.

Christopher Proce
Project Hydrogeologist

Justin Kennedy
Senior Engineer/
Project Manager

6.0 REFERENCES

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Table 1: **Summary of Regional Aquifer Water-Level and Free-Product Thickness Data**
Empire Property Investigation
ExxonMobil Refining & Supply Company
Greenpoint, Brooklyn, New York

January 18, 2007

Well Number	Elevation of Measuring Point (ft-amsl)	Free-Product Specific Gravity	Depth to Free-Product (ft below measuring point)	Depth to Water (ft below measuring point)	Oil/Water Interface Elevation (ft-amsl)	Ground Water Elevation (ft-amsl)	Free-Product Elevation (ft-amsl)	Free-Product Thickness (ft)	Notes
BA-1	20.32	--	NM	NM	NM	NM	NM	NM	
JE-1	18.22	0.90	NM	NM	NM	NM	NM	NM	
JE-2	19.57	0.90	NM	NM	NM	NM	NM	NM	
D-2	15.07	0.87	NM	NM	NM	NM	NM	NM	*4, 20*
D-3	17.20	0.86	NM	NM	NM	NM	NM	NM	*4, 20*
D-4	14.12	--	NM	NM	NM	NM	NM	NM	*4, 20*
D-5	13.99	0.85	NM	NM	NM	NM	NM	NM	*4, 20*
D-6	8.01	0.86	NM	NM	NM	NM	NM	NM	*4, 20*
D-7	10.20	0.89	NM	NM	NM	NM	NM	NM	*4, 20*
D-8	12.73	0.86	NM	NM	NM	NM	NM	NM	*4, 20*
D-10	12.37	0.85	NM	NM	NM	NM	NM	NM	*4, 20*
D-13	8.83	--	NM	NM	NM	NM	NM	NM	*4, 20*
D-14	16.20	0.84	NM	NM	NM	NM	NM	NM	*4, 20*
D-16	11.01	0.85	NM	NM	NM	NM	NM	NM	*5, 20*
D-18	13.98	0.79	NM	NM	NM	NM	NM	NM	*5, 20*
D-20	19.30	--	NM	NM	NM	NM	NM	NM	*5, 20*
D-21	12.43	--	NM	NM	NM	NM	NM	NM	*6, 20*
D-31	8.41	--	NM	NM	NM	NM	NM	NM	*7, 20*
D-32	12.80	0.86	NM	NM	NM	NM	NM	NM	*7, 20*
D-33	14.42	0.85	NM	NM	NM	NM	NM	NM	*7, 20*
D-34	11.53	0.80	NM	NM	NM	NM	NM	NM	*7, 20*
D-35	11.35	--	NM	NM	NM	NM	NM	NM	*7, 20*
D-40	12.49	0.84	NM	NM	NM	NM	NM	NM	*14, 20*
D-41	12.43	0.84	NM	NM	NM	NM	NM	NM	*14, 20*
D-42	13.00	0.85	NM	NM	NM	NM	NM	NM	*14, 20*
D-43	10.48	0.85	NM	NM	NM	NM	NM	NM	*14, 20*
D-44	14.14	0.83	NM	NM	NM	NM	NM	NM	*14, 20*
D-45	13.50	0.85	NM	NM	NM	NM	NM	NM	*14, 20*
D-46	13.80	0.83	NM	NM	NM	NM	NM	NM	*14, 20*
D-47	17.07	0.79	NM	NM	NM	NM	NM	NM	*14, 20*
D-48	15.40	0.89	NM	NM	NM	NM	NM	NM	*15*
D-49	16.64	--	NM	NM	NM	NM	NM	NM	*15*
D-50	12.43	--	NM	NM	NM	NM	NM	NM	*15*
DM-1	7.80	0.89	NM	NM	NM	NM	NM	NM	*20*
DM-6	10.40	--	NM	NM	NM	NM	NM	NM	*20*
DM-7	11.15	0.89	NM	NM	NM	NM	NM	NM	*20*
NCM-2/I	7.56	--	NM	NM	NM	NM	NM	NM	*13*
NCM-4/I	9.68	--	NM	NM	NM	NM	NM	NM	*13*
NCM-12/I	10.03	--	NM	NM	NM	NM	NM	NM	*13*
NCM-13/I	13.04	0.85	NM	NM	NM	NM	NM	NM	*13*
NCM-14/I	11.31	--	NM	NM	NM	NM	NM	NM	*13*
NCM-2/D	7.10	--	NM	NM	NM	NM	NM	NM	*13*
NCM-4/D	9.74	--	NM	NM	NM	NM	NM	NM	*13*
NCM-14/D	11.34	--	NM	NM	NM	NM	NM	NM	*13*
RW-3	10.64	0.86	NM	NM	NM	NM	NM	NM	*21*
RW-4R	12.94	0.85	NM	NM	NM	NM	NM	NM	*21*
RW-12	12.86	0.86	NM	NM	NM	NM	NM	NM	*21*
RW-13	8.58	0.89	NM	NM	NM	NM	NM	NM	*21*
RW-14	15.83	0.86	NM	NM	NM	NM	NM	NM	*21*
RW-16	14.01	0.85	NM	NM	NM	NM	NM	NM	*21*
RW-17	17.42	0.86	NM	NM	NM	NM	NM	NM	*21, 25*
RW-18	14.78	0.88	NM	NM	NM	NM	NM	NM	*21, 25*
RW-19	15.61	0.79	NM	NM	NM	NM	NM	NM	*21, 26*
RW-20B	11.61	0.83	NM	NM	NM	NM	NM	NM	*21, 26*
RW-20A	8.71	0.83	NM	NM	NM	NM	NM	NM	*21, 27*

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Empire Property Investigation
ExxonMobil Refining & Supply Company
Greenpoint, Brooklyn, New York

Well Number	Elevation of Measuring Point (ft-amsl)	Free-Product Specific Gravity	Depth to Free-Product (ft below measuring point)	Depth to Water (ft below measuring point)	Oil/Water Interface Elevation (ft-amsl)	Ground Water Elevation (ft-amsl)	Free-Product Elevation (ft-amsl)	Free-Product Thickness (ft)	Notes
				January 18, 2007					
NC-1 (8:00 am)	8.71	--	NM	NM	NM	NM	NM	NM	23
NC-1 (2:00pm)	8.71	--	NM	NM	NM	NM	NM	NM	23
MW-1	12.67	--	NM	NM	NM	NM	NM	NM	8
MW-2	7.59	0.89	NM	NM	NM	NM	NM	NM	8
MW-3	15.77	0.80	NM	NM	NM	NM	NM	NM	8
MW-4	23.74	--	NM	NM	NM	NM	NM	NM	8
MW-5	22.92	0.81	21.08	22.00	0.92	1.66	1.84	0.92	8
MW-7	26.31	0.79	24.69	24.92	1.39	1.57	1.62	0.23	8
MW-9	25.61	0.80	NM	NM	NM	NM	NM	NM	8
MW-12	38.36	0.79	NM	NM	NM	NM	NM	NM	8
MW-14	29.46	0.79	NM	NM	NM	NM	NM	NM	8
MW-15	47.19	0.79	45.33	47.05	0.14	1.49	1.86	1.72	8
MW-16	54.12	0.81	NM	NM	NM	NM	NM	NM	8
MW-18	42.65	--	NM	NM	NM	NM	NM	NM	8
MW-19	38.06	--	NM	NM	NM	NM	NM	NM	8
MW-20	31.04	--	NM	NM	NM	NM	NM	NM	8
MW-22	19.19	0.80	NM	NM	NM	NM	NM	NM	9
MW-23	21.66	0.80	NM	NM	NM	NM	NM	NM	9
MW-24	17.49	0.80	NM	NM	NM	NM	NM	NM	9
MW-25	16.58	0.80	NM	NM	NM	NM	NM	NM	9
MW-26	21.39	--	--	19.78	--	1.61	--	--	10
MW-27	24.22	--	--	22.65	--	1.57	--	--	10, 25
MW-28	31.21	0.79	29.16	31.02	0.19	1.65	2.05	1.86	10
MW-29	17.94	0.79	16.39	17.23	0.71	1.38	1.55	0.84	10
MW-30	48.14	--	NM	NM	NM	NM	NM	NM	11
MW-31	40.28	0.79	NM	NM	NM	NM	NM	NM	11
MW-32	19.08	0.79	NM	NM	NM	NM	NM	NM	12
MW-33	20.91	0.79	18.95	20.65	0.26	1.59	1.96	1.70	12
MW-34	25.07	0.80	23.18	24.65	0.42	1.59	1.89	1.47	12
MW-35	21.61	0.79	--	18.84	--	2.77	--	--	12
MW-36	42.71	0.80	40.90	42.06	0.65	1.57	1.81	1.16	12
MW-37	38.27	0.78	36.43	38.99	-0.72	1.28	1.84	2.56	12
MW-38	36.11	0.78	NM	NM	NM	NM	NM	NM	12
MW-39	47.01	0.79	45.15	46.18	0.83	1.64	1.86	1.03	12
MW-40	26.49	0.80	24.82	25.92	0.57	1.45	1.67	1.10	14, 25
MW-41	20.02	--	NM	NM	NM	NM	NM	NM	14
MW-42	18.73	0.89	NM	NM	NM	NM	NM	NM	14
MW-43	19.60	0.94	NM	NM	NM	NM	NM	NM	14
MW-44	18.61	--	NM	NM	NM	NM	NM	NM	14
MW-45	19.13	0.80	NM	NM	NM	NM	NM	NM	14
MW-46	17.86	--	NM	NM	NM	NM	NM	NM	14
MW-47	18.66	--	NM	NM	NM	NM	NM	NM	14
MW-48	18.23	0.80	NM	NM	NM	NM	NM	NM	14
MW-49	16.46	0.86	NM	NM	NM	NM	NM	NM	14
MW-50D	16.51	0.87	NM	NM	NM	NM	NM	NM	14
MW-51	17.01	0.86	NM	NM	NM	NM	NM	NM	14
MW-52	17.04	0.88	NM	NM	NM	NM	NM	NM	14
MW-53	17.78	0.88	NM	NM	NM	NM	NM	NM	14
MW-54	18.83	0.88	NM	NM	NM	NM	NM	NM	14
MW-55	18.52	0.83	NM	NM	NM	NM	NM	NM	24
MW-56	13.30	0.80	NM	NM	NM	NM	NM	NM	24
MW-57	20.74	0.80	NM	NM	NM	NM	NM	NM	24
MW-58	22.22	0.80	20.28	21.83	0.39	1.63	1.94	1.55	24
MW-59	23.48	0.80	21.70	22.62	0.86	1.59	1.78	0.92	24
MW-60	18.27	0.79	16.22	18.25	0.02	1.63	2.05	2.03	24

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				January 18, 2007					
MW-61	22.31	--	--	20.80	--	1.51	--	--	24
MW-62	14.02	--	NM	NM	NM	NM	NM	NM	24
MW-63	11.39	--	NM	NM	NM	NM	NM	NM	24
MW-64	7.53	--	NM	NM	NM	NM	NM	NM	24
MW-66	6.53	--	NM	NM	NM	NM	NM	NM	24
MW-67	6.44	0.85	NM	NM	NM	NM	NM	NM	24
MW-68	6.49	0.85	NM	NM	NM	NM	NM	NM	24
MW-69	6.86	0.86	NM	NM	NM	NM	NM	NM	24
MW-70	6.38	0.86	NM	NM	NM	NM	NM	NM	24
MW-72	9.97	0.82	NM	NM	NM	NM	NM	NM	24
MW-73	9.67	0.82	NM	NM	NM	NM	NM	NM	24
MW-74	10.40	0.82	NM	NM	NM	NM	NM	NM	24
MW-75	9.88	0.84	NM	NM	NM	NM	NM	NM	24
MW-76	10.24	0.84	NM	NM	NM	NM	NM	NM	24
MW-77	10.19	0.80	NM	NM	NM	NM	NM	NM	24
MW-78	12.33	0.80	NM	NM	NM	NM	NM	NM	24
MW-79	19.06	0.89	NM	NM	NM	NM	NM	NM	28
MW-80	19.55	0.85	NM	NM	NM	NM	NM	NM	28
MW-81	20.13	--	NM	NM	NM	NM	NM	NM	28
MW-82	18.61	0.80	NM	NM	NM	NM	NM	NM	28
MW-83	21.25	--	NM	NM	NM	NM	NM	NM	28
MW-84	18.80	--	NM	NM	NM	NM	NM	NM	28
MW-85	19.06	--	NM	NM	NM	NM	NM	NM	28
MW-86	19.05	0.80	NM	NM	NM	NM	NM	NM	28
MW-87	18.54	--	NM	NM	NM	NM	NM	NM	28
MW-88S	12.50	--	NM	NM	NM	NM	NM	NM	28
MW-88D	12.36	--	NM	NM	NM	NM	NM	NM	28
MW-89	19.15	--	NM	NM		NM	NM	NM	28
MW-90	31.87	0.80	30.09	31.37	0.50	1.52	1.78	1.28	
MW-91	37.79	--	NM	NM	NM	NM	NM	NM	28
MW-92	26.44	--	NM	NM	NM	NM	NM	NM	
MW-93	31.75	0.80	--	29.83	--	1.92	--	--	
MW-94	26.90	0.80	--	24.53	--	2.37	--	--	
GP-A	22.43	0.80	NM	NM	NM	NM	NM	NM	
GP-B	22.18	0.80	NM	NM	NM	NM	NM	NM	
GP-C	21.97	--	NM	NM	NM	NM	NM	NM	
GP-D	21.95	0.80	NM	NM	NM	NM	NM	NM	
MW-RWB	42.23	0.78	40.30	42.00	0.23	1.56	1.93	1.70	
S-4	15.19	0.80	NM	NM	NM	NM	NM	NM	
RW-A	48.38	0.79	58.88	64.30	-15.92	-11.67	-10.50	5.42	22, 25
RW-C	32.21	0.79	32.30	35.15	-2.94	-0.69	-0.09	2.85	22, 26
RW-D	25.58	0.80	27.39	30.70	-5.12	-2.49	-1.81	3.31	22, 27
RW-E	19.21	0.80	NM	NM	NM	NM	NM	NM	22
RW-F	19.74	0.81	NM	NM	NM	NM	NM	NM	22
RW-G	15.89	0.81	NM	NM	NM	NM	NM	NM	22
NC-2 (7:40 am)	13.44	--	NM	NM	NM	NM	NM	NM	23
NC-2 (1400 pm)	13.44	--	NM	NM	NM	NM	NM	NM	23
AMW-1	22.59	0.80	NM	NM	NM	NM	NM	NM	
AMW-2	19.29	0.81	NM	NM	NM	NM	NM	NM	
AMW-3	20.02	0.80	NM	NM	NM	NM	NM	NM	
AMW-4	17.31	--	NM	NM	NM	NM	NM	NM	
AMW-5	15.03	0.80	NM	NM	NM	NM	NM	NM	
AMW-6	20.06	0.82	NM	NM	NM	NM	NM	NM	
AMW-7	18.55	0.90	NM	NM	NM	NM	NM	NM	
AMW-8	16.48	0.89	NM	NM	NM	NM	NM	NM	

Table 1: Summary of Regional Aquifer Water-Level and Free-Product Thickness Data
Empire Property Investigation
ExxonMobil Refining & Supply Company
Greenpoint, Brooklyn, New York

January 18, 2007

Well Number	Elevation of Measuring Point (ft-amsl)	Free-Product Specific Gravity	Depth to Free-Product (ft below measuring point)	Depth to Water (ft below measuring point)	Oil/Water Interface Elevation (ft-amsl)	Ground Water Elevation (ft-amsl)	Free-Product Elevation (ft-amsl)	Free-Product Thickness (ft)	Notes
AMW-9	17.82	0.88	NM	NM	NM	NM	NM	NM	
AMW-10	16.59	0.88	NM	NM	NM	NM	NM	NM	
AMW-12	18.97	0.88	NM	NM	NM	NM	NM	NM	
AMW-13	18.32	0.88	NM	NM	NM	NM	NM	NM	
AMW-14	18.84	0.88	NM	NM	NM	NM	NM	NM	
AMW-15	20.21	0.85	NM	NM	NM	NM	NM	NM	
AMW-16	22.27	0.85	NM	NM	NM	NM	NM	NM	
AMW-17	20.42	0.85	NM	NM	NM	NM	NM	NM	
AMW-18	20.52	0.85	NM	NM	NM	NM	NM	NM	
AMW-19	15.60	0.85	NM	NM	NM	NM	NM	NM	
AMW-20	17.78	0.85	NM	NM	NM	NM	NM	NM	
AMW-21	NM	0.85	NM	NM	NM	NM	NM	NM	
AOW-1A	13.90	0.89	NM	NM	NM	NM	NM	NM	
AOW-3	14.90	0.89	NM	NM	NM	NM	NM	NM	
AOW-3A	15.06	--	NM	NM	NM	NM	NM	NM	
AOW-4	17.42	--	NM	NM	NM	NM	NM	NM	
AOW-6	15.57	0.87	NM	NM	NM	NM	NM	NM	
AOW-7	17.38	0.80	NM	NM	NM	NM	NM	NM	
AOW-8	17.67	0.80	NM	NM	NM	NM	NM	NM	
AOW-9	16.78	0.87	NM	NM	NM	NM	NM	NM	
AOW-10	12.81	0.92	NM	NM	NM	NM	NM	NM	
AOW-11	15.70	0.89	NM	NM	NM	NM	NM	NM	
AGP-1	22.39	0.90	NM	NM	NM	NM	NM	NM	
AGP-2	21.63	0.90	NM	NM	NM	NM	NM	NM	
AGP-3	20.83	0.85	NM	NM	NM	NM	NM	NM	
AGP-4	20.93	0.82	NM	NM	NM	NM	NM	NM	
AGP-5	21.50	0.82	NM	NM	NM	NM	NM	NM	
AGP-6	21.54	0.82	NM	NM	NM	NM	NM	NM	
AGP-7	21.93	0.82	NM	NM	NM	NM	NM	NM	
AGP-8	24.89	--	NM	NM	NM	NM	NM	NM	
ARW-1	23.39	0.82	NM	NM	NM	NM	NM	NM	
ARW-2	9.98	0.89	NM	NM	NM	NM	NM	NM	
ARW-3	13.79	0.88	NM	NM	NM	NM	NM	NM	
ARW-4	20.45	0.87	NM	NM	NM	NM	NM	NM	
ARW-5	15.83	0.87	NM	NM	NM	NM	NM	NM	
ARW-6	12.88	0.87	NM	NM	NM	NM	NM	NM	
ARW-7	10.79	0.87	NM	NM	NM	NM	NM	NM	
ARW-8	9.49	0.87	NM	NM	NM	NM	NM	NM	
CMW-1	11.72	0.79	NM	NM	NM	NM	NM	NM	
CMW-2	11.80	0.79	NM	NM	NM	NM	NM	NM	
CMW-4	11.72	--	NM	NM	NM	NM	NM	NM	
CMW-5	11.80	--	NM	NM	NM	NM	NM	NM	
CMW-6	11.90	0.80	NM	NM	NM	NM	NM	NM	
CMW-8	11.79	0.84	NM	NM	NM	NM	NM	NM	
CMW-9	11.87	0.84	NM	NM	NM	NM	NM	NM	
CMW-10	11.79	0.80	NM	NM	NM	NM	NM	NM	
CMW-12	22.27	0.80	NM	NM	NM	NM	NM	NM	
CMW-13	7.60	--	NM	NM	NM	NM	NM	NM	
CMW-14	7.53	--	NM	NM	NM	NM	NM	NM	
CMW-15	10.40	--	NM	NM	NM	NM	NM	NM	
CMW-16	12.51	--	NM	NM	NM	NM	NM	NM	
CMW-17	13.87	--	NM	NM	NM	NM	NM	NM	
CMW-18	22.13	0.80	NM	NM	NM	NM	NM	NM	
CMW-19S	22.36	--	NM	NM	NM	NM	NM	NM	
CMW-19D	22.27	--	NM	NM	NM	NM	NM	NM	

Table 1: **Summary of Regional Aquifer Water-Level and Free-Product Thickness Data**
Empire Property Investigation
ExxonMobil Refining & Supply Company
Greenpoint, Brooklyn, New York

January 18, 2007									
Well Number	Elevation of Measuring Point (ft-amsl)	Free-Product Specific Gravity	Depth to Free-Product (ft below measuring point)	Depth to Water (ft below measuring point)	Oil/Water Interface Elevation (ft-amsl)	Ground Water Elevation (ft-amsl)	Free-Product Elevation (ft-amsl)	Free-Product Thickness (ft)	Notes
CMW-20	22.35	0.80	NM	NM	NM	NM	NM	NM	
CMW-21	14.25	0.80	NM	NM	NM	NM	NM	NM	
CMW-22	14.16	--	NM	NM	NM	NM	NM	NM	
CMW-23S	9.99	0.00	NM	NM	NM	NM	NM	NM	
CMW-23D	10.01	--	NM	NM	NM	NM	NM	NM	
CMW-24S	11.83	--	NM	NM	NM	NM	NM	NM	
CMW-24D	11.84	--	NM	NM	NM	NM	NM	NM	
CMW-25S	7.05	--	NM	NM	NM	NM	NM	NM	
CMW-25D	6.78	--	NM	NM	NM	NM	NM	NM	
CMW-26	23.64	--	NM	NM	NM	NM	NM	NM	
CMW-27	24.11	--	NM	NM	NM	NM	NM	NM	
CMW-28	11.87	--	NM	NM	NM	NM	NM	NM	
CMW-29 S	11.79	--	NM	NM	NM	NM	NM	NM	
CMW-29 D	11.81	--	NM	NM	NM	NM	NM	NM	
CMW-30	24.26	0.80	NM	NM	NM	NM	NM	NM	
CMW-31	24.36	0.80	NM	NM	NM	NM	NM	NM	
CMW-32	11.90	--	NM	NM	NM	NM	NM	NM	
CMW-33	11.82	0.86	NM	NM	NM	NM	NM	NM	
CMW-34S	22.02	--	NM	NM	NM	NM	NM	NM	
CMW-34D	22.10	--	NM	NM	NM	NM	NM	NM	
CMW-35	17.99	0.80	NM	NM	NM	NM	NM	NM	
CMW-36S	22.22	0.80	NM	NM	NM	NM	NM	NM	
CMW-36D	22.42	0.80	NM	NM	NM	NM	NM	NM	
CMW-37	22.18	0.80	NM	NM	NM	NM	NM	NM	
CMW-38	22.06	0.80	NM	NM	NM	NM	NM	NM	
CMW-39	14.20	0.82	NM	NM	NM	NM	NM	NM	
CMW-40	13.12	0.82	NM	NM	NM	NM	NM	NM	
CMW-41S	11.79	--	NM	NM	NM	NM	NM	NM	
CMW-41D	11.75	--	NM	NM	NM	NM	NM	NM	
CMW-42	13.60	--	NM	NM	NM	NM	NM	NM	
CMW-43	13.92	0.82	NM	NM	NM	NM	NM	NM	
CMW-44	21.16	--	NM	NM	NM	NM	NM	NM	
CMW-45	22.18	0.82	NM	NM	NM	NM	NM	NM	

Notes

1 All monitoring wells resurveyed for horizontal and vertical coordinates in June, 2001. The above table has been revised to show updated elevations.

2 Elevations are based on the National Geodetic Vertical Datum of 1929 (NGVD 29).

3 Monitoring wells designated with an NM for groundwater elevation or free-product thickness were unable to be measured due to inaccessibility of the well (i.e., cars/trucks parked on top of well, well covered with debris and/or well could not be located).

4. Groundwater elevations have been corrected, where necessary, for the presence of free-product using the specific gravities shown.

5. Free-product present in the regional aquifer beneath the former Mobil Brooklyn terminal exists under semi-confined conditions, resulting in large monitoring well free-product thicknesses that are greatly exaggerated with regards to the actual amount of free-product present. For this reason, free-product thickness measurements and contours shown within the bounds of the former Mobil Brooklyn terminal can only be considered a general indicator of pressure distribution within the free-product phase and cannot be used to directly determine free-product volume or migration characteristics.

6. Former Brooklyn terminal recovery wells RW-14, RW-17, and RW-18 were operating at 52, 50, and 11 gpm respectively at the time of measurement.
Recovery wells RW-1, RW-3, RW-4R, RW-12, RW-15 and RW-16 were not operating at the time of measurement.
Off-Site recovery wells RW-A, RW-C, RW-D, RW-E, and RW-F were operating at 51, 50, 48, 30, and 15 gpm at the time of measurement.

Table 2. Summary of Volatile Organic Compounds in Soil, Empire Property, Greenpoint, Brooklyn, New York

Parameter (Concentrations in µg/kg)	*Restricted - commercial*	Sample Designation:	MW-90	MW-90	MW-93	MW-93	MW-94	SB-1	SB-1	SB-2	SB-2	SB-6	SB-3	SB-4	SB-4	SB-5	SB-5
		Sample Date:	12/12/06	12/12/06	12/11/06	12/11/06	12/11/06	12/11/06	12/14/06	12/12/06	12/14/06	12/11/06	12/14/06	12/11/06	12/15/06	12/11/06	12/15/06
		Sample Depth (ft bls):	1-2	29-31	1-2	27-29	1-2	1-2	27.5-30	1-2	27.5-30	0.5-1	27.5-30	1-2	20-22.5	1-2	12.5-15
1,1,1,2-Tetrachloroethane	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
1,1,1-Trichloroethane	500000		5.8 U	4320 J	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	4.4 J	37 U	12.2	360 U	6.3 U	7.2 U
1,1,2,2-Tetrachloroethane	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
1,1,2-Trichloroethane	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
1,1-Dichloroethane	240000		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	1.9 J
1,1-Dichloroethene	500000		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
1,1-Dichloropropene	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
1,2,3-Trichlorobenzene	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
1,2,3-Trichloropropane	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
1,2,4-Trichlorobenzene	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
1,2,4-Trimethylbenzene	190000		7.2	**483000**	7.3 U	96300	22600	8.4 U	13.8	7.5 U	1.8 J	9.6 U	824	6.3 U	26500	6.3 U	340
1,2-Dibromo-3-chloropropane	--		12 U	30000 U	15 U	14000 U	14000 U	17 U	12 U	15 U	9.8 U	19 U	75 U	13 U	730 U	13 U	14 U
1,2-Dibromoethane	--		1.2 U	3000 U	1.5 U	1400 U	1400 U	1.7 U	1.2 U	1.5 U	0.98 U	1.9 U	7.5 U	1.3 U	73 U	1.3 U	1.4 U
1,2-Dichlorobenzene	500000		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
1,2-Dichloroethane	30000		1.2 U	3000 U	1.5 U	1400 U	1400 U	1.7 U	1.2 U	1.5 U	0.98 U	1.9 U	7.5 U	1.3 U	73 U	1.3 U	1.4 U
1,2-Dichloropropane	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
1,3,5-Trimethylbenzene	190000		6.8	**205000**	7.3 U	42300	15500	8.4 U	7.8	7.5 U	4.9 U	9.6 U	338	6.3 U	8880	6.3 U	132
1,3-Dichlorobenzene	280000		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
1,3-Dichloropropane	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
1,4-Dichlorobenzene	130000		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
2,2-Dichloropropane	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
2-Butanone (MEK)	500000		12 U	30000 U	15 U	14000 U	14000 U	17 U	12 U	15 U	9.8 U	19 U	75 U	13 U	730 U	13 U	22.1
4-Methyl-2-pentanone (MIBK)	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
Acetone	500000		12 U	30000 U	29	14000 U	14000 U	103	12 U	15 U	9.8 U	19 U	75 U	13 U	730 U	13 U	68.2
Benzene	44000		35	**73900**	17.8	3870	1400 U	16.8	0.81 J	14.3	3.2	17.7	5.1 J	19.2	446	1.3 U	1.3 J
Bromobenzene	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
Bromochloromethane	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
Bromodichloromethane	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
Bromoform	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
Bromomethane	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
Carbon tetrachloride	22000		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
Chlorobenzene	500000		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
Chloroethane	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	2.5 J
Chloroform	350000		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
Chloromethane	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
cis-1,2-Dichloroethene	500000		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
cis-1,3-Dichloropropene	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
Dibromochloromethane	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
Dichlorodifluoromethane	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
Ethylbenzene	390000		2.8	171000	1.7	35200	1400 U	1.7 U	7.5	1.5 U	1.1	1.4 J	41.4	1.3	6100	1.3 U	36.1
Hexachlorobutadiene	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
Isopropylbenzene	--		5.8 U	48000	7.3 U	12300	6900 U	8.4 U	1.9 J	7.5 U	4.9 U	9.6 U	44.8	6.3 U	1700	6.3 U	21.5
m+p-Xylene	--		13.8	1120000	6.3	240000	1400 U	4.7	49.2	3 U	6.4	4.9	327	6.1	39700	2.5 U	175
Methylene bromide	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
Methylene chloride	500000		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	8.8	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
MTBE	500000		1.2 U	3000 U	1.5 U	1400 U	1400 U	1.7 U	1.2 U	1.5 U	0.98 U	1.9 U	7.5 U	1.3 U	73 U	1.3 U	9.2
Naphthalene	500000		5.8 U	59500	7.3 U	11900	6900 U	8.4 U	3.2 J	7.5 U	5.2	9.6 U	33.6 J	6.3 U	3810	6.3 U	56.1
n-Butylbenzene	500000		5.8 U	21700	7.3 U	4630 J	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	57.3	6.3 U	1120	6.3 U	7.2 U

Table 2. Summary of Volatile Organic Compounds in Soil, Empire Property, Greenpoint, Brooklyn, New York

Parameter (Concentrations in µg/kg)	*Restricted - commercial*	Sample Designation:	MW-90	MW-90	MW-93	MW-93	MW-94	SB-1	SB-1	SB-2	SB-2	SB-6	SB-3	SB-4	SB-4	SB-5	SB-5
		Sample Date:	12/12/06	12/12/06	12/11/06	12/11/06	12/11/06	12/11/06	12/14/06	12/12/06	12/14/06	12/11/06	12/14/06	12/11/06	12/15/06	12/11/06	12/15/06
		Sample Depth (ft bls):	1-2	29-31	1-2	27-29	1-2	1-2	27.5-30	1-2	27.5-30	0.5-1	27.5-30	1-2	20-22.5	1-2	12.5-15
n-Propylbenzene	500000		5.8 U	72000	7.3 U	16600	6900 U	8.4 U	2.7 J	7.5 U	4.9 U	9.6 U	81.4	6.3 U	2990	6.3 U	36.4
o-Chlorotoluene	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
o-Xylene	--		6	312000	2.1	71300	10800	1.8	14.4	1.5 U	1.4	1.7 J	166	2.5	11200	1.3 U	115
p-Chlorotoluene	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
p-Isopropyltoluene	--		5.8 U	24700	7.3 U	5160 J	135 J	8.4 U	0.7 J	7.5 U	4.9 U	9.6 U	52.3	6.3 U	1030	6.3 U	30.7
sec-Butylbenzene	500000		5.8 U	13600 J	7.3 U	2870 J	59.6 J	8.4 U	0.77 J	7.5 U	4.9 U	9.6 U	27.5 J	6.3 U	540	6.3 U	24.5
Styrene	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
tert-Butylbenzene	500000		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
Tetrachloroethene	150000		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	8.5	360 U	6.3 U	7.2 U
Toluene	500000		12.8	457000	20.1	70700	6900 U	18.8	5.1	3.9	5.2	23.3	18.6	23.4	7970	1.8	30.3
trans-1,2-Dichloroethene	500000		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
trans-1,3-Dichloropropene	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
Trichloroethene	200000		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.4	360 U	6.3 U	2.9 J
Trichlorofluoromethane	--		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
Vinyl chloride	13000		5.8 U	15000 U	7.3 U	6900 U	6900 U	8.4 U	5.9 U	7.5 U	4.9 U	9.6 U	37 U	6.3 U	360 U	6.3 U	7.2 U
Xylenes (total)	500000		19.8	1440000	8.4	311000	28200	6.5	63.5	3 U	7.8	6.6	493	8.6	52100	2.5 U	290

µg/kg - Micrograms per kilogram
ft bls - Feet below land surface
NYSDEC - New York State Department of Environmental Conservation
RSCOs - Restricted Soil Cleanup Objectives
J - Estimated value
U - Not detected
Bold - Indicates value exceeds Restricted Commercial Criteria

Table 3. Summary of Semivolatile Organic Compounds in Soil, Empire Property, Greenpoint, Brooklyn, New York

Parameter (Concentrations in µg/kg)	*Restricted - commercial*	Sample Designation:	MW-90	MW-90	MW-93	MW-93	MW-94	SB-1	SB-1	SB-2	SB-2	SB-6	SB-3	SB-4	SB-4	SB-5	SB-5
		Sample Date:	12/12/06	12/12/06	12/11/06	12/11/06	12/11/06	12/11/06	12/14/06	12/12/06	12/14/06	12/11/06	12/14/06	12/11/06	12/15/06	12/11/06	12/15/06
		Sample Depth (ft bls):	1-2	29-31	1-2	27-29	1-2	1-2	27.5-30	1-2	27.5-30	0.5-1	27.5-30	1-2	20-22.5	1-2	12.5-15
1,2,4-Trichlorobenzene	--		78 U	73 U	84 U	70 U	75 U	93 U	75 U	86 U	69 U	100 U	69 U	75 U	81 U	77 U	79 U
1,2-Dichlorobenzene	500000		78 U	73 U	84 U	70 U	75 U	93 U	75 U	86 U	69 U	100 U	69 U	75 U	81 U	77 U	79 U
1,3-Dichlorobenzene	280000		78 U	73 U	84 U	70 U	75 U	93 U	75 U	86 U	69 U	100 U	69 U	75 U	81 U	77 U	79 U
1,4-Dichlorobenzene	130000		78 U	73 U	84 U	70 U	75 U	93 U	75 U	86 U	69 U	100 U	69 U	75 U	81 U	77 U	79 U
2,2'-oxybis (1-chloropropane)	--		78 U	73 U	84 U	70 U	75 U	93 U	75 U	86 U	69 U	100 U	69 U	75 U	81 U	77 U	79 U
2,4,5-Trichlorophenol	--		200 U	180 U	210 U	170 U	190 U	230 U	190 U	210 U	170 U	250 U	170 U	190 U	200 U	190 U	200 U
2,4,6-Trichlorophenol	--		200 U	180 U	210 U	170 U	190 U	230 U	190 U	210 U	170 U	250 U	170 U	190 U	200 U	190 U	200 U
2,4-Dichlorophenol	--		200 U	180 U	210 U	170 U	190 U	230 U	190 U	210 U	170 U	250 U	170 U	190 U	200 U	190 U	200 U
2,4-Dimethylphenol	--		200 U	1060	210 U	170 U	190 U	151 J	190 U	210 U	170 U	250 U	170 U	190 U	200 U	190 U	200 U
2,4-Dinitrophenol	--		780 U	730 U	840 U	700 U	750 U	930 U	750 U	860 U	690 U	1000 U	690 U	750 U	810 U	770 U	790 U
2,4-Dinitrotoluene	--		78 U	73 U	84 U	70 U	75 U	93 U	75 U	86 U	69 U	100 U	69 U	75 U	81 U	77 U	79 U
2,6-Dinitrotoluene	--		78 U	73 U	84 U	70 U	75 U	93 U	75 U	86 U	69 U	100 U	69 U	75 U	81 U	77 U	79 U
2-Chloronaphthalene	--		78 U	73 U	84 U	70 U	75 U	93 U	75 U	86 U	69 U	100 U	69 U	75 U	81 U	77 U	79 U
2-Chlorophenol	--		200 U	180 U	210 U	170 U	190 U	230 U	190 U	210 U	170 U	250 U	170 U	190 U	200 U	190 U	200 U
2-Methylnaphthalene	--		114	56200	37.7 J	11500	39.6 J	867	75 U	86 U	69 U	100 U	1560	54.1 J	5180	77 U	7210
2-Methylphenol	500000		200 U	180 U	210 U	170 U	190 U	112 J	190 U	210 U	170 U	250 U	170 U	190 U	200 U	190 U	200 U
2-Nitroaniline	--		200 U	180 U	210 U	170 U	190 U	230 U	190 U	210 U	170 U	250 U	170 U	190 U	200 U	190 U	200 U
2-Nitrophenol	--		200 U	180 U	210 U	170 U	190 U	230 U	190 U	210 U	170 U	250 U	170 U	190 U	200 U	190 U	200 U
3&4-Methylphenol	--		200 U	180 U	210 U	170 U	190 U	561	190 U	210 U	170 U	250 U	170 U	190 U	200 U	190 U	200 U
3,3'-Dichlorobenzidine	--		200 U	180 U	210 U	170 U	190 U	230 U	190 U	210 U	170 U	250 U	170 U	190 U	200 U	190 U	200 U
3-Nitroaniline	--		200 U	180 U	210 U	170 U	190 U	230 U	190 U	210 U	170 U	250 U	170 U	190 U	200 U	190 U	200 U
4,6-Dinitro-2-methylphenol	--		780 U	730 U	840 U	700 U	750 U	930 U	750 U	860 U	690 U	1000 U	690 U	750 U	810 U	770 U	790 U
4-Bromophenyl phenyl ether	--		78 U	73 U	84 U	70 U	75 U	93 U	75 U	86 U	69 U	100 U	69 U	75 U	81 U	77 U	79 U
4-Chloro-3-methylphenol	--		200 U	180 U	210 U	170 U	190 U	230 U	190 U	210 U	170 U	250 U	170 U	190 U	200 U	190 U	200 U
4-Chloroaniline	--		200 U	180 U	210 U	170 U	190 U	230 U	190 U	210 U	170 U	250 U	170 U	190 U	200 U	190 U	200 U
4-Chlorophenyl phenyl ether	--		78 U	73 U	84 U	70 U	75 U	93 U	75 U	86 U	69 U	100 U	69 U	75 U	81 U	77 U	79 U
4-Nitroaniline	--		200 U	180 U	210 U	170 U	190 U	230 U	190 U	210 U	170 U	250 U	170 U	190 U	200 U	190 U	200 U
4-Nitrophenol	--		780 U	730 U	840 U	700 U	750 U	930 U	750 U	860 U	690 U	1000 U	690 U	750 U	810 U	770 U	790 U
Acenaphthene	500000		41.2 J	1880	414	70 U	75 U	4400	75 U	86 U	69 U	100 U	145	234	228	167	2230
Acenaphthylene	500000		156	73 U	81 J	70 U	75 U	781	75 U	86 U	69 U	34.7 J	69 U	79.4	81 U	61.6 J	79 U
Anthracene	500000		321	710	1290	164	75 U	10400	75 U	86 U	69 U	44.3 J	72.8	483	127	485	4690
Benzo[a]anthracene	5600		672	273	3470	68.3 J	113	**21400**	18.1 J	49 J	69 U	99.4 J	24.3 J	1030	94.4	1340	**6130**
Benzo[a]pyrene	1000		832	157	**3460**	70 U	89.5	**17700**	26.7 J	40.6 J	69 U	128	69 U	959	67.2 J	**1250**	**4830**
Benzo[b]fluoranthene	5600		1350	90.4	4380	70 U	444	**22900**	26.2 J	60.7 J	69 U	165	69 U	1230	72.5 J	1300	4670
Benzo[g,h,i]perylene	500000		693	126	2320	70 U	352	10500	75 U	35.5 J	69 U	252	69 U	631	50.2 J	813	2560
Benzo[k]fluoranthene	56000		471	37.9 J	1330	70 U	242	6810	75 U	33.5 J	69 U	84.5 J	69 U	428	38.8 J	717	1510
Bis(2-chloroethoxy)methane	--		78 U	73 U	84 U	70 U	75 U	93 U	75 U	86 U	69 U	100 U	69 U	75 U	81 U	77 U	79 U
Bis(2-chloroethyl) ether	--		78 U	73 U	84 U	70 U	75 U	93 U	75 U	86 U	69 U	100 U	69 U	75 U	81 U	77 U	79 U
Bis(2-ethylhexyl) phthalate	--		1010	145	84 U	70 U	190	93 U	75 U	86 U	69 U	100 U	69	214	81 U	618	437
Butylbenzyl phthalate	--		78 U	73 U	84 U	70 U	75 U	93 U	75 U	86 U	69 U	100 U	69 U	73.8 J	81 U	77 U	79 U
Carbazole	--		78 U	73 U	741	70 U	75 U	4630	75 U	86 U	69 U	100 U	69 U	175	81 U	173	550
Chrysene	56000		851	415	3590	109	230	21800	34.8 J	63 J	69 U	118	44.2 J	1080	111	1280	6790
Dibenzo[a,h]anthracene	560		234	73 U	497	70 U	118	**3270**	75 U	86 U	69 U	74.9 J	69 U	186	21.5 J	218	**959**
Dibenzofuran	350000		78 U	1240	189	274	75 U	2830	75 U	86 U	69 U	100 U	69 U	128	126	60.6 J	788
Diethyl phthalate	--		78 U	73 U	84 U	70 U	75 U	93 U	75 U	86 U	69 U	100 U	69 U	75 U	81 U	77 U	79 U
Dimethyl phthalate	--		78 U	73 U	84 U	70 U	75 U	93 U	75 U	86 U	69 U	100 U	69 U	75 U	81 U	77 U	79 U
Di-n-butyl phthalate	--		78 U	73 U	84 U	70 U	80.7	120	75 U	86 U	69 U	100 U	69 U	98.5	81 U	77 U	79 U
Di-n-octyl phthalate	--		78 U	73 U	84 U	70 U	75 U	93 U	75 U	86 U	69 U	100 U	69 U	1630	81 U	77 U	79 U

Table 3. Summary of Semivolatile Organic Compounds in Soil, Empire Property, Greenpoint, Brooklyn, New York

Parameter (Concentrations in µg/kg)	*Restricted - commercial*	Sample Designation:	MW-90	MW-90	MW-93	MW-93	MW-94	SB-1	SB-1	SB-2	SB-2	SB-6	SB-3	SB-4	SB-4	SB-5	SB-5
		Sample Date:	12/12/06	12/12/06	12/11/06	12/11/06	12/11/06	12/11/06	12/14/06	12/12/06	12/14/06	12/11/06	12/14/06	12/11/06	12/15/06	12/11/06	12/15/06
		Sample Depth (ft bls):	1-2	29-31	1-2	27-29	1-2	1-2	27.5-30	1-2	27.5-30	0.5-1	27.5-30	1-2	20-22.5	1-2	12.5-15
Fluoranthene	500000		1180	339	8850	85.2	190	52500	36.8 J	101	69 U	201	69 U	2310	196	2650	10400
Fluorene	500000		57.3 J	2900	384	744	75 U	4310	75 U	86 U	69 U	100 U	206	204	321	181	2800
Hexachlorobenzene	6000		78 U	73 U	84 U	70 U	75 U	93 U	75 U	86 U	69 U	100 U	69 U	75 U	81 U	77 U	79 U
Hexachlorobutadiene	--		78 U	73 U	84 U	70 U	75 U	93 U	75 U	86 U	69 U	100 U	69 U	75 U	81 U	77 U	79 U
Hexachlorocyclopentadiene	--		780 U	730 U	840 U	700 U	750 U	930 U	750 U	860 U	690 U	1000 U	690 U	750 U	810 U	770 U	790 U
Hexachloroethane	--		200 U	180 U	210 U	170 U	190 U	230 U	190 U	210 U	170 U	250 U	170 U	190 U	200 U	190 U	200 U
Indeno[1,2,3-cd]pyrene	5600		613	57.1 J	2110	70 U	319	**10100**	75 U	36.7 J	69 U	238	69 U	608	40.1 J	752	2290
Isophorone	--		78 U	73 U	84 U	70 U	75 U	93 U	75 U	86 U	69 U	100 U	69 U	75 U	81 U	77 U	79 U
Naphthalene	500000		1490	42700	84 U	6150	89	1480	75 U	86 U	69 U	100 U	694	98.5	2830	77 U	911
Nitrobenzene	--		78 U	73 U	84 U	70 U	75 U	93 U	75 U	86 U	69 U	100 U	69 U	75 U	81 U	77 U	79 U
n-Nitrosodi-n-propylamine	--		78 U	73 U	84 U	70 U	75 U	93 U	75 U	86 U	69 U	100 U	69 U	75 U	81 U	77 U	79 U
n-Nitrosodiphenylamine	--		200 U	180 U	210 U	170 U	190 U	230 U	190 U	210 U	170 U	250 U	170 U	190 U	200 U	190 U	200 U
Pentachlorophenol	6700		780 U	730 U	840 U	700 U	750 U	930 U	750 U	860 U	690 U	1000 U	690 U	750 U	810 U	770 U	790 U
Phenanthrene	500000		792	6660	5920	1760	85.3	48300	75 U	51.5 J	69 U	115	294	1940	843	1640	18400
Phenol	500000		200 U	180 U	210 U	170 U	190 U	230 U	190 U	210 U	170 U	250 U	170 U	190 U	200 U	190 U	200 U
Pyrene	500000		999	1110	6920	290	152	38800	43.5 J	79.1 J	69 U	190	81.3	1960	233	2200	13100

µg/kg - Micrograms per kilogram
ft bls - Feet below land surface
NYSDEC - New York State Department of Environmental Conservation
RSCOs - Restricted Soil Cleanup Objectives
J - Estimated value
U - Not detected
Bold - Indicates value exceeds Restricted Commercial Criteria

Table 4. Summary of Metals in Soil, Empire Property, Greenpoint, Brooklyn, New York

Parameter		Sample Designation:	MW-90	MW-90	MW-93	MW-93	MW-94	SB-1	SB-1	SB-2	SB-2	SB-3	SB-3	SB-4	SB-4	SB-5	SB-5
(Concentrations in mg/kg)	*Restricted - commercial*	Sample Date:	12/12/06	12/12/06	12/11/06	12/11/06	12/11/06	12/11/06	12/14/06	12/12/06	12/14/06	12/11/06	12/14/06	12/11/06	12/15/06	12/11/06	12/15/06
		Sample Depth (ft bls):	1-2	29-31	1-2	27-29	1-2	1-2	27.5-30	1-2	27.5-30	0.5-1	27.5-30	1-2	20-22.5	1-2	12.5-15
Aluminum	--		6330	3360	3690	2650	5370	5420	3830	3660	3250	3920	3060	3820	2730	8620	4360
Antimony	--		2.4 U	2.2 U	2.6 U	2 U	2.2 U	6.2	2.3 U	2.8	2.1 U	2.9 U	2.1 U	2.2 U	2.5 U	2.3 U	4.9
Arsenic	16		14.4	2.2 U	**21.6**	2 U	5.8	**72.3**	2.3 U	**25.5**	2.1 U	12.5	2.1 U	14.7	2.5 U	3.7	5.1
Barium	400		**651**	23.4	264	21	**1390**	**907**	23 U	76.4	22.2	97.8	21 U	**472**	25 U	96.5	148
Beryllium	590		0.6 U	0.54 U	0.64 U	0.51 U	0.56 U	0.71 U	0.57 U	0.63 U	0.53 U	0.74 U	0.53 U	0.55 U	0.63 U	0.58 U	0.59 U
Cadmium	9.3		1.1	0.54 U	0.64 U	0.51 U	0.56 U	8.8	0.57 U	0.63 U	0.53 U	0.74 U	0.53 U	0.55 U	0.63 U	0.58 U	7.5
Calcium	--		1690	1280	46200	7650	10300	26000	1210	8940	4530	19900	3470	5180	3430	7920	7150
Chromium	--		31.4	7.5	14.8	7.2	14.9	60.3	8.6	10.3	5.5	22.4	6.2	20.4	5.2	29.6	13.7
Cobalt	--		15.5	5.4 U	6.4 U	5.1 U	6.2	24.4	5.7 U	7.6	5.3 U	9.3	5.3 U	10.6	6.3 U	7.3	5.9 U
Copper	270		165	10.5	134	8.6	73.2	**970**	9.8	69.6	8.6	237	9	242	10.6	34.5	**4490**
Iron	--		36300	7980	18500	6950	28500	188000	8440	40900	7740	38700	6730	32500	5700	18600	9950
Lead	1000		525	6.5	270	3.3	165	**1730**	3.7	618	2.3	265	3.8	456	4.7	68.7	571
Magnesium	--		1660	1930	980	4380	951	3990	1960	630 U	2990	4850	2640	1310	2610	3270	1640
Manganese	10000		255	214	141	252	445	1000	202	169	207	225	301	255	161	411	326
Mercury	2.8		0.78	0.034 U	0.25	0.034 U	1.4	**3.6**	0.035 U	0.16	0.033 U	0.25	0.032 U	0.77	0.039 U	0.11	0.45
Nickel	310		22.8	7.6	14.2	6.8	15.1	58.8	7.6	22.8	6.7	15.8	7.4	19.4	5.3	16.1	14.8
Potassium	--		781	633	640 U	510 U	560 U	821	814	630 U	530 U	740 U	547	550 U	630 U	1940	952
Selenium	1500		2.4 U	2.2 U	2.6 U	2 U	2.2 U	12.2	2.3 U	2.5 U	2.1 U	2.9 U	2.1 U	2.2 U	2.5 U	2.3 U	2.4 U
Silver	1500		1.2 U	1.1 U	1.3 U	1 U	1.1 U	4.1	1.1 U	1.3 U	1.1 U	1.5 U	1.1 U	1.1 U	1.3 U	1.2 U	1.2 U
Sodium	--		1200 U	1100 U	1300 U	1000 U	1100 U	1400 U	1100 U	1300 U	1100 U	1500 U	1100 U	1100 U	1300 U	1200 U	1200 U
Thallium	--		1.2 U	1.1 U	1.3 U	1 U	1.1 U	2.8 U	1.1 U	1.3 U	1.1 U	1.5 U	1.1 U	1.1 U	1.3 U	1.2 U	1.2 U
Vanadium	--		35.7	9.4	17.8	8.4	22.1	32.8	13.3	13.1	9.1	20.3	8.6	17.5	6.3 U	27	20.3
Zinc	10000		1180	16.9	216	16	110	1730	21	163	15.9	347	19.1	693	29.3	107	6260

mg/kg - Milligrams per kilogram
ft bls - Feet below land surface
NYSDEC - New York State Department of Environmental Conservation
RSCOs - Restricted Soil Cleanup Objectives
U - Not detected
Bold - Indicates value exceeds Restricted Commercial Criteria

Table 5. Summary of Volatile Organic Compounds in Soil Using the Toxicity Characteristic Leachate Procedure, Empire Property, Greenpoint, Brooklyn, New York

Parameter (Concentrations in mg/L)	USEPA Regulatory Limits (mg/L)	Sample Designation: / Sample Date: / Sample Depth (ft bls):	MW-90 12/12/06 1-2	MW-93 12/11/06 1-2	MW-94 12/11/06 1-2	SB-1 12/11/06 1-2	SB-2 12/12/06 1-2	SB-3 12/11/06 0.5-1	SB-4 12/11/06 1-2	SB-5 12/11/06 1-2
1,1-Dichloroethene	0.7		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
1,2-Dichloroethane	0.5		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
1,4-Dichlorobenzene	7.5		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
2-Butanone (MEK)	200		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Benzene	0.5		0.0019 J	0.005 U	0.005 U	0.005 U	0.0029 J	0.005 U	0.005 U	0.005 U
Carbon tetrachloride	0.5		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Chlorobenzene	100		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Chloroform	6		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Tetrachloroethene	0.7		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Trichloroethene	0.5		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Vinyl chloride	0.2		0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U

mg/L - Milligrams per Liter
ft bls - Feet below land surface
USEPA - United States Environmental Protection Agency
J - Estimated value
U - Not detected

Table 6. Summary of Semivolatile Organic Compounds in Soil Using the Toxicity Characteristic Leachate Procedure, Empire Property, Greenpoint, Brooklyn, New York

Parameter (Concentrations in mg/L)	USEPA Regulatory Limits (mg/L)	Sample Designation: / Sample Date: / Sample Depth (ft bls):	MW-90 12/12/06 1-2	MW-93 12/11/06 1-2	MW-94 12/11/06 1-2	SB-1 12/11/06 1-2	SB-2 12/12/06 1-2	SB-3 12/11/06 0.5-1	SB-4 12/11/06 1-2	SB-5 12/11/06 1-2
1,4-Dichlorobenzene	7.5		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
2,4,5-Trichlorophenol	400		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2,4,6-Trichlorophenol	2		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
2,4-Dinitrotoluene	0.13		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
2-Methylphenol	200		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
3&4-Methylphenol	200		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Hexachlorobenzene	0.13		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Hexachlorobutadiene	0.5		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Hexachloroethane	3		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Nitrobenzene	2		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Pentachlorophenol	100		0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Pyridine	5		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U

mg/L - Milligrams per Liter
ft bls - Feet below land surface
USEPA - United States Environmental Protection Agency
U - Not detected

Table 7. Summary of Metals in Soil, Using the Toxicity Characteristic Leachate Procedure, Empire Property, Greenpoint, Brooklyn, New York

Parameter (Concentrations in mg/L)	USEPA Regulatory Limits (mg/L)	Sample Designation: / Sample Date: / Sample Depth (ft bls):	MW-90 12/12/06 1-2	MW-93 12/11/06 1-2	MW-94 12/11/06 1-2	SB-1 12/11/06 1-2	SB-2 12/12/06 1-2	SB-3 12/11/06 0.5-1	SB-4 12/11/06 1-2	SB-5 12/11/06 1-2
Arsenic	5		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Barium	100		2.1	1 U	1 U	1 U	1 U	1 U	1.2	1 U
Cadmium	1		0.012	0.005 U	0.005 U	0.018	0.005 U	0.005 U	0.0071	0.005 U
Chromium	5		0.01 U	0.024	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Lead	5		0.5 U	0.5 U	0.5 U	0.51	0.5 U	0.5 U	0.5 U	0.5 U
Mercury	0.2		0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Selenium	1		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Silver	5		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

mg/L - Milligrams per Liter
ft bls - Feet below land surface
USEPA - United States Environmental Protection Agency
U - Not detected

Table 8. Summary of Pesticides in Soil Using the Toxicity Characteristic Leachate Procedure, Empire Property, Greenpoint, Brooklyn, New York

Parameter (Concentrations in mg/L)	USEPA Regulatory Limits (mg/L)	Sample Designation: / Sample Date: / Sample Depth (ft bls):	MW-90 12/12/06 1-2	MW-93 12/11/06 1-2	MW-94 12/11/06 1-2	SB-1 12/11/06 1-2	SB-2 12/12/06 1-2	SB-3 12/11/06 0.5-1	SB-4 12/11/06 1-2	SB-5 12/11/06 1-2
2,4,5-TP	1		0.0075 U	0.0015 U	0.0015 U	0.0075 U	0.0075 U	0.0015 U	0.0075 U	0.0015 U
2,4-D	10		0.025 U	0.005 U	0.005 U	0.025 U	0.025 U	0.005 U	0.025 U	0.005 U
Chlordane	0.03		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Endrin	0.02		0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
gamma-BHC (Lindane)	0.4		0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Heptachlor	0.008		0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Heptachlor epoxide	0.008		0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Methoxychlor	10		0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Toxaphene	0.5		0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U	0.0025 U

mg/L - Milligrams per Liter
ft bls - Feet below land surface
USEPA - United States Environmental Protection Agency
U - Not detected

Table 9. Summary of Volatile Organic Compounds in Groundwater, Empire Property, Greenpoint, Brooklyn, New York

Parameter (Concentrations in µg/L)	NYSDEC AWQSGVs (µg/L)	Sample Designation:	MW-27	MW-90	MW-93	MW-93 DUP	MW-94	TRIP BLANK
		Sample Date:	12/29/06	12/29/06	12/29/06	12/29/06	12/29/06	12/29/06
		Sample Depth (ft bls):						
1,1,1,2-Tetrachloroethane	5		5 U	100 U	100 U	100 U	25 U	5 U
1,1,1-Trichloroethane	5		1 U	**590**	20 U	**522**	5 U	1 U
1,1,2,2-Tetrachloroethane	5		1 U	20 U	20 U	20 U	5 U	1 U
1,1,2-Trichloroethane	1		1 U	20 U	20 U	20 U	5 U	1 U
1,1-Dichloroethane	5		1.5	**205**	20 U	**54.4**	5 U	1 U
1,1-Dichloroethene	5		1 U	**8 J**	20 U	20 U	5 U	1 U
1,1-Dichloropropene	5		5 U	100 U	100 U	100 U	25 U	5 U
1,2,3-Trichlorobenzene	5		5 U	100 U	100 U	100 U	25 U	5 U
1,2,3-Trichloropropane	0.04		5 U	100 U	100 U	100 U	25 U	5 U
1,2,4-Trichlorobenzene	5		5 U	100 U	100 U	100 U	25 U	5 U
1,2,4-Trimethylbenzene	5		2.4 J	**1560**	**1320**	**2910**	**1580**	5 U
1,2-Dibromo-3-chloropropane	0.04		10 U	200 U	200 U	200 U	50 U	10 U
1,2-Dibromoethane	5		2 U	40 U	40 U	40 U	10 U	2 U
1,2-Dichlorobenzene	3		1 U	20 U	20 U	20 U	5 U	1 U
1,2-Dichloroethane	0.6		1 U	20 U	20 U	20 U	5 U	1 U
1,2-Dichloropropane	1		1 U	20 U	20 U	20 U	5 U	1 U
1,3,5-Trimethylbenzene	5		5 U	**518**	**443**	**1090**	**413**	5 U
1,3-Dichlorobenzene	3		1 U	20 U	20 U	20 U	5 U	1 U
1,3-Dichloropropane	5		5 U	100 U	100 U	100 U	25 U	5 U
1,4-Dichlorobenzene	3		1 U	20 U	20 U	20 U	5 U	1 U
2,2-Dichloropropane	5		5 U	100 U	100 U	100 U	25 U	5 U
2-Butanone (MEK)	50		10 U	200 U	200 U	200 U	50 U	10 U
4-Methyl-2-pentanone (MIBK)	--		5 U	100 U	100 U	100 U	25 U	5 U
Acetone	50		10 U	200 U	200 U	200 U	50 U	10 U
Benzene	1		**68.3**	**17500**	**17500**	**17300**	**287**	1 U
Bromobenzene	5		5 U	100 U	100 U	100 U	25 U	5 U
Bromochloromethane	5		5 U	100 U	100 U	100 U	25 U	5 U
Bromodichloromethane	50		1 U	20 U	20 U	20 U	5 U	1 U
Bromoform	50		4 U	80 U	80 U	80 U	20 U	4 U
Bromomethane	5		2 U	40 U	40 U	40 U	10 U	2 U
Carbon tetrachloride	5		1 U	20 U	20 U	20 U	5 U	1 U
Chlorobenzene	5		1 U	20 U	20 U	20 U	5 U	1 U
Chloroethane	5		**14.6**	**20.5**	20 U	20 U	5 U	1 U
Chloroform	7		1 U	20 U	20 U	20 U	5 U	1 U
Chloromethane	5		1 U	20 U	20 U	20 U	5 U	1 U
cis-1,2-Dichloroethene	--		1 U	29.4	20 U	20 U	2.6 J	1 U
cis-1,3-Dichloropropene	--		1 U	20 U	20 U	20 U	5 U	1 U
Dibromochloromethane	50		1 U	20 U	20 U	20 U	5 U	1 U

Table 9. Summary of Volatile Organic Compounds in Groundwater, Empire Property, Greenpoint, Brooklyn, New York

Parameter (Concentrations in µg/L)	NYSDEC AWQSGVs (µg/L)	Sample Designation: / Sample Date: / Sample Depth (ft bls):	MW-27 12/29/06	MW-90 12/29/06	MW-93 12/29/06	MW-93 DUP 12/29/06	MW-94 12/29/06	TRIP BLANK 12/29/06
Dichlorodifluoromethane	5		5 U	100 U	100 U	100 U	25 U	5 U
Ethylbenzene	5		**5.8**	**1670**	**1510**	**2130**	**2040**	1 U
Hexachlorobutadiene	0.5		5 U	100 U	100 U	100 U	25 U	5 U
Isopropylbenzene	5		3	**164**	**148**	**334**	**218**	2 U
m+p-Xylene	5		**9.4**	**10500**	**9170**	**9480**	**5820**	1 U
Methylene bromide	5		5 U	100 U	100 U	100 U	25 U	5 U
Methylene chloride	5		2 U	40 U	40 U	40 U	10 U	2 U
MTBE	10		**67.2**	**22.6**	20 U	20 U	5 U	1 U
Naphthalene	10		5.7	**445**	**442**	**972**	**191**	5 U
n-Butylbenzene	5		1.3 J	100 U	100 U	**134**	**93.7**	5 U
n-Propylbenzene	5		3.1 J	**194**	**166**	**421**	**301**	5 U
o-Chlorotoluene	--		5 U	100 U	100 U	100 U	25 U	5 U
o-Xylene	5		0.92 J	**3110**	**2760**	**3880**	**1500**	1 U
p-Chlorotoluene	--		5 U	100 U	100 U	100 U	25 U	5 U
p-Isopropyltoluene	5		5 U	23.8 J	25.3 J	99.1 J	35.6	5 U
sec-Butylbenzene	5		0.82 J	100 U	100 U	100 U	**47.8**	5 U
Styrene	5		5 U	100 U	100 U	100 U	25 U	5 U
tert-Butylbenzene	5		1.3 J	100 U	100 U	100 U	**10.9 J**	5 U
Tetrachloroethene	5		1 U	20 U	20 U	20 U	5 U	1 U
Toluene	5		2.1	**18400**	**16900**	**16700**	**616**	1 U
trans-1,2-Dichloroethene	--		1 U	20 U	20 U	20 U	5 U	1 U
trans-1,3-Dichloropropene	--		1 U	20 U	20 U	20 U	5 U	1 U
Trichloroethene	5		1 U	20 U	20 U	20 U	5 U	1 U
Trichlorofluoromethane	5		5 U	100 U	100 U	100 U	25 U	5 U
Vinyl chloride	2		1 U	20 U	20 U	20 U	5 U	1 U
Xylenes (total)	5		**10.4**	**13800**	**12200**	**12500**	**7320**	1 U
Total VOCs:			197.84	68760.3	62584.3	68526.5	20476.6	0

Notes:

J - Estimated value

U - Analyte was not detected at or above the reporting limit

NYSDEC - New York State Department of Environmental Conservation

AWQSGVs - Ambient Water-Quality Standards and Guidance Values

-- - No NYSDEC AWQSGV available

Bold - Concentration exceeds NYSDEC AWQSGVs

µg/L - Micrograms per liter

VOCs - Volatile Organic Compounds

Table 10. Summary of Semivolatile Organic Compounds in Groundwater, Empire Property, Greenpoint, Brooklyn, New York

Parameter (Concentrations in µg/L)	NYSDEC AWQSGVs (µg/L)	**Sample Designation:** **Sample Date:**	MW-27 12/29/06	MW-90 12/29/06	MW-93 12/29/06	MW-93 DUP 12/29/06	MW-94 12/29/06
1,2,4-Trichlorobenzene	5		2 U	2.1 U	2.2 U	2.2 U	2 U
1,2-Dichlorobenzene	3		2 U	2.1 U	2.2 U	2.2 U	2 U
1,3-Dichlorobenzene	3		2 U	2.1 U	2.2 U	2.2 U	2 U
1,4-Dichlorobenzene	3		2 U	2.1 U	2.2 U	2.2 U	2 U
2,2'-oxybis (1-chloropropane)	--		2 U	2.1 U	2.2 U	2.2 U	2 U
2,4,5-Trichlorophenol	--		5 U	5.3 U	5.4 U	5.4 U	5 U
2,4,6-Trichlorophenol	--		5 U	5.3 U	5.4 U	5.4 U	5 U
2,4-Dichlorophenol	5		5 U	5.3 U	5.4 U	5.4 U	5 U
2,4-Dimethylphenol	50		5 U	25.6	21.1	23.6	26.1
2,4-Dinitrophenol	10		20 U	21 U	22 U	22 U	20 U
2,4-Dinitrotoluene	5		2 U	2.1 U	2.2 U	2.2 U	2 U
2,6-Dinitrotoluene	5		2 U	2.1 U	2.2 U	2.2 U	2 U
2-Chloronaphthalene	10		5 U	5.3 U	5.4 U	5.4 U	5 U
2-Chlorophenol	--		5 U	5.3 U	5.4 U	5.4 U	5 U
2-Methylnaphthalene	--		0.83 J	261	323	654	43.1
2-Methylphenol	--		5 U	37.5	42.8	44.6	3.9 J
2-Nitroaniline	5		5 U	5.3 U	5.4 U	5.4 U	5 U
2-Nitrophenol	--		5 U	5.3 U	5.4 U	5.4 U	5 U
3&4-Methylphenol	--		5 U	47.9	58.5	62.4	5 U
3,3'-Dichlorobenzidine	5		5 U	5.3 U	5.4 U	5.4 U	5 U
3-Nitroaniline	5		5 U	5.3 U	5.4 U	5.4 U	5 U
4,6-Dinitro-2-methylphenol	--		20 U	21 U	22 U	22 U	20 U
4-Bromophenyl phenyl ether	--		2 U	2.1 U	2.2 U	2.2 U	2 U
4-Chloro-3-methylphenol	--		5 U	5.3 U	5.4 U	5.4 U	5 U
4-Chloroaniline	5		5 U	5.3 U	5.4 U	5.4 U	5 U
4-Chlorophenyl phenyl ether	--		2 U	2.1 U	2.2 U	2.2 U	2 U
4-Nitroaniline	5		5 U	5.3 U	5.4 U	5.4 U	5 U
4-Nitrophenol	--		20 U	21 U	22 U	22 U	20 U
Acenaphthene	20		2 U	7	9.4	**20.7**	2.8
Acenaphthylene	--		2 U	2.1 U	2.2 U	2.2 U	2 U
Anthracene	50		2 U	3	3.7	7.2	2
Benzo[a]anthracene	0.002		2 U	**1.2 J**	**1.4 J**	**3.3**	**1.6 J**
Benzo[a]pyrene	ND		2 U	2.1 U	**0.73 J**	**1.9 J**	**0.97 J**
Benzo[b]fluoranthene	0.002		2 U	2.1 U	2.2 U	2.2 U	**0.8 J**
Benzo[g,h,i]perylene	--		2 U	2.1 U	2.2 U	1.1 J	2 U
Benzo[k]fluoranthene	0.002		2 U	2.1 U	2.2 U	2.2 U	**0.83 J**
Bis(2-chloroethoxy)methane	5		2 U	2.1 U	2.2 U	2.2 U	2 U
Bis(2-chloroethyl) ether	1		2 U	2.1 U	2.2 U	2.2 U	2 U

Table 10. Summary of Semivolatile Organic Compounds in Groundwater, Empire Property, Greenpoint, Brooklyn, New York

Parameter (Concentrations in µg/L)	NYSDEC AWQSGVs (µg/L)	**Sample Designation:** / **Sample Date:**	MW-27 12/29/06	MW-90 12/29/06	MW-93 12/29/06	MW-93 DUP 12/29/06	MW-94 12/29/06
Bis(2-ethylhexyl) phthalate	5		2 U	**10.6**	**10**	**21.4**	3.8
Butylbenzyl phthalate	50		2 U	2.1 U	2.2 U	2.2 U	2 U
Carbazole	--		2 U	5.6	3.8	4.9	2 U
Chrysene	0.002		2 U	**1.7 J**	**2.1 J**	**5.3**	**1.8 J**
Dibenzo[a,h]anthracene	--		2 U	2.1 U	2.2 U	2.2 U	2 U
Dibenzofuran	--		5 U	5.2 J	6.7	14	1.2 J
Diethyl phthalate	50		2 U	2.1 U	2.2 U	2.2 U	2 U
Dimethyl phthalate	50		2 U	2.1 U	2.2 U	2.2 U	2 U
Di-n-butyl phthalate	50		2 U	2.1 U	2.2 U	2.2 U	2 U
Di-n-octyl phthalate	50		2 U	2.1 U	2.2 U	2.2 U	2 U
Fluoranthene	50		2 U	1.3 J	1.4 J	2.7	3.5
Fluorene	50		2 U	12.2	16	35.5	2.9
Hexachlorobenzene	0.04		2 U	2.1 U	2.2 U	2.2 U	2 U
Hexachlorobutadiene	0.5		2 U	2.1 U	2.2 U	2.2 U	2 U
Hexachlorocyclopentadiene	5		20 U	21 U	22 U	22 U	20 U
Hexachloroethane	5		5 U	5.3 U	5.4 U	5.4 U	5 U
Indeno[1,2,3-cd]pyrene	0.002		2 U	2.1 U	2.2 U	2.2 U	2 U
Isophorone	50		2 U	2.1 U	2.2 U	2.2 U	2 U
Naphthalene	10		1.2 J	**332**	**310**	**531**	**58.3**
Nitrobenzene	0.4		2 U	2.1 U	2.2 U	2.2 U	2 U
n-Nitrosodi-n-propylamine	--		2 U	2.1 U	2.2 U	2.2 U	2 U
n-Nitrosodiphenylamine	50		5 U	5.3 U	5.4 U	5.4 U	5 U
Pentachlorophenol	1		20 U	21 U	22 U	22 U	20 U
Phenanthrene	50		2 U	29.4	36	**67.9**	9.8
Phenol	1		**2.5 J**	**42.8**	**61.5**	5.4 U	5 U
Pyrene	50		2 U	4.7	6	14.2	4.7
Total SVOCs:			4.53	828.7	914.13	1515.7	168.1

Notes:

J - Estimated value

U - Analyte was not detected at or above the reporting limit

NYSDEC - New York State Department of Environmental Conservation

AWQSGVs - Ambient Water-Quality Standards and Guidance Values

-- - No NYSDEC AWQSGV available

Bold - Concentration exceeds NYSDEC AWQSGVs

µg/L - Micrograms per liter

Table 11. Summary of Metals in Groundwater, Empire Property, Greenpoint, Brooklyn, New York

Parameter (Concentrations in µg/L)	NYSDEC AWQSGVs (µg/L)	**Sample Designation:** / **Sample Date:**	MW-27 12/29/06	MW-90 12/29/06	MW-93 12/29/06	MW-93 DUP 12/29/06	MW-94 12/29/06
Aluminum	--		224	5520	8780	3610	64100
Antimony	3		6 U	6 U	6 U	6 U	6 U
Arsenic	25		18.8	13.1	13.6	11.5	**41.5**
Barium	1000		**1890**	686	658	599	**16900**
Beryllium	3		1 U	1 U	1 U	1 U	2.8
Cadmium	5		**11.4**	4 U	4 U	4 U	4 U
Calcium	--		226000	85000	92200	88600	136000
Chromium	50		14.3	13.7	19.4	10 U	**123**
Cobalt	--		50 U	50 U	50 U	50 U	50 U
Copper	200		**396**	53.7	56.2	34.8	**554**
Iron	--		321000	53500	25400	15800	158000
Lead	25		12.8	18	21.1	14	**584**
Magnesium	--		13700	17200	26900	24600	33600
Manganese	300		**1710**	**1350**	**2520**	**2340**	**3440**
Mercury	0.7		0.2 U	0.2 U	0.2 U	0.2 U	**9.3**
Nickel	100		40 U	40 U	40 U	40 U	84.6
Potassium	--		25900	13200	10500	9160	29800
Selenium	10		10 U	10 U	10 U	10 U	10 U
Silver	50		10 U	10 U	10 U	10 U	10 U
Sodium	20000		**357000**	**57300**	**33000**	**32100**	**25900**
Thallium	0.5		10 U	10 U	10 U	10 U	10 U
Vanadium	--		50 U	50 U	50 U	50 U	151
Zinc	2000		1670	37.4	53.2	28.7	753

Notes:

U - Indicates that the compound was analyzed for but not detected
NYSDEC - New York State Department of Environmental Conservation
AWQSGVs - Ambient Water-Quality Standards and Guidance Values
-- - No NYSDEC AWQSGV available
Bold - Concentration exceeds NYSDEC AWQSGVs
µg/L - Micrograms per liter

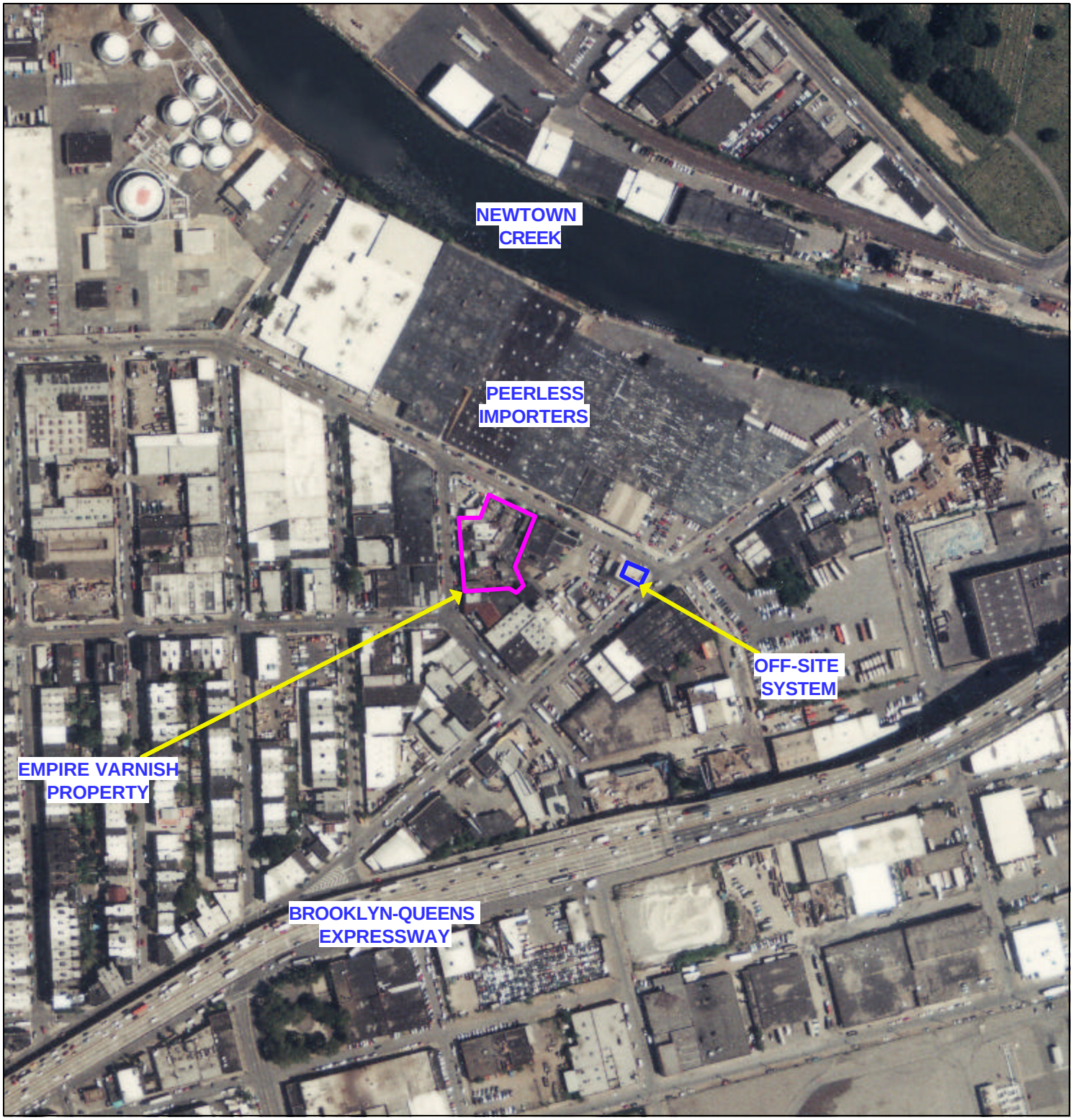
Table 12. Summary of Total Petroleum Hydrocarbons in Groundwater, Empire Property, Greenpoint, Brooklyn, New York

Parameter (Concentrations in µg/L)	**Sample Designation:** / **Sample Date:**	MW-27 12/29/06	MW-90 12/29/06	MW-93 12/29/06	MW-93 DUP 12/29/06	MW-94 12/29/06
TPH		1.9	55.7	63.6	48.2	38.5

Notes:

U - Indicates that the compound was analyzed for but not detected

µg/L - Micrograms per liter



EXPLANATION

EMPIRE VARNISH PROPERTY

N

Title:

SITE PLAN

GREENPOINT
BROOKLYN, NEW YORK

EMPIRE PROPERTY INVESTIGATION
GREENPOINT, BROOKLYN, NEW YORK

Prepared For:
EXXONMOBIL REFINING & SUPPLY CO.
INWOOD, NEW YORK

ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by: C.P.	Date: 30JAN07	FIGURE
Prepared by: C.P.	Scale: NOT TO SCALE	1
Project Mgr: J.P.K.	Office: NEW YORK	
File No: MC3083204	Project: 17230Y21	

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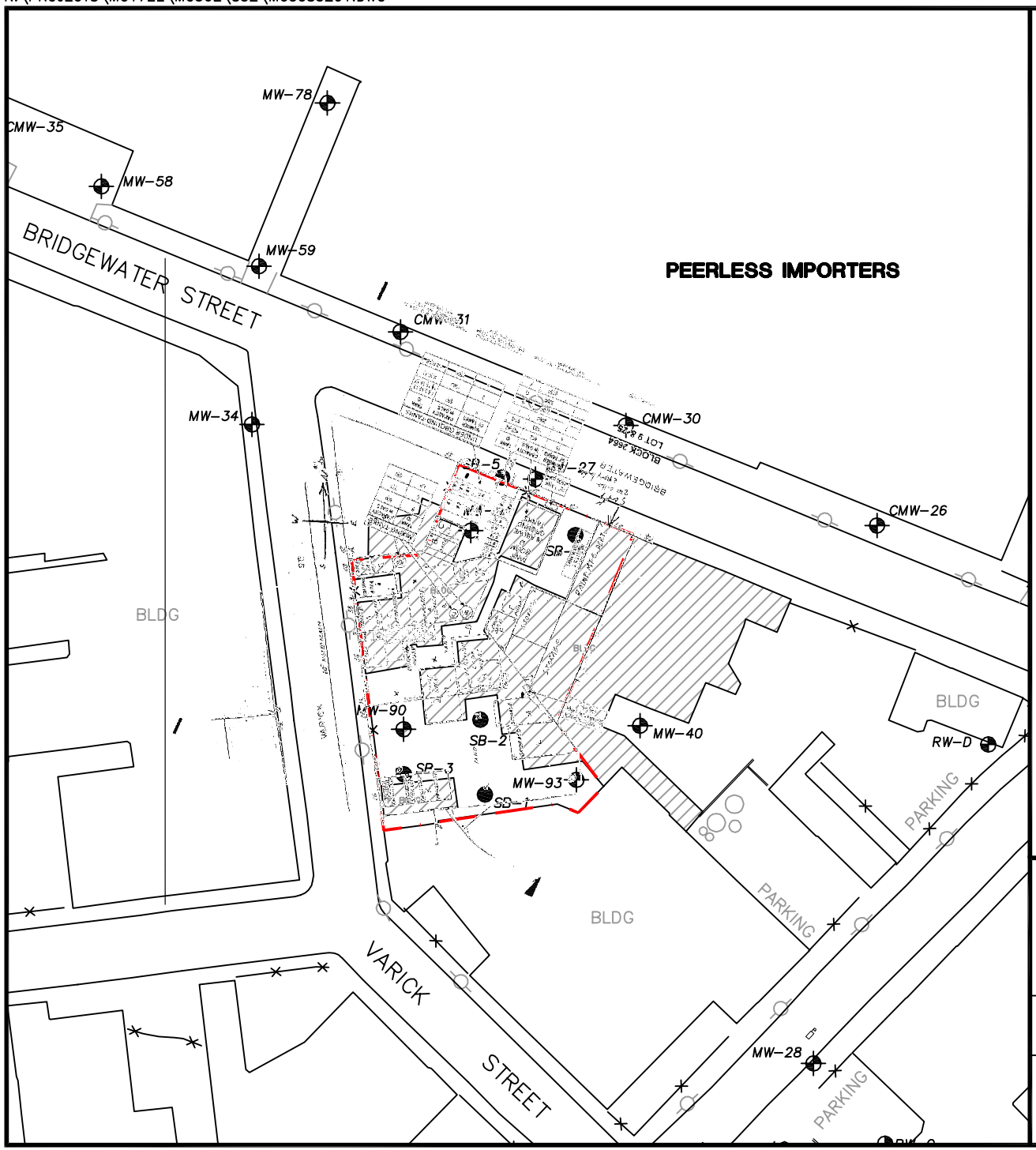

LEGEND

- EMPIRE VARNISH PROPERTY LINE (APPROX.)
- EXISTING FENCELINE
- EXISTING BUILDING / STRUCTURE (BLD)
- EXISTING UTILITY POLE
- EXISTING BUILDING DESIGNATION (BLD)
- EXISTING MONITORING WELL LOCATION (MW-34)
- NEW MONITORING WELL LOCATION (MW-34)
- NEW SOIL BORING LOCATION (SB-1)

50' 0 50'

Title:

SITE PLAN

-EMPIRE VARNISH PROPERTY-

EMPIRE PROPERTY INVESTIGATION
GREENPOINT, BROOKLYN, NEW YORK

Prepared For:
EXXONMOBIL REFINING AND SUPPLY COMPANY
INWOOD, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: J.P.K.	Date: 13JAN05	FIGURE
Prepared by: J.P.K.	Scale: 1" = 50'	2
Project Mgr: J.P.K.	Office: NY	
File No: MC3083201	Project: 17230E17	

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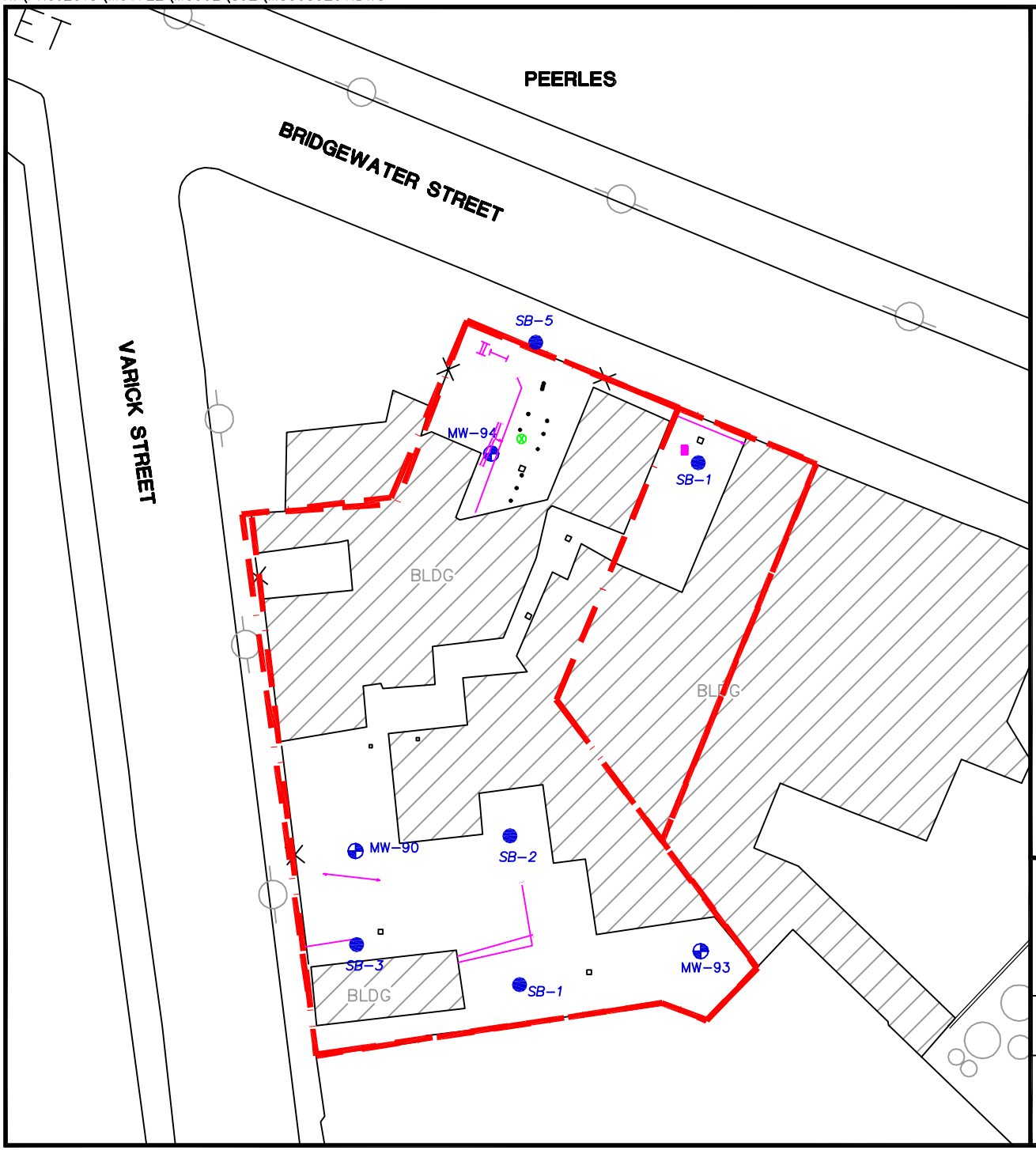

LEGEND

- EMPIRE VARNISH PROPERTY LINE (APPROX.)
- T.W. SMITH PROPERTY LINE (APPROX.)
- EXISTING FENCELINE
- BLD — EXISTING BUILDING / STRUCTURE
- EXISTING UTILITY POLE
- BLD — EXISTING BUILDING DESIGNATION
- MW-34 — EXISTING MONITORING WELL LOCATION
- SB-2 — NEW SOIL BORING LOCATION
- MW-90
- ELECTRIC LINE
- SUSPECTED UTILITY
- METAL-DETECTOR ANALMOLY
- FILL PORT
- MANHOLE COVER
- STORM DRAIN

N

50' 0 50'

Title:

GEOPHYSICAL RESULTS

-EMPIRE VARNISH PROPERTY-

EMPIRE PROPERTY INVESTIGATION
GREENPOINT, BROOKLYN, NEW YORK

Prepared For:
EXXONMOBIL REFINING AND SUPPLY COMPANY
INWOOD, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: J.P.K.	Date: 13JAN05	FIGURE
Prepared by: J.P.K.	Scale: 1" = 50'	3
Project Mgr: J.P.K.	Office: NY	
File No: MC3083201	Project: 17230E17	

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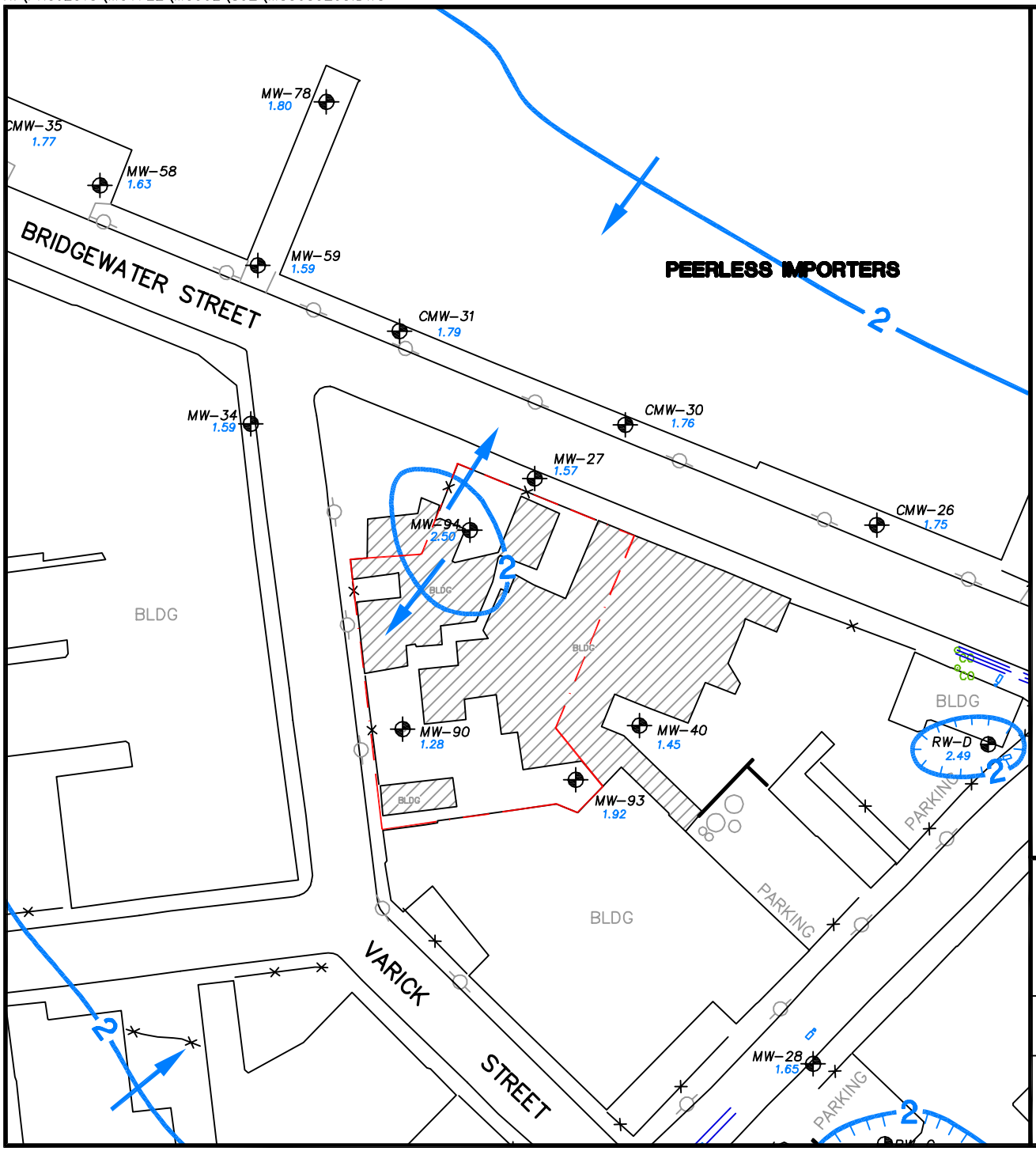

LEGEND

- EMPIRE VARNISH PROPERTY LINE (APPROX.)
- EXISTING FENCELINE
- BLDG — EXISTING BUILDING / STRUCTURE
- EXISTING UTILITY POLE
- BLDG — EXISTING BUILDING DESIGNATION
- MW-34 / 1.47 — LOCATION AND DESIGNATION OF EXISTING/NEW REGIONAL AQUIFER MONITORING WELL; GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- RW-D / 3.31 — LOCATION AND DESIGNATION OF EXISTING REGIONAL AQUIFER RECOVERY WELL; GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- CMW-30 — LOCATION AND DESIGNATION OF EXISTING MONITORING WELL INSTALLED BY CHEVRONTEXACO
- 2 — LINE OF EQUAL GROUNDWATER ELEVATION
- APPROXIMATE DIRECTION OF GROUNDWATER FLOW

50' 0 50'

Title: **REGIONAL AQUIFER GROUNDWATER ELEVATIONS JANUARY 18, 2007 -EMPIRE VARNISH PROPERTY-**

EMPIRE PROPERTY INVESTIGATION
GREENPOINT, BROOKLYN, NEW YORK

Prepared For:
EXXONMOBIL REFINING AND SUPPLY COMPANY
INWOOD, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: J.P.K.	Date: 09FEB07	FIGURE
Prepared by: J.A.D.	Scale: 1" = 50'	4
Project Mgr: J.P.K.	Office: NY	
File No: MC3083203	Project: 17230E17	

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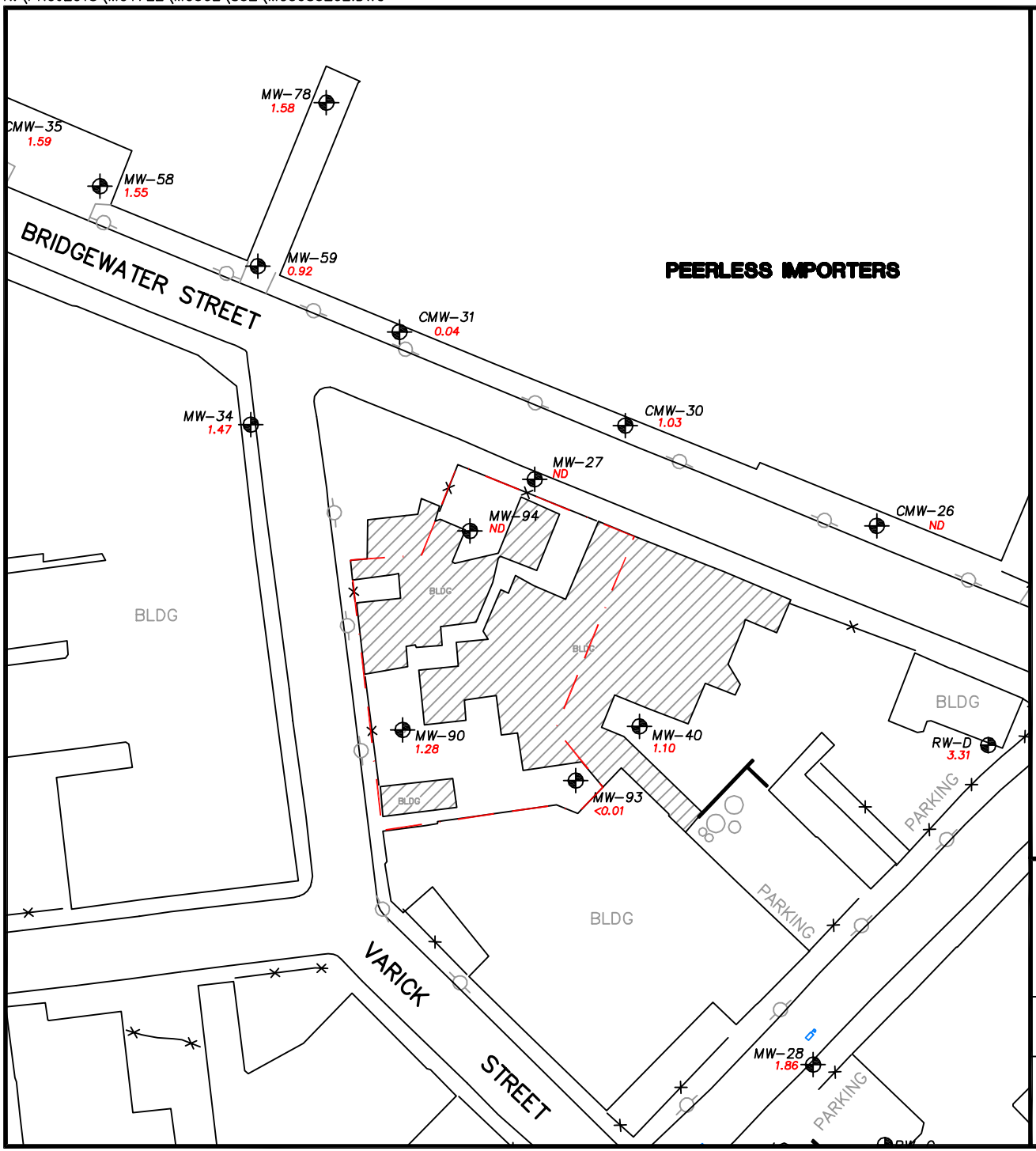


LEGEND

- EMPIRE VARNISH PROPERTY LINE (APPROX.)
- EXISTING FENCELINE
- BLDG — EXISTING BUILDING / STRUCTURE
- EXISTING UTILITY POLE
- BLDG — EXISTING BUILDING DESIGNATION
- MW-34 / 1.47 — LOCATION AND DESIGNATION OF EXISTING/NEW REGIONAL AQUIFER MONITORING WELL
- FREE PRODUCT THICKNESS IN FEET
- RW-D / 3.31 — LOCATION AND DESIGNATION OF EXISTING REGIONAL AQUIFER RECOVERY WELL
- FREE-PRODUCT THICKNESS IN FEET
- CMW-30 — LOCATION AND DESIGNATION OF EXISTING MONITORING WELL INSTALLED BY CHEVRONTEXACO
- ND — FREE-PRODUCT NOT DETECTED

NOTE:
FREE-PRODUCT THICKNESS IN OPERATING RECOVERY WELLS ARE IGNORED FOR CONTOURING PURPOSES.

50' 0 50'

Title:

REGIONAL AQUIFER APPARENT FREE-PRODUCT THICKNESS JANUARY 18, 2007

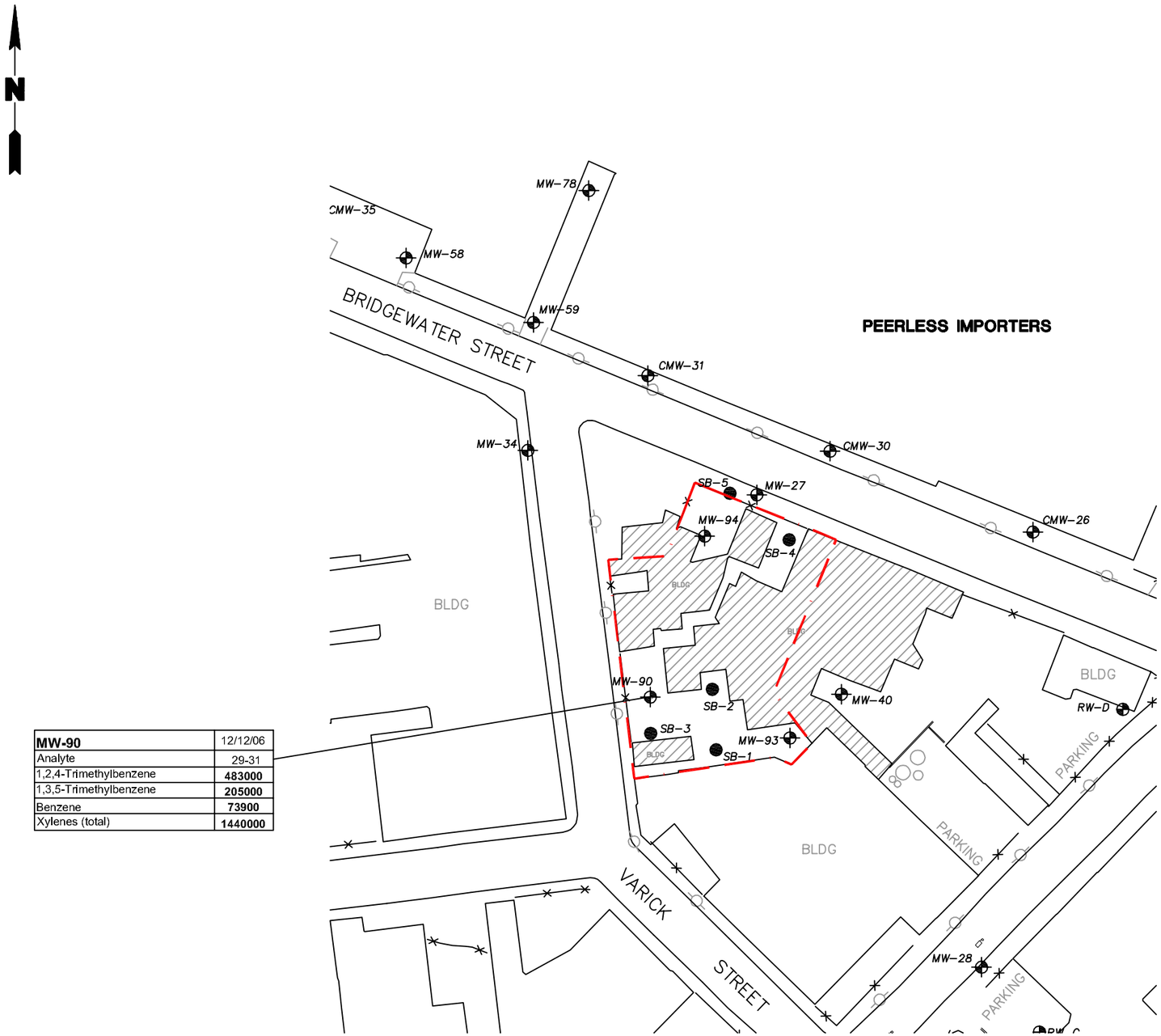
-EMPIRE VARNISH PROPERTY-

EMPIRE PROPERTY INVESTIGATION
GREENPOINT, BROOKLYN, NEW YORK

Prepared For:
EXXONMOBIL REFINING AND SUPPLY COMPANY
INWOOD, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: J.P.K.	Date: 09FEB07	FIGURE
Prepared by: J.A.D.	Scale: 1" = 50'	5
Project Mgr: J.P.K.	Office: NY	
File No: MC3083202	Project: 17230E17	



MW-90	12/12/06
Analyte	29-31
1,2,4-Trimethylbenzene	**483000**
1,3,5-Trimethylbenzene	**205000**
Benzene	**73900**
Xylenes (total)	**1440000**

LEGEND

- EMPIRE VARNISH PROPERTY LINE (APPROX.)
- EXISTING FENCELINE
- BLD — EXISTING BUILDING / STRUCTURE
- EXISTING UTILITY POLE
- BLD — EXISTING BUILDING DESIGNATION
- MW-34 — MONITORING WELL LOCATION
- SB-1 — SOIL BORING LOCATION

TYPICAL DATABOX INFORMATION

ID NUMBER →	**MW-90**	12/12/06	← SAMPLE DATE
ANALYTES	Analyte	29-31	← SAMPLE DEPTH (FT)
	1,2,4-Trimethylbenzene	**483000**	
	1,3,5-Trimethylbenzene	**205000**	← CONCENTRATION (ug/kg)
	Benzene	**73900**	
	Xylenes (total)	**1440000**	

Parameter (Concentrations in ug/kg)	Restricted - commercial (ug/kg)
1,2,4-Trimethylbenzene	190000
1,3,5-Trimethylbenzene	190000
Benzene	44000
Xylenes (total)	500000

µg/kg - Micrograms per kilogram
ft bls - Feet below land surface

100' 0 100'

Title:

VOC EXCEEDANCES DETECTED IN SOIL SAMPLES

- EMPIRE VARNISH PROPERTY -
EMPIRE PROPERTY INVESTIGATION
GREENPOINT, BROOKLYN, NEW YORK

Prepared For:
EXXONMOBIL REFINING AND SUPPLY COMPANY
INWOOD, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: C.P.	Date: 29JAN07	FIGURE
Prepared by: J.A.D.	Scale: AS SHOWN	6
Project Mgr: C.P.	Office: NY	
File No: MC3083201	Project: 17230E21	

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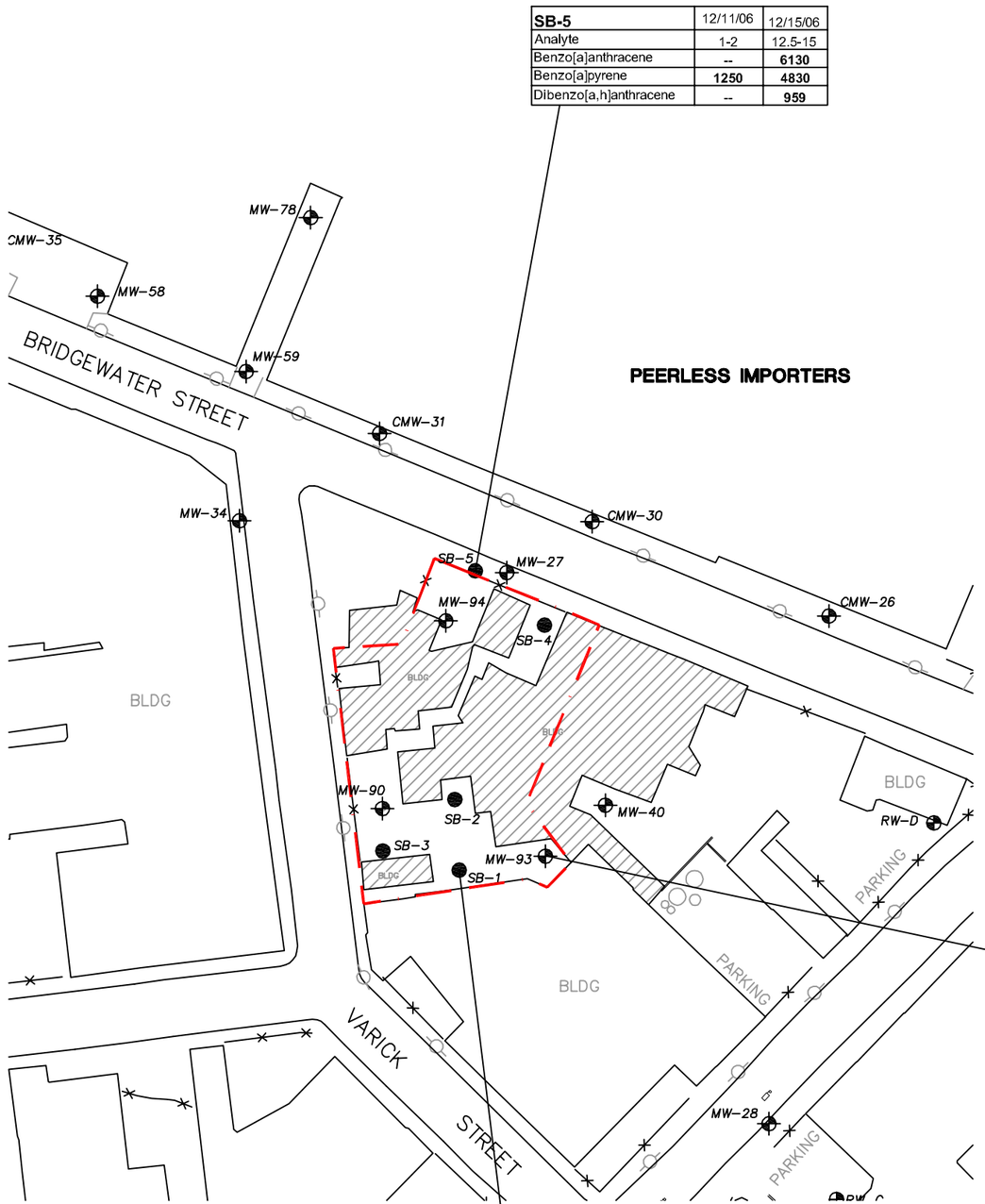

LEGEND

- EMPIRE VARNISH PROPERTY LINE (APPROX.)
- EXISTING FENCELINE
- EXISTING BUILDING / STRUCTURE
- EXISTING UTILITY POLE
- EXISTING BUILDING DESIGNATION
- MONITORING WELL LOCATION
- SOIL BORING LOCATION

TYPICAL DATABOX INFORMATION

ID NUMBER	**MW-90**	12/12/06	SAMPLE DATE
ANALYTES	Analyte	29-31	SAMPLE DEPTH (FT)
	1,2,4-Trimethylbenzene	**483000**	CONCENTRATION (ug/kg)
	1,3,5-Trimethylbenzene	**205000**	
	Benzene	**73900**	
	Xylenes (total)	**1440000**	

Parameter (Concentrations in ug/kg)	Restricted - commercial (ug/kg)
Benzo[a]anthracene	5600
Benzo[a]pyrene	1000
Benzo[b]fluoranthene	5600
Dibenzo[a,h]anthracene	560
Indeno[1,2,3-cd]pyrene	5600

µg/kg - Micrograms per kilogram
ft bls - Feet below land surface

100' 0 100'

Title:

SVOC EXCEEDANCES DETECTED IN SOIL SAMPLES

- EMPIRE VARNISH PROPERTY -
EMPIRE PROPERTY INVESTIGATION
GREENPOINT, BROOKLYN, NEW YORK

Prepared For:
EXXONMOBIL REFINING AND SUPPLY COMPANY
INWOOD, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: C.P.	Date: 29JAN07	FIGURE
Prepared by: J.A.D.	Scale: AS SHOWN	7
Project Mgr: C.P.	Office: NY	
File No: MC3083201	Project: 17230E21	

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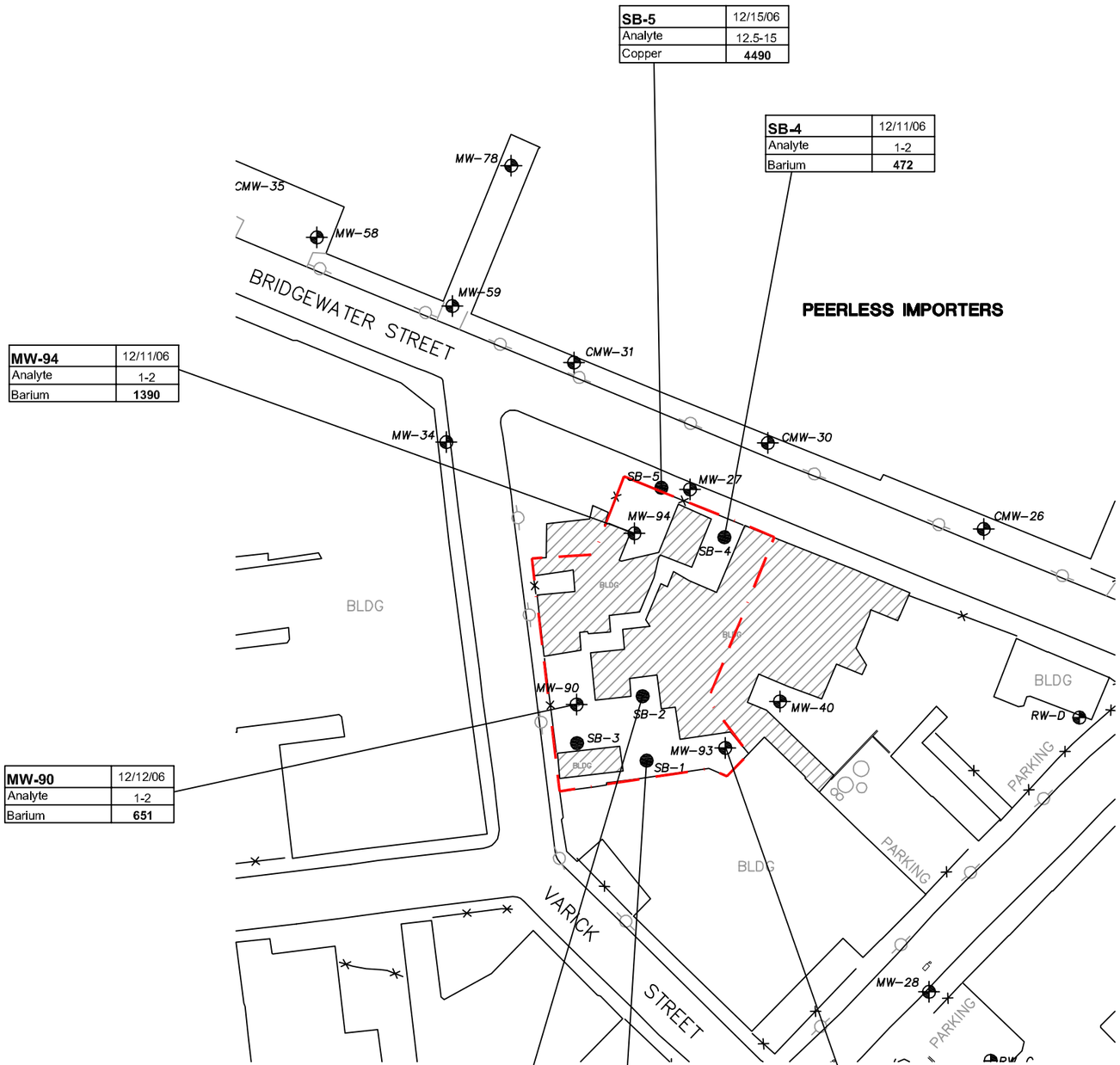

LEGEND

- EMPIRE VARNISH PROPERTY LINE (APPROX.)
- EXISTING FENCELINE
- EXISTING BUILDING / STRUCTURE
- EXISTING UTILITY POLE
- BLD — EXISTING BUILDING DESIGNATION
- MW-34 — MONITORING WELL LOCATION
- SB-1 — SOIL BORING LOCATION

TYPICAL DATABOX INFORMATION

ID NUMBER	**MW-90**	12/12/06	SAMPLE DATE
ANALYTES	Analyte	29-31	SAMPLE DEPTH (FT)
	1,2,4-Trimethylbenzene	**483000**	
	1,3,5-Trimethylbenzene	**205000**	CONCENTRATION (ug/kg)
	Benzene	**73900**	
	Xylenes (total)	**1440000**	

Parameter (Concentrations in ug/kg)	Restricted - commercial (mg/kg)
Arsenic	16
Barium	400
Copper	270
Lead	1000
Mercury	2.8

mg/kg - Milligrams per kilogram
ft bls - Feet below land surface

100' 0 100'

Title:

METAL EXCEEDANCES DETECTED IN SOIL SAMPLES

- EMPIRE VARNISH PROPERTY -
EMPIRE PROPERTY INVESTIGATION
GREENPOINT, BROOKLYN, NEW YORK

Prepared For:
EXXONMOBIL REFINING AND SUPPLY COMPANY
INWOOD, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: C.P.	Date: 29JAN07	FIGURE
Prepared by: J.A.D.	Scale: AS SHOWN	8
Project Mgr: C.P.	Office: NY	
File No: MC3083201	Project: 17230E21	

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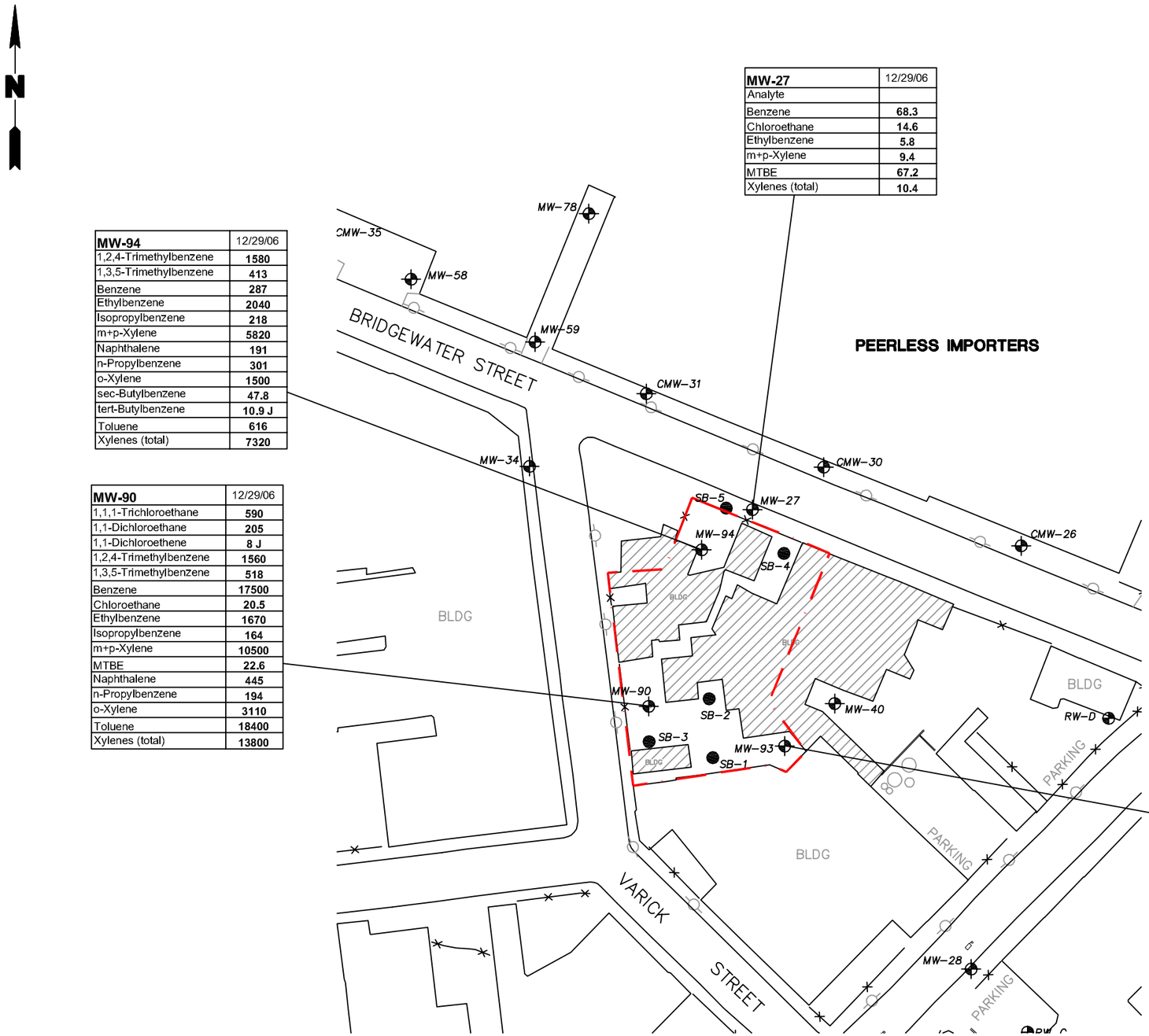

MW-94	12/29/06
1,2,4-Trimethylbenzene	1580
1,3,5-Trimethylbenzene	413
Benzene	287
Ethylbenzene	2040
Isopropylbenzene	218
m+p-Xylene	5820
Naphthalene	191
n-Propylbenzene	301
o-Xylene	1500
sec-Butylbenzene	47.8
tert-Butylbenzene	10.9 J
Toluene	616
Xylenes (total)	7320

MW-90	12/29/06
1,1,1-Trichloroethane	590
1,1-Dichloroethane	205
1,1-Dichloroethene	8 J
1,2,4-Trimethylbenzene	1560
1,3,5-Trimethylbenzene	518
Benzene	17500
Chloroethane	20.5
Ethylbenzene	1670
Isopropylbenzene	164
m+p-Xylene	10500
MTBE	22.6
Naphthalene	445
n-Propylbenzene	194
o-Xylene	3110
Toluene	18400
Xylenes (total)	13800

MW-27	12/29/06
Analyte	
Benzene	68.3
Chloroethane	14.6
Ethylbenzene	5.8
m+p-Xylene	9.4
MTBE	67.2
Xylenes (total)	10.4

MW-93	12/29/06
1,2,4-Trimethylbenzene	1320
1,3,5-Trimethylbenzene	443
Benzene	17500
Ethylbenzene	1510
Isopropylbenzene	148
m+p-Xylene	9170
Naphthalene	442
n-Propylbenzene	166
o-Xylene	2760
Toluene	16900
Xylenes (total)	12200

100' 0 100'

LEGEND

- EMPIRE VARNISH PROPERTY LINE (APPROX.)
- EXISTING FENCELINE
- BLD — EXISTING BUILDING / STRUCTURE
- EXISTING UTILITY POLE
- BLD — EXISTING BUILDING DESIGNATION
- MW-34 — MONITORING WELL LOCATION

TYPICAL DATABOX INFORMATION

ID NUMBER → MW-27 | 12/29/06 ← SAMPLE DATE

ANALYTES	
Analyte	
Benzene	68.3
Chloroethane	14.6 ← CONCENTRATION (ug/L)
Ethylbenzene	5.8
m+p-Xylene	9.4
MTBE	67.2
Xylenes (total)	10.4

Parameter (Concentrations in ug/L)	NYSDEC AWQSGVs (ug/L)
1,1,1-Trichloroethane	5
1,1-Dichloroethane	5
1,1-Dichloroethene	5
1,2,4-Trimethylbenzene	5
1,3,5-Trimethylbenzene	5
Benzene	1
Chloroethane	5
Ethylbenzene	5
Isopropylbenzene	5
m+p-Xylene	5
MTBE	10
Naphthalene	10
n-Propylbenzene	5
o-Xylene	5
sec-Butylbenzene	5
tert-Butylbenzene	5
Toluene	5
Xylenes (total)	5

NYSDEC - New York State Department of Environmental Conservation
AWQSGVs - Ambient Water-Quality Standards and Guidance Values
µg/L - Micrograms per liter
J - Estimated value

Title:

VOC EXCEEDANCES DETECTED IN GROUNDWATER SAMPLES

- EMPIRE VARNISH PROPERTY -
EMPIRE PROPERTY INVESTIGATION
GREENPOINT, BROOKLYN, NEW YORK

Prepared For:
EXXONMOBIL REFINING AND SUPPLY COMPANY
INWOOD, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: C.P.	Date: 29JAN07	FIGURE
Prepared by: J.A.D.	Scale: AS SHOWN	9
Project Mgr: C.P.	Office: NY	
File No: MC3083201	Project: 17230E21	

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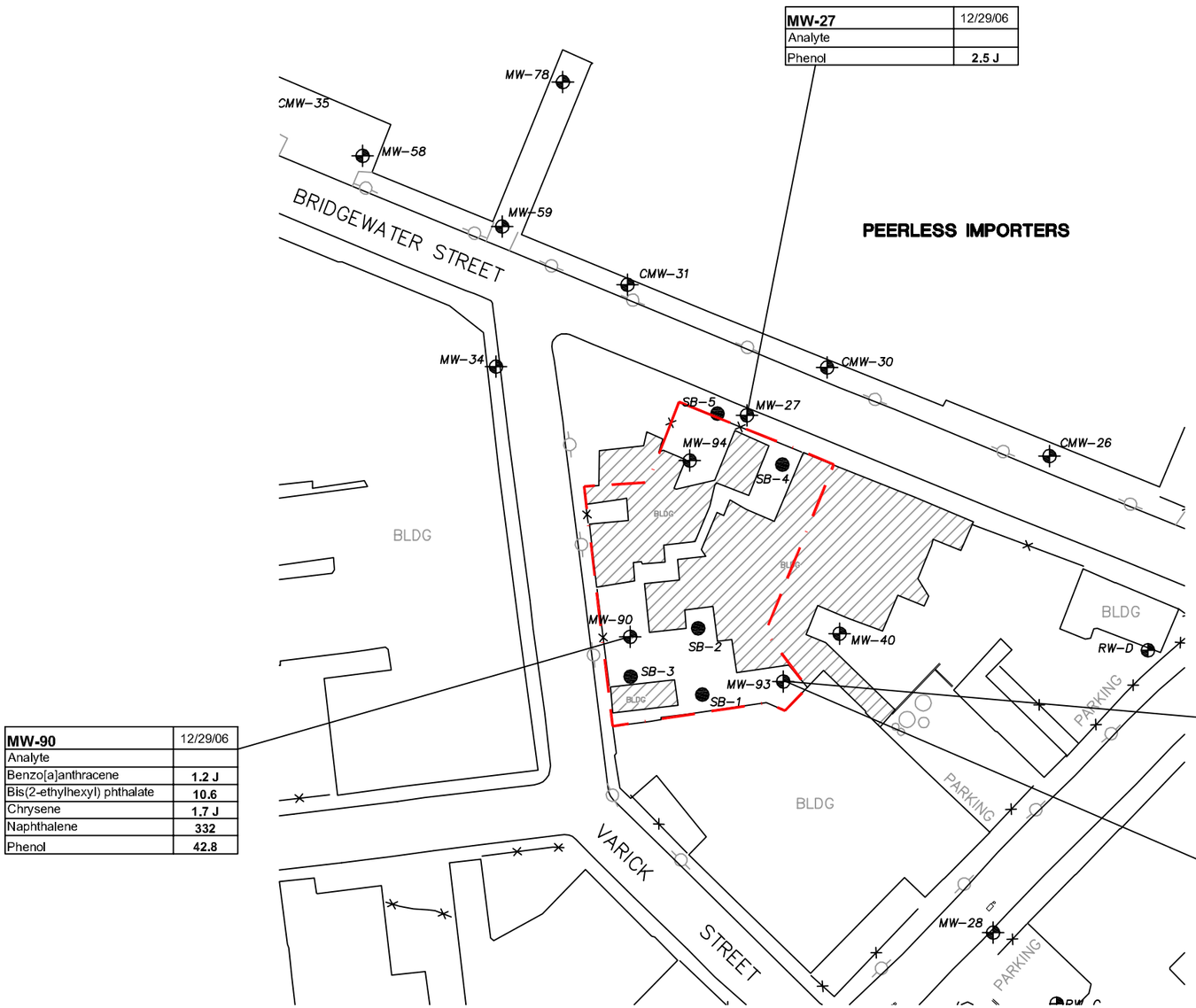

LEGEND

- EMPIRE VARNISH PROPERTY LINE (APPROX.)
- EXISTING FENCELINE
- BLD — EXISTING BUILDING / STRUCTURE
- EXISTING UTILITY POLE
- BLD — EXISTING BUILDING DESIGNATION
- MW-34 — MONITORING WELL LOCATION

TYPICAL DATABOX INFORMATION

ID NUMBER →	MW-27	12/29/06 ← SAMPLE DATE
ANALYTES	Analyte	
	Benzene	68.3
	Chloroethane	14.6 ← CONCENTRATION (ug/L)
	Ethylbenzene	5.8
	m+p-Xylene	9.4
	MTBE	67.2
	Xylenes (total)	10.4

Restricted - commercial	NYSDEC AWQSGVs (ug/L)
Acenaphthene	20
Benzo[a]anthracene	0.002
Benzo[a]pyrene	0.002
Benzo[b]fluoranthene	0.002
Benzo[k]fluoranthene	0.002
Bis(2-ethylhexyl) phthalate	5
Chrysene	0.002
Naphthalene	10
Phenol	1

NYSDEC - New York State Department of Environmental Conservation
AWQSGVs - Ambient Water-Quality Standards and Guidance Values
µg/L - Micrograms per liter
J - Estimated value

100' 0 100'

Title:

SVOC EXCEEDANCES DETECTED IN GROUNDWATER SAMPLES

- EMPIRE VARNISH PROPERTY -
EMPIRE PROPERTY INVESTIGATION
GREENPOINT, BROOKLYN, NEW YORK

Prepared For:
EXXONMOBIL REFINING AND SUPPLY COMPANY
INWOOD, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: C.P.	Date: 29JAN07	FIGURE
Prepared by: J.A.D.	Scale: AS SHOWN	10
Project Mgr: C.P.	Office: NY	
File No: MC3083201	Project: 17230E21	

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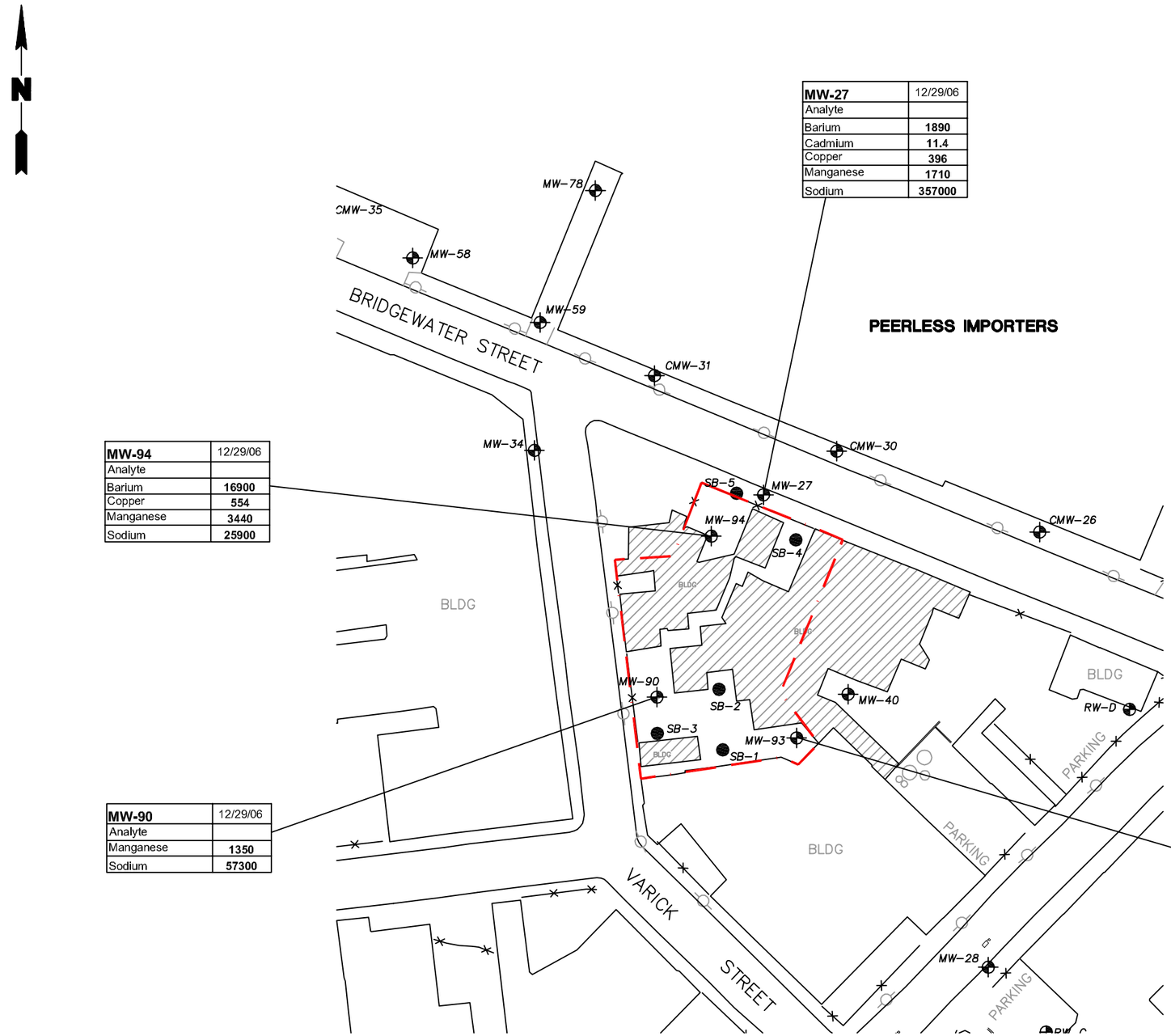

MW-27	12/29/06
Analyte	
Barium	1890
Cadmium	11.4
Copper	396
Manganese	1710
Sodium	357000

MW-94	12/29/06
Analyte	
Barium	16900
Copper	554
Manganese	3440
Sodium	25900

MW-90	12/29/06
Analyte	
Manganese	1350
Sodium	57300

MW-93	12/29/06
Analyte	
Manganese	2520
Sodium	33000

LEGEND

- EMPIRE VARNISH PROPERTY LINE (APPROX.)
- EXISTING FENCELINE
- BLD — EXISTING BUILDING / STRUCTURE
- EXISTING UTILITY POLE
- BLD — EXISTING BUILDING DESIGNATION
- MW-34 — MONITORING WELL LOCATION

TYPICAL DATABOX INFORMATION

ID NUMBER	MW-27	12/29/06 (SAMPLE DATE)
Analyte		
ANALYTES	Benzene	68.3
	Chloroethane	14.6 (CONCENTRATION (ug/L))
	Ethylbenzene	5.8
	m+p-Xylene	9.4
	MTBE	67.2
	Xylenes (total)	10.4

Parameter (Concentrations in µg/kg)	NYSDEC AWQSGVs (µg/L)
Barium	1000
Copper	200
Manganese	300
Sodium	20000

NYSDEC - New York State Department of Environmental Conservation
AWQSGVs - Ambient Water-Quality Standards and Guidance Values
µg/L - Micrograms per liter

100' 0 100'

Title:
METAL EXCEEDANCES DETECTED IN GROUNDWATER SAMPLES
- EMPIRE VARNISH PROPERTY -
EMPIRE PROPERTY INVESTIGATION
GREENPOINT, BROOKLYN, NEW YORK

Prepared For:
EXXONMOBIL REFINING AND SUPPLY COMPANY
INWOOD, NEW YORK

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: C.P.	Date: 29JAN07	FIGURE 11
Prepared by: J.A.D.	Scale: AS SHOWN	
Project Mgr: C.P.	Office: NY	
File No: MC3083201	Project: 17230E21	

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