

Supplemental Remedial Investigation Report

2 Love Road Site
BCP Site No. C314113

Herbert Redl Properties

Poughkeepsie, NY

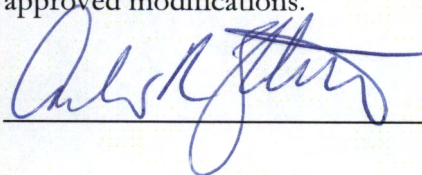
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80 Washington Street
Poughkeepsie, NY 12601

I Andrew R. Zlotnick LEP, LEED-AP certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375 and I Gregory A. Toothill, PE certify that I am currently a NYS registered professional engineer and that this Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.








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1 Introduction

This report presents a summary of the supplemental remedial investigation conducted at 2 Love Road in the Town of Poughkeepsie, Dutchess County, New York (Figure 1). The 2 Love Road Site (Brownfield Cleanup Program (BCP) Site No. C314113) was accepted into the BCP in February 2005. An initial investigation had been performed during 2005 and 2006 as documented in the "Site Characterization and Remedial Investigation Summary Report" (Fuss & O'Neill, 2006.)

The supplemental remedial investigation was proposed to address data gaps in the initial investigation and included the following tasks:

- Installation and sampling of a monitoring well network as proposed in the November 2008 "Addendum to Remedial Investigation Work Plan - Monitoring Well Installations" by Fuss & O'Neill
- Completion of a Fish and Wildlife Resource Impact Analysis (FWRIA) as proposed in the July 2006 "Site Characterization and Remedial Investigation Summary Report" by Fuss & O'Neill
- Completion of the soil vapor investigation as proposed in the July 2006 "Site Characterization and Remedial Investigation Summary Report" by Fuss & O'Neill

1.1 Site Description

The Site consists of approximately 4.6 acres of vacant land. Access to the Site is along Love Road, which intersects with Burnett Boulevard Extension. Love Road curves through the Site and provides access to both the lower and upper portions of the property. Site elevation varies from approximately 196 feet above sea level at the far southeastern end of the property to approximately 152 feet above mean sea level at the far northwestern end of the property. It appears that the topography of the site reflects the amount of fill that was placed on site. Generally, the fill is thicker at the southern portion of the site where the elevation is higher. The open area in the central part of the property is generally flat. The foundation of a demolished building exists on the southern side of the Site. An approximate 0.1-acre pond lies in the center of the property, north of the existing foundation. This pond may have been part of a former storm water retention system.

Adjoining parcels are primarily commercial real estate. The Site is abutted immediately to the south by New York State Route 44 (Dutchess Turnpike) and to the east by an abandoned railroad bed. The Site is surrounded to the north and west by a commercial plaza commonly referred to as the Dutchess Center Plaza or Route 44 Plaza. This plaza was constructed on lands that previously contained the Poughkeepsie Municipal Landfill. It is reported that the landfill waste was relocated further to the north prior to construction of the plaza.



1.2 Site History

The Site was formerly occupied by a petroleum bulk storage (PBS) facility, a lumber/building supply yard, a gasoline service station, and a brick factory. The central portion of the Site was formerly owned and operated by E.A. Aldrich through the late 1950s as a gas station, until the NYS DOT widened and elevated Route 44. The expansion of the roadway required 10-15 feet of the property, which was obtained through eminent domain. This land loss required the gas station to close, at which point Love/Effron Oil purchased the property to operate a petroleum bulk storage (PBS) facility.

The most recent use for the central parcel was as petroleum bulk storage (PBS) facility that operated through the 1970s and 1980s. The existing foundation present at the Site was likely used as a garage, offices, and a loading facility. The PBS facility closed in the late 1980s. During operation, the PBS facility had a 2,500,000-gallon fuel oil tank, two 25,000-gallon fuel oil tanks and three 20,000-gallon fuel oil tanks. The 2,500,000-gallon tank was located in a diked storage area to the north of the existing foundation, which likely was used as a garage and/or loading facility. The two 25,000-gallon tanks and one of the 20,000-gallon tanks were located on a concrete pad along the fence in the central portion of the property, near what is believed to be the former truck loading facility. The other two 20,000-gallon tanks were located on cradles between the former garage and fenced area. The New York State Department of Environmental Conservation (NYSDEC) PBS Unit reported the tanks were cleaned and abandoned in the early 1990s by the former owner/operator. Both a NYSDEC PBS registration certificate and a letter from Luzon Environmental Services have been obtained stating the tanks have been closed and removed.

The western portion of the Site was formerly owned by Dutchess County. The parcel was taken in lieu of taxes owed by the prior owner.

1.3 Previous Investigations

The initial remedial investigation at the Love Road Site commenced on June 16, 2005. Approximately 48 test pits, 29 soil probes, and two temporary monitoring wells were advanced as shown on *Figure 2*. The depth to the underlying bedrock at the Site was found to be variable. Bedrock outcrops observed on the eastern margin of the Site contain competent siltstone layers interbedded with somewhat less competent shale. Bedrock contours at this Site have formed a bowl-shaped depression where depth to bedrock was greater than 30 feet below grade; surrounded on virtually all sides by dramatic rises in elevation where the bedrock was very close to the ground surface and outcropped in some locations.

Observations made during the initial phases of the site investigation indicate that the surface material at the Site consists of a 1-2 ft. thick layer of construction fill underlain by a moderately soft to moderately dense fine sand, blue-grey silt and clayey silt.

During the initial investigation, three areas of concern (AOCs) were identified, including the former fuel unloading area by the northern entrance to the property (AOC-01), the area surrounding and including the existing foundation (AOC-02), and the parcel north of Love



Road adjacent to the railroad bed (AOC-03). These areas were identified based on visual and olfactory field observations and exceedances of regulatory guidance values for a number of volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) associated with petroleum product releases. At the time the previous investigations were performed, the applicable regulatory guidance values for soil were the Technical and Administrative Guidance Memorandum (TAGM) 4046. Since that time, the new Subpart 375-6 soil cleanup objectives have been promulgated. Updated tables containing the analytical results for the soil samples collected from the test pits during the June 2005 investigation compared to the new Subpart 375-6 soil cleanup objectives for unrestricted use, restricted residential use and commercial use are included as *Table 1*. It should be noted that the tables conservatively included the standard for hexavalent chromium, however only total chromium was analyzed. The table indicates potential exceedances of the hexavalent chromium standard, however it is likely that the chromium exists as trivalent chromium. This conclusion is based on the history of the site use and the fact that chromium was not found in the groundwater. If hexavalent chromium was present at the site it is likely that chromium would have been observed in the groundwater.

AOC-01 contains low levels of SVOCs, below the Subpart 375-6 unrestricted use criteria. A VOC, acetone, and metals, including lead, nickel, and zinc were detected at levels exceeding the Subpart 375-6 unrestricted use criteria in AOC-01. AOC-01 was the subject of an interim remedial measure (IRM) to excavate grossly impacted soil atop the shallow bedrock. A summary of the IRM is included in Section 1.4 of this report. One test pit that was advanced within the AOC, but outside of the IRM soil removal area had acetone present at a level that exceeded the Subpart 375-6 unrestricted use criteria.

AOC-02 contains VOC impacted soil; specifically, acetone was present above the subpart 375-6 unrestricted use criteria. Metals including: arsenic, nickel, and zinc, were also detected at levels exceeding the unrestricted use criteria in this area. One sample had arsenic at 18.8 mg/kg, which exceeds the commercial use criteria.

A 1,000-gallon underground storage tank (UST) located in AOC-2 was removed from the upper tier of the property on the southeast edge of the existing foundation through an approved IRM in November 2005. Samples collected from the tank grave located in this area contained VOCs including: n-butylbenzene, ethylbenzene, naphthalene, n-propylbenzene, toluene, 1,2,4-trimethylbenzene, o-xylene, and m/p-xylene and an SVOC, naphthalene, above the subpart 375-6 unrestricted use criteria. Updated tables of the analytical testing results for the tank grave samples collected during the IRM compared to the new Subpart 375-6 soil cleanup objectives are included as *Table 3*. A summary of the IRM is included in *Section 1.4* of this report.

AOC-03 was determined through field observations and analytical results to be impacted by acetone at levels exceeding the subpart 375-6 unrestricted use criteria. Low levels of other VOCs and SVOCs were present at levels below the unrestricted use criteria. Metals, including lead, manganese, mercury, nickel, and zinc were detected at levels exceeding unrestricted use criteria. One sample had mercury at 1.4 mg/kg, which exceeds the restricted residential criteria. Subsurface soil appears to exhibit fewer impacts closer to the northern property line. Bedrock under this parcel appears to form a shallow trough leading off the northern boundary.

Metals, including arsenic, copper, lead, manganese, mercury, nickel, and zinc at levels exceeding unrestricted use criteria were found in many of the samples collected across the Site, including those outside of the AOCs. The metals present at the Site are assumed to be indicative of background conditions in the area.

As a result of the investigation performed from June through August of 2005, three general areas of concern were identified, including the former fuel unloading area by the northern entrance to the property (AOC-01), the area surrounding and including the existing foundation (AOC-02), and the parcel north of Love Road adjacent to the railroad bed (AOC-03). These areas were identified based on visual and olfactory field observations and exceedances of regulatory guidance values for VOCs. A VOC, acetone, and metals, including lead, nickel, and zinc were detected at levels exceeding the Subpart 375-6 unrestricted use criteria in AOC-01. AOC-02 also contains VOC impacted soil. Acetone was present above the subpart 375-6 unrestricted use criteria. Metals including: arsenic, nickel, and zinc, were also detected at levels exceeding the unrestricted use criteria in this area. One sample within AOC-02 had arsenic at a level exceeding the commercial use criteria. An 1,000-gallon UST was found within AOC-02 at the upper tier of the property on the southeast edge of the existing foundation. The UST was later removed as part of an IRM as described below in Section 1.4. AOC-03 is impacted by acetone and metals, including lead, manganese, mercury, nickel, and zinc, at levels exceeding the subpart 375-6 unrestricted use criteria. One sample in AOC-03 had mercury at a level exceeding the restricted residential criteria.

1.4 Interim Remedial Measures

During the Remedial Investigation, a 1,000-gallon UST was observed in AOC-2 at the southeast edge of the property near the existing foundation as shown in *Figure 2*. It is believed that this tank was a gasoline UST associated with the former gasoline station. The UST was removed in November 2005 as part of an IRM approved by the NYSDEC and NYSDOH. A small hole was noted in the bottom of the tank, and impacts were observed underneath; however, the bulk of the impacts seen in this area are likely not due solely to this tank, based on historical use. The tank was surrounded by the same dense blue-gray silt and clay as seen in other areas of the Site, which may have worked to minimize any leaking from the tank. Confirmatory soil samples were collected in the grave of the tank. Analytical results for samples collected from the sidewalls and bottom of the tank pit suggest that the tank may have been leaking. Samples collected from the tank grave located in this area contained VOCs including: n-butylbenzene, ethylbenzene, naphthalene, n-propylbenzene, toluene, 1,2,4-trimethylbenzene, o-xylene, and m/p-xylene and SVOCs including naphthalene above the subpart 375-6 unrestricted use criteria. Updated tables of the analytical testing results for the tank grave samples collected during the IRM compared to the new Subpart 375-6 soil cleanup objectives are included as *Table 3*.

An area of heavy petroleum staining and free product was encountered in AOC-01 during the site investigation. To address this immediate threat to the environment, an Interim Remedial Measure (IRM) work plan was submitted to the NYSDEC and was approved in October of 2005. The plan consisted of excavation of grossly impacted soil near the northern most entrance, underneath and adjacent to the two existing concrete pads. The soil excavation IRM was initiated on July 24, 2007. During the excavation two field-fabricated tanks approximately

500-gallons in size, connected with a 4-inch pipe were removed and disposed. It is believed that these tanks may have been used as an oil/water separator. The area of excavation and the location of the former tanks is shown on *Figure 2*. Analytical results from seven confirmatory samples had no detections of VOCs or SVOCs and low levels of total petroleum hydrocarbons were observed in only two of the samples. Updated tables of the analytical results for the confirmation samples collected during the IRM compared to the new Subpart 375-6 soil cleanup objectives are included as *Table 2*. The IRM is documented in a report entitled "Soil Excavation Interim Remedial Measure." (Fuss & O'Neill, 2007)

2 Supplemental Investigation

2.1 Soil Vapor Investigation

Plans for future development of the Site have not been prepared at this time; however, development may include construction of buildings in areas that are currently impacted with VOCs. Soil vapors have the potential to infiltrate the building slab and affect indoor air quality in these areas. To assess the potential that engineering controls may be necessary to prevent infiltration of soil vapors into the building, five soil vapor samples were collected across the Site in potential future building locations.

Five soil gas sample ports were established as shown on *Figure 3*, using a hand-driven steel auger inserted to three feet below the ground surface. A sample probe consisting of a polyethylene tube was inserted into the sample port. Samples were collected from each sample location using dedicated laboratory-certified summa canisters and submitted to Con-Test Analytical Laboratory in Longmeadow, MA, a New York State Environmental Laboratory Approval Program (ELAP) accredited laboratory, for analysis for the Environmental Protection Agency (EPA) TO-15 list of VOCs.

2.1.1 Soil Vapor Investigation Results

No guidelines exist for acceptable levels of VOCs in soil vapor alone. For comparison purposes, the sample results were compared to the Soil Vapor/Indoor Air Matrix Tables in the "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" (NYSDOH, 2006) to determine if the soil vapor concentration were at a level that could potentially require mitigation. Carbon tetrachloride, trichloroethylene, and vinyl chloride have the potential to require mitigation if the sub-slab vapor concentrations are greater than 5 micrograms per cubic meter according to the Soil Vapor/Indoor Air Matrix Tables. 1,1-Dichloroethylene, cis-1,2-dichloroethylene, tetrachloroethylene, and 1,1,1-trichloroethane have the potential to require mitigation if the sub-slab vapor concentrations are greater than 100 micrograms per cubic meter according to the Soil Vapor/Indoor Air Matrix Tables.

Soil vapor at each sample location contained VOCs at detectable concentrations; however, there were not any reported concentrations that could potentially require mitigation according to the Soil Vapor/Indoor Air Matrices. It should be noted that the detection limits at SG-2 and SG-5 were above the range of concentrations that may have required mitigation. A table

summarizing the soil vapor analytical results is included as *Table 4*. The laboratory analytical report and the Data Usability Summary Report (DUSR) are included in *Appendix A*.

It is possible that there are VOCs at SG-2 and SG-5 that may have the potential to impact indoor air quality in any buildings constructed in that area. Any future building construction in the vicinity of SG-2, SG-5, or in areas where soil vapor has not been investigated should either be constructed with an engineering control to mitigate any potential soil vapor intrusion or additional soil vapor testing should be performed to evaluate the need for such a system.

2.2 Groundwater Investigation

Test pits and soil borings during previous site investigations have indicated that petroleum impacted soil is present over portions of the Site. Four monitoring wells were installed at the Site to determine if the groundwater has been impacted and if there is a potential for impacts to be migrating off-site. The monitoring well locations are shown on *Figure 3*.

The monitoring wells were installed using an air-rotary drilling method according to the "Addendum to Remedial Investigation Work Plan – Monitoring Well Installations" (Fuss & O'Neill, 2008), the approval letter from the NYSDEC dated November 25, 2008, and email correspondence from the NYSDEC dated December 8, 2008. 2009-MW-04 had to be relocated approximately ten feet to the north of the location proposed in the work plan, because a soil pile was located at the initially proposed location. The monitoring wells were installed within AOC-01 and AOC-02 and in areas inferred to be hydraulically downgradient of AOC-1 and AOC-02. The purpose of these monitoring wells was to determine whether the groundwater had been impacted and if the impacts were migrating away from the source areas. 2009-MW-1 was installed as an overburden well to a depth of 20 feet below ground surface. 2009-MW-2, 2009-MW-3, and 2009-MW-4 were completed as bedrock wells with total depth varying between 25 feet and 35 feet below ground surface. Copies of the Well Completion Logs are included in *Appendix B*.

Each well was developed and sampled utilizing low-flow sampling techniques in accordance with the project QAPP. Analytical parameters were selected based on known constituents of concern, as indicated in Fuss & O'Neill's 2008 Addendum to Remedial Investigation Work Plan – Monitoring Well Installations. Samples were submitted to an ELAP-certified laboratory, Phoenix Environmental Laboratories, Inc. in Manchester, CT, for analysis via New York State Certified ASP Category B protocols for the following parameters:

- RCRA-8 Suite of metals by EPA Method 6010
- STARS list VOCs by EPA Method 8260
- STARS list of SVOCs by EPA Method 8021

2.2.1 Groundwater Sampling Results

Evaluation of groundwater analytical data was conducted using the Division of Water Technical and Operational Guidance Series (TOGS 1.1.1) water quality standards and guidance values for contaminants (June 1998). A summary of the baseline exceedances of the TOGS 1.1.1 standards is included as *Table 5* and the laboratory analytical report and the DUSR are included

in *Appendix A*. There were no exceedances of the TOGS 1.1.1 standards in the three bedrock wells (2009-MW-02, 2009-MW-03, and 2009-MW-04) installed at the Site.

There were a number of exceedances of the TOGS 1.1.1 standards for VOCs and SVOCs in the overburden well installed at 2009-MW-01, including exceedances for ethylbenzene, isopropylbenzene, m&p-xylene, naphthalene, n-propylbenzene, o-xylene, and sec-butylbenzene. Monitoring well 2009-MW-01 was located within AOC-02 in the general vicinity of the 1,000-gallon UST that was removed during the 2005 IRM.

The results of this investigation suggest that impacts to groundwater are limited to the overburden groundwater within AOC-02. These impacts were expected based on their proximity to the former UST removed during an IRM. Overburden groundwater impacts were also observed migrating to the northwest of the source at MW-01 as observed during the initial investigation in 2005. The bedrock aquifer has not been significantly impacted and no groundwater collected from the bedrock wells has exceeded the TOGS 1.1.1 standards.

2.3 Fish and Wildlife Resources Impact Analysis

A Fish and Wildlife Resource Impact Analysis (FWRIA) was prepared with the goals of identifying the fish and wildlife resources that presently exist as well as those that existed before contaminant introduction and to provide information necessary for the design of a remedial investigation. The FWRIA was developed as a separate document and is included in *Appendix C*.

Fuss & O'Neill completed this FWRIA in accordance §3.10 of the draft Technical Guidance for Site Investigation and Remediation (Draft DER-10). The results of this FWRIA determined that contaminants present at the Site do not constitute actual or potential adverse impacts to fish and wildlife resources. These conclusions were drawn based on an understanding of historical uses of the Site, an identification of contaminant migration pathways, an evaluation of fish and wildlife resources; and estimation of toxicity of the contaminants of ecological concern.

2.4 Soil Stockpile Characterization

A soil characterization sample was collected from the excavated soil that was stockpiled at the site from the Soil Removal IRM conducted in July 2007. The sample was analyzed for the disposal characterization requirements of Deep Green of New York (Deep Green). Deep Green is a soil recycling facility located in New Windsor, NY. One composite sample was collected from across the stockpile and analyzed for polychlorinated biphenyls (PCBs), RCRA-8 metals, total petroleum hydrocarbons (TPH), total benzene, and total halogenated organics. No detectable PCBs, total halogenated organics, silver, mercury, selenium or benzene were present in the sample. TPH was present at 23 mg/kg. A summary table is included as *Table 6*. A copy of the laboratory report and DUSR are included in *Appendix A*. The sample met all the acceptance criteria for Deep Green. The stockpile currently remains at the site covered in plastic sheeting until removal can be arranged by the owner.

3 Conclusions

Fuss & O'Neill has completed the supplemental remedial investigation that was proposed to address data gaps in the initial investigation. The supplemental investigation included the following tasks:

- Completion of the Soil Vapor Investigation
- Installation and sampling of four monitoring wells
- Completion of a FWRIA
- Characterization of the soil stockpile remaining from the IRM

Soil vapor at each sample location had VOCs present; however, there were not any reported concentrations that could potentially require mitigation according to the NYSDOH Soil Vapor/Indoor Air Matrices. It should be noted that the detection limits at SG-2 and SG-5 were above the range of concentrations that may require mitigation. Any future building construction in the vicinity of SG-2, SG-5, or in areas where soil vapor has not been investigated should either be constructed with an engineering control to mitigate any potential soil vapor intrusion or additional soil vapor testing should be performed to evaluate the need for such a system.

There were no exceedances of the TOGS 1.1.1 standards in the three bedrock wells installed at the Site. There were a number of exceedances of the TOGS 1.1.1 standards for VOCs and SVOCs in the overburden well (2009-MW-1) installed in AOC-02. The results of this investigation suggest that while groundwater in the overburden have been impacted at AOC-02, the bedrock aquifer has not been impacted above the TOGS 1.1.1 standards.

A FWRIA was prepared for the Site. The results of this FWRIA determined that impacts present at the Site do not constitute actual or potential adverse impacts to fish and wildlife resources.

Soil stockpiled at the site from the July 2007 Soil Removal IRM meets the disposal requirements of Deep Green of New York. The stockpile currently remains at the site covered in plastic sheeting until removal can be arranged by the owner.

Herbert Redl Properties (The Volunteer) is currently assessing potential development options for the site. A Remedial Action Work Plan to address the groundwater and soil exceedances as well as potential sub-slab vapors will be created once the future development plans are in place.



Tables

Table 1
Remedial Investigation Summary of Detected Constituents in Soil
2 Love Road, Poughkeepsie, NY
November 2009

CONSTITUENT	Site ID			TP-19	TP-20	TP-21	TP-21	TP-22	TP-24	TP-25	TP-28	TP-28	TP-29	TP-29	TP-30	
	UU-SCO	PPH-C	PPH-RR	TP-19-02_0-2 6/17/2005 1	TP-20-01_3.5-4.5 6/17/2005 4	TP-21-01_6-6.5 6/17/2005 6.25	TP-21-02_3-4 6/17/2005 3.5	TP-22-01_8.5-9 6/17/2005 8.75	TP-24-01_8-9 6/20/2005 8.5	TP-25-01_5.5-6.5 6/20/2005 6	TP-28-01_1-4 6/20/2005 2.5	TP-28-02_9.5 6/20/2005 9.5	TP-29-01_9 6/20/2005 9	TP-29-02_0-1 6/20/2005 0.5	TP-30-01_9.5 6/20/2005 9.5	
Depth				Duplicate 1	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	
VOCs (ug/kg)																
Acetone	50	50000	100000	<22U	<23J	<24U	<25U	<110U	[100]	<26U	<25U	<23U	<25J	[110]	<26J	
Benzene	60	44000	4800	<5.6U	<5.8U	<6.0U	<6.2U	<28U	<6.5U	<6.5U	<6.1U	38	<6.1U	<5.9U	<6.6U	
Benzene, 1,2,4-trimethyl	3600	190000	52000	<5.6U	<5.8U	<6.0U	<6.2U	<28U	<6.5U	<6.5U	<6.1U	100	<6.1U	<5.9U	<6.6U	
Benzene, 1,3,5-trimethyl	8400	190000	52000	<5.6U	<5.8U	<6.0U	<6.2U	<28U	<6.5U	<6.5U	<6.1U	250	<6.1U	<5.9U	<6.6U	
Benzene, 1-methylethyl	NE	NE	NE	<5.6U	<5.8U	<6.0U	<6.2U	<28U	<6.5U	<6.5U	<6.1U	61	<6.1U	<5.9U	<6.6U	
Ethylbenzene	1000	390000	41000	<5.6U	<5.8U	<6.0U	<6.2U	<28U	<6.5U	<6.5U	<6.1U	80	<6.1U	<5.9U	<6.6U	
M/P-xylenes	260	500000	100000	<5.6U	<5.8U	<6.0U	<6.2U	<28U	<6.5U	<6.5U	<6.1U	160	<6.1U	<5.9U	<6.6U	
Methyl ethyl Ketone	120	500000	100000	<11U	<12U	<12U	<12U	<56U	14	<13U	<12U	<11U	<12U	14	<13U	
n-Butylbenzene	12000	500000	100000	<5.6U	<5.8U	<6.0U	<6.2U	<28U	<6.5U	<6.5U	<6.1U	27	<6.1U	<5.9U	<6.6U	
n-Propylbenzene	3900	500000	100000	<5.6U	<5.8U	<6.0U	<6.2U	<28U	<6.5U	<6.5U	<6.1U	89	<6.1U	<5.9U	<6.6U	
o-Xylene	260	500000	100000	<5.6U	<5.8U	<6.0U	<6.2U	<28U	<6.5U	<6.5U	<6.1U	6.3	<6.1U	<5.9U	<6.6U	
p-Cymene	NE	NE	NE	<5.6U	<5.8U	<6.0U	<6.2U	<28U	<6.5U	<6.5U	<6.1U	37	<6.1U	<5.9U	<6.6U	
sec-Butylbenzene	11000	500000	100000	<5.6U	<5.8U	<6.0U	<6.2U	<28J	<6.5U	<6.5U	<6.1U	18	<6.1U	<5.9U	<6.6U	
tert-Butylbenzene	5900	500000	100000	<5.6U	<5.8U	<6.0U	<6.2U	<28J	<6.5U	<6.5U	<6.1U	<5.6J	<6.1U	<5.9U	<6.6U	
Toluene	700	500000	100000	<5.6U	<5.8U	<6.0U	<6.2U	<28U	<6.5U	<6.5U	<6.1U	6.4	<6.1J	<5.9J	<6.6J	
SVOCs (ug/kg)																
Acenaphthene	20000	500000	100000	<1100U	<380U	<390U	<410U	<370U	<430U	<430J	<410U	<370U	<400U	<390U	<430U	
Fluoranthene	100000	500000	100000	<1100U	<380U	<390U	<410U	<370U	<430U	<430U	<410U	<370U	<400U	<390U	<430U	
Fluorene	30000	500000	100000	<1100U	<380U	<390U	<410U	<370J	<430U	<430J	<410U	<370U	<400U	<390U	<430U	
2-Methylnaphthalene	NE	NE	NE	<1100U	<380U	<390U	<410U	<370U	<430U	<430J	<410U	<370U	<400U	<390U	<430U	
Naphthalene	12000	500000	100000	<5.6U ?	<5.8U ?	<6.0U ?	<6.2U ?	<28U ?	<6.5J ?	<6.5J ?	<6.1J ?	110 ?	<6.1J ?	<5.9J ?	<6.6J ?	
Phenanthrene	100000	500000	100000	<1100U	<380U	<390U	<410U	<370J	<430U	<430J	<410U	<370U	<400U	<390U	<430U	
Pyrene	100000	500000	100000	<1100U	<380U	<390U	<410U	<370J	<430U	<430U	<410U	<370U	<400U	<390U	<430U	
Metals (mg/kg)																
Aluminum	NE	NE	NE	17100	17100	20800	23200	12500	20500	17200	20100	11100	11400	17900	20200	
Arsenic	13	16	16	7.7	8.3	9.9	7.2	7	9.3	7.5	11.6	5.6	[18.8]	5.9	10.9	
Barium	350	400	400	73.7	70.4	140	134	61.2	107	76	127	45.4	127	93.2	113	
Beryllium	7.2	590	72	<0.54U	<0.57U	0.59	<0.62U	<0.55U	<0.62U	<0.64U	<0.59U	<0.54U	<0.60U	<0.56U	<0.66U	
Cadmium	2.5	9.3	4.3	<0.54U	<0.57U	<0.59U	<0.62U	<0.55U	<0.62U	<0.64U	<0.59U	<0.54U	<0.60U	<0.56U	<0.66U	
Calcium	NE	NE	NE	10400	935	3440	2800	1920	1570	1460	2580	13300	6840	1140	7430	
Chromium*	1 (Hexavalent) / 30 (Trivalent)	400 / 1500	110 / 180	[18.9]	[19.4]	[22.8]	[24.5]	[15.9]	[22]	[19.7]	[23.4]	[13.5]	[13.9]	[20]	[25.1]	
Cobalt	NE	NE	NE	11.8	13.8	16.5	14.9	11.8	17.3	14	19.8	10.2	13.4	13.4	17	
Copper	50	270	270	30.3	29.2	26.1	21.3	32.9	30.4	36.9	38.5	28.2	34.3	18.8	37.5	
Iron	NE	NE	NE	29100	31500	33400	29900	25800	34600	30000	41800	25900	28000	27300	37600	
Lead	63	1000	400	30.3	15.8	27.2	17.2	14.5	17	14.8	19.4	10.2	13.3	18.9	16.9	
Magnesium	NE	NE	NE	11000	5550	6250	5710	5880	5680	6830	6890	5870	5780	4630	8570	
Manganese	1600	10000	2000	1500	758	717	1200	791	855	1080	1480	730	[2410]	1590	733	
Mercury	0.18	2.8	0.81	0.05	<0.04U	0.04	0.05	<0.04U	0.06	0.04	0.05	<0.04U	<0.04U	0.04	<0.04U	
Nickel	30	310	310	26.3	23.7	28.8	27.7	25.6	[30.8]	29.9	[37.1]	22.9	28.4	22.6	[36.4]	
Potassium	NE	NE	NE	1380	1410	1680	1760	1380	1480	1740	2020	1240	1300	1250	2750	
Selenium	3.9	1500	180	2.1	1.3	1.7	2.6	1	2.1	1.5	1.6	1.1	1.1	1.6	0.94	
Sodium	NE	NE	NE	69.5	61.1	126	125	55.6	70.4	<64.3U	119	204	119	73.5	106	
Vanadium	NE	NE	NE	25.9	22.4	28.5	30.4	16.8	23.8	21.4	26.4	13.2	14.5	24.8	25.1	
Zinc	109	10000	10000	94.7	65	96.7	74	95	75.4	88.4	93.4	71.1	78.9	76.2	96.2	

Notes:

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N:\P2004\0761\A6N - Supplemental RI\SR1\Tables\Summary of Detected Constituents.xls

CONSTITUENT	UU-SCO	PPH-C	TP-37	TP-38	TP-39
			TP-37-01_4-5 6/20/2005 4.5 Primary	TP-38-01_4-7 6/20/2005 5.5 Primary	TP-39-01_6-7.5 6/20/2005 6.75 Primary
VOCs (ug/kg)					
Acetone	50	500000	[69]	[120]	<31J
Benzene	60	44000	<5.7U	<6.2J	<7.7U
Benzene, 1,2,4-trimethyl	3600	190000	7.9	<6.2U	<7.7J
Benzene, 1,3,5-trimethyl-	8400	190000	<5.7J	<6.2U	<7.7U
Benzene, 1-methylethyl-	NE	NE	<5.7J	<6.2U	<7.7U
Ethylbenzene	1000	390000	<5.7U	<6.2U	<7.7U
M/P-xylenes	260	500000	<5.7J	<6.2U	<7.7U
Methyl ethyl Ketone	120	500000	<11J	12J	<15U
n-Butylbenzene	12000	500000	<5.7U	<6.2U	<7.7U
n-Propylbenzene	3900	500000	<5.7U	<6.2U	<7.7U
o-Xylene	260	500000	<5.7J	<6.2U	<7.7U
p-Cymene	NE	NE	<5.7U	<6.2U	<7.7U
sec-Butylbenzene	11000	500000	<5.7J	<6.2U	<7.7U
tert-Butylbenzene	5900	500000	<5.7U	<6.2U	<7.7U
Toluene	700	500000	<5.7J	<6.2J	<7.7U
SVOCs (ug/kg)					
Acenaphthene	20000	500000	<380J	<410J	<1500U
Fluoranthene	100000	500000	<380J	410	<1500J
Fluorene	30000	500000	<380J	<410J	<1500U
2-Methylnaphthalene	NE	NE	<380J	<410J	<1500U
Naphthalene	12000	500000	180 ?	<6.2U ?	8.0 ?
Phenanthrene	100000	500000	<380J	<410J	<1500J
Pyrene	100000	500000	<380J	<410J	<1500J
Metals (mg/kg)					
Aluminum	NE	NE	17400	12900	21800
Arsenic	13	16	9.9	9	9.4
Barium	350	400	52.2	72.5	88
Beryllium	7.2	590	<0.55U	<0.62U	<0.75U
Cadmium	2.5	9.3	0.71	0.82	1.2
Calcium	NE	NE	2020	3130	5140
Chromium*	1 (Hexavalent) / 30 (Trivalent)	400 / 1500	[21.1]	[17]	[29.8]
Cobalt	NE	NE	18.5	12	18.1
Copper	50	270	49.3	37.9	49.9
Iron	NE	NE	37200	41000	38700
Lead	63	1000	[64.5]	46.5	[118]
Magnesium	NE	NE	9150	5280	13700
Manganese	1600	10000	720	[1810]	724
Mercury	0.18	2.8	0.05	0.04	0.1
Nickel	30	310	[37]	27.7	[40.8]
Potassium	NE	NE	1360	1550	1350
Selenium	3.9	1500	1.5	2.5	1.3
Sodium	NE	NE	77.2	134	111
Vanadium	NE	NE	21.1	20.4	34.9
Zinc	109	10000	[120]	93.6	[182]

Notes:

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N:\P2004\0761\A6N - Supplemental RI\SRI\Tables\Summary of Detected Constituents.xls

Table 1
Remedial Investigation Summary of Detected Constituents in Soil
2 Love Road, Poughkeepsie, NY
November 2009

CONSTITUENT	UU-SCO	PPH-C	PPH-RR	Site ID	TP-41	TP-42	TP-44	TP-44	TP-46	TP-47	TP-47	TP-48
				Sample #	TP-41-01_3-6	TP-42-01_4-6	TP-44-01_10.5	TP-44-02_0-2	TP-46-01_10	TP-47-02_8-9	TP-47-03_8-9	TP-48-01_6-7
				Date	6/21/2005	6/21/2005	6/21/2005	6/21/2005	6/21/2005	6/21/2005	6/21/2005	6/21/2005
				Depth	4.5	5	10.5	1	10	8.5	8.5	6.5
					Primary	Primary	Primary	Primary	Primary	Primary	Duplicate 1	Primary
VOCs (ug/kg)												
Acetone	50	500000	100000		<23J	<25J	<25J	[66]	<110J	<23J	<23J	<23J
Benzene	60	44000	4800		<5.7U	<6.2U	<6.2U	<5.5U	<28U	<5.7U	<5.7U	<5.7U
Benzene, 1,2,4-trimethyl	3600	190000	52000		<5.7U	<6.2U	<6.2U	<5.5U	250	<5.7U	<5.7U	<5.7U
Benzene, 1,3,5-trimethyl-	8400	190000	52000		<5.7U	<6.2U	<6.2U	<5.5U	33	<5.7U	<5.7U	<5.7U
Benzene, 1-methylethyl-	NE	NE	NE		<5.7U	<6.2U	<6.2U	<5.5U	<28J	<5.7U	<5.7U	<5.7U
Ethylbenzene	1000	390000	41000		<5.7U	<6.2U	<6.2U	<5.5U	<28U	<5.7U	<5.7U	<5.7U
M/P-xylenes	260	500000	100000		<5.7U	<6.2U	<6.2U	<5.5U	<28U	<5.7U	<5.7U	<5.7U
Methyl ethyl Ketone	120	500000	100000		<11U	<12U	<12U	<11J	<57U	<11U	<11U	<11U
n-Butylbenzene	12000	500000	100000		<5.7U	<6.2U	<6.2U	<5.5U	130	<5.7U	<5.7U	<5.7U
n-Propylbenzene	3900	500000	100000		<5.7U	<6.2U	<6.2U	<5.5U	43	<5.7U	<5.7U	<5.7U
o-Xylene	260	500000	100000		<5.7U	<6.2U	<6.2U	<5.5U	<28U	<5.7U	<5.7U	<5.7U
p-Cymene	NE	NE	NE		<5.7U	<6.2U	<6.2U	<5.5U	83	<5.7U	<5.7U	<5.7U
sec-Butylbenzene	11000	500000	100000		<5.7U	<6.2U	<6.2U	<5.5U	110	<5.7U	<5.7U	<5.7U
tert-Butylbenzene	5900	500000	100000		<5.7U	<6.2U	<6.2U	<5.5U	<28U	<5.7U	<5.7U	<5.7U
Toluene	700	500000	100000		<5.7U	<6.2U	<6.2U	<5.5U	<28U	<5.7U	<5.7U	<5.7U
SVOCs (ug/kg)												
Acenaphthene	20000	500000	100000		<370U	<410U	<410U	<360U	<380J	<380U	<380U	<370U
Fluoranthene	100000	500000	100000		<370U	<410U	<410U	<360J	<380U	<380U	<380U	<370U
Fluorene	30000	500000	100000		<370U	<410U	<410U	<360U	<380J	<380U	<380U	<370U
2-Methylnaphthalene	NE	NE	NE		<370U	<410U	<410U	560	510	<380U	<380U	<370U
Naphthalene	12000	500000	100000		<5.7U ?	<6.2U ?	<6.2U ?	<5.5U ?	750 ?	<5.7U ?	<5.7U ?	<5.7U ?
Phenanthrene	100000	500000	100000		<370U	<410U	<410U	360J	<380J	<380U	<380U	<370U
Pyrene	100000	500000	100000		<370U	<410U	<410U	<360J	<380U	<380U	<380U	<370U
Metals (mg/kg)												
Aluminum	NE	NE	NE		14100	18800	16800	10500	15500	16300	15400	15600
Arsenic	13	16	16		7.9	7.4	6.2	9.5	6.3	7.3	7.4	8.4
Barium	350	400	400		83	76.1	74.2	64.6	98.9	79.5	79.3	81.4
Beryllium	7.2	590	72		<0.57U	<0.59U	<0.61U	<0.52U	<0.54U	<0.54U	<0.57U	<0.55U
Cadmium	2.5	9.3	4.3		<0.57U	<0.59U	<0.61U	0.59	<0.54U	<0.54U	<0.57U	0.58
Calcium	NE	NE	NE		30600	1170	1330	8140	12100	2590	2450	12500
Chromium*	1 (Hexavalent) / 30 (Trivalent)	400 / 1500	110 / 180		[18.8]	[23.4]	[19.8]	[13.7]	[19.7]	[20.5]	[19.5]	[20]
Cobalt	NE	NE	NE		13	11.8	13.3	9.5	13.9	14.4	14.4	16
Copper	50	270	270		34.7	30.3	37.1	29.3	32.3	37.8	38.2	39.7
Iron	NE	NE	NE		29600	33200	31400	27500	31000	32800	32200	32100
Lead	63	1000	400		12.8	15.3	15.1	60.9	14	16.4	15.7	15
Magnesium	NE	NE	NE		7620	6390	6960	6610	6380	7270	6720	7030
Manganese	1600	10000	2000		825	378	693	631	550	876	844	909
Mercury	0.18	2.8	0.81		<0.04U	<0.04U	0.04	0.07	<0.04U	<0.04U	<0.04U	0.04
Nickel	30	310	310		27.7	27.3	28.6	23.2	28.6	[32.6]	[31.1]	[33.9]
Potassium	NE	NE	NE		2010	1870	1990	1060	1890	1840	1880	1920
Selenium	3.9	1500	180		1.3	1.8	1.3	1.1	0.94	1.2	1.3	1.4
Sodium	NE	NE	NE		115	120	<61.2U	142	80.8	109	111	75.1
Vanadium	NE	NE	NE		19.8	27.5	21.8	17.6	20.2	22.2	21.1	21.2
Zinc	109	10000	10000		82.1	76.8	85.4	[143]	90	94.4	89.8	94.6

Notes:

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Table 2
Soil Excavation IRM - Confirmatory Samples
2 Love Road, Poughkeepsie, NY
November 2009

				Site ID	CS-01	CS-02	CS-03	CS-04	CS-05	CS-06	CS-07
				Sample #	767070724-01	767070724-02	767070724-03	767070724-04	767070724-05	767070724-06	767070724-07
				Date	7/24/2007	7/24/2007	7/24/2007	7/24/2007	7/24/2007	7/24/2007	7/24/2007
CONSTITUENT	UU-SCO	PPH-C	PPH-RR		Primary	Primary	Primary	Primary	Primary	Primary	Primary
Volatile Organics, Method 8260 (STARS), µg/kg											
No Detections											
Semi-Volatile Organics, Method 8270 (STARS), µg/kg											
No Detections											
Total Petroleum Hydrocarbons, Method 418.1, mg/kg											
TPH	NE	NE	NE	< 51U	<23U	<23U	71	<22U	140	<24U	

Notes:

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2. < =constituent not detected at the specified laboratory reporting limit
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4. **UU-SCO** = Unrestricted Use - Soil Cleanup Objective
5. **PPH-C** = Protection of Public Health - Commercial
6. **PPH - RR** = Protection of Public Health - Restricted Residential
7. U = indicates the compound was analyzed but not detected

Table 3
Tank Pull IRM - Confirmatory Samples
2 Love Road, Poughkeepsie, NY
November 2009

				Site ID	TG-01	TG-02	TG-03	TG-04	TG-05
				Sample #	767051108-01	767051108-02	767051108-03	767051108-04	767051108-05
				Date	11/8/2005	11/8/2005	11/8/2005	11/8/2005	11/8/2005
CONSTITUENT	UU-SCO	PPH-C	PPH-RR		Primary	Primary	Primary	Primary	Primary
VOCs (ug/kg)									
sec-butylbenzene	11000	500000	100000		5300	380	1100	1100	8200
n-butylbenzene	12000	500000	100000		[19000]	1400	11000	8700	[17000]
ethylbenzene	1000	390000	41000		[20000]	<140U	[1400]	[1400]	[8800]
Isopropyl Benzene	NE	NE	NE		7900	<140U	630	1100	4300
p-isopropyltoluene	NE	NE	NE		480	<140U	420	470	<280U
naphthalene	12000	500000	100000		[28000]	510	5300	2800	[27000]
n-propylbenzene	3900	500000	100000		[18000]	460	2600	2100	[13000]
toluene	700	500000	100000		[3400]	<140U	530	360	[1100]
1,2,4-trimethylbenzene	3600	190000	52000		2400	260	2200	[14000]	<280U
1,3,5-trimethylbenzene	8400	190000	52000		1200	160	2300	5100	640
o-xylene	260	500000	100000		[2300]	<290U	[360]	[1200]	[910]
m-xylene, p-xylene	260	500000	100000		[2300]	<290U	<290U	[5700]	<560U
SVOCs (ug/kg)									
Fluorene	30000	500000	100000		7400	980	4000	<380U	7800
2-methylnaphthalene	NE	NE	NE		44000	630	22000	1800	30000
naphthalene	12000	500000	100000		[14000]	<380U	6900	1300	11000
Phenanthrene	100000	500000	100000		13000	1500	6400	<380U	13000

Notes:

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7. PPH - RR = Protection of Public Health - Restricted Residential
8. U = indicates the compound was analyzed but not detected
9. J = estimated value

Table 4
Supplemental Remedial Investigation
Summary of Soil Vapor Results
2 Love Road, Poughkeepsie, NY
November 2009

Volatile Organic Compounds ($\mu\text{g}/\text{m}^3$)	Sample Location: Sample Number: Sample Date:	SG-1	SG-2	SG-3	SG-4	SG-5
		980080612-01 6/12/2008	980080612-02 6/12/2008	980080612-03 6/12/2008	980080612-04 6/12/2008	980080612-05 6/12/2008
	NYSDOH Soil Vapor/ Indoor Air Matrix***					
Acetone	NE	36	ND<240	27	55	ND<4.8
Benzene	NE	3.4	1000	7.6	0.4	90
Benzyl Chloride	NE	ND<0.52*	ND<260*	ND<0.26	ND<0.26	ND<5.2*
Bromodichloromethane	NE	ND<0.66	ND<330	ND<0.33	ND<0.33	ND<6.6
Bromoform	NE	ND>1.1	ND<510	ND<0.51	ND<0.51	ND<11.
Bromomethane	NE	ND<0.38	ND<190	ND<0.19	ND<0.19	ND<3.8
1,3-Butadiene	NE	ND<0.22	ND<110	ND<0.11	ND<0.11	ND<2.2
2-Butanone (MEK)	NE	9.3	ND<230	5.4	26	14
Carbon Disulfide	NE	13	3300	0.83	2.7	5
Carbon Tetrachloride	1	ND<0.62	ND<310	0.53	0.49	ND<6.2
Chlorobenzene	NE	ND<0.46	ND<230	ND<0.23	ND<0.23	ND<4.6
Chlorodibromomethane	NE	ND<0.86	ND<430	ND<0.43	ND<0.43	ND<8.6
Chloroethane	NE	ND<0.26	ND<130	ND<0.13	ND<0.13	ND<2.6
Chloroform	NE	ND<0.48	ND<240	ND<0.24	ND<0.24	ND<4.8
Chloromethane	NE	1.1	ND<100	1.3	0.94	ND<2.0
Cyclohexane	NE	71	41000	47	ND<0.17	290
1,2-Dibromoethane	NE	ND<0.76	ND<380	ND<0.38	ND<0.38	ND<7.6
1,2-Dichlorobenzene	NE	ND<0.60	ND<300	ND<0.30	ND<0.30	ND<6.0
1,3-Dichlorobenzene	NE	ND<0.60	ND<300	ND<0.30	ND<0.30	ND<6.0
1,4-Dichlorobenzene	NE	ND<0.60	ND<300	ND<0.30	ND<0.30	ND<6.0
Dichlorodifluoromethane	NE	2.7	ND<250	2.7	2.7	ND<5.0
1,1-Dichloroethane	NE	ND<0.40	ND<200	1.4	0.52	ND<4.0
1,2-Dichloroethane	NE	ND<0.40	240	ND<0.20	ND<0.20	ND<4.0
1,1-Dichloroethylene	2	ND<0.40	ND<200	ND<0.20	ND<0.20	ND<4.0
cis-1,2-Dichloroethylene	2	ND<0.40	ND<200	0.31	ND<0.20	ND<4.0
trans-1,2-Dichloroethylene	NE	ND<0.40	ND<200	ND<0.20	ND<0.20	ND<4.0
1,2-Dichloropropane	NE	ND<0.46	ND<230	ND<0.23	ND<0.23	ND<4.6
cis-1,3-Dichloropropene	NE	ND<0.44	ND<220	ND<0.22	ND<0.22	ND<4.4
trans-1,3-Dichloropropene	NE	ND<0.44	ND<220	ND<0.22	ND<0.22	ND<4.4
1,2-Dichlorotetrafluoroethane (114)	NE	ND<0.70	ND<350	ND<0.35	ND<0.35	ND<7.0
Ethanol	NE	6.1	ND<190	3.5	14	ND<3.8
Ethyl Acetate	NE	ND<0.44	ND<370	ND<0.37	ND<0.37	ND<7.3
Ethylbenzene	NE	21	7500	49	0.22	220
4-Ethyl Toluene	NE	19	3300	25	0.25	250
n-Heptane	NE	110	63000	47	0.97	320
Hexachlorobutadiene	NE	ND<2.2**	ND<1100**	ND<1.1	ND<1.1	ND<22**
Hexane	NE	93	43000	51	1	300
2-Hexanone	NE	ND<0.40	ND<200	ND<0.20	5.9	ND<4.0
Isopropanol	NE	2.4	410	1.6	5	5.7
Methyl tert-Butyl Ether (MTBE)	NE	ND<0.36	ND<180	ND<0.18	ND<0.18	ND<3.6
Methylene Chloride	NE	17	6100	4.6	0.78	ND<7.0
4-Methyl-2-Pentanone (MIBK)	NE	ND<0.40	ND<200	ND<0.20	2.7	ND<4.0
Propene	NE	22	ND<180	5.6	6.1	ND<3.5
Styrene	NE	ND<0.42	ND<210	ND<0.21	ND<0.21	ND<4.2
1,1,2,2-Tetrachloroethane	NE	ND<0.68	ND<340	ND<0.34	ND<0.34	ND<6.8
Tetrachloroethylene	2	ND<0.68	ND<340	ND<0.34	ND<0.34	ND<6.8
Tetrahydrofuran	NE	ND<0.30	ND<150	ND<0.15	19	ND<3.0
Toluene	NE	4.4	580	4.3	0.85	20
1,2,4-Trichlorobenzene	NE	2.5*	ND<370*	ND<0.37	ND<0.37	ND<7.4*
1,1,1-Trichloroethane	2	ND<0.54	ND<270	ND<0.27	ND<0.27	ND<5.4
1,1,2-Trichloroethane	NE	ND<0.54	ND<270	ND<0.27	ND<0.27	ND<5.4
Trichloroethylene	1	ND<0.54	ND<270	ND<0.27	ND<0.27	ND<5.4
Trichlorofluoromethane	NE	15	ND<280	1.7	1.4	ND<5.6
1,1,2-Trichloro-1,2,2-Trifluoroethane	NE	ND<0.76	ND<380	0.59	0.65	ND<7.6
1,2,4-Trimethylbenzene	NE	77	10000	84	0.47	780
1,3,5-Trimethylbenzene	NE	5.9	260	27	ND<0.25	58
Vinyl Acetate	NE	ND<1.5	ND<710	ND<0.71	ND<0.71	ND<15
Vinyl Chloride	1	ND<0.26	ND<130	1.5	ND<0.13	ND<2.6
m/p-Xylene	NE	23	7500	53	0.63	330
o-Xylene	NE	2.4	610	5.2	0.23	44

Notes:
 $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter
 ND<(xx) = Not detected at or above the Reporting Limit (xx)
 NE = Not Established
 * = Laboratory fortified blank recovery is outside of control limits. Any reported value for this compound in this batch is expected to be biased on the high side.
 ** = Laboratory fortified blank recovery is outside of control limits. Any reported value for this compound in this batch is expected to be biased on the low side.
 *** = Compounds compared to Sample Matrix 1 have the potential to require mitigation if the sample concentration is greater than $5 \mu\text{g}/\text{m}^3$.
 Compounds compared to Sample Matrix 2 have the potential to require mitigation if the sample concentration is greater than $100 \mu\text{g}/\text{m}^3$.

Table 5
Supplemental Remedial Investigation
Summary of Detected Constituents in Groundwater
2 Love Road, Poughkeepsie, NY
November 2009

CONSTITUENT	Standards & Guidance Values	Site ID	2009-MW-04	2009-MW-04	2009-MW-03	2009-MW-02	2009-MW-01	
		Sample #	2009-MW-04	2009-MW-04	2009-MW-03	2009-MW-02	2009-MW-01	
		Date	Primary	Primary	Duplicate	Primary	Primary	
VOCs (ug/L)								
Chloromethane	5	984090720-01 7/20/2009	0.37J	<1U	0.22J	0.43J	0.55J	<50U
Ethylbenzene	5	984090720-02 7/20/2009	<1U	<1U	<1U	<1U	<1U	[1300]
Isopropylbenzene	5		<1U	0.13J	0.13J	<1U	<1U	[160]
m&p-Xylene	5		<1U	<1U	<1U	<1U	<1U	[400]
Methylene chloride	5		[8.3S]	0.1JS	<1U	<1U	0.1JS	<50U
Naphthalene	10		<1U	<1U	<1U	<1U	<1U	[92]
n-Propylbenzene	5		<1U	<1U	<1U	<1U	<1U	[220]
o-Xylene	5		<1U	<1U	<1U	<1U	<1U	[15J]
sec-Butylbenzene	5		<1U	0.18J	0.18J	<1U	<1U	[10J]
SVOCs (ug/L)								
2-Methylnaphthalene	NE			0.93	1	<0.2U	<0.2U	38D
Acenaphthene	20			0.32	0.34	<0.2U	<0.2U	1.4
Fluorene	50			0.27	0.28	<0.2U	<0.2U	2.5
Naphthalene	10			<0.2U	<0.2U	<0.2U	<0.2U	[130D]
Metals (mg/L)								
Arsenic	25			0.009	0.009	<0.004U	<0.004U	0.007
Barium	1000			0.172	0.178	0.08	0.064B	0.107
Cadmium	5			0.0003B	0.0002B	<0.001U	0.0004	<0.001U
Chromium	50			<0.001U	0.0004B	<0.001U	0.0009B	0.0004B
Lead	25			<0.002U	<0.002U	<0.002U	0.0015B	0.007
Mercury	0.7			<0.0002U	<0.0002U	<0.0002U	<0.0002U	<0.0002U
Selenium	10			<0.01U	<0.01U	<0.01U	<0.01U	<0.01U
Silver	50			0.0003B	<0.001U	0.0003B	0.0003B	0.0007B

Notes:

1. Units: ug = micrograms; mg = milligrams; kg = kilograms
2. < =constituent not detected at the specified laboratory reporting limit
3. NE = Not Established
4. [2040] indicates an exceedance of applicable TOGS 1.1.1 Class GA Standard or Guidance Value
5. U = indicates the compound was analyzed but not detected
6. J = estimated value
7. B = The reported value was obtained from a reading that was less than the Reporting level (RL) but greater than or equal to the Instrument Detection Level (IDL).
8. D = The reported concentration is the result of a diluted analysis.
9. S = This compound is a solvent that is used in the laboratory. Laboratory contamination is suspected if concentration is less than five times the reporting level.

Table 6
Summary of Detected Constituents in
Soil Stockpile - Characterization Samples
2 Love Road, Poughkeepsie, NY
November 2009

Site ID	SP-01
Sample #	984070707-01
Date	7/7/2009
CONSTITUENT	Primary
Metals (RCRA-8), Methods 6010/7471, µg/kg	
Arsenic	3
Barium	55.6
Cadmium	0.51
Chromium	13.3
Lead	26.9
Mercury	<0.08
Selenium	<2.0
Silver	< 0.40
Extractable Organic Halides, Method 9023, mg/kg	
Extractable Organic Halides	<20
Benzene, Method 8021, µg/kg	
Benzene	<250
Polychlorinated Biphenyls, Method 8010, µg/kg	
No Detections	
Total Petroleum Hydrocarbons, Method 418.1, mg/kg	
TPH	23

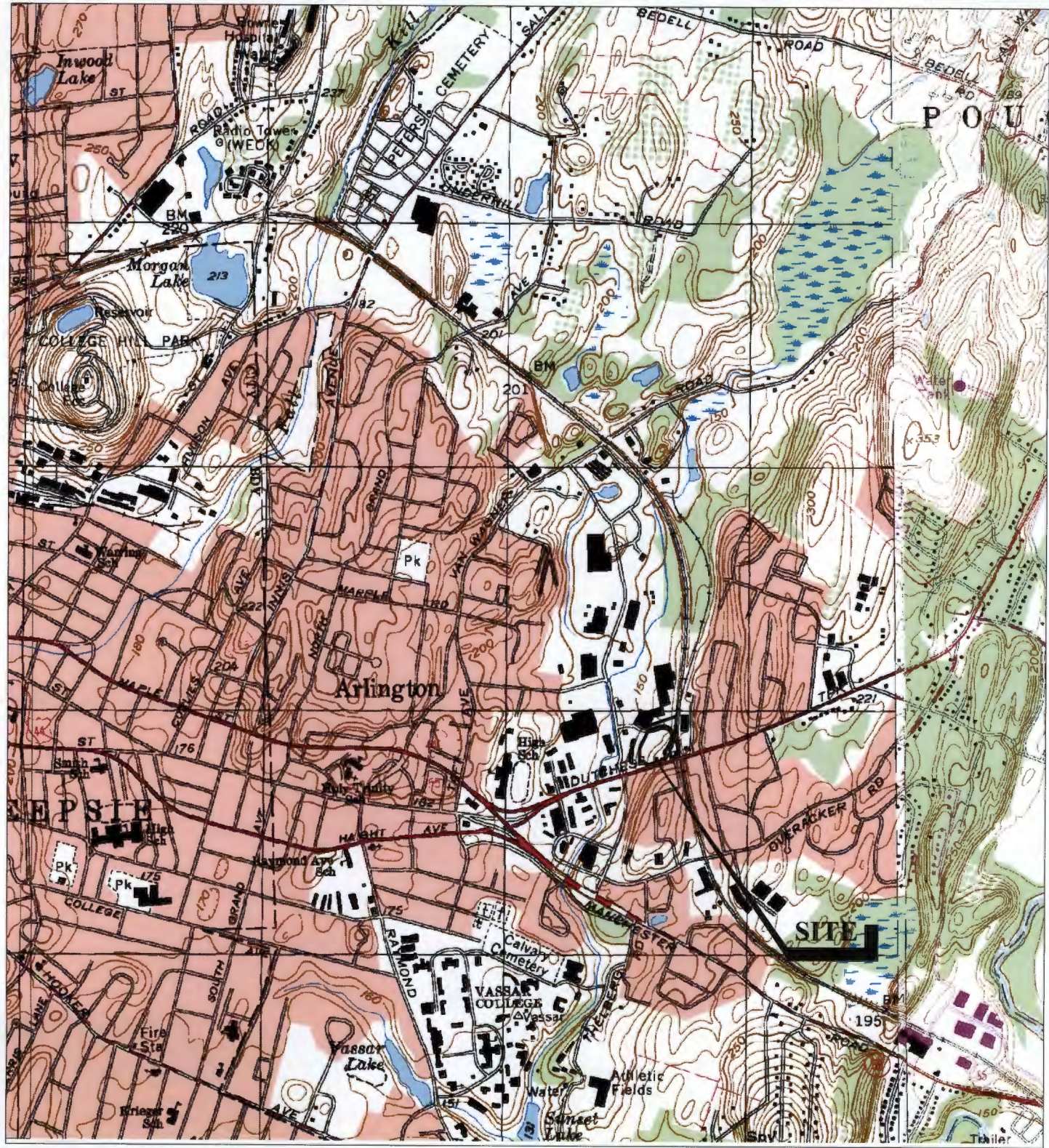
Notes:

1. Units: ug = micrograms; mg = milligrams; kg = kilograms
2. < =constituent not detected at the specified laboratory reporting limit



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Figures




MAP REFERENCE

THIS MAP WAS PREPARED FROM THE FOLLOWING 7.5 MINUTE USGS MAPS:
 Poughkeepsie Quadrangle 1964, Photorevised 1980
 Poughkeepsie Quadrangle 1963, Photorevised 1980

UCS: WORLD
 M/S VIEW: 2000
 L/MAN: PLOT
 CTB: F&O STANDARD

SCALE:	
HORZ.: 1" = 2000'	
VERT.: N/A	
DATUM:	
HORZ.: N/A	
VERT.: N/A	
GRAPHIC SCALE	

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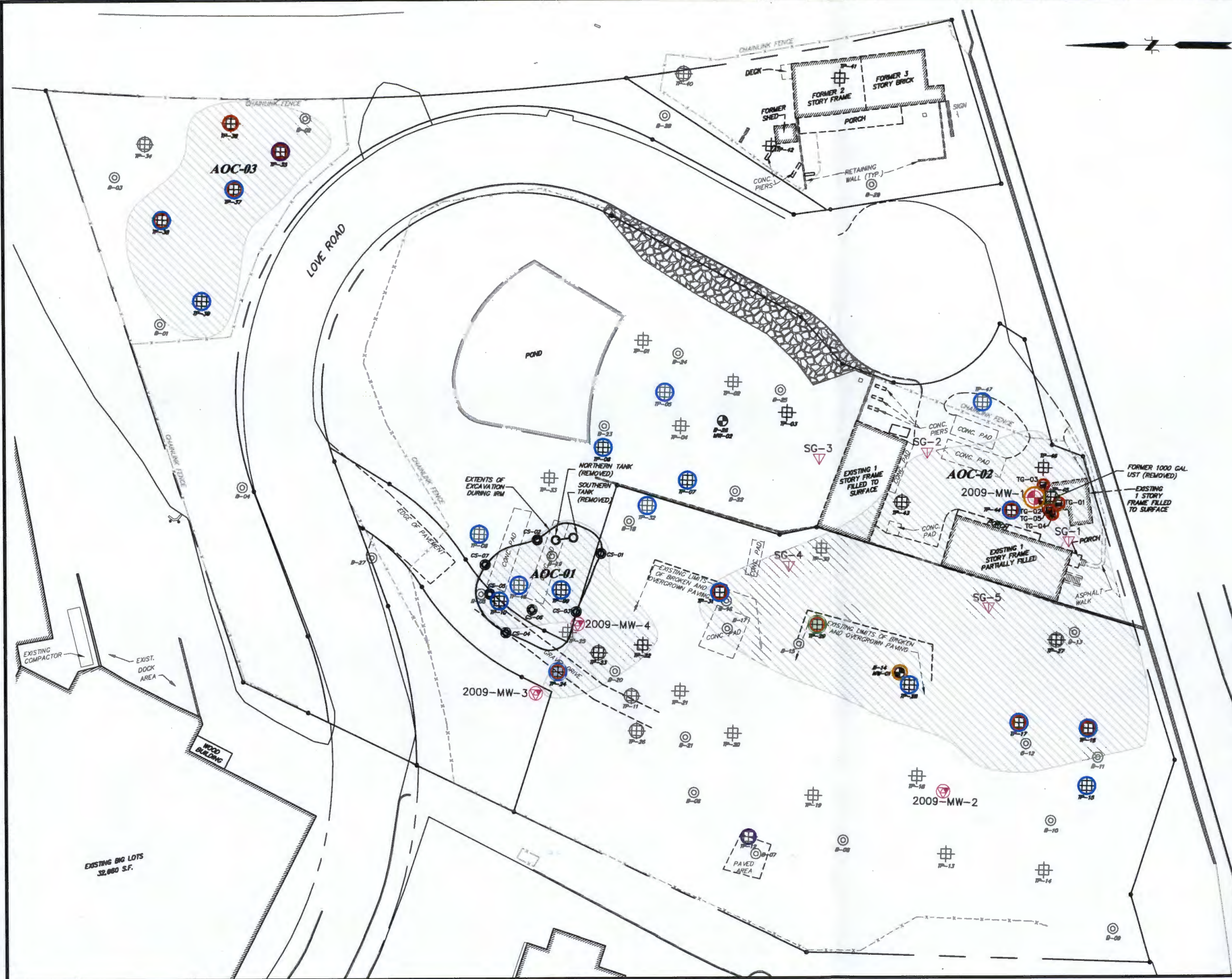
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HERBERT REDL PROPERTIES
USGS LOCATION MAP
 2 LOVE ROAD
 TOWN OF POUGHKEEPSIE DUTCHESS COUNTY, NEW YORK

PROJ. No.: 20040761.A6N
 DATE: SEPTEMBER 2009

FIG. 1



LEGEND

- ⊕ TEST PIT – ONE OR MORE VOLATILE OR SEMI-VOLATILE ORGANIC COMPOUNDS DETECTED BELOW THE UNRESTRICTED USE CRITERIA (2005)
- ⊕ TEST PIT – NO VOLATILE OR SEMI-VOLATILE ORGANIC COMPOUNDS DETECTED (2005)
- ⊙ SOIL PROBE (NO SAMPLES COLLECTED) (2005)
- ⊕ TEMPORARY MONITORING WELL AND SOIL BORING (2005)
- ⊠ TANK GRAVE SAMPLE (2005)
- SOIL EXCAVATION CONFIRMATION SAMPLE (2007)
- ⊕ SUPPLEMENTAL REMEDIAL INVESTIGATION BEDROCK MONITORING WELL (2009)
- ⊕ SUPPLEMENTAL REMEDIAL INVESTIGATION SOIL GAS SAMPLE (2008)
- ⊕ SUPPLEMENTAL REMEDIAL INVESTIGATION OVERBURDEN MONITORING WELL (2009)
- SOIL SAMPLE WITH VOLATILE OR SEMI-VOLATILE ORGANIC COMPOUNDS EXCEEDING THE UNRESTRICTED USE CRITERIA
- SOIL SAMPLE WITH METALS EXCEEDING THE UNRESTRICTED USE CRITERIA
- SOIL SAMPLE WITH METALS EXCEEDING THE RESTRICTED RESIDENTIAL USE CRITERIA
- SOIL SAMPLE WITH METALS EXCEEDING THE COMMERCIAL USE CRITERIA
- OVERBURDEN MONITORING WELL WITH VOLATILE ORGANIC COMPOUNDS EXCEEDING TOGS 1.1.1
- ⊕ TEST PIT WITH NO SAMPLES COLLECTED BUT ASSUMED UNIMPACTED WITH VOCs BASED ON VISUAL AND OLFACTORY INSPECTION
- ⊕ TEST PIT WITH NO SAMPLES COLLECTED BUT ASSUMED IMPACTED WITH VOCs OR SVOCs BASED ON VISUAL AND OLFACTORY INSPECTION
- ▨ AREA OF CONCERN WITH VOLATILE OR SEMI-VOLATILE ORGANIC COMPOUND IMPACTED SOILS

GENERAL NOTES

1. ALL SAMPLE LOCATIONS AND EXCAVATION AREAS ARE APPROXIMATE.

MAP REFERENCE

1. BASE MAP OBTAINED FROM A DRAWING ENTITLED "SURVEY MAP OF THE LANDS OF DONALD LOVE AND H. PAUL RICHARDS", PREPARED BY RAYMOND J. KIHLMIRE, L.S., FILED IN THE DCCO ON SEPTEMBER 04, 1987.

UCS: 1/8" VIEW: LMAN: CTB:

PROJ. MANAGER		REVIEWED BY:		DATE
CHIEF DESIGNER:		REVIEWED BY:		DATE
REVIEWED BY:		REVIEWED BY:		DATE
REVIEWED BY:		REVIEWED BY:		DATE
REVIEWED BY:		REVIEWED BY:		DATE
No.	DATE	DESCRIPTION	BY	
REVISIONS				

SCALE

HORIZ: 1" = 60'

VERT:

DATUM:

HORIZ:

VERT:

0 30 60

GRAPHIC SCALE

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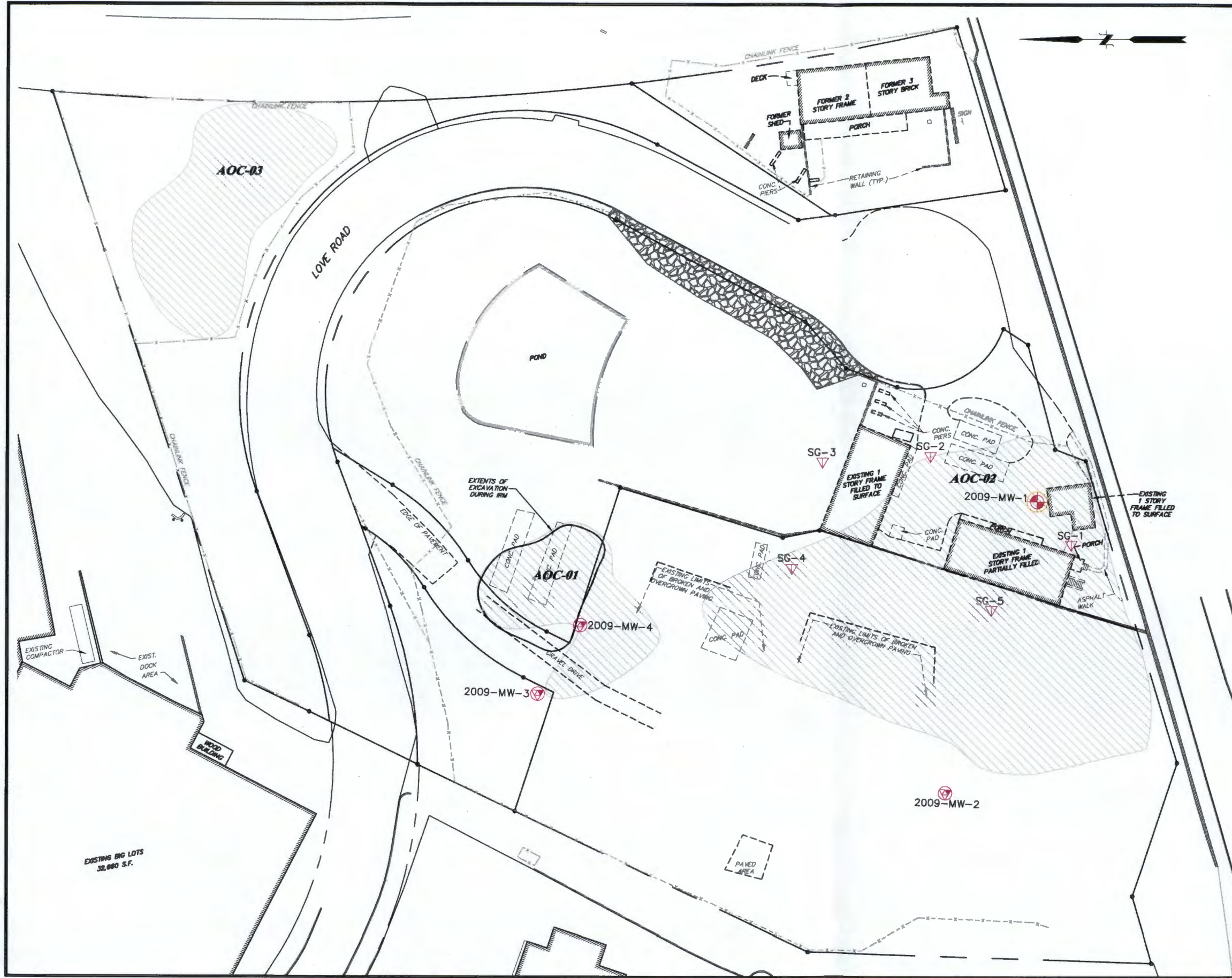
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HERBERT REDL PROPERTIES






**SUPPLEMENTAL REMEDIAL INVESTIGATION
HISTORIC SAMPLE LOCATIONS
2 LOVE ROAD**

TOWN OF POUGHKEEPSIE NEW YORK

FIGURE 2



LEGEND

-  SUPPLEMENTAL REMEDIAL INVESTIGATION BEDROCK MONITORING WELL (2009)
-  SUPPLEMENTAL REMEDIAL INVESTIGATION SOIL GAS SAMPLE (2008)
-  SUPPLEMENTAL REMEDIAL INVESTIGATION OVERBURDEN MONITORING WELL (2009)
-  OVERBURDEN MONITORING WELL WITH VOLATILE ORGANIC COMPOUNDS EXCEEDING TOGS 1.1.1 (2009)
-  AREA OF CONCERN WITH VOC/SVOC IMPACTED SOILS

GENERAL NOTES

1. ALL SAMPLE LOCATIONS AND EXCAVATION AREAS ARE APPROXIMATE.

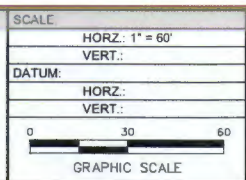
MAP REFERENCE

1. BASE MAP OBTAINED FROM A DRAWING ENTITLED "SURVEY MAP OF THE LANDS OF DONALD LOVE AND H. PAUL RICHARDS", PREPARED BY RAYMOND J. KIHLMIRE, L.S., FILED IN THE DCCO ON SEPTEMBER 04, 1987.


UCS: 1MS VIEW: LUMAK: CTEB:

PROJ. MANAGER		CHIEF DESIGNER	
REVIEWED BY:		DATE	
No.	DATE	DESCRIPTION	BY
1.			

SCALE	
HORIZ.: 1" = 60'	VERT.:
DATUM:	
HORIZ.:	VERT.:
0 30 60	
GRAPHIC SCALE	



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 GROUNDWATER AND SOIL VAPOR SAMPLE LOCATION PLAN
 2 LOVE ROAD

TOWN OF POUGHKEEPSIE NEW YORK

PROJ. No: 20090101
 DATE: NOVEMBER 2009

FIGURE 3