

**Limited Phase II Environmental  
Site Assessment Report  
Former Sylvan  
Equipment Corporation  
91 North 12<sup>th</sup> Street  
Brooklyn, New York**

**H&H Job No. PRG-001**

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2923 South Tryon Street  
Suite 100  
Charlotte, NC 28203  
704-586-0007

8601 Six Forks Road  
Suite 400  
Raleigh, NC 27615  
919-847-4241

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**1.0 Introduction and Background Information**

Hart & Hickman, PC (H&H) has conducted Phase II site assessment activities at the former Sylvan Equipment Corporation facility (subject property) located at 91 North 12<sup>th</sup> Street in Brooklyn, New York. A site location map is provided as Figure 1, and a site plan is provided as Figure 2.

The subject site consists of four separate parcels totaling approximately 2.7 acres of land and contains four buildings. The subject property is currently occupied by Sunbelt Rentals, an equipment rental business. The two buildings located in the northwest portion of the subject property are used as a maintenance shop and warehouse storage. The two buildings located in the southern portion of the subject property are used for storage, offices, and additional maintenance shops. Historical information indicates that the site has been used for various industrial purposes since at least the 1800's. The subject property has been used as an equipment rental and sales business for the last 75 years.

In July 1999 Malcom Pirnie, Inc., on behalf of NationsRent, Inc. (tenant), conducted a Phase II Environmental Site Assessment to investigate potential impacts associated with the current and/or past operations at the subject and surrounding properties. Malcom Pirnie, Inc. installed soil borings and monitoring wells to investigate potential areas of concern including current and former underground storage tank (UST) locations, upgradient sources, a sediment trap, and areas of staining. Analytical results indicated petroleum impacts were present in both the ground water and soil at several locations.

In a letter from the New York State Department of Environmental Conservation (NYSDEC) dated June 18, 2007 and follow up letter dated July 19, 2007, NYSDEC requested additional assessment activities be completed to investigate ground water contamination reported on August 31, 1999 (NYSDEC Spill # 9906462). The NYSDEC correspondence is provided in Appendix A. Specifically, the NYSDEC requested the following additional investigations be conducted:

- Closed in-place 550-gallon gasoline UST (Malcom Pirnie sample BK-3) – The ground water sample collected from monitoring well BK-3 in 1999 indicated the presence of methyl tert-butyl ether (MTBE) and tetrachloroethane (PCE) at levels below the NYSDEC ground water standard. NYSDEC requested soil and ground water samples be collected at this location.
- Sediment trap (Malcom Pirnie sample BK-6) – Soil samples collected from this location in 1999 indicated the presence of several volatile organic compounds (VOCs) including benzene and naphthalene at concentrations exceeding the NYSDEC Soil to Ground Water cleanup standard. The NYSDEC requested additional soil and ground water samples be collected at this location.
- Four former 550-gallon diesel USTs and northern property corner (Malcolm Pirnie samples BK-7 and BK-10) – Ground water sampling in 1999 indicated several VOCs were present at concentrations exceeding the NYSDEC ground water standard. NYSDEC requested soil sampling be conducted at both of these locations as well as a ground water investigation including monitoring well sampling and ground water elevation survey.

On October 8, 2007, H&H conducted additional environmental assessment activities at the site. The activities completed by H&H included the installation and sampling of one temporary ground water monitoring well (BK-6A), sampling of two existing monitoring wells (BK-3 and

BK-7), installation of four soil borings (BK-3A, BK-6A, BK-7A, and BK-10A), and the collection of static water level measurements from all existing onsite monitoring wells.. These activities were conducted to provide additional information concerning the current soil and ground water conditions at the site. The methods, results, and conclusions of the soil sampling, temporary monitoring well installation, and ground water sampling are presented in Sections 2.0 and 3.0.

As part of the assessment activities, NYSDEC also requested that potential receptors in the vicinity of the site be identified. The receptor information is provided in Section 4.0. NYSDEC also requested a summary of former UST information for the site. Table 1 provides a summary of the requested UST information.

## 2.0 Soil Sampling

### 2.1 Methods

On October 8, 2007, H&H and Summit Drilling, Inc. (Summit) of Bound Brook, New Jersey advanced four soil borings at the site using a direct push technology (DPT) rig (Geoprobe 5400). Prior to drilling activities, Summit contacted the New York One Call utility locating service to mark public utilities located in the work area.

Three soil borings (BK-3A, BK-7A, and BK-10A) were advanced to a depth of 5 feet below ground surface (BGS) adjacent to the existing monitoring wells installed by Malcolm Pirnie, Inc. in 1999. Soil boring BK-6A was installed adjacent to the northwest corner of the sediment trap and was advanced to a depth of 12 ft BGS to allow the installation of a temporary well (discussed in Section 3.1). The soil boring locations are shown in Figure 2.

Soil cores were continuously retrieved from each soil boring within acetate sleeves for characterization and soil vapor screening with a photoionization vapor detector (PID). Soil samples were collected from the two deepest two foot intervals which also corresponded with the highest PID readings. The soil samples were placed into laboratory containers which were properly labeled, and then placed in a chilled cooler for transport to the New York certified analytical laboratory, Test America Corporation. All samples were handled under chain-of-custody protocol.

With the approval of the NYSDEC case manager, only the deepest sample interval collected from each boring was submitted for analysis of VOCs by EPA Method 8260 and semi-VOCs (SVOCs) by EPA 8270.

## 2.2 Results

The results of analyses of the soil samples are summarized in Table 3 and discussed below. Laboratory analytical data sheets are provided in Appendix C.

### Sediment Trap – BK-6

The results of the soil analyses indicate that several VOCs are present at concentrations exceeding the recommended Soil Cleanup Objectives outlined in the NYSDEC Technical and Administrative Guidance Memorandum #HWR-94-4046 (TAGM 4046), Determination of Soil Cleanup Objectives and Cleanup Levels, December 2000 (hereafter referred to as the soil cleanup objectives). The target constituents above cleanup levels include benzene (0.895 mg/kg), ethylbenzene (16.3 mg/kg), isopropylbenzene (3.18 mg/kg), p-isopropyltoluene (10.2 mg/kg), n-propylbenzene (5.78 mg/kg), 1,2,4-trimethylbenzene (22.2 mg/kg), and xylenes (2.53 mg/kg).

### Closed in-place gasoline UST – BK-3A

The results of the soil analyses indicate that all target constituents are below soil cleanup objectives.

### Four Former 550-gallon diesel USTs – BK-7A

The results of the soil analyses indicate that the SVOC benzo(a)pyrene was detected at a concentration of 0.375 mg/kg exceeding the soil cleanup objective of 0.061 mg/kg. No other SVOCs and no VOCs were detected above laboratory method detection limits.

Northern Corner of Site –BK-10A

The results of the soil analyses indicate that the polynuclear aromatic hydrocarbons (PAHs) benzo(a)anthracene (2.23 mg/kg), benzo(a)pyrene (2.51 mg/kg), chrysene (2.53 mg/kg), benzo(b)fluoranthene (2.22 mg/kg), benzo(k)fluoranthene (2.42 mg/kg), and dibenz(a,h)anthracene (0.604 mg/kg) were detected at concentrations exceeding their respective soil cleanup objectives.

### **3.0 Temporary Monitoring Well Installation and Ground Water Sampling**

#### **3.1 Methods**

Temporary monitoring well BK-6A was installed by DPT methods at the site on October 8, 2007. Temporary monitoring well BK-6A was constructed of 1-inch diameter PVC casing with a 10-foot PVC well screen. The well screen was placed to bracket the water table. Monitoring wells BK-3, BK-7, and BK-10 were installed by Malcolm Pirnie in October 1999. The location of the site monitoring wells is shown in Figure 2, and the borings logs and a temporary well construction record are provided in Appendix B.

Prior to sampling, water levels in all of the site monitor wells were measured with an electronic depth to water oil interface probe. Water level measurements and ground water elevation data are provided in Table 2 and Figure 3. Following water level gauging, the monitor wells were purged of a minimum of three well bore volumes of standing water until pH, temperature, and conductivity stabilized. Temporary monitoring well BK-6A was purged dry prior to the stabilization of the water quality parameters. BK-6A was allowed to recharge prior to sampling.

Following purging, samples were collected from the wells. The well purging and sampling were conducted with new, disposable Teflon bailers. Ground water samples were placed into laboratory-supplied containers which were properly labeled, and then placed in a chilled cooler for transport to the analytical laboratory. Samples were handled under chain-of-custody protocol.

The ground water samples were analyzed for VOCs by EPA Method 8260 and SVOCs by EPA Method 8270. The laboratory analyses were conducted by Test America Corporation, a New York certified laboratory.

## 3.2 Results

The water level gauging data are presented in Table 2. Results of the water level gauging indicate that the depth to ground water at the site ranges from approximately 5 ft BGS in the northern portion of the site to 10 ft BGS in the southern portion of the site.

The water level data collected on October 8, 2007 were used to develop a shallow ground water potentiometric surface map (Figure 3). The map indicates shallow ground water generally flows to the southeast.

The results of analyses of the monitoring well samples are summarized in Table 4 and are discussed below. Laboratory analytical data sheets are provided in Appendix C.

### Closed in-place gasoline UST – BK-3A

The results of the ground water analyses indicate that all target constituents are below laboratory method detection limits.

### Sediment Trap – BK-6

The results of the ground water analyses indicate that several VOCs are present at concentrations exceeding their respective NYSDEC ground water standards. The target constituents exceeding ground water standards include benzene (2,110 µg/l), sec-butylbenzene (223 µg/l), n-butylbenzene (215 µg/l), ethylbenzene (844 µg/l), isopropylbenzene (341 µg/l), p-isopropyltoluene (208 µg/l), methyl tert-butyl ether (257 µg/l), naphthalene (697 µg/l), n-propylbenzene (439 µg/l), 1,3,5-trimethylbenzene (227 µg/l), 1,2,4-trimethylbenzene (3,020 µg/l), and xylenes (247 µg/l).

#### Four Former 550-gallon diesel USTs - BK-7

The results of the ground water analyses indicate that the VOCs isopropylbenzene (2.26 µg/l), sec-butylbenzene (1.13 µg/l), and n-propylbenzene (1.54 µg/l) are present at concentrations below their respective NYSDEC ground water standards. No additional VOCs and no SVOCs were detected above laboratory method detection limits.

#### Northern Corner of Site –BK-10

During static water level measurements, 2.37 ft of free product was measured in monitoring well BK-10. Based on the presence of free product, a ground water sample was not collected from BK-10.

Based upon ground water elevation data collected at the site and lack of impacts at the potential source area well BK-7, it appears the free product observed in monitoring well BK-10 is likely from an offsite source. The Bayside Fuel Oil Depot is located adjacent and upgradient. The property has historically been operated as Astral Refinery (kerosene) and later as a bulk petroleum storage facility since the 1800s. At maximum capacity, the facility reportedly stored approximately 5.5 million gallons of petroleum products in two USTs and 13 aboveground storage tanks (ASTs). At least six reported spill incidents are associated with the property and the site entered into the Voluntary Cleanup Program in 2002 (Site ID V00587-2). Directly south of the Bayside Fuel Oil Depot and also upgradient of the subject property is the former Williamsburg Manufactured Gas Site. Based on the current and/or historic use of the adjacent properties, it is likely the source of the free product located in the northern portion of the subject property is from an upgradient source.

## **4.0 Receptor Survey**

As part of the assessment activities, H&H also completed a potential receptor survey. In general, the receptor survey included a review of the site and nearby area for water supply wells, surface water bodies, subsurface structures, and municipal water availability. Land use and zoning information were also obtained for the site and nearby area.

### **4.1 Property Owner and Land Use**

The subject property is approximately 2.1 acres in size and is owned by Sylvan Holdings, LLC. The facility is currently occupied by Sunbelt Rentals, an equipment rental business. There are no areas of woods, open land, agricultural crops, or barren areas.

The land use within the area is predominately commercial and warehouse/industrial. The site is bounded by manufacturing facilities and office/warehouse space. The Bayside Fuel Oil Depot is located adjacent and west of the subject property. H&H identified a park and high school approximately 500 to 600 ft southeast to east of the subject property.

### **4.2 Zoning**

The subject site and adjacent properties are zoned M1-2 and M3-1 (Manufacturing). Mixed used zoning MX-8 (M1-2/R6A) is present to the north, east, and south of the manufacturing district containing the subject property.

### **4.3 Municipal Water Availability and Water Supply Wells**

Due to the poor water quality and documented regional ground water contamination, municipal water is provided to all of Brooklyn. Based on this information it is unlikely any water supply wells are present in the vicinity of the subject property.

#### **4.4 Surface Water Bodies**

The East River is located approximately 1,500 ft west and Bushwick Inlet is located approximately 350 ft north of the subject property.

#### **4.5 Subsurface Structures**

Due to the urban nature of the property, subsurface utilities are present throughout the subject property and surrounding area.

## 5.0 Conclusions

The subject property is located in a heavily industrialized area. The industrialized development of the site and surrounding properties extends to at least the 1800s. The presence of the polynuclear aromatic hydrocarbons (PAHs) in soil samples collected from BK-10A are indicative of historical fill material resulting from the past uses of the property. These soils are currently capped with either asphalt or concrete and pose no exposure risk to workers at the property.

Petroleum impacts identified in the soil sample collected from BK-6A are likely associated with four 1,500-gallon USTs located adjacent to the sediment trap (NYSDEC Spill #00-03390). Sidewall samples collected by Tyree Brothers Environmental Services, Inc. in June 2000 indicated impacts remained in the soils at the time of removal of the four USTs. The October 2000 *Closure Report for the Excavation of Underground Storage Tanks* is provided in Appendix D.

Ground water sampling activities indicated the presence of free product in the northern portion of the subject property. Ground water flow direction and lack of potential onsite sources in the vicinity of the observed free product suggest that the Bayside Fuel Oil Depot or the former Williamsburg Manufactured Gas Plant, located adjacent and upgradient of the subject property, are the likely source of the free product and associated ground water contamination.

Ground water contamination observed in temporary monitoring well BK-6A could be related to the former 1,500-gallon USTs removed from the site in 2000 or could be a result of larger scale impacted ground water from the upgradient former Williamsburg Manufactured Gas Plant site. The lack of ground water impacts in downgradient monitoring well BK-3 indicates impacts from onsite or upgradient sources have likely not migrated offsite.

The results of the receptor survey did not identify any ground water receptors in the area of the site, and the site and adjacent areas are used for commercial/industrial purposes. Based upon the results of the ground water assessment, receptor survey, existing poor ground water quality in the vicinity of the subject property, and a documented upgradient source of ground water impacts including free product, soil and ground water impacts at the site can be most effectively managed through land use restrictions and standard engineering controls.

## **Appendix A**

### **NYSDEC Correspondence**

## **Appendix B**

### **Soil Boring and Well Construction Logs**

**Appendix C**  
**Laboratory Analytical Data Sheets**

**Appendix D**  
**Tyree Brothers Closure Report**