



**Site Closure
Investigation
Report/Facility
Closure Plan**

800.426.4262
W&C Contact

woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

213949.00
Karta Corp
1013-1017 Lower
South Street,
Peekskill NY

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1. INTRODUCTION

This Site Closure Investigation Report and Facility Closure Plan (SCIR/FCP) was prepared for the Global Recycling and Collection, Inc. ("Global") site located at 1011-1017 Lower South Street in Peekskill, New York (the "Site") (Figure 1). The Site is a former solid waste processing facility permitted under Part 360 of the New York State Solid Waste regulations.

This SCIR/FCP was prepared in response to the New York Department of Environmental Conservation's (NYSDEC) April 13, 2011 letter. The NYSDEC letter denied a previous closure plan dated March 2010 that was submitted to the NYSDEC on February 2, 2011. According to the NYSDEC letter, the closure plan did not adequately address the requirements of 6 NYCRR Sections 360-1.9, 1.14 and 16.4. The NYSDEC April 13, 2011 letter discusses two components of the closure including (1) the Facility (buildings and infrastructure), and (2) the Site.

The NYSDEC concerns, as articulated in the April 13, 2011 letter, were addressed in a three step process as follows:

- Step 1 - Following the April 13, 2011 letter, Woodard & Curran (W&C) developed a scope of work for supplemental investigation to support Site and Facility Closure and submitted a Site Closure Investigation and Facility Closure Plan (SCI/FCP) dated October 25, 2011 to the NYSDEC. In response, the NYSDEC issued a letter dated November 25, 2011 identifying additional actions to be included in the scope of work for the proposed SCI/FCP, and identified additional information that was to be provided in the SCIR/FCP to be submitted upon completion of the Site Closure Investigation (SCI).
- Step 2 - Implementation of the supplemental SCI to support existing historic data in the development of a Site and Facility Closure Plan. In addition to the investigation scope proposed in the October, 25 2011 SCI/FCP, W&C addressed the NYSDEC's comments during the implementation of the supplemental SCI which was conducted in April and May of 2012.
- Step 3 - Interpretation of a complete data set and development of the Site and Facility Closure Plan as presented in this revised SCIR/FCP including a comparison of Site data to the Unrestricted, Restricted Residential, and Protection of Ground Water Soil Cleanup Objective (SCO).

The following SCIR/FCP sections provide a complete history of previous Site investigations along with the supplemental Site investigation activities, the data analysis, and proposed activities for Facility and the Site as follows:

- Section 1 - Introduction;
- Section 2 - Site location including physical setting, geology, hydrogeology and topography;
- Section 3 - Site ownership history of 1011, 1013 and 1017 Lower South Street;
- Section 4 - Historic investigations and environmental data that exists for the Site;
- Section 5 - Discussing previously identified Areas of Concern and the evaluation of existing data to determine the scope of work for the April/May 2012 investigation (Step 1);
- Section 6 - The work plan for the April/May 2012 investigation based on the evaluation presented in Section 5 (Step 2);
- Section 7 - Presenting data gathered during the SCI completed by W&C in May 2012 aimed at better defining potential areas of contamination identified during previous investigations (Step 3);
- Section 8 - Evaluation of data gathered during the SCI to determine the nature and extent of any fill material that may be present on the Site to facilitate the development of the Final Site Closure Plan as discussed in the NYSDEC April 13, 2011 letter.
- Section 9 - The Final Site Closure Plan including documentation of activities already completed and those necessary for Site Closure.

- Section 10 – Presenting the background of prior Facility Closure Plan submittals and requirements, identifying the applicable closure criteria and presenting the status, methodology and documents associated with completion of these activities required for closure.

2. PHYSICAL SETTING

2.1 LOCATION

The Site consists of three adjacent parcels at 1011 Lower South Street and 1013-1017 Lower South Street in Peekskill, New York (Figure 1). The Site lies south of the intersection of Louisa Street and Lower South Street and West of Route 9. The 1017 Lower South Street parcel is designated 32.20-2-4 and comprises 1.673 acres of the Site. Parcel C refers to 1013 Lower South Street and comprises 2.303 acres of the Site. The 1011 Lower South Street parcel is designated 32.20-2-5 and comprises 4.4 acres of the Site (Appendix A, Figure A-5).

2.2 TOPOGRAPHY

The Site is located on the U.S. Geological Survey (USGS) 7.5 Minute Topographic Map Series Peekskill, New York Map with an elevation between 35 and 70 feet above sea level. The Site is moderately sloped with general surface drainage to the west towards the Hudson River (Figure 1).

2.3 GEOLOGY

According to the Surficial Geologic Map of New York, Lower Hudson Sheet (Cadwell et. al., 1989), the unconsolidated geology beneath the Site consists of till overlying bedrock. According to Caldwell et. al. (1989), the till is of variable texture (e.g., clay, silt-clay, boulder clay), usually poorly sorted diamict, deposition beneath glacial ice, relatively impermeable (loamy matrix), variable clast content ranging from abundant well-rounded diverse lithologies in valley tills to relatively angular, more limited lithologies in upland tills and tends to be sandy in areas underlain by gneiss or sandstone with potential land instability on steep slopes. The thickness is variable between one and 50 meters.

According to the Geologic Map of New York, Lower Hudson Sheet (Fisher et. al., 1970), the bedrock geology beneath the Site is classified as Upper Ordovician Cortland and Smaller Mafic Complexes consisting of hornblende norite, in which the hornblende is poikilitic.

2.4 SURFACE WATER

There are no surface water bodies on Site; however, the Hudson River is present approximately 0.2 miles to the west of the Site.

3. SITE OWNERSHIP HISTORY

Site ownership and operating history were researched to facilitate the interpretation of Site environmental data and scoping of the SCI used to develop the proposed Site Closure Plan. Below is a summary of the research completed and findings as they relate to historic Site ownership and operating activities. The drawings that depict the ownership history are provided in Appendix A.

3.1 HISTORIC OWNERSHIP AND SUBDIVISIONS OF LAND

A review of land records was conducted to determine the various owners of the two parcels of land presently owned by Global Land, Inc. ("Global"). Karta Container and Recycling Inc. and Global were both operators during the earlier stages of facility operations. Both entities were consolidated into Karta Corporation Inc., for parcels 1013 and 1017 following NYSDEC consent order dated 2001. It should be noted that parcel 1013 as it exists today was formerly a part of parcel 1011 which was subdivided in 2006.

The parcels are presently known as 1011, 1013, and 1017 (LSS). Deeds and maps filed in the Westchester County Clerk's Office were examined to determine the chain of ownership for the Global parcels. In addition, various surveys of the properties were also reviewed.

Our research indicates that the Global parcels were once part of a larger parcel owned by Harlan L. Lent. The Lent property extended east of what is now US Route 9. A map entitled Map of Lands to be acquired for the Briarcliff Peekskill Parkway, filed in 1932, bisected the Lent property and acquired 5.7 acres for what is now the Route 9 right-of-way (ROW). The Global parcels were part of the western portion of the bisected Lent property. Both the eastern and western portions of the Lent property were conveyed to the City of Peekskill by a deed from Edith A. Petre on May 24, 1944 (Figure A-1; Appendix A).

The City of Peekskill retained ownership of the western parcel until it began conveying their ownership of portions of the property beginning in 1957. Peekskill conveyed a portion of the western parcel to Stuart M. Muller and William Gallagher on January 28, 1957, while the City of Peekskill retained ownership of the other portions (Figure A-2; Appendix A).

The Mueller and Gallagher property, which included the land area that would become 1013 and 1017 Lower South Street was transferred several times prior to the parcel being further subdivided by deed. Muller and Gallagher transferred the property to 118 Oakley Ave Corp in 1967, which then transferred the property to Charles Geisenheimer a few days later. The estate of Geisenheimer subsequently transferred the property to Gamul Realty Co in November of 1967. Gamul split the property by conveying a portion to Beach Hill Realty Corp on August 8, 1979, and transferring the balance of the property to William Gluck and Jeffery Phillips on February 6, 1980. The portion conveyed to Beach Hill Realty Corp is south of the Site. Gluck and Phillips further subdivided the property by conveying the portion of the property known as 1017 LSS to Karta Diner, Inc. ("Karta") on February 9, 1981. The remaining property, which includes the land area of 1013 LSS was conveyed to Scodeck Construction Corp on June 27th 1984. Figure A-3 in Appendix A illustrates the ownership of the various parcels in 1984.

3.2 OWNERSHIP HISTORY OF GLOBAL PARCELS

The Global Parcels include 1017 and 1013 LSS (including a portion of 1011 LSS that was acquired in a subdivision in 2006) plus the City of Peekskill ROW. Below is a discussion of the Global parcels.

3.2.1 1017 Lower South Street

In 1989, the recycling operations of Karta on 1017 LSS were first registered with the NYSDEC. The ownership at that time is shown in Figure A-4 of Appendix A. Recycling operations commenced on the Karta Diner parcel in 1989, although the parcel was owned by the City of Peekskill Industrial Development Agency (IDA) at that time.

The recent ownership history of the land area that comprises 1017 LSS is summarized in the table below:

Property Owner	Date Acquired
Karta Diner, Inc.	February 2, 1981
City of Peekskill Industrial Development Agency	July 1, 1989
Karta Industries, Inc.	October 31, 2006
Busy Beavers, Inc.	October 31, 2006
Global Recycling and Collection	June 7, 2011

3.2.2 1011 and 1013 Lower South Street

The property conveyed to Scodeck Construction Corp (Figure A-3; Appendix A) was subdivided into 1011 and 1013 Lower South Street as shown on F.M. 27801, dated August 2, 2006 (Appendix A). 1011 LSS (4.9 acres) was conveyed to Peekskill Bay, LLC with Global Land, Inc. retaining ownership of the balance (2.3 acres).

3.2.2.1 1011 Lower South Street

1011 Lower South Street is divided into two parcels (Parcels 5 & 6) located along Lower South Street currently owned by the City of Peekskill (Appendix A, Figure A-5). Parcel 5 was previously owned by several entities, including an unnamed auto junk yard and Ginsberg Development Corporation. Based on NYS online aerial imagery, the southern portion of Parcel 5 consisted of a junk yard prior to the mid 1990's and the northern portion was developed as residential properties. In the early 2000's, several structures were seen on the southern portion of Parcel 5. By the later 2000's, the structures seen in the southern portion of Parcel 5 were removed.

Parcel 6 was previously owned by Karta Recycling and was developed as a solid waste and construction and demolition transfer station. As stated in section 3.2.2, Parcel 6 was subdivided from 1011 Lower South Street and is currently owned by the City of Peekskill.

DEC has required that Karta address 1011 Lower South Street in this Closure Plan. It should be noted, however, that the City of Peekskill has owned and operated 1011 Lower South Street for approximately four years, and that Karta has not had access to 1011 Lower South Street since April/May of 2009. The City provided data to W&C regarding testing conducted by Tectonic Engineering & Surveying Consultants P.C. (Tectonic) on behalf of the City on 1011 Lower South Street in 2011, which is discussed further in Sections 4.9 and 8.6.

3.2.2.2 1013 Lower South Street

The ownership history of the land area presently known as 1013 LSS is summarized in the table below:

Property Owner	Date Acquired
Scodeck Construction Corp	June 27, 1984
Louis DiNapoli, William Decker, Angelo Carbone, and Pasquali Cartalemi	July 23, 1984
Louis DiNapoli, Angelo Carbone, and Pasquali Cartalemi	January 30, 1986
Travis Lane Associates	June 9, 1986
Global Land, Inc.	July 27, 1998
Busy Beavers, Inc.	October 31, 2008
Global Recycling and Collection	June 7, 2011

3.2.3 City of Peekskill ROW

The City of Peekskill ROW was owned by the City from 1944 until 2000 when the southern portion was conveyed to Global Recycling and Collection, Inc. (Appendix A, Figure A-4). The remaining parcel located to the west of the City's ROW was sold to Locaparra who operated the parcel under L&L Scrap Metals.

3.2.4 Present Ownership

Figure A-5 in Appendix A illustrates the present configuration of the various parcels and the current ownership.

3.3 HISTORICAL SITE OPERATIONS

Karta's operations as a Solid Waste Management Facility included transferring and processing of various materials including municipal waste, commercial waste, recyclables, and construction and demolition (C&D) debris including brick, asphalt, processed wood (mulch) and producing recycled aggregate fill consisting of brick and concrete.

As various operations have been conducted at the Site over many years by a number of landowners prior to Global ownership, a review of Site aerial photography and historic topographic mapping was completed to scope the investigations completed as part of the preparation of the SCI/FCP to define the nature and extent of any materials placed on the Site during the Karta operations. The information reviewed included:

- Deeds and maps on file with the Westchester County Clerk's Office.
- Aerial photographs available through the Westchester County GIS web site ;
- Boundary and topographic surveys of the properties

Below is a discussion of the information reviewed:

- 1932 - The map prepared for acquisition of a portion of the Lent property was filed in 1932 (Figure A-7; Appendix A). The 1932 Map shows the Briarcliff-Peekskill Parkway (aka Route 9) and demonstrates that little land disturbances existed at that time.
- 1947 - The 1947 aerial photographs indicate that a road had been constructed within the recently acquired ROW (Figure A-8; Appendix A). It appears the construction of this original phase of US Route 9 was the first major project that altered the topography of the area. The Westchester County 1947 aerial photographs indicate that most of the Global property was wooded with the exception of the western portion of 1017 Lower South Street (LSS), and the western portion of the 50 foot City of Peekskill right of way that is part of the 1013 LSS parcel. The area disturbed by construction activities identified in the aerial photography is the same area where the City's consultant, Hydro Environmental Solutions, Inc. (HES), identified areas of concern (AOC) 3 and AOC-4. No structures are observed on the property in the 1947 photographs. Test pits 4, 5, and 6 were dug by HES in the disturbed area shown on the 1947 aerial photographs. All three test pits contained ash. Based upon the disturbed area observed in the aerial photographs and the type of fill observed in the disturbed area, it appears that the first major placement of fill on the Global property in or about the mid-1940's.
- 1948 through 1958 - A map for the South Street Intercepting Sewer Project was filed in 1948 (RO 6741) for the purpose of establishing a sewer easement on the property to the south of the Global property which was owned by the Husted Estate at that time. It appears the sewer line may have been constructed in 1949; however, no easement was required on the property presently owned by Global since the City of Peekskill was the owner during the period of sewer construction. An easement map filed in 1958 (RO 11467) for the South Street Intercepting Sewer Project was filed just after the conveyance of the property to Mueller and Gallagher. It appears the City established these sewer easements prior to conveying the property to provide access to the sewer lines constructed on the property. Based upon the easement maps, it appears the Global land property was disturbed for the purpose of constructing the sewer in the late 1940's. Based upon the depth of the sewer, it also appears the easement area may have received additional fill after construction.
- 1960 - The 1960 aerial photograph of the area indicates that the 1013 LSS property is disturbed. The 1011 LSS property also shows disturbance and activity at the Site (Attachment A; Figure A-13).
- 1976 - The 1976 aerial photograph of the area indicates that 1017 LSS was disturbed and appeared to be storing vehicles (Figure A-9; Appendix A). 1013 LSS is largely undisturbed with the exception of what appears to be a trespass from the auto recycling operation north of 1017 LSS owned by Richard Locaparra at that time. It appears that a portion of the Locaparra recycling operation was being conducted in the area identified as AOC-3 in the HES report.
- 1981 - In 1981, Karta Diner, Inc. acquired the 1017 LSS property, and began recycling operations at the Site. Initially, Karta commenced operations processing wood waste and operating a transfer station for C&D waste. The first structure constructed on the Site was the office building located on the western portion of the property, with a 3,000 square foot footprint. It is reported by the owner that only minor grading was required to construct this building and the footings for this building needed to be modified to support of the weight of the building on the ash that already existed in this area. The presence of ash in the building footprint is supported by representations made by the professional engineer that was retained to oversee the work at the time of construction; Thomas M. Quartuccio, PE. His recollections are provided in a letter dated August 26, 2011 that is provided in Appendix H.

- 1989 - Construction of the large recycling building known as Building # 6 on the 1017 LSS property took place in 1988 and 1989. The construction of this 24,000 sq. ft. building required the removal of approximately 30,000 cu. ft. of rock. Since Building # 6 was cut into rock, historical fill should not be present under Building 6.
- 1992 – A topographic survey for 1011 LSS was prepared in 1992 for Travis Lane Associates (Figure A-10; Appendix A)
- 1998 - Global Land, Inc. acquired the 1011 LSS property in 1998, and purchased the right of ways from the City of Peekskill in 2000. Extensive cut and fill operations took place on this property in order to construct the buildings associated with the recycling operations. The topography of this property was reportedly altered during the construction of the Louisa Street interchange on Route 9 during this time period. Four large buildings were constructed on the 1011 LSS property between 1992 and 1998. The present grades on this property were established during construction of these buildings.

Based on our review of historical documentation regarding fill we have concluded the following:

- 1017 LSS – Historic filling occurred on 1017 LSS over the course of many decades prior to Global taking ownership. Disturbance is evident in 1947 as part of the Auto Recycling activities on the Locaparra Parcel (AOC-3), during/after the construction of the sewer by the City of Peekskill (late 1940's), and as part of the construction of Building # 3 where historic coal ash was identified. The HES (2009) report also indicates the presence of ash. In consideration of the body of data presented in this SCIR/FCP, it appears that the identified fill on 1017 LSS as AOC-4, is either historic (i.e., pre-1963) or coal ash, which in certain circumstances is exempt from Part 360 or both.
- 1013 LSS - Figure A-11 and Figure A-12 (Appendix A), represents historic topography on the Site 1013 LSS parcel. From a review of Figure A-11 and Figure A-12, it is evident that there were cuts and fills that occurred during the construction of Building 6 by Karta based on a comparison of aerial photographs and previous Site topography.
- 50-foot City of Peekskill ROW –Auto Recycling operations were conducted by L&L Scrap Metals on the City of Peekskill parcel. Karta Corp purchased this parcel after 2000. This area has been depicted as AOC-2 by HES as discussed in Section 5.

3.3.1 Supplemental Historical Information

In addition to the review of historic records discussed above, below is additional information regarding the historic Site operations gathered from interviews with the current Site owner:

- 1986-1989 – Excess highway excavation materials were placed to the area north of Building # 3 by the contractor (Morano Construction) while performing the contract work for the New York State Department of Transportation project for the reconstruction of the Route 9 highway arterial ramps immediately adjacent to the property line of 1011 LSS (now delineated as 1011 and 1013 LSS). The exact quantities of the fill are unknown but were observed to be significant (in excess of 10-12 feet in grade change in many areas)
- 1988-1989 – During the facility Site development work in 1988-89 (ownership by the City of Peekskill IDA) in preparation of the construction of Building # 6, approximately 30,000 cubic yards of blasted rock was removed from the natural slope embankment on the property. Of this total amount of material, approximately 10,000 cubic yards was crushed and processed as crushed stone/trap rock for sale as product. The remaining material,

primarily rock and some soils, was placed in the area north and east of Building # 3 to meet the required final grades for Site development.

- 1990's-2000's – The site was being operated by Karta/Global Land as a NYSDEC registered facility. Allowable "uncontaminated construction demolition materials" were imported to the Site from various sources within the local communities and NYC metropolitan area. These materials which were accepted were screened and processed in accordance with the applicable rules and industry standards at that time. The end product material was sold as a commodity and exported off-site. The materials were not placed as fill in the area adjacent to Building # 3 or any location on-site.

4. PREVIOUS SITE INVESTIGATIONS AND REMEDIAL ACTIVITIES

Below is a discussion of historical site investigations and remedial activities. As part of this SCIR/FCP, the results were compared to the NYSDEC Part 375 Unrestricted and Restricted Residential Soil Cleanup Objectives (SCO), discussed below and summarized on Figures 6A through Figure 10.

4.1 FEBRUARY/MARCH 2002 SPILL INVESTIGATION

On February 4, 2002, Global contacted SITES, Inc. (SITES) after strong petroleum odors were encountered during the excavation of a utility trench located on their property at 1011 (now 1013 LSS) Lower South Street. Petroleum odors were encountered as excavation work commenced within the southwest portion of the property abutting Lower South Street and the property line with L&L Scrap Metals.

SITES, Inc. conducted a preliminary site investigation on February 5, 2002 and sampled five test pits within the area of concern. A total of six suspect soil samples and one water sample were taken for laboratory analysis (Figure 2). Field screening utilizing a photo-ionization detector (PID) during test pit excavations was elevated and indicative of soil impacts. Review of laboratory data, as summarized in Table 1 and Table 2 (Appendix B), confirmed the presence of volatile organic compounds (VOCs) at concentrations exceeding the NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 soil cleanup objectives. The results were reported to NYSDEC and Spill Number 01-11200 was assigned to the clean-up operation by NYSDEC.

Following the submittal of a Work Plan to the NYSDEC approval of a work plan, SITES supervised spill closure and the completion of utility trench excavation. Four additional soil samples were taken along the utility trench in concurrence with the approved work plan. During excavation, suspect contaminated soil was separated from clean material and stored by container on-site. Based on the laboratory data for waste disposal characterization, the petroleum contaminated soil was properly disposed off-site at TT Materials Corp of Wingdale, NY. No additional areas of suspected contamination were encountered outside the initial area of contamination along the property line. Following the acceptance of the closure report provided by SITES, Spill Number 01-11200 was closed as indicated by NYSDEC Letter, dated May 28, 2002.

W&C compared data gathered during the SITES February/March 2002 spill investigation to the NYSDEC Part 375 Unrestricted and Restricted Residential SCOs. Results from the SITES February/March 2002 spill investigation are summarized on Figures 6A through 8B and indicate the following:

- VOCs were detected in the sample collected from Test Pit 3 (SS3) at a concentration exceeding the NYSDEC Part 375 Unrestricted SCO. VOCs were detected in the sample from Test Pit 4 (SS4), but at concentrations below the Part 375 Unrestricted and Restricted Residential SCO. VOCs were not detected in any other samples collected during the February/March 2002 spill investigation.
- Semi-volatile Organic Compounds (SVOCs) were detected at concentrations exceeding the Part 375 Unrestricted SCO in all samples collected during the February/March 2002 spill investigation. In addition, SVOCs were detected at concentrations exceeding the Part 375 Restricted Residential SCO in samples collected from Test Pits 1, 2, 3, 4 and 5 (SS-1, SS-2, SS-2A, SS-3, SS-5).

Metals were detected at concentrations exceeding the Part 375 Unrestricted SCO in all samples collected during the February/March 2002 spill investigation. In addition, Metals were detected at concentrations exceeding the Part 375 Restricted Residential SCO in samples collected from Test Pits 1, 2, 3 and 4 (SS-1, SS-2, SS-2A, SS-3, SS-4).

4.2 APRIL 2002 PHASE I/II ENVIRONMENTAL SITE ASSESSMENT

In March and April of 2002 an Environmental Site Assessment (ESA) Phase I/II was conducted by SITES, Inc. for the property located at 1011 Lower South Street (now 1013 LSS). The assessment was performed to identify environmental conditions from current or historical property use and evaluate sub-surface soil and groundwater conditions at locations bearing a potential for contamination.

Database searches performed as part of Phase I Assessment identified several Federal and State sites within close proximity of the 1011 Lower South Street Property. The adjoining property, L&L Scrap Metals was identified as a listed Resource Conservation and Recovery Act (RCRA) generator and was recognized as bearing the greatest potential impact on the Global Land property. Laboratory data obtained through the investigation and closure of NYSDEC Spill Number 01-11200 was utilized as part of the Phase II Assessment. In addition, two test pits and seven soil borings were supervised and sampled as part of the site evaluation. Laboratory analysis of soil samples did not detect the presence of any contaminants at concentrations exceeding the NYSDEC TAGM soil cleanup objectives. The petroleum contamination subject of Spill Number 01-11200 was determined to be attributed to operations conducted on the L&L Scrap Metals property.

W&C compared data gathered during the SITES April 2002 Phase I/II ESA to the NYSDEC Part 375 Unrestricted and Restricted Residential SCOs. Results from the SITES April 2002 Phase I/II ESA are summarized on Figures 6A through 10 and indicate the following:

- VOCs were detected in two soils borings (SB2, SB1), but at concentrations below the NYSDEC Part 375 Unrestricted and Restricted Residential SCO. VOCs were not detected in any other samples collected during the April 2002 Phase I/II ESA.
- SVOCs were detected at concentrations exceeding the NYSDEC Part 375 Unrestricted and Restricted Residential SCO in one soil boring (SB-3). SVOCs were not detected in any other soil borings collected during the April 2002 Phase I/II ESA. SVOCs were detected in four test pit samples (SS2, SS4, SS5, and SS6) at concentrations exceeding the NYSDEC Part 375 Unrestricted and Restricted Residential SCO. In addition, SVOCs were detected in the remaining test pit samples (SS1 and SS3), but at concentrations below the NYSDEC Part 375 Unrestricted and Restricted Residential SCOs.
- Metals were detected in test pit samples SS5 and SS6 at concentrations exceeding the NYSDEC Part 375 Unrestricted SCO. In addition, Barium was detected in SS6 at a concentration exceeding the NYSDEC Part 375 Restricted Residential SCO.
- Polychlorinated biphenyls (PCBs) were detected in two test pit samples (SS5, SS6) at concentrations below the NYSDEC Part 375 Unrestricted and Restricted Residential SCOs.

4.3 SEPTEMBER 2003 SOIL STOCKPILE SAMPLE

On September 6, 2003, SITES, Inc. sampled soil stockpiled at the property located at 1013-1017 Lower South Street owned by the Karta Corporation. The stockpiled soil was processed construction and demolition debris (C&D), soil, and rock. The stockpiled soil was analyzed for Toxicity Characteristic Leaching Procedure (TCLP) Semi-volatile SVOCs, RCRA metals, pesticides, herbicides and VOCs. As shown in Table 5 in Appendix C, the laboratory data indicates that the stockpiled materials did not contain concentrations of targeted substances at concentrations exceeding the NYSDEC Part 371 Hazardous Waste Determination Criteria. Based on the data for this stockpile recycled aggregate material, it was sold as part of the facility's typical permitted business operations.

4.4 OCTOBER 2003 SUBSURFACE SOIL INVESTIGATION

In September of 2003, Karta Corporation entered into a Consent Order Case 3-5512-00054-00004 with the NYSDEC regarding their property at 1017 Lower South Street. As part of the Consent Order, sampling of sub-surface soils was required within the C&D debris tipping, sorting and processing area of the property.

Following the NYSDEC approval of the work plan, SITES, Inc. oversaw the investigation and sampling of six test pits on the property. The test pits were excavated through the existing concrete pad located to the west of the existing Building 6 in the attached SITES, Inc. report dated November 19, 2003 (Appendix B).

Soil Samples were analyzed for pesticides, SVOCs, PCBs and total RCRA metals. Review of laboratory data indicated minor exceedances of some TAGM soil cleanup objectives. The final report prepared by SITES, Inc. and submitted to the NYSDEC indicated that the exceedances did not pose a significant threat to environmental or public health and that the removal of sub-base soils was not recommended.

W&C compared data gathered during the SITES October 2003 Subsurface Soil Investigation to the NYSDEC Part 375 Unrestricted and Restricted Residential SCOs. Results from the SITES October 2003 Subsurface Soil Investigation is summarized on Figures 6A through 10 and indicates the following:

- VOCs were detected in TP1, but at a concentration below the NYSDEC Part 375 Unrestricted and Restricted Residential SCO. VOCs were not detected in any other samples.
- SVOCs were detected at concentrations exceeding the NYSDEC Part 375 Unrestricted and Restricted Residential SCOs in TP1, TP5 and TP6. SVOCs were detected in TP2, TP3 and TP4, but at concentrations below the NYSDEC Part 375 Unrestricted and Restricted Residential SCOs.
- Metals were detected at concentrations exceeding the NYSDEC Part 375 Unrestricted SCO in samples collected from TP1, TP3, TP4, TP5 and TP6. In addition, metals were detected at concentrations exceeding the NYSDEC Part 375 Restricted Residential SCO in TP2 and TP3.
- Chlordane, a pesticide, was detected in TP4 at a concentration exceeding the NYSDEC Part 375 Unrestricted SCO, but at a concentration below the Restricted Residential SCO.
- PCBs were detected in TP1 and TP2 at concentrations exceeding the NYSDEC Part 375 Unrestricted and Restricted Residential SCO. In addition, PCBs were detected in TP5 at a concentration exceeding the NYSDEC Part 375 Unrestricted SCO but below the Restricted Residential SCO.

4.5 MARCH 2008 BUILDING 6 FLOOR SLAB REPAIRS

In the spring of 2008, SITES Inc. oversaw floor repairs to the existing Building 6 on the 1017 Lower South Street property in attached SITES reports (Appendix B). In accordance with NYSDEC approved work plan, identified areas of potential contamination were explored within Building # 6.

Samples of the building floor slab and supporting sub-slab soils were collected at the locations defined in the work plan. Upon the removal of floor slab, sub-slab soils suspect of contamination were excavated and stored on-site in container, pending the results of laboratory analysis. According to SITES, the material below the slab was characterized as crushed stone (i.e., Item 4 type material). The material was screened with a PID, which did not indicate the presence of volatile organic compounds and no staining was observed.

In total, three soil samples and one composite concrete chip sample were collected for laboratory analysis. Soil samples were analyzed for pesticides, VOCs, SVOCs, herbicides, ketones, PCBs and total RCRA Metals. The concrete chip sample was analyzed for TCLP SVOCs, herbicide, RCRA Metals, pesticides and VOCs. The laboratory data provided in Appendix C, Table 7A, Table 7B, and Table 7C indicated SVOCs were detected at concentrations exceeding the Unrestricted and Restricted Residential SCO in the soil sample collected from Building 6 Area 1 (SS5). Based on the concrete sampling data, the excess concrete was processed with other materials on Site as recycled aggregate.

W&C compared data gathered during the SITES March 2008 Building # 6 Floor Slab investigation to the NYSDEC Part 375 Unrestricted and Restricted Residential SCOs. Results from the SITES March 2008 Building 6 Floor Slab investigation are summarized on Figures 6A through 10 and indicate the following:

- VOCs were detected in sample STK1, but at concentrations below the NYSDEC Part 375 Unrestricted and Restricted Residential SCO.
- SVOCs were detected at concentrations exceeding the NYSDEC Part 375 Unrestricted and Restricted Residential SCO in sample SS5. However, SVOCs were detected at concentrations below the Part 375 Unrestricted in the composite sample collected from SS1 through SS4. SVOCs were not detected in sample STK1.
- Metals were detected at concentrations exceeding the NYSDEC Part 375 Unrestricted SCO, but below the Part 375 Restricted Residential SCO in sample SS5. However, Metals were detected at concentrations below the NYSDEC Part 375 Unrestricted in the composite sample (SS-1 –SS-4 Comp) and sample STK1.
- Pesticides were not detected in the samples collected during the March 2008 investigation.
- PCBs were detected in sample SS5 at a concentration exceeding the NYSDEC Part 375 Unrestricted SCO, but below the NYSDEC Part 375 Restricted Residential SCO. In addition, PCBs were detected in the composite sample (SS-1-SS-4 Comp), but at concentrations below the NYSDEC Part 375 Unrestricted and Restricted Residential SCO. PCBs were not detected in sample STK1.

4.6 MARCH 2009 BUILDINGS 3 AND BUILDING 6 FLOOR SLAB TESTING AND REPAIRS

During March of 2009, SITES, Inc. supervised additional floor repairs and sampling activity in Building 3 and Building 6 as indicated in the attached SITES report (Appendix B). Following the recommendation of the NYSDEC, additional areas of suspected contaminated concrete floor slabs in Building # 3 and Building # 6 were investigated.

Similar to the investigation completed in March of 2008, soil samples and concrete chip samples were collected from the concrete slabs and underlying soils. Upon discovery of sub-slab soils suspect of contamination, soils were excavated and stored in containers located on-site pending the outcome of laboratory analysis. According to SITES, the material below the slab was characterized as crushed stone (i.e., Item 4 type material). The material was screened with a PID, which did not indicate the presence of VOCs and no staining was observed.

In total, seven soil samples were collected from sub-slab soils at the areas under investigation within Building # 3 and Building # 6 (Appendix B). One composite concrete chip sample was collected from the concrete slab in Building # 3 for analysis. Soil samples were analyzed for pesticides, VOCs, SVOCs, herbicides, ketones, PCBs and total RCRA metals. The concrete chip sample was analyzed for TCLP SVOCs, herbicide, RCRA metals, pesticides and VOCs. Review of laboratory data against Part 375 Soil Cleanup Objectives and Part 371 Hazardous Waste Determination Criteria as provided on Appendix C, Tables 8A and 8B indicate exceedances of the Unrestricted and Restricted

Residential SCO for SVOCs and Barium. The final report prepared by SITES, Inc. and submitted to the NYSDEC indicated that the exceedances did not pose a significant threat to environmental or public health and that the removal of sub-base soils was not recommended. Based on the concrete sampling data, the excess concrete was processed with other materials on Site as recycled aggregate.

W&C compared data gathered during the SITES March 2009 Building 3 Floor and Building # 6 Floor Slab investigation to the NYSDEC Part 375 Unrestricted and Restricted Residential SCOs. Results from the SITES March 2009 Building # 3 Floor and Building # 6 Floor Slab investigation are summarized on Figures 6A through 10 and indicate the following:

- VOCs were detected in the composite sample collected from Area 6 (Area 6 Comp) and Area 6 SS-4, at concentrations below the NYSDEC Part 375 Unrestricted and Restricted Residential SCO.
- SVOCs were detected at concentrations exceeding the NYSDEC Part 375 Unrestricted SCO in the samples collected from Area 6 (Area 6 Comp), and Area 7 (Area 7 Comp). SVOCs were detected at concentrations exceeding the NYSDEC Part 375 Unrestricted and Restricted Residential SCOs in the samples collected from Area 5 (Area 5 Comp), Area 6 Comp, Area 6 SS-4 and Area 7 Comp. SVOCs were detected in the sample collected from Area 4 (Area 4 Comp), but at concentrations below the Part 375 Unrestricted and Restricted Residential SCOs.
- Chromium was detected at concentrations exceeding the NYSDEC Part 375 Unrestricted SCO, but below the NYSDEC Part 375 Commercial SCO in all samples collected during the March 2009 investigation.
- Pesticides were detected in the samples collected from Area 5 (Area 5 Comp), Area 6 (Area 6 Comp), and Area 6 SS4 but at concentrations below the NYSDEC Part 375 Unrestricted and Restricted Residential SCOs.
- PCBs were detected in the samples collected from Area 5 (Area 5 Comp) and Area 6 (Area 6 Comp), but at concentrations below the Part 375 Unrestricted and Restricted Residential SCO.

4.7 SEPTEMBER 2010 SUBSURFACE INVESTIGATION

In September of 2010, HydroEnvironmental Solutions, Inc. (HES) on behalf of the City of Peekskill completed a due diligence Site investigation of the 1013-1017 Lower South Street properties owned by the Karta Corporation. HES documented the September 2010 investigation in their report dated November 2010, which is provided in Appendix B. As part of their investigation, Geoprobe™ borings, soil samples, ground water and surface water samples were collected for laboratory analysis.

In total, seven test pits, thirty-nine test borings and five water samples were collected by HES during their investigation activities. Soil samples were analyzed for VOCs, SVOCs, PCBs, and Total RCRA metals. Water samples were analyzed for VOCs and SVOCs.

Analysis of laboratory data provided in the HES report, dated November 9, 2010, indicates some exceedances of NYSDEC TAGM Soil Cleanup Objectives and Part 700 ground water quality standards (Division of Water Technical and Operational Guidance Series (TOGS 1.1.1) Ambient Water Quality Standards and Guidance values and Groundwater effluent Limitations).

As part of their recommendations, HES identified five areas of concern requiring further environmental investigation and potential cleanup.

W&C compared data gathered during the HES September 2010 Subsurface Investigation to the NYSDEC Part 375 Unrestricted and Restricted Residential SCOs. Results from the HES September 2010 Subsurface Investigation is summarized on Figures 6A through 10 and indicates the following:

- VOCs were detected at concentrations exceeding the NYSDEC Part 375 Unrestricted SCO, but below the NYSDEC Part 375 Restricted Residential SCO in TP-3, TP-4, GB-1, GB-6, GB-8, GB-10, GB-16, GB-20, GB-26, GB-28, GB-30, GB-32, GB-33, GB-36, GB-37, and GB-39
- SVOCs were detected at concentrations exceeding the NYSDEC Part 375 Unrestricted and Restricted Residential SCO in TP-1, TP-2, TP-3, GB-8, GB-10, GB-11, GB-16, GB-24, GB-26, GB-28, GB-32, GB-36, GB-37 and GB-38
- Metals were detected at concentrations exceeding the NYSDEC Part 375 Unrestricted SCO, but below the NYSDEC Part 375 Restricted Residential SCO in GB-8, GB-12, GB-16, GB-29, and GB-32. Metals were detected at concentrations exceeding the NYSDEC Part 375 Unrestricted and Restricted Residential SCOs in TP-6, GB-4 and GB-37.
- PCBs were detected at concentrations exceeding the Part 375 Unrestricted SCO, but below the Part 375 Restricted Residential SCO in GB-16 and GB-7.

4.8 MARCH 2011 AOC-1 INVESTIGATION

Following the recommendations of the HES November 2010 subsurface Investigation report, SITES, Inc. conducted further investigation of the area of potential contamination identified as Area of Concern one located along the eastern side of Building # 3.

After defining approximate limits of possible contamination, on March 4, 2011 SITES supervised the excavation and sampling of soil. Soil suspected of contamination was excavated and stockpiled on plastic sheets for disposal, pending the results of laboratory analysis. In total, four soil samples were taken from the sidewalls of the excavation. Soil samples were analyzed for STARS List Volatile Organics, Semi-Volatiles, Lead and Total Solids parameters. A review of the data against NYSDEC Part 375 and CP-51 (Soil Cleanup Policy) SCOs as provided on SITES Table 9 (Appendix C) indicate several Restricted Residential exceedances.

A Spill Closure Report was submitted to the NYSDEC in July, 2011 with a recommendation of no further action. A copy of the Spill Closure Report is attached in Appendix B. A follow-up call was made to NYSDEC, Spill Division on October 4, 2011, which confirmed that the spill case was closed by NYSDEC; however, the case was referred to the Solid Waste Division.

W&C compared data gathered during the SITES March 2011 AOC-1 Investigation to the NYSDEC Part 375 Unrestricted and Restricted Residential SCOs. Results from the SITES March 2011 AOC-1 Investigation is summarized on Figures 6A through 8B and indicate the following:

- VOCs were not detected in any of the samples collected during the November 2010 AOC-1 investigation.
- SVOCs were detected at a concentration exceeding the NYSDEC Part 375 Unrestricted and Restricted Residential SCOs in samples SS1, SS2, SS3 and SS4.

- Lead was detected at a concentration exceeding the NYSDEC Part 375 Unrestricted SCO but below the NYSDEC Part 375 Restricted Residential SCO in all samples collected during the March 2011 AOC-1 investigation.

4.9 TECTONIC OCTOBER 2011 ENVIRONMENTAL SITE INVESTIGATION

In July of 2011, Tectonic on behalf of the City of Peekskill completed a due diligence Site Investigation (SI) of two parcels located along Lower South Street including 1011 LSS (aka Parcel 5) and the Lacappara parcel (aka Parcel 6 referenced in Section 3.2.3) to determine if any recognized environmental conditions (RECs) have impacted the property. The SI included the installation of 38 soil borings, the excavation of 13 test pits and the collection of eight soil gas samples aimed at determining whether parcels 5 and 6 were impacted by the presence of historic fill, the operation of the former junkyard, the presence of an onsite aboveground storage tank, and/or the waste processing operations and petroleum hydrocarbons from the off-site spill at the adjacent property (1013-1017 LSS).

The results from the Tectonic SI indicate the presence of historic fill (consisting of brick, wood, and glass) on the property ranging in thickness from one foot to ten feet below ground surface. Laboratory analytical results indicate exceedances of VOCs, SVOCs, metals and PCBs above the NYSDEC Part 375 Unrestricted and Restricted Residential SCOs in several borings in Parcel 6. In addition, SVOCs, metals and PCBs were detected at concentrations exceeding the Part 375 Unrestricted and Restricted Residential SCO in soil samples collected from test pits in parcels 5 and 6. The data pertaining to 1011 LSS is incorporated into this document and presented in Section 8.

5. AREAS OF CONCERN

As discussed in Section 1, Step 1 involved the review of historic Site data to develop a scope of work for a supplemental Site Closure Investigation. In consideration of the historical Site ownership and operations, historic Site investigations, and overall Site subsurface conditions, there are a number of areas of concern (AOCs) on the Site that required further investigation to aid in the development of the Final Closure Plan. Historic data discussed in the following section was compared to the NYSDEC Part 375 Commercial SCO. However, following discussions with, and at the request of, the NYSDEC, the data collected during W&C's investigation and historic data presented in the sections 7 and 8 of this report were compared to the NYSDEC Part 375 Unrestricted and Restricted Residential SCO. Below is a detailed discussion of the AOCs found on-site.

5.1 AREAS OF CONCERN IDENTIFIED BY HES

The HES report identified five areas based on the results of soil and/or water sampling data indicating concentrations of substances exceeding TAGM Soil Cleanup Objectives and Part 700 water quality standards (i.e., TOGS 1.1.1). An evaluation of the historical data discussed in Section 4 was completed by W&C. The evaluation included a comparison of the historical soil data to the NYSDEC Part 375 CommercialSCO. This approach was completed to compare the Site data to the most current SCO (including CP-51) consistent with the intended future use of the Site. Based on the aforementioned evaluation, which is summarized in tables provided in Appendix C, a discussion of the identified AOCs shown on Figure 2 is provided below.

5.1.1 Building # 3 Petroleum-Impacted Area (AOC-1)

AOC-1 is located along the eastern side of Building # 3 along the western Site boundary (Figure 2). The November 2010 report issued by HES, describes that during the investigation of AOC-1, light non-aqueous phase liquid (LNAPL) was encountered within AOC-1. In total, two soil samples and one ground water sample were collected within AOC-1 by HES for laboratory analysis. Analysis of the soil and ground water samples in AOC-1 by HES indicated an elevated concentration of acetone at concentrations exceeding the TAGM SCO and TOGS 1.1.1 criteria, respectively.

As discussed in Section 4.8, the historical data presented in the March 2011 investigation conducted by SITES Inc. indicates that the AOC-1 was closed by NYSDEC. The SITES, Inc. (Appendix C; Table 1 and Table 3) and HES (Appendix C; Table 10) historical data were re-evaluated with respect to the NYSDEC Part 375 Commercial Soil Cleanup Objectives. As shown on Table 9 and Table 10 in Appendix C, the historical soil data collected in AOC-1 indicates that Benzo (a) pyrene was the only constituent detected at a concentration marginally exceeding the Part 375 Commercial SCO.

Based on the available historical data, Woodard & Curran recommended no further investigation with respect to AOC-1 as the AOC has been removed from the Site and approved by the NYSDEC as part of the closing of Spill Number 1007976.

5.1.2 Building # 3 Fill Area (AOC-2)

AOC-2 as defined in the HES report (Section 4.7) is located along the western side of Building # 3 and consists of asphalt paved surface along the property line with the former L&L Scrap Metals property to the west of the Site (Figure 2). HES collected one soil sample from boring GB-29 within AOC-2, which indicates the presence of Chromium at a concentration exceeding the TAGM SCO. Because of the proximity of the HES defined AOC-2 to Building # 3, the presence of fill to the north of Building 3 as discussed in Section 3, and the distribution of detected constituents in soil reported by HES, W&C has expanded the AOC-2 as shown on Figure 2. Therefore, AOC-2

encompasses HES sample locations GB-4, TP-7, GB-22, GB-24, TP-2, TP-1, GB-28, GB-27, GB-25, GB-26, GB-29 and SITES sample locations SB-1, SB-2, and SB-3.

Based on the re-evaluation of the HES and SITES soil data as shown on Table 10 and Table 2 (Appendix C), the data indicates that Benzo(a)pyrene and Benzo(b)fluoranthene are the only detected constituents that marginally exceed the Part 375 Commercial SCO.

Based on the available historical data, W&C conducted additional delineation and characterization of AOC-2 via the excavation of test pits to guide the development of the Final Closure Plan for the Site.

5.1.3 Spill Area (AOC-3)

AOC-3 as defined in the HES report (Section 4.7) is located north of the former office building along the Site boundary (Figure 2). Laboratory analysis of soil samples collected by HES within AOC-3 indicated elevated concentrations of acetone, several metals, and SVOCs exceeding TAGM SCO. Samples taken by HES were obtained along the property line with the former business; L&L Scrap Metals. As discussed in Section 3.3.2, AOC-3 is also the location of former NYSDEC Spill Number 01-11200, closed in May of 2002.

Based on the re-evaluation of the HES and SITES soil data as shown on Table 10, Table 1, and Table 4 (Appendix C), the data indicates that Benzo(a) pyrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Indeno(1,2,3-cd)pyrene, barium are the only detected constituents that exceed the Part 375 Commercial SCO.

Based on the available historical data including the analytical data collected by SITES and HES and the understanding of the operations and ownership history of the Site, W&C conducted additional investigation activities in the vicinity of AOC-3, the results of which are discussed in Section 7.

5.1.4 Office Building Fill Area (AOC-4)

AOC-4 as defined in the HES report (Section 4.7) is located west of the former office building along the Site boundary. Sampling conducted by HES within AOC-4 indicated elevated concentrations of arsenic, chromium and acetone to be present at concentrations exceeding the TAGM SCO. As discussed in Section 5.1.1, this area was subject to filling with material identified as coal ash by HES.

Based on the re-evaluation of the HES soil data as shown on Table 10 (Appendix C), the data indicates that arsenic is the only detected constituent that exceeds the Part 375 Commercial SCO.

Based on the available historical data including the analytical data collected by SITES and HES and the understanding of the operations and ownership history of the Site, in addition to comments from the NYDEC in their letter dated November 25, 2011 W&C conducted additional investigation activities in the vicinity of AOC-4 to confirm the presence of ash and fill identified during the HES investigation, the results of which are discussed on Section 6.1.

5.1.5 Building # 6 Pit (AOC-5)

AOC-5 as defined in the HES report (Section 4.7) is located within the eastern portion of Building # 6 (Figure 2). AOC-5 is a former process area that has an open concrete pit containing stagnant water as described in the November 2010 HES Report. One water sample was collected from the pit for laboratory analysis. The sample data indicates the presence of Toluene and Xylenes. HES recommended this area of investigation due to the limited sampling conducted at the location; however, this area was previously investigated as discussed in Section 4.5 and NYSDEC closed the case based on the historical investigation.

Based on the re-evaluation of the SITES and HES soil data from samples collected in the vicinity of the pit as shown on Figure 6B, neither toluene, nor xylenes were detected at a concentration above the NYSDEC Part 375 Unrestricted SCO in any soil sample collected in the vicinity of the pit and only xylenes were detected at a concentration above the laboratory reporting limit in any soil sample collected in the vicinity of AOC-5 (HES GB-16). Xylenes and toluene were not detected in the SITES (Area 2 Comp) or HES samples (GB-14 and GB-19) closest to the pit. Since toluene and xylenes were not detected in soils in the vicinity of the pit in either the Site 2008 or HES 2010 investigation and there was no indication of a release to the subsurface, and therefore no additional investigation of AOC-5 was warranted. Based on the available historical data, W&C recommended no further investigation of AOC-5, as sufficient data exists to guide the development of a Final Closure Plan for this area.

5.2 ADDITIONAL AREAS OF CONCERN

In addition to the above listed AOCs, W&C identified four additional AOCs based on the historical data, which are discussed in detail below.

5.2.1 Building # 3 (AOC-6) and Building # 6 (AOC-7)

W&C has identified Building # 3 and Building # 6 as AOCs because the buildings were used as a sorting area for solid waste unloaded from disposal containers.

As discussed in Section 4.5 and Section 4.6, SITES investigated the concrete and sub-slab soil in Building # 3 and Building # 6 due to concerns by the NYSDEC regarding potential subsurface impacts from the building operations. Based on the results of the historical investigation, SITES concluded that no impacts to the concrete or soil occurred during Site operations. The historical SITES data, provided in Table 7A, Table 7B, Table 7C, Table 8A, and Table 8B (Appendix C) indicates that Benzo(a)pyrene and Barium were the only constituents detected at concentrations in excess of Part 375 Commercial SCO.

In addition, as discussed in Section 4.7, HES completed numerous borings within Building # 3 and Building # 6. The HES soil data was re-evaluated with respect to the Part 375 Soil Cleanup Objectives as summarized in Table 10 (Appendix C). Based upon historical HES data, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene and Dibenzo(a,h)anthracene were the only constituents of concern detected at concentrations exceeding the Part 375 Commercial SCO.

Based on the available historical data, W&C recommended no further investigation of AOC-6 and AOC-7, as sufficient data existed to guide the development of a the Final Closure Plan for these areas.

5.2.2 Building # 6 Oil-Water Separator (AOC-8)

During the historical document review, W&C identified the location of an oil-water separator in Building # 6 (Figure 2) as a separate AOC. This AOC was not previously investigated; therefore, W&C conducted an investigation of this AOC as discussed in Section 7.

5.2.3 Building # 3 Oil-Water Separator (AOC-9)

During the historical document review, W&C identified the location of an oil-water separator in Building # 3 (Figure 2) as a separate AOC. This AOC was not previously investigated; therefore, W&C conducted an investigation of this AOC as discussed in Section 7.

6. SUPPLEMENTAL SITE CLOSURE INVESTIGATION

6.1 SCOPE OF WORK

As discussed in Section 1, Step 2 of addressing the NYSDEC April 13, 2011 comments was to conduct a supplemental SCI. Below is an outline of the scope of work conducted by W&C during implementation of the SCI. The scope of work was developed based on a review of historic site data initially compared to the Part 375 Commercial SCO and subsequent correspondence with the NYSDEC including the November 25, 2011 comment letter.

- **Building # 3 Fill Area (AOC-2)** – The HES report presented in Section 3.3.7 and the presence of the fill discussed in Section 5.1.2 indicate that an area of fill exists as shown on Figure 3. The scope of work for AOC-2 included the excavation of ten test pits to delineate and characterize the Building # 3 area and the screening of seven soil gas sampling locations to investigate potential vapor intrusion.
- **Building # 6 Oil-Water Separator (AOC-8)** – The facility operated an oil-water separator that collected residual oil and grease from Building # 6 prior to discharging to the sanitary sewer. The scope of work included one soil boring to investigate potential subsurface impacts associated with the operation of the oil-water separator.
- **Building 3 Oil-Water Separator (AOC-9)** – The facility operated an oil-water separator that collected residual oil and grease from Building 3 prior to discharging to the sanitary sewer. The scope of work included one soil boring to investigate potential subsurface impacts associated with the operation of the oil-water separator.
- **Perimeter Soil Gas Survey (AOC-1, AOC-3, AOC-4, AOC-7)** – The scope of work included conducting a bar-hole survey to screen for potential vapor intrusion in and around the existing and proposed building footprints.
- **Ground Water** – Intermittent perched water was encountered in several test pits and was sampled and analyzed.
- **Background Soil Samples** – In response to the NYSDEC letter dated November 25, 2011, W&C collected six background soil samples at locations determined in the field based on NYSDEC recommendations.
- **AOC-4 Waste Delineation Samples** – In response to the NYSDEC letter dated November 25, 2011, W&C completed soil borings in the vicinity of AOC-4 to investigate the presence of ash.

6.2 UTILITY CLEARANCE

All boring and test pit locations were cleared of subsurface utilities by a private utility locating company, NAEVA Geophysics, Inc., on April 19 and April 20, 2012, prior to initiating investigation activities. In addition, Dig Safely New York was contacted by the drilling subcontractor prior to mobilization to clear utilities in the vicinity of the Site.

6.3 SOIL INVESTIGATION

Soil borings were completed to investigate potential subsurface impacts resulting from the solid waste management operations at the former Karta Site. A summary of the soil sampling program and associated analytical plan is provided in Table 1.

6.3.1 Soil Borings

On April 24 and April 25, 2012, soil borings were completed at the former Karta Site by the drilling contractor Eastern Environmental Solutions, Inc. Soil borings were completed at eight locations (WC-1 through WC-8) as shown on Figure 3. Two deep soil borings were completed to evaluate potential impacts from the Oil-Water Separators using the direct-push drilling method (i.e., Geoprobe®); WC-1 to an auger refusal depth of eight feet below ground surface (ftbgs) and WC-2 to a depth of 20 ftbgs. Six shallow (WC-3 through WC-8) soil borings were completed to depth ranging from 2.5 to 3 ftbgs using the direct-push drilling method to evaluate the ash fill observed at AOC-4.

Soil samples were collected in four-foot macro core samplers lined with dedicated acetate sleeves and were field screened for volatile organic compounds with a PID. The soil samples were inspected for moisture content, color and grain size distribution using the Burmeister Soil Classification system and field observations were recorded on soil boring logs which can be found in Appendix D. Sample depths were determined based on field screening of the boring.

Soil samples were collected using dedicated equipment, (i.e. disposable plastic trowels), and placed in labeled sample jars. Sample jars were stored in a cooler with ice. All samples were logged on a Chain of Custody Form. Soil samples were transported by courier to Alpha Analytical; a New York certified laboratory, for analysis.

6.3.2 Test Pits

The test pit investigation of AOC-2 included the excavation of 10 test pits as summarized on Table 1 and shown on Figure 3. Test pits were excavated using an excavator. Material removed during the excavation of the test pits was stockpiled on-site on polyethylene sheeting during the field screening and sampling process. At least one sample was collected from each test pit as summarized on Table 1.

Prior to sample collection, the material was screened with a PID. A sample was collected from the interval with the highest PID reading and submitted for laboratory analysis. In addition, as outlined on Table 1, samples from each test pit were collected for waste composition analysis. Waste composition samples were analyzed by GeoTesting Express, of Acton, MA and the analysis was performed in accordance with NYSDEC Region 3 Office/Solid Waste Program Standard Operating Procedures for Waste Composition Analysis. Waste composition sample locations are shown on Figure 4. Test pit logs summarizing subsurface conditions were prepared for each test pit and are included in Appendix D.

Upon completion of the excavation, the test pits were backfilled with the excavated material. During backfilling, the excavated material was compacted by tamping with the backhoe bucket. The backfilled test pit was graded to the level of the ground surface.

6.3.3 Background Soil Sampling

To determine the relationship between concentrations of metals and SVOCs found on-site compared to background offsite concentrations, W&C collected six background soil samples. Background soil samples were collected from locations determined in the field based on the recommendation of the NYSDEC during their Site visit of May 2, 2012. Background soil samples were collected manually utilizing a hand auger, and were collected at shallow depths ranging from six inches to two feet below ground surface. Where practicable, the background soil samples were collected in areas at an elevation higher than the Site and nearby road surfaces to minimize the potential for on-site or up gradient influences. Background soil sample locations are shown on Figure 5.

6.4 VAPOR INTRUSION INVESTIGATION

6.4.1 Soil Gas Sampling

The soil gas sampling plan consisted of prescreening seven potential sampling locations as shown on Table 1 and Figure 3. Prior to sample collection, bar-hole sampling was conducted to screen for the presence of VOCs methane and other gases. The two locations with the highest prescreening readings were selected for analytical sample locations. Sample locations are shown on Figure 3. The sampling was completed utilizing temporary soil gas sample points in accordance with the New York State Department of Health, Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006).

The temporary soil gas sampling points were installed utilizing a direct push drill rig and sampled utilizing a 6-liter Summa™ canister. The sampling point was connected to the canister utilizing Teflon™ tubing. The Summa™ canisters were fitted with flow controllers to allow sampling over one-hour, which is the minimum sampling interval in accordance with the NYSDOH soil gas guidance document (October 2006).

Soil gas samples were collected from a depth of five feet below grade. A pilot hole was drilled utilizing a direct push drill rig. Teflon tubing with a 6-inch stainless steel screen was inserted into the hole. The annular space around the screen was filled with 6-inches of glass beads and then filled with No.01 sand to 6-inches below ground surface. The boring was then sealed at the surface with Bentonite. Once sealed, a shroud was placed over the tubing and the annular space filled with helium. Three sample train volumes were purged from the tubing and the effluent screened with a dielectric helium detector to confirm the sampling point seal integrity. Once the integrity of the sample point was confirmed, the valve to the SUMMA™ canister was opened and sample collection began.

All air sample canisters were labeled and were logged on a Chain of Custody Form. Air samples were transported by courier to Alpha Analytical, a New York certified laboratory, for analysis.

6.4.2 Bar-Hole Sampling

In addition to the above referenced soil gas sampling, a perimeter bar-hole survey was conducted in accordance with Part 360-2.15 to address the potential presence of gases onsite, migrating offsite, and to screen for potential vapor intrusion into the existing and proposed building footprints. To conduct bar-hole sampling, a metal bar was inserted into the ground to an approximate depth of 5 feet below ground surface using direct-push drilling method (i.e., Geoprobe™). The bar was removed and Teflon™ tubing was inserted in the void space. The boring was then sealed at the surface with Bentonite and screened with a PID, a multi-gas meter and a methane meter. Bar-hole screening data is included on Table 7 and bar-hole sample locations can be found on Figure 3.

6.4.3 Ambient Air Sampling

One ambient air sample was collected over 24-hr period during the soil gas sampling to document background conditions during sampling. In addition, a site weather station will be setup to record weather conditions during the soil gas sampling. All air sample canisters were labeled were logged on a Chain of Custody Form. Air samples were transported by courier to Alpha Analytical, a New York certified laboratory, for analysis.

6.5 GROUND WATER INVESTIGATION

Ground water was not encountered during the completion of borings intended for soil or soil gas investigation. However perched water was encountered during the excavation of Test Pits TP-3 and TP-8. Water samples from TP-3 and TP-8 were collected from the open test pit utilizing a surface water sampler and transferred to the

laboratory provided bottles. The water samples were analyzed for VOCs, SVOCs, metals and pesticides as outlined on Table 1.

7. SITE CLOSURE INVESTIGATION RESULTS

As discussed in Section 1, Step 3 of addressing the NYSDEC April 13, 2011 comments was to interpret the complete data set (historic and supplemental data) and develop the Site and Facility Closure Plan. Below are the results of the investigation conducted by W&C in April and May 2012. The data is compared to the Part 375 Unrestricted, Restricted Residential and Protection of Ground Water SCOs based on discussions with the NYSDEC during the preparation of this SCIR/FCP.

7.1 SOIL INVESTIGATION RESULTS

7.1.1 Soil Borings

The analytical data from samples collected from soil borings installed during the SCI is summarized on Table 2 and shown on Figure 6A through 10. The data was initially compared to the NYSDEC Part 375 Unrestricted and Commercial SCOs. However, following discussions with the NYSDEC, the data was compared to the Unrestricted and Restricted Residential SCOs. Copies of the laboratory reports are provided in Appendix E. Based on the laboratory analysis, the data indicates the following:

Pesticides

- Several pesticides were detected in WC-1, a boring completed in the vicinity of AOC- 8 (Building # 3 Oil water Separator), but at concentrations below the NYSDEC Part 375 Unrestricted, Restricted Residential, and Protection of Ground Water SCOs. Pesticides were not detected in any other borings above the reporting limit (RL)

PCBs

- Several PCBs were detected in borings WC-5 (AOC-4) and WC-1 (AOC-8) concentrations below the NYSDEC Part 375 Restricted Residential SCO and Protection of Ground Water, but above the Part 375 Unrestricted SCO. PCBs were not detected in WC-2 (AOC-9) above the RL.

SVOCs

- SVOCs were detected in borings WC-5, but at a concentration below the NYSDEC Part 375 Unrestricted SCO. Several SVOCs were detected in WC-1 at concentrations exceeding the Part 375 Restricted Residential and Unrestricted SCO, but below the Protection of Ground Water SCO. SVOCs were not detected in WC-2 above the RL.

Metals

- Barium was detected in WC-1 at a concentration exceeding the NYSDEC Part 375 Unrestricted and Restricted Residential SCO, but below the Protection of Ground Water SCO. Barium was detected in WC-5 and WC-2, but at concentrations below NYSDEC Part 375 Restricted Residential and Unrestricted SCOs.
- Copper was detected in WC-5 and WC-1 at a concentration below the NYSDEC Part 375 Restricted Residential and Protection of Ground Water SCO, but above the NYSDEC Part 375 Unrestricted SCO.
- Lead was detected in WC-1 at a concentration below the NYSDEC Part 375 Restricted Residential and Protection of Ground Water SCO, but above the NYSDEC Part 375 Unrestricted SCO.

- Nickel was detected in WC-5 at a concentration below the NYSDEC Part 375 Restricted Residential and Protection of Ground Water SCO, but above the NYSDEC Part 375 Unrestricted SCO.
- Zinc was detected in WC-1 at a concentration below the NYSDEC Part 375 Restricted Residential and Protection of Ground Water SCO, but above the NYSDEC Part 375 Unrestricted SCO.

• VOCs

- Acetone was detected in WC-1, WC-2 and WC-5 at a concentration exceeding the NYSDEC Part 375 Unrestricted SCO and Protection of Ground Water, but below Restricted Residential SCO.

7.1.2 Test Pits

The analytical data from samples collected from test pits excavated during the SCI is summarized on Table 3 and shown on Figures 6A through 10. Copies of the laboratory reports are provided in Appendix E. Based on the laboratory analysis, the data indicates the following:

Pesticides

- Pesticides were detected in Test Pits TP-1, TP-2, TP-9 and TP-10 at concentrations below the NYSDEC Part 375 Restricted Residential and Protection of Ground Water SCO, but above the NYSDEC Part 375 Unrestricted SCO.

PCBs

- PCBs were detected in TP-2, TP-3, TP-4, TP-6, and TP-7 at a concentration below the NYSDEC Part 375 Restricted Residential and Protection of Ground Water SCOs but above the NYSDEC Part 375 Unrestricted SCO. PCBs were also detected in TP-5 at a concentration exceeding the NYSDEC Part 375 Unrestricted and Restricted Residential SCO, but below the Protection of Ground Water SCO.

SVOCs

- SVOCs were detected in all ten Test pits at concentrations exceeding the NYSDEC Part 375 Unrestricted, Restricted Residential, and Protection of Ground Water SCOs.

Metals

- Metals were detected in all ten test pits at concentrations exceeding the NYSDEC Part 375 Unrestricted SCO.
- Mercury was detected in TP-6, TP-3, and TP-2/TP-X at a concentration exceeding the NYSDEC Part 375 Restricted Residential SCO and Protection of Ground Water SCO.

VOCs

- Acetone was detected in TP-2, TP-5, TP-6 and TP-7 at a concentration below the NYSDEC Part 375 Restricted Residential SCO, but above the Part 375 Unrestricted and Protection of Ground Water SCO.

7.1.3 Waste Composition Results

As discussed in Section 6.3.2, waste composition analysis was performed by GeoTesting Express in accordance with NYSDEC Region 3 protocol. Copies of the laboratory reports are included in Appendix E. Figure 4 depicts the location of waste composition samples and the sample compositing approach. Based on the waste composition analysis, the data indicates the following:

- Asphalt, brick, concrete and glass were detected in all five waste composition samples in both sieve tests at a range of six percent to 47 percent.
- Coal/slag/ash was detected in all five waste composition samples in the two to six millimeter (mm) sieve fraction at a range of one percent to seven percent, and was not detected in any of the waste composition samples in the greater than six mm sieve fraction.
- Visual observations did not suggest the presence of Gypsum, however, all five waste composition samples tested positive for Gypsum in accordance with the NYSDEC Region 3 method. It should be noted that Gypsum can be found as a constituent in cement at concentrations of up to 5%, and is used to prevent "flash set" of the cement (Kurtis, 2012., Appendix I).

7.1.4 Background Soil Samples

The analytical data from background soil samples collected during the SCI is summarized on Table 6 and the sample locations are shown on Figure 5. As shown on Figure 5, the background samples were distributed on adjacent areas along Louisa Street, in the back of the home on 1011 LSS, along the north bound lane of Route 9, between the 1017 LLS property and the adjacent property to the south, and uphill along the North bound side of Route 9. Copies of the laboratory reports are provided in Appendix E. Based on laboratory analysis, the data indicates the following:

- SVOCs were detected in BS-1, BS-5 and BS-6 at concentrations exceeding the NYSDEC Part 375 Restricted Residential and Unrestricted SCO
- SVOCs were detected at a concentration exceeding the Part 375 Protection of Ground Water SCO in BS-1 and BS-5.
- Copper, Lead and Zinc were detected in BS-1 and BS-6 at concentrations exceeding the NYSDEC Part 375 Unrestricted SCO.
- No Metals were detected in any of the background soil samples at concentrations exceeding the NYSDEC Part 375 Restricted Residential SCO.

7.2 VAPOR INTRUSION INVESTIGATION RESULTS

7.2.1 Bar-Hole Survey Results (AOC-1/3/4/7)

PID and Landfill Gas readings were collected from 19 locations at the Site as shown on Figure 3. Field screening data from the Bar-Hole locations is included in Table 7 and indicates the following:

- Concentrations of VOCs utilizing the PID were detected in BH-4, BH-5, BH-7, BH-8, BH-9, BH-10, BH-11, BH-14 and BH-16.

- Methane (CH₄) was detected in BH-4, BH-7, BH-8 and BH-9.
- Hydrogen Sulfide (H₂S) was detected in BH-1, BH-3, BH-4, BH-5, BH-6, BH-8, BH-9, BH-10, BH-14, BH-15 and BH-19.
- Additional data including concentration of Carbon Dioxide, Carbon Monoxide, Hydrogen, Oxygen and Barometric Pressure is included in Table 7.

7.2.2 Soil Gas Investigation Results (AOC-2)

The analytical data from soil gas samples collected during the SCI is summarized on Table 4 and the sample locations are shown on Figure 3. In addition, field screening data collected to determine analytical sample locations is included in Table 7. Because the 1013-1017 site is vacant and vapor intrusion is not a concern at the moment, the data was compared to the New York State Department of Health (NYSDOH) Air Guideline Values (AGV) to evaluate the potential for vapor intrusion based on conceptual redevelopment plans and for discussion purposes. Copies of the laboratory reports are provided in Appendix E. Based laboratory analysis, the data indicates the following:

- Several VOCs were detected in both SG-2 and SG-6, but at concentrations below the New York State Department of Health NYSDOH AGV.
- Trichloroethene was detected in SG-2 at a concentration exceeding the NYSDOH AGV. Trichloroethene was not detected in SG-6 or the Ambient Air sample.
- Methane was detected in SG-2 at a concentration of 0.386 %. Methane was not detected in SG-6 or the Ambient Air sample.
- Acetone, Methylene Chloride, Toluene, Carbon Tetrachloride and Tetrachloroethene were detected in the Ambient Air Sample.

7.3 GROUND WATER INVESTIGATION RESULTS (AOC-2)

The analytical data from water samples collected during the SCI is summarized on Table 4. Copies of the laboratory reports are provided in Appendix E. Based on the laboratory analysis, the data indicates the following:

- 4,4'DDD was detected in the water sample collected from of TP-8 at a concentration below the Technical and Operational Guidance Series (TOGS) Ambient Water Quality Guidance Value for Class GA ground water (GA).
- Several SVOCs were detected in the water samples collected from TP-3 and TP-8 at concentrations exceeding the TOGS Class GA guidance value.
- Total Lead (Unfiltered) was detected in the water samples collected from TP-3 and TP-8 at a concentration exceeding the TOGS Class GA guidance value. Dissolved Lead (Filtered) was detected in both ground water samples, but at concentrations below the TOGS Class GA guidance value, suggesting that the detected concentrations in the unfiltered sample are attributed to sample turbidity.
- Manganese and Mercury were detected in the water sample collected from TP-8 at a concentration exceeding the TOGS Class GA guidance value. Dissolved Manganese (filtered) was detected in TP-8 but

at a concentration below the TOGS Class GA guidance value and Dissolved Mercury was not detected suggesting that the detected concentrations in the unfiltered sample are attributed to sample turbidity.

- Methyl-Tert-Butyl-Ether (MTBE) and Acetone were detected in the water sample collected from TP-8 at concentrations exceeding the TOGS Class GA guidance value.

7.4 QUALITY ASSURANCE/QUALITY CONTROL

During the course of the SCI, several quality assurance/quality control samples (QA/QC) samples were collected including field blanks, trip blanks and blind duplicate samples. One ground water field blank was collected by pouring distilled water over a decontaminated surface water sample and collecting the rinsate in the appropriate sample container. Two soil field blanks were collected during the SCI, including one blank for soil boring samples and one field blank for test pit samples. The soil boring field blank was collected by pouring distilled water over a plastic trowel and acetate sleeve used to collect soil samples. The test pit field blank was collected by pouring distilled water over a stainless steel bowl used to collect soil samples. The rinsate for both soil boring and test pit field blanks was collected in the appropriate sample container. Blind Duplicate sample data is included on the corresponding summary tables, and field blank/trip blank data is included on Table 8. Based on laboratory analysis, the QA/QC data indicates the following:

- Heptachlor, a pesticide, was detected in the ground water field blank (025 FB GW) at an estimated concentration of 0.007 micrograms per liter (ug/l). However, heptachlor was not detected in any of the ground water samples collected during the SCI.
- Barium was detected in the soil field blank (021 FB-SOIL) at an estimated concentration of 1 ug/l. Based on the concentrations of barium found in the soil samples collected during the SCI, it does not appear as if this barium detection presents a data quality issue.
- 2-butanone was detected in the test pit field blank (021 FB-SOIL) at an estimated concentration of 1.4 ug/l. However, 2-butanone was not detected in any of the corresponding soil samples collected from test pits during the SCI.
- Acetone was detected in the soil boring field blank (007 FB) at an estimated concentration of 4.4 ug/l. Acetone is a known laboratory artifact and the presence of acetone in the soil boring field blank may be attributed to laboratory contamination.

Data validation was completed by Alpha Geoscience of Clifton Park, NY and Data Usability Summary Reports (DUSR) are provided in Appendix G. As indicated in the DUSRs, the data is mostly acceptable with only minor issues that were identified in the data validation reviews, which do not affect the data usability. Additional information regarding data usability is included in the DUSRs found in Appendix G.

8. SITE CLOSURE INVESTIGATION CONCLUSIONS

In addition to the data collected during the SCI, W&C reviewed historic data collected during previous investigations and compared the results to the NYSDEC Part 375 Unrestricted and Restricted Residential SCO's as requested by the NYSDEC in correspondence dated November 25, 2011. Figures 6A-10 present analytical data collected during W&C's SCI in addition to data collected during previous investigations conducted by SITES, HES and Tectonic summarized in Section 4. Figure 6A through Figure 10 depict the areas with concentrations of constituents of concern exceeding both the NYSDEC Part 375 Unrestricted and Restricted Residential SCOs. In addition, based on NYSDEC comments on a draft version of this SCIR/FCP submitted on March 11, 2013, the data was compared to the Part 375 Protection of Ground Water SCO (Appendix K). Based on the data presented on Figure 6A through Figure 11 and Figure 14, W&C has made the following conclusions with respect to each AOC:

8.1 1013 & 1017 LOWER SOUTH STREET

8.1.1 Building # 3 Fill Area (AOC-2) Test Pits

8.1.1.1 Building # 3 Fill Area (AOC-2) Composition Analysis

Results from composition samples collected from test pits excavated in AOC-2 indicate the presence of non-native materials in all depth intervals composited for analysis. All composition samples tested positive for the presence of gypsum and had a composition including natural rock, brick, concrete, glass, asphalt, and coal/ash/slag and plant debris. Comp 3, a composite of test pits TP-4, TP-6 and TP-7 had the smallest percentage of natural rock in both the two to six mm fraction and the greater than six mm fraction. Subsequently, Comp 3 had the largest percentage of brick, concrete and glass. Asphalt was detected in all five waste composition samples with concentrations ranging from 6% to 37% in the two to six mm fraction, and 6% to 47% in the greater than six mm fraction. The highest detection was from the TP-9 sample, where asphalt was found at a concentration of 37% in the two to six mm fraction and 47% at the greater than six mm fraction.

Based on the test results and supported by visual observation, the non-native material appears to be a processed fill material that is consistent with the types of material processed at the Site, and distributed as recycled aggregate fill.

The fill material in AOC-2 exists at varying depth intervals. Based on the presence of asphalt in the fill material, the detected concentrations of SVOCs above NYSDEC Part 375 Unrestricted and Restricted Residential standards are may be attributed to material consistent with that which was processed and sold in commerce at a Part 360 facility. These areas do not pose a concern related to SVOCS, and no remedial measures are necessary.

8.1.1.2 Volatile Organic Compounds (AOC-2)

As shown on Figure 6A and 6B, VOCs, mainly acetone, were detected in the vicinity of AOC-2 at concentrations below the NYSDEC Part 375 Restricted Residential SCO but above the NYSDEC Part 375 Unrestricted SCO. However, based on the very low concentrations and distribution of the acetone in soil, it is likely that the detected acetone is a function of decaying wood chips and other organic matter observed in the test pits. This observation is supported by literature; specifically a 1994 document published by the US Department of Health and Human Services (USDHHS) provided in Appendix I. In addition, as shown in Appendix K, acetone and other VOCs were detected at a concentration exceeding the Protection of Ground Water SCO.

Proposed Site Closure measures for the VOC impacted areas discussed further in Section 9.1.1.1 on page 36.

8.1.1.3 Semi-volatile Organic Compounds (AOC-2)

As shown on Figures 7A and 7B, the fill area in the vicinity of Building 3 (AOC-2) is impacted with SVOCs at concentrations exceeding the NYSDEC Part 375 Restricted Residential SCO. Based on data collected during W&C's SCI and data gathered during previous investigations as compared to the NYSDEC Part 375 Restricted Residential SCO, the extent of SVOC impacted soil has been expanded up to the property line dividing 1011 LSS and 1013 LSS (Figure 7A). As discussed in Section 8.1.3, the materials at the Site contained a significant quantity of asphalt, brick, concrete and other debris, which is contributing to the presence of SVOCs detected during historical Site investigation. This is the recycled aggregate material that was processed under the facility permit. The SVOCs in the soil detected throughout the Site as shown on Figures 7A and 7B is attributed to the presence of the acceptable amount of asphalt and other C&D materials present within the recycled aggregate materials. In addition, SVOCs were detected at a concentration exceeding the Protection of Ground Water SCO, as shown in Appendix K.

The proposed Site Closure Measures for the SVOC impacted areas in AOC-2 is discussed further in Section 9.1.1.1 and 9.1.1.4 on pages 36 and 40, respectively.

8.1.1.4 Metals (AOC-2)

Based on the results of W&C's SCI and a reevaluation of data gathered during previous investigations, only minor areas of metals impacted soil are present in the vicinity of AOC-2 when compared to NYSDEC Part 375 Restricted Residential SCOs as detailed on Figure 8. Concentrations of metals detected in the vicinity of AOC-2 exceed the Part 375 Unrestricted SCO, with limited areas above the Part 375 Restricted Residential and Protection of Ground Water SCO.

As discussed in Section 8.1.3, the materials at the Site contain a significant quantity of asphalt, brick, concrete and other debris, which is contributing to the presence of metals detected during historical Site investigation (Townsend, 1998, Appendix I). Recycled aggregate material was processed under the facility permit. The metals in the soil detected throughout the Site as shown on Figure 8, is attributed to the presence of the recycled aggregate materials.

The proposed Site Closure measures for the metals impacted areas in AOC-2 is discussed further in Section 9.1.1.1, 9.1.1.2.2 and 9.1.1.4 on pages 36, 37 and 40, respectively.

8.1.1.5 Polychlorinated Biphenyls (AOC-2)

Several areas in the vicinity of AOC-2 have detected concentrations of PCBs above the NYSDEC Part 375 Unrestricted SCO, including W&C's TP-6, TP-7, TP-3, and TP-2.

In addition, PCBs were detected in the vicinity of AOC-2 in exceedance of the NYSDEC Part 375 Restricted Residential SCO in W&C TP-5 as shown on Figure 10. Based on the reevaluation of SITES and HES data, no additional PCB exceedances exist in the vicinity of AOC-2 above the Part 375 Restricted Residential or Protection of Ground Water SCO.

The proposed Site Closure measures for the PCB impacted areas is discussed further in Section 9.1.1.1 and 9.1.1.4 on pages 36 and 40, respectively.

8.1.1.6 Pesticides (AOC-2)

Pesticides were detected in several samples collected during the W&C investigation at concentrations above the NYSDEC Part 375 Unrestricted SCOs, including samples from TP-9, TP-10, TP-3, TP-2 and TP-1.

No pesticides were detected at concentrations above the NYSDEC Part 375 Restricted Residential SCO in W&C samples collected from AOC-2 as shown on Figure 9. After evaluating historic data, AOC-2 does not require remedial action to facilitate Site closure as no samples from W&C's SCI or any previous investigations exceed the NYSDEC Part 375 Restricted Residential or Protection of Ground Water SCO for pesticides. Pesticides in exceedance of the Part 375 Unrestricted SCO will be addressed in the agreement with the NYSDEC discussed in Section 9.1.1.1 on page 36.

8.1.1.7 Building # 3 Fill Area (AOC-2) Soil Gas

Results from the soil gas samples collected from AOC-2 indicate the presence of VOCs (SG-2, SG-6) and methane (SG-2). TCE was detected at a concentration exceeding the NYSDOH AGV in SG-2. Although vapor intrusion not a concern based upon current Site use, the potential for vapor intrusion in future structures should be addressed and is discussed in further detail in Section 9.1.1.5 on page 41.

8.1.1.8 Building # 3 Fill Area (AOC-2)

SVOCs, VOCs and metals were identified in both perched water samples collected from test pits excavated in AOC-2. However, only concentrations of SVOCs were detected above the NYSDEC TOGS Class GA guidance value. In addition, a sample of perched water collected from the base of TP-8 contained concentrations of MTBE and acetone exceeding the TOGS Class GA guidance value. The proposed remedial action for impacted water is discussed further in Section 9.1.1.4 on page 40.

8.2 BUILDING # 6 OIL WATER SEPARATOR (AOC-8)

8.2.1 Volatile Organic Compounds (AOC-8)

As shown on Figure 6A and 6B and Appendix K, acetone was detected in the W&C soil boring (WC-1) collected from AOC-8 at a concentration above the NYSDEC Part 375 Unrestricted and Protection of Ground Water SCO, but below the Restricted Residential SCO.

VOCs in exceedance of the Part 375 Unrestricted SCO will be addressed in the agreement with the NYSDEC discussed in Section 9.1.1.1 on page 36.

8.2.2 Semi-volatile Organic Compounds (AOC-8)

SVOCs were detected in the W&C soil boring (WC-1) collected from AOC-8 as shown on Figure 5B at concentrations above the NYSDEC Part 375 Unrestricted Restricted Residential, and Protection of Ground Water SCO.

After reevaluating the data gathered during previous investigations, it appears as if GB-16, a soil sample collected during the HES 2010 investigation has an exceedance of several SVOCs above the NYSDEC Part 375 Restricted Residential and Protection of Ground Water SCO.

The proposed Site Closure measures for the SVOC impacted area in the vicinity of AOC-8 is discussed further in Section 9.1.1.1 and 9.1.1.4 on pages 36 and 40, respectively.

8.2.3 Metals (AOC-8)

Several metals were detected in the W&C (WC-1) soil boring collected from AOC-8 as shown on Figure 8 at concentrations exceeding the NYSDEC Part 375 Unrestricted SCO, but below the Restricted Residential and Protection of Ground Water SCO.

Only barium was detected at a concentration exceeding the NYSDEC Part 375 Restricted Residential SCO.

The proposed Site Closure measure for the metals impacted area in the vicinity of AOC-8 is discussed further in Section 9.1.1.1 and 9.1.1.3 on pages 36 and 39, respectively.

8.2.4 Polychlorinated Biphenyls (AOC-8)

PCBs were detected in the W&C soil boring collected from AOC-8 as shown on Figure 10 at concentrations below the NYSDEC Restricted Residential and Protection of Ground Water SCOs but above the Unrestricted SCO.

While PCBs were detected in samples from previous investigations at concentration above the NYSDEC Part 375 Unrestricted SCO, no PCB exceedances of NYSDEC Part 375 Restricted Residential or Protection of Ground Water SCOs were detected in samples collected in the vicinity of AOC-8 from previous investigations. PCBs in exceedence of the Part 375 Unrestricted SCO will be addressed in the agreement with the NYSDEC discussed in Section 9.1.1.1 on page 36.

8.2.5 Pesticides (AOC-8)

Several Pesticides were detected in the W&C soil boring collected from AOC-8 as shown on Figure 10 but at concentrations below the NYSDEC Part 375 Unrestricted Restricted Residential, and Protection of Ground Water SCOs.

In addition, no pesticide exceedances of Part 375 Unrestricted, Restricted Residential, or Protection of Ground Water SCOs were detected in samples collected in the vicinity of AOC-8 from previous investigations.

8.3 BUILDING # 3 OIL WATER SEPARATOR (AOC-9)

8.3.1 Volatile Organic Compounds (AOC-9)

As shown on Figure 6A and 6B, acetone was the only VOC detected in the W&C soil boring (WC-2) collected from AOC-9. The detected concentration of acetone is above the NYSDEC Part 375 Unrestricted SCO, but below the Part 375 Restricted Residential and Protection of Ground Water SCOs (Appendix K). Acetone was detected in the soil sample collected from GB-1 during the HES 2010 investigation above the NYSDEC Part 375 Unrestricted and Protection of Ground Water SCOs, but at a concentration below the NYSDEC Part 375 Restricted Residential SCO.

VOCs in exceedence of the Part 375 Unrestricted SCO will be addressed in the agreement with the NYSDEC discussed in Section 9.1.1.1 on page 36.

8.3.2 Semi-volatile Organic Compounds (AOC-9)

SVOCs were not detected in the W&C soil boring (WC-2) collected from AOC-9 as shown on Figure 7A and 7B. After reevaluating the data gathered during previous investigations, it appears as if GB-11, a soil sample collected during the HES 2010 investigation has an exceedance of SVOCs above the NYSDEC Part 375 Unrestricted, Restricted Residential, and Protection of Ground Water SCOs. In addition, several soil samples collected by SITES from beneath the Building 3 floor slab have detected concentrations of SVOCs in exceedance of the NYSDEC Part 375 Unrestricted Restricted Residential, and Protection of Ground Water SCOs as shown on Figures 7A and 7B. and Appendix K.

The proposed Site Closure measure for the SVOC impacted area in the vicinity of AOC-9 is discussed further in Section 9.1.1.1 and 9.1.1.4 on pages 36 and 40, respectively.

8.3.3 Metals (AOC-9)

Several metals were detected in the W&C soil boring (W-2) collected from AOC-9 as shown on Figure 8. However, the detected concentration of metals is below the NYSDEC Part 375 Unrestricted, Restricted Residential, and Protection of Ground Water SCOs.

Metals were detected in several soil samples in the vicinity of AOC-9 collected during previous investigations, but at concentrations below the NYSDEC Part 375 Unrestricted Restricted Residential, and Protection of Ground Water SCOs.

8.3.4 Polychlorinated Biphenyls (AOC-9)

PCBs were not detected in the soil sample collected from AOC-9. Soil samples collected during previous investigations in the vicinity of AOC-9 were not analyzed for PCBs.

8.3.5 Pesticides (AOC-9)

Pesticides were not detected in the soil sample collected from AOC-9. Pesticides were detected in soil samples collected by SITES from beneath the Building 3 floor slab, but at a concentration below the NYSDEC Part 375 Unrestricted, Restricted Residential and Protection of Ground Water SCOs.

8.4 OFFICE BUILDING FILL AREA (AOC-4)

As discussed in Section 6.3.1, W&C completed six soil boring in the vicinity of AOC-4 (Office Building Fill Area) confirming the presence of fill including ash, wood and brick at shallow depths. Ash was encountered in five of the six soil borings (WC-3 through WC-7) at depths ranging from 0.3 to 2.5 ft. bgs as shown on Figure 4. Ash was not encountered in WC-8, which was completed to the north of the existing office building, adjacent to the truck scale. One analytical sample was collected from WC-5 which had the highest concentration of VOCs observed with the PID. Analytical results from WC-5 are discussed below.

8.4.1 Volatile Organic Compounds (AOC-4)

Several VOCs were detected in WC-5 at concentrations below the NYSDEC Part 375 Unrestricted SCO. Acetone was detected at a concentration exceeding the NYSDEC Part 375 Unrestricted and Protection of Ground Water SCOs.. No other VOCs were detected at concentrations above the NYSDEC Part 375 Restricted Residential or

Protection of Ground Water SCOs. VOCs in exceedence of the Part 375 Unrestricted and Protection of Ground Water SCOs will be addressed in the agreement with the NYSDEC discussed in Section 9.1.1.1 on page 36.

8.4.2 Semi-volatile Organic Compounds (AOC-4)

Several SVOCs were detected in WC-5, but at concentrations below the NYSDEC Part 375 Unrestricted, Restricted Residential, and Protection of Ground Water SCOs.

8.4.3 Metals (AOC-4)

Several Metals were detected in WC-5 including Copper and Nickel, which were detected at concentrations exceeding the NYSDEC Part 375 Unrestricted SCO but below the Restricted Residential SCO. Barium was detected above the NYSDEC Part 375 Unrestricted or Restricted Residential SCOs in WC-5. However, no metals were detected above the Protection of Ground Water SCO. Arsenic was detected in the HES test pit sample collected from TP-6, located in the vicinity of WC-5 at a concentration exceeding the NYSDEC Part 375 Restricted Residential and Protection of Ground Water SCOs, and lead and chromium were detected at a concentration exceeding the NYSDEC Part 375 Unrestricted SCO, but below the Restricted Residential SCO. .

The proposed Site Closure measure for the metals impacted area in the vicinity of AOC- 4 is discussed further in Section 9.1.1.1 and 9.1.1.2.2 on pages 36 and 37, respectively.

8.4.4 Pesticides (AOC-4)

Pesticides were not detected in the soil sample collected from AOC-4. Pesticides were not analyzed in the test pit or soil boring samples collected during the HES investigation of AOC-4.

8.4.5 Polychlorinated Biphenyls (AOC-4)

PCBs were detected in the soil sample collected from AOC-4 at a concentration exceeding the NYSDEC Part 375 Unrestricted SCO, but below the Restricted Residential and Protection of Ground Water SCO. PCBs were not analyzed in the test pit or soil boring samples collected during the HES investigation of AOC-4. PCBs in exceedence of the Part 375 Unrestricted SCO will be addressed in the agreement with the NYSDEC discussed in Section 9.1.1.1 on page 36.

8.5 PERIMETER SOIL GAS SURVEY

Based on the results of field screening conducted at 19 bar-hole locations (Figure 3), it appears that landfill gases are present on site. Methane was detected in four of the bar-hole locations with the highest concentration of 8.9% detected in BH-7, located between Building 3 and Building 6. The three remaining detected concentrations of methane were in the vicinity of AOC-3.

Hydrogen sulfide was detected in 11 bar-hole locations, with the highest concentration of two parts per million (ppm) detected in BH-8 and BH-9, located in the vicinity of AOC-3. The remaining detected concentrations of hydrogen sulfide were located in the vicinity of Building 3 and Building 6.

PID readings were observed in nine bar-hole locations, with the highest measured concentration of 15.9 ppm detected in BH-9, located in the vicinity of AOC-3. The majority of the remaining bar-hole locations with detectable PID concentrations were in the vicinity of Buildings 3 and 6. The proposed remedial action for the areas that have potential landfill gas impacts and/or vapor intrusion concerns is discussed further in Section 9.

8.6 1011 LOWER SOUTH STREET

Although 1011 Lower South Street was not included in the scope of W&C's SCI, analytical data gathered during previous investigations indicate the presence of possible contaminants above Unrestricted and Restricted Residential SCOs. Based on information gathered during the Tectonic Site Investigation conducted in October of 2011, it appears that the majority of impacted soils in exceedance of NYSDEC Part 375 Restricted Residential SCOs can be found on Parcel 6, in the vicinity of Building #4, and the historical Building # 2, which was removed. In addition, the area in the vicinity of previously existing Building 1 has soil impacts in exceedance of NYSDEC Part 375 Restricted Residential SCOs. However, the majority of exceedances of the NYSDEC Part 375 Restricted Residential SCO are SVOCs and metals, which are attributed to the presence of asphalt, urban fill, and Karta's permitted operations. Figure 11 depicts all areas on 1011, 1013 and 1017 LSS in exceedance of NYSDEC Part 375 Restricted Residential SCOs that were identified during Woodard & Curran's SCI and any previous investigations including the Tectonic July 2011 Site Investigation and Figure 12 depicts all areas exceeding Part 375 Restricted Residential SCOs excluding SVOCs. A review of the boring and test pit logs provided in Appendix III of the Tectonic report indicates the presence of fill, mainly sandy soils mixed with urban fill material including brick, asphalt, glass and wood fragments. The Tectonic report is provided in Appendix B.

8.7 PROTECTION OF GROUND WATER SOIL CLEANUP OBJECTIVE ANALYSIS

In addition to a comparison to the Unrestricted and Restricted Residential SCOs, all Site data was compared to the Protection of Ground Water SCO. Results of the Comparison are included in Appendix K and shown on Figure 14. Based on the review of existing Site data to the Part 375 Protection of Ground Water SCO, as requested by the NYSDEC in their comment letter dated June 19 2013, on a draft SCIR/FCP the data indicates that SVOCs, and to a lesser extent PCBs, metals and VOCs, exceed the Protection of Ground Water SCO. The NYSDEC has indicated that an assessment of potential impacts to ground water and remediation plan should be in the Site Closure Plan. A detailed discussion of the proposed plan to address the Protection of Ground Water SCO exceedences is included in Section 9.1.1.4.

9. FINAL SITE CLOSURE PLAN

9.1 INTRODUCTION

The City of Peekskill has entered into an agreement with Global to purchase the 1013 and 1017 parcels for the purposes of advancing redevelopment of the area. To facilitate this redevelopment, the 1013 and 1017 parcels would be considered along with adjacent parcels of land presently owned by the City, specifically the 1011 LSS parcel, the site formerly known as Locaparra site, and the existing Town Highway Department. Collectively, these parcels represent a 14.39 acre development area.

There are many options available to redevelop all or a portion of these parcels, and the City is actively seeking developers to partner with to determine the ultimate development plan. Regardless of the final redevelopment approach, the proposed Site Closure Plan outlined below identifies the steps required to facilitate Site Closure.

9.1.1 Site Closure Plan

The proposed Closure Plan for the Site and adjoining parcels is focused on identifying the means in which the areas of concern defined within this SCIR will be managed as part of the Site closure and redevelopment. As the actual plan may vary, the Closure Plan relies on several tenets to accommodate the necessary closure requirements while providing flexibility to the City to implement a specific redevelopment plan. These tenets include but are not limited to the implementation of an institutional control and/or agreement with the NYSDEC, the limited excavation of PCB and metals impacted soils, the reuse of soils onsite, implementation of a protective barrier to reduce ground water infiltration, and implementation of a gas venting system for buildings constructed as part of the future Site redevelopment. Below is a detailed discussion of each tenet:

9.1.1.1 Agreement with NYSDEC

Karta contemplates entering into an agreement (Consent Order or similar agreement) with the NYSDEC, which would place an environmental easement over the property to limit development to Restricted Residential activities and require implementation of Site closure as set forth in a NYSDEC approved Closure Plan. This approach is focused on implementing institutional controls to address the VOC, SVOC, Metals, Pesticide, and PCB exceedances of the Unrestricted SCO. The Consent Order would acknowledge that active remedial activities, as identified in the approved Closure Plan, will address those areas and contaminants that exceed the Part 375 Protection of Ground Water SCOs. These areas are presented on Figure 12.

Implementation of the Closure Plan would be funded through the establishment of a Standby Trust Agreement. Under the Standby Trust (Sunset Provision) Agreement, the NYSDEC would direct payments for implementation of the Closure Plan. A cost estimate for the implementation of the Closure Plan is included in Appendix J.

As part of the Consent Order, Karta anticipates that the bond which secures the obligation for completion of final closure would be released, and the proceeds of the Bond would be transferred into a Standby Trust Fund for the benefit of the NYSDEC. Any additional funds required to complete soil removals & sunset provision closure will be secured by escrow accounts by the respective land owner. The Consent Order would also provide for the payment of penalties.

9.1.1.2 Soil Excavation and Offsite Disposal

The second tenet of the Site Closure Plan would require the excavation and offsite disposal of PCBs and metals impacted soil exceeding the Part 375 Protection of Ground Water SCO. Although there are several VOCs in exceedance of the Protection of Ground Water SCO, with the exception of HES GB-16 and SITES SS3, acetone was the only detected VOC at concentrations above the Protection of Ground Water SCO and is a common laboratory artifact. HES GB-16 is located under Building # 3 and is covered with an impervious surface, and Sites SS3 will be excavated with the removal of lead and mercury impacted soils found in Area A-9, depicted on Figure 12 and discussed below.

9.1.1.2.1 PCB Excavation

Based on the areas of PCB contamination above the NYSDEC part 375 Protection of Ground Water SCO, one area of PCB impacted soil would be excavated and disposed of offsite, (Area A-4) as shown on Figure 12. Areas A-1, A-2, A-3 and A-16 do not exceed the Protection of Ground Water SCO and will be addressed with the Protective Barrier outlined below in Tenet 4. Remaining soils impacted with PCBs at concentrations exceeding the Protection of Ground Water SCO (Area A-4) would be excavated, characterized and properly disposed off-site.

Discrete post excavation endpoint samples would be collected from PCB impacted area Area A-4 to ensure that all contaminated soils with concentrations above the Protection of Ground Water SCO have been removed. Post excavation sampling would be completed in accordance with NYSDEC DER-10 requirements and additional soil would be removed as necessary. Because the final limits of the excavation areas Area A-4 are unknown at this time, an exact number of endpoint samples are not included in this Closure Plan. However, samples would be collected at the frequency prescribed in NYSDEC DER-10 (1 sample per 30 linear feet of excavation sidewall, 1 sample per 900 square feet of excavation bottom). All excavations would be secured and covered with polyethylene sheeting and safety fencing pending the results of post-excavation endpoint sampling.

The volume of material to be removed was estimated by comparing samples with PCB concentrations in exceedance of the NYSDEC Part 375 Protection of Ground Water and Restricted Residential SCO with adjacent sample locations with no PCB exceedances. Approximately half the distance between such samples was used to estimate the approximate dimension of a given remedial excavation. We believe this represents a conservative approach to estimating the volume to be removed for each area, however, field conditions and endpoint sample analytical results would ultimately determine the volume of material to be excavated. Following receipt of analytical data showing all contaminated material above the Protection of Ground Water SCO has been removed, the excavations will be backfilled with virgin and/or clean material. The anticipated excavation volume for Area A-4 based on the available data is approximately 1200 cubic yards.

9.1.1.2.2 Metals Excavation

In addition to the PCB impacted areas, several areas with concentrations of arsenic, lead and mercury exceeding the Protection of Ground Water SCO found on 1011, 1013 and 1017 LSS would require excavation and offsite disposal as shown on Figure 12. Post excavation endpoint samples would be collected from areas to ensure all contaminated soils have been removed.

Discrete post excavation sampling would be completed in accordance with NYSDEC requirements and additional soil would be removed as necessary. Because the final limits of the excavations areas are unknown, an exact number of endpoint samples are not included in this Closure Plan. However, samples will be collected at the frequency prescribed in NYSDEC DER-10 (1 sample per 30 linear feet of excavation sidewall, 1 sample per 900 square feet of

excavation bottom). All excavations would be secured and covered with polyethylene sheeting and safety fencing pending the results of post-excavation endpoint sampling.

The volume of material to be removed was estimated by comparing samples with arsenic, mercury and/or lead concentrations in exceedance of the NYSDEC Part 375 Protection of Ground Water SCO with adjacent sample locations with no exceedances. Approximately half the distance between such samples or the property boundary (where applicable) was used to estimate the approximate dimension of a given remedial excavation. We believe this represents a conservative approach to estimating the volume to be removed for each area, however, field conditions and endpoint sample analytical results would ultimately determine the volume of material to be excavated. Following receipt of analytical data showing that all contaminated material above the Protection of Ground Water SCO has been removed, the excavations will be backfilled with clean and/or virgin material. The anticipated volume for each impacted area based on the available data is as follows:

1011 Lower South Street

- Area A-2: approximately 100 cubic yards (arsenic)
- Area A-12: approximately 100 cubic yards (mercury)
- Area A-8: approximately 100 cubic yards (arsenic)
- Area A-13: approximately 100 cubic yards (mercury)
- Area A-15: approximately 100 cubic yards (mercury)

1013 Lower South Street

- Area A-5: approximately 600 cubic yards (mercury)
- Area A-9 (GB-37, SITES TP-2/SS-2/SS-2A): approximately 120 cubic yards (40 cubic yards mercury, lead; 80 cubic yards mercury, lead & VOCs)
- Area A-14 (W&C TP-X/2, TP-3): approximately 200 cubic yards (mercury)

1017 Lower South Street

- Area A-7: approximately 160 cubic yards (arsenic)
- Area A-4 (SITES TP-2): Lead impacted soils included in the PCB removal of Area A-4)

9.1.1.2.3 Soil Management Plan

During the excavation and disposal process, all soils would be managed based on a Soil Management Plan (SMP), which outlines the protocols for inspecting, sampling, onsite storage and transportation of soils excavated during closure activities. The SMP would be implemented in accordance with New York State Department of Environmental Conservation (NYSDEC) DER-10 regulations and include the following items:

- Roles and responsibilities to address baseline sampling and excavation activities;
- Soil management procedures
- Soil sampling, analysis, and data evaluation protocols;
- Offsite disposal procedures.

A detailed SMP is included in Appendix I. Prior to conducting Site Closure activities, the SMP would require updates to identify specific disposal facilities and required sampling and analytical plans based on the volume and characterization of material to be managed.

9.1.1.3 Allowable Reuse Pursuant to NYSDEC DER-10

The third tenet of this Closure Plan is the allowable reuse of barium impacted soils onsite. W&C addressed several areas with multiple samples exhibiting barium concentrations exceeding the NYSDEC Part 375 Restricted Residential SCO at varying depths using the process of in-situ characterization to determine whether reuse was allowable in accordance with DER-10. In-situ characterization is based on the regulations set forth in NYSEC DER-10 - Table 5.4(e)4 (Reuse of Soil). In-situ characterization was used in areas of non-native material where samples with barium concentrations in exceedance of the Part 375 Restricted Residential SCO are directly adjacent to, or in the immediate vicinity of, samples with barium concentrations of non-detect or below the Part 375 Unrestricted and/or Restricted Residential SCO. Because of the variability in the observed barium concentrations both vertically and horizontally, the existing sample data were treated as in-situ composite samples; similar to sampling a stockpile of fill material for exportation or disposal. Based on NYSDEC DER-10, if the concentrations of a contaminant meet the Unrestricted Soil Cleanup Goals (SCGs), the soil can be reused onsite with no restrictions. Alternatively, if the soil meets the applicable use-based criteria, the soil can be used onsite in a soil cover/protective barrier or as backfill within an area of the site subject to an institutional control, such as the limiting of the site for restricted residential/commercial development as outlined in Tenet 1 above.

W&C reviewed historic data for the purposes of applying the in-situ characterization approach to three areas on 1011 (Area A-11), 1013 (Area A-9) and 1017 (Area A-10) LSS with several samples exhibiting barium concentrations above the Part 375 Restricted Residential SCO at various depth intervals. Each area was treated as an in-situ stockpile and based on the estimated volume of each area, W&C determined that the number of historic samples met the recommended number of soil samples outlined in NYSDEC DER-10 Table 5.4(E)10 – Recommended Number of Soil Samples for Soil Imported to or Exported from a Site. The arithmetic mean was then calculated for all samples in each area to determine if the area as a composite is in compliance with NYSDEC DER-10 Appendix 5 - Allowable Constituent Levels For Imported Fill or Soil (ACL). The maximum depth interval collected for laboratory analysis in each area requiring remediation based on in-situ characterization was used to estimate the anticipated volume based on NYSDEC DER-10 guidance. In-situ characterization data is included on Tables 9A through 9C and is depicted on Figure 13. Below is a table outlining a comparison of sample frequency and NYSDEC DER-10 requirements:

Area	Approximate Soil Volume (cubic yards)	Number of Samples	DER-10 Recommended Composite Samples	Barium Unrestricted ACL (mg/kg)	Barium Restricted Residential ACL (mg/kg)	Average Barium Concentration (mg/kg)
A-9	2300	10	3	350	400	439.70
A-10	1500	8	3	350	400	316.83
A-11	4000	8	5	350	400	366.64

Based on the in-situ characterization approach, one area (Area A-9) along the southwest border of 1013 LSS has an average barium concentration exceeding the NYSDEC DER-10 Restricted Residential ACL (Table 9A). However, Area A-9 is adjacent to the former L&L Scrap Metals property; a parcel of property with a history of contamination. As such, contamination found in area A-9 is likely attributed to offsite migration of contaminants from the L&L Scrap Metal property. This argument is reinforced with the observations documented in the SITES February/March 2002 Spill investigation, which uncovered evidence of petroleum contamination related to NYSDEC Spill Number 01-11200

(determined to be attributed to L&L Scrap Metals) and metals exceedances above the NYSDEC Part 375 Restricted Residential SCO. In addition, the SITES April 2002 Phase I/II Site Assessment identified the adjacent property (L&L Scrap Metals) as a listed RCRA generator that may have impacted 1013 LSS. Furthermore, a review of aerial photographs indicate that the portion of 1013 LSS within Area A-9 was disturbed as early as 1947 and used for automobile recycling as early as 1960, prior to Karta acquiring the property. Accordingly, no further remedial action is warranted as part of this Closure Plan.

Based on in-situ characterization, Area A-10 (Building 6 – 1017 LSS) and Area A-11 (Building 4 - 1011 LSS) would be used for onsite fill, as the average concentration of barium is below the DER-10 Unrestricted ACL and Restricted Residential ACL, respectively (Tables 9B & 9C, Figure 13). The agreement with the NYSDEC referenced in Tenet 1 above could provide for the soils in Area A-10 and A-11 to be used onsite as backfill material during Site redevelopment, as applicable and/or as an institutional control. In addition, the protective barrier discussed below would reduce potential impacts to ground water and prevent direct contact for barium impacted soils in these areas.

In addition to the concentrations of barium found in Areas A-9, A-10 and A-11, barium was detected at a concentration exceeding the NYSDEC Part 375 Restricted Residential SCO in a Tectonic soil boring on 1011 LSS (B38, Area A-8) and an HES boring on 1013 LSS (GB-34, Area A-6). However, based on the review of the data as compared to the Part 375 Protection of Ground Water SCO, W&C recommends no further remedial action for Area A-6, as the concentrations of barium do not exceed the Protection of Ground Water SCO. Area A-8 will be excavated and disposed of offsite due the exceedence of Arsenic above the Protection of Ground Water SCO.

9.1.1.4 Protection of Ground Water Site Protective Barrier

Based on a review of existing Site data as compared to the Part 375 Protection of Ground Water SCO, SVOCs, and to a lesser extent VOCs and PCBs, are present at concentrations requiring protection of ground water to be included in the final Site Closure Plan. To reduce infiltration and protect ground water, a protective barrier would be installed across the Site as part a future developer's final development plan. In addition, this protective barrier would provide for protection of human health and the environment by reducing the potential for direct contact. The protective barrier would include several types of barriers based on the specific site redevelopment approach to be implemented by the future site developer. Any material in exceedence of the Protection of Ground Water SCO that requires excavation as part of the final development would be consolidated onsite in areas with similar concentrations of contaminants. Below is a detailed discussion of each type of protective barrier which would be selected by a future developer in accordance with its final development plan:

- **Type I Protective Barrier – Vegetated Area**

In the event the consolidated materials exceeding the Protection of Ground Water SCO are placed in an area that would be vegetated or grassed in the final end use, the protective barrier would include, from the top down, a six inch layer of topsoil underlain by an 18 inch thick layer of soil compacted to a 1×10^{-5} centimeters per second (cm/s) permeability over a 6 inch thick gas collection layer comprised of sandy soils with a permeability of 1×10^{-3} cm/s permeability. The interface between the consolidated materials and imported clean/virgin fill will be demarcated accordingly (e.g., plastic orange fence as applicable).

- **Type II Protective Barrier – Asphalt Areas**

In the event the consolidated materials exceeding the Protection of Ground Water SCO are placed in an area that would be covered with asphalt in the final end use, the protective barrier would include, from the top down, a two inch layer of asphalt underlain by a four inch thick layer of

asphalt base course over a six inch dense graded aggregate layer. The six inch thick dense graded aggregate layer will be underlain by a geotextile fabric and a 6 inch gas collection layer comprised of sandy soils with a permeability of 1×10^{-3} cm/s permeability.

- **Type III Protective Barrier – Stormwater Basins**

In the event the consolidated materials exceeding the Protection of Ground Water standard are placed in an area that is proposed as a stormwater retention basin, the cap would include, from the top down, a six inch thick layer of topsoil underlain by a geotextile fabric and 6 inch thick drainage layer comprised of sandy soils with a permeability of 1×10^{-3} cm/s permeability. The 6 inch thick drainage layer will be underlain with an 30 mil PVC geomembrane liner and a 6 inch gas collection layer comprised of sandy soils with a permeability of 1×10^{-3} cm/s permeability. In addition, any subsurface drainage structures including infiltration galleries would include an impermeable geomembrane to prevent infiltration.

- **Type IV Protective Barrier – Under Buildings**

In the event the consolidated materials exceeding the Protection of Ground Water standard are placed in an area beneath a proposed building footprint, the building would be constructed with an active/passive vapor mitigation system as discussed in Tenet 5.

9.1.1.5 Sub-Slab Venting on Structures

Based on the results of the vapor and gas survey completed as part of the SCI activities, Site Closure would include the management of subsurface gases and vapors as part of the redevelopment activities. As gases and vapors have been identified on the site, any structures that are part of the end use development would need to include a sub slab venting system. Regardless of which approach is implemented during site redevelopment, any proposed buildings would be equipped with a passive vapor mitigation system and applied vapor barrier (e.g., Liquid Boot). The types of venting systems and vapor barrier proposed would vary depending upon the approach taken by the developer.

9.1.1.6 Sunset Provision

Should the Site remain undeveloped for period of more than 5 years, a protective barrier consistent with a Type 1 protective barrier described above would be placed over the entire Site (excluding areas already covered with impervious surfaces) as part of the agreement discussed in Tenet 1. Figure 15 depicts the proposed protective barrier in absence of Site development. In the absence of site development within the sunset period, the estimated costs to fund the implementation of the Type 1 protective barrier would be used in accordance with the Standby Trust Agreement.

10. FACILITY CLOSURE PLAN

The Karta Corporation, Inc. (Karta) solid waste processing and recycling operations on the parcels of land owned by Global (parcels 1013 and 1017 Lower South Street) ceased on or about March 2010. Since that time, Karta decommissioned the site and is seeking to transfer ownership of the parcel known as 1013-1017 LSS to the City of Peekskill.

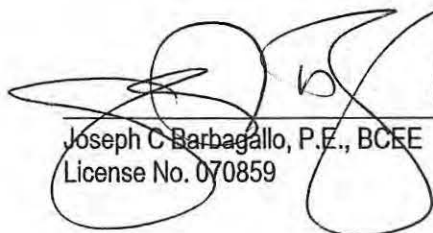
Daniel A. Ciarcia, P.E. prepared a Closure Certification Statement in accordance with the Closure Plan dated March 2010. NYSDEC issued a letter dated April 13, 2011 in response to the March 2010 Closure Plan prepared by Mr. Ciarcia, P.E.. The NYSDEC requested additional information related to the facility closure activities. To address facility closure and the deficiencies identified in the NYSDEC April 13, 2011 letter, W&C prepared a summary of the applicable closure criteria based on a review of the background information and other project related documents, and a table indicating how those applicable criteria have or will be satisfied was submitted to the NYSDEC with the October 25, 2011 SCI/FCP.

Based on the review of the information related to the Facility Closure Plan, the applicable closure criteria are a combination of those requirements identified within the original 2001 Closure Plan submitted to the NYSDEC (as the requirements have been consistent in all Closure Plans submitted since 2001), closure related items that are required to address the Conditions of the May 2006 Permit, and the specific items enumerated in the April 13, 2011 letter from the NYSDEC.

Daniel A. Ciarcia, P.E. issued a revised Closure Certification Statement dated August 10, 2012 addressing the deficiencies identified by the NYSDEC. To assist the NYSDEC in reviewing compliance with applicable closure criteria, the attached updated table (Appendix H, Table H1) summarizes the closure requirement, the method(s) that were used to address the closure requirement, and the documentation that the closure requirement has been satisfied, including professional certifications. Facility closure documentation including the August 10, 2012 Closure Certification Statement prepared by Daniel A. Ciarcia, P.E. is included in Appendix H.

11. CERTIFICATION

I, Joseph Barbagallo, P.E. certify that I am currently a New York State Registered Professional Engineer, that this Site Closure Investigation Report/Facility Closure Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with NYSDEC Part 360 and Division of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation regulations.


Joseph C. Barbagallo, P.E., BCEE
License No. 070859



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TABLES

Table 1
Summary of Sampling Program
Investigation Work Plan
Former Karta Corp Site - Peekskill, NY

SAMPLES ⁽³⁾						ANALYTICAL PROGRAM ⁽²⁾						
SAMPLE NO.	ID	AOC ⁽³⁾	Sample Intervals ⁽¹⁾	Sample Type	Sample Matrix	TCL - VOCs	TCL - SVOCs	PP - Metals	PCBs	Pest	Hex. Cr.	Waste Comp ⁽⁵⁾
005	SG-2	AOC-2	5.0'	Soil Gas	Vapor	X						
007	SG-6	AOC-2	5.0'	Soil Gas	Vapor	X						
019	TP-3 GW	AOC-2	---	Ground Water	Aqueous	X	X	X ⁽⁴⁾	X	X	X	
022	TP-8 GW	AOC-2	---	Ground Water	Aqueous	X	X	X ⁽⁴⁾	X	X	X	
002	WC-1	AOC-8	6.0-7.0'	Soil Boring	Soil	X	X	X	X	X	X	
003	WC-2	AOC-9	14.5-15.5'	Soil Boring	Soil	X	X	X	X	X	X	
001	WC-5	AOC-4	1.0-2.0'	Soil Boring	Soil	X	X	X	X	X	X	
023	WCTP-1	AOC-2	6.0-7.0'	Test Pit	Soil	X	X	X	X	X	X	
017	WCTP-2	AOC-2	9.0-10.0'	Test Pit	Soil	X	X	X	X	X	X	
016	WCTP-3	AOC-2	9.0-10.0'	Test Pit	Soil	X	X	X	X	X	X	
015	WCTP-4	AOC-2	9.0-10.0'	Test Pit	Soil	X	X	X	X	X	X	
010	WCTP-5	AOC-2	7.0-8.0'	Test Pit	Soil	X	X	X	X	X	X	
009	WCTP-6	AOC-2	11.0-12.0'	Test Pit	Soil	X	X	X	X	X	X	
011	WCTP-7	AOC-2	3.0-4.0'	Test Pit	Soil	X	X	X	X	X	X	
008	WCTP-7	AOC-2	9.0-10.0'	Test Pit	Soil	X	X	X	X	X	X	
012	WCTP-8	AOC-2	4.0-5.0'	Test Pit	Soil	X	X	X	X	X	X	
013	WCTP-9	AOC-2	2.0-3.0'	Test Pit	Soil	X	X	X	X	X	X	
014	WCTP-9	AOC-2	3.0-4.0'	Test Pit	Soil	X	X	X	X	X	X	
024	WCTP-10	AOC-2	4.5-5.5'	Test Pit	Soil	X	X	X	X	X	X	
028	BS-1	---	1.0-2.0'	Background Soil	Soil		X	X				
029	BS-2	---	0.5-0.8'	Background Soil	Soil		X	X				
032	BS-3	---	1.0-2.0'	Background Soil	Soil		X	X				
027	BS-4	---	1.0-2.0'	Background Soil	Soil		X	X				
030	BS-5	---	0.5-1.0'	Background Soil	Soil		X	X				
031	BS-6	---	0.6-1.0'	Background Soil	Soil		X	X				
035	Comp 1	AOC-2	TP-1,2,3	Waste Composition	Soil							X
036	Comp 2	AOC-2	TP-1,2,3, 10	Waste Composition	Soil							X
037	Comp 3	AOC-2	TP-4,6,7	Waste Composition	Soil							X
038	Comp 4	AOC-2	TP-5,7,8,9	Waste Composition	Soil							X
039	WCTP-9	AOC-2	3.0-4.0'	Waste Composition	Soil							X

Notes:

(1) Soil sample interval based on highest PID and/or one foot above refusal/top of bedrock (TOR) or water table (WT)

(2) Analytical program

TCL-VOC+15 - Target Compound List Volatile Organic Compounds

TCL- SVOCs - Target Compound List Semi-volatile Organic Compounds

PP - Metals - Priority Pollutant Metals List

Hex. Cr. - Hexavalent chromium

PCBS - Polychlorinated biphenyls

(3) Samples

AOC - Area of Concern

(4) Samples analyzed for total (unfiltered) and dissolved (filtered) metals to evaluate the effects of sample turbidity

(5) Samples to be analyzed for Waste Composition by NYSDEC Region 3 SOP for Waste Classification

Table 2
Summary of Soil Analytical Data
Karta - Lower South Street
Peekskill, NY

W&C SAMPLE ID					001		002		003	
LOCATION					WC-5		WC-1		WC-2	
SAMPLING DATE					4/24/2012		4/25/2012		4/25/2012	
LAB SAMPLE ID					L1207297-01/RI		L1207297-02		L1207297-03	
SAMPLE DEPTH (ft.)					1-2		6-7		14.5-15.5	
	RESR	GW	UNRES	Units		Q		Q		Q
Volatile Organic Compounds										
Toluene	100	0.7	0.7	mg/kg	0.011	J	0.0042	U	0.0044	U
Ethylbenzene	41	1	1	mg/kg	0.026	J	0.0028	U	0.0029	U
p/m-Xylene	*100	*1.6	*0.26	mg/kg	0.023	J	0.0056	U	0.0058	U
o-Xylene	*100	*1.6	*0.26	mg/kg	0.03	J	0.0056	U	0.0058	U
Acetone	100	0.05	0.05	mg/kg	0.27		0.15		0.061	
2-Butanone	100	0.12	0.12	mg/kg	0.27	U	0.022	J	0.012	J
n-Butylbenzene	100	5.9	12	mg/kg	0.015	J	0.0028	U	0.0029	U
sec-Butylbenzene	100	11	11	mg/kg	0.015	J	0.0028	U	0.0029	U
n-Propylbenzene	100	3.9	3.9	mg/kg	0.015	J	0.0028	U	0.0029	U
1,2,4-Trimethylbenzene	52	3.6	3.6	mg/kg	0.18		0.014	U	0.014	U

Notes:

Bold - Compound detected above the Reporting Limit (RL)

mg/kg - milligrams per kilogram

NA - Not Analyzed

Q - Qualifier

U - Compound not detected above the reporting limit (RL) shown

J - Estimated Value

P - The Relative Percent Difference (RPD) between the results for the two columns exceeds the method-specified criteria.

R - Unreliable Result; data is rejected or unusable. Analyte may or may not be present in sample

UJ - Not detected, quantitation limit may be inaccurate or imprecise.

SCO - Soil Cleanup Objective

NYSDEC - New York State Department of Environmental Conservation

UNRES - NYSDEC Part 375 Soil Cleanup Objective for Unrestricted Use

RESR - NYSDEC Part 375 Soil Cleanup Objective for Restricted Residential Use

GW - NYSDEC Part 375 Soil Cleanup Objective for the Protection of GW

Exceeds GW & UNRES

Exceeds UNRES

Exceeds RESR & UNRES

* Soil Cleanup Objective applies to total Xylenes (p/m-Xylene and o-Xylene)

** The SCO for this speciofic compound is considered to be met if the analysis for the total species of this contaminant is below the specific SCO

Table 3
Summary of Soil Vapor Analytical Data
Karta - Lower South Street
Peekskill, NY

W&C SAMPLE ID		005		007		004	
LOCATION		SG-2		SG-6		AMBIENT	
SAMPLING DATE		4/25/2012		4/25/2012		4/25/2012	
LAB SAMPLE ID		L1207395-01		L1207395-02		L1207395-03	
	Units		Q		Q		Q
Volatile Organic Compounds							
Vinyl chloride	ug/m3	48.6		3.86		0.511	U
Acetone	ug/m3	869		314		7.82	
1,1-Dichloroethene	ug/m3	5.79		2.64	U	0.793	U
Methylene chloride	ug/m3	17.4	U	11.6	U	3.86	
1,1-Dichloroethane	ug/m3	4.13		2.7	U	0.809	U
Methyl tert butyl ether	ug/m3	26.8		2.4	U	0.721	U
2-Butanone	ug/m3	56.3		37.2		0.59	U
cis-1,2-Dichloroethene	ug/m3	8.68		2.64	U	0.793	U
Benzene	ug/m3	111		5.18		0.639	U
Trichloroethene	ug/m3	12.8		3.58	U	1.07	U
Toluene	ug/m3	73.9		3.19		0.878	
Tetrachloroethene	ug/m3	16		4.52	U	1.36	U
Volatile Organic Compounds (SIM)							
Carbon tetrachloride	ug/m3	-		-		0.358	
Tetrachloroethene	ug/m3	-		-		0.142	
Fixed Gases							
Methane	%	0.386		0.138	U	0.14	U

Notes:

Bold - Compound Detected

ug/m3 - micrograms per cubic meter

Q - Qualifier

U - Compound not detected above reporting limit (RL) shown

Table 4
Summary of Test Pit Analytical Data
Karta - Lower South Street
Peekskill, NY

W&C SAMPLE ID					008		011		009		010		012		013		014		015		016		017		018		023		024		
LOCATION					TP-7		TP-7		TP-6		TP-5		TP-8		TP-9		TP-9		TP-4		TP-3		TP-2		TP-X (TP-2)		TP-1		TP-10		
SAMPLING DATE					5/2/2012		5/2/2012		5/2/2012		5/2/2012		5/2/2012		5/2/2012		5/2/2012		5/2/2012		5/3/2012		5/3/2012		5/3/2012		5/3/2012		5/3/2012		
LAB SAMPLE ID					L1207958-01		L1207958-02		L1207958-03		L1207958-04		L1207958-05		L1207958-06		L1207958-07		L1207958-08		L1207958-09		L1207958-10		L1207958-11		L1207958-12		L1207958-13		
SAMPLE DEPTH (ft.)					9-10		3-4		11-12		7-8		4-5		2-3		3-4		9-10		9-10		9-10		—		6-7		4.5-5.5		
	RESR	GW	UNRES	Units		Q		Q		Q		Q		Q		Q		Q		Q		Q		Q		Q		Q		Q	
General Chemistry																															
Solids, Total	---		---	%	77		87		84		88		90		87		89		88		76		79		82		84		87		
Pesticides																															
Dieldrin	0.2	0.1	0.005	mg/kg	0.0631	U	0.055	U	0.0567	U	0.0544	U	0.0528	U	0.0296	J	0.054	U	0.0556	U	0.025	U	0.0246	U	0.0231	U	0.0581	U	0.0402		
4,4'-DDD	13	14	0.0033	mg/kg	0.101	U	0.088	U	0.0908	U	0.087	U	0.0844	U	0.0887	U	0.0864	U	0.089	U	0.04	U	0.0279	J	0.0347	J	0.0929	U	0.0352	U	
4,4'-DDT	7.9	136	0.0033	mg/kg	0.189	U	0.165	U	0.17	U	0.163	U	0.158	U	0.166	U	0.162	U	0.167	U	0.075	U	0.0738	U	0.0693	U	0.174	U	0.0339	J	
Endosulfan sulfate	24	1000	2.4	mg/kg	0.042	U	0.0366	U	0.0378	U	0.0362	U	0.0352	U	0.037	U	0.036	U	0.0371	U	0.00833	J	0.0164	U	0.00924	J	0.0387	U	0.00734	J	
cis-Chlordane	4.2	2.9	0.094	mg/kg	0.126	U	0.0396	J	0.113	U	0.109	U	0.106	U	0.0562	J	0.0371	J	0.111	U	0.015	J	0.0208	J	0.0171	J	0.111	J	0.0498		
PCBs																															
Aroclor 1242	1	3.2	0.1	mg/kg	0.0587		0.0889		0.0769		0.185	U	0.0391		0.0372	U	0.0273	J	0.0615		0.342		0.313		0.332		0.0382	U	0.037	U	
Aroclor 1254	1	3.2	0.1	mg/kg	0.0493		0.0754		0.207		1.14		0.0333	J	0.0431		0.0209	J	0.051		0.183		0.127		0.197		0.0421		0.0586		
Aroclor 1260	1	3.2	0.1	mg/kg	0.0157	J	0.0227	J	0.0618		1.04		0.0203	J	0.0133	J	0.0364	U	0.0147	J	0.0867		0.0543		0.0609		0.0143	J	0.0163	J	
Total PCBs	1	3.2	0.1	mg/kg	0.1237		0.187		0.2688		1.365		0.0927		0.0564		0.0482		0.1272		0.6117		0.4943		0.5899		0.0564		0.0749		
Semivolatile Organic Compounds																															
Acenaphthene	100	98	20	mg/kg	6.8	U	1.4	J	4.7	U	4.5	U	5.8	U	4.5	U	4.4	U	4.5	U	4.6	J	4.2	J	3.2	J	4.7	U	6	U	
Fluoranthene	100	1000	100	mg/kg	15		15		6.4		8.4		20		15		6.1		12		45		39		30		15		14		
Naphthalene	100	12	12	mg/kg	8.5	U	5.6	U	5.8	U	5.6	U	7.2	U	5.6	U	5.5	U	5.6	U	6.5	U	3	J	7.9	U	5.8	U	7.5	U	
Benzo(a)anthracene	1	1	1	mg/kg	5.6		6.4		3.1	J	3.4		8		6.3		2.6	J	5.5		21		17		12		6.6		6.1		
Benzo(a)pyrene	1	22	1	mg/kg	5.1	J	5.1	J	2.1	J	1.2	J	7.3	J	6	J	3.1	J	3.2	J	3.2	J	3.2	J	3.2	J	3.2	J	3.2	J	
Benzo(b)fluoranthene	1	1.7	1	mg/kg	6.5		7		3.5		4.1		8.6		8.4		3.7		7		21		19		14		7.6		7.4		
Benzo(k)fluoranthene	3.9	1.7	0.8	mg/kg	2.3	J	2.3	J	1.5	J	1.6	J	2.3	J	2.7	J	1.2	J	2.3	J	9		7.5		5.1		2.3	J	2.3	J	
Chrysene	3.9	1	1	mg/kg	5.6		6.3		3.1	J	3.6		8		6.6		3.3		6.5		21		16		12		6.9		6.4		
Acenaphthylene	100	107	100	mg/kg	6.8	U	4.5	U	4.7	U	4.5	U	5.8	U	4.5	U	4.4	U	4.5	U	5.2	U	6.6	U	6.3	U	4.7	U	6	U	
Anthracene	100	1000	100	mg/kg	2.7	J	3.4		1.1	J	1.2	J	6.1		2	J	3.3	U	1.8	J	10		8.7		7.2		2.4	J	2	J	
Benzo(ghi)perylene	100	1000	100	mg/kg	3.3	J	3.2	J	1.8	J	2	J	3.8	J	3.9	J	1.9	J	4	J	11		8.3		6	J	3.6	J	3.8	J	
Fluorene	100	386	30	mg/kg	8.5	U	1.5	J	5.8	U	5.6	U	7.2	U	5.6	U	5.5	U	1.2	J	5.5	J	4.9	J	3.7	J	5.8	U	7.5	U	
Phenanthrene	100	1000	100	mg/kg	13		11		3.6		5.6		22		9.6		3.5		8.3		37		29		20		7.7		8.9		
Dibenzo(a,h)anthracene	0.33	1000	0.33	mg/kg	5.1	U	3.4	U	3.5	U	3.3	U	4.3	U	3.3	U	1.9	J	1.3	J	4.4		2.1	J	4.8	U	3.5	U	4.5	U	
Indeno(1,2,3-cd)pyrene	0.5	8.2	0.5	mg/kg	1.5	J	1.3	J	1.9	J	1.1	J	3.1	J	4.3	J	4.9		6.5		13		9.2		1.3		1.8	J	1.1	J	
Pyrene	100	1000	100	mg/kg	12		12		5.2		6.7		18		12		4.8		9.8		36		31		24		12		11		
Dibenzofuran	---	---	7	mg/kg	8.5	U	5.6	U	5.8	U	5.6	U	7.2	U	5.6	U	5.5	U	5.6	U	3.1	J	2.6	J	2	J	5.8	U	7.5	U	

Table 4
Summary of Test Pit Analytical Data
Karta - Lower South Street
Peekskill, NY

W&C SAMPLE ID					008		011		009		010		012		013		014		015		016		017		018		023		024		
LOCATION					TP-7		TP-7		TP-6		TP-5		TP-8		TP-9		TP-9		TP-4		TP-3		TP-2		TP-X (TP-2)		TP-1		TP-10		
SAMPLING DATE					5/2/2012		5/2/2012		5/2/2012		5/2/2012		5/2/2012		5/2/2012		5/2/2012		5/2/2012		5/3/2012		5/3/2012		5/3/2012		5/3/2012		5/3/2012		
LAB SAMPLE ID					L1207958-01		L1207958-02		L1207958-03		L1207958-04		L1207958-05		L1207958-06		L1207958-07		L1207958-08		L1207958-09		L1207958-10		L1207958-11		L1207958-12		L1207958-13		
SAMPLE DEPTH (ft.)					9-10		3-4		11-12		7-8		4-5		2-3		3-4		9-10		9-10		9-10		—		6-7		4.5-5.5		
	RESR	GW	UNRES	Units		Q		Q		Q		Q		Q		Q		Q		Q		Q		Q		Q		Q		Q	
Total Metals																															
Arsenic, Total	16	16	13	mg/kg	4.2		3.9		3.6		5.8		3.9		4.3		2.6		4.9		7.3		6.6		10		6.7		3.8		
Barium, Total	400	820	350	mg/kg	200		140		140		160		93		95		98		67		240		200		170		140		100		
Beryllium, Total	72	47	7.2	mg/kg	0.31		0.28		0.25		0.26		0.29		0.34		0.17	J	0.18	J	0.25		0.23	J	0.23		0.32		0.29		
Cadmium, Total	4.3	7.5	2.5	mg/kg	0.24	J	0.19	J	0.81		0.24	J	0.2	J	0.14	J	0.23	J	0.16	J	3.9		0.96		1.2		0.38	J	0.12	J	
Chromium, Hexavalent	110	19	1	mg/kg	1	U	0.92	U	0.95	U	0.91	U	0.89	U	0.92	U	0.9	U	0.91	U	1	U	0.24	J	0.98	U	0.95	U	0.92	U	
Chromium, Trivalent	**180	—	**30	mg/kg	20		20.08		31.05		21.09		16.11		16.08		20.01		12.09		25		21.76		28.02		20.05		16.08		
Chromium, Total	**180	—	**30	mg/kg	21		21		32		22		17		17		21		13		26		22		29		21		17		
Copper, Total	270	1720	50	mg/kg	50		67		160		46		30		31		50		64		110		110		89		61		31		
Lead, Total	400	450	63	mg/kg	140		110		110		100		57		57		82		60		350		280		260		120		66		
Manganese, Total	2000	2000	1600	mg/kg	300		320		220		240		240		290		180		240		280		270		250		290		240		
Mercury, Total	0.81	0.73	0.18	mg/kg	0.17		0.24		4.8		0.18		0.14		0.06	J	0.1		0.65		0.75		0.74		1.6		0.3		0.21		
Nickel, Total	310	130	30	mg/kg	18		15		19		17		14		13		12		11		22		27		21		15		14		
Selenium, Total	180	4	3.9	mg/kg	0.87	J	0.78	J	0.68	J	0.81	J	0.4	J	0.55	J	0.51	J	0.72	J	0.69	J	0.95		0.95		0.76	J	0.6	J	
Silver, Total	180	8.3	2	mg/kg	0.2	J	0.3	J	0.34	J	0.15	J	0.11	J	0.25	J	0.11	J	0.15	J	0.38	J	0.39	J	0.74		0.16	J	0.15	J	
Zinc, Total	10000	2480	109	mg/kg	150		270		320		260		160		110		130		100		290		350		420		170		110		
Volatile Organic Compounds																															
Benzene	2.9	0.06	0.06	mg/kg	0.0032	U	0.0029	U	0.003	U	0.0028	U	0.0028	U	0.0029	U	0.0028	U	0.0028	U	0.001	J	0.0032	U	0.003	U	0.003	U	0.0029	U	
Toluene	100	0.7	0.7	mg/kg	0.0049	U	0.0043	U	0.0088	U	0.0043	U	0.0011	J	0.0043	U	0.0042	U	0.0043	U	0.001	J	0.0047	U	0.0046	U	0.004	J	0.0043	U	
Ethylbenzene	41	1	1	mg/kg	0.0032	U	0.0029	U	0.003	U	0.0014	J	0.0016	J	0.0029	U	0.0028	U	0.0026	J	0.0031	J	0.0065		0.0069		0.0019	J	0.0029	U	
Trichloroethene	21	0.47	0.47	mg/kg	0.0032	U	0.0029	U	0.003	U	0.0028	U	0.0028	U	0.0029	U	0.0028	U	0.0015	J	0.0033	U	0.0032	U	0.003	U	0.003	U	0.0029	U	
1,4-Dichlorobenzene	13	1.8	1.8	mg/kg	0.016	U	0.014	U	0.0019	J	0.014	U	0.014	U	0.014	U	0.014	U	0.014	U	0.016	U	0.016	U	0.015	U	0.015	U	0.014	U	
p/m-Xylene	*100	*1.6	*0.26	mg/kg	0.0065	U	0.0057	U	0.0018	J	0.0057	U	0.0052	J	0.0057	U	0.0056	U	0.0016	J	0.0017	J	0.0017	J	0.0014	J	0.012		0.0057	U	
o-Xylene	*100	*1.6	*0.26	mg/kg	0.0065	U	0.0057	U	0.006	U	0.0057	U	0.0051	J	0.0057	U	0.0056	U	0.0019	J	0.0066	U	0.0013	J	0.0061	U	0.0075		0.0057	U	
Acetone	100	0.05	0.05	mg/kg	0.14		0.029	U	0.001		0.18		0.028	U	0.029	U	0.028	U	0.046		0.033	U	0.04		0.23		0.03	U	0.029	U	
sec-Butylbenzene	100	11	11	mg/kg	0.0032	U	0.0029	U	0.012		0.0028	U	0.0028	U	0.0029	U	0.0028	U	0.0028	U	0.0033	U	0.0032	U	0.003	U	0.003	U	0.0029	U	
n-Propylbenzene	100	3.9	3.9	mg/kg	0.0032	U	0.0029	U	0.0092		0.0028	U	0.0011	J	0.0029	U	0.0028	U	0.0028	U	0.0033	U	0.0032	U	0.003	U	0.003	U	0.0029	U	
1,3,5-Trimethylbenzene	52	8.4	8.4	mg/kg	0.0024	J	0.014	U	0.0066	J	0.014	U	0.0078	J	0.014	U	0.014	U	0.0023	J	0.016	U	0.016	U	0.015	U	0.0068	J	0.014	U	
1,2,4-Trimethylbenzene	52	3.6	3.6	mg/kg	0.0047	J	0.0016	J	0.005	J	0.014	U	0.014		0.014	U	0.014	U	0.0045	J	0.0024	J	0.002	J	0.015	U	0.013	J	0.014	U	

Notes:
Bold - Compound detected above the Reporting Limit (RL)
 mg/kg - milligrams per kilogram
 NA - Not Analyzed
 Q - Qualifier
 U - Compound not detected above the reporting limit (RL) shown
 J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL)
 SCO - Soil Cleanup Objective
 NYSDEC - New York State Department of Environmental Conservation
 UNRES - NYSDEC Part 375 Soil Cleanup Objective for Unrestricted Use
 RESR - NYSDEC Part 375 Soil Cleanup Objective for Restricted Residential Use
 GW - NYSDEC Part 375 Soil Cleanup Objective for the Protection of GW
 Exceeds GW, UNRES & COMM
 Exceeds GW & UNRES
 Exceeds UNRES
 Exceeds RESR & UNRES
 * Soil Cleanup Objective applies to total Xylenes (p/m-Xylene and o-Xylene)
 ** The SCO for this specific compound is considered to be met if the analysis for the total species of this contaminant is below the specific SCO

From Mar
Report

Table 5
Summary of Ground Water Analytical Data
Karta - Lower South Street
Peekskill, NY

W&C SAMPLE ID			019		020		022		025		026	
LOCATION			TP-3 GW		TP-X		TP-8 GW		FB GW		TB	
SAMPLING DATE			5/3/2012		5/3/2012		5/3/2012		5/3/2012		5/3/2012	
LAB SAMPLE ID			L1207957-01		L1207957-02		L1207957-03		L1207957-04		L1207957-05	
SAMPLE TYPE			Test Pit		Test Pit		Test Pit		Field Blank		Trip Blank	
	GA	Units		Q		Q		Q		Q		Q
Pesticides												
Heptachlor	0.04	ug/l	0.003	U	0.003	U	0.003	U	0.007	J	NA	
4,4'-DDD	0.3	ug/l	0.005	U	0.005	U	0.012	J	0.005	U	NA	
PCBs												
Semivolatile Organics												
Dibenzofuran	---	ug/l	0.47	U	0.47	U	8.3	J	0.47	U	NA	
Phenol	1	ug/l	0.26	U	0.26	U	11	J	0.26	U	NA	
Acenaphthene	20	ug/l	1.8		2		16		0.06	U	NA	
Fluoranthene	50	ug/l	1.9		2.1		31		0.04	U	NA	
Naphthalene	10	ug/l	3.2		3.7		14		0.06	U	NA	
Benzo(a)anthracene	---	ug/l	0.6		0.65		11		0.06	U	NA	
Benzo(a)pyrene	0	ug/l	0.61		0.05		13		0.07	U	NA	
Benzo(b)fluoranthene	0.002	ug/l	0.57		0.67		11		0.07	U	NA	
Benzo(k)fluoranthene	0.002	ug/l	0.53		0.55		11		0.07	U	NA	
Chrysene	0.002	ug/l	0.59		0.63		11		0.05	U	NA	
Acenaphthylene	---	ug/l	0.08	J	0.05	U	0.5	U	0.05	U	NA	
Anthracene	50	ug/l	0.76		0.79		7.5		0.06	U	NA	
Benzo(ghi)perylene	---	ug/l	0.51		0.54		9.3		0.07	U	NA	
Fluorene	50	ug/l	1.4		1.4		13		0.06	U	NA	
Phenanthrene	50	ug/l	2.6		2.5		27		0.06	U	NA	
Dibenzo(a,h)anthracene	---	ug/l	0.31		0.31		4		0.07	U	NA	
Indeno(1,2,3-cd)Pyrene	0.002	ug/l	0.65		0.56		5.3		0.08	U	NA	
Pyrene	50	ug/l	1.4		1.6		14		0.06	U	NA	
Metals, Total												
Arsenic, Total	25	ug/l	10		13		31		3	U	NA	
Barium, Total	1,000	ug/l	226		261		1030		1	U	NA	
Beryllium, Total	3	ug/l	0.1	J	0.2	J	1.8		0.1	U	NA	
Cadmium, Total	5	ug/l	1	U	1	U	5		1	U	NA	
Chromium, Total	50	ug/l	7	J	10		50		2	U	NA	
Copper, Total	200	ug/l	24		33		126		5	U	NA	
Lead, Total	25	ug/l	23		122		1410		3	U	NA	
Manganese, Total	300	ug/l	208		242		1740		1	U	NA	
Mercury, Total	0.7	ug/l	0.3		0.2		34.1		0.1	U	NA	
Nickel, Total	100	ug/l	12	J	14	J	64		3	U	NA	
Zinc, Total	2000	ug/l	150		210		1540		5	U	NA	
Metals, Dissolved												
Arsenic, Dissolved	25	ug/l	6		6		10		NA		NA	
Barium, Dissolved	1000	ug/l	136		132		291		NA		NA	
Copper, Dissolved	200	ug/l	5	J	5	J	7	J	NA		NA	
Lead, Dissolved	25	ug/l	14		7	J	30		NA		NA	
Manganese, Dissolved	300	ug/l	120		114		246		NA		NA	
Mercury, Dissolved	0.7	ug/l	0.1	U	0.1	U	0.2		NA		NA	
Nickel, Dissolved	100	ug/l	8		7	J	11	J	NA		NA	
Zinc, Dissolved	2000	ug/l	34	J	19	J	23	J	NA		NA	
Volatile Organic Compounds												
Tetrachloroethene	5	ug/l	0.26	J	0.27	J	0.18	U	0.18	U	0.18	U
Methyl tert butyl ether	10	ug/l	0.7	U	0.7	U	14		0.7	U	0.7	U
Acetone	50	ug/l	2.4	J	3.9	J	65		1.1	J	1	U
2-Butanone	50	ug/l	1	U	1	U	12		1.8	J	1	U

Notes:

Bold - Compound detected above the Method Detection Limit (MDL)

ug/l - micrograms per liter

NA - Not Analyzed

Q - Qualifier

U - Compound not detected above the method detection limit (MDL) shown

J - Estimated Value

NYSDEC - New York State Department of Environmental Conservation

GA - NYSDEC Class GA Ground Water Quality Standards

* Standards obtained from New York State Technical and Operational Guidance Series (TOGS) -

Ambient Water Quality Standards and Guidance Values

Exceeds GA

Table 6
Summary of Background Soil Analytical Data
Karta - Lower South Street
Peekskill, NY

W&C SAMPLE ID					027		028		029		030		031		032		033	
LOCATION					BS-4		BS-1		BS-2		BS-5		BS-6		BS-3		BS-X	
SAMPLING DATE					5/3/2012		5/3/2012		5/3/2012		5/3/2012		5/3/2012		5/3/2012		5/3/2012	
LAB SAMPLE ID					L1208047-01		L1208047-02		L1208047-03		L1208047-04		L1208047-05		L1208047-06		L1208047-07	
SAMPLE DEPTH					1'-2'		1'-2'		6"- 10"		6"- 12"		8"- 12"		1'-2'		1'-2'	
	RESR	GW	UNRES	Units		Q		Q		Q		Q		Q		Q		Q
General Chemistry																		
Solids, Total	—	—	—	%	81		88		86		89		82		83		84	
Semivolatile Organic Compounds																		
Fluoranthene	100	1000	100	mg/kg	0.049	J	12		0.08	J	1.8		1.6	J	0.12	U	0.12	U
Benzo(a)anthracene	1	1	1	mg/kg	0.12	U	4.5		0.039	J	1	J	0.88	J	0.12	U	0.12	U
Benzo(a)pyrene	1	22	1	mg/kg	0.16	U	4	J	0.15	U	0.93	J	3.2	U	0.16	U	0.16	U
Benzo(b)fluoranthene	1	1.7	1	mg/kg	0.12	U	5.6		0.053	J	1.4		1	J	0.12	U	0.12	U
Benzo(k)fluoranthene	3.9	1.7	0.8	mg/kg	0.12	U	1.9	J	0.12	U	0.48	J	2.4	U	0.12	U	0.12	U
Chrysene	3.9	1	1	mg/kg	0.12	U	4.9		0.045	J	1.3		0.99	J	0.12	U	0.12	U
Anthracene	100	1000	100	mg/kg	0.12	U	2	J	0.12	U	1.1	U	2.4	U	0.12	U	0.12	U
Benzo(ghi)perylene	100	1000	100	mg/kg	0.16	U	2.7	J	0.15	U	0.59	J	3.2	U	0.16	U	0.16	U
Fluorene	100	386	30	mg/kg	0.2	U	5.5	U	0.19	U	1.8	U	4	U	0.2	U	0.2	U
Phenanthrene	100	1000	100	mg/kg	0.12	U	9		0.12	U	1.1	U	2.4	U	0.12	U	0.12	U
Indeno(1,2,3-cd)pyrene	0.5	8.2	0.5	mg/kg	0.16	U	2.4	J	0.15	U	0.5	J	3.2	U	0.16	U	0.16	U
Pyrene	100	1000	100	mg/kg	0.045	J	9		0.078	J	1.6		1.5	J	0.12	U	0.12	U

Table 6
Summary of Background Soil Analytical Data
Karta - Lower South Street
Peekskill, NY

W&C SAMPLE ID					027		028		029		030		031		032		033	
LOCATION					BS-4		BS-1		BS-2		BS-5		BS-6		BS-3		BS-X	
SAMPLING DATE					5/3/2012		5/3/2012		5/3/2012		5/3/2012		5/3/2012		5/3/2012		5/3/2012	
LAB SAMPLE ID					L1208047-01		L1208047-02		L1208047-03		L1208047-04		L1208047-05		L1208047-06		L1208047-07	
SAMPLE DEPTH					1'-2'		1'-2'		6"- 10"		6"- 12"		8"- 12"		1'-2'		1'-2'	
	RESR	GW	UNRES	Units		Q		Q		Q		Q		Q		Q		Q
Metals, Total																		
Arsenic, Total	16	16	13	mg/kg	2.9		3.5		2.9		3.8		11		3.8		4.1	
Barium, Total	400	820	350	mg/kg	130		64		36		71		120		100		82	
Beryllium, Total	72	47	7.2	mg/kg	0.62		0.17	J	0.32		0.46		0.43		0.55		0.48	
Cadmium, Total	4.3	7.5	2.5	mg/kg	0.46	U	0.26	J	0.44	U	0.43	U	0.21	J	0.46	U	0.45	U
Chromium, Total	*180	—	*30	mg/kg	21		23		14		16		27		18		18	
Copper, Total	270	1720	50	mg/kg	20		65		18		22		91		19		22	
Lead, Total	400	450	63	mg/kg	15		76		12		35		110		9.5		19	
Manganese, Total	2000	2000	1600	mg/kg	490		240		160		350		340		190		210	
Mercury, Total	0.81	0.73	0.18	mg/kg	0.04	J	0.14		0.05	J	0.05	J	0.15		0.02	J	0.03	J
Nickel, Total	310	130	30	mg/kg	28		14		13		17		20		21		19	
Selenium, Total	180	4	3.9	mg/kg	1.5		0.84	J	0.71	J	0.96		1		0.99		1.2	
Silver, Total	180	8.3	2	mg/kg	0.46	U	0.21	J	0.44	U	0.43	U	0.11	J	0.46	U	0.45	U
Zinc, Total	10000	2480	109	mg/kg	59		300		35		56		170		58		70	

Notes:

Bold - Compound detected above the Reporting Limit (RL)

mg/kg - milligrams per kilogram

Q - Qualifier

U - Compound not detected above the RL shown

J - Estimated Value

SCO - Soil Cleanup Objective

NYSDEC - New York State Department of Environmental Conservation

COMM - NYSDEC Part 375 Soil Cleanup Objective for Commercial Use

UNRES - NYSDEC Part 375 Soil Cleanup Objective for Unrestricted Use

GW - NYSDEC Part 375 Soil Cleanup Objective for Protection of Ground Water

Exceeds UNRES

Exceeds COMM & UNRES

Exceeds COMM, UNRES & GW

Exceeds UNRES & GW

* The SCO for this specific compound is considered to be met if the analysis for the total species of this contaminant is below the specific SCO

Table 7
Summary of Bar Hole and Soil Gas Data
Karta Corporation
1013-1017 Lowe South Street, Peekskill NY

Bar Hole Location	PID	CH ₄	CO ₂	O ₂	Balance	Bar	H ₂	CO	H ₂ S
Units	ppm	%	%	%	%	"Hg	ppm	ppm	ppm
Equipment	MR-2000	GEM-2000							
BH-1	0.0	0	2.6	14.3	83.1	29.43	0	0	1
BH-2	0.0	0	1.8	16	81.3	29.43	0	0	0
BH-3	0.0	0	4.9	11.8	86.3	29.43	0	0	1
BH-4	4.7	1.2	0	4.3	90.8	29.43	0	0	1
BH-5	7.3*	0	0	13.1	85.9	29.43	0	0	1
BH-6	0.0	0	0	20.7	79.3	29.43	0	6	1
BH-7	0.9	8.9	1.3	20.6	78.4	29.43	0	0	0
BH-8	1.8	1.5	0	11.4	78.5	29.43	0	0	2
BH-9	15.9	0.9	0	14.6	83.9	29.43	0	42	2
BH-10	2.0	0	0	14.9	83.4	29.43	0	25	1
BH-11	0.6	0	1.1	21.2	78.8	29.43	0	22	0
BH-12	0.0	0	5.5	18.6	80.4	29.43	0	0	0
BH-13	0.0	0	0.2	5.2	89.3	29.43	0	9	0
BH-14	1.4	0	0	18.8	81	29.44	0	0	1
BH-15	0.0	0	0	18.9	81.1	29.44	0	0	1
BH-16	0.5	0	0	21.3	78.7	29.44	0	2	0
BH-17	0.0	0	5.8	19.1	80.9	29.44	0	0	0
BH-18	0.0	0	2.4	4.8	89.6	29.44	0	0	0
BH-19	0.0	0	0	14.3	83.4	29.45	0	0	1
SG-1	1.0	0	0	16.4	---	---	---	17	1
SG-2	6.1	0.3	0	19.3	---	---	---	15	1
SG-3	0.8	0	0	17.8	---	---	---	0	0
SG-4	0.6	0	0.1	16.3	---	---	---	0	1
SG-5	1.3	0	0	19.4	---	---	---	0	1
SG-6	1.6	0	0.3	17.9	---	---	---	7	1
SG-7	0.6	0	0	19.3	---	---	---	0	1
BH-19	0.0	0	0	14.3	83.4	29.45	0	0	1

Notes:

Bold - Parameter Detected (Includes PID, CH₄, H₂S)

ppm - part per million

"Hg -Inches of Mercury

MR-2000 - MiniRAE 2000 Photo Ionization Detector w/ 11.7 EV lamp

GEM-2000 - GEM 2000 Plus landfill gas analyzer

** All Barhole gas samples were collected at 5' below ground surface

* Decreased to 0.0 during sample collection

Table 8
Summary of QA/QC Data
Karta - Lower South Street
Peekskill, NY

W&C SAMPLE ID		007		—		025		026		021		034	
LOCATION		FB		TRIP BLANK		FB GW		TB		FB-SOIL		TB	
SAMPLING DATE		4/25/2012		4/25/2012		5/3/2012		5/3/2012		5/3/2012		5/3/2012	
LAB SAMPLE ID		L1207297-04		L1207297-05		L1207957-04		L1207957-05		L1207958-14		L1208047-08	
	Units		Q		Q		Q		Q		Q		Q
Pesticides													
Heptachlor	ug/l	0.02	U	NA		0.007	J	NA		0.02	U	NA	
PCBs													
Semivolatile Organic Compounds		ND		ND		ND		ND		ND		ND	
Metals, Total													
Arsenic, Total	ug/l	5	U	NA		5	U	NA		5	U	NA	-
Barium, Total	ug/l	10	U	NA		10	U	NA		1	J	NA	-
Volatile Organic Compounds													
Acetone	ug/l	4.4	J	5	U	1.1	J	5	U	5	U	5	U
2-Butanone	ug/l	5	U	5	U	1.8	J	5	U	1.4	J	5	U

Notes:

Bold - Compound Detected

Q - Qualifier

U - Compound not detected above reporting limit (RL) shown

J - estimated value

NA - Not Analyzed

ND - Not Detected

ug/l - micrograms per liter

Table 9A - In-Situ Characterization
Area 9 - Southwestern 1013 LSS
Karta
Peekskill, NY

SAMPLE ID					TP6	SS1	SS2	SS2A	SS3	SS4	SS5	SS5	SS6	GB-37 (6-7 FTBG) AN16040
CONSULTANT					SITES	SITES	SITES	SITES	SITES	SITES	SITES	SITES	SITES	HES
SAMPLE DATE					10/9/2003	2/5/2002	2/5/2002	2/5/2002	2/5/2002	2/5/2002	2/5/2002	3/27/2002	3/27/2002	10/4/2010
SAMPLE DEPTH					2'-2.5'	24 "	18 "	36"	18"	18"	30"	0 + 10' at 12 inch	0 + 20' at 12 inch	6' -7'
	DER-10 UNRES	DER-10 RESR	DER-10 COMM	Units										
Metals (mg/kg)														
Barium	350	400	400	mg/kg	251	63	42	43	21	23	213	195	33	31

Mean Barium Concentration (mg/kg): 439.70

Notes:

mg/kg - milligrams per kilogram

DER-10 - NYSDEC DER-10 Allowable Constituent Levels (ACL) for Imported Fill or Soil

Exceeds DER-10 Commercial, Restricted Residential, and Unrestricted ACL

Exceeds DER-10 Restricted Residential and Unrestricted ACL

Exceeds DER-10 Unrestricted ACL

Table 9B - Compliance Averaging
Area 11 - Building 4 - 1011 LSS
Karta
Peekskill, NY

SAMPLE ID					TP-2	B-1-1-3	B-2-4-6	B-3-0-2	B-6-8-10	B-7-0.5-2.5	B-8-0.5-2.5	B-11-0.5-2
CONSULTANT					Tectonic	Tectonic	Tectonic	Tectonic	Tectonic Table 2	Tectonic	Tectonic	Tectonic
SAMPLE DATE					8/1/2011	7/27/2011	7/27/2011	7/27/2011	7/27/2011	7/28/2011	7/28/2011	7/28/2011
SAMPLE DEPTH					4' - 6'	1'-3'	4'-7.5'	0'-2'	8'-10'	0.5'-2.5'	0.5'-2.5'	0.5'-2'
	DER-10 UNRES	DER-10 RESR	DER-10 COMM	Units								
Metals (mg/kg)												
Barium	350	400	400	mg/kg	137	567	625	362	25	318	313	185

Mean Barium Concentration (mg/kg): 366.625

Notes:

mg/kg - milligrams per kilogram

DER-10 - NYSDEC DER-10 Allowable Constituent Levels (ACL) for Imported Fill or Soil

Exceeds DER-10 Commercial, Restricted Residential, and Unrestricted ACL

Exceeds DER-10 Restricted Residential and Unrestricted ACL

Exceeds DER-10 Unrestricted ACL

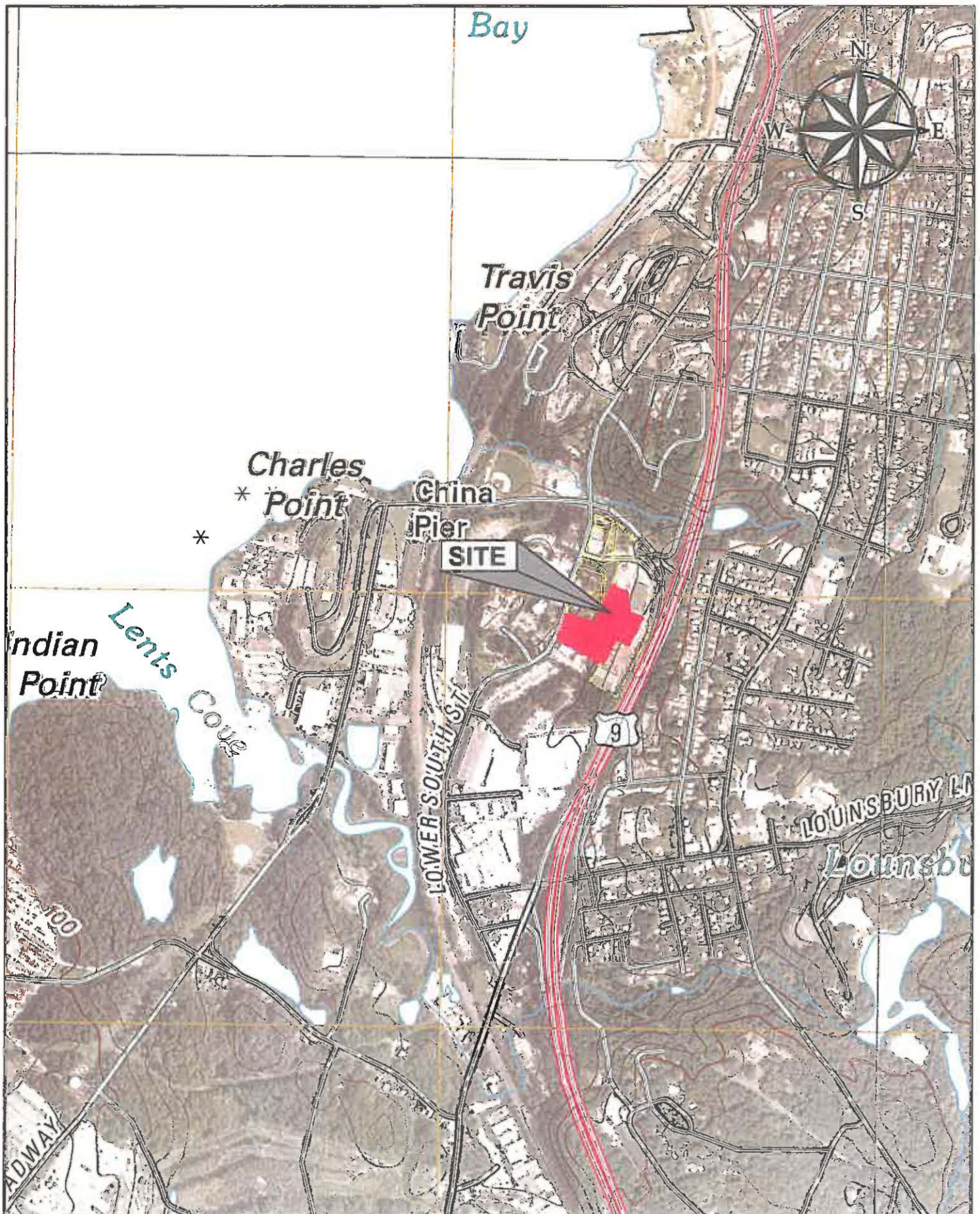
Table 9C - In-Situ Characterization
Area 10 - 1017 LSS - Building 6
Karta
Peekskill, NY

SAMPLE ID					002 W&C-1	Area 3 Comp	GB-16 AN16029	GB-34	TP1	TP2	TP3	TP4
CONSULTANT					W&C	SITES	HES	HES	SITES	SITES	SITES	SITES
SAMPLE DATE					4/25/2012	3/4/2009	9/28/2010	10/4/2010	10/9/2003	10/9/2003	10/9/2003	10/9/2003
SAMPLE DEPTH					6' -7'	0' -2'	2' - 6'	3' - 4'	2'-2.5'	2'-2.5'	2'-2.5'	2'-2.5'
	DER-10 UNRES	DER-10 RESR	DER-10 COMM	Units								
Metals												
Barium	350	400	400	mg/kg	316.8375	38.8	293	62.9	343	272	274	331

Mean Barium Concentration (mg/kg): 316.8375

Notes:
mg/kg - milligrams per kilogram
DER-10 - NYSDEC DER-10 Allowable Constituent Levels (ACL) for Imported Fill or Soil
Exceeds DER-10 Commercial, Restricted Residential, and Unrestricted ACL
Exceeds DER-10 Restricted Residential and Unrestricted ACL
Exceeds DER-10 Unrestricted ACL

FIGURES



WOODARD & CURRAN ENGINEERING PA PC
708 Westchester Avenue | Suite L2
White Plains, New York 10604
914.448.2266 | www.woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

SITE LOCATION MAP

DESIGNED BY:
DRAWN BY:

CHECKED BY:
213949_Figure 1_Site Location Map.dwg

KARTA CORPORATION
1013-1017 LOWER SOUTH STREET
PEEKSKILL, NEW YORK 10566

SITE CLOSURE INVESTIGATION REPORT
AND FACILITY CLOSURE PLAN

JOB NO: 213949
DATE: MARCH 2013
SCALE: N.T.S.

FIGURE 1



LEGEND

- FEBRUARY 5, 2002 – SPILL CLOSURE REPORT TEST PIT LOCATION BY S.I.T.E.S. INC.
- MARCH 22, 2002 – SPILL CLOSURE REPORT SOIL SAMPLE LOCATION BY S.I.T.E.S. INC.
- MARCH 22, 2002 – ENVIRONMENTAL SITE ASSESSMENT SOIL BORING LOCATION BY S.I.T.E.S. INC.
- MARCH 27, 2002 – ENVIRONMENTAL SITE ASSESSMENT SOIL SAMPLE LOCATION BY S.I.T.E.S. INC.
- OCTOBER 9, 2003 – SAMPLING AND ANALYSIS OF UNDERLYING SOILS TEST PIT LOCATION BY S.I.T.E.S. INC.
- MARCH 3, 2009 – SAMPLING OF SLAB AND UNDERLYING MATERIAL SOIL SAMPLE LOCATION BY S.I.T.E.S. INC.
- OCTOBER 2010 – SUBSURFACE INVESTIGATION REPORT GEBORING LOCATION BY HYDRO ENVIRONMENTAL SOLUTIONS INC.
- OCTOBER 2010 – SUBSURFACE INVESTIGATION REPORT SURFACE WATER SAMPLE LOCATION BY HYDRO ENVIRONMENTAL SOLUTIONS INC.
- OCTOBER 2010 – SUBSURFACE INVESTIGATION REPORT TEST PIT LOCATION BY HYDRO ENVIRONMENTAL SOLUTIONS INC.
- MARCH 11, 2011 – SPILL REMEDIATION AREA OF CONCERN #1 SOIL SAMPLE LOCATION BY S.I.T.E.S. INC.
- SUB-SLAB INVESTIGATION AREAS:
AREA 1: S.I.T.E.S. INC. CONCRETE SLAB INVESTIGATION AREA OF MARCH 2008
AREAS 2: S.I.T.E.S. INC. CONCRETE THRU SLAB INVESTIGATION AREAS AREA 7 OF MARCH 2009
- AREA OF CONCERN
- BENZO(A)PYRENE EXCEEDS NYSDEC SOIL CLEANUP OBJECTIVES FOR COMMERCIAL USE
- PAH'S EXCEEDS NYSDEC SOIL CLEANUP OBJECTIVES FOR COMMERCIAL USE
- ARSENIC EXCEEDS NYSDEC SOIL CLEANUP OBJECTIVES FOR COMMERCIAL USE
- BARIUM EXCEEDS NYSDEC SOIL CLEANUP OBJECTIVES FOR COMMERCIAL USE
- LEAD EXCEEDS NYSDEC SOIL CLEANUP OBJECTIVES FOR COMMERCIAL USE



BAR SCALE
1" = 80'

CHECK GRAPHIC SCALE BEFORE USING

NOTE:

- EXISTING CONDITIONS SHOWN ON THIS DRAWING HAVE BEEN TAKEN FROM A COMPILATION OF DATA PROVIDED BY WESTCHESTER COUNTY GEOGRAPHIC INFORMATION SYSTEMS AND ARE APPROXIMATE.

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HISTORICAL SAMPLE LOCATIONS

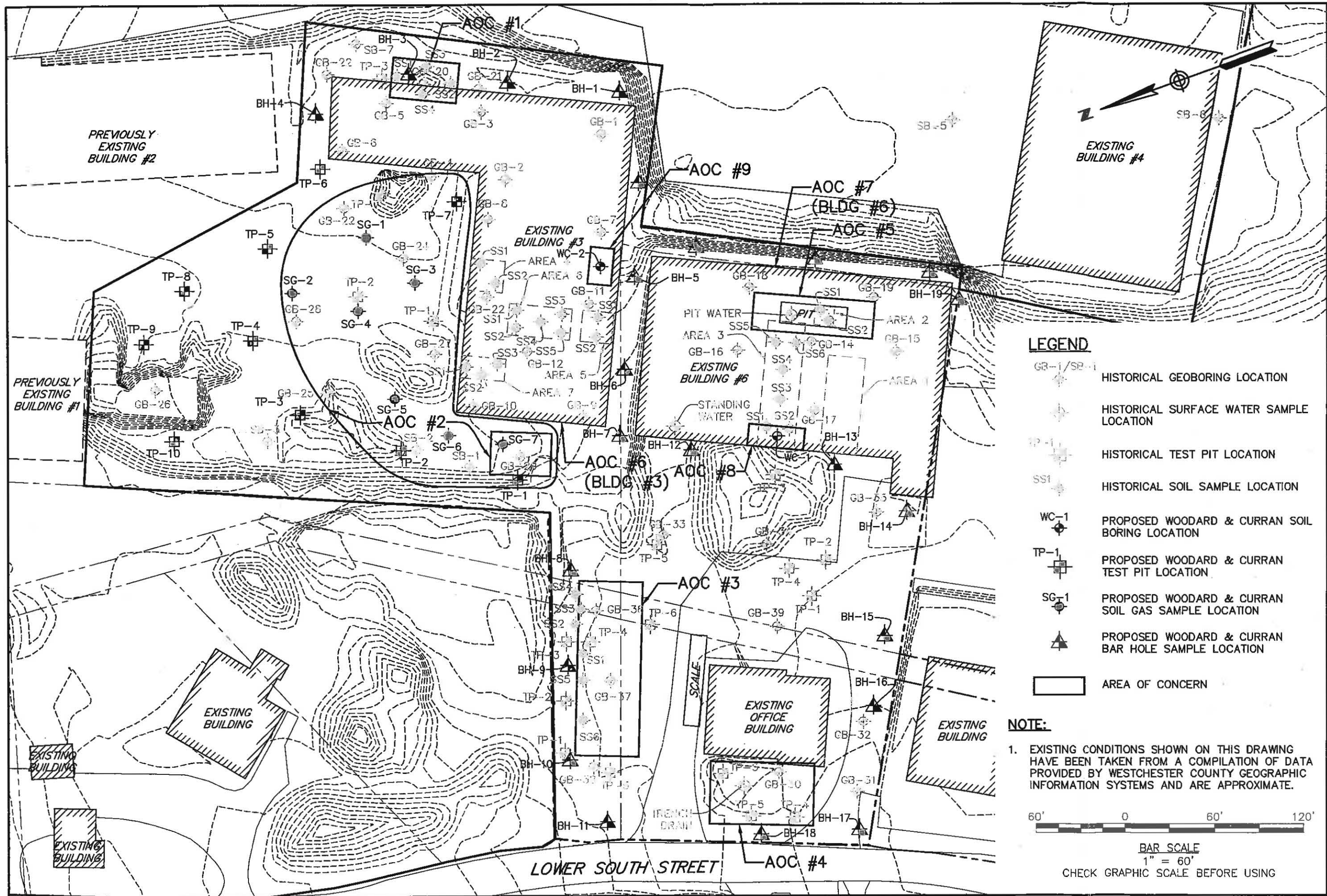
DESIGNED BY: 213949_Figure 2_3.dwg
DRAWN BY:

KARTA CORPORATION
1013-1017 LOWER SOUTH STREET
PEEKSKILL, NEW YORK 10566

SITE CLOSURE INVESTIGATION REPORT/
FACILITY CLOSURE PLAN

JOB NO: 213949
DATE: MARCH 2013
SCALE: 1"=80'

FIGURE 2



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COMMITMENT & INTEGRITY DRIVE RESULTS

**SITE CLOSURE INVESTIGATION
SAMPLE LOCATIONS**

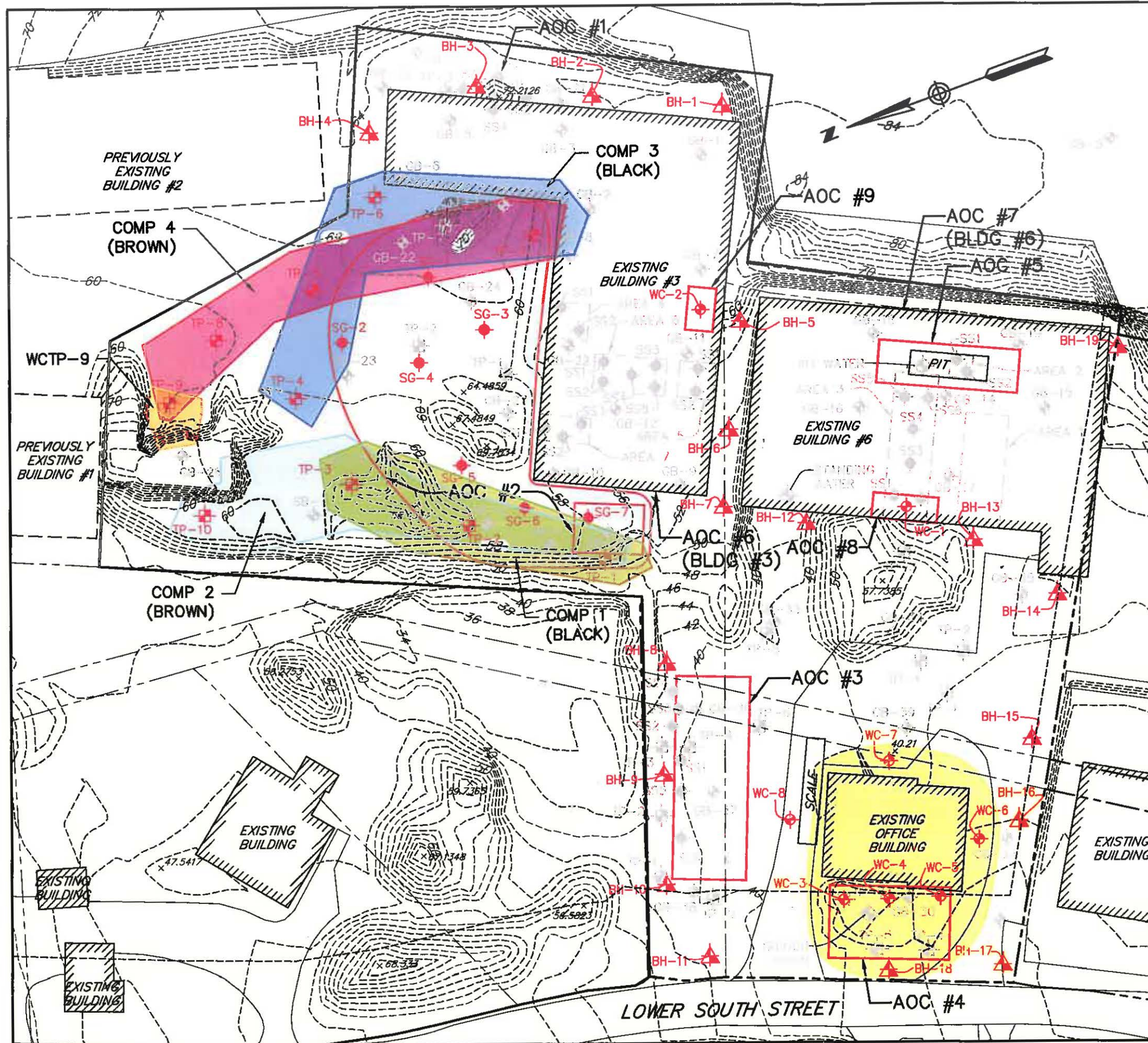
CHECKED BY: 213949_Figure 2_3.dwg

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PEEKSKILL, NEW YORK 10566

SITE CLOSURE INVESTIGATION REPORT/
FACILITY CLOSURE PLAN

JOB NO: 213949
DATE: MARCH 2013
SCALE: 1"=60'

FIGURE 3

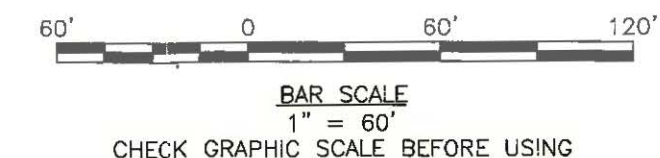


LEGEND

- HISTORICAL GEOBORING LOCATION
- HISTORICAL SURFACE WATER SAMPLE LOCATION
- HISTORICAL TEST PIT LOCATION
- HISTORICAL SOIL SAMPLE LOCATION
- WC-1 WOODARD & CURRAN SOIL BORING LOCATION
- TP-1 WOODARD & CURRAN TEST PIT LOCATION
- SG-1 WOODARD & CURRAN SOIL GAS SAMPLE LOCATION
- BH-15 WOODARD & CURRAN BAR HOLE SAMPLE LOCATION
- AREA OF CONCERN
- WASTE COMPOSITION 1 (BLACK)
- WASTE COMPOSITION 2 (BROWN)
- WASTE COMPOSITION 3 (BLACK)
- WASTE COMPOSITION 4 (BROWN)
- WCTP-9 WASTE COMPOSITION
- AOC-4 (SEE NOTE 2)

NOTE:

- EXISTING CONDITIONS SHOWN ON THIS DRAWING HAVE BEEN TAKEN FROM A COMPILATION OF DATA PROVIDED BY WESTCHESTER COUNTY GEOGRAPHIC INFORMATION SYSTEMS AND ARE APPROXIMATE.
- AREA OF HISTORIC FILL AND ASH IDENTIFIED BY W&C AND HES.



WASTE COMPOSITION SAMPLE LOCATIONS AND AOC-4 HISTORIC FILL AND ASH DELINEATION

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1013-1017 LOWER SOUTH STREET
PEEKSKILL, NEW YORK 10566

SITE CLOSURE INVESTIGATION REPORT/
FACILITY CLOSURE PLAN

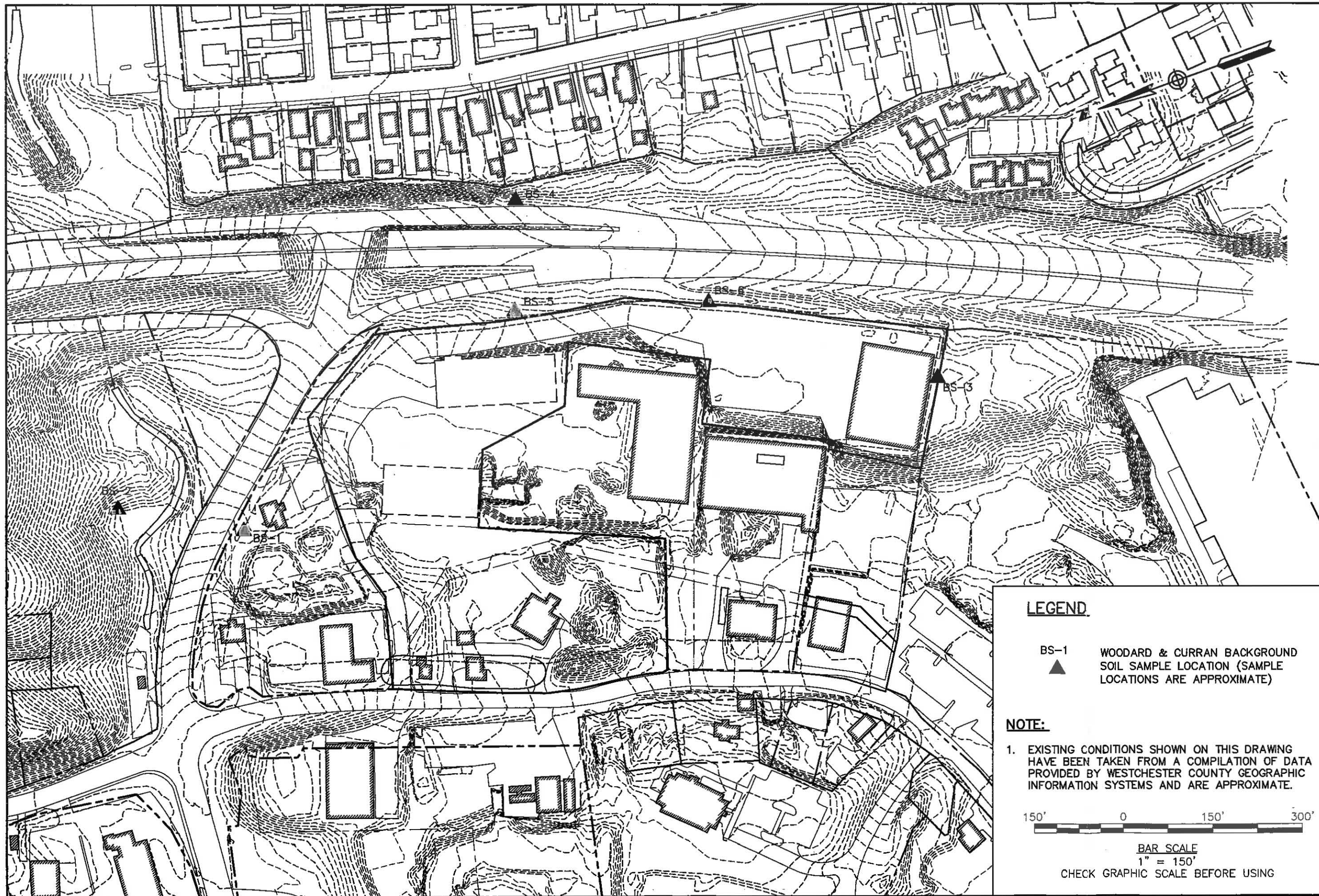
JOB NO: 213949
DATE: MARCH 2013
SCALE: 1"=60'

FIGURE 4

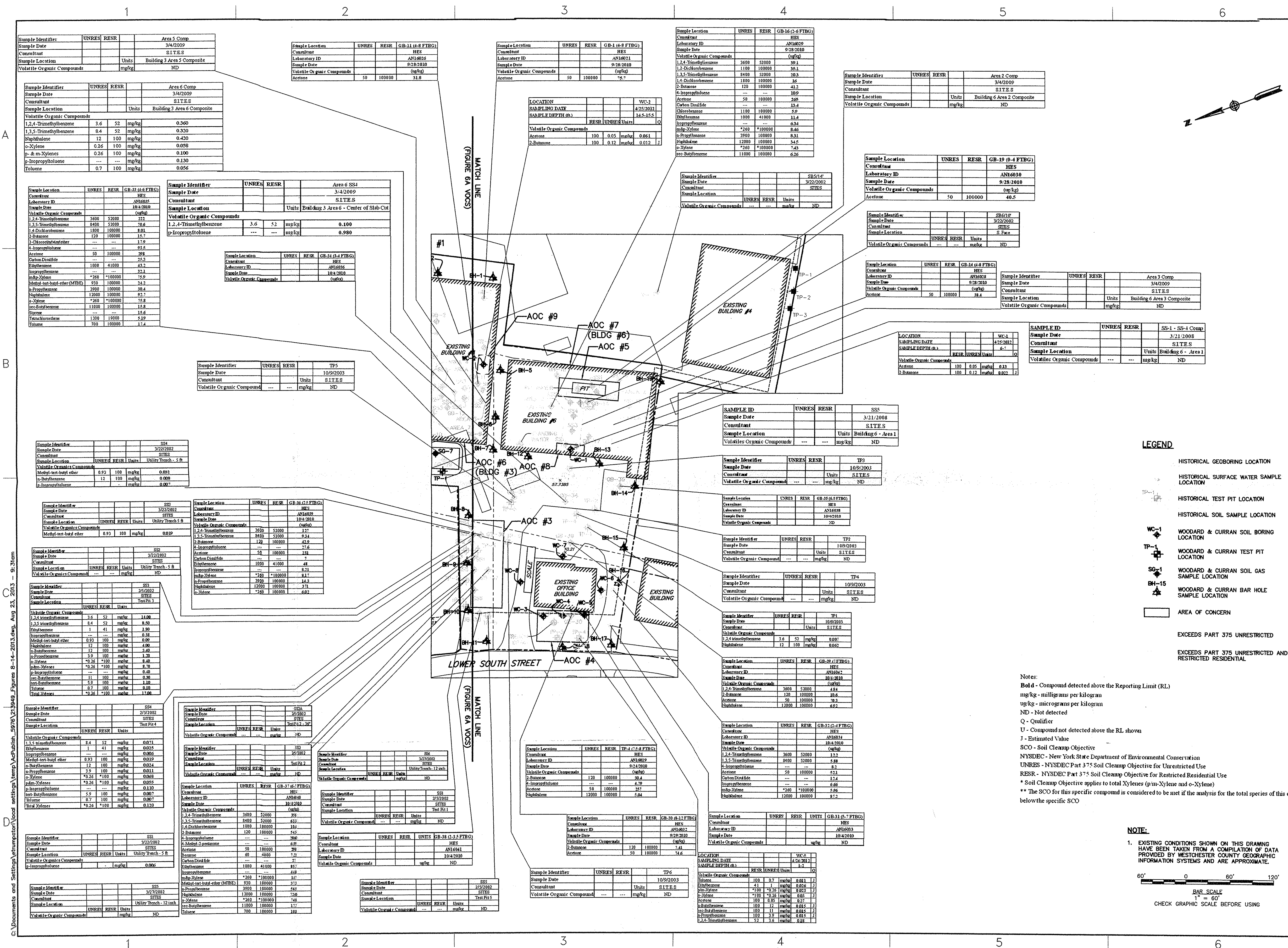


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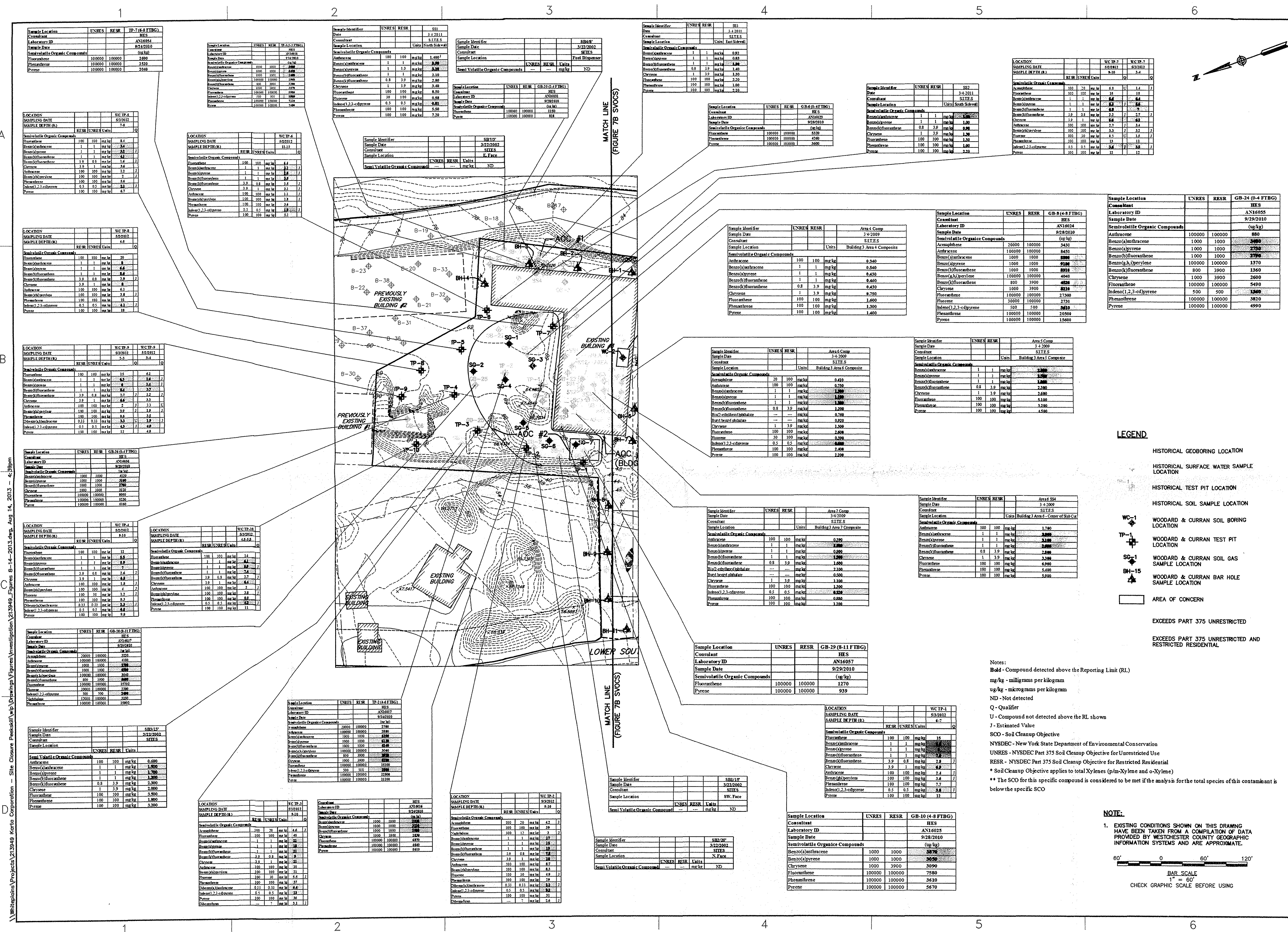
REV	DESCRIPTION	DATE
1	DESIGNED BY: [Name]	2/21/2008
2	CHECKED BY: [Name]	2/21/2008
3	DRAWN BY: [Name]	2/21/2008

VOLATILE ORGANIC COMPOUND ANALYTICAL DATA

KARTA CORPORATION
1013-1017 LOWER SOUTH STREET
PEEEKSKILL, NEW YORK 10566

JOB NO.: 213949
DATE: AUGUST 2013
SCALE: 1"=60'
SHEET: 01 OF 02

FIGURE 6B



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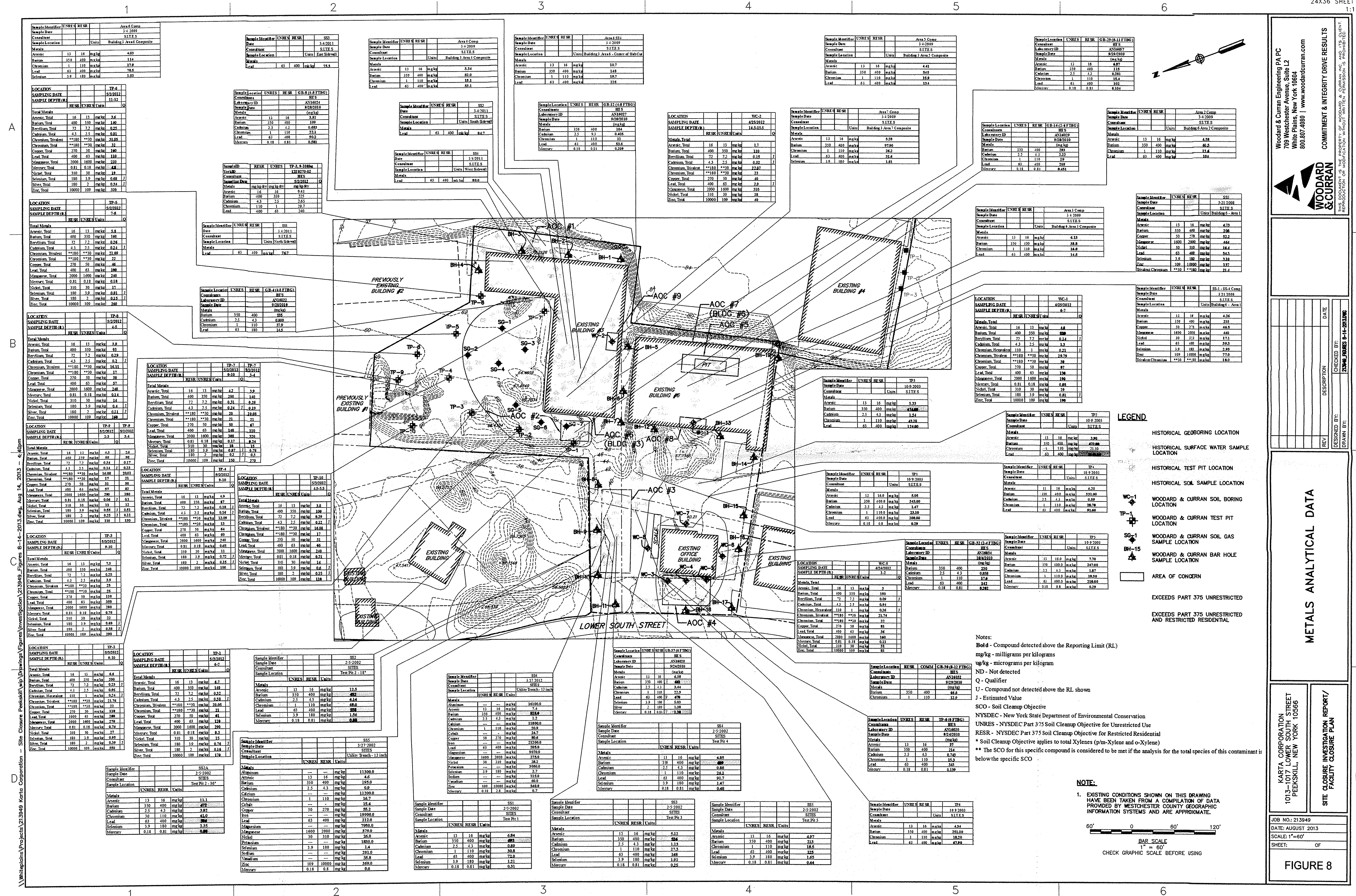
SEMI-VOLATILE ORGANIC COMPOUND ANALYTICAL DATA

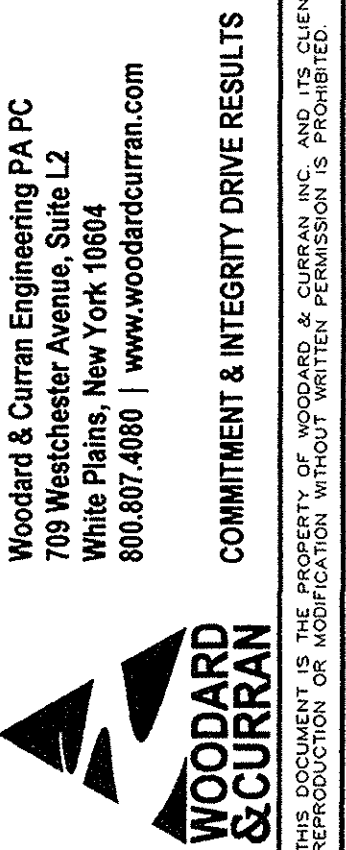
KARTA CORPORATION
1013-1017 LOWER SOUTH STREET
PEEKSKILL, NEW YORK 10566

SITE CLOSURE INVESTIGATION REPORT/
FACILITY CLOSURE PLAN

JOB NO.: 213949
DATE: AUGUST 2013
SCALE: 1"=60'
SHEET: OF

FIGURE 7A





PESTICIDE ANALYTICAL DATA

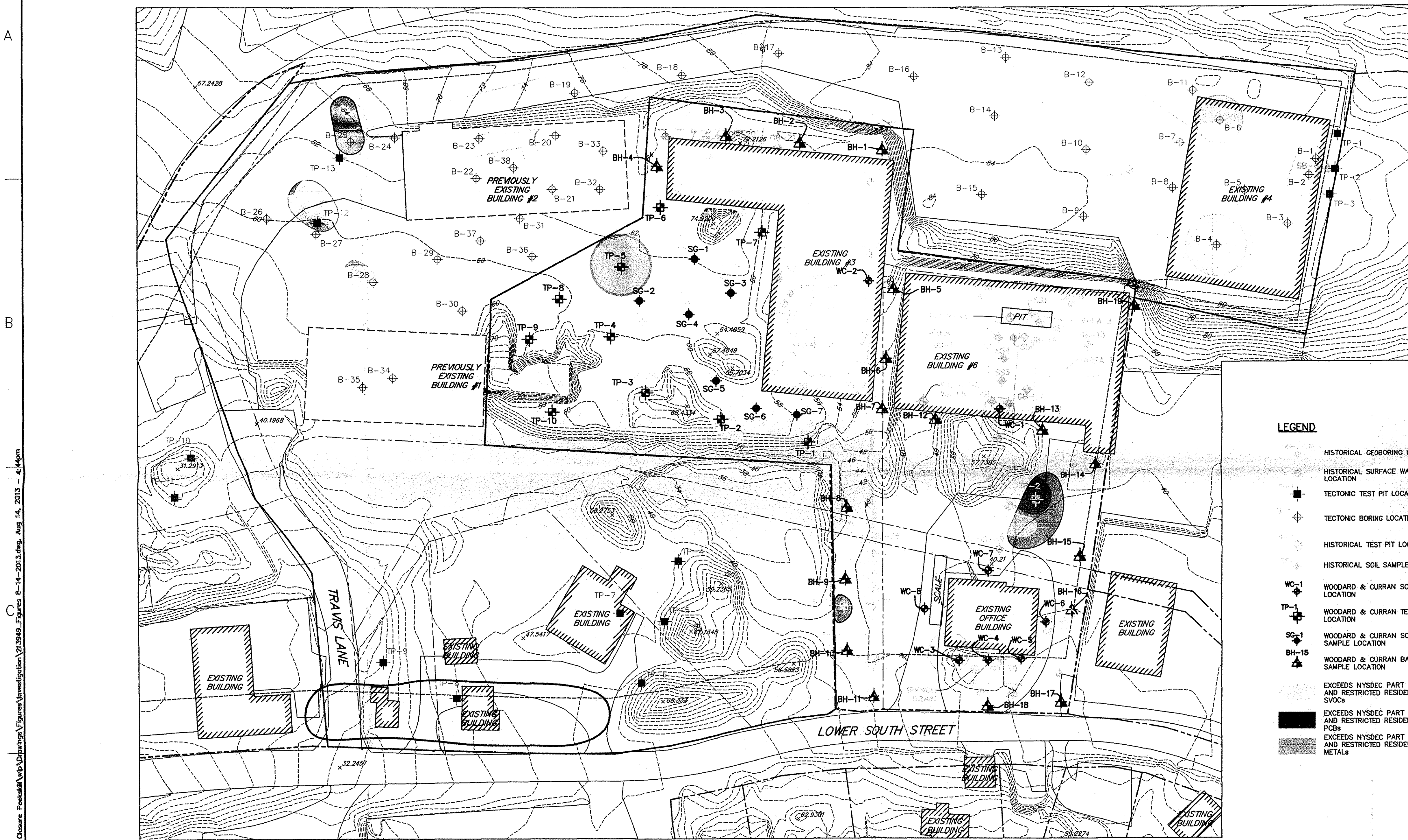
KARTA CORPORATION
1013-1017 LOWER SOUTH STREET
PEEKSKILL, NEW YORK 10566

SITE CLOSURE INVESTIGATION REPORT/
FACILITY CLOSURE PLAN

B NO.: 213949
 DATE: AUGUST 2013
 SCALE: 1"=60'
 SHEET: OF

FIGURE 9



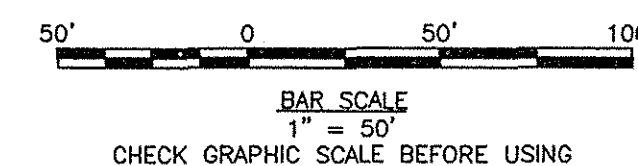


LEGEND

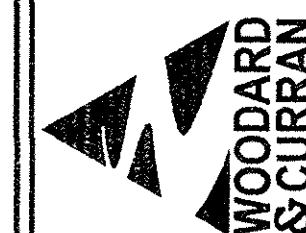
- HISTORICAL GEOBORING LOCATION
- HISTORICAL SURFACE WATER SAMPLE LOCATION
- TECTONIC TEST PIT LOCATION
- TECTONIC BORING LOCATION
- HISTORICAL TEST PIT LOCATION
- HISTORICAL SOIL SAMPLE LOCATION
- WOODARD & CURRAN SOIL BORING LOCATION
- WOODARD & CURRAN TEST PIT LOCATION
- WOODARD & CURRAN SOIL GAS SAMPLE LOCATION
- WOODARD & CURRAN BAR HOLE SAMPLE LOCATION
- EXCEEDS NYSDEC PART 375 UNRESTRICTED AND RESTRICTED RESIDENTIAL SCO FOR SVOCs
- EXCEEDS NYSDEC PART 375 UNRESTRICTED AND RESTRICTED RESIDENTIAL SCO FOR PCBs
- EXCEEDS NYSDEC PART 375 UNRESTRICTED AND RESTRICTED RESIDENTIAL SCO FOR METALS

NOTE:

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REV	DESCRIPTION	DATE
1	DESIGNED BY: 213949	8-14-2013
2	CHECKED BY: 213949	8-14-2013
3	DRAWN BY: 213949	8-14-2013

NYSDEC PART 375 RESTRICTED RESIDENTIAL EXCEEDANCES

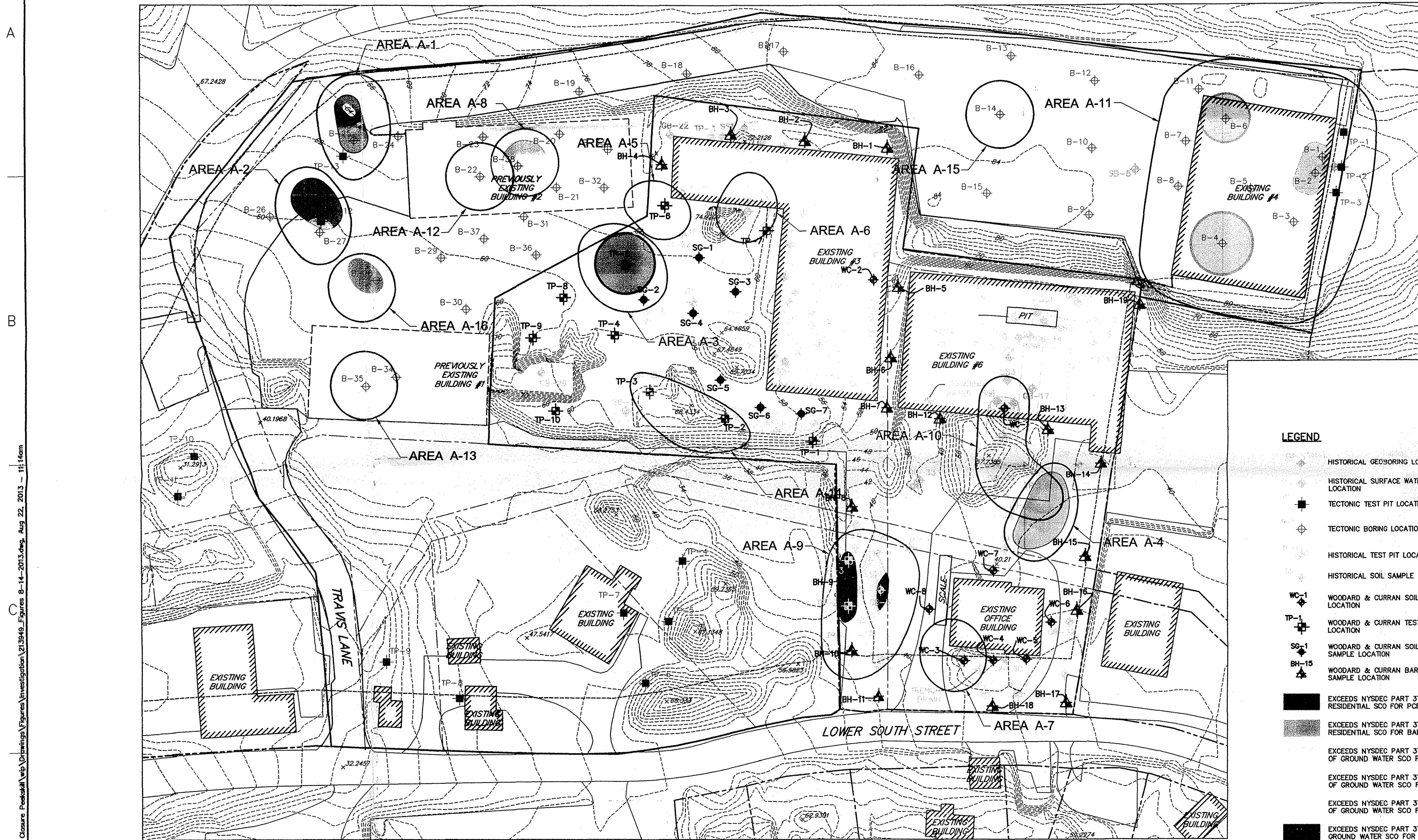
KARTA CORPORATION
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PEEKSKILL, NEW YORK 10566

SITE CLOSURE INVESTIGATION REPORT/
FACILITY CLOSURE PLAN

JOB NO: 213949
DATE: AUGUST 2013
SCALE: 1"=50'

SHEET: OF

FIGURE 11

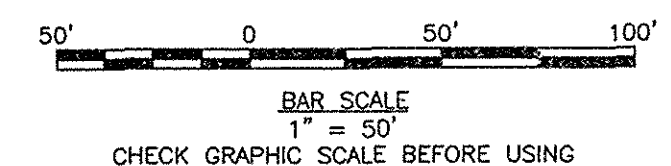


LEGEND

- HISTORICAL GEOSBORING LOCATION
- HISTORICAL SURFACE WATER SAMPLE LOCATION
- TECTONIC TEST PIT LOCATION
- TECTONIC BORING LOCATION
- HISTORICAL TEST PIT LOCATION
- HISTORICAL SOIL SAMPLE LOCATION
- WOODARD & CURRAN SOIL BORING LOCATION
- WOODARD & CURRAN TEST PIT LOCATION
- WOODARD & CURRAN SOIL GAS SAMPLE LOCATION
- WOODARD & CURRAN BAR HOLE SAMPLE LOCATION
- EXCEEDS NYSDEC PART 375 RESTRICTED RESIDENTIAL SCO FOR PCBs
- EXCEEDS NYSDEC PART 375 RESTRICTED RESIDENTIAL SCO FOR BARIUM
- EXCEEDS NYSDEC PART 375 PROTECTION OF GROUND WATER SCO FOR ARSENIC
- EXCEEDS NYSDEC PART 375 PROTECTION OF GROUND WATER SCO FOR MERCURY
- EXCEEDS NYSDEC PART 375 PROTECTION OF GROUND WATER SCO FOR LEAD
- EXCEEDS NYSDEC PART 375 PROTECTION OF GROUND WATER SCO FOR LEAD & MERCURY
- EXCEEDS NYSDEC PART 375 PROTECTION OF GROUND WATER SCO FOR PCBs
- 1011 LOWER SOUTH STREET PARCEL

NOTE:

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REV	DESCRIPTION	DATE
1	2014-08-14-2014-08-14	

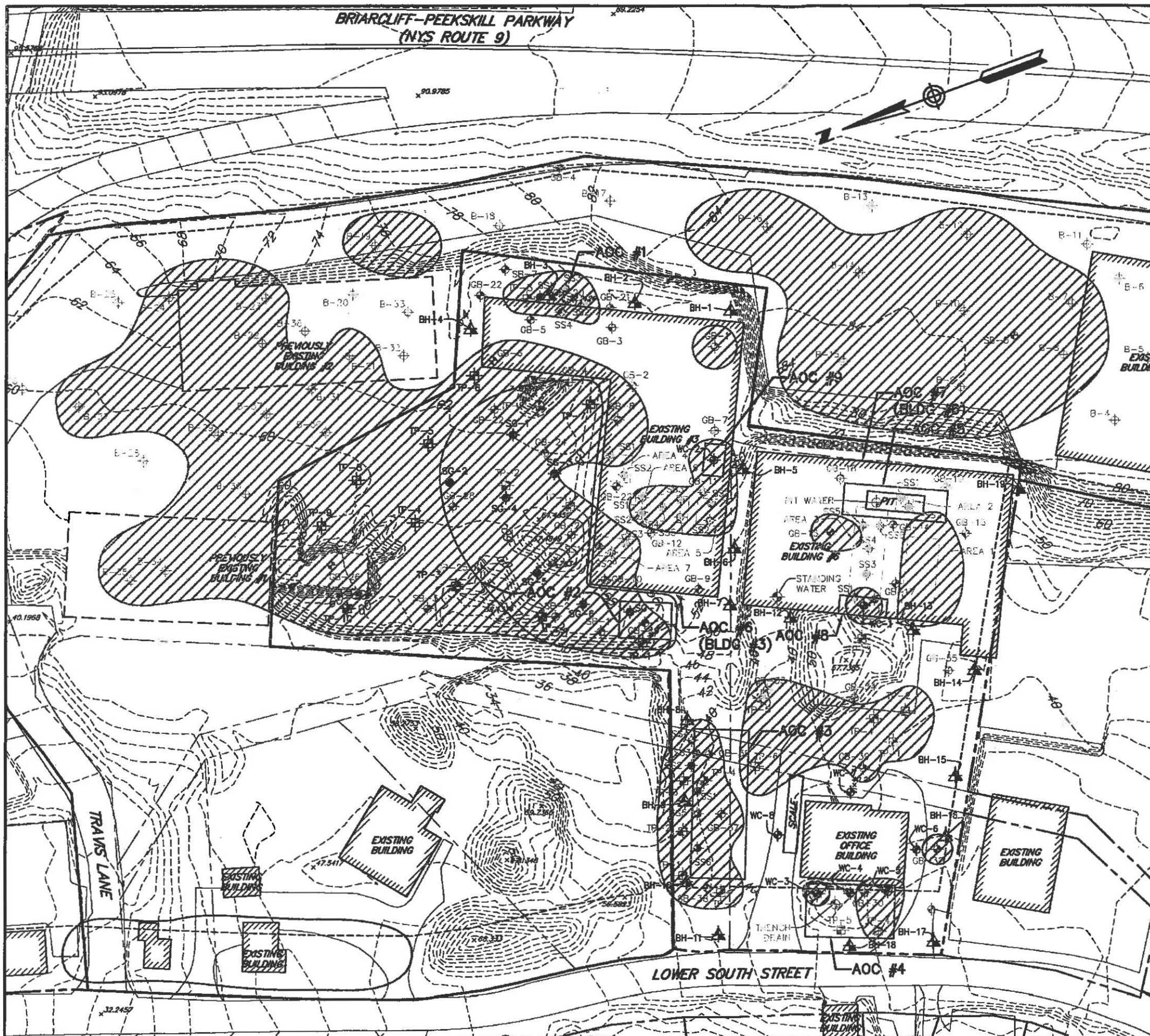
NYSDEC PART 375 RESTRICTED
RESIDENTIAL/PROTECTION OF
GROUND WATER EXCEEDANCES
FOR PCBs & METALS

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1013-1017 LOWER SOUTH STREET
PEEKSKILL, NEW YORK 10566

SITE CLOSURE INVESTIGATION REPORT/
FACILITY CLOSURE PLAN

JOB NO.: 213949
DATE: AUGUST 2013
SCALE: 1"=50'
SHEET: 01 OF 01

FIGURE 12



LEGEND

- GB-1/SB-1 HISTORICAL GEOBORING LOCATION
- HISTORICAL SURFACE WATER SAMPLE LOCATION
- TP-1 HISTORICAL TEST PIT LOCATION
- SSI HISTORICAL SOIL SAMPLE LOCATION
- WC-1 WOODARD & CURRAN SOIL BORING LOCATION
- TP-1 WOODARD & CURRAN TEST PIT LOCATION
- SG-1 WOODARD & CURRAN SOIL GAS SAMPLE LOCATION
- BH-15 WOODARD & CURRAN BAR HOLE SAMPLE LOCATION
- AREA OF CONCERN
- EXCEEDS NYSDEC PART 375 PROTECTION OF GROUNDWATER

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NYSDEC PART 375 PROTECTION
OF GROUNDWATER EXCEEDANCES

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PEEKSKILL, NEW YORK 10566

JOB NO: 213949
DATE: 7/24/2013
NOT TO SCALE

FIGURE 14

DESIGNED BY: RYAN HATCH
CHECKED BY: RYAN HATCH
DRAWN BY: RYAN HATCH
UPDATE: dwg

SITE CLOSURE INVESTIGATION REPORT/
FACILITY CLOSURE PLAN



LEGEND



EXISTING IMPERVIOUS SURFACES



PROPOSED PROTECTIVE BARRIER

KARTA CORPORATION
1013-1017 LOWER SOUTH STREET
PEEKSKILL, NEW YORK 10566
SITE CLOSURE INVESTIGATION REPORT/
FACILITY CLOSURE PLAN

PROPOSED EXTENT OF SITE
PROTECTIVE BARRIER WITHOUT
SITE DEVELOPMENT

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CHECKED BY: 213949
DRAWN BY: Figures 8-14-2013.dwg

JOB NO: 213949
DATE: August 2013
SCALE: 1"=150'

FIGURE 15



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Appendices (Disk)

Appendix A: Historical Parcel Data

Appendix B: Historical Reports

Appendix C: Historical Data Summary Tables

Appendix D: Boring Logs

Appendix E: Laboratory Reports

Appendix F: Photographs

Appendix G: Data Validation Report

Appendix H: Facility Closure Documentation

Appendix I: Soil Management Plan

Appendix J: Cost Estimate

Appendix K: Protection of Ground Water Analysis

Appendix L: References



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