REMEDIAL INVESTIGATION WORKPLAN

"LONG DOCK BEACON"
RED FLYNN DRIVE, CITY OF BEACON
DUTCHESS COUNTY, NEW YORK

NYSDEC Brownfields Program Site: C314112

Date of Preparation: March 2005
Revised August 2006

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The undersigned have reviewed this Remedial Investigation Workplan and certifies to The Scenic Hudson Land Trust, Inc. and Foss Group Beacon, LLC, that the information provided in this document is accurate as of the date of issuance by this office.

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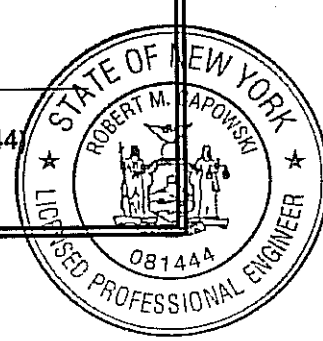

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this Remedial Investigation Workplan (RIWP) is to define the nature and extent of contamination environmental conditions at the "Long Dock Beacon" property, located west of Red Flynn Drive in the City of Beacon, Dutchess County, New York (hereafter referred to as the "Site". It is the intent of this RIWP to provide additional data to those existing from previous investigations of the Site (see Section 1.3); to identify contaminant source areas; and, to produce data of sufficient quantity and quality to support the development of an acceptable Remedial Action Plan.

1.2 Site Information

1.2.1 Site Identification and Location

The Long Dock Beacon Site is an 8.85-acre irregular-shaped parcel situated on a peninsula on the eastern shore of the Hudson River (see Site Location Map, Figure 1). The northern half of the Site was formerly known as the "Beacon Salvage" property, and the southern half of the Site was formerly known as the "Garret Storm" property. The Site extends approximately 1,200 feet westwards from Red Flynn Drive and includes lands submerged in the Hudson River.

Structures present on the former Beacon Salvage property include a barn and a house, located on the northeastern and north-central portions of the Site, and a concrete foundation located in the vicinity of the western shoreline. Structures present on the former Garret Storm property consists of one building and a small storage shed, which at the time of the drafting of this RIWP are utilized by the Dutchess Boat Club. Remaining portions of the Site consist of vacant, overgrown areas.

1.2.2 Site Topography and Hydrogeology

The majority of the Site is at a surface elevation between 5 to 10 feet above mean sea level, with somewhat higher elevations at the eastern end, near Red Flynn Drive. Groundwater was encountered during previous investigations of the Site at approximately 4 feet below surface grade (bsg) and is likely to be influenced by variations in the height of the Hudson River. Previous data indicate that on-site shallow groundwater flow is tidally influenced above mean sea level (msl). Geotechnical borings indicate that depth to bedrock at the site is likely to be 180' bsg or greater.

1.2.3 Surrounding Land Uses

The Site is part of the City of Beacon Waterfront, bounded on the east by the MTA commuter rail tracks and to the north by a small parcel of land owned by the City of Beacon and to the west by the Hudson River. Vacant land (also owned by the Scenic Hudson Land Trust, Inc. but not part of this Brownsfield Site) is present to the south.

1.3 Site History

Both the former Garret Storm and Beacon Salvage portions of the Site have been the subjects of various environmental investigations from 1987 to the present (excerpts of relevant documents are provided in Appendix A). Previous sample locations are illustrated in Figure 2.

A Preliminary Hydrogeologic Assessment (PHA) of a larger geographic area, which included the former Beacon Salvage and Garret Storm properties, was conducted by Empire Soils Investigations, Inc. and Thomsen Associates in February 1987. According to the PHA, the Site was formed with uncontrolled fill from multiple sources (including coal-ash and construction and demolition debris). The PHA indicated that the Beacon Salvage property was the former location of an insecticide and soap manufacturer and that the Garret Storm property was a former major oil storage facility (MOSF).

Both the Garret Storm and Beacon Salvage properties were investigated separately as described below, and separately entered the Voluntary Clean-up Program (VCP). All investigations were conducted consistent with established NYSDEC protocols. Both Sites remained in the Voluntary Clean-up Program until they were combined as a single Site in the Brownfields program.

As described below, several soil and groundwater investigations have occurred over the past two decades in the eastern and central portions of both sites. No testing occurred in the western portion of the Garret Storm site and scattered surface and subsurface sampling occurred on the Beacon Salvage Site. No sediment sampling has yet occurred on any portion of this Site.

Former Beacon Salvage Property

The 1987 PHA documented the extension of four on-site test pits (TP-1 to TP-4) and the installation of groundwater monitoring wells in the excavations. The type of fill encountered and the degree of soil compaction were noted to vary throughout the site. A petroleum sheen and odor were observed at TP-3, located near the western extent of the peninsula. No other significant field evidence of contamination was noted at the site. Laboratory analysis of groundwater samples indicated that iron was present at concentrations above groundwater standards and that several other metals were present at concentrations approaching groundwater standards.

An Environmental Constraints Analysis (ECA) of the same area covered by the February 1987 PHA was conducted by Cortell Associates in June 1989. The ECA included an analysis of on-site geology and topography, surveys of on-site wetlands, vegetation, and animal species, and the extension of two soil borings. The ECA stated that elevated concentrations of metals were present at a number of soil borings (specific borings, however, were not indicated). No data summary tables or laboratory reports were provided with ESI's copy of the ECA.

A Combined Phase I and Phase II Environmental Site Assessment (Phase I/II ESA) of the Beacon Salvage property was conducted by ESI in June and July 2000. The Phase I investigation identified four potential environmental concerns: the historic use of the property, including the presence of a scrap yard from the 1950's through the 1980's; the potential historic use of kerosene-based pesticides; the integrity of fill materials used to create the peninsula; and, the presence of on-site burn areas associated with activities conducted at the scrap yard.

The Phase II portion of the investigation involved the extension of five manual soil borings to a maximum depth of five feet below surface grade (bsg) and the collection of seven surface samples from the 0-1' bsg interval. Soil borings were distributed throughout the eastern half of

the Beacon Salvage property, and surface samples were focused on the area east of the on-site barn. Elevated levels of several RCRA metals (arsenic, cadmium, lead, and selenium) were detected throughout the property and elevated levels of PCBs were detected in the burn areas.

ESI conducted additional investigative services from August 2000 to February 2002, including the collection of additional soil samples throughout the Site, the installation of groundwater monitoring wells, and the collection of groundwater samples. Based on the additional investigations, ESI concluded that on-site groundwater was not impacted by historic site use, and that soils in the vicinity of the burn areas contained PCBs in excess of NYSDEC guidance levels. Finally, the data supported the conclusion that elevated metals were present in surface soils to the west of the on-site residential structure as well as to the east of the barn, but not in the central portion of the Site. No testing for VOCs PAHs or PCBs was conducted from soil samples collected to the west of the building.

PCB-contaminated soil (approximately 400 tons) was excavated from the impacted area and disposed of off-site in August and September 2002. Confirmatory endpoint sampling documented the presence of PCBs in remaining soils at concentrations below the NYSDEC guidance level for PCBs in subsurface soils (10 ppm). Clean soils were imported to restore the area to the approximate former grade, and the area was seeded with grass. This area was subsequently disturbed by on-site equipment storage practices and additional soils were therefore imported and reseeded in order to restore the protective cover in November 2004.

Four trenches were extended at locations between the western concrete pad and the barn in December 2004 as part of an archeological investigation. The NYSDEC Program Manager was present during the fieldwork. Soil samples were collected for VOCs, SVOCs, PCBs/Pesticides and metals. Evidence of low-level petroleum impacts was observed at each trench and pieces of copper fuel lines were discovered at the westernmost trench. Low-grade PAH and metal contamination was detected throughout the study area. Low concentrations of PCBs (below guidance levels) were detected near the western end of the barn. No VOCs or pesticides were detected in any sample.

Former Garret Storm Property

The 1987 PHA documented the extension of two test pits (TP-5 and TP-6) at the central portion of the property. A strong petroleum odor and sheen were noted at both locations, and laboratory analysis of the groundwater samples indicated that fuel oil was present at TP-5.

A NYSDEC inspection of on-site groundwater monitoring wells in December 1988 revealed the likely presence of dissolved petroleum products in on-site groundwater. A NYSDOH analysis of a groundwater sample in February 1989 indicated elevated concentrations of Hexachlorobutadiene, 1,2,3-trichlorobenzene, phenols, iron and manganese. Fuel oil was detected at a concentration of 1,300 ppb. Multiple metals were detected at concentrations approaching groundwater quality standards.

The Cortell Associates ECA documented the presence of free product in an on-site monitoring well (no laboratory data were provided with ESI's copy of the ECA).

ESI completed a Subsurface Investigation and Monitoring Well Installation Report (Garret Storm SSI) in September and October 1994. [Note: the Garret Storm SSI included a summary of three petroleum spill events known to have occurred on the property: a release of fuel-oil into the containment area in the early 1980s; a report of petroleum in groundwater during well installation in 1989 (NYSDEC Spill # 8900064); and evidence of petroleum contamination encountered during the extension of test pits on the central portion of the property in February 1993 (NYSDEC Spill number 9212560)]. Eleven soil borings were extended in the former fuel handling and storage area and six of the borings were completed as groundwater monitoring wells. Field evidence of petroleum contamination was noted at six borings and elevated SVOCS were detected in several samples. Elevated concentrations of SVOCs were also detected in two groundwater samples. Floating free-product was observed at two wells; no dissolved petroleum hydrocarbons, however, were detected in those locations. The Garret Storm SSI concluded that significant petroleum contamination was present in soils and groundwater located in the vicinity of the former fuel-storage and handling area, but was unlikely to migrate off-site.

An Environmental Audit (Garret Storm EA) issued by ESI in May 1999 summarizes an investigation of the site conducted by ESI in January 1997. The Garret Storm EA included a Phase I analysis of the property, as well as the sampling of four on-site and four off-site groundwater monitoring wells. 1-Methylnapthalene was detected in two on-site wells at concentrations below the NYSDEC groundwater quality standard. No other petroleum hydrocarbons were detected in any other sampled wells. The Garret Storm EA concluded that petroleum-contaminated soils in the vicinity of the tank cradles should be excavated and disposed of off-site, and that several existing abandoned on-site aboveground storage tanks should be removed.

A Summary Report of Remedial Activities (Garret Storm RA Report), dated June 2003, details remedial activities undertaken by ESI at the Site as well as additional investigations of on-site and off-site groundwater quality. Remedial activities were initiated in October 1999 when a former on-site pump house and tank-cradle were demolished in order to excavate petroleum contaminated soils (approximately 600 tons of petroleum contaminated soil were disposed of off-site). Laboratory analysis documented the absence of significant petroleum constituents in remaining soils. No underground storage tanks were encountered during the extension of several additional test pits.

Two observation/recovery sumps were installed in the excavated area, in the event that recoverable quantities of free product were detected on the water table and a monitoring well (RD-10) was installed in February 2001 to replace two monitoring wells (RD-2 and RD-6) destroyed during soil excavation.

Groundwater sampling was conducted in October 2000, and March, June, and October 2001. A petroleum sheen and odor was noted in two wells in October 2000 but no petroleum hydrocarbons were detected above reported detection limits. Elevated concentrations of several VOCs (BTEX and related compounds) and PAHs were detected in RD-10 during the March 2001 sampling event, elevated concentrations of two PAHs were detected in RD-10 in June 2001, and low-levels of VOCs were detected in RD-10 during October 2001. With the exception of several VOCs detected in on-site well RD-3 in June 2001, no other compounds were detected in other wells during any sampling rounds (no VOCs or PAHs have been detected in any off-site wells on the adjoining Kellam Site (south) or the Beacon Salvage Site (north). The Garret Storm RA Report concluded that concentrations of VOCs and PAHs in the vicinity of the area of soil excavation have been diminishing over time, and that residual petroleum hydrocarbons at the Site are likely to be bound to soil and therefore are not likely to represent a threat to on- or off-site groundwater quality.

1.4 Proposed Future Site Use

The Site has been proposed for use as a hotel and conference center, for waterfront and environmental education programs, and for recreation.

2.0 PROPOSED INVESTIGATION ACTIVITIES

This section of the RIWP details activities that are proposed to investigate environmental conditions on the Site, as defined in Section 1.3, above.

Section 2.1 provides information on services to be conducted in anticipation of intrusive fieldwork and Section 2.2 provides detailed information on the Investigation services that will be conducted by the Participant's designated environmental consultant (the "On-Site Coordinator", OSC) to assess Site conditions. . Project deliverables (i.e., written reports) are described in Section 2.3.

2.1 Site Preparation Services

2.1.1 Project Management

The OSC will be responsible for the effective implementation of the services described in this RIWP, including adherence to the proposed work schedule, barring unforeseen conditions. Qualified personnel shall conduct all on-site Investigation work and prepare all applicable written documentation. All on-site staff will be appropriately trained in accordance with Occupational Safety and Health Administration (OSHA) practices (29 CFR, Part 1910). Prior to the initiation of fieldwork, a Site Health and Safety Officer will be designated by the Participant in order to ensure compliance with the Health and Safety Plan (see Section 2.1.2, below).

2.1.2 Health and Safety Plan

A Site-specific Health and Safety Plan (HASP) will be reviewed with Site personnel and appropriate subcontractors prior to the initiation of fieldwork. All proposed work will be performed in "Level D" personal protective equipment; however, field personnel (including subcontractors) will be prepared to continue services wearing more protective levels of equipment should field conditions warrant. A Qualitative Human Health Exposure Assessment is provided in the HASP. A copy of the HASP is included as Appendix B.

2.1.3 Quality Assurance / Quality Control Plan

A Site-specific Quality Assurance / Quality Control (QA/QC) Plan will be reviewed with Site personnel and appropriate subcontractors prior to the initiation of fieldwork. All proposed fieldwork, sample handling, and laboratory analysis will be performed in accordance with the QA/QC Plan. A copy of the QA/QC Plan is included as Appendix C.

2.1.4 Notification/Communications

2.1.4.1 Citizen Participation Plan

A Citizen Participation Plan (CPP), developed in accordance with 6 NYCRR Part 375 (provided as Appendix D) will be implemented prior to the initiation of fieldwork.

2.1.4.2 Agency Notification

All relevant project notifications from the Participant and/or the Participant's Consultant will be made to the NYSDEC, and (as appropriate) other relevant agencies (e.g., New York State Department of Health). To the extent practicable, all fieldwork will be supervised by the NYSDEC Project Manager or an on-site NYSDEC representative. The NYSDEC will be notified in writing at least two (2) weeks prior to the start of fieldwork. Notification of subsequent field activities will be in accordance with reasonable business practice, with verbal notification for immediate (within 48 hours) activities and written notification otherwise. Written notifications will be transmitted to the NYSDEC via facsimile or electronic mail.

2.1.5 Utility Markout

Prior to the initiation of fieldwork, a request for a complete utility markout of the subject property will be submitted by ESI as required by New York State Department of Labor regulations. Confirmation of underground utility locations will be secured, and a field check of the utility markout will be conducted prior to any intrusive activities.

2.1.6 Subcontractor Coordination

Subcontractors will perform requested services, as necessary, as specified by the Participant's Consultant. All subcontracted work (excluding laboratory analyses) will be directly supervised by the OSC.

2.2 Investigative Services

The tasks detailed below will be performed by the OSC and designated subcontractors to achieve the project objectives specified in Section 1.1 of this RIWP. Investigative services will be conducted to determine the extent of contamination warranting response actions. In general, the following investigative tasks will be conducted:

- Surface soil samples will be collected throughout the Site to access the exposure risks for future uses of the Site.

- Soil borings will be extended throughout the Site to characterize soil conditions and contaminant concentrations at portions of the Site proposed for excavation (see Section 2.2.1).

- Test pits will be extended throughout the Site to characterize subsurface conditions and to provide guidance on the presence or absence of elevated metals and/or organic contaminants (see Section 2.2.1 below).

- Monitoring wells will be installed at the throughout the Site to document the presence or absence of dissolved metals and organic contaminants in groundwater at these Site areas (see Section 2.2.2).

- Sediment and water sampling will be conducted in that portion of the Site (the extreme western, northern, and southern portions) which is submerged in the Hudson River (see Section 2.2.3 below)

- Sampling logs for soil borings, test pits, sediment sampling transects, monitoring well installation, monitoring well development, and monitoring well sampling will be developed and provided in the Remedial Investigation Report (RI Report). Sampling log samples are provided in Appendix E.

- A map showing the location of all proposed fieldwork is provided as Figure 3. Best efforts will be made to collect samples at the locations indicated. All locations must be approved by the NYSDEC Project Manager before sampling.

- If gross contamination or indications of contamination migrating off-site are observed, the scope of the RIWP will be expanded at the request of the Department to delineate all contamination emanating from the site.

2.2.1 Soil Borings, Test Pits, and Surface Soil Samples

2.2.1.1 Location and Extension of Soil Borings and Test Pits

Soil Borings

A total of eleven soil borings will be extended on the Site in locations illustrated on the proposed Fieldwork map (Figure 3).

Soil borings will be extended to a maximum depth of approximately 20 feet below surface grade, (depth to bedrock at the site is likely to be 180' or greater, based on geotechnical borings)) using either a track-mounted Geoprobe rig (equipped with a hollow-core sampler having sample intervals of either 4' or 5' and disposable, acetate tubes) or a hollow-stem auger rig (equipped with a split-spoon sampler having 2' sample intervals), under the supervision of ESI personnel. If adequate recovery is not attained by the Geoprobe, the hollow-stem auger will be utilized and vise versa. The sampling equipment will be decontaminated prior to the initiation of fieldwork and before each new sample location.

A determination will be made in the field regarding exact soil boring locations, based on the locations of underground utilities and other relevant site conditions.

Test Pits

Nine test pits will be extended on the Site in locations specified on the Proposed Fieldwork Map (Figure 3). Additional test pits will be located should field evidence of significant contamination (e.g., staining, odors, etc.) be encountered.

Test pits will be extended using a standard backhoe to a maximum depth of 10 feet below grade or until groundwater is reached (groundwater is likely to be encountered at 4-6 feet below surface grade).

A determination will be made in the field regarding exact test pit locations, based on the locations of underground utilities and other relevant site conditions. Soil generated during the excavation of test pits will be re-interred. If obvious contamination is encountered, such soils will be stockpiled on 6-mil plastic for off-site disposal (should laboratory results indicate on-site disposal is inappropriate).

Surface Soils

Twelve surface soil samples will be collected at locations specified on the Proposed Fieldwork Map (Figure 3). Surface soil samples will be collected from the 0-2" depth using a stainless steel trowel, and all vegetation will be removed from each sample.. The trowel will be decontaminated prior to the initiation of fieldwork and after the collection of each sample in order to breven cross-contamination.

2.2.1.2 Soil Sample Collection

A discrete sample will be collected from each test pit (biased toward areas of likely contamination). It is anticipated that soil samples will be collected from each borehole where sufficient sampling material is present. Field conditions may warrant the collection and analysis of additional samples; similarly, the absence of measurable recovery in the sampling spoon may reduce the total number of samples. Samples collected from soil borings will not be composited to a greater length than the sampler interval.

Grossly contaminated soil will not be returned to the subsurface and will be disposed of in accordance with applicable guidance and regulations.

Decontaminated stainless steel trowels and dedicated gloves will be used at each sample location to place the material into the laboratory supplied glassware. Prior to and after the collection of each material sample, the sample collection instrument will be decontaminated to avoid cross-contamination between samples.

2.2.1.3 Soil Sample Analysis

Approximately two soil samples from each boring (20 total) and one sample from each test pit (14 total) will be submitted to the laboratory for chemical testing based on visual observation and field instrument readings. Samples selected for submission to the laboratory will be analyzed for Target Analyte List (TAL) metals, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs)and PCBs . A select amount of samples will be submitted for pesticide analysis as outlined in Section 2.3.1. Additional samples may be submitted if field conditions indicate the possible presence of contamination.

2.2.2 Groundwater Monitoring

Five new groundwater monitoring wells will be installed at the Site and sampled (proposed well locations are depicted on Figure 3). In addition, three existing wells (RD-3, RD-4, and RD-7) will be utilized. The location of these wells are depicted on Figure 2. The NYSDEC will be provided with construction logs for these existing wells. Existing wells will be inspected to see if they are usable, sounded to determine if siltation has occurred and developed prior to sampling. If existing wells are determined to be inappropriate for sampling to the NYSDEC, the wells will be replaced by new monitoring wells. Pending initial groundwater sampling data, the NYSDEC may require an additional round of groundwater monitoring.

2.2.2.1 Installation of Proposed Monitoring Wells

Five boreholes will be extended at the Site using a truck-mounted hollow-stem auger and will be completed as two-inch diameter groundwater monitoring wells. Any overtly contaminated soil exposed during boring operations will be tested and handled as per protocols discussed in Section 2.2.1, above.

- Each well will be constructed of two-inch PVC casing and a ten foot length of 0.01-inch slotted PVC well screening across the water table. No glue will be used to thread the casing lengths. A locked riser cap with vent will be installed at the top of the PVC riser.

- Depending on field conditions observed, all monitoring wells will be screened across the shallow water table if possible from 2-12 feet below grade. If the water table is lower, the monitoring wells shall be screened five feet above and five feet below the measured water table.

- The annular space between well screen and the borehole will be backfilled with clean #1 silica sand to a depth of one to two feet above the well screen. A one-foot thick bentonite seal will be poured down the borehole above the sand pack and allowed to hydrate before grouting the remaining annular space with cement.

- All on-site groundwater monitoring wells will be surveyed to the nearest 0.01 foot in relation to a permanent datum and horizontally to an accuracy of one-tenth of a second latitude and longitude. The survey will be referenced to NAD 83 and NGVD 29 and will include a marked spot on the top of the well riser and ground elevation adjacent to the well. All the surface soil sampling, soil boring and test pit locations will be included in the survey.

2.2.2.2 Monitoring Well Development

Well development will begin at the top of the saturated portion of the screened interval to prevent clogging of the pump within the well casing. The wells will be developed until the discharge water is free of sediment and the indicator parameters (pH, temperature, turbidity, dissolved oxygen and specific conductivity) have stabilized. Well development shall be discontinued when the turbidity of the discharged water is below 50 NTUs and the other parameters have stabilized. Upon completion, the pump assembly will be removed from the well while the pump is still running to avoid discharge of purged water back into the well.

2.2.2.3 Monitoring Well Sampling

Sampling of the monitoring wells will take place no sooner than one week after development of the wells. Eight wells will be sampled as described in section 2.2.2 (above). Sampling will begin at the potentially least contaminated well (as determined from well location and/or previous data) and proceed to the most contaminated well. New nitrile (or equivalent) gloves will be worn by the sampler at each well location. Provided below is a description of the sampling protocol.

1. Basic climatological data (e.g., temperature, precipitation, conductivity, etc.) will be recorded in the field logbook.

2. The protective casing on the well will be unlocked.

3. The air in the well head will be screened for organic vapors using the PID.

4. The well's static water level will be measured to the nearest 0.01 foot with a decontaminated Solinst water level meter, and the measurement will be recorded in the logbook. The measurement will be made relative to the top of the PVC casing.

5. The well will be purged and sampled using the low-flow method. Using a peristaltic pump and dedicated Teflon and silicon sample tubing, the well will be purged at a flow rate between 100 and 200 ml/minute, for a period of time no less than 15 minutes. Depth to water, flow rate, temperature (°C), specific conductivity (µS/cm), pH, ORP (mv), DO (mg/l), and turbidity (NTU) will be monitored in one-minute intervals throughout sampling. If all parameters are stable (readings varying by no more than approximately 10% over 5 minutes) after 15 minutes, the well will be sampled. If the parameters have not stabilized after 15 minutes, purging will continue until the parameters have stabilized.

6. Water samples will be collected into appropriate vessels outlined in the QA/QC Plan .

7. All samples will be stored on ice and the sample information recorded in the field logbook, as well as on the laboratory's Chain of Custody forms.

8. The protective cap on the well will be replaced and locked.

9. The field sampling crew will move to the next most potentially contaminated well and the process will be repeated until all-on-site wells have been sampled.

10. All samples will be maintained at appropriate cold temperatures prior to their transport to the New York State Department of Health-approved laboratory. All samples will be accompanied by proper chain of custody documentation.

2.2.2.4 Analysis of Groundwater Samples

Groundwater samples will be submitted for laboratory analysis of total and dissolved TAL Metals, VOCs , SVOCs, , PCBs, and Pesticides as outlined in Section 2.3.1. .

2.2.2.5 Groundwater Flow Calculations

The direction of groundwater flow will be determined based on elevations of static groundwater as measured at all on-site wells, measured prior to water quality sample collection. Measurements will be collected with an electronic depth meter with an accuracy of measuring depth to the nearest 0.01 foot. Data will be recorded in field logs for use in generating a Direction of Groundwater Flow Map in the final project RI Report (see Section 2.3, below).

2.2.3 Sediment and Surface Water Sampling

This RIWP proposes that Hudson River sediments be sampled at thirteen locations at the western, northern, and southern portions of the Site. In addition, four surface water samples will be collected from the Hudson River.

2.2.3.1 Sample Collection

Sediment and surface water sampling will be conducted from a stable work boat or barge capable of safely supporting all required personnel and field equipment, and which can be readily maneuvered to the appropriate sampling locations and be held stationary through anchors, ropes, or other practical means. Sampling locations will be documented using global positioning system technology and field observations. The choice of sampling equipment will be determined by the field technician based on depth to the river bottom and encountered field conditions (e.g., soft verses hard bottom materials).

At twelve locations sediment will be collected in one continuous core from 0 to 6 feet below the river bottom using a vibra-core equipped boat. Logs will be prepared for all sediment samples to document sediment structure and any field evidence of contamination. Grossly contaminated sediment will not be returned to the river and will be disposed of in accordance with applicable guidance and regulations. Decontaminated stainless steel trowels and dedicated gloves will be

used to place the material into the laboratory supplied glassware. Prior to and after the collection of each material sample, all sample collection equipment will be properly decontaminated to avoid cross-contamination between samples.

At one location (southern point in vicinity of proposed kayak launching beach), a sediment sample will be collected from 0-6".

Surface water samples will be collected in 32-oz amber jars, then transferred into analysis-appropriate sample vessels. If field conditions will not allow the safe collection of surface water samples via this method, and alternate method (i.e., a peristaltic pump with dedicated tubing, a dip type sampler, etc.) will be used.

2.2.3.2 Sample Analysis

Approximately two samples from each of the thirteen sampling locations (20 total) will be submitted for laboratory analysis of TAL Metals, SVOCs (total list for six samples and PAHs only for all other samples) , and PCBs. All cores extended below the four foot depth will also be sampled at the seven and the ten foot depth (6" samples).

The surface water will be analyzed for VOCs , SVOCs PCBs and Pesticides as outlined in Section 2.3.1..

2.3 Data Generation and Validation

This Section of the RIWP summarizes all proposed analyses of soil, water, and sediment . The number of samples specified in this Section is subject to change based on field conditions

2.3.1 Laboratory Analyses

This Section specifies the minimum of samples that will be collected and analyzed for each medium. Field observations may warrant the inclusion of additional samples and/or analytes. Field conditions (e.g., refusal) may prevent the collection of proposed samples or may result in an insufficient volume of soil for the proposed analyses. Any changes in the proposed analyte list will only be made after consultation with the NYSDEC project manager.

All data as provided by the laboratory will be presented as Category B deliverables. Complete quality control documentation will be provided for the purpose of independent data validation (see Section 2.3.3 below). The USEPA method that will be utilized for each analysis is listed parenthetically next to the stated analysis.

Summary of Laboratory Analyses

Fieldwork	Medium	Number of Samples	Analytes
Soil Borings	Soil	20	VOCs, SVOCs, TAL metals, PCBs, 10% Pesticides
Surface Soil	Soil	12	VOCs, SVOCs, TAL Metals, PCBs, 50% Pesticides
Test Pits	Soil	14	VOCs, SVOCs, TAL metals, PCBs, 33% Pesticides
Monitoring Wells	Groundwater	8(per sample round)	VOCs, SVOCs, TAL metals, PCBs, 25% Pesticides
Sediment Sampling	Soil	20	SVOCs, TAL metals, PCBs, 10% Pesticides
Surface Water Sampling	Surface water	4	VOCs, SVOCs, PCBs, 25% Pesticides

Summary of Analytical Methods

The analyses and corresponding analytical methods that will be utilized in the execution of this RIWP are outlined below. In no instance will analytical methods deviate from those listed. Additional analyses may be added based on observed field conditions.

- VOCs USEPA Method 8260
- SVOCs USEPA Method 8270
- PCBs USEPA Method 8082
- Pesticides USEPA Method 8081
- TAL Metals USEPA Methods 6010 and 7471

2.3.2 Quality Control Samples

The following QA/QC samples will be included in this investigation:

One rinse blank will be collected from each piece of equipment for every 20 samples collected using that piece of equipment;.

- One duplicate sample will be submitted to the laboratory for every 20 samples of each sample medium
- One matrix spike sample and one matrix spike duplicate will be submitted to the laboratory for every 20 samples of each medium;
- Every sample cooler will include a trip blank during each day of sampling; and,
- Split samples to be submitted to the NYSDEC for independent analysis, as per request made by the NYSDEC in the field.

2.3.3 Data Validation

All data as provided by the laboratory will be submitted to an independent data validator for review and comment. The rejection of data by the validator may necessitate the re-collection of samples and subsequent re-analysis by the laboratory. The complete report by the data validator will be included in the Remedial Investigation Report (see Section 2.4, below).

2.4 Remedial Investigation Report

Upon completion of Site investigation services, a Remedial Investigation Report (RI Report) summarizing all services performed on the subject property will be prepared. This RI Report will include the following:

- Documentation of field activities, including relevant supporting documents (e.g., sampling logs);
- All laboratory reports and associated deliverables generated as a result of the investigation;
- A Data Usability Summary Report prepared by an independent, third party;
- A summary of laboratory analytical data, including a comparison of data to appropriate NYSDEC guidance documents;

- Maps and drawings of sufficient specificity to provide a working description of Site, including a survey-quality Site Map (with 2' contour intervals), with all sample points indicated.

- An assessment of documented contaminants present on the Site, including an assessment of likely off-site impacts associated with known on-site conditions and a qualitative exposure assessment; and,

- If appropriate, an analysis of potential remedial options and cost estimates will be provided for each identified environmental condition based on documented Site conditions.

Upon completion, the RI Report will be submitted to the NYSDEC for review and comment. This RI Report may include the Remedial Action Workplan, if appropriate.

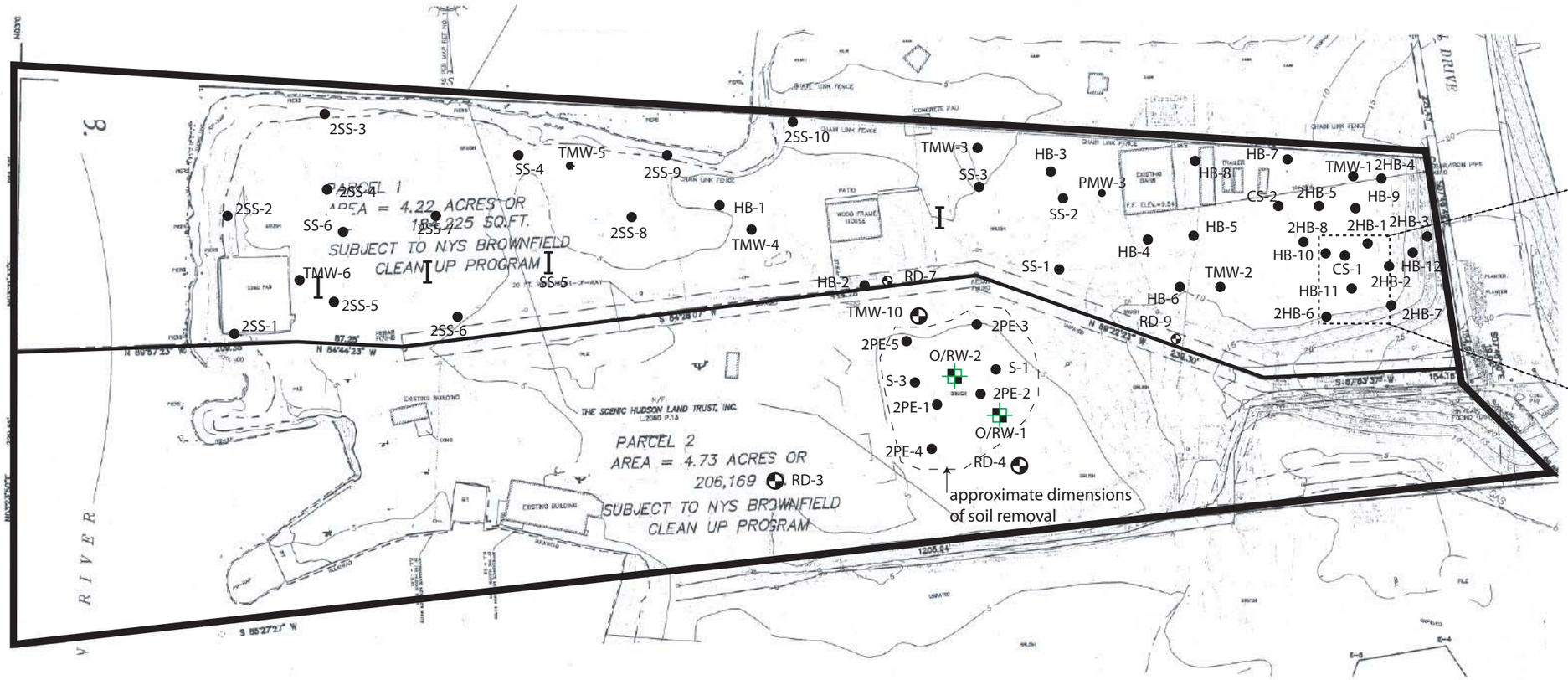
3.0 TIME SCHEDULE

The schedule outlined below will be maintained unless revised by mutual consent of the NYSDEC and the Client.

Within sixty (60) days of NYSDEC approval of this RIWP, all on-site Investigation activities will have been completed.

Within fourteen (14) days of the completion of on-site Investigation activities, a Remedial Investigation Report (RI Report) will be submitted to the NYSDEC.

Within thirty (30) days of the receipt of the final Report, the NYSDEC will provide a written response to the Client as to the adequacy of Site Investigation Services.



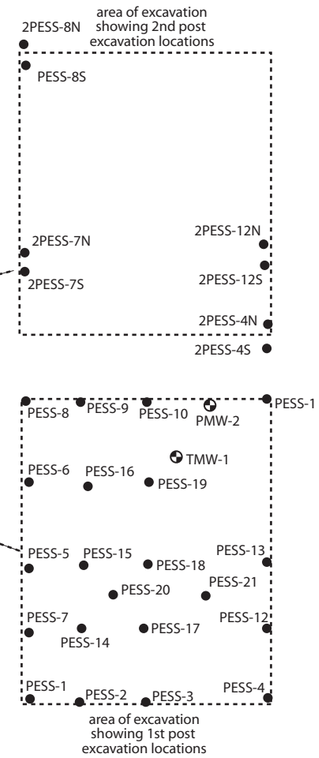


FIGURE 2

All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

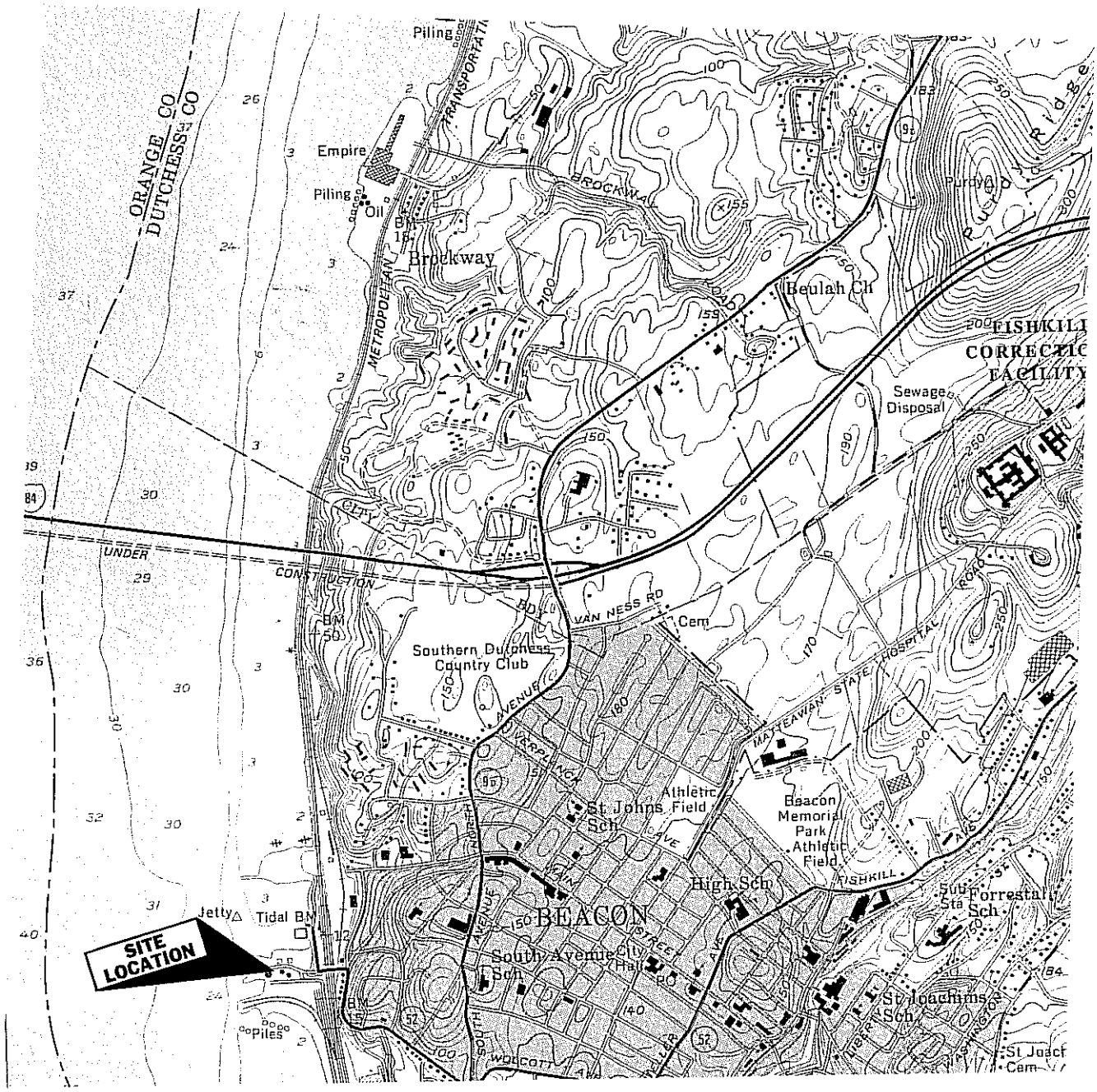
Previous Testing Map

Long Dock Beacon
Red Flynn Drive
City of Beacon
Dutchess County, New York

Legend:

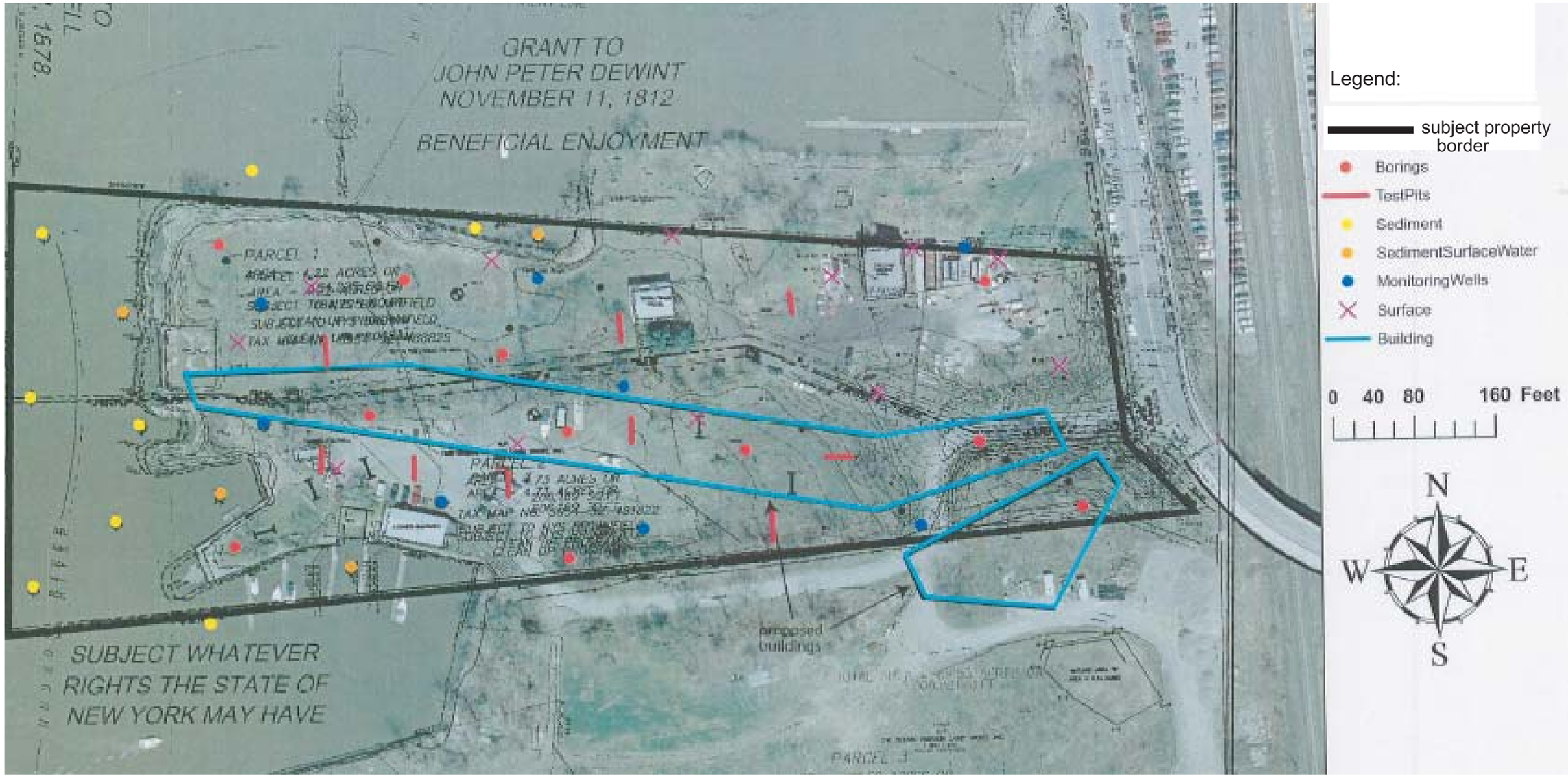
- subject property border
- previous sample location
- monitoring well location
- observation recovery well location
- I Archaeological Test Pits (December 2004)

ESI File: SG96152.50
August 2006
Not to scale
Attachment - FIGURE 2



Source: U.S. Department of the Interior Geological Survey Topographic Map of the Wappingers Falls, NY Quadrangle, dated 1956 (photorevised 1981)

Site Location Map (Scale: 1:24000) Long Dock Beacon Red Flynn Drive, City of Beacon Dutchess County, New York	N	ESI File: SG96152.50 Date: AUGUST 2006 Attachment FIGURE 1



All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

Proposed Fieldwork Map

Long Dock Beacon Red Flynn Drive City of Beacon Dutchess County, New York	ESI Job: SG96152.50	
	Not to Scale	
	August 2006	FIGURE 3
	Ecosystems Strategies, Inc.	

Text Only
Previously Relevant Environmental Reports
Garret Storm Site

1.0 Introduction

1.1 Purpose of the Investigation

This Environmental Audit ("Audit") identifies environmental conditions which might represent a financial liability resulting from or associated with the storage, use, transport or disposal of hazardous or regulated materials on the approximate 6.9-acre (4.5-acres above water and 2.4-acres under water) property known as the former Garret Storm, Inc. Major Oil Storage Facility (MOSF) located off of Ferry Road in the City of Beacon, Dutchess County, New York. A full property description is provided in Section 2.1 below. A map showing the location of the subject property is provided on Page 5 of this Audit.

This Audit also summarizes all investigative work that was performed on the property to continue to document the presence or absence of petroleum hydrocarbons in on-site groundwater. Specifically, the four (4) on-site monitoring wells and the four (4) off-site monitoring wells were sampled to determine current site conditions and whether on-site contaminated groundwater has migrated off-site. Field observations and analytical data are combined with data on hydrologic conditions to provide a framework for further investigative and/or remedial activities in support of the ultimate closure of an "Active" NYSDEC spill file on this property.

1.2 Methodology

This Audit has been prepared in conformance with guidelines set forth by the American Society for Testing and Materials (ASTM) Method E 1527-94. The specific components of this Audit are as follows:

1. Investigation of the subject property's history through the analysis of Sanborn Fire Insurance Company Maps dated 1919, 1927, 1946 and 1962; aerial photographs dated 1936, 1960, 1970, 1980, 1983 and 1990; City and County road maps; Soil Survey of Dutchess County; USGS Topographic Map; City of Beacon Assessor's Office and Building Department records; previous environmental reports; and information provided by the Client.

2. Review of federal and state computer databases and printed records for documentation of potential liabilities relevant to the subject property. Records reviewed and corresponding search radii are consistent with, or exceed, the requirements set forth by the ASTM.

3. Visual inspection of the property conducted January 15, 1997 by Bradley E. Fisher and Jay A. Kaplan of Ecosystems Strategies, Inc.

4. Groundwater sampling of the four (4) on-site and four (4) off-site monitoring wells conducted on January 15, 1997 to determine the presence or absence of on-site contaminated groundwater and possible off-site migration.

1.3 Limitations

This Audit is an assessment of the approximate 6.9-acre (4.5-acres above water and 2.4-acres under water) former Garret Storm, Inc. Major Oil Storage Facility (MOSF) located off of Ferry Road in the City of Beacon, Dutchess County, New York and is not valid for any other property or location. It is a representation of the property analyzed as of the dates that services were provided. This Audit cannot be held accountable for activities or events resulting in environmental liability after the date of the site inspection or historic research.

This Audit is based in part on certain information provided in writing or verbally by federal, state and local officials (including public records) and other parties referenced herein. No attempt was made to independently verify the accuracy or completeness of this information. Unless specifically noted, the findings and conclusions contained herein must be considered not as scientific certainties, but as probabilities based on professional judgement.

This Audit is intended for the sole use of Scenic Hudson Land Trust, Inc. and must be used in its entirety.

2.0 Site Location and Description

2.1 Description of the Subject Property

The subject property is defined as the approximate 6.9-acre (4.5-acres above water and 2.4-acres under water) former Garret Storm, Inc. Major Oil Storage Facility (MOSF) located off of Ferry Road in the City of Beacon, Dutchess County, New York (see the Site Location Map, Page 6). The subject property is comprised of a single tax lot (City of Beacon Tax Identification: Map 5954, Block 32, Lot 481822).

The subject property is an irregularly-shaped parcel which is located off of Ferry Street between the Consolidated Railroad Corp. right of way (ROW) and the Hudson River; a portion of the subject property (approximately 2.4-acres) extends into the Hudson River. The subject property is a former major oil storage facility that ceased operation in 1992; all of the on-site tanks were removed by July 1994. The subject property contains the remnants of this previous usage, including tank cradles and a pump house. The western portion of the subject property is currently used as a marina for the Dutchess Boat Club; a one-story clubhouse and a shed are located on the peninsula. Photographs of the subject property are included in Appendix A of this Audit.

2.1.1 Site Topography

Information on the subject property's topography was obtained from a review of the 1956 (photorevised 1981) United States Geological Survey (USGS) Topographic Map of the Wappingers Falls, New York Quadrangle and observations made during a site inspection of the subject property performed by this office on January 15, 1997. A copy of the USGS topographic map with the subject property outlined is included in Appendix B of this Audit.

According to the USGS map, the portion of the subject property located above water is situated on a generally level plot at approximately 5 to 10 feet above mean sea level (msl). The underwater portion of the subject property has depths ranging from 2 feet below msl along the shoreline to approximately 24 feet below msl along the western border of the subject property (all depths measured during mean low water). According to the USGS map and observations made during the site inspection, there is a gradual upwards slope to the east towards the Ferry Street Bridge.

A review of the above-referenced topographic map did not indicate the presence of soil/gravel mining operations or unusual topographic patterns indicative of excavation or landfilling activities on the subject property. However, it is known that portions of the subject property were formed by landfilling activities. The USGS map also indicates the presence of three large aboveground storage tanks on the subject property.

2.1.2 Site Geology

At least three previous site specific investigations of the subsurface (e.g., test pits, borings and groundwater sampling) are known to have been performed on the subject property. Information obtained during the extension of test pits and borings for subsurface characterization purposes on the subject property indicates that the subsurface is characterized predominantly by fill material consisting of sand, gravel, slag, coal, asphalt and concrete within a matrix of silt to approximately 5 feet below grade. From approximately 5 feet below grade and below, the subsurface is characterized by dark gray/black silt and clay representative of riverine deposits. The actual depth to bedrock (Hudson River Formation) on the subject property cannot be accurately documented at this time.

According to the Dutchess County Soil and Water Conservation District's Soil Survey of Dutchess County, dated September 1991, the subject property is characterized by the Udorthents smoothed soil unit consisting of very deep, somewhat excessively drained to moderately well drained soils that have been altered by cutting and/or filling activities.

2.1.3 Site Hydrogeology

At least three site specific investigations of groundwater flow and depth are known to have been performed on the subject property. Depth to groundwater has been documented on the site to be between 0.63 feet above mean sea level and 1.76 feet above mean sea level (measurements taken in October 1994 and January 1997). Groundwater depth on the site is known to be influenced by tidal fluctuations due to the proximity of the site to the Hudson River.

Direction of groundwater flow is also known to be influenced by tidal flow. The on-site direction of groundwater flow has been documented in a northeasterly direction during times of high tide and in a southwesterly and northwesterly direction during times of low tide.

2.1.4 Surface Hydrology

Based on a review of the USGS map and observations made during the site inspection, a portion of the subject property (approximately 2.4-acres) is located within the Hudson River.

Wetlands

The New York State Department of Environmental Conservation (NYSDEC) Freshwater Wetlands Map and the National Wetlands Inventory Map for the Wappingers Falls, NY Quadrangle were reviewed by this office. According to the NYSDEC Wetlands Map (1973-2nd edition), there are no NYSDEC designated wetlands (areas greater than 12.7 acres in size) present on the subject property. According to the Federal Wetlands Map (1990), there are no federally designated wetlands (areas greater than 1.0 acre in size) located on the subject property. Copies of these wetland maps with the subject property outlined are provided in Appendix C of this Audit.

Flood Zone

Based on a review of the Federal Emergency Management Agency's (FEMA) Flood Boundary and Floodway Map of the City of Beacon, New York (Community Panel #360217 0001), effective date March 1, 1984), at least 90% of the subject property is present within an area of a 100-year flood (Zone A). The remaining portions of the subject property are present within areas of minimal flooding.

2.2 Description of Surrounding Properties

2.2.1 Surrounding Land Uses

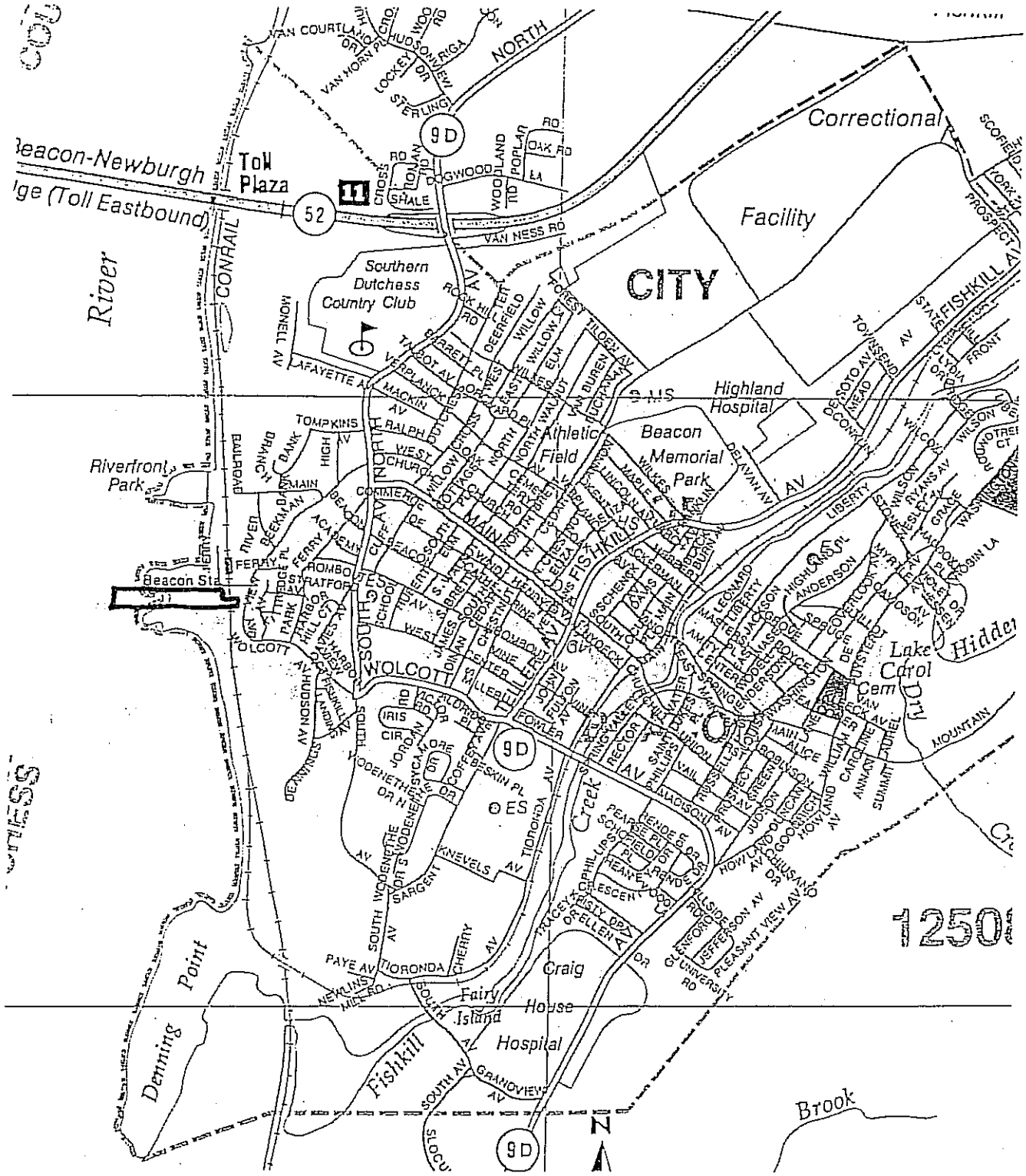
The subject property is located in a waterfront area comprised of former industrial and mixed use properties. A description of the adjoining and nearby properties is shown in Table 1, below.

Table 1: Land Uses in the Vicinity of the Subject Property

Direction	Adjoining Use(s)	Vicinity Use(s)
North	• Beacon Salvage (Scrapyard) • Single-Family Residence	• Abandoned Ferry Slip • Commuter Train Station
East	• Conrail Railroad Corp. ROW	• Multi-Family Residential
South	• Undeveloped Vacant Land • Hudson River	• Hudson River
West	• Hudson River	• Hudson River

2.2.2 Nearby Sensitive Environmental Receptors

According to applicable maps and observations made during the site inspection, there are sensitive environmental receptors in the immediate vicinity of the subject property. The Hudson River, which flows in a southerly direction and adjoins the subject property to the west, is a New York State protected waterway. According to the Federal Wetlands Map, there are two federally-designated wetlands located on the adjoining property to the south. No potable groundwater supply wells were noted on the subject property or on adjoining properties during the site inspection; the subject property and adjoining properties are likely to be connected to the central water system.



MAP FROM HAGSTROM MAP COMPANY, INC. (1990)

Site Location Map

FORMER GARRET-STORM, INC. MOSF SITE
City of Beacon, Dutchess County, New York

N

ESI File Number: SG96152.20

January 1997

3.0 Investigation

3.1 Ownership Records

Ownership Information

The information provided below on current property ownership is gathered from information contained in the City of Beacon Assessor's Office records. This ownership summary does not constitute a title search. Provided below in Table 2 is a summary of the ownership information for Map 5954, Block 32, Lot 481822.

Table 2: Ownership Information (Map 5954, Block 32, Lot 481822)

Parcel ID	Owner	Date
Map 5954, Block 32, Lot 481822	Garret Storm, Inc.	1927

3.2 Site History

The history of the subject property is reconstructed through the review of Sanborn Fire Insurance Company Maps dated 1919, 1927, 1946 and 1962; aerial photographs dated 1936, 1960, 1970, 1980, 1983 and 1990; City of Beacon Assessor's Office and Building Department records; and previous environmental reports.

3.2.1 Sanborn Fire Insurance Company Maps

A summary of the information contained in the Sanborn Fire Insurance Company Maps dated 1919, 1927, 1946 and 1962 is provided below. Copies of these maps with the subject property outlined are provided in Appendix D of this Audit.

1919: The majority of the subject property is shown as being a basin of the Hudson River. Three multi-story structures (one is labeled as a dwelling) are located on the peninsula located on the westernmost portion of the subject property; these structures may be associated with the Long Dock Coal Company which occupies the land north of the subject property. The portion of the property along Ferry Street is depicted as vacant land. No petroleum or chemical bulk storage tanks are shown on the subject property.

Immediately adjoining the subject property to the north on the peninsula are a number of multi-story dwellings, offices, storage buildings and a large coal shed; these structures are likely associated with the Long Dock Coal Company. A transformer house is located on the north side of Ferry Street adjacent to the Long Dock structures. A two and a half-story structure labeled as the National Power Co. also adjoins the subject property to the north. Adjoining the subject property to the south are a number of buildings associated with a railroad yard; railroad tracks labeled as "coal run" extend from the main railroad tracks out onto the peninsula that extends into the Hudson River. A one and a half-story structure labeled as a store house and oil room is located immediately south of the basin. Adjoining the subject property to the east are the New York Central and Hudson River Railroad tracks. Further north of the subject property is the Newburgh Ferry, a boat shop, ferry boat slip, and the N.Y.C.R.R. passenger station. No petroleum or chemical bulk storage tanks are shown on adjoining or immediately surrounding properties.

1927: No significant changes are noted on the subject property; however, the Long Dock Coal Company is now labeled as the Garret-Storm Coal Yard. No petroleum or chemical bulk storage tanks are noted on the subject property.

No significant changes are noted on the adjoining property to the north; however, the Long Dock Coal Company is now labeled as the Garret Storm Coal Yard. The westernmost structure located north of the subject property at the end of the peninsula is now occupied by the Central Hudson Steamboat Company. The adjoining structure previously labeled as the National Power Co. is now labeled as being occupied by the Beacon Soap Co., Inc. No significant changes are noted on the adjoining property to the south; however, the structure previously labeled as an oil room is now only labeled as a storage house. No petroleum or chemical bulk storage tanks are shown on adjoining or immediately surrounding properties.

1946: A portion of the basin that formerly occupied a majority of the subject property has been filled in. Two large aboveground storage tanks, one medium size tank and six smaller tanks have been added to the eastern portion of the subject property; the capacities of these tanks are not indicated but all are labeled as containing fuel oil. The structures previously noted at the end of the peninsula are no longer shown; the land is now depicted as being vacant.

A majority of the previously noted dwellings, offices and sheds are no longer shown on the adjoining property to the north; however, the freight house occupied by the Central Hudson Steamboat Company and a multi-story office are still present as is the transformer house. The Beacon Soap company and the large coal shed are no longer shown on the property to the north. All of the structures previously noted on the peninsula to the south and along the "coal run" have been removed; however, railroad tracks are still shown on the adjoining property to the south as are some structures associated with the main railroad. No significant changes are noted on immediately surrounding properties. No petroleum or chemical bulk storage tanks are noted on adjoining or immediately surrounding properties.

1962: The entire basin is now shown as having been filled in. Two additional tanks are now shown on the subject property (one large tank and one much larger tank); the total number of tanks present on the subject property is now eleven. The product contained in the two additional tanks is not indicated; however, these tanks are likely to contain fuel oil as well. A one-story structure labeled as a boathouse has been constructed on the western portion of the subject property adjacent to the largest of the eleven tanks. The remaining portions of the subject property are depicted as undeveloped land.

The structure adjoining the subject property to the north at the end of the peninsula is no longer labeled as being occupied by the Central Hudson Steamboat Company; the property and the structure are now labeled as a junkyard. The transformer house along the northern side of Ferry Street is no longer shown on the map. A dwelling, a structure used for storage and a warehouse are present along the northern side of Ferry Street directly adjoining the on-site tanks; the locations of the dwelling and the storage house are consistent with the current adjoining structures to the north. A coal yard is indicated as being present at the western end of the Ferry Street bridge. The adjoining property to the south appears to be comprised of vacant land; however, railroad tracks are still located on the property. No petroleum or chemical bulk storage tanks are shown on adjoining or immediately surrounding properties.

3.2.2 Aerial Photographs

The following is a summary of information obtained from aerial photographs dated 1936, 1960, 1970, 1980, 1983 and 1990. The small scale of the aerial photographs made distinguishing details difficult.

1936: The majority of the subject property appears to be actively utilized as a petroleum storage facility. Present on the subject property are at least nine large and small aboveground storage tanks (three circular tanks, five tanks parallel to each other and one tank off-set from the others). A small shed is located adjacent to the parallel tanks; the location of this structure is consistent with the current on-site pump house. The land located east of these tanks is cleared and undeveloped; however, the area immediately surrounding the tanks appears to be disturbed.

Scattered structures are noted on the adjoining property to the north; these structures are generally consistent with the structures noted in the 1927 Sanborn map. Scattered debris is noted on the adjoining property to the north along the peninsula; this area appears to be slightly disturbed. Adjoining the subject property to the south is a rail yard; at least four structures likely associated with this property usage are present in the northwest portion of this property. A ferry slip and a train station are noted further north of the subject property.

1960: The entire basin now appears to have been filled in. A large aboveground storage tank has been added to the on-site petroleum bulk storage facility. The other tanks noted in the previous photograph are still visible and the land surrounding these tanks still appears to be disturbed. A second disturbed area is noted on the western end of the peninsula; the cause of which cannot be determined.

No significant changes are noted on adjoining properties to the north; scattered structures are located along Ferry Street and accumulated debris is present at the end of the peninsula. The adjoining property to the south is now comprised of partially cleared and vegetated land; however, railroad tracks are still shown extending from the main railway in a westerly direction towards the Hudson River. The four structures previously noted south of the subject property are no longer shown; the area appears to be disturbed. East of the subject property are scattered access roads extending from the bridge and the railroad tracks.

1970: No significant changes are noted on the subject property. The property still appears to be utilized as a petroleum bulk storage facility as all of the tanks noted in the previous photograph are visible. The area surrounding the tank complex still appears to be slightly disturbed.

No significant changes are noted on adjoining properties to the south or east or on immediately surrounding properties. No significant areas of disturbance are noted on the adjoining properties.

1980: The subject property is still utilized as a petroleum storage facility. The easternmost medium-size circular tank is no longer shown; however, a new medium-size tank has been added south of the parallel tanks (there are now ten tanks located on the subject property). A structure has been constructed on the western portion of the subject property; the location of this structure is consistent with the current location of the marina clubhouse. No significant areas of disturbance are noted on the subject property; however, the area surrounding the tanks appears to be slightly disturbed.

The adjoining properties to the north still appear to be actively used as junkyards as accumulated debris is visible. The current adjoining residence and the Beacon Salvage structure are present as is a large structure at the westernmost portion of the peninsula. The adjoining property to the south appears to be comprised of vacant and partially disturbed land; the nature of this disturbance cannot be determined. The railroad tracks previously noted on this adjoining property are no longer shown.

1983: Only nine tanks appear to be located on the subject property; one of the medium-size tanks is no longer visible. No changes are noted on the remaining portions of the subject property. No significant areas of disturbance are noted on the subject property.

The land located north of the subject property appears to be more actively used as a junkyard as large quantities of accumulated debris are visible. The adjoining property to the south still appears to be cleared and disturbed; areas of standing water are visible on this property. No significant changes are noted on adjoining properties to the east.

1990: Ten bulk storage tanks now appear to be present on the subject property; the remaining portions of this property remain unchanged. No significant areas of disturbance are noted on the subject property.

The structure noted at the end of the peninsula is no longer present and the large amounts of accumulated debris on this peninsula are no longer as pronounced. The adjoining residence and the Beacon Salvage structure are still present north of the subject property; areas of accumulated debris are still noted around the Beacon Salvage structure. No significant changes are noted on the adjoining property to the south; however, the disturbed areas on this property appear to be less pronounced.

3.2.3 Local Records

Assessor's Office Records

City of Beacon Assessor's Office records were reviewed for the subject property on January 29, 1997. According to information in the file, the on-site marina clubhouse was constructed in approximately 1950 and is connected to a private sewer system.

Building Department Records

A request was made to review the City of Beacon Building Department records for the subject property on January 29, 1997. According to office personnel, no Building Department records are on file for the subject property.

3.2.4 Previous Environmental Investigations

This section of the Audit summarizes environmental services that have been performed on the subject property. Reports detailing these investigative environmental services have been provided to this office by various sources.

Reports Prepared by Empire Soils Investigations, Inc.

A historic investigation and a subsurface investigation involving the extension of test pits on the subject property was performed by Empire Soils Investigations, Inc. ("Empire Soils") in 1987. This subsurface investigation was performed to document the presence or absence of subsurface soil and/or groundwater contamination. Ecosystems Strategies, Inc. personnel were not present during this investigation.

Information contained in the Empire Soils report indicates that the subject property was historically (since 1927) utilized as petroleum storage terminal by Garret-Storm, Inc. and that the facility primarily stored #2 fuel oil (kerosene and other types of fuel oil were stored prior to 1979). Two test pits extended on the subject property identified the subsurface to be comprised entirely of miscellaneous fill materials including demolition and building materials, gravel, ash and wood. Laboratory analyses of collected water samples from site wells extended into the test pits documented the presence of elevated levels of chlorides. A petroleum identification conducted on a sample collected from within the fuel oil storage area detected fuel oil in the groundwater.

Reports Prepared by Cortell Associates

A subsurface soil and groundwater investigation involving the extension of six (6) borings, the completion of three (3) monitoring wells (two of which are still present on the adjoining property: RD-K1 and RD-K2) and the collection of two sediment samples from the Hudson River was performed on the adjoining property to the south by Cortell Associates in May 1989. Ecosystems Strategies, Inc. was not present during this investigation. According to information contained in the report prepared by Cortell Associates, field screening of all soils encountered during the extension of the borings (borings extended to approximately 12 feet below grade) did not indicate the presence of any contaminated soil; however, attached boring logs document the presence of strong petroleum odors from 0 to 4 feet below grade during the extension of one of the monitoring wells (RD-K2).

Laboratory analyses of collected soil and sediment samples documented the presence of low concentrations of the 13 EPA Priority Pollutant Metals; however, elevated levels of lead (up to 1,000 ppm) were detected in three of the soil samples but at shallow depths (less than 5 feet below grade). The soil and sediment samples were also analyzed for PCBs; no PCBs were detected in any of the soil samples. Laboratory analyses of groundwater samples collected from three monitoring wells located on the adjoining property to the south indicated the presence of low levels of metals and petroleum hydrocarbons generally "...at levels not indicative of a major contamination problem."

Reports Prepared by Ecosystems Strategies, Inc.

A subsurface and groundwater investigation was performed on the subject property and adjoining properties by Ecosystems Strategies, Inc. between September 1994 and October 1994. This work is summarized in the Summary Report of Subsurface Investigation and Monitoring Well Installation ("Report") dated November 30, 1994. This investigation involved the extension of eleven (11) borings and the completion of six (6) of the borings as monitoring wells. Upon completion of the monitoring wells, the wells were sampled to document the presence or absence of contaminated groundwater, and the potential for off-site migration of contaminants.

Field observations made during the extension of borings (borings extended to the groundwater interface) within the former fuel distribution area indicated the presence of petroleum odors, instrument indications of contamination, and soil saturated with product. Floating product was also noted on the groundwater encountered in the borings. Laboratory analyses of soil samples collected from the borings documented the presence of elevated levels of hydrocarbons in two of the borings extended within the former fuel storage and distribution area. Petroleum hydrocarbons were detected at three other boring locations outside of the main storage and distribution area but at levels below designated action levels.

Groundwater sampling of the current monitoring wells was conducted by Ecosystems Strategies, Inc. in October 1994. Laboratory analysis documented the presence of elevated levels of petroleum hydrocarbons in two of the seven wells (RD-2 and RD-6); all detected compounds were detected at levels above NYSDEC-designated action levels. No petroleum hydrocarbons were detected in groundwater samples collected from wells located outside of the former fuel storage and distribution area suggesting that the contaminants are not migrating off-site.

Additional investigative work was performed on the subject property by Ecosystems Strategies, Inc. in January 1997. See Section 3.5, below for a complete discussion of investigative work performed as part of this Audit.

3.3 Review of Federal and State Agency Records

3.3.1 Methodology

Federal and state computer databases and printed records were reviewed for documentation of potential liabilities relevant to the subject property. Records reviewed and corresponding search radii are consistent with, or exceed, the requirements set forth by ASTM.

The following databases were searched at their specified radii, consistent with ASTM protocol:

USEPA National Priority List (1.0 mile)
USEPA CERCLIS List (0.5 mile)
USEPA RCRIS Hazardous Waste Treatment, Storage and Disposal Facilities List (1.0 mile)
USEPA RCRIS Hazardous Waste Generators Facilities List (subject/adjoining properties)
USEPA Emergency Response Notification System (subject property)
NYSDEC Registry of Inactive Hazardous Waste Disposal Sites (1.0 mile)
NYSDEC Leaking Underground Storage Tank (LUST) Records (0.25 mile)
NYSDEC Registry of Active and Inactive State Landfills (0.5 mile)
NYSDEC Petroleum Bulk Storage Tank Records (subject/adjoining properties)
NYSDEC Chemical Bulk Storage Tank Records (subject/adjoining properties)

The following databases not required by ASTM protocol were also reviewed:

NYSDEC Major Oil Storage Facilities (0.5 mile)
NYSDEC Petroleum and Chemical Spill Records (0.25 mile)
NYSDEC Resource Recovery Projects in New York State (0.5 mile)
NYSDEC Listing of SPDES Permitted Facilities (subject property)
NYSDOH Basement Radon Readings By County (Dutchess)
NYSDOH Basement Radon Readings By Zip Code (12508)

A complete definition of each database, along with the date of the version used for this Audit investigation, is provided below in Section 5.1 of this Audit.

3.3.2 Findings of Regulatory Records Review

Federal Hazardous Waste Sites

The subject property is not listed with the United States Environmental Protection Agency (USEPA) as a National Priority Listing (NPL) site. According to USEPA records, there are no NPL sites located within 1.0 mile of the subject property.

The subject property is not listed on the USEPA's CERCLIS List. According to USEPA records, there are no CERCLIS sites located within 0.5 mile of the subject property.

State Hazardous Waste Sites

The subject property is not listed with the New York State Department of Environmental Conservation (NYSDEC) as an inactive hazardous waste disposal site. According to NYSDEC records, there are no inactive hazardous waste disposal sites located within 1.0 mile of the subject property.

Hazardous Waste Storage and Disposal

SQG/LQG GENERATORS

The subject property is not identified in USEPA records as the location of a small quantity or large quantity generator (SQG/LQG) of hazardous waste. According to USEPA records, there are no registered generators of hazardous waste on adjoining properties.

TSD FACILITIES

The subject property is not registered with the USEPA as a treatment, storage or disposal (TSD) facility for hazardous waste or materials. According to USEPA records, there are no TSD facilities known to be located within 1.0 mile of the subject property.

Landfills and Solid Waste Disposal Facilities

The subject property is not listed with the NYSDEC as an active or inactive landfill, transfer station or solid waste disposal facility. There are no active or inactive landfills, transfer stations or solid waste disposal facilities located within 0.5 mile of the subject property.

The subject property is not listed with the NYSDEC as a resource recovery facility. There are no resource recovery facilities located within 0.5 mile of the subject property.

Major Oil Storage Facilities

According to NYSDEC records, the subject property (Garret-Storm, Inc.) is registered with the NYSDEC as a major oil storage facility (MOSF) site (MOSF #3-2500). NYSDEC records indicate that the current status of this facility is "temporarily closed" and that no tanks are located on the subject property. Previous investigations of this property indicate that during the operation of this site as a MOSF, nine (9) aboveground storage tanks (ASTs) and two (2) underground storage tanks (USTs) were located on the site: six (6) 20,000-gallon ASTs, two (2) 300,000-gallon ASTs, and one (1) 1,500,000-gallon AST were present on this site. The capacities of the two USTs which were used as spill overflow tanks are unknown. Available information indicates that the major oil storage facility ceased operations in 1992 and that all of the tanks were removed by July 1994. No documentation of the removal of any of the tanks from the subject property could be provided to this office for review.

Petroleum contaminated soil and groundwater is known to be present on the former Garret-Storm MOSF site (see Section 3.2.4, above and the State Chemical and Petroleum Spills Section, below).

Petroleum Bulk Storage

SUBJECT PROPERTY

According to NYSDEC records, the subject property is not registered as a petroleum bulk storage facility; however, the subject property is registered with the NYSDEC as a major oil storage facility (see above). No fill ports or vent pipes likely serving underground petroleum bulk storage tanks were noted on the subject property during the site inspection. However, observations made during the site inspection indicate the presence of an active 275-gallon aboveground petroleum bulk storage tanks (AST) and three (3) abandoned 275-gallon ASTs on the subject property.

See Section 3.4.3, below for a more complete discussion of all identified tanks. See the Selected Site Features Map, Page 20 of this Audit for the approximate locations of all identified tanks.

Petroleum Bulk Storage Regulations

NYSDEC Petroleum Bulk Storage Regulations 6 NYCRR Parts 612-614 require that all petroleum storage facilities with a combined storage capacity greater than 1,100 gallons register all on-site tanks with the NYSDEC. The known aboveground petroleum bulk storage capacity on the subject property is currently 275 gallons; therefore, the subject property is exempt from 6 NYCRR, Parts 612-614.

ADJOINING PROPERTIES

According to NYSDEC records, there are no petroleum bulk storage facilities located on adjoining properties. Observations made during the site inspection indicated the presence of three (3) approximate 6,000-gallon former USTs, one (1) approximate 10,000-gallon former UST and one (1) abandoned 275-gallon AST located on the adjoining property to the south. No historic documentation of the removal of any underground storage tanks on this adjoining property is known to exist.

Chemical Bulk Storage

No chemical bulk storage tanks are registered with the NYSDEC for the subject property or for any adjoining properties and no chemical bulk storage tanks or evidence of underground chemical bulk storage tanks (e.g., fill ports, vent pipes) were noted on the subject property during the site inspection.

Federal Chemical and Petroleum Spills

There are currently no chemical or petroleum spills on record with the USEPA's Emergency Response Notification System (ERNS) database for the subject property.

State Chemical and Petroleum Spills

There are currently two (2) petroleum spills known to have occurred on the subject property since 1986 (records updated through June 1996); a third spill of which no formal documentation exists is also known to have occurred on the subject property. Provided below is a description of all of these adjoining spill events.

Garret-Storm Site

According to the November 1994 Report prepared by Ecosystems Strategies, Inc., a spill involving the release of an unknown quantity of fuel oil onto the ground was reported to the Coast Guard in 1981 or 1982. The spill occurred when a valve was left open for an undetermined length of time allowing fuel oil to be discharged into the diked fuel storage area. The floating product was pumped back into the filter tank; however, an undetermined amount was not recovered.

Spill #8900064 occurred on April 4, 1989 when an unspecified quantity of an unknown petroleum product was released as a result of an unknown cause; groundwater is indicated as having been affected by this release. NYSDEC records indicate that possible petroleum contaminated soil and groundwater was encountered during the installation of monitoring wells. This spill event is listed with a "Closure Date" of June 10, 1989 indicating that investigative and/or remedial actions have been completed to the satisfaction of the NYSDEC.

Possibly related to spill #8900064 is information in NYSDEC records which indicates that a "slight fuel odor and a sheen" was noted during the extension of monitoring wells and that analysis of groundwater samples collected from an unspecified well (i.e., well either on subject property or on adjoining property to the south) detected petroleum hydrocarbons.

Spill #9212560 occurred on February 4, 1993 when an unspecified quantity of contaminated soil was encountered during the extension of test pits on the subject property; groundwater is indicated as having been affected by this release. This release is listed as "Active" with the NYSDEC indicating that additional information and/or remedial action has been requested by the NYSDEC.

Spills Within 0.25 Mile of Subject Property

A review of the NYSDEC spill records further indicates that there are two (2) other spill events which are known to have occurred within 0.25 mile of the subject property since 1986. A summary of the available information for each of the adjoining and vicinity spill events is provided in Table 3, below (Table does not include information on spill reported to the Coast Guard).

Table 3: Recorded Chemical and Petroleum Spills Within 0.25 Mile of Subject Property
(Spills that have occurred on the subject property are shown in **bold**)

Spill Number	Spill Date	Address of Spill (Location)	Product	Quantity (gallons)	Cause	Closure Date[2]
8707165	Unspecified	Dennings Avenue (Sewage Treatment Plant)	Unspecified	0[1]	Tank Test Failure	Unspecified
8900064	4/4/89	Garret-Storm (Ferry Street)	Unknown Petroleum Product	0[1]	Unknown	6/10/89
9212560	2/4/93	Garret-Storm (Ferry Street)	#2 Fuel Oil	0[1]	Unknown	Active
9403880	6/19/94	16 Main Street (Beacon Oil)	#2 Fuel Oil	10	Equipment Failure	6/27/94

Notes: 1. "0" gallons denotes that no product was reported as being spilled or that the quantity spilled could not be determined by NYSDEC.
2. Spills provided with a "Closure" date are generally events wherein investigative and/or remedial actions have been completed to the satisfaction of the NYSDEC. Files which are not provided with "Closure" dates are generally spills wherein additional information or action has been requested by the NYSDEC.

Air Discharges

No air discharge permits are known to have been issued by the NYSDEC for the subject property and no operations likely to require an air discharge permit were noted on the subject property during the site inspection.

Wastewater Discharges

No NYSDEC permits for wastewater discharges are known to exist for the subject property and no current operations likely to require a wastewater discharge permit were noted on the subject property during the site inspection. According to available information, the on-site marina clubhouse is connected to a private sewer system; the location of this system could not be determined.

Groundwater Usage

According to available information, no on-site potable wells or uses of groundwater are known to exist on the subject property. According to available information, the on-site marina clubhouse is connected to the central water system. Four (4) monitoring wells are located on the subject property; these wells were installed in September 1994 by Ecosystems Strategies, Inc. and designated subcontractors. Sampling of these wells and wells located on adjoining properties was performed by Ecosystems Strategies, Inc. in October 1994 and January 1997 (see Section 3.2.4, above regarding testing completed in October 1994 and Section 3.5, below regarding sampling performed in January 1997).

Radon

Information on radon levels in the vicinity of the subject property was obtained from New York State Department of Health (NYSDOH) documents. No regulatory standards for radon levels currently exist in New York State. The USEPA has established a guidance value (the level where mitigation measures may be appropriate) for radon of 4.0 or greater picoCuries/liter.

According to NYSDOH documents, the average radon level in Dutchess County is 6.7 picoCuries/liter (pCi/liter). This average level is based on radon sampling done in 2118 homes and has a standard deviation of 7.0 pCi/liter. NYSDOH documents further reveal that the average radon level for the subject property's zip code (12508) is 5.4 pCi/liter. This average level is based on radon sampling done in 26 homes and has a standard deviation of 5.8 pCi/liter.

This average county and zip code radon levels suggest the potential presence of elevated radon levels on the subject property; however, no definitive statement can be made regarding on-site radon levels without the placement of radon sampling canisters in the on-site structure.

3.4 Site Inspection

3.4.1 Protocol

A site inspection was conducted on January 15, 1997 in order to address any potential concerns raised during the historical research and regulatory review (above, Sections 3.1 through 3.3) and to identify any additional indications of contamination from the use, storage, or disposal of hazardous or regulated materials. To the extent possible, existing vegetation and topography were examined for any obvious indications of contamination (e.g., vegetative stress, soil stains, or the physical presence of contaminants) or any other unusual patterns.

Section 3.4.2 describes the physical characteristics of the subject property. Section 3.4.3 is divided into topics on specific environmental conditions or concerns, actual or potential, noted on the subject property during the site inspections. Section 3.4.4 describes the physical characteristics of adjoining properties as they concern the potential or actual environmental condition of the subject property.

Identified concerns and/or areas discussed specifically in this Section of this Audit are shown on the Selected Site Features Map, Page 20. Photographs of the subject property are included in Appendix A of this Audit.

3.4.2 Physical Characteristics of Subject Property

3.4.2.1 Property

The subject property is an irregularly-shaped parcel which is located off of Ferry Street between the Consolidated Railroad Corp. right of way (ROW) and the Hudson River; a portion of the subject property (approximately 2.4-acres) extends into the Hudson River. The subject property is a former major oil storage facility that ceased operation in 1992; all of the on-site tanks were removed by July 1994. The subject property contains the remnants of this previous usage including tank cradles and a pump house. The western portion of the subject property is currently used as a marina for the Dutchess Boat Club; a one-story clubhouse and a storage shed are located on the peninsula (see Section 3.4.2.2, below). The central portion of the subject property is comprised of undeveloped vacant land that has been disturbed by the dumping of concrete and dirt.

3.4.2.2 Structures

Present on the western portion of the subject property along the basin of the Hudson River is a one-story clubhouse used by the Dutchess Boat Club. This structure is a wood-frame structure constructed on a concrete block foundation. At the time of the site inspection, the exterior of this structure was being renovated. Representative interior areas of this structure that could be inspected were generally in good condition with wood or tiled floors and newly painted walls. An approximate ten by thirty feet wood shed is located north of the clubhouse; the interior of this shed could not be inspected, however, it is believed to be used for storage. See the Selected Site Features Map on Page 20 of this Audit for the approximate locations of these structures.

3.4.3 Specific On-Site Environmental Conditions

Debris Areas

Scattered debris consisting of household trash, metal, abandoned empty tanks, and wash-up materials from the River was noted on the northwestern peninsula of the subject property; wash-up materials were also noted on the southwestern peninsula. The majority of the central portion of the subject property in the vicinity of the former fuel storage area has been disturbed by the dumping of broken up concrete and dirt (presumably dumped from off-site sources); this dumping has created irregular topography (i.e., undulating mounds, berms). Fragments of metal and metal piping are also noted scattered throughout the subject property.

At least five (5) abandoned vehicles including two former petroleum tanker trucks are located along the eastern border of the subject property; these vehicles may actually be located on an adjoining property. At least three (3) other abandoned vehicles including a petroleum tanker truck were noted on the northwestern peninsula; however, these trucks may be located on the adjoining property to the north. An inspection of the ground beneath these vehicles could not be performed due to the presence of associated debris and unsafe conditions. See the Selected Site Features Map, Page 20 of this Audit for the approximate locations of identified areas of debris.

Petroleum Bulk Storage

The subject property is known to have been historically utilized as a petroleum bulk storage and distribution center from at least 1927 until 1992; all of the tanks were reportedly removed by July 1994. No documentation of the removal of any of the tanks from the subject property could be provided to this office for review. Specifically, nine (9) aboveground storage tanks with a combined storage capacity of 2,220,000 gallons and two (2) underground storage tanks used for spill overflow were located on the subject property during the operation as a major oil storage facility. No fill ports or vent pipes likely serving underground petroleum bulk storage tanks were noted on the subject property during the site inspection.

Observations made during the site inspection indicate that six (6) tank cradles are still located on the subject property as is the pump house. The surface soils underlying these tank cradles and surrounding the pump house are heavily stained with petroleum and a noticeable petroleum odor was noted in the area. Borings extended in the immediate vicinity of the tank cradles in 1994 identified the presence of contaminated soil extending to approximately four feet below grade and laboratory analyses of soil samples documented elevated levels of petroleum hydrocarbons in the vicinity of monitoring wells RD-2 and RD-6 (see Section 3.2.4, above).

An active 275-gallon aboveground storage tank (AST) used to store fuel oil was noted adjacent to the southern side of the on-site clubhouse. Two (2) abandoned ASTs were noted adjacent to the former fuel storage area and monitoring well RD-4 (see the Selected Site Features Map, Page 20). These tanks were labeled as having contained fuel oil and one of the tanks appeared to be partially filled with some type product. No strong petroleum odor was emanating from the tanks and the soil in the vicinity of the tanks did not appear to be noticeably stained. A third abandoned 275-gallon tank was noted on the western peninsula of the subject property; this tank and the ground immediately beneath the tank could not be inspected.

Chemical Storage

No chemical bulk storage tanks or fill ports or vent pipes likely serving underground storage tanks were noted on the subject property during the site inspection.

Asbestos-Containing Materials

Asbestos containing materials (ACMs) are those materials which are known to contain over 1% of any type of asbestos. No material suspected of containing asbestos was noted on the subject property during the site inspection. Due to the likely date of construction of the on-site clubhouse (1950), asbestos-containing materials (e.g., roofing materials, floor tiles, wallboard) may have been used during initial construction and/or during subsequent maintenance work.

Lead-Based Paint

The presence or absence of lead-based paint can only be determined through the material analysis of paint samples. The manufacture of lead-based paint is known to have ceased in 1978. The presence of deteriorated paint is indicative of a potential health risk in that paint dust and chips could be inhaled and/or ingested.

The likely date of construction of the on-site clubhouse (1950) indicates that lead-based paint may have been used during initial construction and/or during subsequent maintenance work. Paint suspected of containing lead was noted on exterior trim surfaces of the on-site clubhouse; these areas were generally in poor condition as paint was flaking from the surface. Interior painted portions of the on-site structure were generally in good condition.

Water Supply and Sewage Disposal

No on-site potable water supply wells are known to be located on the subject property and no such wells were noted during the site inspection. According to available information, the on-site marina clubhouse is connected to the central water system and a private sewer system; the location of this sewer system could not be determined during the site inspection.

Four (4) monitoring wells are located on the subject property; these wells were installed in September 1994 by Ecosystems Strategies, Inc. and designated subcontractors. Sampling of these wells and wells located on adjoining properties was performed by Ecosystems Strategies, Inc. in October 1994 and January 1997 (see Section 3.5, below).

Topographic Irregularities

The majority of the central portion of the subject property in the vicinity of the former fuel storage area has been disturbed by the dumping of broken-up concrete and dirt (brought onto the site from off-site sources, according to a representative of the boat club); this dumping has created irregular topography (i.e., undulating mounds, berms).

Surface Waters

The surface waters of the Hudson River could not be inspected by this office at the time of the site inspection as the waters along the banks were frozen.

Vegetative Features

Petroleum contaminated subsurface soil is known present on the subject property. Heavily stained soil was noted in the vicinity of the tank cradles and the pump house; this area is generally devoid of vegetation.

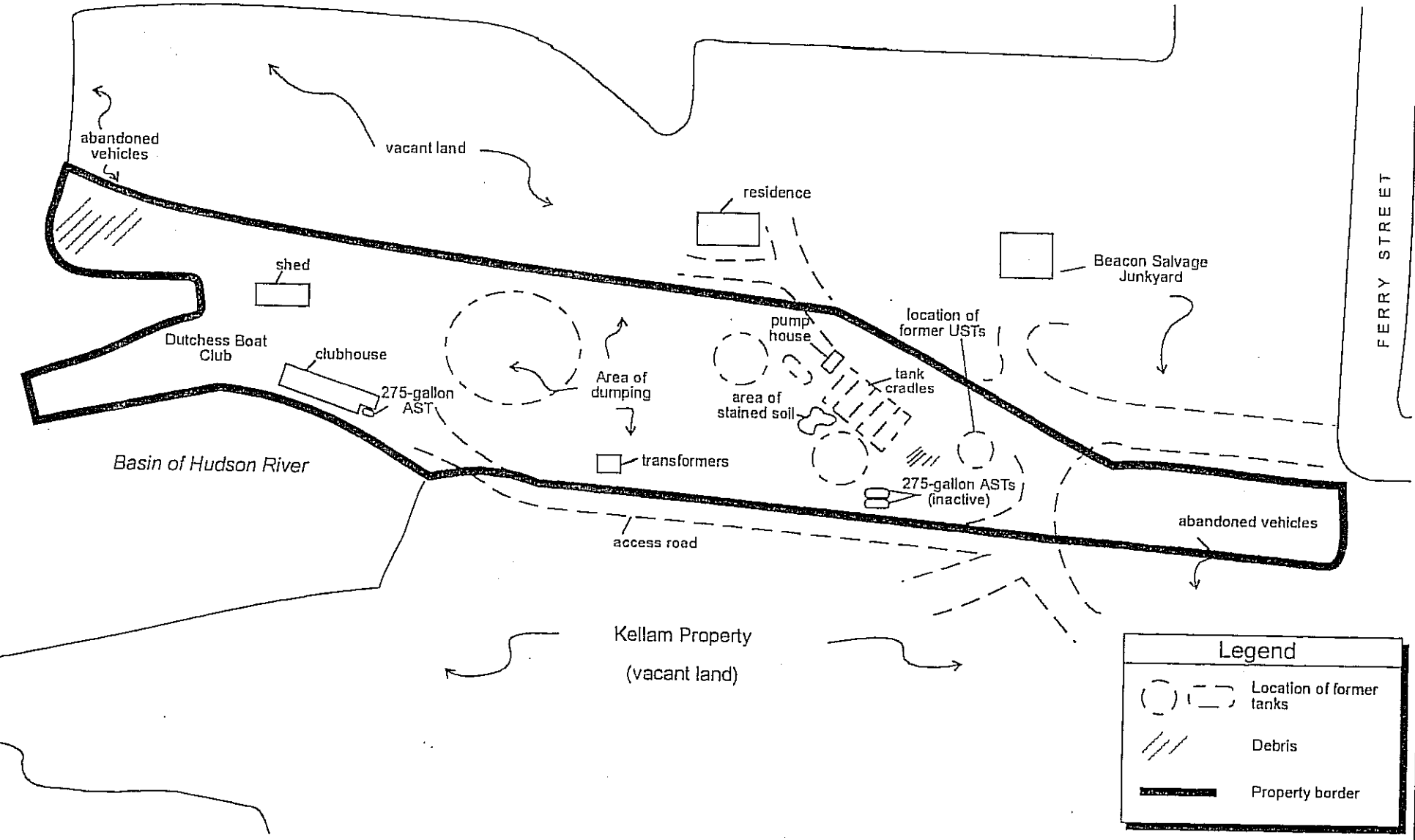
PCBs

An inspection for the presence of equipment likely to contain PCBs was conducted by this office during the site inspection. PCBs were widely used in equipment such as transformers, capacitors and hydraulic equipment until 1979 when the USEPA banned their use in this capacity.

Two (2) inactive pole-mounted transformers were noted along the southern border of the subject property in the vicinity of monitoring well RD-3. No staining was noted on or around the base of these transformers during the site inspection.

3.4.4 Environmental Conditions on Adjoining Properties

No conditions considered by this office to pose a threat to the environmental integrity of the subject property were noted on adjoining properties during the site inspection. Observations made during the site inspection indicated the presence of three (3) approximate 6,000-gallon former USTs, one (1) approximate 10,000-gallon former UST and one (1) abandoned 275-gallon AST located on the adjoining property to the south. No historic documentation of the removal of any underground storage tanks on this adjoining property is known to exist.



Note: Western property border in Hudson River

Selected Site Features Map

Former Garret - Storm, Inc. MOSF Site
City of Beacon, Dutchess County, New York

N

ESI File Number: SG96152.20
January 1997
Not to Scale

3.5 Field Work

On January 15, 1997 Ecosystems Strategies, Inc. sampled the four (4) on-site monitoring wells and the four (4) off-site monitoring wells to determine the continued presence or absence of on-site groundwater contamination and whether or not these contaminants have migrated off-site. Field observations and analytical data are combined with data on hydrologic conditions to provide a framework for further investigative and/or remedial activities in support of the ultimate closure of the "Active" spill file with the NYSDEC.

Previous investigations identified the known presence of contaminated subsurface soil and groundwater on the subject property as a result of the historic on-site handling, storage and dispensing of fuel oil during the operation of the subject property as a major oil storage facility. Three spills are known to have occurred on the subject property, two of which are known to have affected groundwater.

3.5.1 Summary of Services

The following services were conducted by Ecosystems Strategies, Inc. personnel:

- Conducted field screening and completed depth to groundwater measurements at each of the eight (8) monitoring wells;
- Collected a groundwater sample from each of the monitoring wells for laboratory analysis of poly aromatic hydrocarbons (PAHs) using USEPA Method 8270. Two (2) of the samples were also analyzed for volatile organic compounds (VOCs) using USEPA Method 8240; and
- Suggested (if appropriate) further investigative and/or remedial actions regarding the presence or absence groundwater contamination.

3.5.2 Field Work Methodology

Field screening with a Thermal Instruments 580B photoionization detector (PID) could not be performed due to the cold temperatures at the time of sampling.

Prior to sampling, depth to groundwater measurements were collected at each of the eight (8) monitoring well locations with a Solinst water level meter. The depth to groundwater for each monitoring well was recorded by Ecosystems Strategies, Inc. personnel on field data sheets; groundwater measurements as documented in January 1996 and the groundwater depth measurements from the previous October 1994 data collection days are provided in Table 4 on Page 24.

Groundwater sample collection from the on and off-site monitoring wells proceeded in the following order: RD-3, RD-7, RD-4, RD-9, RD-K1, RD-K2, RD-6 and RD-2. The specific locations of the monitoring wells are shown on the Direction of Groundwater Flow Map on Page 25 of this Audit.

Prior to sample collection, approximately three well volumes (approximately 5 gallons) were purged from each monitoring well with a mechanical pump decontaminated between wells to avoid cross-contamination; the specific amount purged depended on the total depth of the well and the volume of water in the well column. Purgewater was screened for any visual or olfactory indications of petroleum contamination (see Section 3.5.3, below).

At each monitoring well location, one (1) groundwater sample was collected using individual disposable bailors for laboratory analysis of the poly aromatic hydrocarbons (PAHs) using USEPA Method 8270. Two (2) of the samples (RD-2 and RD-6) were also analyzed for volatile organic compounds (VOCs) using USEPA Method 8240.

All groundwater samples were collected in a manner consistent with USEPA and NYSDEC sample collection protocols. All sample collection equipment was properly decontaminated prior to the initiation of sampling and between sample locations to avoid cross contamination. All samples were collected in sample vials sterilized at the laboratory; each sample vial was provided by the laboratory with hydrochloric acid for sample preservation. After sample collection, the jars were placed in a cool (4° C), dry place prior to their transport to the laboratory.

At the completion of sampling, all groundwater samples were transported via overnight delivery to Matrix Analytical, Inc., a New York State Department of Health approved laboratory (ELAP Certification Number: 11116). Appropriate chain of custody procedures were followed. Complete laboratory results for the groundwater samples are provided in Appendix E of this Audit.

3.5.3 Field Work Observations

Purgewater exhibiting a petroleum odor (the intensity of the odor varied) was encountered at each monitoring well location except RD-9 and RD-K2. The strongest odors were observed in the purgewater from monitoring wells RD-2 and RD-6 (wells located in immediate vicinity of former fuel storage and distribution area). A sheen was also noted on the purgewater from RD-2 and RD-6. These initial observations are consistent with the previous October 1994 sampling round which identified strong petroleum odors and sheens from the monitoring wells located within the former fuel storage and distribution area.

3.5.4 Action Levels

The term "action level," as defined in this Audit, refers to the concentration of a particular contaminant above which remedial actions are considered more likely. The overall objective of setting action levels is to assess the integrity of on-site groundwater relative to conditions which are likely to present a threat to public health, given the existing and probable future uses of the site. Groundwater with contaminant levels exceeding these action levels is considered more likely to warrant remediation. No independent risk assessment was performed as part of this investigation.

The action levels identified in this Audit for groundwater are determined based on the NYSDEC Spill Technology and Remediation Series (STARS) Memo #1: Petroleum-Contaminated Soil Guidance Policy (August 1992). In accordance with standards set forth in the above-referenced document, all compounds referenced below are presented with their respective action levels.

3.5.5 Analytical Results

Laboratory analyses detected petroleum hydrocarbons in only two (2) of the eight (8) monitoring wells: 10 parts per billion (ppb) of 1-methyl napthalene in RD-6 and 5 ppb of 1-methyl napthalene in RD-2. Both of these detected levels are either at or below the NYSDEC-designated action level for 1-methyl napthalene (10 ppb). The remaining PAHs analyzed for were present at non-detectable levels in RD-2 and RD-6; detection limits were either at or below NYSDEC-designated action levels for specific compounds. No PAHs were detected in any of the other eight (8) monitoring wells; detection limits were either at or below NYSDEC-designated action levels for specific compounds.

The laboratory data are consistent with field observations which identified petroleum odors and sheens on the purgewater collected from RD-2 and RD-6. However, the laboratory data appear to be inconsistent with field observations in that odors were also noted in the other on-site wells (no elevated levels of petroleum hydrocarbons were detected in these wells). The absence of detectable concentrations at the other two monitoring wells within the former oil storage and distribution area suggests that the petroleum hydrocarbons may not be fully dissolved in the groundwater.

Current laboratory data are consistent with the previous October 1994 data in that elevated levels of petroleum hydrocarbons were only detected in the wells in the immediate vicinity of the fuel storage and distribution area (RD-2 and RD-6); however, the detected levels in January 1997 no longer exceed designated action levels. Specifically, laboratory analysis of the October 1994 samples detected the presence of elevated levels of napthalene (120 ppb), 1-methyl napthalene (380 ppb), and 2-methyl napthalene (480 ppb) in RD-2 and 2-methyl napthalene (120 ppb) in RD-6. Only 10 ppb and 5 ppb of 1-methyl napthalene were detected in RD-2 and RD-6, respectively during the January 1997 sampling; the other two previously detected compounds were not detected in January 1997.

The continued absence of detectable concentrations of PAHs in any of the off-site wells including RD-K1 and RD-K2 located on the adjoining property to the south suggests that any contaminated groundwater that may have previously been present on the subject property has not migrated off-site.

3.5.6 Site Hydrology

3.5.6.1 Mean Groundwater Elevations

To date, groundwater elevation data have been collected on the site on three separate dates to provide information on groundwater elevations and flow patterns. On-site groundwater is known to be influenced by tidal fluctuations due to the proximity of the subject property to the Hudson River; therefore, different elevations and flow patterns are expected as fluctuations in the tide occur.

Previous groundwater elevations were collected in the afternoon of October 3, 1994 (high tide) and the morning of October 4, 1994 (low tide). The groundwater measurements collected on January 15, 1997 were collected during the general time of low tide. Groundwater elevation data from these measurements and the January 15, 1997 measurements are summarized in Table 4, below (Table includes all on-site and off-site well data). To date, data indicate that groundwater is present on the site between 2.96 feet below grade and 6.36 feet below grade. Groundwater elevation was on average approximately 0.22 feet higher in October 1994 than in January 1997 (both sets of measurements collected during times of low tide).

Table 4: Summary of Water Level Data
(All elevations are in feet above mean sea level)

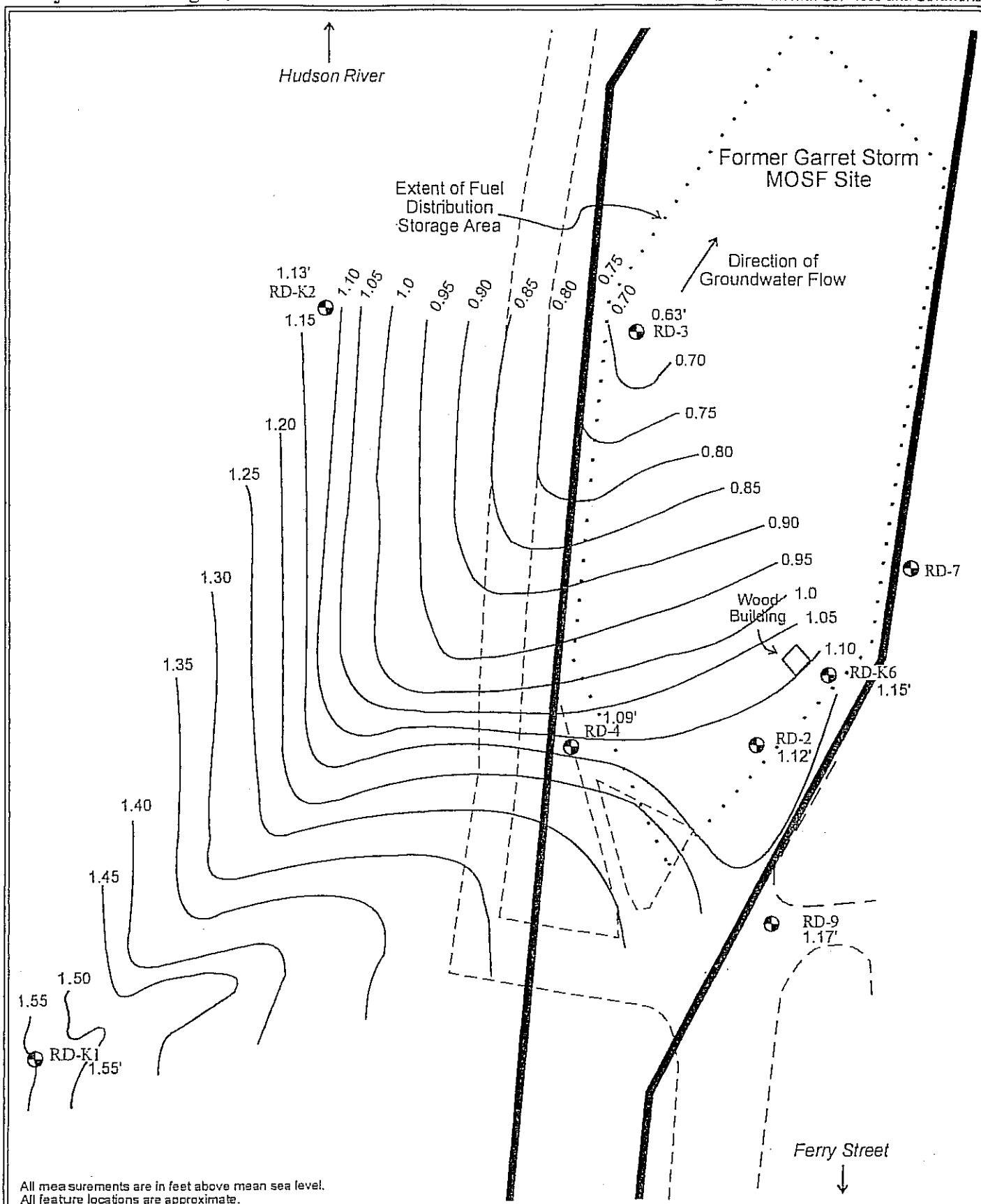
Location	Top of Casing Elevation[1]	Groundwater Level Elevations		
		October 3, 1994[2]	October 4, 1994[3]	January 15, 1997[4]
RD-2	7.48	1.70	1.50	1.12
RD-3	4.72	1.76	1.48	0.63
RD-4	5.18	1.70	1.50	1.09
RD-6	6.82	1.72	1.49	1.15
RD-7	8.70	1.96	1.48	1.41
RD-9	12.88	1.67	1.56	1.17
RD-K1	6.89	1.99	1.89	1.55
RD-K2	6.94	1.74	1.37	1.13

Notes:
1. Based on survey provided by Hayward and Pakan Associates
2. Depth to water measurements collected between 2:00 pm and 3:00 pm
3. Depth to water measurements collected between 9:00 am and 10:00 am
4. Depth to water measurements collected between 10:00 am and 11:30 am

3.5.6.2 Direction of Groundwater Flow Data

Direction of groundwater flow is graphically represented on the Direction of Groundwater Flow Map for data collected on January 15, 1997 (see Page 25 of this Audit). Direction of Groundwater Flow Maps for previous data sets (October 3, 1994 and October 4, 1994) are provided in Appendix F of this Audit; the same base map was used for each Direction of Groundwater Flow Map.

January 1997 data suggest that groundwater is moving in a northwesterly direction. Data collected to date indicate that groundwater is moving in a northeasterly direction during times of rising tides and in a southwesterly or northwesterly direction during times of low tides. These directions are varied due to the presence of fill material in the subsurface and the tidal fluctuations.



All measurements are in feet above mean sea level.
All feature locations are approximate.

Direction of Groundwater Flow Map

Former Garret Storm, Inc. MOSF Site
City of Beacon, Dutchess County, New York

N

ESI File Number: SG96152.20
January 1997
Scale: 1" = 70" (approximately)
Page 25

4.0 Conclusions and Recommendations

This Audit has been performed on the approximate 6.9-acre (4.5-acres above water and 2.4-acres under water) former Garret Storm, Inc. Major Oil Storage Facility (MOSF) located off of Ferry Road in the City of Beacon, Dutchess County, New York as fully described in Section 2.0, above. Based on the work performed by this office to date, the following Conclusions and Recommendations (in bold) are made regarding the subject property. Cost estimates for proposed recommendations are provided in *italics*.

Historic Investigation

1. Historic information obtained from a review of historic maps, photographs, and previous reports identified historic environmental conditions which may represent a financial liability. The following is a summary of these identified environmental concerns:

   Historic Maps and Documents

   A review of Sanborn Fire Insurance Company Maps, aerial photographs and previous reports indicates that the subject property has historically (since at least 1927 until 1992) been utilized as a major oil storage facility and distribution center operated by Garret Storm, Inc.; all of the tanks were reportedly removed by July 1994. No documentation of the removal of any of the tanks from the subject property could be provided to this office for review. Specifically, nine (9) aboveground storage tanks with a combined storage capacity of 2,220,000 gallons and two (2) underground storage tanks used for spill overflow were located on the subject property during the operation as a major oil storage facility.

   See recommendations in Paragraphs #4 and #20, below.

   Available information indicates that a majority of the subject property has been reclaimed over time by filling activities including the recent deposition of demolition and building materials (see Paragraph #11, below).

   See recommendations in Paragraph #11, below.

   Previous Environmental Investigations

   Numerous previous investigations of the subsurface have been conducted on the subject property since at least 1987. These investigations have generally involved the extension of borings and test pits and the completion and sampling of on-site monitoring wells to determine whether the subject property has been impacted by historic site usage including the on-site storage, handling and distribution of petroleum.

   A subsurface and groundwater investigation performed on the subject property and adjoining properties by Ecosystems Strategies, Inc. between September 1994 and October 1994 documented the presence of petroleum odors, instrument indications of contamination, and soil saturated with product in borings extended within the former fuel storage and distribution area. Floating product was also noted on the groundwater encountered in the borings.

   Laboratory analyses of soil samples collected from the borings documented the presence of elevated levels of hydrocarbons in two of the borings extended within the former fuel storage and distribution area. Petroleum hydrocarbons were also detected at three other boring locations outside of the main storage and distribution area but at levels below designated action levels.

Groundwater sampling of the current monitoring wells was conducted by Ecosystems Strategies, Inc. in October 1994. Laboratory analysis documented the presence of elevated levels of petroleum hydrocarbons in two of the wells (RD-2 and RD-6); all detected compounds were detected at levels above NYSDEC-designated action levels. No petroleum hydrocarbons were detected in groundwater samples collected from wells located outside of the former fuel storage and distribution area suggesting that the contaminants are not migrating off-site.

Ecosystems Strategies, Inc. sampled the on-site and adjoining monitoring wells on January 15, 1997 to document the continued presence or absence of groundwater contamination and determine whether off-site migration of contaminants is occurring (see Paragraph #20, below).

See recommendation in Paragraph #20, below.

2. According to observations made during the site inspection and a review of NYSDEC and Federal Wetlands Maps for the subject property, there no NYSDEC or federally-designated wetlands located on the subject property. However, almost the entirety of the subject property is located within a designated 100-year flood zone. Any construction within federally designated wetland areas, their vicinity, or within the flood zone may require state, federal and/or local permits.

   No further investigation is recommended at this time. Any construction on the subject property should be conducted in accordance with applicable wetland and flood zone regulations.

Review of Regulatory Agency Records

3. A review of state, county and federal regulatory agency databases for the subject property indicates that the subject property was not identified on any of the databases for hazardous waste sites; hazardous and solid waste storage, generation and/or disposal sites; inactive or active landfills; chemical bulk storage; or air/wastewater discharges.

   No further investigation is recommended.

4. According to NYSDEC records, the subject property (Garret Storm, Inc.) is registered with the NYSDEC as a major oil storage facility (MOSF) site (#3-2500). NYSDEC records indicate that the current status of this facility is "temporarily closed" and that no tanks are located on the subject property. Previous investigations of this property indicate that during the operation of this site as a MOSF, nine (9) aboveground storage tanks (ASTs) with a combined storage capacity of 2,220,000 gallons and two (2) underground storage tanks (USTs) were located on the site. Available information indicates that the major oil storage facility ceased operations in 1992 and that all of the tanks were removed by July 1994. No documentation of the removal of any of the tanks from the subject property could be provided to this office for review.

   It is recommended that the NYSDEC be contacted to revise the current status of the Garret Storm, Inc. site to "Closed". It is further recommended that the property owner provide documentation on the closure and/or removal of the two on-site USTs.

5. A review of NYSDEC records indicates that there are two (2) spill events which are known to have occurred on the adjoining Garret-Storm property; a third spill of which no formal documentation exists is also known to have occurred on this adjoining site. Groundwater is indicated as having been affected by at least two of these releases. One of these spill events (#9212560) is currently listed as "Active" with the NYSDEC.

The direction of groundwater flow on the subject property is known to fluctuate due to tidal influences; therefore, migration of product onto adjoining properties is possible. However, groundwater sampling of the off-site monitoring wells in October 1994 and January 1997 did not document the presence of concentrations of petroleum hydrocarbons. Based on information and data obtained to date, it appears as if the environmental integrity of the adjoining properties has not been affected by any of the known releases on the subject property.

See recommendations in Paragraphs #12 and #20, below.

6. No petroleum bulk storage tanks are registered with the NYSDEC for the subject property and no fill ports or vent pipes likely serving underground petroleum bulk storage tanks (USTs) were noted on the subject property. No documentation of the removal of any USTs from the subject property is known to exist. Observations made during the site inspection indicate the presence of an active 275-gallon aboveground storage tank (AST) used to store fuel oil located adjacent to the southern side of the on-site clubhouse.

   NYSDEC Petroleum Bulk Storage Regulations 6 NYCRR Parts 612-614 require that all petroleum storage facilities with a combined storage capacity greater than 1,100 gallons register all on-site tanks with the NYSDEC. The known aboveground petroleum bulk storage capacity on the subject property is currently 275 gallons; therefore, the subject property is exempt from 6 NYCRR, Parts 612-614.

   No further investigation is recommended.

7. No chemical bulk storage tanks are registered with the NYSDEC for the subject and no chemical bulk storage tanks requiring registration with the NYSDEC were noted on the subject property during the site inspection.

   No further investigation is recommended.

8. No NYSDEC permits for wastewater discharges or air discharges are known to exist for the subject property and no operations likely to require an air or wastewater discharge permit were noted on the subject property during the site inspection. Available information indicates that the on-site structure is connected to the central water system and a private sewer system.

   No further investigation is recommended.

9. A review of state and federal regulatory agency databases for adjoining and vicinity properties indicates that:

   - There are no hazardous waste sites; hazardous and solid waste storage, generation and/or disposal sites; inactive or active landfills; chemical bulk storage facilities; chemical spill events; or air/wastewater discharges associated with immediately adjoining properties.

     No further investigation is recommended.

   - According to a review of NYSDEC spill records, there are two (2) spills known to have occurred within 0.25 mile of the subject property (records updated through June 1996). It is unlikely that the environmental integrity of the subject property was affected by any of these spills due to the intervening distance and topography between the subject property and these sites.

     No further investigation is recommended.

10. According to NYSDOH documents, the average radon level in Dutchess County is 6.7 picoCuries/liter (pCi/liter) and the average radon level for the subject property's zip code (12508) is 5.4 pCi/liter. No regulatory standards for radon level currently exist in New York State. The USEPA has established a guidance value of 4.0 or greater pCi/liter.

These average radon levels suggest the potential presence of elevated radon levels on the subject property; however, no definitive statement can be made regarding on-site radon levels without the placement of radon sampling canisters in the on-site structure.

Due to the non-residential usage of the subject property, no further investigation is recommended. If residential usage is proposed, it is recommended that radon sampling be conducted in the on-site structure to document the presence or absence of on-site elevated radon levels. Pending testing results, structural modifications to proposed units may have to be implemented.

Site Inspection

11. Scattered debris consisting of household trash, metal, abandoned empty tanks, and wash-up materials from the Hudson River was noted on the northwestern peninsula of the subject property; wash-up materials were also noted on the southwestern peninsula. The majority of the central portion of the subject property in the vicinity of the former fuel storage area has been disturbed by the dumping of broken-up concrete and dirt (presumably dumped from off-site sources); this dumping has created irregular topography (i.e., undulating mounds, berms). Fragments of metal and metal piping are also noted scattered throughout the subject property.

It is recommended that all debris be segregated into that which can be disposed of as solid waste and that which may require special handling. All debris should then be removed from the subject property in accordance with applicable state and local regulations. Proper documentation of the removal of all debris materials requiring special handling should be maintained.

The estimated cost of debris removal is less than $10,000.

At least eight (8) abandoned vehicles including former petroleum tanker trucks are located along the eastern border of the subject property and on the northwestern peninsula; these vehicles may actually be located on an adjoining property. An inspection of the ground beneath these vehicles could not be performed due to the presence of associated debris and unsafe conditions.

It is recommended that all on-site abandoned vehicles be drained of all internal liquids and be disposed of in accordance with applicable state and local regulations. Proper documentation of the disposal of internal fluids from the vehicles should be maintained.

12. Observations made during the site inspection indicate that six (6) tank cradles are still located on the subject property as is the pump house. The surface soils underlying these tank cradles and surrounding the pump house are heavily stained with petroleum and a noticeable petroleum odor was noted in the area. Borings extended in the immediate vicinity of the tank cradles in 1994 identified the presence of contaminated soil extending to approximately four feet below grade and laboratory analyses of soil samples documented elevated levels of petroleum hydrocarbons in the vicinity of RD-2 and RD-6.

It is recommended that contaminated soil in the immediate vicinity of the former fuel distribution area and the tank cradles be properly remediated. It is estimated that the total volume of soil requiring remediation is between 300 and 600 cubic yards.

The estimated costs associated with this remediation are between $30,000 and $40,000.

An active 275-gallon aboveground storage tank (AST) used to store fuel oil and two (2) abandoned ASTs were noted on the subject property. The abandoned tanks were labeled as having contained fuel oil and one of the tanks appeared to be partially filled with some type product. No strong petroleum odor was emanating from the tanks and the soil in the vicinity of the tanks did not appear to be noticeably stained. A third abandoned 275-gallon tank was noted on the western peninsula of the subject property.

It is recommended that all of the abandoned tanks be drained of any product in accordance with NYSDEC Petroleum Bulk Storage Regulations 6 NYCRR, Parts 612-614 and that they subsequently be removed from the subject property and disposed of as scrap metal.

It is estimated that the cost associated with the draining and removal of the abandoned tanks will be $5,000.

13. No chemical bulk storage tanks were noted on the subject property and no fill ports or vent pipes likely serving any underground chemical bulk storage tanks were noted on the subject property.

No further investigation is recommended.

14. No material suspected of containing asbestos was noted on the subject property during the site inspection. Due to the likely date of construction of the on-site clubhouse (1950), asbestos-containing materials (e.g., roofing materials, floor tiles, wallboard) may have been used during initial construction and/or during subsequent maintenance work.

It is recommended that any suspect material encountered during maintenance, renovation or demolition activities be analyzed for asbestos content or be treated as though it contained asbestos. All maintenance, renovation or demolition activities should be conducted in accordance with applicable regulations.

15. The likely date of construction of the on-site clubhouse (1950) indicates that lead-based paint may have been used during initial construction and/or during subsequent maintenance work. Paint suspected of containing lead was noted on exterior trim surfaces of the on-site clubhouse; these areas were generally in poor condition as paint was flaking from the surface. Interior painted portions of the on-site structure were generally in good condition.

It is recommended that any suspect paint encountered during maintenance, renovation or demolition activities be analyzed for lead content or be treated as though it were lead-based paint. All maintenance, renovation or demolition activities should be conducted in accordance with applicable guidelines and regulations. Any debris generated during renovation and/or demolition activities should be sampled for lead content and be handled in accordance with federal regulations.

16. No on-site potable water supply wells are known to be located on the subject property and no such wells were noted during the site inspection. According to available information, the on-site marina clubhouse is connected to the central water system and a private sewer system.

No further investigation is recommended.

17. The majority of the central portion of the subject property in the vicinity of the former fuel storage area has been disturbed by the dumping of broken-up concrete and dirt (brought onto the site from off-site sources, according to a representative of the boat club); this dumping has created irregular topography (i.e., undulating mounds, berms).

See recommendation in Paragraph #11, above.

18. Two (2) inactive pole-mounted transformers were noted along the southern border of the subject property in the vicinity of monitoring well RD-3. No staining was noted on or around the base of these transformers during the site inspection.

No further investigation is recommended at this time. If these transformers are to be removed from the subject property, it is recommended that provisions be made for the possible presence of PCBs within the transformers. The dismantling and disposal of these transformers should be performed in accordance with applicable regulations.

19. No conditions considered by this office to pose a threat to the environmental integrity of the subject property were noted on adjoining properties during the site inspection.

No further investigation is recommended.

Field Work

20. On January 15, 1997 Ecosystems Strategies, Inc. sampled the four (4) on-site monitoring wells and the four (4) off-site monitoring wells to determine the continued presence or absence of on-site groundwater contamination and the presence or absence of off-site migration of contaminated groundwater.

Laboratory analyses detected only one petroleum hydrocarbon (1-methyl napthalene) in only two (RD-2 and RD-6) of the eight (8) monitoring wells but at levels below NYSDEC-designated action levels. No PAHs were detected in any of the other eight (8) monitoring wells; detection limits were either at or below NYSDEC-designated action levels for specific compounds.

The laboratory data are consistent with field observations which identified petroleum odors and sheens on the purgewater collected from RD-2 and RD-6. However, the laboratory data appear to be inconsistent with field observations in that odors were also noted in the other on-site wells (no elevated levels of petroleum hydrocarbons were detected in these wells). The absence of detectable concentrations at the other two monitoring wells within the former oil storage and distribution area suggests that the petroleum hydrocarbons may not be fully dissolved in the groundwater.

Current laboratory data are consistent with the previous October 1994 data in that elevated levels of petroleum hydrocarbons were only detected in the wells in the immediate vicinity of the fuel storage and distribution area (three compounds were detected in RD-2 and one compound was detected in RD-6); however, the detected levels in January 1997 no longer exceed designated action levels.

The continued absence of detectable concentrations of PAHs in any of the off-site wells including RD-K1 and RD-K2 located on the adjoining property to the south suggests that any contaminated groundwater that may have previously been present on the property has not migrated off-site.

It is recommended that free product present in the on-site groundwater be removed through the process of product skimming. Direct discharge of treated groundwater may be appropriate if hydrocarbon concentrations in the resulting effluent remain at current levels.

The estimated costs associated with this proposed remedial action are between $15,000 and $25,000, assuming an operational period of three to five years.

It is further recommended that periodic sampling of all on-site and off-site wells along the northern property border and analysis for petroleum hydrocarbons be conducted.

The periodic testing of on-site and nearby monitoring wells is estimated to cost $4,000 per year.

5.0 Sources of Information

5.1 Regulatory Records Review

USEPA National Priorities List (NPL)

ASTM DATABASE
SEARCH: 1.0 MILE
UPDATED: MAY 1996

LISTING OF SITES WHICH ARE CONSIDERED TO POSE AN IMMEDIATE THREAT TO HUMAN HEALTH AND THE ENVIRONMENT AND HAVE BEEN IDENTIFIED FOR PRIORITY CLEANUP UNDER SUPERFUND.

USEPA Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) List

ASTM DATABASE
SEARCH: 0.5 MILE
UPDATED: MAY 1996

LISTING OF ABANDONED, INACTIVE OR UNCONTROLLED HAZARDOUS WASTE SITES WHICH THE USEPA HAS INVESTIGATED OR IS CURRENTLY INVESTIGATING FOR INCLUSION ON THE NPL.

NYSDEC Registry of Inactive Hazardous Waste Disposal Sites

ASTM DATABASE
SEARCH: 1.0 MILE
UPDATED: JANUARY 1996

LISTING OF FACILITIES SUBJECT TO INVESTIGATIONS CONCERNING LIKELY OR THREATENED RELEASES OF HAZARDOUS SUBSTANCES FROM THOSE FACILITIES.

USEPA Emergency Response Notification System (ERNS)

ASTM DATABASE
SEARCH: TARGET PROPERTY
UPDATED: MAY 1996

LISTING OF RELEASES OF PETROLEUM, CHEMICAL AND/OR HAZARDOUS SUBSTANCES INTO THE ENVIRONMENT AS REPORTED TO THE USEPA AND COAST GUARD.

NYSDEC Leaking Underground Storage Tanks (LUSTs)

ASTM DATABASE
SEARCH: 0.25 MILE
UPDATED: JUNE 1996

SUBSET OF NYSDEC CHEMICAL AND PETROLEUM SPILLS DATABASE (SEE BELOW) LISTING ALL REPORTED LEAKING UNDERGROUND STORAGE TANKS.

NYSDEC Petroleum and Chemical Spill Records

NON-ASTM DATABASE
SEARCH: 0.25 MILE
UPDATED: JUNE 1996

LISTING OF ALL PETROLEUM, CHEMICAL OR HAZARDOUS SUBSTANCE RELEASES REPORTED TO THE NYSDEC.

USEPA Resource Conservation and Recovery Information System (RCRIS) List of Hazardous Waste Generators (SQG/LQG)

ASTM DATABASE
SEARCH: TARGET/ADJOINING PROPERTY
UPDATED: MAY 1996

LISTING OF FACILITIES REGULATED UNDER THE RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) THAT GENERATE HAZARDOUS WASTE.

USEPA Resource Conservation and Recovery Information System (RCRIS) List of Hazardous Waste Treatment, Storage and Disposal Facilities (TSDF)

ASTM DATABASE
SEARCH: 1.0 MILE
UPDATED: MAY 1996

LISTING OF FACILITIES REGULATED UNDER THE RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) THAT TREAT, STORE AND/OR DISPOSE OF HAZARDOUS WASTE.

NYSDEC Petroleum Bulk Storage Tank Records (PBS)

ASTM DATABASE
SEARCH: TARGET/ADJOINING PROPERTY
UPDATED: FEBRUARY 1996

LISTING OF FACILITIES WHICH TYPICALLY STORE MORE THAN 1100 GALLONS OF PETROLEUM PRODUCT IN BULK STORAGE TANKS.

NYSDEC Chemical Bulk Storage Tank Records (CBS)

ASTM DATABASE
SEARCH: TARGET/ADJOINING PROPERTY
UPDATED: FEBRUARY 1996

LISTING OF FACILITIES WHICH STORE ANY VOLUME OF CHEMICALS IN AN UNDERGROUND STORAGE TANK AND/OR MORE THAN 185 GALLONS OF CHEMICALS IN AN ABOVEGROUND STORAGE TANK.

NYSDEC Major Oil Storage Facility Records (MOSF)

NON-ASTM DATABASE
SEARCH: 0.5 MILE
UPDATED: FEBRUARY 1996

LISTING OF FACILITIES STORING 400,000 GALLONS OR GREATER OF PETROLEUM PRODUCT.

NYSDEC Registry of Active Landfills, Transfer Stations and Solid Waste Disposal Facilities

ASTM DATABASE
SEARCH: 0.5 MILE
UPDATED: DECEMBER 1995

LISTING OF ACTIVE LANDFILLS, TRANSFER STATIONS AND SOLID WASTE DISPOSAL FACILITIES.

NYSDEC Registry of Inactive Landfills, Transfer Stations and Solid Waste Disposal Facilities

NON-ASTM DATABASE
SEARCH: 0.5 MILE
UPDATED: APRIL 1995

LISTING OF INACTIVE LANDFILLS, TRANSFER STATIONS AND SOLID WASTE DISPOSAL FACILITIES.

NYSDEC Resource Recovery Projects in New York State

NON-ASTM DATABASE
SEARCH: 0.5 MILE
UPDATED: DECEMBER 1995

LISTING OF ACTIVE RESOURCE RECOVERY FACILITIES.

NYSDOH Basement Radon Readings

NON-ASTM DATABASE
UPDATED: JUNE 1995

LISTING OF RADON LEVELS BY ZIP CODE, MUNICIPALITY AND COUNTY.

5.2 Maps and Documents

Environmental Audit Phase I dated May 5, 1993, prepared by Ecosystems Strategies, Inc. on the adjoining Kellam Property to the south.

Summary Report of Subsurface Investigation and Monitoring Well Installation dated November 30, 1994. Prepared on the former Garret-Storm, Inc. MOSF Site by Ecosystems Strategies, Inc.

Preliminary Hydrogeologic Assessment Beacon Development Project, dated 1987. Prepared by Empire Soils Investigations, Inc. and Thomsen Associates.

Environmental Constraints Analysis Ferry Plaza Project. Prepared by Cortell Associates.

Sanborn Fire Insurance Company Maps dated 1919, 1927, 1946 and 1962.

Aerial photographs dated 1936, 1960, 1970, 1980, 1983 and 1990, available for viewing at the City of Beacon Municipal Building, and the Dutchess County Soil and Water Conservation District.

United States Geological Survey Topographic Map of the Wappingers Falls, NY Quadrangle, dated 1956 (photorevised 1981).

United States Geological Survey Topographic Map of the West Point, NY Quadrangle, dated 1957 (photorevised 1981).

New York State Department of Environmental Conservation Freshwater Wetlands Map of the Wappingers Falls, NY Quadrangle (1973-2nd edition).

National Wetlands Inventory Map of the Wappingers Falls, NY Quadrangle (1990).

Soil Survey of Dutchess County, New York prepared by the US Department of Agriculture (issued September 1994).

Federal Emergency Management Agency's (FEMA) Flood Boundary and Floodway Map of the City of Beacon, New York (Community Panel #360217 0001), effective date March 1, 1984).

5.3 Local Agency Records

City of Beacon Assessor's Office records, reviewed January 29, 1997.

City of Beacon Building Department records, reviewed January 29, 1997.

Text Only
Previously Relevant Environmental Reports
Beacon Salvage Site

1.0 Introduction

1.1 Purpose of the Investigation

This Combined Phase I and II Environmental Site Assessment ("ESA") identifies environmental conditions which might represent a financial liability resulting from or associated with the storage, use, transport, or disposal of hazardous or regulated materials on the property and structure located on Red Flynn Drive, City of Beacon, Dutchess County, New York A full property description is provided in Section 2.1, below.

1.2 Methodology

This ESA has been prepared in conformance with guidelines set forth by the American Society for Testing and Materials (ASTM) Method E1527-97. The specific components of this ESA are as follows:

1. Investigation of the subject property's history and characteristics through the analysis of aerial photographs, local and regional maps, municipal records, and information provided by subject property representatives. Complete references are provided in Section 5.0 of this ESA.

2. Review of Federal and State computer databases and printed records for documentation of potential liabilities relevant to the subject property. Records reviewed and corresponding search radii are consistent with, or exceed, the requirements set forth by the ASTM.

3. An initial visual inspection of the subject property conducted on June 9, 2000 by Paul H. Ciminello of Ecosystems Strategies, Inc. ("ESI").

4. A subsurface investigation conducted on specified portions of the subject property by Mary F. Martello and Larry A. Porres on June 29, 2000. This additional investigation consisted the extension of soils cores and collection of surface soil samples in areas identified during the Phase I review as being areas of potential contamination.

1.3 Limitations

This ESA is an evaluation of the property described in Section 2.1 below and is not valid for any other property or location. It is a representation of the property analyzed as of the dates that services were provided. This ESA cannot be held accountable for activities or events resulting in environmental liability after the respective dates of the site inspection or historic and regulatory research.

This ESA is based in part on certain information provided in writing or verbally by Federal, State and local officials (including public records) and other parties referenced herein. No attempt was made to independently verify the accuracy or completeness of this information. Unless specifically noted, the findings and conclusions contained herein must be considered not as scientific certainties, but as probabilities based on professional judgement.

2.0 Site Location and Description

2.1 Description of the Subject Property

The subject property as defined in this ESA consists of the 4.2-acre "Barney Cohen" property located on Red Flynn Drive, City of Beacon, Dutchess County, New York. A map depicting the location of the subject property is provided in Appendix A of this ESA. The subject property is composed of one tax parcel (City of Beacon Tax Identification: Grid Number 30-5954-32-48835).

The subject property is an irregularly-shaped lot located on the westernmost end of Red Flynn Drive where the property has approximately 170 feet of frontage. The subject property extends approximately 1,100 feet westward from Red Flynn Drive. The western property line extends approximately 150 feet into the Hudson River. Located on the subject property are two structures, trees and open areas.

A map illustrating the layout of the subject property is provided in Appendix A of this ESA. Photographs of the subject property are provided in Appendix B of this ESA.

2.1.1 Site Topography

Information on the subject property's topography was obtained from the review of the United States Geological Survey (USGS) Topographic Maps of the Wappingers Falls, New York Quadrangle (dated 1956, photorevised 1981), the West Point, New York Quadrangle (dated 1957, photorevised 1981), and observations made by this office during the June 9, 2000 and June 29, 2000 site inspections. A copy of the USGS Topographic Map with the subject property indicated is included in Appendix B of this Phase I ESA.

According to the above-referenced topographic map, the topography of the area in which the subject property is located has a gentle downward slope to the southwest, towards the Hudson River. The topography of the subject property has a surface elevation of approximately 10 feet above mean sea level (msl). Observations made during the site inspection indicate that the topography of the subject property is relatively level on the eastern portion; on the western portion of the subject property the land slopes slightly downward from east to west.

A review of the above-referenced topographic map did not indicate the presence of any soil/gravel mining operations or unusual topographic patterns indicative of landfilling activities on the subject property.

2.1.2 Site Geology

A subsurface investigation conducted by this office on June 29, 2000, indicates that the subsurface soils from 0' to 4' below surface grade consist of medium to dark brown soils with interspersed gravel, cobble and small stones. A soil sample taken from the southern property border contained ash and a few samples taken from the eastern portion of the property contained some organic materials.

The Dutchess County Soil and Water Conservation District's Dutchess County Soil Survey ("Soil Survey"), dated September 1991, was reviewed by this office to ascertain which soil types are likely to be present on the subject property. Provided below is a summary of the information obtained from this review.

According to the Soil Survey, the subject property is located in an area composed of the smoothed Udorthents (0 to 8 percent slopes) soil type. The smoothed Udorthents are very deep, somewhat excessively drained to moderately well drained soils that have been altered by cutting and filling.

Depth to bedrock in the Udorthents soil type is most likely to be greater than 60 inches below grade.

2.1.3 Site Hydrogeology

The subsurface investigation conducted by this office on June 29, 2000 indicated that on-site groundwater is found at a depths of two feet to four feet below surface grade. No site-specific investigation of the direction of groundwater flow is known to have been performed on the subject property; therefore, no documented determinations are provided in this Phase I ESA. Information contained in the above-referenced Soil Survey indicates that shallow groundwater is likely to be present at depths of greater than three feet below grade from November to June. The direction of on-site groundwater flow is likely to be in a westerly direction, toward the Hudson River which adjoins the subject property to the west. On-site groundwater flow and depth may be subject to tidal influences.

2.1.4 Surface Hydrology

Information regarding on-site surface hydrology was obtained from the review of available maps and from observations made by this office during the June 9, 2000 and June 29, 2000 site inspections. According to these sources, the westernmost portion of the subject property extends into the Hudson River.

Wetlands

The New York State Department of Environmental Conservation (NYSDEC) Freshwater Wetlands Map (1973) and the United States Department of the Interior Federal Wetlands Map (1990) of the Wappingers Falls, New York Quadrangle were reviewed by this office. According to a review of these maps, there are no NYSDEC wetlands (areas greater than 12.4 acres) located in the immediate vicinity of the subject property. The Hudson River which is located on the western portion of the property and which adjoins the subject property to the west is a federally designated Esturarine, Subtidal, Unconsolidated Bottom, Subtidal, Oligohaline (E1UBL6) wetland.

2.2 Description of Surrounding Properties

2.2.1 Surrounding Land Uses

The subject property is located in an urban area comprised primarily of single-family residential properties and woods. A description of the adjoining and nearby properties is provided in Table 1, below.

Table 1: Land Uses in the Vicinity of Subject Property

Direction	Adjoining Use(s)	Vicinity Use(s)
North	• Vacant • Train Station Parking	• Beacon Train Station • Residential • Small Commercial
East	• Train Station Parking • Vacant	• Residential
South	• Vacant (former Garrett Storm MOSF)	• Vacant • Commercial (Nabisco Building) • Residential
West	• Hudson River	• Hudson River • City of Newburgh

2.2.2 Sensitive Environmental Receptors

A review of available information including maps, as well as observations made during the site inspection indicate that there is one sensitive environmental receptor on the subject property. This sensitive environmental receptor is the Hudson River which flows over the westernmost portion of the subject property.

3.0 Phase One Investigation

3.1 Ownership Records

The information listed below on current or former property ownership is gathered from available sources, including the City of Beacon Assessor's Office records. This ownership summary does not constitute a title search. Provided below in Table 2 is a summary of the ownership information for lot 30-5954-32-48835

Table 2: Ownership Information

Parcel ID	Owner	Date
TAX ID: 30-5954-32-48835	Benj. & Elise Cohen	Unknown

3.2 Site History

The history of the subject property is reconstructed through the review of historic photographs, City of Beacon Assessor's Office and Building Department files, and information provided by subject property representatives.

3.2.1 Aerial Photographs

A summary of the information obtained from the review of aerial photographs dated 1935, 1945, 1960, 1967, 1980, and 1995 is provided below. The small scale and quality of the photographs made distinguishing details difficult.

1935: The subject property is an open lot containing a few structures. There are two small structures on the eastern portion of the subject property. To the west of these structures is a pile of debris or area of disturbance. Located on the southwestern corner of the subject property is a shed or a small house. A dirt road which appears to be associated with the railroad is located on the southern and eastern portions of the subject property.

Adjoining the subject property to the north is a vacant lot. Farther north are fields, a railroad station, woodland, farmland and a few small structures. Adjoining the subject property to the east are railroad tracks and a dirt road. Farther east is the City of Beacon, which is heavily developed with residential and commercial structures. Adjoining the subject property to the south is an open lot and a small structure. There are a few dirt roads extending throughout this adjoining parcel. Farther south are residential and commercial structures. The Hudson River adjoins the subject property to the west and the City of Newburgh is located farther west of the property across the Hudson River.

1945: No significant changes are noted on the subject property or adjoining parcels.

Development within the City of Beacon has spread farther east; also, additional structures have been constructed farther north of the subject property.

1960: All of the previously shown structures are still present. There is also an additional small shed located on the eastern portion of the property. The areas of the subject property surrounding the structures are open and there are trees extending along the eastern property border. The area of disturbance formerly located on the property is not visible.

The northern adjoining parcel consists partially of woodland and partially of a vacant lot. Farther north there are several docks, a golf course and the Newburgh-Beacon Bridge. The southern adjoining property now contains one large tank and nine smaller tanks. There are also large tanks located on the western bank of the Hudson River. No other significant changes are noted on the adjoining parcels or in the surrounding area.

1967: No significant changes are noted on the subject property, adjoining parcels, or in the area surrounding the subject property.

1980: There appear to be areas which could be piles of debris or car/boat storage on the southern and eastern portions of the subject property. All the previously mentioned on-site structures are still present.

No significant changes are noted on the adjoining parcels or in the surrounding area.

1995: The westernmost portion of the subject property is now vacant. This portion now consists of an open field. There are still two structures on the eastern portion of the property. Noted to the east of the structures is a pile of material which may be debris.

There are two new tanks located on the southern adjoining parcel. The eight smaller tanks, however, are no longer present. The rest of the southern adjoining property is still vacant. No significant changes or areas of disturbance are noted on other parcels in the surrounding area.

3.2.2 Local Records

City of Beacon Assessor's Office Records

City of Beacon Assessor's Office property card records and associated files for the subject property were reviewed by this office on June 16, 2000. According to a document included in the Assessor's file for the subject property dated May 2000, there are a one-family house which is 150 years old and a barn, which has been vacant for approximately 30 years, located on the subject property. It is also noted that the house has been vacant for approximately 30 years. The barn is approximately 150 years old and there is no heat or hot water available to the subject property. Another document included in the Assessor's records, dated March 1988, indicated that there is no city sewer available to the subject property. No other information pertinent to the environmental integrity of the subject property was present in these records. A summary of the readily available property ownership information is provided in Table 2, above.

City of Beacon Building Department Records

City of Beacon Building Department records for the subject property were requested by this office on June 16, 2000. According Building Department personnel, there are no records on file for the subject property.

3.2.3 Subject Property Representative Information

Pertinent information regarding the subject property was provided to this office by Barney Cohen, the owner of the subject property. According to Mr. Cohen, no past, threatened, or pending environmental liens, violations, governmental notifications, lawsuits, administrative proceedings, or documents relevant to the environmental condition of the property are known to exist. Mr. Cohen had no specialized knowledge or experience regarding previous ownership or uses of the property which was material in identifying recognized environmental conditions.

When queried about the potential presence and/or usage of petroleum products or hazardous substances on the subject property, Mr. Cohen stated that other than a 275-gallon heating oil AST located near the on-site residential structure, he was not aware of the former presence or usage of these materials.

Pertinent information provided by Mr. Cohen is also provided in relevant sections of this Phase I ESA, where appropriate.

3.3 Review of Federal and State Agency Records

3.3.1 Methodology

Federal and State computer databases and printed records were reviewed for documentation of potential liabilities relevant to the subject property. Records reviewed and corresponding search radii are consistent with, or exceed, the requirements set forth by ASTM.

The following ASTM databases were searched at their specified radii, consistent with ASTM protocol:

USEPA National Priority List (1.0 mile)
USEPA CERCLIS List (0.5 mile)
USEPA RCRIS CORRACTS Hazardous Waste TSD Facilities (1.0 mile)
USEPA RCRIS non-CORRACTS Hazardous Waste TSD Facilities (0.5 mile)
NYSDEC Registry of Inactive Hazardous Waste Disposal Sites (1.0 mile)
NYSDEC Registry of Active and Inactive State Landfills (0.5 mile)
NYSDEC Leaking Underground Storage Tank (LUST) Records (0.5 mile)
USEPA RCRIS Hazardous Waste Generators Facilities List (subject/adjoining properties)
USEPA Emergency Response Notification System (subject property)
NYSDEC Petroleum Bulk Storage Tank Records (subject/adjoining properties)
NYSDEC Chemical Bulk Storage Tank Records (subject/adjoining properties)

The following databases not required by ASTM protocol were also reviewed:

NYSDEC Resource Recovery Projects in New York State (1.0 mile)
USEPA RCRIS Hazardous Waste Transporters List (0.5 mile)
NYSDEC Major Oil Storage Facilities (0.5 mile)
NYSDEC Petroleum and Chemical Spill Records (0.5 mile)
NYSDOH Basement Radon Readings (by County, Municipality and Zip Code)
USEPA Wastewater Discharge NPDES Permits (subject/adjoining properties)

A complete definition of each database, along with the date of the version used for this review, is provided below in Section 6.1 of this Phase I ESA. Provided in Appendix C of this Phase I ESA are copies of the facility printouts for the sites identified herein.

3.3.2 Findings of Regulatory Records Review

Federal Hazardous Waste Sites

The subject property is not identified on the United States Environmental Protection Agency's (USEPA) National Priority List (NPL) of uncontrolled or abandoned hazardous waste sites identified for priority remedial actions. According to a review of USEPA records, there are no NPL sites located within 1.0 mile of the subject property.

The subject property is not listed on the USEPA's CERCLIS list detailing all sites which are either proposed to the NPL or are in the screening and assessment phase for possible inclusion on the NPL. According to a review of USEPA records, there are no CERCLIS sites located within 0.5 mile of the subject property.

State Hazardous Waste Sites

The subject property is not listed with the New York State Department of Environmental Conservation (NYSDEC) as an inactive hazardous waste disposal site. According to a review of NYSDEC records, there are no NYSDEC inactive hazardous waste disposal sites located within 1.0 mile of the subject property.

Hazardous Waste Storage and Disposal

The USEPA Resource Conservation and Recovery Information System (RCRIS) database details facilities which report generation, storage, transportation, treatment, or disposal of hazardous waste.

SQG/LQG

According to a review of USEPA records, the subject property is not registered with the USEPA as a small (between 100 and 1,000 kg/month) or large (greater than 1,000 kg/month) quantity generator (SQG or LQG) or transporter of hazardous waste. According to a review of USEPA records, there are no SQGs, LQGs, or hazardous waste transporters located on adjoining properties.

TSDFs

The subject property is not registered with the USEPA as a treatment, storage, or disposal facility (TSDF) for hazardous waste or materials. No TSDFs are located within 1.0 mile of the subject property.

Landfills and Solid Waste Disposal Facilities

According to a review of NYSDEC records, the subject property is not listed with the NYSDEC as an active or inactive landfill, transfer station, solid waste disposal, or resource recovery facility. No active or inactive transfer stations, solid waste disposal, resource recovery facilities, or active landfills are located within 0.5 mile of the subject property according to NYSDEC records.

There is one inactive landfill located within 0.5 mile of the subject property. This is the Beacon Landfill (sludge) facility (Facility ID: 14S91) which is located approximately 0.19 mile north northeast of the subject property. No additional information was provided in NYSDEC records.

Chemical Bulk Storage

A review of NYSDEC records indicates that the subject property is not registered with the NYSDEC as a chemical bulk storage (CBS) facility. Observations made during the site inspection did not indicate the presence of chemical bulk storage on the subject property. No adjoining properties are registered with the NYSDEC as CBS facilities.

Petroleum Bulk Storage

SUBJECT PROPERTY

According to a review of the NYSDEC PBS database the subject property is not registered as a PBS facility. A 275-gallon, active, fuel oil AST was noted on the western side of the residential structure. No information regarding the age of the tank was provided by the site representative.

State and Federal PBS Regulations

NYSDEC Petroleum Bulk Storage Regulations 6 NYCRR Parts 612-614 apply to facilities with a combined storage capacity greater than 1,100 gallons (excluding tanks less than 1,100 gallons used to store fuel oil for on-site consumption), and Federal Regulations specified in 40 CFR, Part 112 apply to all facilities storing greater than 42,000 gallons of petroleum product underground or 1,360 gallons aboveground. Based on the known active storage capacity of the subject property (275 gallons aboveground), the subject property is not subject to either State or Federal PBS regulations.

ADJOINING PROPERTIES

According to a review of NYSDEC records, there are no PBS facilities adjoining the subject property. No overt evidence of PBS tanks was noted on adjoining properties during the site inspection.

Major Oil Storage Facilities (MOSFs)

The subject property is not listed with the NYSDEC as a major oil storage facility (MOSF). According to a review of NYSDEC records, there is one MOSF located within 0.5 mile of the subject property. This is the Garret Storm, Inc. facility (MOSF Number: 3-2500) which adjoins the subject property to the south. This is an inactive facility which was a petroleum storage terminal in the past. The site is listed as no longer being a MOSF and the tanks at this site have been removed.

Federal Chemical and Petroleum Spills

The USEPA Emergency Response Notification System (ERNS) database details initial reports of releases of oil and hazardous substances as reported to federal authorities. There are currently no chemical or petroleum spills on record for the subject property, according to a review of the USEPA ERNS database.

State Chemical and Petroleum Spill and Leaking Underground Storage Tank Events

A review of NYSDEC spill records indicates that no spill events are known to have occurred on the subject property since 1986. Available information indicates that four spill events are believed to have occurred within 0.5 mile of the subject property. None of these events are classified as leaking underground storage tank (LUST) events.

The spill event with the greatest likelihood of impacting the subject property, based on available information, occurred on February 4, 1993 at the southern adjoining property, which is the former Garret Storm MOSF. This event (spill number 9212560) involved the release of an unknown quantity of #2 fuel oil which was discovered when digging test holes on-site. Groundwater is the resource listed as having been the most impacted by this event. The removal of the PBS tanks from this facility negates the possibility of future spill events at the Garrett Storm facility. This spill event has not been provided a closure date by the NYSDEC and has not met NYSDEC cleanup standards.

Air Discharges

No NYSDEC permits for air discharges from the subject property are known to exist. No operations likely to require a NYSDEC air discharge permit were noted on the subject property during the site inspection.

Groundwater Usage

According to observations made during the site inspection and information provided by the property representative, the subject property obtains potable water from the central water system. No uses of groundwater were noted on the subject property during the site inspection.

Wastewater Discharges

No USEPA National Pollutant Discharge Elimination System (NPDES) permit is known to exist for the subject property. No operations likely to require a NPDES permit were noted on the subject property during the site inspection. According to observations made during the site inspection and information provided by the property representative, the subject property is serviced by a private septic system. No adjoining properties are registered with the USEPA as NPDES facilities.

Radon

Information on radon levels was obtained from New York State Department of Health (NYSDOH) documents. No regulatory standards for radon levels currently exist in New York State. The USEPA has established a guidance value (the level where mitigation measures may be appropriate) for radon of 4.0 or greater picoCuries/liter (pCi/liter). Provided below in Table 3 is a summary of the available radon information for the subject property's vicinity.

Table 3: Radon Levels in Vicinity of Subject Property
All radon levels provided in picoCuries/liter (pCi/liter)

NYSDOH Radon Information	Dutchess County	City of Beacon	Zip Code (12508)
Median Radon Level	4.0	2.8	2.9
Percent of Homes >4pCi/l	50.00	39.03	Not Available
Number of Homes Tested	2513	40	36

These median radon level for the city in which the subject property is located is below the USEPA's guidance value of 4.0 pCi/liter; however, more than 39% of the homes tested in the subject property's vicinity had levels in exceedence of this guidance value. Therefore it is likely that there are elevated radon levels on the subject property. No radon testing is known to have been conducted on the subject property.

3.4 Site Inspection

3.4.1 Protocol

The site inspections were conducted on June 9, 2000 and June 29, 2000 in order to address any potential concerns raised during the regulatory agency records review (above, Section 3.1) and to identify any additional indications of contamination from the use, storage or disposal of hazardous or regulated materials. To the extent possible, site structures, vegetation, topography, surface waters, and other relevant site features were examined for any obvious evidence of existing or previous contamination or unusual patterns (e.g., vegetative stress, soil staining, surface water sheen, or the physical presence of contaminants), which would indicate that the environmental integrity had been or could be impacted.

Section 3.4.2 describes the physical characteristics of the subject property. Section 3.4.3 is divided into topics on specific environmental conditions or concerns, actual or potential, noted on the subject property during the site inspection. Section 3.4.4 describes the physical characteristics of adjoining properties as they concern the potential or actual environmental condition of the subject property.

A Selected Site Features Map illustrating the general layout of the subject property and the locations of specific identified concerns discussed specifically in this Section of the ESA is provided in Appendix A. Photographs of the subject property are provided in Appendix B of this ESA.

3.4.2 Physical Characteristics of Subject Property

3.4.2.1 Property

The subject property is an irregularly-shaped lot located on the westernmost end of Red Flynn Drive where the property has approximately 170 feet of frontage. The subject property also extends approximately 1,100 feet westward. Two structures are located on the subject property (see below). Located in the vicinity of the barn structure is a junk yard. The subject property consists of open areas with trees and overgrown vegetation. A fence surrounds the structure which is located on the western portion of the property. There is a pulley and a concrete retaining wall on the southwestern corner of the property along the Hudson River.

3.4.2.2 Structures

Two structures are located on the subject property. There is a wooden barn located on the eastern portion of the property. The floor of this barn is composed of concrete. Located inside this barn is metal and wood debris and other storage materials (see below).

A house is located on the western portion of the property. The exterior of this structure is constructed of aluminum siding and an asphalt shingled roof. The interior of this occupied residence was not accessible at the time of the site inspection.

Site Utilities

According to available information, the residential structure located on the subject property is serviced by the City of Beacon central water system and a private septic system. The house is heated with oil. There are no utilities connected to the barn.

3.4.3 Specific On-Site Environmental Conditions

Debris Areas

Approximately 400 cubic yards of debris were noted on the subject property. The debris consisted of 250-350 cubic yards of metal debris along the southern border of the property; approximately 50, empty 55-gallon drums with their tops removed; miscellaneous debris located on the northwestern corner of the property; two trucks near the center of the property; two trucks along the shore of the Hudson River; and two cut, 275-gallon tanks in the waters of the Hudson River.

Petroleum Storage

A 275-gallon fuel oil AST was noted on the western side of the residential structure. No staining indicative of prior spills was noted on or in the vicinity of the AST. No small quantities of petroleum products or indications of underground petroleum bulk storage tanks (e.g., fill ports or vent pipes) were noted on the subject property during the site inspection.

Chemical Storage

No small quantities of chemicals or aboveground chemical bulk storage tanks were noted on the subject property during the site inspection. No indications of underground chemical bulk storage tanks (e.g., fill ports or vent pipes) were noted on the subject property during the site inspection.

Floor Drains/Conduits

No floor drains or conduits to the subsurface were noted on the subject property during the site inspection.

Asbestos-Containing Materials

Asbestos-containing materials (ACMs) are those materials which are known to contain over 1% of any type of asbestos. The presence or absence of asbestos within a material can only be determined through the physical analysis of material samples.

The age of the on-site buildings suggests that ACMs may have been used during initial building construction and/or during subsequent maintenance work. An asbestos survey of the subject property is not known to have been conducted. No suspect materials were noted during the on-site inspection. However, the interior of the residential structure could not be accessed during the site inspection. Building construction materials (e.g., roofing, plaster, etc.) could potentially contain asbestos.

Lead-Based Paint

The presence or absence of lead-based paint (LBP) can only be determined through the material analysis of paint samples. However, as the manufacture of LBP is known to have ceased in 1978, a building's date of construction is often times used to help assess the likelihood that lead-based paint was used during initial building construction and/or during subsequent renovations. The presence of deteriorated paint is indicative of a potential health risk in that paint dust and chips could be inhaled and/or ingested.

The dates of construction of the on-site structures (1850s) indicates that LBP is likely to have been used. A lead-based paint survey of the subject property's structure is not known to have been conducted. All of the painted surfaces of the areas inspected by this office were in good condition at the time of the site inspection. However, no judgement can be made by this office regarding the presence or absence of LBP in underlying layers of paint or construction. Also, the interior of the residential structure could not be accessed during the site inspection.

Water Supply and Sewage Disposal

The on-site residential structure is connected to the City of Beacon central water system and is serviced by a private septic system. The septic system which serves the structure is located on the eastern side of the house. The on-site barn is not serviced by any utilities.

Topographic Irregularities

No overt topographic irregularities (e.g., sinkholes or berms) indicative of the presence of material in the subsurface were noted on the subject property during the site inspection.

Vegetative Features

Three burn spots which are approximately six feet in diameter were noted on the eastern portion of the subject property. No other overt areas of stressed or dying vegetation indicative of the presence of contaminants in surface or subsurface soils were noted on the subject property during the site inspection.

Surface Waters

Based on observations made during the site inspection, the Hudson River flows over the westernmost portion of the subject property. Inspections of the accessible portions of this water body did not indicate the presence of any evidence of contamination (e.g., staining, sheen, odor).

PCBs

An inspection for the presence of equipment likely to contain PCBs was conducted by this office during the site inspection. PCBs were widely used in equipment such as transformers, capacitors and hydraulic equipment until 1979 when the USEPA regulated their use in this capacity.

With the exception of fluorescent light fixtures which could potentially have ballasts containing PCBs, no equipment likely to contain PCBs was noted on the subject property during the site inspection.

There were also several "burn spots" noted on the eastern portion of the subject property. These areas were most likely used for the cleaning of metal equipment in the past. The oils which were cleaned from these materials may have contained PCBs.

3.4.4 Environmental Conditions on Adjoining Properties

No overt conditions judged by this office to pose a threat to the environmental integrity of the subject property were noted on adjoining properties during the site inspection.

4.0 Phase Two Investigation

4.1 Areas of Concern

The work described in this section was performed on specified portions of the subject property to address several potential environmental areas of concern identified during the initial phase one investigation conducted by this office. These areas of concern are as follows:

- the historic usage of the subject property as a scrap yard from the late 1950's through the early 1980s. This historic usage is likely to have involved the disposal of metals and petroleum products;
- historic usage of the site for kerosene-based pesticides, as referenced in a historic photograph of the property;
- integrity of the fill material used to create the site; and
- the presence of burn spots on the subject property associated with activities conducted at the junk yard.

4.2 Field Work Overview

In order to address the concerns identified above, additional investigative work was conducted on the subject property. This work consisted of the following:

- the extension of soil cores throughout the property to document the presence or absence of petroleum, metals and/or PCB contamination and;
- the sampling of surface soils in the area of the "burn spots" and debris pile areas noted on the subject property to document the presence or absence of petroleum, metal and/or PCB contamination;

A Selected Site Features Map indicating the coring locations and associated selected site features is provided in Appendix A of this ESA.

4.3 Field Work Methodology

All field work documented in this ESA was performed by ESI personnel. Prior to initiation of field work, a request for a complete utility markout of the Site was submitted by ESI as required by New York State Department of Labor regulations. Confirmation of underground utility locations was secured and a field check of the utility markout was conducted prior to the extension of soil corings.

All soil samples were collected in a manner consistent with NYSDEC sample collection protocols. Stainless steel trowels were used at each sample location to place samples into jars pre-cleaned at the laboratory. After sample collection, the sample containers were placed in a cooler prior to transport to the laboratory. The soil samples were transported on ice via overnight delivery to York Analytical Laboratories, Inc., which is a New York State Environmental Laboratory Approval Program (ELAP) certified laboratory (ELAP Number 11116) for chemical analyses. Appropriate chain of custody procedures were followed.

4.3.1 Soil Cores

All manual borings were extended by ESI personnel using a hand-held direct push sampling spoon equipped with a slide hammer. Sampling was conducted at five boring locations (see section 4.4.1) at two-foot intervals to a maximum depth of four feet below grade or until refusal was reached. The sampling spoon was equipped with 1½ -inch outer diameter disposable acetate sleeves to prevent the cross contamination of soil samples. All sample collection equipment was properly decontaminated prior to the initiation of sampling and between sample locations to avoid cross-contamination.

An assessment of subsurface soil characteristics, including soil type, the presence of foreign materials and field indications of contamination (e.g., unusual coloration patterns or odors) was made by ESI personnel during the extension of each test pit and soil coring. ESI personnel maintained independent field logs documenting the physical characteristics and any field indications of contamination for all encountered material at each boring location. Relevant information from ESI logs for each boring location is summarized in Section 4.3.2; below.

4.3.2 Surface Soil Sampling

All surface soil samples were collected from the 0' to 1' depth subsequent to the removal of all organic surface materials. All equipment used to obtain the surface soil samples were decontaminated after each sample was collected.

An assessment of subsurface soil characteristics, including soil type, the presence of foreign materials and field indications of contamination (e.g., unusual coloration patterns or odors) was made by ESI personnel during the extension of each test pit and soil coring. ESI personnel maintained independent field logs documenting the physical characteristics and any field indications of contamination for all encountered material at each boring location. Relevant information from ESI logs for each boring location is summarized in Section 4.3.2, below.

4.4 Field Work Observations

Provided below is a description of each of the five soil cores and seven surface soil samples. The locations of these soil cores and surface soil sampling points were chosen based on information obtained during the initial phase one review and on observations made at the time of field work. A map illustrating the approximate locations of these sampling locations is provided in Appendix A of this ESA.

4.4.1 Soil Cores

Five soil cores were extended on the subject property. The first sample (HB-1) was located in a weeded area of the property located to the west of the house. The second sample (HB-2) was taken along the southern property border to the south of the house. HB-3 was taken in a debris area approximately 25 feet northwest of the barn. HB-4 was taken approximately 5 feet south of the barn and HB-5 was taken approximately three feet from the southeastern corner of the barn.

Although some variation was noted amongst the twelve sample locations, the subsurface material encountered generally consisted of light to medium brown, fine grained soil with fine to gravel, stone fragments, and cobbles. Groundwater was encountered at depths ranging from two to four feet below grade. A summary of the specific conditions encountered in each of these soil cores is summarized in Table 4, below.

4.4.2 Surface Soil Observations

Seven surface soil samples were taken to properly characterize the present condition of the surface soils in the area of the "burn spots" and debris storage areas of the subject property. One sample (HB-6) was taken from a debris area located approximately 25 feet south of the barn. The second sample (HB-7) was taken on the northern edge of the drum storage area. The third sample (HB-8) was taken along the northeastern side of the barn. The final four samples (HB-9, HB-10, HB-11 and HB-12) were taken from the "burn areas" located on the eastern portion of the property.

The soils collected from these locations generally consisted of medium to dark brown soils with gravel, small stones and a small amount of organic materials. A summary of the specific conditions encountered in each of the surface soils is summarized in Table 4, below.

Table 4: Observations of On-Site Surface and Subsurface Soils

ID	Location	Depth of Soil Core	General Observations
HB-1	Western portion of the property in the center of the open area located within the overgrown vegetation	0'-2' 2'-4' 4'-5' 5' refusal	soils at 0'-2' were dry light to medium brown were gravel and sand. At 2'-4' soils consisted of medium to dark brown sand intermixed with gravel and cobbles. Soils at 4' were wet. No field indications of contamination noted.
HB-2	Along the southern property border directly south of the center of the house	0'-2' 2'-4'	soils at 0'-2' consisted of black coal, ash, gravel, etc. Soils from 2'-6' were consistent with HB-1. No field indications of contamination were noted.
HB-3	Approximately 20 feet west of barn in a debris storage area	0'-2' 2'-4'	Soils from 0'-4' were dark brown soils with stones interspersed. From 2'-4' soils were dark brown with gravel and small stones. These soils were also wet. No field indications of contamination were noted.
HB-4	Approximately 8 feet south of the barn	0'-2' 2'-4'	Soils from 0'-2' consisted of dark brown to black soils with interspersed gravel, cobbles and small stones. Soils from 2'-4' were dark brown with gravel, cobble and stones. The soils from 2'-4' were moist. No field indications of contamination were noted.
HB-5	Approximately 5 feet from the southwestern corner of the barn	0'-2' 2' refusal	Soils from 0'-2' consisted of dark brown to black soils interspersed with gravel, cobble and small stones. No field indications of contamination were noted.
HB-6	Approximately 20 feet south of HB-5 on the northern side of a debris pile	0'-1'	Soils from 0'-1' were medium to dark brown with cobble, small stones and gravel. NO field indications of contamination were noted.

HB-7	On the northern side of the drum storage area	0'-1'	Soils from 0-1 were medium to dark brown with organic matter and gravel. No field indications of contamination were noted.
HB-8	Approximately 2 feet from the northwestern corner of the barn	0'-1'	Soils from 0'-1' were medium to dark brown with organic matter, gravel and small stones. No field indications of contamination were noted.
HB-9	Approximately 30' east of the center of the barn's eastern facade	0'-1'	Soils from 0'-1' were medium to dark brown with gravel and small stones. No field indications of contamination were noted.
HB-10	Approximately 35' northeast of HB-6 in a burn spot location	0'-1'	Soils from 0'-1' were medium to dark brown with gravel and small stones. No field indications of contamination were noted.
HB-11	Approximately 10' east of HB-10 in a burn spot location	0'-1'	Soils from 0'-1' were medium to dark brown with gravel and small stones. No field indications of contamination were noted.
HB-12	Approximately 7' northwest of HB-11	0'-1'	Soils from 0'-1' were medium to dark brown with grave and small stones. No field indications of contamination were noted.

4.5 Laboratory Analysis and Results

During the course of the field work described in Sections 4.2 and 4.3, above, sixteen soil samples were collected. Fourteen samples were submitted to the laboratory for analysis to document the presence or absence of contamination of on-site soils. As described below, four samples were subsequently reanalyzed for leachable metals, PCBs and total petroleum hydrocarbons.

4.5.1 Terminology

Action Levels

The term "action level," as defined in this ESA, is the concentration of a particular contaminant above which remedial actions are considered more likely. The overall objective of setting action levels is to assess the integrity of on-site soils and groundwater relative to conditions which are likely to present a threat to public health, given the existing and probable future uses of the site. On-site soils and groundwater with contaminant levels exceeding these action levels are considered more likely to warrant remediation. No independent risk assessment was performed as part of this investigation.

The action levels identified in this ESA for metals and petroleum hydrcarbons are based on the NYSDEC's Division Technical and Administrative Guidance Memorandum (TAGM) on Determination of Soil Cleanup Objectives and Cleanup Levels (January 24, 1994) as modified by subsequent, relevant NYSDEC Records of Decision (RODs) and Spill Technology and Remediation Series Memo #1 (STARS), respectively. In accordance with standards set forth in the above-referenced documents, all detected compounds are provided with their established action levels.

Background Levels

The term "background level", as defined in this ESA is the concentration of a particular metal which is known to naturally occur in Eastern United States soils. The overall objective of setting background levels for metals in soil is to assess the concentrations of metals in on-site soils relative to those that are naturally occurring.

On-site soils with metal concentrations exceeding these background levels are considered more likely to have been affected by anthropogenic contributions. The background levels for metals provided in this ESA are based on the NYSDEC's TAGM (January 24, 1994) as modified by subsequent, relevant Records of Decision (RODs).

Background levels do not exist for refined petroleum hydrocarbons and PCBs and therefore, no discussion of naturally occurring levels for these compounds is appropriate.

4.5.1 Submission and Analysis

Soils

Eight soil samples collected from the soil cores extended on the subject property were submitted for laboratory analysis: HB-1 (0'-2', 4'-5'), HB-2 (0'-2'), HB-3 (0'-2', 2'-4'), HB-4 (0'-2', 2'-4') and HB-5 (0'-2'). Six surface soil samples were also submitted to the laboratory for analysis (HB-6, HB-7, HB-8, HB-9, HB-10 and HB-11). Each of these samples were collected from soils determined by ESI personnel to be an accurate representation of the current on-site soil conditions. All fourteen soil samples were submitted to the laboratory for analysis for all eight RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver). Samples HB-6 and HB-8 were also analyzed for TPHs (with a fuel ID for kerosene) using USEPA Method D120 and samples HB-9 through HB-11 were analyzed for PCBs using USEPA Method 8080.

Soil sample HB-1(0'-2') was also submitted to the laboratory for TCLP analysis of arsenic and soil samples HB-3 (2'-4'), HB-7 (0'-1') and HB-8 (0'-1') were analyzed for TCLP of lead. The TCLP analysis was conducted due to the elevated levels of these metals in the dry weight soil samples.

4.5.2 Laboratory Results

Summarized laboratory data and conclusions based upon laboratory results are outlined in the following discussion. Specific characteristics or trends in results are noted where applicable. Further discussion of the laboratory results may also be found in the Conclusions and Recommendations section of this ESA.

Metals

Laboratory analysis of sample HB-2 (0'-2') did not identify the presence of any of the eight metals at concentrations above their established action levels. Barium, cadmium, chromium, mercury and silver were not detected at concentrations above the given action level in any of the soils analyzed.

Arsenic was detected at concentrations exceeding its established action level (7.5 ppm) in eight of the fourteen soil samples analyzed. The levels of arsenic in the soils ranged from 1.6 in sample HB-2 to 106 ppm in HB-1.

Lead was also detected at concentrations exceeding its established action level (250 ppm) in seven of the analyzed samples. The level of lead in the sampled soils ranged from 13.3 in HB-2 (0-2) to 1170 ppm in HB-7. HB-9 also had a very elevated level of lead (1010 ppm).

Selenium which is used in pigments, photographic exposure meters, electronics and xerography was detected at concentrations exceeding its established action level (2 ppm) in thirteen of the samples. The level of selenium in the samples soils ranged from 1.54 in HB-2 to 22.9 in HB-1 (0-2).

The extent of contaminated soil does not follow a distinct horizontal pattern. The contaminated soil appears to be spread throughout the site based on laboratory results. Provided below in Table 5 is a summary of the detected levels of metals analyzed in on-site soils.

Table 5: Summary of Detected Metals in Soils
All data provided in mg/kg. Concentrations shown in **bold** exceed NYSDEC established action levels

Metals (ppm)	Background Levels[1]	Action Levels[1]	HB-1 (0'-2')	HB-1 (4'-5')	HB-2 (0'-2')	HB-3 (0'-2')	HB-3 (2'-4')	HB-4 (0'-2')	HB-4 (2'-4')	HB-5 (0'-2')
Arsenic	3.0 - 12.0	7.5	**106**	**25.9**	1.6	**11.6**	**16.7**	6.25	6.28	3.7
Barium	15 - 600	300	57.5	68.8	34.7	144	69.8	117	60.5	176
Cadmium	0.1 - 1.0	10	ND	ND	ND	1.66	ND	1.82	4.02	ND
Chromium	1.5 - 40	50	13.6	19.8	3.99	6.43	6.31	10.9	11.5	5.03
Lead	4.0 - 61	400	213	**535**	13.3	**886**	**418**	97.1	69.0	63.3
Mercury	0.0001 - 0.2	1	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	0.1 - 3.9	2	**22.9**	**7.50**	1.54	**8.03**	**4.79**	**3.39**	**2.43**	**2.55**
Silver	NA[2]	NA[2]	ND	ND	ND	ND	ND	ND	ND	ND

Notes: 1. Source: NYSDEC Technical and Administrative Guidance Memorandum (January 24, 1994) as modified by subsequent relevant RODs.
2. NYSDEC action and/or background levels were not available for this compound.
3. ND = Not detected above laboratory detection limit
4. NA = Not Analyzed.

Table 5 (cont'd): Summary of Detected Metals in Soils

Metals (ppm)	Background Levels[1]	Action Levels[1]	HB-6 (0'-1')	HB-7 (0'-1')	HB-8 (0'-1')	HB-9 (0'-1')	HB-10 (0'-1')	HB-11 (0'-1')
Arsenic	3.0 - 12.0	7.5	3.08	**19.0**	8.79	12.6	5.73	**21.2**
Barium	15 - 600	300	222	157	170	160	97.8	170
Cadmium	0.1 - 1.0	10	ND	2.23	3.34	3.09	1.63	ND
Chromium	1.5 - 40	50	6.19	16.0	24.6	17.8	8.72	8.16
Lead	4.0 - 61	400	151	**1170**	**896**	**1010**	276	187
Mercury	0.0001 - 0.2	1	ND	ND	0.26	0.35	0.85	ND
Selenium	0.1 - 3.9	2	**2.39**	**4.68**	**4.27**	**2.93**	**3.94**	**3.98**
Silver	NA[2]	NA[2]	ND	ND	ND	ND	ND	ND

Notes: 1. Source: NYSDEC Technical and Administrative Guidance Memorandum (January 24, 1994) as modified by subsequent relevant RODs.
2. NYSDEC action and/or background levels were not available for this compound.
3. ND = Not detected above laboratory detection limit
4. NA = Not Analyzed.

TCLP

Arsenic

Analysis for TCLP of arsenic in sample HB-1 (0'-2') indicated that leachable arsenic was not detected in the sample.

Lead

TCLP of lead was detected in the three samples analyzed by the laboratory (HB-3 (0'-4'), HB-7 (0'-1'), HB-8 (0'-1')). However the levels at which it was detected (0.126 mg/L, 0.488 mg/L, 0.405 mg/L) were under the respective action level (5 mg/L) for TCLP of lead.

PCBs

Analysis of the samples for the presence of PCBs indicated the presence of PCBs in the three samples analyzed. For confirmation, all samples were re-analyzed for PCBs, with all re-analyses confirming PCBs. Total PCB levels were exceeded for sample HB-10 (total PCBs of 17.72 ppm) and HB-11(total PCBs of 1.02 ppm).

At HB-9, total PCBs were 0.92 ppm, below the NYSDEC action level of 1.0 ppm.

Provided below in Table 6 is a summary of the findings regarding the samples analyzed for the presence or absence of PCBs in the soils.

Table 6: PCBs Detected in Soils

All data provided in ug/kg. Concentration shown is **BOLD** exceed action level.

Compound (Method 8082)	Action Level[1]	Sample Identification					
					Re-analyses		
		HB-9 0-1	HB-10 0-1	HB-11 0-1	HB-9 0-1	HB-10 (010)	HB-11 (0-1)
PCB-1016	1,000	80	**5,400**	240	ND	ND	ND
PCB-1221	1,000	ND	ND	ND	ND	ND	ND
PCB-1232	1,000	ND	ND	ND	ND	ND	ND
PCB-1242	1,000	ND	ND	ND	ND	ND	ND
PCB-1248	1,000	ND	ND	ND	ND	ND	ND
PCB-1254	1,000	260	**8,100**	570	540	**12,400**	730
PCB-1260	1,000	14	ND	ND	380	**5,320**	290
PCB-Total		480	**13,500**	810	920	**17,720**	**1,020**

Notes: 1. Action level for PCBs is 1,000 µg/kg for surface soils; 10,000 µg/kg for subsurface soils pursuant to the NYSDEC Technical Administrative Guidance Memorandum #4046 (TAGM) Revised January 24, 1994.
2. ND = Not Detected above specified detection limit.

Total Petroleum Hydrocarbons

Two of the three samples analyzed for total petroleum hydrocarbons (TPHs) documented the presence of low levels of TPHs in soil (maximum concentrations of 210 ppm). NYSDEC does not maintain an action level for TPHs; the identified conclusions on the Site are below established guidance values in New Jersey and Connecticut.

Data suggest low levels of TPH may be present in on-site soils. Levels do not indicate the presence of a petroleum release and are not at levels warranting remediation.

5.0 Conclusions and Recommendations

This ESA has been performed on the "Barney Cohen" property located on Red Flynn Drive, City of Beacon, Dutchess County, New York, as described in Section 2.0, above. All phase one work was conducted in conformance with the scope and limitation of ASTM Practice E 1527-97. This ESA has revealed no evidence of potential recognized environmental conditions in connection with the property with the exception of the items detailed below. With respect to these conditions, the following conclusions and recommendations (in **bold**) are made. Cost estimates for proposed investigations and/or remedial actions are provided in *italics* where appropriate.

1. Information obtained during a review of historic photographs, municipal records, and information provided by the property representative indicates that one of the two on-site structures has been present on the subject property since at least the early 1900s. The subject property has been used as a junk yard for several years. A small area of disturbance was noted on the subject property in the 1935 photograph. This area of disturbance was not observed on later photographs. Areas of debris or car/boat storage were noted on the 1980 and 1995 photographs.

   There were several aboveground oil tanks on the southern adjoining parcel from the 1960s to the late 1990s. These tanks have since been removed (see Paragraph # 11 below). There were no areas of disturbance likely to impact the subject property noted on the aerial photographs.

   No further investigation of historic records is recommended.

2. Five soil cores and seven surface soil samples were submitted to the laboratory to confirm the presence or absence of soil contamination resulting from the historic use of the property as a junk yard. These soil samples were analyzed for the presence of metals, PCBs and TPHs.

   Laboratory analysis indicated that there were levels of lead and arsenic above their respective action levels in the on-site soils. Further analysis indicated that there were not leachable levels of arsenic in the analyzed soil and the leachable levels of lead were below the respective action level.

   Data support the conclusion that elevated metal concentrations are present throughout the site in both surface and subsurface soils, and that the likely source of these elevated metals is the fill material used to create the property. The absence of elevated TCLP data supports the conclusion that on-site soils can be managed as a non-hazardous waste.

   No further investigation of metal concentrations is recommended. Future development plans of the site should incorporate specific actions to reduce the likelihood of direct contact with these soils, including the installation of a barrier layer and/or importation of fill.

   PCBs are present in surface soils in the vicinity of the barn at levels exceeding NYSDEC action levels. The lateral and vertical extent of PCB concentration is not known.

   It is recommended that additional sampling be conducted on the subject property to determine the extent of PCB contamination on-site. A grid should be established and samples be collected over a broad area surrounding the three areas currently identified. It is further recommended that additional samples be collected in the burn areas to determine the vertical extent of contamination.

   Estimated cost for additional investigation: $3,000

The laboratory analysis of TPHs in samples HB-4 and HB-8 indicated that 210,000 ppb of TPH was present in sample HB-8. TPH was not detected in HB-4. The source of petroleum is not known, but based on the fact that the subject property has been used for dumping of metallic wastes it can be assumed that cutting oils and other lubricants commonly found on the debris leached into the on-site soils. On-site TPH levels support the conclusion that no widespread petroleum contamination is present on the site and that documented levels do not warrant remediation.

No further investigation is recommended.

3. A 275-gallon, active fuel oil AST was noted on the western side of the residential structure. No staining indicative of prior spills was noted on or in the vicinity of the AST during the site inspection. This tank is not required to be registered with the NYSDEC.

It is recommended that all petroleum products be stored within adequate secondary containment areas and that appropriate absorbent materials be maintained in all areas where releases could potentially occur.

4. Approximately 400 cubic yards of debris was noted on the subject property. The debris consisted of 250-350 cubic yards of metal debris along the southern border of the property, approximately 50 55-gallon empty 55-gallon drums with their tops removed, miscellaneous debris located on the northwestern corner of the property, two trucks near the center of the property, two trucks along the shore of the Hudson River and two cut, 275-gallon tanks in the water.

It is recommended that all debris materials be segregated into appropriate waste streams (i.e., those which can be disposed of as solid waste and those which require special handling) and be disposed of in accordance with applicable regulations.

Estimated Cost of Debris Removal: $15,000-$20,000

5. Asbestos-containing materials could potentially be present on the subject property. No asbestos survey is known to have been conducted. No suspect materials were noted during the inspection. However, items such as roofing materials and ceiling tiles could potentially contain asbestos.

No further investigation is recommended. It is recommended that any suspect material encountered during maintenance, renovation, or demolition activities be tested for asbestos or be treated as though it were asbestos in the absence of analytical data. All maintenance, renovation, or demolition activities should be conducted in accordance with applicable regulations.

6. Lead-based paint could potentially be present on the subject property. A lead-based paint survey is not known to have been conducted. All of the painted surfaces of the areas inspected by this office were in good condition at the time of the site inspection and are likely to have been painted multiple times. However, no statement can be made by this office regarding the presence or absence of LBP in underlying layers of paint.

No further investigation is recommended. It is recommended that any suspect material encountered during maintenance, renovation, or demolition activities be tested for lead or be treated as though it were lead-based paint in the absence of analytical data. All maintenance, renovation, or demolition activities should be conducted in accordance with applicable regulations.

7. Fluorescent light fixtures which may have light ballasts which contain PCBs were noted on the subject property. No other equipment likely to contain PCBs was noted on the subject property during the site inspection.

   No further investigation is recommended. It is recommended that any equipment which could potentially contain PCBs or materials contaminated with PCBs encountered during maintenance, renovation, or demolition activities be handled, removed, and disposed of in accordance with applicable regulations.

   There were also several "burn spots" noted on the eastern portion of the subject property. These areas were most likely used for the cleaning of metal equipment in the past. The oils which were cleaned from these materials may have contained PCBs.

   See Paragraph #2, above.

8. Four spill events (zero LUSTs) are recorded with the NYSDEC for areas located within 0.50 mile of the subject property. Spill closure dates have been provided by the NYSDEC for three of these events and NYSDEC cleanup standards were met for three of these events. Based on available information, these events are not likely to have impacted the subject property.

   No further investigation is recommended.

9. The median radon levels in the subject property's vicinity are below the established guidance level of 4.0 pCi/liter however more than 39% of the homes tested had radon levels above the guidance level. Therefore, it is likely that there are elevated radon levels on the subject property.

   It is recommended that radon canisters be placed on the first floor of the on-site structure to document the presence or absence of elevated levels of radon.

   Estimated cost: less than $400

10. There is one inactive landfill located within 0.5 mile of the subject property. This is the Beacon Landfill (sludge) facility (Facility ID: 14S91) which is located approximately 0.07 mile south-southwest of the subject property. Based on available information, operations that had occurred at this facility would not have impacted the subject property.

    No further investigation is recommended.

11. The Garret Storm, Inc. facility which adjoins the subject property to the south is registered with the NYSDEC as a former MOSF. The tanks at this site have been removed. This property is located downgradient of the subject property.

    No further investigation is recommended.

6.0 Sources of Information

6.1 Regulatory Records Review

USEPA National Priorities List (NPL)

ASTM DATABASE
SEARCH: 1.0 MILE
UPDATED: JUNE 2000

LISTING OF SITES WHICH ARE CONSIDERED TO POSE AN IMMEDIATE THREAT TO HUMAN HEALTH AND THE ENVIRONMENT AND HAVE BEEN IDENTIFIED FOR PRIORITY CLEANUP UNDER SUPERFUND.

USEPA Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) List

ASTM DATABASE
SEARCH: 0.5 MILE
UPDATED: JUNE 2000

LISTING OF ABANDONED, INACTIVE OR UNCONTROLLED HAZARDOUS WASTE SITES WHICH THE USEPA HAS INVESTIGATED OR IS CURRENTLY INVESTIGATING FOR INCLUSION ON THE NPL.

USEPA Resource Conservation and Recovery Information System (RCRIS) Corrective Action Activity (CORRACTS) List of Hazardous Waste Treatment, Storage and Disposal Facilities (TSDF)

ASTM DATABASE
SEARCH: 1.0 MILE
UPDATED: JUNE 2000

LISTING OF FACILITIES REGULATED UNDER THE RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) THAT TREAT, STORE AND/OR DISPOSE OF HAZARDOUS WASTE WITH CORRECTIVE ACTION ACTIVITY.

USEPA Resource Conservation and Recovery Information System (RCRIS) Non-CORRACTS List of Hazardous Waste Treatment, Storage and Disposal Facilities (TSDF)

ASTM DATABASE
SEARCH: 0.5 MILE
UPDATED: JUNE 2000

LISTING OF FACILITIES REGULATED UNDER THE RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) THAT TREAT, STORE AND/OR DISPOSE OF HAZARDOUS WASTE WHICH ARE NOT SUBJECT TO CORRECTIVE ACTION.

NYSDEC Registry of Inactive Hazardous Waste Disposal Sites and Solid Waste Disposal Facilities

ASTM DATABASE
SEARCH: 1.0 MILE
UPDATED: APRIL 2000

LISTING OF FACILITIES SUBJECT TO INVESTIGATIONS CONCERNING LIKELY OR THREATENED RELEASES OF HAZARDOUS SUBSTANCES FROM THOSE FACILITIES.

NYSDEC Registry of Active and Inactive Landfills, Transfer Stations and Solid Waste Disposal Facilities

ASTM DATABASE
SEARCH: 0.5 MILE
UPDATED: JUNE 1999

LISTING OF ACTIVE AND INACTIVE LANDFILLS, TRANSFER STATIONS AND SOLID WASTE DISPOSAL FACILITIES.

NYSDEC Leaking Underground Storage Tanks (LUSTs)

ASTM DATABASE
SEARCH:0.5 MILE
UPDATED: JANUARY 2000

SUBSET OF NYSDEC CHEMICAL AND PETROLEUM SPILLS DATABASE (SEE BELOW) LISTING ALL REPORTED LEAKING UNDERGROUND STORAGE TANKS.

USEPA Resource Conservation and Recovery Information System (RCRIS) List of Hazardous Waste Generators (SQG/LQG)

ASTM DATABASE
SEARCH: TARGET/ADJOINING PROPERTY
UPDATED: JUNE 2000

LISTING OF FACILITIES REGULATED UNDER THE RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) THAT GENERATE HAZARDOUS WASTE.

USEPA Emergency Response Notification System (ERNS)

ASTM DATABASE
SEARCH: TARGET PROPERTY
UPDATED: APRIL 2000

LISTING OF RELEASES OF PETROLEUM, CHEMICAL AND/OR HAZARDOUS SUBSTANCES INTO THE ENVIRONMENT AS REPORTED TO THE USEPA AND COAST GUARD.

NYSDEC Petroleum Bulk Storage Tank Records (PBS)

ASTM DATABASE
SEARCH: TARGET/ADJOINING PROPERTY
UPDATED: JANUARY 2000

LISTING OF FACILITIES WHICH TYPICALLY STORE MORE THAN 1100 GALLONS OF PETROLEUM PRODUCT IN BULK STORAGE TANKS.

NYSDEC Chemical Bulk Storage Tank Records (CBS)

ASTM DATABASE
SEARCH: TARGET/ADJOINING PROPERTY
UPDATED: JANUARY 2000

LISTING OF FACILITIES WHICH STORE ANY VOLUME OF CHEMICALS IN AN UNDERGROUND STORAGE TANK AND/OR MORE THAN 185 GALLONS OF CHEMICALS IN AN ABOVEGROUND STORAGE TANK.

NYSDEC Resource Recovery Projects in New York State

NON-ASTM DATABASE
SEARCH: 1.0 MILE
UPDATED: JUNE 1999

LISTING OF ACTIVE RESOURCE RECOVERY FACILITIES.

USEPA Resource Conservation and Recovery Information System (RCRIS) List of Hazardous Waste Transporters

NON-ASTM DATABASE
SEARCH: 1.0 MILE
UPDATED: JUNE 2000

LISTING OF FACILITIES REGULATED UNDER THE RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) THAT TRANSPORT HAZARDOUS WASTE.

NYSDEC Major Oil Storage Facility Records (MOSF)

NON-ASTM DATABASE
SEARCH: 0.5 MILE
UPDATED: JANUARY 2000

LISTING OF FACILITIES STORING 400,000 GALLONS OR GREATER OF PETROLEUM PRODUCT.

NYSDEC Petroleum and Chemical Spill Records

NON-ASTM DATABASE
SEARCH: 0.5 MILE
UPDATED: JANUARY 2000

LISTING OF ALL PETROLEUM, CHEMICAL OR HAZARDOUS SUBSTANCE RELEASES REPORTED TO THE NYSDEC.

USEPA National Pollutant Discharge Elimination System (NPDES) Wastewater Discharge

NON-ASTM DATABASE
SEARCH: TARGET PROPERTY
UPDATED: JUNE 2000

LIST OF SIGNIFICANT STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM (SPDES) WASTEWATER DISCHARGE PERMITTED FACILITIES. FACILITIES ARE CONSIDERED SIGNIFICANT BASED ON SEVERAL CHARACTERISTICS INCLUDING VOLUME OF DISCHARGE, SIZE OF RECEIVING STREAM, AND TOXICITY OF EFFLUENT.

NYSDOH Basement Radon Readings

NON-ASTM DATABASE
UPDATED: MARCH 1999/JULY 1998

LISTING OF RADON LEVELS BY ZIP CODE, MUNICIPALITY AND COUNTY

6.2 Maps and Documents

Aerial photographs dated 1935, 1945, 1960, 1965, 1980 and 1995, available for viewing at the Dutchess County Soil and Water Conservation District Office.

New York State Department of Environmental Conservation Freshwater Wetlands Map of the Wappingers Falls, New York Quadrangle, dated 1973.

United States Department of the Interior Federal Wetlands Map of the Wappingers Falls, New York Quadrangle, dated 1990.

United States Geographic Survey Topographic Maps of the Wappingers Falls, New York Quadrangle, dated 1956, (photorevised 1981) and the West Point, New York Quadrangle (dated 1957, photorevised 1981).

6.3 Local Agency Records

City of Beacon Building Department records, requested June 16, 2000.

City of Beacon Assessor's Office records, reviewed June 16, 2000.

6.4 Communications

Barney Cohen, owner of the subject property, various dates June 2000.

1989 Data
Garret Storm Site

CAMO LABORATORIES
367 VIOLET AVENUE
POUGHKEEPSIE, NEW YORK 12601
(914) 473-9200
FED. I.D. #14-1514539
NYS LAB ID NO.: 10310

New York State Department
of Environmental Conservation
21 South Putt Corners Road
New Paltz, New York 12561

Date of Invoice: 05/05/89
P.O. #: D100139
Job #:
Invoice #: 89-4-1694

Attn: Mr. Peter Doshna

Facility: Garrel Storm
Spill No.: 8900064
PIN: 99002

Analytical Report

Sample Identification

Date Samples Collected: 04/18/89
Date Samples Received: 04/18/89
Samples Collected By: CAMO Lab
Samples Delivered By: CAMO Lab
Matrix: Water

(01). Well

Parameters	Unit/ Measure	(01)
Method 503.1 by GC/MS and MTBE		*
Petroleum Product ID**		
Fuel Oil	ul/L	<0.1
Kerosene	ul/L	<0.1
Gasoline	D/ND	ND
Lube Oil	D/ND	ND

Analysis Comments: * See attached tables.

** Unidentified peaks present in petroleum product ID analysis. See attached chromatographs.

All samples will be discarded after twenty-one (21) days, or EPA Holding time, whichever is shorter, unless we are notified otherwise.

Hazardous waste samples will be returned to client.

Analytical Methods: All analytical methods comply with those specified in APHA "Standard Methods" and/or EPA approved methods.

CAMO LOG NO.: 89-4-1694

VOLATILES

METHOD 503.1 by GC/MS

PARAMETERS	SAMPLE IDENTIFICATION (01) Well
Benzene	<5
Trichloroethylene	<5
Toluene	<5
Tetrachloroethylene	<5
Ethylbenzene	<5
1-Chlorocyclohexene-1 *	<5
p-Xylene *	<5
Chlorobenzene *	<5
m-Xylene *	<5
o-Xylene	<5
Iso-propylbenzene	<5
Styrene	<5
p-Bromofluorobenzene	<5
n-propylbenzene	<5
tert-Butylbenzene	<5

NOTE: All results expressed in ug/L unless noted otherwise.

* Coelution Compounds.

CAMO LOG NO.: 89-4-1694

VOLATILES

METHOD 503.1 by GC/MS

PARAMETERS	SAMPLE IDENTIFICATION (01) Well
o-Chlorotoluene *	<5
p-Chlorotoluene *	<5
Bromobenzene *	<5
sec-Butylbenzene	<5
1,3,5-Trimethylbenzene	<5
p-Cymene *	<5
1,2,4-Trimethylbenzene *	<5
p-Dichlorobenzene	<15
m-Dichlorobenzene *	<15
Cyclopropylbenzene *	<5
n-Butylbenzene *	<5
2,3-Benzofuran	<5
o-Dichlorobenzene	<15
Hexachlorobutadiene	<25
1,2,4-Trichlorobenzene	<25
Napthalene	<25
1,2,3-Trichlorobenzene	<25
MTBE	<50

NOTE: All results expressed in ug/L unless noted otherwise.

* Coelution Compounds.

15 (1/75)

PIN # SP 9900 2
DUTCHESS

New York State Department of Environmental Conservation

MEMORANDUM

TO: Paul Keller
FROM: John K. O'Mara
SUBJECT: Oil Spill Inspection on 12/1/88, of the Garrett Storm and adjacent properties; in the City of Beacon

DATE: December 9, 1988

Dutchess

After making contact with the appropriate owners or representatives for the owners of the following properties in Beacon:

1) Garrett Storm
2) Hudson Handling Co.
3) Beacon Salvage

Mr. Pat Dunn, of the Oil Spill group, made an inspection of the above mentioned properties. Mr. Dunn's inspection report is attached for completeness. During the inspection as many of the monitoring wells that could be located were inspected and bailed, see attached map, no free product was found but varying intensities of a petroleum odor was noticed which would be indicative of the presence of dissolved product. At this time, considering the present use of the property and no observable manifestations of environmental impact, there is no real need indicated for active remediation to commence.

PORTION EXCEPTED

JO:ss

SPILL REPORT UPDATE FORM

Page _____ of _____

Spill No.: _____
PIN No.: _____

Name: GARRETT STORM

Location: BEACON Date of Inspection: 12-1-88

County: ORANGE

Inspection: X or Telephone Conversation: _____

Contact Person: _____

Site Activity: Hand Bailed monitoring wells on Property's of Hudson Handling Co, GARRETT STORM INC, and BEACON SALV

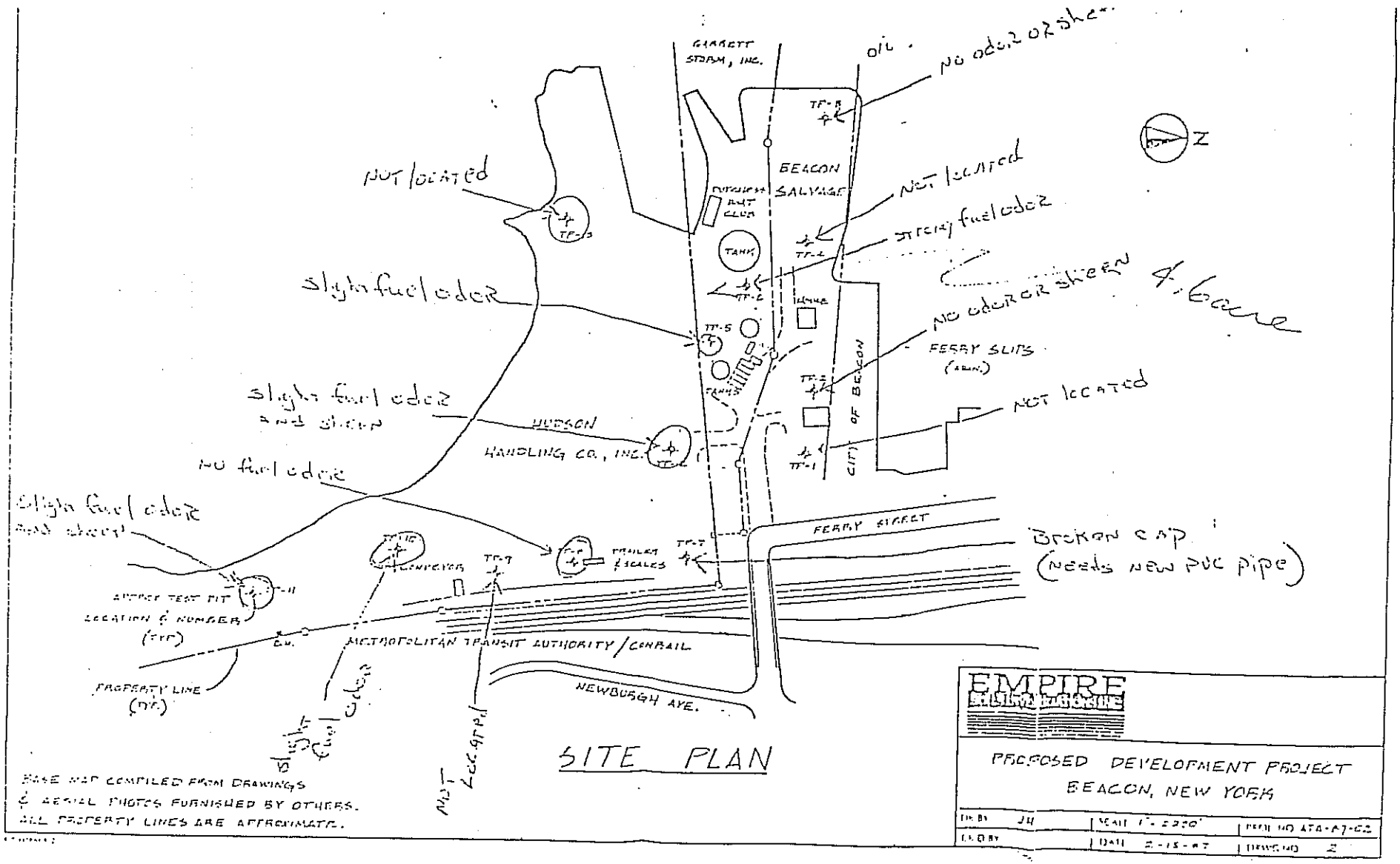
Met and bailed wells on Beacon Salvage with proper owner Bernie Cohen. Total of four(4) wells located on his property. I located two(2) of them - TP-2 & TP-3. TP-2 h no odor or sheen. TP-3 had no odor or sheen. (Wells TP-1 & TP-4 were not located.

Bailed wells TP-5 & TP-6 on GARRETT STORM property. T had very slight fuel odor. TP-6 had strong fuel odor.

Bailed wells TP-8, TP-10, TP-11 and TP-12 on Hudson Hand Co. property. (Wells TP-7, TP-9 and TP-13 were either broken or not located. TP-8 had no fuel odor or sheen. TP-10 had a very slight fuel odor. TP-11 had slight fuel odo and sheen. TP-12 had slight fuel odor and sheen.

~~Further Action Needed:~~ None of the wells bailed had fre product.

Prepared By: P. Dunn Date: 12-2-88



SITE PLAN

BASE MAP COMPILED FROM DRAWINGS & AERIAL PHOTOS FURNISHED BY OTHERS. ALL PROPERTY LINES ARE APPROXIMATE.

EMPIRE ENVIRONMENTAL

PROPOSED DEVELOPMENT PROJECT
BEACON, NEW YORK

DR BY JH	SCALE 1" = 200'	PROJ NO ATA-87-02	
CK'D BY	DATE 2-15-87	DRWG NO 2	

0671

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPO

SAMPLE ID: 890016 SAMPLE RECEIVED:89/01/05/ CHARGE: 37.
PROGRAM: 513:SPECIAL SAMPLES FOR DEC REGION 3
SOURCE ID: DRAINAGE BASIN:13 GAZETTEER CODE:1355
POLITICAL SUBDIVISION:FISHKILL COUNTY:DUTCHESS
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: GARRETT STORM
DESCRIPTION:MONITORING WELL
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: PPEP-2:PESTICIDES, PCBS, PURGEABLES, PRIORITY POLLUTANT
SAMPLE TYPE: 191:TEST WELL OR MONITORING WELL
TIME OF SAMPLING: 89/01/04 : DATE PRINTED:89/02/

<> THE PRESENCE OF PETROLEUM PRODUCT RELATED PEAKS PREVENTS <>
<> QUANTIFICATION OF BASE NEUTRAL PRIORITY POLLUTANTS. <>

ANALYSIS: XPEST-PCB ORGANOCHLORINE PESTICIDES & PCB'S (DES310-2)
DATE REPORTED: 89/01/24 REPORT MAILED OU

PARAMETER	RESULT
HCH,ALPHA	< 0.04 MCG/L
HCH,BETA	< 0.04 MCG/L
HCH,GAMMA (LINDANE)	< 0.04 MCG/L
HCH,DELTA	< 0.04 MCG/L
HEPTACHLOR	< 0.05 MCG/L
ALDRIN	< 0.02 MCG/L
HEPTACHLOR EPOXIDE	< 0.05 MCG/L
ENDOSULFAN I	< 0.05 MCG/L
4,4'-DDE	< 0.05 MCG/L
DIELDRIN	< 0.02 MCG/L
ENDRIN	< 0.02 MCG/L
4,4'-DDD	< 0.05 MCG/L
ENDOSULFAN II	< 0.05 MCG/L
ENDRIN ALDEHYDE	< 0.02 MCG/L
ENDOSULFAN SULFATE	< 0.05 MCG/L
4,4'-DDT	< 0.05 MCG/L
METHOXYCHLOR	< 1.0 MCG/L
TOXAPHENE	< 1.0 MCG/L
CHLORDANE	< 0.1 MCG/L
MIREX	< 0.05 MCG/L
PCB,AROCLOR 1221	< 0.05 MCG/L
PCB,AROCLOR 1016/1242	< 0.05 MCG/L
PCB,AROCLOR 1248	< 0.05 MCG/L
PCB,AROCLOR 1254	< 0.05 MCG/L
PCB,AROCLOR 1260	< 0.05 MCG/L

**** CONTINUED ON NEXT PAGE ****

COPIES SENT TO: CO(1), RO(2), LPHE(1), FED( ), INFO-P( ), INFO-L( )

N.Y.S.DEPT.OF ENVIRONMENTAL CONSERVATION
REGION 3
202 MAMARONECK AVE.
WHITE PLAINS,N.Y. 10602

SUBMITTED BY:DUNN

0672

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 2 RESULTS OF EXAMINATION FINAL REPO

SAMPLE ID: 890016 SAMPLE RECEIVED:89/01/05/ CHARGE: 37.
POLITICAL SUBDIVISION:FISHKILL COUNTY:DUTCHESS
LOCATION: GARRETT STORM
TIME OF SAMPLING: 89/01/04 : DATE PRINTED:89/02/

ANALYSIS: VH05021 VOLATILE HALOGENATED ORGANICS (DES 310-29)
DATE REPORTED: 89/01/24 REPORT MAILED 01

PARAMETER	RESULT
CHLOROMETHANE	< 0.5 MCG/L
BROMOMETHANE	< 0.5 MCG/L
VINYL CHLORIDE	< 0.5 MCG/L
DICHLORODIFLUOROMETHANE (FREON-12)	< 0.5 MCG/L
CHLOROETHANE	< 0.5 MCG/L
METHYLENE CHLORIDE (DICHLOROMETHANE)	< 0.5 MCG/L
TRICHLOROFLUOROMETHANE (FREON-11)	< 0.5 MCG/L
1,1-DICHLOROETHENE	< 0.5 MCG/L
1,1-DICHLOROETHANE	< 0.5 MCG/L
TRANS-1,2-DICHLOROETHENE	< 0.5 MCG/L
CIS-1,2-DICHLOROETHENE	< 0.5 MCG/L
CHLOROFORM	< 0.5 MCG/L
1,2-DICHLOROETHANE	< 0.5 MCG/L
DIBROMOMETHANE	< 0.5 MCG/L
1,1,1-TRICHLOROETHANE	< 0.5 MCG/L
CARBON TETRACHLORIDE	< 0.5 MCG/L
BROMODICHLOROMETHANE	< 0.5 MCG/L
2,3-DICHLOROPROPENE	< 0.5 MCG/L
1,2-DICHLOROPROPANE	< 0.5 MCG/L
TRANS-1,3-DICHLOROPROPENE	< 0.5 MCG/L
TRICHLOROETHENE	< 0.5 MCG/L
1,3-DICHLOROPROPANE	< 0.5 MCG/L
DIBROMOCHLOROMETHANE	< 0.5 MCG/L
CIS-1,3-DICHLOROPROPENE	< 0.5 MCG/L
1,1,2-TRICHLOROETHANE	< 0.5 MCG/L
1,2-DIBROMOETHANE	< 0.5 MCG/L
2-CHLOROETHYLVINYL ETHER	< 0.5 MCG/L
BROMOFORM	< 0.5 MCG/L
1,1,1,2-TETRACHLOROETHANE	< 0.5 MCG/L
1,2,3-TRICHLOROPROPANE,	< 0.5 MCG/L
1,1,2,2-TETRACHLOROETHANE	< 0.5 MCG/L
TETRACHLOROETHENE	< 0.5 MCG/L
PENTACHLOROETHANE	< 0.5 MCG/L
1-CHLOROCYCLOHEXENE-1	< 0.5 MCG/L
CHLOROBENZENE	< 0.5 MCG/L
BIS(2-CHLOROETHYL)ETHER	< 0.5 MCG/L
1,2-DIBROMO-3-CHLOROPROPANE	< 0.5 MCG/L
BROMOBENZENE	< 0.5 MCG/L
O-CHLOROTOLUENE	< 0.5 MCG/L
BIS(2-CHLOROISOPROPYL)ETHER	< 0.5 MCG/L
1,3-DICHLOROBENZENE	< 0.5 MCG/L
1,2-DICHLOROBENZENE	< 0.5 MCG/L
1,4-DICHLOROBENZENE	< 0.5 MCG/L

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

RESULTS OF EXAMINATION

FINAL REPO

SAMPLE ID: 890016 SAMPLE RECEIVED:89/01/05/ CHARGE: 37.
POLITICAL SUBDIVISION:FISHKILL COUNTY:DUTCHESS
LOCATION: GARRETT STORM
TIME OF SAMPLING: 89/01/04 : DATE PRINTED:89/02/

ANALYSIS: 5031 AROMATIC PURGEABLES, EPA METHOD 503.1 (DES 310-22
DATE REPORTED: 89/01/24 REPORT MAILED 0(

PARAMETER	RESULT
BENZENE	< 0.5 MCG/L
TOLUENE	< 0.5 MCG/L
ETHYLBENZENE	1. MCG/L
P-XYLENE	< 0.5 MCG/L
M-XYLENE	< 0.5 MCG/L
O-XYLENE	< 0.5 MCG/L
CUMENE	< 0.5 MCG/L
STYRENE	< 0.5 MCG/L
P-BROMOFLUOROBENZENE	< 0.5 MCG/L
N-PROPYLBENZENE	< 0.5 MCG/L
TERT-BUTYLBENZENE	< 0.5 MCG/L
O/P-CHLOROTOLUENE	< 0.5 MCG/L
M-CHLOROTOLUENE	< 0.5 MCG/L
1,3,5-TRIMETHYLBENZENE	< 0.5 MCG/L
1,2,4-TRIMETHYLBENZENE	< 0.5 MCG/L
P-CYMENE	< 0.5 MCG/L
CYCLOPROPYLBENZENE	< 0.5 MCG/L
SEC-BUTYLBENZENE	< 0.5 MCG/L
N-BUTYLBENZENE	< 0.5 MCG/L
2,3-BENZOFURAN	< 0.5 MCG/L
HEXACHLOROBUTADIENE (C-46)	40. MCG/L [SU]
1,2,4-TRICHLOROBENZENE	20. MCG/L [SU]
NAPHTHALENE	< 0.5 MCG/L
1,2,3-TRICHLOROBENZENE	< 0.5 MCG/L
PH OF AROMATIC ALIQUOT	5
PH WAS NOT AS LOW AS REQUIRED BY METHOD	YES

RECEIVED
FEB 13 1989
NYSDEC
REGION 3-WHITE PLAINS

ANALYSIS: GC-FID-A PRIORITY POLLUTANTS*ACIDS*GC/FID RESULTS
DATE PRINTED: 89/02/08 FINAL REPOR

PARAMETER	RESULT
PHENOL	< 10. MCG/L
2-CHLOROPHENOL	< 10. MCG/L
2-NITROPHENOL	< 10. MCG/L
2,4-DIMETHYLPHENOL	< 10. MCG/L
2,4-DICHLOROPHENOL	< 10. MCG/L
4-CHLORO-3-METHYLPHENOL	< 10. MCG/L
2,4,6-TRICHLOROPHENOL	< 10. MCG/L
2,4,5-TRICHLOROPHENOL	< 10. MCG/L
2,4-DINITROPHENOL	< 10. MCG/L
4-NITROPHENOL	< 10. MCG/L
2-METHYL-4,6-DINITROPHENOL	< 10. MCG/L
PENTACHLOROPHENOL	< 10. MCG/L

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

RESULTS OF EXAMINATION

FINAL REPOR

SAMPLE ID: 890016 SAMPLE RECEIVED:89/01/05/ CHARGE: 37.5
POLITICAL SUBDIVISION:FISHKILL COUNTY:DUTCHESS
LOCATION: GARRETT STORM
TIME OF SAMPLING: 89/01/04 : DATE PRINTED:89/02/0

ANALYSIS: GC-FID-BN PRIORITY POLLUTANTS*BASE/NEUTRALS*GC/FID RESULTS
DATE PRINTED: 89/02/08 FINAL REPORT

PARAMETER	RESULT
N-NITROSODI-N-PROPYLAMINE	INTERF.
HEXACHLOROETHANE	INTERF.
NITROBENZENE	INTERF.
ISOPHORONE	INTERF.
BIS(2-CHLOROETHOXY)METHANE	INTERF.
HEXACHLOROCYCLOPENTADIENE (C-56)	INTERF.
2-CHLORONAPHTHALENE	INTERF.
2,6-DINITROTOLUENE	INTERF.
ACENAPHTHYLENE	INTERF.
DIMETHYLPHTHALATE	INTERF.
ACENAPHTHENE	INTERF.
2,4-DINITROTOLUENE	INTERF.
DIETHYLPHTHALATE	INTERF.
FLUORENE	INTERF.
N-NITROSODIPHENYLAMINE	INTERF.
1,2-DIPHENYLHYDRAZINE	INTERF.
4-BROMOPHENYL PHENYL ETHER	INTERF.
HEXACHLOROBENZENE	INTERF.
PHENANTHRENE	INTERF.
ANTHRACENE	INTERF.
DI-N-BUTYL PHTHALATE	INTERF.
FLUORANTHENE	INTERF.
PYRENE	INTERF.
BENZIDINE	INTERF.
BUTYL BENZYL PHTHALATE	INTERF.
BENZO(A)ANTHRACENE	INTERF.
3,3'-DICHLOROBENZIDINE	INTERF.
CHRYSENE	INTERF.
BIS(2-ETHYLHEXYL)PHTHALATE	INTERF.
DI-N-OCTYL PHTHALATE	INTERF.
BENZO(B)FLUORANTHENE	INTERF.
BENZO(K)FLUORANTHENE	INTERF.
BENZO(A)PYRENE	INTERF.
INDENO(1,2,3-CD)PYRENE	INTERF.
DIBENZO(AH)ANTHRACENE	INTERF.
BENZO(GHI)PERYLENE	INTERF.

FOLLOWING PARAMETERS NOT PART OF TEST PATTERN

ANALYSIS: HCS PETROLEUM PRODUCTS (HYDROCARBON SCAN) (DES 310-13)
DATE REPORTED: 89/01/27 REPORT MAILED OUT

PARAMETER	RESULT
GASOLINE	[ND]
KEROSENE	INTERFER

**** CONTINUED ON NEXT PAGE ****

0675

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 5 RESULTS OF EXAMINATION FINAL REPOR

SAMPLE ID: 890016 SAMPLE RECEIVED:89/01/05/ CHARGE: 37.5
POLITICAL SUBDIVISION:FISHKILL COUNTY:DUTCHESS
LOCATION: GARRETT STORM
TIME OF SAMPLING: 89/01/04 : DATE PRINTED:89/02/0

----------PARAMETER----------	----------RESULT----------
FUEL OIL	1300. MCL/L [EE]
OIL, LUBRICATING	[ND]

**** END OF REPORT ****

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPOR

SAMPLE ID: 891005001 SAMPLE RECEIVED:89/01/05/10 CHARGE: 9.5
PROGRAM: 513:SPECIAL SAMPLES FOR DEC REGION 3
SOURCE ID: DRAINAGE BASIN:13 GAZETTEER CODE:1355
POLITICAL SUBDIVISION:FISHKILL COUNTY:DUTCHESS
LATITUDE: . LONGITUDE: . Z DIRECTION:
LOCATION: GARRETT STORM
DESCRIPTION:MONITORING WELL
REPORTING LAB: 10:LABORATORY OF INORGANIC ANALYTICAL CHEMISTRY - AL
TEST PATTERN: 10-107:SAFE DRINKING WATER ACT-TOTAL METALS
SAMPLE TYPE: 191:TEST WELL OR MONITORING WELL
TIME OF SAMPLING: 89/01/04 : DATE PRINTED:89/02/0

ANALYSIS: ICP-2 ICP GROUPING 2 - TOTAL RECOVERABLE

----------PARAMETER----------	----------RESULT----------
MERCURY	< 0.2 MCG/L
ARSENIC, TOTAL RECOVERABLE	< 10. MCG/L
SELENIUM, TOTAL RECOVERABLE	< 5. MCG/L
LEAD, TOTAL RECOVERABLE	21. MCG/L
BERYLLIUM, TOTAL RECOVERABLE	< 1. MCG/L
SILVER, TOTAL RECOVERABLE	< 10. MCG/L
BARIUM, TOTAL RECOVERABLE	141. MCG/L
CADMIUM, TOTAL RECOVERABLE	< 5. MCG/L
COBALT, TOTAL RECOVERABLE	< 5. MCG/L
CHROMIUM, TOTAL RECOVERABLE	< 5. MCG/L
COPPER, TOTAL RECOVERABLE	11. MCG/L
IRON, TOTAL RECOVERABLE	23500. MCG/L
MANGANESE, TOTAL RECOVERABLE	988. MCG/L
NICKEL, TOTAL RECOVERABLE	5. MCG/L
STRONTIUM, TOTAL RECOVERABLE	501. MCG/L
TITANIUM, TOTAL RECOVERABLE	16. MCG/L
VANADIUM, TOTAL RECOVERABLE	8. MCG/L
ZINC, TOTAL RECOVERABLE	34. MCG/L
MOLYBDENUM, TOTAL RECOVERABLE	< 20. MCG/L
ANTIMONY, TOTAL RECOVERABLE	< 50. MCG/L
TIN, TOTAL RECOVERABLE	< 50. MCG/L
THALLIUM, TOTAL RECOVERABLE	< 30. MCG/L
ALUMINUM, TOTAL RECOVERABLE	1440. MCG/L

FOLLOWING PARAMETERS NOT PART OF TEST PATTERN

----------PARAMETER----------	----------RESULT----------
PHENOLS	3. MCG/L
CYANIDES, HYDROLYZABLE	0.003 MG/L
DIG OF H2O-RECOVERABLE METALS	DONE

**** END OF REPORT ****

RECEIVED
FEB 13 1989
NYSDEC
REGION 3-WHITE PLAINS

COPIES SENT TO: CO(1), RO(2), LPHE(1), FED( ), INFO-P( ), INFO-L( )

N.Y.S.DEPT.OF ENVIRONMENTAL CONSERVATION
REGION 3
202 MAMARONECK AVE.
WHITE PLAINS,N.Y. 10602

SUBMITTED BY:DUNN

REGION: 3 SPILL NO. 8900064
PIN # 9900

CALLER'S NAME: John K O'Mara NOTIFIER'S NAME: SAME DUTCH.

CALLER'S AGENCY: NYSDEC NOTIFIER'S AGENCY:

CALLER'S PHONE: 2555453 NOTIFIER'S PHONE: AC ( )

SPILL DATE: 4/14/89 TIME: 1100 hrs. ANS SVC DATE: / / TIME:

CENT OFF DATE: 4/14/89 TIME: 1120 hrs. FIRST CALL: A (R) C

REG OFF DATE: 4/14/89 TIME: 1100 hrs.

Petroleum Spilled

1 - Gasoline
2 - #2 Fuel
3 - #3 Fuel
4 - #6 Fuel
5 - Diesel
6 - Jet Fuel
7 - Waste Oil
8 - Non PCB Oil
9 - PCB Oil
10 - Kerosene
(11) - Unknown

Material Class

(1) - Petroleum
2 - NonPetro/NonHaz
3 - Hazardous Material
4 - Raw Sewage
5 - Unknown

Other Material Spilled:

Is this a SARA Title III/ CERCLA Notification? ____ Yes ____ No

If Tank Test Failure Tank Size: ____ Gal. Test Method: ____

Quantity Spilled OR Leak Rate:

SPILL LOCATION

PLACE: GARRETT STORM
STREET/ROAD: Ferry STREET
MUNICIPALITY: Beacon
COUNTY: Dutchess
CONTACT PERSON: John Griffiths
PHONE: AC (914) 831 1100

SPILLER (If Different)

NAME: UNK.
STREET:
CITY/ZIP:
CONTACT:
PHONE: AC ( )

SPILL CAUSE

1 - Human Error
2 - Traffic Accident
3 - Equip. Failure
4 - Vandalism
5 - TK Test Fail. (Bulk Stor Pro)
6 - Housekeeping
7 - Deliberate
8 - Aband. Drums
9 - Tank Failure
10 - Tank Overfill
11 - Other
(12) - Unknown

SPILL SOURCE

1 - Comm./Indust.
2 - Non Comm/Inst.
3 - Maj Fac 400,000 Gal
4 - Non-Maj Fac 1,100 Gal
5 - Gas Station
6 - Pass. Vehicle
7 - Comm. Vehicle
8 - Tank Truck
9 - Pvt. Dwelling
10 - Vessel
11 - Railroad Car
(12) - Unknown

RESOURCE AFFECTED

1 - On Land
2 - In Sewer
(3) - Groundwater
4 - Surface Water
5 - Air

Drainage Basin:
Waterbody:

NOTIFIER

1 - Responsible Party
2 - Affected Person
3 - Police Department
4 - Fire Department
5 - Tank Tester
(6) - DEC
7 - Citizen
8 - Health Dept.
9 - Local Agency
10 - Federal Govern
11 - Other

REMARKS:
Possible Contamination of Groundwater at Garret Storm.

PERSON CONTACTED: Tom ANS SVC OPER: CALLER: DUTY OFF: Bob M/L

SPILL REPORT UPDATE FORM

Page 1 of 1

Spill No.: 8900064
PIN No.: SP 99002

Name: GARRETT STORM

Location: FERRY STREET DEACON Date of Inspection: —

County: DUTCHESS

Inspection: — or Telephone Conversation: —

Contact Person: —

Site Activity:

TA 8876

CC 90 99 00 27 - 89

SPOKE TO JOHN EISENHARDT. MODIFIED 624 AND PETROLEUM PRODUCTS IN H2O

Further Action Needed: SAMPLE OF GROUNDWATER BY CAMO LABS

Prepared By: JOHN K O'MARA Date: 4/4/89

1987 Data
Unspecified locations on both
Garret Storm and Beacon Salvage Sites

CHEMICAL ANALYSIS RESULTS

APPENDIX D

PROPOSED BEACON DEVELOPMENT PROJECT

BEACON, NEW YORK

LABORATORY CHEMICAL ANALYSIS RESULTS

GROUNDWATER SAMPLES OF JANUARY 13, 1987

TEST PIT NO. 1

Parameter	Result	Groundwater Standard
pH	7.28	6.5 - 8.5
Conductance	1205 umhos/cm	None
Petroleum ID	Not Detected	Not Present
Chloride	230 mg/l	250 mg/l

TEST PIT NO. 2

Parameter	Result	Groundwater Standard
pH	6.20	6.5 - 8.5
Conductance	625 umhos/cm	None
PCB (water)	<0.1 ug/l	0.1 ug/l
Iron	0.54 mg/l	0.30 mg/l
Aluminum	<0.5 mg/l	2.0 mg/l
Arsenic	0.02 mg/l	0.025 mg/l
Cadmium	0.001 mg/l	0.010 mg/l
Chromium	<0.005 mg/l	0.05 mg/l
Mercury	0.002 mg/l	0.002 mg/l
Selenium	<0.002 mg/l	0.020 mg/l
Lead	<0.01 mg/l	0.025 mg/l
Barium	0.11 mg/l	1.0 mg/l
Chloride	67 mg/l	250 mg/l

TEST PIT NO. 3

Parameter	Result	Groundwater Standard
Petroleum ID	Not Detected	Not Present
Iron	1.12 mg/l	0.30 mg/l
Aluminum	<0.5 mg/l	2.0 mg/l
Arsenic	0.02 mg/l	0.025 mg/l
Cadmium	0.003 mg/l	0.010 mg/l
Chromium	<0.005 mg/l	0.05 mg/l
Mercury	<0.0004 mg/l	0.002 mg/l
Selenium	<0.002 mg/l	0.020 mg/l
Lead	<0.01 mg/l	0.025 mg/l
Barium	0.12 mg/l	1.0 mg/l
Chloride	118 mg/l	250 mg/l

TEST PIT NO. 4

Parameter	Result	Groundwater Standard
EPA 624– 30 parameters	Each <1 ug/l	Varies; see note below

TEST PIT NO. 5

Parameter	Result	Groundwater Standard
pH	6.84	6.5 - 8.5
Conductance	2390 umhos/cm	None
PCB (water)	<0.1 ug/l	0.1 ug/l
PCB (oil)	<4.0 ug/g	---
Petroleum ID	"Fuel Oil" detected	Not Present
Chloride	800 mg/l	25 0 mg/l

TEST PIT NO. 6

Parameter	Result	Groundwater Standard
Chloride	650 mg/l	250 mg/l
EPA 624-30 parameters	Each < 1 ug/l	Varies; see note below

TEST PIT NO. 7

Paramter	Result	Groundwater Standard
pH	7.80	6.5 - 8.5
Conductance	3350 umhos/cm	None
PCB (water)	< 0.1 ug/l	0.1 ug/l
Iron	0.21 mg/l	0.30 mg/l
Aluminum	< 0.50 mg/l	2.0 mg/l
Arsenic	0.01 mg/l	0.025 mg/l
Cadmium	0.01 mg/l	0.010 mg/l
Chromium	< 0.005 mg/l	0.05 mg/l
Mercury	0.001 mg/l	0.002 mg/l
Selenium	< 0.002 mg/l	0.020 mg/l
Lead	0.02 mg/l	0.025 mg/l
Barium	0.05 mg/l	1.0 mg/l
Petroleum ID	Not Detected	Not Present
Chloride	290 mg/l	250 mg/l
EPA 624-30 parameters	Each < 1 ug/l	Varies; see note below

TEST PIT NO. 9

Parameter	Result	Groundwater Standard
pH	7.24	6.5 - 8.5
Conductance	14,100	None
Chloride	4100 mg/l	250 mg/l
Cyanide	<0.005 mg/l	0.2 mg/l

TEST PIT NO. 10

Parameter	Result	Groundwater Standard
pH	6.09	6.5 - 8.5
Conductance	>50,000 umhos/cm	None
Chloride	117,000 mg/l	250 mg/l
Cyanide	0.170 mg/l	0.2 mg/l

TEST PIT NO. 11

Parameter	Result	Groundwater Standard
pH	7.49	6.5 - 8.5
Conductance	1845 umhos/cm	None
Chloride	650 mg/l	250 mg/l

TEST PIT NO. 12

Parameter	Result	Groundwater Standard
pH	7.13	6.5 - 8.5
Conductance	45,800 umhos/cm	None
Chloride	22,000 mg/l	250 mg/l

Explanatory Notes

1) Tabulation adapted from "Laboratory Report" prepared by Adirondack Environmental Services, Inc. Rensselaer, N.Y., dated February 2, 1987.

2) Methods are in accordance with "Standard Methods for the Examination of Water and Wastewater", and "Methods for Chemical Analysis of Water and Wastes (EPA)".

3) Conductance and pH were determined in the laboratory.

4) Samples analyzed for arsenic, cadmium, chromium, mercury, selenium, lead and barium were field filtered prior to adding fixative agent.

5) "<" denotes Less Than; ">" denotes Greater Than.

6) Groundwater Standards (maximum values) are from "Ambient Water Quality Standards and Guidance Values", NYSDEC Technical and Operations Guidance Series (TOGS) 86-W-38, and "Ground Water Classifications, Quality Standards and Effluent Standards and/or Limitations", Title 6, Official Compilation of Codes, Rules and Regulations, Part 703.5.

7) Parameters included in EPA 624 volatile organic compound scan include the following, listed with their maximum permissable (standard) or recommended (guidance) concentrations:

Chloromethane	
Bromomethane	
Dichlorodifluoromethane	
Vinyl Chloride	5 ug/l (S)
Methylene Chloride	50 ug/l (G)
Trichlorofluoromethane	
1,1 Dichloroethene	
1,1 Dichloroethane	50 ug/l (G)
t-1,2 Dichloroethane	
Chloroform	100 ug/l (S)
Chloroethane	
1,2 Dichloroethane	0.8 ug/l (G)
1,1,1 Trichloroethane	50 ug/l (G)

Carbon Tetrachloride	5 ug/l (S)
Bromodichloromethane	50 ug/l (G)
1,2 Dichloropropane	50 ug/l (G)
t-1,3 Dichloropropene	
Trichloroethylene	10 ug/l (S)
Dibromochloromethane	50 ug/l (G)
1,1,2 Trichloroethane	0.6 ug/l (G)
cis 1,3 Dichloropropene	
bis 2 Chlorovinylether	
Bromoform	50 ug/l (G)
1,1,2,2 Tetrachloroethane	0.2 ug/l (G)
Tetrachloroethene	
Chlorobenzene	20 ug/l (G)
Benzene	Not Detectable (S)
Toluene	50 ug/l (G)
Ethyl Benzene	50 ug/l (G)
Dichlorobenzene	4.7 ug/l (S)
Maximum total (sum) of organic chemicals	100 ug/l

(S) indicates groundwater standard

(G) indicates guideline value

1994 – 2001
Summary Data Tables
Garret Storm Site

Table 1: Summary of Detected PAHs for RD-2, RD-3, RD-4, and RD-6 for Garret Storm

All concentrations are expressed in parts per billion (ppb). Results in **bold** exceed designated action levels.

Compound (USEPA Method 8270)	Action Level[1]	RD-2				RD-3						RD-4						RD-6		
		10/ 1994	01/ 1997	10/ 2000	03/ 2001	10/ 1994	01/ 1997	10/ 2000	03/ 2001	06/ 2001	10/ 2001	10/ 1994	01/ 1997	10/ 2000	03/ 2001	06/ 2001	10/ 2001	10/ 1994	01/ 1997	10/ 2000
Acenaphthene	5	ND	ND	Monitoring Well Destroyed During 1999 Soil Excavation	Monitoring Well Destroyed During 1999 Soil Excavation	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Monitoring Well Destroyed During 1999 Soil Excavation
Acenaphthylene	5	ND	ND			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Anthracene	5	ND	ND			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Benzo (a) Anthracene	.002[2]	ND	ND			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Benzo (a) Pyrene	.002[2]	ND	ND			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Benzo (b) Fluoranthene	.002[2]	ND	ND			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Benzo (g,h,i) Perylene	.002[2]	ND	ND			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Benzo (k) Fluoranthene	5	ND	ND			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Chrysene	.002[2]	ND	ND			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Dibenz (a,h) Anthracene	5	ND	ND			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Fluoranthene	5	ND	ND			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Fluorene	5	ND	ND			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Indeno (1,2,3-cd) Pyrene	.002[2]	ND	ND			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Naphthalene	5	120	ND			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
1-Methylnapthalene	10	380	5			ND	ND	NA	NA	ND	ND	ND	ND	NA	NA	ND	ND	ND	10	
2-Methylnapthalene	5	480	ND			ND	ND	NA	NA	ND	ND	ND	ND	NA	NA	ND	ND	120	ND	
Phenanthrene	5	ND	ND			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Pyrene	5	ND	ND			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	

Notes:

1. Source: NYSDEC Water Quality Regulations Surface Water and Groundwater Classifications and Standards, New York State Codes, Rules and Regulations, Title 6, Chapter X parts 700-706, including amendments through August 4, 1999.

ND - Compound not detected

NA - Not Analyzed

Table 2: Summary of Detected PAHs for RD-7, RD-9, RD-10 (as a replacement for RD-2 and RD-6), RD-K1, and RD-K2 for Garret Storm

All concentrations are expressed in parts per billion (ppb). Results in **bold** exceed designated action levels.

Compound (USEPA Method 8270)	Action Level[1]	RD-7						RD-9						RD-10			RD-K1			RD-K2	
		10/ 1994	01/ 1997	10/ 2000	03/ 2001	06/ 2001	10/ 2001	10/ 1994	01/ 1997	10/ 2000	03/ 2001	06/ 2001	10/ 2001	03/2001	06/2001	10/2001	10/ 1994	01/ 1997	10/2000 and 03/2001	01/ 1997	10/2000 and 03/2001
Acenaphthene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Well Destroyed During Site Restoration	36	ND	ND	ND	ND	No sample collected	ND	No sample collected
Acenaphthylene	5	ND	ND	NA	NA	ND	ND	ND	ND	NA	NA	ND		NA	ND	ND	ND	ND		ND	
Anthracene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		17	24	ND	ND	ND		ND	
Benzo (a) Anthracene	.002[2]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND		ND	
Benzo (a) Pyrene	.002[2]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND		ND	
Benzo (b) Fluoranthene	.002[2]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND		ND	
Benzo (g,h,i) Perylene	.002[2]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND		ND	
Benzo (k) Fluoranthene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND		ND	
Chrysene	.002[2]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND		ND	
Dibenz (a,h) Anthracene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND		ND	
Fluoranthene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND		ND	
Fluorene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		81	ND	ND	ND	ND		ND	
Indeno (1,2,3-cd) Pyrene	.002[2]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND		ND	
Naphthalene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND		ND	
1-Methylnapthalene	10	ND	ND	NA	NA	ND	ND	ND	ND	NA	NA	ND		NA	ND	ND	ND	ND		ND	
2-Methylnapthalene	5	ND	ND	NA	NA	ND	ND	ND	ND	NA	NA	ND		NA	ND	ND	ND	ND		ND	
Phenanthrene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		79	67	ND	ND	ND		ND	
Pyrene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		22	ND	ND	ND	ND		ND	

Notes:

1. Source: NYSDEC Water Quality Regulations Surface Water and Groundwater Classifications and Standards, New York State Codes, Rules and Regulations, Title 6, Chapter X parts 700-706, including amendments through August 4, 1999.

ND - Compound not detected

NA - Not Analyzed

Table 3: Summary of Detected VOCs for RD-2, RD-3, RD-4, RD-6, RD-7, RD-9, and RD-10 (as replacement for RD-2 and RD-6) **for Garret Storm**
All concentrations are expressed in parts per billion (ppb). Results in bold exceed designated action levels.

Detected VOC Compounds	Action Level[1]	RD-2		RD-3				RD-4				RD-6		RD-7				RD-9			RD-10		
		01/ 1997	10/2000 and 03/2001	10/ 2000	03/ 2001	06/ 2001	10/ 2001	10/ 2000	03/ 2001	06/ 2001	10/ 2001	01/ 1997	10/2000 and 03/2001	10/ 2000	03/ 2001	06/ 2001	10/ 2001	10/ 2000	03/ 2001	06/ 2001	03/ 2001	06/ 2001	10/ 2001
,2,4-Trimethylbenzene	5	ND	Monitoring Well Destroyed During 1999 Soil Excavation	ND	ND	5	ND	ND	ND	ND	ND	ND	Monitoring Well Destroyed During 1999 Soil Excavation	ND	ND	ND	ND	ND	ND	ND	10	ND	ND
,3,5-Trimethylbenzene	5	ND		ND	ND	1	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	37	ND	ND
Benzene	0.7	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	5	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	7	ND	ND
Isopropylbenzene	5	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	17	ND	2
Methyl-tert-butyl ether (MTBE)	10	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	10	ND		ND	ND	58	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Butylbenzene	5	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	190	ND	1
n-Propylbenzene	5	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	1	ND	2
o-Xylene	5	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-&m-Xylenes	5	ND		ND	ND	2	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	5	ND		ND	ND	2	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	5	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	5	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	41	ND	ND
tert-Butylbenzene	5	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	49	ND	ND
Toluene	5	ND		ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	ND	ND	ND	9	

Notes:
1. Source: NYSDEC Water Quality Regulations Surface Water and Groundwater Classifications and Standards, New York State Codes, Rules and Regulations, Title 6, Chapter X parts 700-706, including amendments through August 4, 1999.

ND - Compound was analyzed for but was not detected
NA - Not Analyzed
NS - No sample collected

Post-Excavation Samples
Garret Storm Site

Table 4: Summary of PAHs in Soil Samples from October 19-20, 1999 and March 27, 2003
All results provided in µg/kg (ppb). Results in bold exceed designated action levels.

Compound (USEPA Method 8270)	Action Level[1]	Sample Identification							
		S-1	S-3	Base 6'	2PE-1 (5-7')	2PE-2 (5-7')	2PE-3 (5-7')	2PE-4 (5-7')	2PE-5 (5-7')
Acenaphthene	50,000	3,000	2,100	ND	3,700	3,600	ND	ND	ND
Anthracene	50,000	ND	ND	ND	ND	ND	ND	ND	ND
Benzo (a) Anthracene	224	ND*	ND*	ND*	ND*	ND*	ND*	ND*	ND*
Benzo (a) Pyrene	61	ND*	ND*	ND*	ND*	ND*	ND*	ND*	ND*
Benzo (b) Fluoranthene	1,100	ND	ND	ND	ND	ND	ND	ND	ND
Benzo (k) Fluoranthene	1,100	ND	ND	ND	ND	ND	ND	ND	ND
Benzo (g,h,i) Perylene	50,000	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	400	ND*	ND*	ND*	ND*	ND*	ND*	ND*	ND*
Dibenzo (a,h) Anthracene	14	ND*	ND*	ND*	ND*	ND*	ND*	ND*	ND*
Fluoranthene	50,000	ND	ND	ND	ND	ND	ND	4,900	ND
Fluorene	50,000	5,100	3,700	ND	5,300	8,100	ND	ND	ND
Indeno (1,2,3-cd) Pyrene	3,200	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	13,000	ND	2,200	ND	8,200	4,600	ND	ND	ND
Phenanthrene	50,000	8,800	6,500	ND	5,500	14,000	ND	6,300	9,800
Pyrene	50,000	ND	ND	ND	5,700	7,000	ND	ND	ND

Notes:
1. Source: NYSDEC Technical and Administrative Guidance Memorandum #4046 (TAGM) (January 24, 1994) as modified by subsequent, relevant NYSDEC Records of Decision (RODs).

* = Reported minimum detection levels are above TAGM action levels.
ND = Not Detected.

Table 5: Summary of Detected VOCs in Soil Samples from March 27, 2003

All results measured in µg/kg-ppb. Results in bold exceed designated action levels.

Compound (USEPA Method 8260)	Action Level[1,2]	Sample Identification				
		2PE-1 (5-7')	2PE-2 (5-7')	2PE-3 (5-7')	2PE-4 (5-7')	2PE-5 (5-7')
Benzene	60	15	ND	ND	ND	ND
Ethylbenzene	5500	350	350	16	39	19
o-Xylene	1200	120	ND	ND	ND	ND
p-&m-Xylenes	1200	980	300	ND	ND	37
Toluene	1500	19	ND	ND	ND	ND

Notes:

1. Source: NYSDEC Technical and Administrative Guidance Memorandum #4046 (TAGM) (January 24, 1994) as modified by subsequent, relevant NYSDEC Records of Decision (RODs).

2. Source: NYSDEC Spill Technology and Remediation Series (STARS) Memo #1, July 1993.

ND = Not Detected

Table 6: Summary of RCRA Metals in Soils from March 27, 2003

All data provided in mg/kg. Concentrations shown in bold exceed NYSDEC established action levels.

Metals	Background Levels[1]	Action Levels[1]	Sample Identification				
			2PE-1 (5-7')	2PE-2 (5-7')	2PE-3 (5-7')	2PE-4 (5-7')	2PE-5 (5-7')
Arsenic	3 - 12	7.5	38.1	3.07	6.11	7.48	6.95
Barium	15 -600	300	37.9	20.7	27.6	35.1	32.7
Cadmium	0.1 - 1	1	ND	ND	ND	ND	ND
Chromium	1.5 - 4.0	10	7.43	4.61	6.22	5.73	8.53
Lead	4 - 61	250	48.4	11.8	123	27.3	63.7
Mercury	0.001 - 0.2	0.1	ND	ND	ND	ND	ND
Selenium	0.1 - 3.9	2	2.54	ND	ND	ND	ND
Silver	NP	SB	ND	ND	ND	ND	ND

Notes:

1. Source: NYSDEC Technical and Administrative Guidance Memorandum #4046 (January 24, 1994) as modified by subsequent, relevant NYSDEC Records of Decision (RODs)

ND = Not detected above specified detection limit

SB = Site Background

1994
Soil Sample Data
Garret Storm Site

Table 1: Summary of Analytical Data from Soil Samples at Groundwater Interface
(All results are in ppb. All results in **BOLD** exceed action levels)

Compound	Sample Identification										
	RD-1	RD-2[2]	RD-3	RD-4	RD-5[2]	RD-6[2]	RD-7	RD-8	RD-10	RD-11	Action Level[1]
Anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND	*250*	1000
Acenaphthene	ND	ND	ND	*150*	ND	ND	ND	ND	ND	ND	400
1-Methylnaphthalene	ND	**65,000**	ND	ND	**52,000**	ND	ND	ND	ND	ND	1000
2-Methylnapthalene	ND	**95,000**	ND	*140*	**65,000**	ND	ND	ND	ND	*650*	1000
Phenanthrene	ND	ND	*140*	ND	ND	ND	ND	ND	ND	**1400**	1000
Pyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	*140*	1000
Benzo (a) Anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.04
Benzo (a) Pyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.04
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	200
Fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1000
Fluorene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1000
Chrysene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.04
Benzo (b) Fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.04
Benzo (k) Fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.04

Notes:
1. Source: NYSDEC STARS Memo #1: Petroleum Contaminated Soil Guidance Policy, August 1992.
2. Due to matrix interference, detection limits for this sample were between 25,000 and 125,000 ppb

Soil Sample Data
Beacon Salvage Site

The extent of contaminated soil does not follow a distinct horizontal pattern. The contaminated soil appears to be spread throughout the site based on laboratory results. Provided below in Table 5 is a summary of the detected levels of metals analyzed in on-site soils.

Table 5: Summary of Detected Metals in Soils
All data provided in mg/kg. Concentrations shown in **bold** exceed NYSDEC established action levels

Metals (ppm)	Background Levels[1]	Action Levels[1]	HB-1 (0'-2')	HB-1 (4'-5')	HB-2 (0'-2')	HB-3 (0'-2')	HB-3 (2'-4')	HB-4 (0'-2')	HB-4 (2'-4')	HB-5 (0'-2')
Arsenic	3.0 - 12.0	7.5	**106**	**25.9**	1.6	**11.6**	**16.7**	6.25	6.28	3.7
Barium	15 - 600	300	57.5	68.8	34.7	144	69.8	117	60.5	176
Cadmium	0.1 - 1.0	10	ND	ND	ND	1.66	ND	1.82	4.02	ND
Chromium	1.5 - 40	50	13.6	19.8	3.99	6.43	6.31	10.9	11.5	5.03
Lead	4.0 - 61	400	**213**	**535**	13.3	**886**	**418**	97.1	69.0	63.3
Mercury	0.0001 - 0.2	1	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	0.1 - 3.9	2	**22.9**	**7.50**	1.54	**8.03**	**4.79**	**3.39**	**2.43**	**2.55**
Silver	NA[2]	NA[2]	ND	ND	ND	ND	ND	ND	ND	ND

Notes: 1. Source: NYSDEC Technical and Administrative Guidance Memorandum (January 24, 1994) as modified by subsequent relevant RODs.
2. NYSDEC action and/or background levels were not available for this compound.
3. ND = Not detected above laboratory detection limit
4. NA = Not Analyzed.

Table 5 (cont'd): Summary of Detected Metals in Soils

Metals (ppm)	Background Levels[1]	Action Levels[1]	HB-6 (0'-1')	HB-7 (0'-1')	HB-8 (0'-1')	HB-9 (0'-1')	HB-10 (0'-1')	HB-11 (0'-1')
Arsenic	3.0 - 12.0	7.5	3.08	**19.0**	**8.79**	**12.6**	5.73	**21.2**
Barium	15 - 600	300	222	157	170	160	97.8	170
Cadmium	0.1 - 1.0	10	ND	2.23	3.34	3.09	1.63	ND
Chromium	1.5 - 40	50	6.19	16.0	24.6	17.8	8.72	8.16
Lead	4.0 - 61	400	151	**1170**	**896**	**1010**	276	187
Mercury	0.0001 - 0.2	1	ND	ND	0.26	0.35	0.85	ND
Selenium	0.1 - 3.9	2	**2.39**	**4.68**	**4.27**	**2.93**	**3.94**	**3.98**
Silver	NA[2]	NA[2]	ND	ND	ND	ND	ND	ND

Notes: 1. Source: NYSDEC Technical and Administrative Guidance Memorandum (January 24, 1994) as modified by subsequent relevant RODs.
2. NYSDEC action and/or background levels were not available for this compound.
3. ND = Not detected above laboratory detection limit
4. NA = Not Analyzed.

TCLP

Arsenic

Analysis for TCLP of arsenic in sample HB-1 (0'-2') indicated that leachable arsenic was not detected in the sample.

Lead

TCLP of lead was detected in the three samples analyzed by the laboratory (HB-3 (0'-4'), HB-7 (0'-1'), HB-8 (0'-1')). However the levels at which it was detected (0.126 mg/L, 0.488 mg/L, 0.405 mg/L) were under the respective action level (5 mg/L) for TCLP of lead.

PCBs

Analysis of the samples for the presence of PCBs indicated the presence of PCBs in the three samples analyzed. For confirmation, all samples were re-analyzed for PCBs, with all re-analyses confirming PCBs. Total PCB levels were exceeded for sample HB-10 (total PCBs of 17.72 ppm) and HB-11(total PCBs of 1.02 ppm).

At HB-9, total PCBs were 0.92 ppm, below the NYSDEC action level of 1.0 ppm.

Provided below in Table 6 is a summary of the findings regarding the samples analyzed for the presence or absence of PCBs in the soils.

Table 6: PCBs Detected in Soils

All data provided in ug/kg. Concentration shown is **BOLD** exceed action level.

Compound (Method 8082)	Action Level[1]	Sample Identification					
					Re-analyses		
		HB-9 0-1	HB-10 0-1	HB-11 0-1	HB-9 0-1	HB-10 (010)	HB-11 (0-1)
PCB-1016	1,000	80	**5,400**	240	ND	ND	ND
PCB-1221	1,000	ND	ND	ND	ND	ND	ND
PCB-1232	1,000	ND	ND	ND	ND	ND	ND
PCB-1242	1,000	ND	ND	ND	ND	ND	ND
PCB-1248	1,000	ND	ND	ND	ND	ND	ND
PCB-1254	1,000	260	**8,100**	570	540	**12,400**	730
PCB-1260	1,000	14	ND	ND	380	**5,320**	290
PCB-Total		480	**13,500**	810	920	**17,720**	**1,020**

Notes: 1. Action level for PCBs is 1,000 µg/kg for surface soils; 10,000 µg/kg for subsurface soils pursuant to the NYSDEC Technical Administrative Guidance Memorandum #4046 (TAGM) Revised January 24, 1994.
2. ND = Not Detected above specified detection limit.

Summary Data Tables
PCB-Contaminated Area
Beacon Salvage Site

Summary of PCBs in Soil Samples from June 2000 Sampling
(Results in **bold** exceed designated action levels. All results measured in µg/kg.)

Compound (Method 8082)	Action Level[1]	Sample Identification					
					Re-analyses		
		HB-9 (0-1')	HB-10 (0-1')	HB-11 (0-1')	HB-9 (0-1')	HB-10 (0-1')	HB-11 (0-1')
PCB-1016	1,000	80	**5,400**	240	ND	ND	ND
PCB-1221	1,000	ND	ND	ND	ND	ND	ND
PCB-1232	1,000	ND	ND	ND	ND	ND	ND
PCB-1242	1,000	ND	ND	ND	ND	ND	ND
PCB-1248	1,000	ND	ND	ND	ND	ND	ND
PCB-1254	1,000	260	**8,100**	570	540	**12,400**	730
PCB-1260	1,000	14	ND	ND	380	**5,320**	290
PCB-Total	1,000	480	**13,500**	810	920	**17,720**	**1,020**

Notes: 1. Action level for PCBs is 1,000 µg/kg for surface soils; 10,000 µg/kg for subsurface soils pursuant to the NYSDEC Technical Administrative Guidance Memorandum #4046 (TAGM) revised January 24, 1994, as modified by subsequent, relevant records of decision (RODs).
ND = Not Detected above specified detection limit.

Summary of PCBs in Soil Samples from August 2000 Sampling
(Results in **bold** exceed designated action levels. All results measured in µg/kg.)

Compound (Method 8082)	Action Level[1]	Sample Identification						
		2HB-1 (0'-0.5')	2HB-1 (4'-5')	2HB-2 (0'-0.5')	2HB-3 (0'-0.5')	2HB-3 (4'-5')	2HB-4 (0'-0.5')	2HB-4 (3'-5')
PCB-1016	1,000	40	30	80	100	820	40	ND
PCB-1221	1,000	ND	ND	ND	ND	ND	ND	ND
PCB-1232	1,000	ND	ND	ND	ND	ND	ND	ND
PCB-1242	1,000	ND	ND	ND	ND	ND	ND	ND
PCB-1248	1,000	ND	ND	ND	ND	ND	ND	ND
PCB-1254	1,000	400	120	520	200	480	120	ND
PCB-1260	1,000	150	ND	ND	180	190	90	ND
Total PCBs	1,000	590	150	600	480	**1,500**	250	ND

Notes: 1. Action level for PCBs is 1,000 µg/kg for surface soils; 10,000 µg/kg for subsurface soils pursuant to the NYSDEC Technical Administrative Guidance Memorandum #4046 (TAGM) Revised January 24, 1994 as modified by subsequent, relevant records of decision (RODs).
2. ND = Not Detected above specified detection limit.

Table 2 (continued)

Compound (Method 8082)	Action Level[1]	Sample Identification							
		2HB-5 (0'-0.5')	2HB-5 (5'-6')	2HB-6 (0'-0.5')	2HB-6 (4'-6')	2HB-7 (0'-0.5')	2HB-7 (4'-6')	2HB-8 (0'-0.5')	2HB-8 (3'-4')
PCB-1016	1,000	170	ND	100	30	670	ND	280	ND
PCB-1221	1,000	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1232	1,000	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1242	1,000	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1248	1,000	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1254	1,000	ND	270	450	180	540	ND	130	110
PCB-1260	1,000	380	200	ND	ND	ND	ND	430	ND
Total PCBs	1,000	550	470	550	210	**1,200**	ND	**2,000**	110

Notes: 1. Action level for PCBs is 1,000 µg/kg for surface soils; 10,000 µg/kg for subsurface soils pursuant to the NYSDEC Technical Administrative Guidance Memorandum #404 (TAGM) revised January 24, 1994, as modified by subsequent, relevant records of decision (RODs).
ND = Not Detected above specified detection limit.

Surface Soil Samples
Beacon Salvage Site

Summary of PCBs, Pesticides, and SVOCs in Soil Samples from August 2001 Sampling
(Results in **bold** exceed designated action levels. All results measured in μg/kg.)

Compound	Action Level[1]	Sample Identification							
		CS-1	CS-2	SS-1	SS-2	SS-3	SS-4	SS-5	SS-6
PCBs (total)	1,000	**1100**	810	740	**1100**	180	30	ND	60
Pesticides	varies	ND	ND	NA	NA	NA	NA	NA	NA
VOCs	varies	ND	ND	NA	NA	ND	ND	NA	NA
SVOCs:									
Benzo (a) Anthracene	224	**2,700**	**2,100**	NA	NA	ND	ND	NA	NA
Benzo (a) Pyrene	61	**1,900**	**2,100**	NA	NA	ND	ND	NA	NA
Benzo (a) Fluoranthene	1,100	**1,900**	**2,200**	NA	NA	ND	ND	NA	NA
Benzo (k) Fluoranthene	1,100	**2,600**	**2,500**	NA	NA	800	ND	NA	NA
Benzo (g,h,i) Perylene	50,000	ND	670	NA	NA	ND	ND	NA	NA
Chrysene	400	**3,000**	**2,500**	NA	NA	**730**	ND	NA	NA
Fluoranthene	50,000	4,500	4,200	NA	NA	1,400	ND	NA	NA
Indeno (1,2,3-cd) Pyrene	3,200	ND	870	NA	NA	ND	ND	NA	NA
Phenanthrene	50,000	2,100	2,400	NA	NA	850	ND	NA	NA
Pyrene	50,000	4,300	3,700	NA	NA	1,100	ND	NA	NA
TCDF	NP	ND	ND	NA	NA	NA	ND	NA	NA
TCDD	NP	ND	ND	NA	NA	NA	ND	NA	NA

Notes: 1: Source: NYSDEC Technical and Administrative Guidance Memorandum revised January 24, 1994, as modified by subsequent, relevant NYSDEC Records of Decisions (RODs).
ND = Not Detected above specified detection limit
NA = Not Analyzed
NP = Not Provided

Summary of Metal Concentrations in Soil Samples from August 2001 Sampling
(Results in **bold** exceed designated action levels. All results measured in mg/kg.)

Metals	Background Levels[1]	Action Level[1]	Sample Identification							
			CS-1	CS-2	SS-1	SS-2	SS-3	SS-4	SS-5	SS-6
Arsenic	3 - 12	7.5	**12.8**	**26.6**	**14.2**	**17.4**	**11.4**	5.34	7.5	**11**
Barium	15 - 600	300	143	151	157	19.4	60.8	58.4	128	131
Cadmium	0.1 - 1	10	4.21	2.09	1.48	8.87	0.9	ND	ND	3.37
Chromium	1.5 - 4.0	50	**57.5**	39.2	13.7	18.7	11.5	14.2	17.3	11.6
Lead	200-500	400	**472**	**404**	**558**	**3,950**	395	140	319	**470**
Mercury	0.001 - 0.2	1	ND	0.25	0.35	**1.14**	0.34	ND	0.42	0.92
Selenium	0.1 - 3.9	2	ND	ND	ND	ND	1.33	ND	ND	ND
Silver	NP	NP	0.95	0.67	ND	1.88	ND	ND	ND	ND

Notes:
1. Source: NYSDEC Technical and Administrative Guidance Memorandum #4046, revised January 24, 1994, as modified by subsequent, relevant NYSDEC Records of Decision (RODs)
ND = Not detected above specified detection limit
NP = Not Provided
SB = Site Background

Table 5: Summary of Arsenic and Lead Concentrations in Soil Samples from October 2001 Sampling
(Results in **bold** exceed designated action levels. All results measured in mg/kg.)

Metals	Background Levels[1]	Action Level[1]	2SS-1	2SS-2	2SS-3	2SS-4	2SS-5	2SS-6	2SS-7	2SS-8	2SS-9	2SS-10
Arsenic	3.0 -12.0	7.5	7.35	10.4	11.3	**25.7**	10.9	9.88	**15.7**	11.4	11.3	**13.1**
Lead	4.0 - 61	400	**700**	**603**	**654**	**1180**	**1280**	**1060**	**828**	303	214	332

Notes:
1. Source: NYSDEC Technical and Administrative Guidance Memorandum #4046 , revised January 24, 1994, as modified by subsequent, relevant NYSDEC Records of Decision (RODs)

Groundwater Monitoring
Beacon Salvage Site

Summary of RCRA Metals in Groundwater from August 2001 and February 2002 Sampling
All data provided in ug/L or ppb. Concentrations in **bold** exceed NYSDEC established action levels.

Metals	Action Levels [1]	Sample Identification				
		RD-7	TMW-2	TMW-3	TMW-4 (filtered)	TMW-4 (unfiltered)
Arsenic	25	ND	ND	ND	ND	ND
Barium	1,000	75	83	51	84	79
Cadmium	5	ND	ND	ND	ND	ND
Chromium	50	ND	ND	ND	ND	ND
Lead	25	ND	ND	ND	ND	ND
Mercury	0.7	ND	ND	ND	ND	ND
Selenium	10	ND	ND	ND	ND	ND
Silver	50	ND	ND	ND	ND	ND

Notes:

1. Source: NYSDEC Water Quality Regulations Surface Water and Groundwater Classifications and Standards New York State Codes, Rules and Regulations, Title 6, Chapter X, Parts 700 – 706

ND = Not detected above specified laboratory detection limit.

Summary of PCBs in Groundwater from October 2000 and February 2002 Sampling
All data provided in ug/L or ppb. Concentrations in **bold** exceed NYSDEC established action levels.

Compound (Method 8082)	Action Level[1]	Sample Identification					
		RD-7	RD-8	TMW-2	TMW-3	TMW-4	TMW-6
PCB-1016	0.09	ND	ND	ND	ND	ND	ND
PCB-1221	0.09	ND	ND	ND	ND	ND	ND
PCB-1232	0.09	ND	ND	ND	ND	ND	ND
PCB-1242	0.09	ND	ND	ND	ND	ND	ND
PCB-1248	0.09	ND	ND	ND	ND	ND	ND
PCB-1254	0.09	ND	ND	ND	ND	ND	ND
PCB-1260	0.09	ND	ND	ND	ND	ND	ND

Notes:

1. Source: NYSDEC Water Quality Regulations Surface Water and Groundwater Classifications and Standards New York State Codes, Rules and Regulations, Title 6, Chapter X, Parts 700 – 706

ND = Not detected above specified laboratory detection limit.

Summary of PAHs in Groundwater from February 2002 Sampling
All data provided in ug/L or ppb. Concentrations in **bold** exceed NYSDEC established action levels.

Compound[3] (Method 8270C)	ActionLevel[1, 2]	Sample Identification	
		TMW-2	TMW-4
Acenaphthene	5	ND	ND
Acenaphthylene	5	ND	ND
Anthracene	5	ND	ND
Benzo (a) Anthracene	.002[2]	ND	ND
Benzo (a) Pyrene	.002[2]	ND	ND
Benzo (b) Fluoranthene	.002[2]	ND	ND
Benzo (k) Fluoranthene	.002[2]	ND	ND
Benzo (g,h,i) Perylene	5	ND	ND
Chrysene	.002[2]	ND	ND
Dibenzo (a,h) Anthracene	5	ND	ND
Fluoranthene	5	ND	ND
Fluorene	5	ND	ND
Indeno (1,2,3-cd) Pyrene	.002[2]	ND	ND
2-Methyl Napthalene	5	ND	ND
Naphthalene	5	ND	ND
Phenanthrene	5	ND	ND
Pyrene	5	ND	ND

Notes:

1. Source: NYSDEC Water Quality Regulations Surface Water and Groundwater Classifications and Standards, New York State Codes, Rules and Regulations, Title 6, Chapter X parts 700-706, including amendments through August 4, 1999.
2. Source: NYSDEC Division Technical and Administrative Guidance Memorandum on Determination of Soil Cleanup Objectives and Cleanup Levels dated January 24, 1994, as modified by subsequent, relevant NYSDEC Records of Decision (RODs).
3. Any compounds not listed were not detected in any of the samples analyzed.

ND = Not Detected above specified detection limit.

Summary of VOCs in Groundwater from February 2002 Sampling
All data provided in ug/L or ppb. Concentrations in **bold** exceed NYSDEC established action levels.

Volatile Organic Compounds (Method 8260)	Action Level[1]	Sample Identification	
		TMW-2	TMW-4
Benzene	0.7	ND	ND
n-Butylbenzene	5	ND	ND
Tert-Butylbenzene	5	ND	ND
Ethylbenzene	5	ND	ND
p-Isopropyltoluene	5	ND	ND
Toluene	5	ND	ND
Isopropylbenzene	5	ND	ND
MTBE	10	ND	ND
Naphthalene	10	ND	ND
n-Propylbenzene	5	ND	ND
1,2,4-Trimethylbenzene	5	ND	ND
1,3,5-Trimethylbenzene	5	ND	ND
o-Xylene	5	ND	ND
p/m-Xylene	5	ND	ND

Notes:

1. Source: NYSDEC Water Quality Regulations Surface Water and Groundwater Classifications and Standards, New York State Codes, Rules and Regulations, Title 6, Chapter X parts 700-706, including amendments through August 4, 1999.

ND = Not Detected above specified detection limit.

Post Excavation Samples
Former PCB-Contaminated Area
Beacon Salvage Site

Table 1: Summary of PCBs in Soil Samples
(All results provided in µg/kg. Results in **bold** exceed designated action levels.)

Compound (USEPA Method 8082)	Action Level[1]	Sample Identification																				
		October 23, 2002																				
		PESS -1	PESS -2	PESS -3	PESS -4	PESS -5	PESS -6	PESS -7	PESS -8	PESS -9	PESS -10	PESS -11	PESS -12	PESS -13	PESS -14	PESS -15	PESS -16	PESS -17	PESS -18	PESS -19	PESS -20	PESS -21
PCB-1016	1,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1221	1,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1232	1,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1242	1,000	ND	ND	120	**1810**	450	160	210	390	230	220	400	**2970**	330	ND	100	70	170	110	190	60	ND
PCB-1248	1,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1254	1,000	60	ND	180	870	170	150	780	**1650**	270	160	250	**6000**	210	ND	110	70	50	100	110	40	ND
PCB-1260	1,000	ND	ND	130	440	230	180	350	630	270	210	340	**3400**	330	ND	150	80	30	160	170	50	ND
Total PCBs		60	ND	430	**3120**	850	490	**1340**	**2670**	770	590	990	**39100**	870	ND	360	220	250	370	470	150	ND

Notes:
1. Source: NYSDEC Division Technical and Administrative Guidance Memorandum on Determination of Soil Cleanup Objectives and Cleanup Levels dated January 24, 1994, as modified by subsequent, relevant NYSDEC Records of Decision (RODs).

ND = Not Detected above specified detection limit.

2.3.3 Additional Soil Excavation

Table 2: Summary of PCBs in Soil Samples- Additional excavation
(All results provided in μg/kg. Results in **bold** exceed designated action levels.)

Compound (USEPA Method 8082)	Action Level[1]	2PESS-4N	2PESS-4S	2PESS-7N	2PESS-7S	2PESS-8N	2PESS-8S	2PESS-12N	2PESS-12S
PCB-1016	10,000	820	20	70	ND	470	ND	220	300
PCB-1221	10,000	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1232	10,000	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1242	10,000	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1248	10,000	ND	ND	ND	ND	ND	ND	ND	ND
PCB-1254	10,000	570	ND	110	70	2000	2710	360	730
PCB-1260	10,000	290	ND	90	ND	470	ND	270	350
Total PCBs		1680	20	270	70	2940	2710	850	1380

An additional soil excavation was conducted on September 16, 2002 to remove remaining PCB concentrations. Endpoint samples were obtained to insure that PCB levels in remaining soils were below NYSDEC action levels for subsurface soils (10 ppm). Two samples were collected from each of the four locations of additional excavation and labeled 2PESS-4N, 2PESS-4S, 2PESS-7N, 2PESS-7S, 2PESS-8N, 2PESS-8S, 2PESS-12N and 2PESS-12S respectively. All soil samples exhibited concentrations of total PCBs below NYSDEC action levels for subsurface soils (10 ppm). PCB Concentrations for this round of sampling ranged from 0.02 ppm to 2.94 ppm.

2.3.4 Stockpile analysis

Two composite samples of stockpiled materials (PE Stock Comp 1 and PE Stock Comp 2) were collected and analyzed for BTEX volatiles, PCBs, TCLP metals, total RCRA metals, flashpoint, pH, reactivity, total organic halogens (TOX) and total petroleum hydrocarbons (TPH), as was required by the soil repository. Based on the concentrations of detected compounds from samples obtained from the stockpiled soils, the material was deemed acceptable for disposal at Clean Earth of Philadelphia soil repository. The laboratory data results are included as Appendix B of this Report.

2.3.5 Site Restoration Activities

On October 1, 2002 ESI personnel directed the restoration activities in the eastern portion of the site. Activities included the importing of approximately 300 tons of "clean fill" material from the West Hook Gravel Mine (DEC Permit Number: 3-1330-52). Fill material was distributed and back bladed evenly throughout the excavation until the approximate original grade was achieved. At the conclusion of soil restoration activity, the site was seeded and mulched with straw to encourage the growth of stabilizing grasses for erosion control.

2.3.6 Monitoring Well Installation And Sampling

On September 5, 2002 ESI personnel directed the installation of three monitoring wells (see attached fieldwork map for locations) on the site by Site Environmental, LLC (see well installation logs, Appendix D, for well specifications). The three wells were installed in the vicinity of the

YORK
ANALYTICAL LABORATORIES, INC.

Technical Report

prepared for

Ecosystems Strategies, Inc.
24 Davis Avenue
Poughkeepsie, NY 12603
Attention: Carl Kochersberger

Report Date: 12/7/2004
Re: Client Project ID: SB2096.50
York Project No.: 04120006

CT License No. PH-0723 New York License No. 10854 Mass. License No. M-CT106 Rhode Island License No. 93 NJ License No. CT401

120 RESEARCH DRIVE STRATFORD, CT 06615 (203) 325-1371 FAX (203) 357-0166

Report Date: 12/7/2004
Client Project ID: SB2096.50
York Project No.: 04120006

Ecosystems Strategies, Inc.
24 Davis Avenue
Poughkeepsie, NY 12603
Attention: Carl Kochersberger

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on 11/30/04. The project was identifed as your project "SB2096.50 ".

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables .

All samples were received in proper condition meeting the NELAC acceptance requirements for environmental samples except those indicated under the Notes section of this report.

All the analyses met the method and laboratory standard operating procedure requirements except as indicated under the Notes section of this report, or as indicated by any data flags, the meaning of which is explained in the attachment to this report, if applicable.

The results of the analyses, which are all reported on an as-received basis unless otherwise noted, are summarized in the following table(s).

Analysis Results

Client Sample ID			BT1/S2		BT1/S3	
York Sample ID			04120006-02		04120006-03	
Matrix			SOIL		SOIL	
Parameter	Method	Units	Results	MDL	Results	MDL
BNA-8270 List soil	SW846-8270C	ug/Kg	---	---	---	---
1,2,4-Trichlorobenzene			Not detected	50	Not detected	100
1,2-Dichlorobenzene			Not detected	50	Not detected	100
1,3-Dichlorobenzene			Not detected	50	Not detected	100
1,4-Dichlorobenzene			Not detected	50	Not detected	100
2,4,5-Trichlorophenol			Not detected	50	Not detected	100
2,4,6-Trichlorophenol			Not detected	50	Not detected	100
2,4-Dichlorophenol			Not detected	50	Not detected	100
2,4-Dimethylphenol			Not detected	50	Not detected	100
2,4-Dinitrophenol			Not detected	50	Not detected	100
2,4-Dinitrotoluene			Not detected	50	Not detected	100
2,6-Dinitrotoluene			Not detected	50	Not detected	100
2-Chloronaphthalene			Not detected	50	Not detected	100
2-Chlorophenol			Not detected	50	Not detected	100
2-Methylnaphthalene			Not detected	50	Not detected	100
2-Methylphenol			Not detected	50	Not detected	100
2-Nitroaniline			Not detected	50	Not detected	100

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Client Sample ID			BT1/S2		BT1/S3	
York Sample ID			04120006-02		04120006-03	
Matrix			SOIL		SOIL	
Parameter	Method	Units	Results	MDL	Results	MDL
2-Nitrophenol			Not detected	50	Not detected	100
3,3'-Dichlorobenzidine			Not detected	50	Not detected	100
3-Nitroaniline			Not detected	50	Not detected	100
4,6-Dinitro-2-methylphenol			Not detected	50	Not detected	100
4-Bromophenyl phenyl ether			Not detected	50	Not detected	100
4-Chloro-3-methyl phenol			Not detected	50	Not detected	100
4-Chloroaniline			Not detected	50	Not detected	100
4-Chlorophenyl phenyl ether			Not detected	50	Not detected	100
4-Methylphenol			Not detected	50	Not detected	100
4-Nitroaniline			Not detected	50	Not detected	100
4-Nitrophenol			Not detected	50	Not detected	100
Acenaphthene			91	50	Not detected	100
Acenaphthylene			93	50	Not detected	100
Anthracene			200	50	Not detected	100
Benzidine			Not detected	50	Not detected	100
Benzo(a)anthracene			360	50	Not detected	100
Benzo(a)pyrene			400	50	Not detected	100
Benzo(b)fluoranthene			290	50	Not detected	100
Benzo(g,h,i)perylene			230	50	Not detected	100
Benzo(k)fluoranthene			410	50	Not detected	100
Benzyl alcohol			Not detected	50	Not detected	100
Bis(2-chloroethoxy)methane			Not detected	50	Not detected	100
Bis(2-chloroethyl)ether			Not detected	50	Not detected	100
Bis(2-chloroisopropyl)ether			Not detected	50	Not detected	100
Bis(2-ethylhexyl)phthalate			Not detected	50	Not detected	100
Butyl benzyl phthalate			Not detected	50	Not detected	100
Chrysene			520	50	Not detected	100
Dibenz(a,h)anthracene			84	50	Not detected	100
Dibenzofuran			Not detected	50	Not detected	100
Diethylphthalate			Not detected	50	Not detected	100
Dimethylphthalate			Not detected	50	8100	100
Di-n-butylphthalate			Not detected	50	150	100
Di-n-octylphthalate			Not detected	50	Not detected	100
Fluoranthene			1300	50	Not detected	100
Fluorene			91	50	Not detected	100
Hexachlorobenzene			Not detected	50	Not detected	100
Hexachlorobutadiene			Not detected	50	Not detected	100
Hexachlorocyclopentadiene			Not detected	50	Not detected	100
Hexachloroethane			Not detected	50	Not detected	100
Indeno(1,2,3-cd)pyrene			220	50	Not detected	100
Isophorone			Not detected	50	Not detected	100
Naphthalene			Not detected	50	Not detected	100
Nitrobenzene			Not detected	50	Not detected	100
N-Nitrosodi-n-propylamine			Not detected	50	Not detected	100
N-Nitrosodiphenylamine			Not detected	50	Not detected	100
Pentachlorophenol			Not detected	50	Not detected	100
Phenanthrene			1200	50	Not detected	100
Phenol			Not detected	50	Not detected	100
Pyrene			1200	50	Not detected	100
PCB	SW846-3550B/8082	mg/Kg	---	---	---	---
PCB 1016			Not detected	0.02	Not detected	0.02

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Client Sample ID			BT1/S2		BT1/S3	
York Sample ID			04120006-02		04120006-03	
Matrix			SOIL		SOIL	
Parameter	Method	Units	Results	MDL	Results	MDL
PCB 1221			Not detected	0.02	Not detected	0.02
PCB 1232			Not detected	0.02	Not detected	0.02
PCB 1242			Not detected	0.02	Not detected	0.02
PCB 1248			Not detected	0.02	Not detected	0.02
PCB 1254			Not detected	0.02	Not detected	0.02
PCB 1260			Not detected	0.02	Not detected	0.02
PCB, Total			Not detected	0.02	Not detected	0.02
Total RCRA Metals	SW846	mg/kG	---	---	---	---
Arsenic, total			4.88	1.00	9.45	1.00
Barium, total			49.7	0.50	172	0.50
Cadmium, total			1.08	0.50	Not detected	0.50
Chromium, total			10.2	0.50	5.49	0.50
Lead, total			64.1	0.50	15.4	0.50
Selenium, total			Not detected	1.00	13.4	1.00
Silver, total			Not detected	0.50	Not detected	0.50
Mercury	SW846-7471	mg/kG	Not detected	0.10	Not detected	0.10

Units Key: For Waters/Liquids: mg/L = ppm ; ug/L = ppb For Soils/Solids: mg/kg = ppm ; ug/kg = ppb

Notes for York Project No. 04120006

1. The MDL (Minimum Detectable Limit) reported is adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All samples were received in proper condition for analysis with proper documentation.
6. All analyses conducted met method or Laboratory SOP requirements.
7. It is noted that no analyses reported herein were subcontracted to another laboratory.

Approved By: _____ **Date:** 12/7/2004

Robert Q. Bradley
Managing Director

YORK

YORK
Analytical Laboratories, Inc.
120 Research Drive
Stratford, CT 06615
203.325.1371 FAX 203.357-0166

Field Chain-of-Custody Record

04120006

Company Name	Report to:	Invoice to:	Project ID/No.	Samples Collected by (signature)
Ecosystems Strategies, Inc.	Carl	Brenda	SB2096.50	Scott Spitzer (Name printed)

Sample No.	Location/ID	Date Sampled	Sample Matrix: Water	Soil	Air	Other	Analyses Requested	Container Desc.
	BT1/S1			X			HOLD	1x4oz
	BT1/S2			X			8270 SVOCs / 8082 PCBs / RCRA metals	↓
	BT2/S3			X			8270 SVOCs / 8082 PCBs / RCRA metals	↓

Chain-of-Custody Record

	Date/Time		Date/Time		Date/Time
Bottles Relinquished from Lab by		Samples Relinquished by	11/30/04	Samples received by	
Bottles received in field by		Samples Relinquished by		Samples received in LAB by	12/1/04 4.0C

Comments/Special Instructions

Turn-Around Time Requested- Specify Date Expected if RUSH Requested: DATE DUE FOR RUSH:

X STANDARD _____ RUSH(Define)_____

YORK
ANALYTICAL LABORATORIES, INC.

Technical Report

prepared for

Ecosystems Strategies, Inc.
24 Davis Avenue
Poughkeepsie, NY 12603
Attention: Carl Kochersberger

Report Date: 12/7/2004
Re: Client Project ID: SB2096.50
York Project No.: 04120022

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Report Date: 12/7/2004
Client Project ID: SB2096.50
York Project No.: 04120022

Ecosystems Strategies, Inc.
24 Davis Avenue
Poughkeepsie, NY 12603
Attention: Carl Kochersberger

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on 12/01/04. The project was identifed as your project "SB2096.50 ".

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables .

All samples were received in proper condition meeting the NELAC acceptance requirements for environmental samples except those indicated under the Notes section of this report.

All the analyses met the method and laboratory standard operating procedure requirements except as indicated under the Notes section of this report, or as indicated by any data flags, the meaning of which is explained in the attachment to this report, if applicable.

The results of the analyses, which are all reported on an as-received basis unless otherwise noted, are summarized in the following table(s).

Analysis Results

Client Sample ID			BT-3/S-4		BT-4/S-5	
York Sample ID			04120022-01		04120022-02	
Matrix			SOIL		SOIL	
Parameter	Method	Units	Results	MDL	Results	MDL
BNA-8270 List soil	SW846-8270C	ug/Kg	---	---	---	---
1,2,4-Trichlorobenzene			Not detected	50	Not detected	50
1,2-Dichlorobenzene			Not detected	50	Not detected	50
1,3-Dichlorobenzene			Not detected	50	Not detected	50
1,4-Dichlorobenzene			Not detected	50	Not detected	50
2,4,5-Trichlorophenol			Not detected	50	Not detected	50
2,4,6-Trichlorophenol			Not detected	50	Not detected	50
2,4-Dichlorophenol			Not detected	50	Not detected	50
2,4-Dimethylphenol			Not detected	50	Not detected	50
2,4-Dinitrophenol			Not detected	50	Not detected	50
2,4-Dinitrotoluene			Not detected	50	Not detected	50
2,6-Dinitrotoluene			Not detected	50	Not detected	50
2-Chloronaphthalene			Not detected	50	Not detected	50
2-Chlorophenol			Not detected	50	Not detected	50
2-Methylnaphthalene			Not detected	50	63	50
2-Methylphenol			Not detected	50	Not detected	50
2-Nitroaniline			Not detected	50	Not detected	50

YORK

Client Sample ID			BT-3/S-4		BT-4/S-5	
York Sample ID			04120022-01		04120022-02	
Matrix			SOIL		SOIL	
Parameter	Method	Units	Results	MDL	Results	MDL
2-Nitrophenol			Not detected	50	Not detected	50
3,3'-Dichlorobenzidine			Not detected	50	Not detected	50
3-Nitroaniline			Not detected	50	Not detected	50
4,6-Dinitro-2-methylphenol			Not detected	50	Not detected	50
4-Bromophenyl phenyl ether			Not detected	50	Not detected	50
4-Chloro-3-methyl phenol			Not detected	50	Not detected	50
4-Chloroaniline			Not detected	50	Not detected	50
4-Chlorophenyl phenyl ether			Not detected	50	Not detected	50
4-Methylphenol			Not detected	50	Not detected	50
4-Nitroaniline			Not detected	50	Not detected	50
4-Nitrophenol			Not detected	50	Not detected	50
Acenaphthene			Not detected	50	Not detected	50
Acenaphthylene			Not detected	50	52	50
Anthracene			Not detected	50	180	50
Benzidine			Not detected	50	Not detected	50
Benzo(a)anthracene			70	50	720	50
Benzo(a)pyrene			69	50	570	50
Benzo(b)fluoranthene			52	50	530	50
Benzo(g,h,i)perylene			Not detected	50	68	50
Benzo(k)fluoranthene			84	50	620	50
Benzyl alcohol			Not detected	50	Not detected	50
Bis(2-chloroethoxy)methane			Not detected	50	Not detected	50
Bis(2-chloroethyl)ether			Not detected	50	Not detected	50
Bis(2-chloroisopropyl)ether			Not detected	50	Not detected	50
Bis(2-ethylhexyl)phthalate			Not detected	50	Not detected	50
Butyl benzyl phthalate			Not detected	50	Not detected	50
Chrysene			61	50	630	50
Dibenz(a,h)anthracene			Not detected	50	71	50
Dibenzofuran			Not detected	50	Not detected	50
Diethylphthalate			Not detected	50	Not detected	50
Dimethylphthalate			Not detected	50	Not detected	50
Di-n-butylphthalate			Not detected	50	54	50
Di-n-octylphthalate			Not detected	50	Not detected	50
Fluoranthene			160	50	1400	50
Fluorene			Not detected	50	Not detected	50
Hexachlorobenzene			Not detected	50	Not detected	50
Hexachlorobutadiene			Not detected	50	Not detected	50
Hexachlorocyclopentadiene			Not detected	50	Not detected	50
Hexachloroethane			Not detected	50	Not detected	50
Indeno(1,2,3-cd)pyrene			Not detected	50	120	50
Isophorone			Not detected	50	Not detected	50
Naphthalene			Not detected	50	Not detected	50
Nitrobenzene			Not detected	50	Not detected	50
N-Nitrosodi-n-propylamine			Not detected	50	Not detected	50
N-Nitrosodiphenylamine			Not detected	50	Not detected	50
Pentachlorophenol			Not detected	50	Not detected	50
Phenanthrene			110	50	760	50
Phenol			Not detected	50	Not detected	50
Pyrene			160	50	1300	50
PCB	SW846-3550B/8082	mg/Kg	---	---	---	---
PCB 1016			Not detected	0.02	Not detected	0.02

YORK

Client Sample ID			BT-3/S-4		BT-4/S-5	
York Sample ID			04120022-01		04120022-02	
Matrix			SOIL		SOIL	
Parameter	Method	Units	Results	MDL	Results	MDL
PCB 1221			Not detected	0.02	Not detected	0.02
PCB 1232			Not detected	0.02	Not detected	0.02
PCB 1242			Not detected	0.02	Not detected	0.02
PCB 1248			Not detected	0.02	Not detected	0.02
PCB 1254			Not detected	0.02	0.08	0.02
PCB 1260			Not detected	0.02	0.02	0.02
PCB, Total			Not detected	0.02	0.10	0.02
Total RCRA Metals	SW846	mg/kG	---	---	---	---
Arsenic, total			4.69	1.00	13.4	1.00
Barium, total			47.6	0.50	109	0.50
Cadmium, total			1.34	0.50	1.21	0.50
Chromium, total			13.7	0.50	15.2	0.50
Lead, total			62.9	0.50	258	0.50
Selenium, total			Not detected	1.00	2.36	1.00
Silver, total			Not detected	0.50	Not detected	0.50
Mercury	SW846-7471	mg/kG	0.22	0.10	0.28	0.10

Units Key: For Waters/Liquids: mg/L = ppm ; ug/L = ppb For Soils/Solids: mg/kg = ppm ; ug/kg = ppb

Notes for York Project No. 04120022

1. The MDL (Minimum Detectable Limit) reported is adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All samples were received in proper condition for analysis with proper documentation.
6. All analyses conducted met method or Laboratory SOP requirements.
7. It is noted that no analyses reported herein were subcontracted to another laboratory.

Approved By: Robert Q. Bradley
Managing Director

Date: 12/7/2004

YORK

YORK
Analytical Laboratories, Inc.

120 Research Drive
Stratford, CT 06615
203.325.1371 FAX 203.357-0166

04120022.

Field Chain-of-Custody Record

Company Name	Report to:	Invoice to:	Project ID/No.	Samples Collected by (signature)
Ecosystems Strategies, Inc.	Carl Kochersberger	Accounts Payable	SB2096.50	Carl Kochersberger Name (printed)

Sample No.	Location/ID	Date Sampled	Sample Matrix: Water	Soil	Air	Other	Analyses Requested	Container Desc.
	BT-3/S-4	11/30/2004		X			8270 (Full SVOC), 8082(PCBs), total weight RCRA Metals	4-oz Jar
	BT-4/S-5	11/30/2004		X			8270 (Full SVOC), 8082(PCBs), total weight RCRA Metals	4-oz Jar

Chain-of-Custody Record

Bottles Relinquished from Lab by	Date/Time	Samples Relinquished by	Date/Time	Samples Received by	Date/Time
			12/1/04		12/1/04 12PM 4.4C

Bottles received in field by	Date/Time	Samples Relinquished by	Date/Time	Samples received in LAB by	Date/Time

Comments/Special Instructions:

Turn-Around Time Requested- Specify Date Expected if RUSH Requested: DATE DUE FOR RUSH:

X STANDARD ______ RUSH(Define)_

HEALTH AND SAFETY PLAN

FOR

REMEDIAL INVESTIGATION

"LONG DOCK BEACON"
RED FLYNN DRIVE, CITY OF BEACON
DUTCHESS COUNTY, NEW YORK

Date of Preparation: November 2005

ECOSYSTEMS STRATEGIES, INC.
24 DAVIS AVENUE
POUGHKEEPSIE, NEW YORK 12603
(845) 452-1658

ESI File: SG96152.50

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1.0 INTRODUCTION

1.1 Purpose

This Health and Safety Plan (HASP) has been developed to provide the requirements and general procedures to be followed by the consultants and designated subcontractors while performing a Remedial Investigation (fieldwork) at the "Long Dock Beacon" Site, located on Red Flynn Drive, City of Beacon, Dutchess County, New York. Site Location and Proposed Fieldwork Maps are attached to the Remedial Investigation Work Plan (RIWP).

This HASP describes the responsibilities, training requirements, protective equipment, and standard operating procedures to be utilized by all personnel while on the Site. This HASP incorporates by reference the applicable Occupational Safety and Health Administration (OSHA) requirements in 29 CFR 1910 and 29 CFR 1926.

The requirements and guidelines in this HASP are based on a review of available information and evaluation of potential on-site hazards. This HASP will be discussed with Site personnel and will be available on-site for review while work is underway. On-site personnel will report to the Site Safety and Health Officer (SSHO) in matters of health and safety. The on-site project supervisor(s) are responsible for enforcement and implementation of this HASP.

This HASP is specifically intended for the conduct of activities within the defined scope of work in specified areas of the Site. Changes in site conditions and future actions that may be conducted at this Site may necessitate the modification of the requirements of the HASP. Although this HASP can be made available to interested persons for informational purposes, Ecosystems Strategies, Inc. (ESI) has no responsibility over the interpretations or activities of any other persons or entities other than employees of ESI and designated subcontractors to ESI.

1.2 Site Location and Description

The Long Dock Beacon Site is an 8.85-acre irregular-shaped parcel situated on a peninsula on the eastern shore of the Hudson River. The northern half of the Site was formerly known as the "Beacon Salvage" property, and the southern half of the Site was formerly known as the "Garret Storm" property. The Site extends approximately 1,200 feet westwards from Red Flynn Drive and includes lands submerged in the Hudson River.

Structures present on the former Beacon Salvage property include a barn and a house, located on the northeastern and north-central portions of the Site, and a concrete foundation located in the vicinity of the western shoreline. Structures present on the former Garret Storm property consist of one building and a small storage shed, which at the time of the drafting of this HASP are utilized by the Dutchess Boat Club. Remaining portions of the Site consist of vacant, overgrown areas.

1.3 Fieldwork Activities

Fieldwork activities are detailed in the RIWP, dated November 2005. The specific tasks detailed in the RIWP are wholly incorporated by reference into this HASP. The tasks described in the RIWP are proposed to define the nature of environmental conditions at the Site.

The following field tasks will be performed:

- Soil borings will be extended at the western and central portions of the Site to characterize soil conditions and contaminant concentrations at portions of the Site proposed for excavation (see RIWP Section 2.2.1).

- Test pits will be extended at the southwestern portion of the Site to characterize subsurface conditions and to provide guidance on the presence or absence of elevated metals and/or organic contaminants (see RIWP Section 2.2.1).

- Monitoring wells will be installed at the western and southwestern portions of the Site to document the presence or absence of dissolved metals and organic contaminants in groundwater at these areas (see RIWP Section 2.2.2).

- Sediment and water sampling will be conducted on portions of the Site (the extreme western and northern portions) which are submerged in the Hudson River (see RIWP Section 2.2.3).

2.0 HEALTH AND SAFETY HAZARDS

Chemical Hazards

Soils exhibiting concentrations of polychlorinated biphenyls (PCBs) and RCRA Metals in excess of NYSDEC soil criteria were previously documented at the former Beacon Salvage portion of the Site. Remedial efforts were undertaken to remove soils with PCB contamination and to cover soils having elevated levels of PCBs with clean soil. No fieldwork is proposed in areas known to contain elevated levels of PCBs. The former Garrett Storm portion of the Site was a Major Oil Storage Facility (MOSF), where petroleum-contaminated soils were removed from the Site. Laboratory analyses indicated that concentrations of petroleum hydrocarbons in remaining soils were within allowable limits as defined by the NYSDEC.

During fieldwork, the possibility exists for on-site personnel to have contact with soils and dust containing elevated levels of RCRA Metals and low levels of petroleum hydrocarbons. Contaminants may be present in dust at levels that may present an inhalation or ingestion hazard. It is not anticipated that contaminants will migrate from the Site. Only small quantities of soil will be disturbed during the Remedial Investigation. Previous on-site and off-site groundwater sampling revealed no significant on-site groundwater contamination and no migration of contaminants from the Site; therefore, with regard to contaminant exposure, this HASP is limited to direct contact with soil and fugitive dust concerns.

Physical Hazards

Working in the vicinity of heavy equipment is the primary safety hazard at the Site. Physical hazards in working near heavy construction equipment include the following: overhead hazards, slips/trip/falls, hand and foot injuries, moving part hazards, improper lifting/back injuries, and noise.

Test-pits will be extended on the property. Potential hazards include falling injuries and the potential to become buried by a collapsed side-wall, should personnel either accidentally or purposely enter a test-pit.

Watercraft will be used in the collection of sediment and surface water samples; the potential exists for personnel to fall overboard from the sampling vessel. Potential hazards include slips, trips, hypothermia and/or drowning.

3.0 PERSONAL PROTECTIVE EQUIPMENT

The levels of protection identified for the services specified in the Workplan represent a best estimate of exposure potential and protective equipment needed for that exposure. Determination of levels was based on data provided by previous studies of the Site and information reviewed on current and past Site usage. The Site Safety and Health Officer (SSHO) may recommend revisions to these levels based on an assessment of actual exposures.

The level of protective clothing and equipment selected for this project is Level D. Workers will wear Level D protective clothing including, but not limited to, a hard hat, steel-toed boots, latex (or equivalent) gloves (when handling soils and/or groundwater), and safety goggles (when decontaminating equipment). Workers screening soil through sieves will wear dust masks. Personal protective equipment (PPE) will be worn at all times, as designated by this HASP.

The need for an upgrade in PPE will be determined based upon measurements taken in the breathing zone of the work area using a photo-ionization detector (PID) and by visual observations for dust. As outlined in Section 5.0, below, an upgrade to a higher level of protection will begin when PID readings above specified limits are measured and/or when visible dust is observed.

If any equipment fails and/or any employee experiences a failure or other alteration of their protective equipment that may affect its protective ability, that person will immediately leave the work area. The Project Manager and the SSHO will be notified and, after reviewing the situation, determine the effect of the failure on the continuation of on-going operations. If the failure affects the safety of personnel, the work site, or the surrounding environment, personnel will be evacuated until appropriate corrective actions have been taken.

With regard to physical hazards, all personnel will maintain a safe distance from construction equipment in order to not interfere with their operation. Those personnel not involved directly with observation and supervision of site remediation activities involving heavy equipment will stand at a safe distance from all such equipment. All personnel will be familiar with the location and operation of the kill switch on utilized equipment. Precautions will be taken in lifting any heavy equipment. Additionally, hearing protection will be utilized during any operations generating excessive noise levels.

All personnel involved in the collection of sediment and surface water samples will wear US Coast Guard approved personal flotation devices.

4.0 CONTAMINANT CONTROL

Precautions will be taken during dry weather (e.g., wetting or covering exposed soils) to avoid breathing dust-generated from soils. A PID and a digital dust meter (during the extension of test pits only) will be used to monitor potential contaminant levels. Response to the monitoring will be in accordance with the action levels provided in Section 5.0.

5.0 MONITORING AND ACTION LEVELS

Concentrations of Petroleum Hydrocarbons, PCBs, and metals in the air are expected to be below OSHA permissible exposure limits (PELs). Air monitoring will be conducted for VOCs and dust (during the extension of test pits only). Monitoring will be conducted at all times that fieldwork activities which are likely to generate emission are occurring. Monitoring will occur near the area of activity and near the downwind border of the Site. PID readings consistently in excess of 5 ppm, and, during the extension of test pits, the presence of dust levels in excess of 150 micrograms/cubic meter ($\mu g/m^{3)}$ will be used as an indication of the need to initiate personnel monitoring and/or increase worker protective measures.

PID readings and/or dust levels that consistently exceed background in the breathing zone (during any of the proposed tasks) will necessitate moving away from the source or implementing a higher PPE level.

Dust levels or PID readings in excess of these thresholds at the downwind site border will be cause for stopping activities until levels are within acceptable limits.

6.0 SITE ACCESS AND CONTROL

Site control procedures will be established to reduce the possibility of worker contact with compounds present in the soil, to protect the public in the area surrounding the Site and to limit access to the Site to only those persons required to be in the work zone. Measures (e.g., the construction of fences, placement of traffic cones and warning tape, etc.) will be taken to limit the entry of unauthorized personnel into the specific areas of field activity.

7.0 PERSONNEL TRAINING

Work zones that will accomplish the general objective stated above will be established by the Project Manager and the SSHO. Site access will be monitored by the SSHO, who will maintain a log-in sheet for personnel that will include, at the minimum, personnel on the Site, their arrival and departure times, and their destination on the Site. Personnel exiting the work zone(s) will be decontaminated prior to exit. The SSHO will establish a decontamination system and

decontamination procedures appropriate to the Site and the work that will prevent potentially hazardous materials from leaving the Site (see Section 8.0).

Site-specific training will be provided to each employee. Personnel will be briefed by the SSHO as to the potential hazards to be encountered. Topics will include:

- Availability of this HASP;
- General site hazards and specific hazards in the work areas, including those attributable to the chemicals present;
- Selection, use, testing, and care of the body, eye, hand, and foot protection being worn, with the limitations of each;
- Decontamination procedures for personnel, their personal protective equipment, and other equipment used on the Site;
- Emergency response procedures and requirements;
- Emergency alarm systems and other forms of notification, and evacuation routes to be followed; and
- Methods to obtain emergency assistance and medical attention.

8.0 DECONTAMINATION

Trucks will be brushed to remove materials adhering to the surfaces. Sampling equipment will be segregated and, after decontamination, stored separately from splash protection equipment. Decontaminated or clean sampling equipment not in use will be covered with plastic and stored in a designated storage area in the work zone.

9.0 EMERGENCY RESPONSE

9.1 Notification of Site Emergencies

In the event of an emergency, the SSHO will be immediately notified of the nature and extent of the emergency.

The last page of this HASP contains Table 1: Emergency Response Telephone Numbers, and immediately following is a map detailing the directions to the nearest hospital. This information will be maintained at the Site by the SSHO. The location of the nearest telephone will be determined prior to the initiation of on-site activities. In addition to any permanent phone lines, a cellular phone will be available for use on-site.

9.2 Responsibilities

The SSHO who is responsible for responding to emergencies and prior to the initiation of on-site work activities will:

1. Notify individuals, authorities, and/or health care facilities of the potentially hazardous activities and potential wastes that may develop as a result of the investigation;
2. Confirm that the following safety equipment is available: first aid supplies and a fire extinguisher;
3. Have a working knowledge of safety equipment available; and
4. Confirm that a map detailing the most direct route to the hospital is prominently posted with the emergency telephone numbers.

The SSHO will be responsible for directing notification, response, and follow-up actions and for contacting outside response personnel (ambulance, fire department, or others). In the case of an evacuation, the SSHO will account for personnel. A log of individuals entering and leaving the Site will be kept so that everyone can be accounted for in an emergency.

Upon notification of an exposure incident, the SSHO will contact the appropriate emergency response personnel for recommended medical diagnosis and, if necessary, treatment. The SSHO will determine whether and at what levels exposure actually occurred, the cause of such exposure, and the means to prevent similar incidents from occurring.

9.3 Accidents and Injuries

In the event of an accident or injury, measures will be taken to assist those who have been injured or exposed and to protect others from hazards. If an individual is transported to a hospital or doctor, a copy of the HASP will accompany the individual.

The SSHO will be notified and will respond according to the severity of the incident. The SSHO will perform an investigation of the incident and prepare a signed and dated report documenting the investigation. An exposure-incident report will also be completed by the SSHO and the exposed individual. The form will be filed with the employee's medical and safety records to serve as documentation of the incident and the actions taken.

9.4 Communication

No special hand signals will be utilized within the work zone. Field personnel will utilize standard hand signals during the operation of heavy equipment.

9.5 Safe Refuge

Vehicles and on-site structures will serve as the immediate place of refuge in the event of an emergency. If evacuation from the area is necessary, project vehicles will be used to transport on-site personnel to safety.

9.6 Site Security and Control

Site security and control during emergencies, accidents, and incidents will be monitored by the SSHO. The SSHO is responsible for limiting access to the Site to authorized personnel and for oversight of reaction activities.

9.7 Emergency Evacuation

In case of an emergency, personnel will evacuate to the safe refuge identified by the SSHO, both for their personal safety and to prevent the hampering of response/rescue efforts. The main entrance to the subject property is through chain link gates which front onto Red Flynn Drive.

9.8 Resuming Work

A determination that it is safe to return to work will be made by the SSHO and/or any personnel assisting in the emergency, e.g., fire department, police department, utility company, etc. No personnel will be allowed to return to the work areas until a full determination has been made by the above-identified personnel that all field activities can continue unobstructed. Such a determination will depend upon the nature of the emergency (e.g., downed power lines -- removal of all lines from the property; fire -- extinguished fire; injury -- safe transport of the injured party to a medical facility with either assurance of acceptable medical care present or completion of medical care; etc.).

Before on-site work is resumed following an emergency, necessary emergency equipment will be recharged, refilled, or replaced. Government agencies will be notified as appropriate. An Incident Report Form will be filed.

9.9 Fire Fighting Procedures

A fire extinguisher will be available in the work zone during on-site activities. This extinguisher is intended for small fires. When a fire cannot be controlled with the extinguisher, the area will be evacuated immediately. The SSHO will be responsible for directing notification, response, and follow-up actions and for contacting ambulance and fire department personnel.

9.10 Emergency Decontamination Procedure

The extent of emergency decontamination depends on the severity of the injury or illness and the nature of the contamination. Whenever possible, minimum decontamination will consist of washing, rinsing, and/or removal of contaminated outer clothing and equipment. If time does not permit decontamination, the person will be given first aid treatment and then wrapped in plastic or a blanket prior to transport to medical care.

9.11 Emergency Equipment

The following on-site equipment for safety and emergency response will be maintained in the on-site vehicle of the SSHO:

1. fire extinguisher;
2. first aid kit; and
3. extra copy of this Health and Safety Plan.

10.0 SPECIAL PRECAUTIONS AND PROCEDURES

The activities associated with this investigation may involve potential risks of exposure to both chemical and physical hazards. The potential for chemical exposure to hazardous or regulated substances will be significantly reduced through the use of monitoring, personal protective clothing, engineering controls, and implementation of safe work practices.

10.1 Heat/Cold Stress

Training in prevention of heat/cold stress will be provided as part of the site-specific training. The timing of this project is such that heat/cold stress may pose a threat to the health and safety of personnel. Work/rest regimens will be employed, as necessary, so that personnel do not suffer adverse effects from heat/cold stress. Special clothing and appropriate diet and fluid intake regimens will be recommended to personnel to further reduce this temperature-related hazard. Rest periods will be recommended in the event of high/low temperatures and/or humidity to counter the negative effects of heat/cold stress.

10.2 Heavy Equipment

Precautions will be taken when standing near or working adjacent to any heavy equipment.

10.3 Additional Safety Practices

The following are important safety precautions which will be enforced during this investigation:

1. Medicine and alcohol can aggravate the effect of exposure to certain compounds. Controlled substances and alcoholic beverages will not be consumed during investigation activities. Consumption of prescribed drugs will only be at the discretion of a physician familiar with the person's work.

2. Eating, drinking, chewing gum or tobacco, smoking, or other practices that increase the probability of hand-to-mouth transfer and ingestion of material is prohibited except in areas designated by the SSHO.

3. Contact with potentially contaminated surfaces will be avoided whenever possible. Workers will not unnecessarily walk through puddles, mud, or other discolored surfaces; kneel on the ground; or lean, sit, or place equipment on drums, containers, vehicles, or the ground.

4. Personnel and equipment in the work areas will be minimized, consistent with effective site operations.

5. Unsafe equipment left unattended will be identified by a "DANGER, DO NOT OPERATE" tag.

6. Work areas for various operational activities will be established.

10.4 Daily Log Contents

The SSHO will establish a system appropriate to the Site, the work, and the work zones that will record, at a minimum, the following information:

1. Personnel on the Site, their arrival and departure times, and their destination on the Site.

2. Incidents and unusual activities that occur on the Site such as, but not limited to, accidents, spills, breaches of security, injuries, equipment failures, and weather-related problems.

3. Changes to the HASP.

4. Daily information generated such as: work accomplished, the current Site status, and monitoring results.

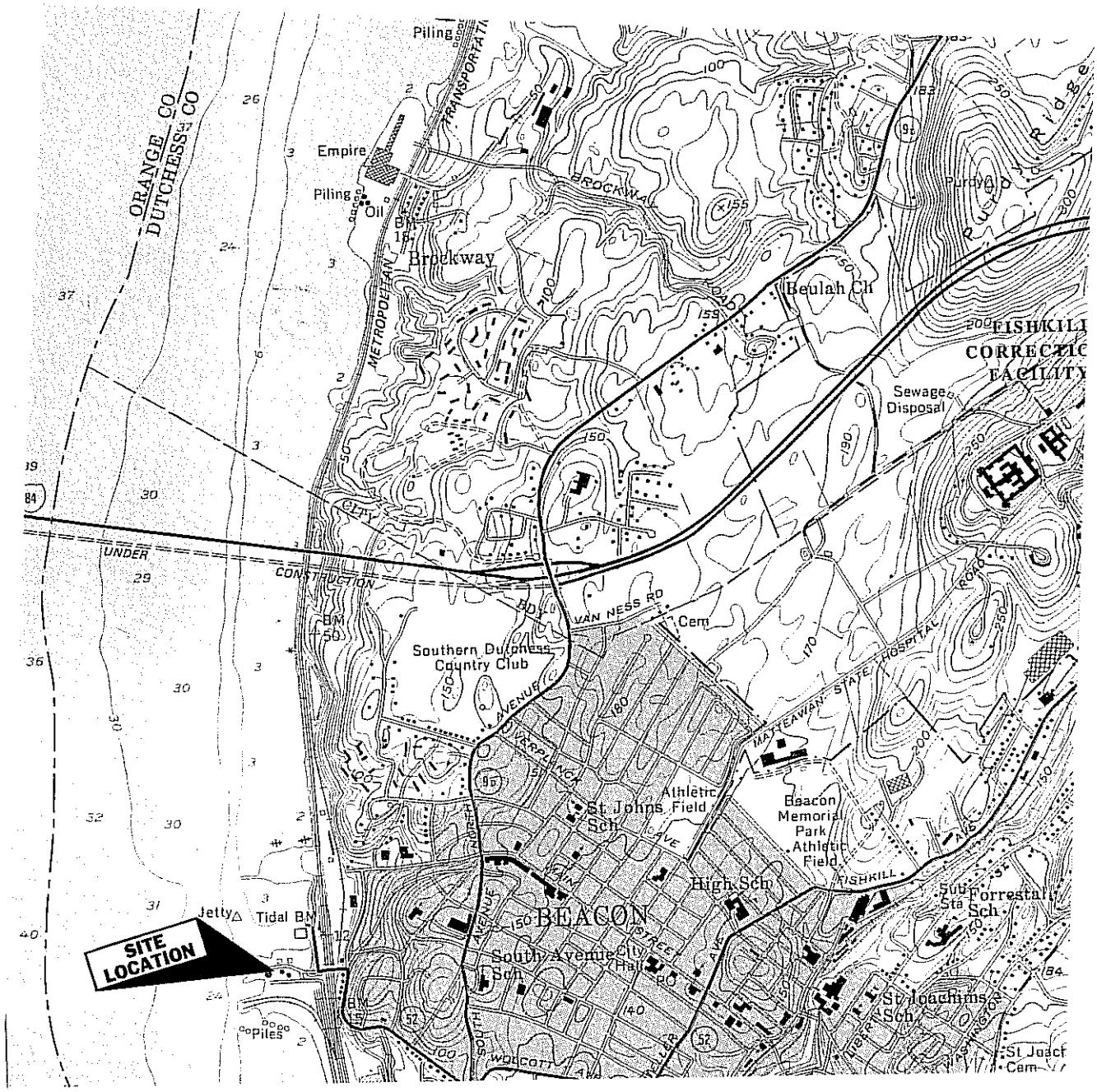
11.0 TABLE AND FIGURE

Table 1: Emergency Response Telephone Numbers

Emergency Agencies	Phone Numbers
EMERGENCY	911
St. Luke's Hospital 70 Dubois Street, Newburgh	(845) 568-2305 - Emergency Room (845) 561-4400 - Main Information
Beacon Police Department	(845) 831-4111 or 911
Beacon Fire Department	(845) 831-2121 or 911
City Hall	(845) 838-5000
City Mayor	(845) 838-5010
Water and Sewer	(845) 831-3136

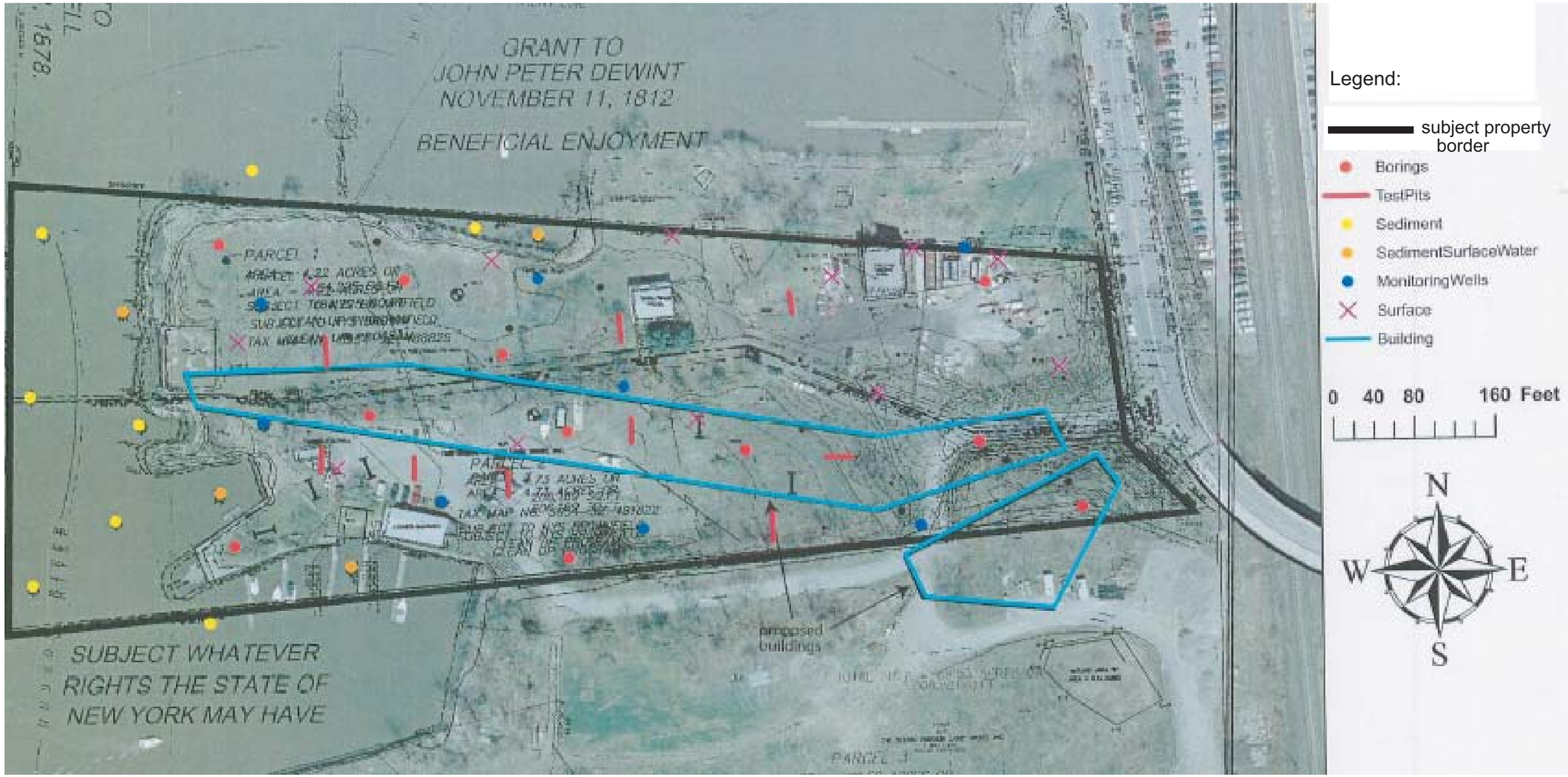
Figure 1: Directions to Hospital / Map

South to Ferry Street; left on Ferry for one block to Beekman Street; left on Beekman and continue to NYS Route 9D; left on 9D to Interstate 84; West on I-84, over Beacon-Newburgh Bridge to US Route 9W; left on 9W and south to First Street (11 blocks); left on First Street and continue five blocks to Dubois Street.



Source: U.S. Department of the Interior Geological Survey Topographic Map of the Wappingers Falls, NY Quadrangle, dated 1956 (photorevised 1981)

Site Location Map (Scale: 1:24000) Long Dock Beacon Red Flynn Drive, City of Beacon Dutchess County, New York	N	ESI File: SG96152.50 Date: AUGUST 2006 Attachment FIGURE 1



All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

Proposed Fieldwork Map

Long Dock Beacon Red Flynn Drive City of Beacon Dutchess County, New York	ESI Job: SG96152.50	
	Not to Scale	
	August 2006	FIGURE 3
	Ecosystems Strategies, Inc.	

QUALITY ASSURANCE/QUALITY CONTROL PLAN

for

"LONG DOCK BEACON"

RED FLYNN DRIVE, CITY OF BEACON
DUTCHESS COUNTY, NEW YORK

Date of Preparation: November 2005
Revised August 2006

ECOSYSTEMS STRATEGIES, INC.
24 DAVIS AVENUE
POUGHKEEPSIE, NEW YORK 12603
(845) 452-1658

ESI File: SG96152.50

QUALITY ASSURANCE/QUALITY CONTROL PLAN

for

"LONG DOCK BEACON"

RED FLYNN DRIVE, CITY OF BEACON
DUTCHESS COUNTY, NEW YORK

Date of Preparation: November 2005, Revised August 2006

Prepared By:

Ecosystems Strategies, Inc.
24 Davis Avenue
Poughkeepsie, New York 12603

Dewkett Engineering, P.C.
187 E. Market Street
Rhinebeck, NY 12572

Prepared For:

The Scenic Hudson Land Trust, Inc.
Civic Center Plaza
Poughkeepsie, New York 12601

Foss Group Beacon, LLC
163 Delaware Avenue
Delmar, New York 12045

The undersigned has reviewed this Quality Assurance/Quality Control Workplan and certifies to Scenic Hudson Land Trust, Inc. and Foss Group Beacon, LLC that the information provided in this document is accurate as of the date of issuance by this office.

Any and all questions or comments, including requests for additional information, should be submitted to the undersigned.

Paul H. Ciminello
President

Robert Capowski, P.E.
Dewkett Engineering, P.C.

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1.0 PROJECT MANAGEMENT

1.1 Project/Task Organization

The following individuals are major participants in the project.

William Bennett	NYSDEC
Robert Capowski P.E..	Dewkett Engineering, P.E.
Paul Ciminello	President, Ecosystems Strategies, Inc.
Carl Kochersberger	On-Site Coordinator (OSC) Ecosystems Strategies Inc.

1.2 Principal Data Users

The principal users of the generated data in this project are listed below.

a. Residents of the City of Beacon, especially those residing in the vicinity of the site

b. Scenic Hudson Land Trust, Inc.

c. NYSDEC

1.3 Problem Definition/Background

The primary objective of the proposed investigation is to generate data of sufficient quality and quantity to represent subsurface conditions at the site with a view to generating a Proposed Remedial Investigation Report (RI Report). The RI Report will recommend necessary remedial actions, if any.

1.4 Project Task/Description

The project will meet its objective by extending borings and test pits and installing temporary monitoring wells at the site. Soil and water samples will be collected and analyzed for petroleum compounds and metals to document site conditions.

1.5 Quality Objectives and Criteria

The data collected in this project will be used for three purposes:

(1) To identify and locate occurrences of on-site contamination;

(2) To inform and educate the public about potential impacts to human health; and,

(3) To collect baseline data for planning future remedial activity. This objective requires the same data quality and performance criteria as (1) above.

1.6 Documents and Records

Electronic and paper copies of all measurements will be retained by Ecosystems Strategies, Inc. Paper copies will also be included in the RI Report to be generated at the conclusion of field investigations.

2.0 Data Generation and Acquisition

2.1 Sampling Methods

- Soil and sediment samples will be collected in appropriately-sized glass jars provided by the laboratory, in the manner outlined in the Remedial Investigation Workplan (RIWP), dated November 2005. During the sampling procedure, samples will be stored in a cooler prior to transport to the approved laboratory.

- Water samples will be collected in laboratory provided vessels of a type and capacity specific to the required analyses, in the manner outlined in the RIWP. During the sampling procedure, samples will be stored in a cooler prior to transport to the approved laboratory.

2.2 Sample Handling and Custody

Samples will be handled by the OSC. After each sample is collected, it will be placed in a sample cooler that is maintained at approximately 4°C. For each sampling day, sampling personnel will be required to complete a sampling custody worksheet indicating all pertinent information about the samples collected, handling methods, name of the collector, and chain of custody. Upon the completion of each day of sample collection activities, all samples will be shipped via either courier or overnight delivery (per laboratory requirements) to a NYSDOH ELAP approved laboratory. Laboratory personnel will record the cooler temperature (approximately 4°C) upon receipt and analyze the samples prior to the expiration of the following hold times:

VOCs:	14 Days
SVOCs:	14 Days
Metals:	6 Months
PCBs:	14 Days
Pesticides:	14 Days

2.3 Analytical Methods

Soil samples will be analyzed for VOCs (USEPA 8260), SVOCs (USEPA 8270), TAL metals (USEPA 6010 and 7471), and PCBs (USEPA 8082)

Monitoring well samples will be analyzed for VOCs (USEPA 8260), SVOCs(USEPA 8260), TAL metals (USEPA 6010 and 7471), and PCBs (USEPA 8082)

Sediment samples will be analyzed for SVOCs(USEPA 8270), TAL metals (USEPA 6010 and 7471), and PCBs (USEPA 8082)

Surface water samples will be analyzed for VOCs (USEPA 8260), SVOCs (USEPA 8270), and PCBs (USEPA 8082).

Additionally, 25% of all samples collected will be submitted for analysis of pesticides using USEPA Method 8081.

2.4 Quality Control

Accuracy and precision will be determined by repeated analysis of laboratory standards, and matrix effects and recovery will be determined through use of spiked samples. With each sample run, standards, blanks, and spiked samples will be run.

One QA/QC sample for every 20 samples per medium (soil, sediment, surface water, and groundwater) will be duplicated by ESI. One in 20 samples per medium will also be submitted for Matrix spike (MS) and Matrix Spike Duplicate (MSD) analysis. One rinse blank will be prepared for each given piece of sampling equipment for every 20 analytical samples collected using that piece of equipment. For each day of sampling, a trip blank will be included with each sample cooler.

2.5 Instrument/Equipment, Testing, Inspection, and Maintenance

Field measurements will be collected using a PID during all sampling and a Horiba U22 multi-parameter meter during monitoring well sampling. All field instruments will be stored at Ecosystems Strategies, Inc. offices when not in use. These instruments will be calibrated each day in accordance with the manufacturers instructions. Instrument malfunction is normally apparent during calibration. In the event of malfunction, equipment will be cleaned and tested. Equipment testing, inspection, and maintenance will be the responsibility of the Quality Assurance manager for the project.

2.6 Inspection/Acceptance of Supplies and Consumables

The following supplies and consumables will be used:

- One 8-oz (for SVOCs, PCBs, TAL Metals, and pesticides) and one 2-oz (for VOCs) clear glass jar will be used for each soil/sediment sample. Duplicate soil/sediment samples will each require one additional sample volume. MS/MSD soil/sediment samples will each require two additional sample volumes,

- Three 1-L amber jars (one for PCBs and Pesticides, one for SVOCs) , one 500-ml plastic jar with HNO_3 preservative (for TAL Metals), and two 40-ml vials with HCl preservative (for VOCs) will be used for each water sample. Each duplicate water sample will require one additional sample volume. Each MS/MSD water sample will require two additional sample volumes.

- Disposable gloves (nitrile or equivalent).

- Distilled water (for decontamination and the preparation of rinse blanks)

All supplies and consumables will be inspected and tested (if necessary) by the QA manager upon receipt.

2.7 Data Management

For the purpose of data management, the data can be divided into field and laboratory data.

Field data will be recorded at the time of measurement on written field logs.

3.0 Assessment and Oversight

3.1 Reports to Management

The results of the assessments described above (surveillance, inspection, and performance evaluations) will be reported to those on the distribution list after the completion of fieldwork.

4.0 Data Validation and Usability

4.1 Data Review, Verification, and Validation

Data generated by this project will be reviewed, verified and validated as follows

4.1.1 Field measurements (PID and Horiba U22):

If field instruments are determined to be function correctly through calibration and measurements of standards, and if there are no inconsistencies between written records and data recorded in the meters, the data will be assumed to be valid and will be accepted as an indication of field conditions. If instruments malfunction prior to field measurement, they will be restored to proper function prior to use. If they malfunction immediately after field measurements are taken, the measurements will be retaken as soon as possible. Inconsistencies between written records and meter data will be resolved as described above. In addition all field data will be reviewed for consistency and plausibility.

4.1.2 Laboratory Analysis

As a NYSDOH ELAP-certified certified laboratory, the approved laboratory will follow standard procedures regarding data validation and verification.

4.2 Verification and Validation Methods

4.2.1 Verification Method

Once collected, all data will go to the QA manager for review and verification. Review will involve determining that all data has been collected at the proper locations by the proper persons and that all field and laboratory logs are complete. Data will be validated by an independent data validator.

4.2.2 Authority for Verification

Authority for verification, validation, and resolution of data issues will be distributed among the investigators. Authority to resolve issues regarding verification of field measurements will rest with the QA manager.

4.2.3 Transmittal to Users

Following review, validation, and verification, all data will be conveyed to users via the RI Report.

4.2.4 Calculations

There are no project specific calculations required.

New York State Department of Environmental Conservation

Brownfield Cleanup Program

Site # C314112

Citizen Participation Plan

for

Long Dock Beacon

Red Flynn Drive
City of Beacon
Dutchess County, New York

MAY 2006

Contents

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Note: The information presented in this Citizen Participation Plan was current as of the date of its approval by the New York State Department of Environmental Conservation. Portions of this Citizen Participation Plan may be revised during the brownfield site's remedial process.

Applicant: **The Scenic Hudson Land Trust, Inc. and Foss Group Beacon LLC**
Site Name: **Long Dock Beacon**
Site Address: **Red Flynn Drive, City of Beacon**
Site County: **Dutchess County**
Site Number: **C314112**

1. What is New York's Brownfield Cleanup Program?

New York's Brownfield Cleanup Program (BCP) is designed to encourage the private sector to investigate, remediate (clean up) and redevelop brownfields. A brownfield is any real property where redevelopment or reuse may be complicated by the presence or potential presence of a contaminant. A brownfield typically is a former industrial or commercial property where operations may have resulted in environmental contamination. A brownfield can pose environmental, legal and financial burdens on a community. If the brownfield is not addressed, it can reduce property values in the area and affect economic development of nearby properties.

The BCP is administered by the New York State Department of Environmental Conservation (NYSDEC) which oversees Applicants that conduct brownfield site remedial activities.[1] An Applicant is a person whose request to participate in the BCP has been accepted by NYSDEC. The BCP contains investigation and remediation requirements, ensuring that cleanups protect public health and the environment. When NYSDEC certifies that these requirements have been met, the property can be reused or redeveloped for the intended use.

For more information about the BCP, go online at: **www.dec.state.ny.us/website/der/bcp**

2. Citizen Participation Plan Overview

This Citizen Participation (CP) Plan provides members of the affected and interested public with information about how NYSDEC will inform and involve them during the investigation and remediation of the site identified above. The public information and involvement program will be carried out with assistance, as appropriate, from the Applicant.

Appendix A contains a map identifying the location of the site.

[1] "Remedial activities", "remedial action" and "remediation" are defined as all activities or actions undertaken to eliminate, remove, treat, abate, control, manage, or monitor contaminants at or coming from a brownfield site.

Project Contacts

Appendix B identifies project contact(s) to whom the public should address questions or request information about the site's remedial program. The public's suggestions about this CP Plan and the CP program for the site are always welcome. Interested people are encouraged to share their ideas and suggestions with the project contacts at any time.

Document Repositories

The locations of the site's document repositories also are identified in Appendix B. The document repositories provide convenient access to important project documents for public review and comment.

Site Contact List

Appendix C contains the brownfield site contact list. This list has been developed to keep the community informed about, and involved in, the site's investigation and remediation process. The brownfield site contact list will be used periodically to distribute fact sheets that provide updates about the status of the project, including notifications of upcoming remedial activities at the site (such as fieldwork), as well as availability of project documents and announcements about public comment periods.

The brownfield site contact list includes, at a minimum:

- chief executive officer and zoning chairperson of each county, city, town and village in which the site is located;
- residents, owners, and occupants of the site and properties adjacent to the site;
- the public water supplier which services the area in which the site is located;
- any person who has requested to be placed on the site contact list;
- the administrator of any school or day care facility located on or near the site for purposes of posting and/or dissemination of information at the facility; and
- document repositories.

Where the site or adjacent real property contains multiple dwelling units, the Applicant will work with the Department to develop an alternative method for providing such notice in lieu of mailing to each individual. For example, the owner of such a property that contains multiple dwellings may be requested to prominently display fact sheets and notices required to be developed during the site's remedial process. This procedure would substitute for the mailing of such notices and fact sheets, especially at locations where renters, tenants and other residents may number in the hundreds or thousands, making the mailing of such notices impractical.

The brownfield site contact list will be reviewed periodically and updated as appropriate. Individuals and organizations will be added to the site contact list upon request. Such requests should be submitted to the NYSDEC project contact(s) identified in Appendix B. Other additions to the brownfield site contact list may be made on a site-specific basis at the discretion of the NYSDEC project manager, in consultation with other NYSDEC staff as appropriate.

CP Activities

Appendix D identifies the CP activities, at a minimum, that have been and will be conducted during the site's remedial program. The flowchart in Appendix E shows how these CP activities integrate with the site remedial process. The public is informed about these CP activities through fact sheets and notices developed at significant points in the site's remedial process.

- **Notices and fact sheets** help the interested and affected public to understand contamination issues related to a brownfield site, and the nature and progress of efforts to investigate and remediate a brownfield site.

- **Public forums, comment periods and contact with project managers** provide opportunities for the public to contribute information, opinions and perspectives that have potential to influence decisions about a brownfield site's investigation and remediation.

The public is encouraged to contact project staff anytime during the site's remedial process with questions, comments, or requests for information about the remedial program.

This CP Plan may be revised due to changes in major issues of public concern identified in Section 6. or in the nature and scope of remedial activities. Modifications may include additions to the site contact list and changes in planned citizen participation activities.

3. Site Information

Site Description

Long Dock Beacon is an 8.85-acre parcel situated on a peninsula on the eastern shore of the Hudson River. The Site extends approximately 1,200 feet westwards from Red Flynn Drive and includes lands submerged in the Hudson River. The Site is part of the City of Beacon Waterfront, bounded on the east by the MTA commuter rail tracks and to the north by a small parcel of land owned by the City of Beacon and to the west by the Hudson River. Vacant land (also owned by the Scenic Hudson Land Trust, Inc. but not part of this Brownfield Site) is present to the south. Existing on-site structures include a vacant residence and a barn on the northern portion of the property, and a boathouse (used by the Dutchess Boat Club) located on the southern portion of the property. A Site Location Map is provided in Appendix A.

Site History

Long Dock Beacon is located in a former industrial area. The northern half of the Site, which is currently vacant, was formerly known as the "Beacon Salvage" property. The Beacon Salvage Property was a salvage/scrap yard, and prior to that, the location of a manufacturer of soaps and insecticides. The owner of the scrap yard also formerly resided on the property. The southern half of the Site, currently occupied by the Dutchess Boat Club, was formerly known as the "Garret Storm" property, which was a major oil storage facility.

Soils exhibiting concentrations of polychlorinated biphenyls (PCBs) and metals in excess of NYSDEC soil criteria were previously found at the former Beacon Salvage portion of the Site. Remedial efforts were undertaken to remove soils with PCB contamination and to cover remaining soils having elevated levels of PCBs with clean soil. The former Garrett Storm portion of the Site was a Major Oil Storage Facility. Petroleum-contaminated soils were removed from this portion of the Site. Laboratory analyses indicated that concentrations of petroleum hydrocarbons (a group of chemicals related to refined petroleum products that include volatile organic compounds [VOCs], semivolatile organic compounds [SVOCs], polycyclic aromatic hydrocarbons [PAHs, which are a specific group of SVOCs], as well as other compounds) in remaining soils were within allowable limits as defined by the NYSDEC.

Environmental History

Long Dock Beacon has been the subject of various environmental investigations from 1987 to the present. A Preliminary Hydrogeologic Assessment (PHA) of a larger geographic area, which included the Site, was conducted by Empire Soils Investigations, Inc. and Thomsen Associates in February 1987. According to the PHA, the Site was formed with uncontrolled fill from multiple sources (including coal-ash and construction and demolition debris).

Both the Garret Storm and Beacon Salvage portions of the Site were investigated separately as described below, and separately entered the Voluntary Cleanup Program (VCP). Both portions of the Site remained in the VCP until they were combined as the Long Dock Beacon Site in the Brownfields program.

As described below, several soil and groundwater investigations have occurred over the past two decades in the eastern and central portions of the Site. No testing occurred in the western portion of the Garret Storm portion of the Site, and scattered surface and sub-surface sampling occurred on the Beacon Salvage portion of the Site.

Former Beacon Salvage Property

The 1987 PHA documented the extension of four on-site test pits and the installation of groundwater monitoring wells. The type of fill encountered and the degree of soil compaction were noted to vary throughout the site. A petroleum sheen and odor were observed on groundwater encountered near the western extent of the peninsula. No other significant field

evidence of contamination was noted at the site. Laboratory analysis of groundwater samples indicated that iron was present at concentrations above groundwater standards and that several other metals were present at concentrations approaching groundwater standards.

An Environmental Constraints Analysis (ECA) of the same area covered by the February 1987 PHA was conducted by Cortell Associates in June 1989. The ECA included an analysis of on-site geology and topography, surveys of on-site wetlands, vegetation, and animal species, and the extension of two soil borings. The ECA stated that elevated concentrations of metals were present in on-site soils.

A Combined Phase I and Phase II Environmental Site Assessment (Phase I/II ESA) of the Beacon Salvage property was conducted by Ecosystems Strategies, Inc. (ESI) in June and July 2000. Four potential environmental concerns were identified: the historic use of the property, including the presence of a scrap yard from the 1950's through the 1980's; the potential historic use of kerosene-based pesticides; the integrity of fill materials used to create the peninsula; and, the presence of on-site burn areas associated with activities conducted at the scrap yard.

The Phase II portion of the investigation involved the extension of five manual soil borings to a maximum depth of five feet below surface grade (bsg) and the collection of seven surface samples. Elevated levels of several metals (arsenic, cadmium, lead, and selenium) were detected throughout the property and elevated levels of PCBs were detected in the burn areas.

ESI conducted additional investigative services from August 2000 to February 2002, including the collection of additional soil samples throughout the Site, the installation of groundwater monitoring wells, and the collection of groundwater samples. Based on the additional investigations, ESI concluded that groundwater on this portion of the Site was not impacted by historic site use, and that soils in the vicinity of the burn areas contained PCBs in excess of NYSDEC guidance levels. Finally, the data supported the conclusion that elevated metals were present in surface soils to the west of the on-site residential structure as well as to the east of the barn, but not in the central portion of the Site. No testing for VOCs, PAHs, or PCBs was conducted from soil samples collected to the west of the building.

PCB-contaminated soil (approximately 400 tons) was excavated from the impacted area and disposed of off-site in August and September 2002. Confirmatory endpoint sampling documented the presence of PCBs in remaining soils at concentrations below the NYSDEC guidance level of 10 parts per million (ppm) for PCBs in sub-surface soils. Clean soils were imported to restore the area to the approximate former grade, and the area was seeded with grass. This area was subsequently disturbed by on-site equipment storage practices and in November 2004 additional soils were imported and reseeded in order to restore the protective cover.

Four trenches were extended at locations between the western concrete pad and the barn in December 2004 as part of an archeological investigation. The NYSDEC Program Manager at the time was present during the fieldwork. Evidence of low-level petroleum impacts was observed at each trench and pieces of copper fuel lines were discovered at the westernmost trench. Low-grade PAH and metal contamination was detected throughout the study area. Low concentrations of PCBs (below guidance levels) were detected near the western end of the barn.

Former Garret Storm Property

The 1987 PHA documented the extension of two test pits at the central portion of the property. A strong petroleum odor and sheen were noted at both locations, and laboratory analysis of the groundwater samples indicated that fuel oil was present at one location.

A NYSDEC inspection of on-site groundwater monitoring wells in December 1988 revealed the likely presence of dissolved petroleum products in on-site groundwater. A NYSDOH analysis of a groundwater sample in February 1989 indicated elevated concentrations of petroleum hydrocarbons and metals.

The Cortell Associates ECA documented the presence of free product in an on-site monitoring well.

ESI completed a Subsurface Investigation and Monitoring Well Installation Report (Garret Storm SSI) in September and October 1994. Eleven soil borings were extended in the former fuel handling and storage area, and six of the borings were completed as groundwater monitoring wells. Field evidence (i.e., stained soil, petroleum odors, floating product on groundwater, etc.) suggested the presence of petroleum contamination. Soil and groundwater samples from two locations contained elevated levels of SVOCs. The Garret Storm SSI concluded that significant petroleum contamination was present in soils and groundwater located in the vicinity of the former fuel-storage and handling area, but was unlikely to migrate off-site.

An Environmental Audit (Garret Storm EA) issued by ESI in May 1999 summarizes an investigation of the site conducted by ESI in January 1997. The Garret Storm EA included a Phase I analysis of the property, as well as the sampling of four on-site and four off-site groundwater monitoring wells. SVOCs were detected in two on-site wells at low concentrations (below guidance levels). No other petroleum hydrocarbons were detected in any other sampled wells. The Garret Storm EA concluded that petroleum-contaminated soils in the vicinity of the tank cradles should be excavated and disposed of off-site, and that several existing abandoned on-site aboveground storage tanks should be removed.

A Summary Report of Remedial Activities (Garret Storm RA Report), dated June 2003, details remedial activities undertaken by ESI at the Site as well as additional investigations of on-site and off-site groundwater quality. Remedial activities were initiated in October 1999 when a former on-site pump house and tank-cradle were demolished in order to excavate petroleum contaminated soils (approximately 600 tons of petroleum contaminated soil were disposed of off-site). Laboratory analysis documented the absence of significant petroleum constituents in remaining soils. No underground storage tanks were encountered during the extension of several additional test pits.

Two observation/recovery sumps were installed in the excavated area, in the event that recoverable quantities of free product were detected on the water table, and a monitoring well was installed in February 2001 to replace two other monitoring wells that were destroyed during the course of soil excavation.

Groundwater sampling was conducted in October 2000, and March, June, and October 2001. A petroleum sheen and odor was noted in two wells in October 2000 but no petroleum hydrocarbons were detected above reported detection limits. Elevated concentrations of several VOCs and/or PAHs were detected in one on-site monitoring well in March 2001 and June 2001 (low-levels were detected in October 2001). Low levels of VOCs were detected in one other on-site well in June 2001. No other compounds were detected in other wells during any sampling rounds (no VOCs or PAHs have been detected in any off-site wells). The Garret Storm RA Report concluded that concentrations of VOCs and PAHs in the vicinity of the area of soil excavation have been diminishing over time, and that residual petroleum hydrocarbons at the Site are likely to be bound to soil and are, therefore, unlikely to represent a threat to on- or off-site groundwater quality.

4. Remedial Process

Note: See Appendix E for a flowchart of the brownfield site remedial process.

Application

The Applicant has applied for and been accepted into New York's Brownfield Cleanup Program as a Volunteer. This means that the Applicant was not responsible for the disposal or discharge of the contaminants or whose ownership or operation of the site took place after the discharge or disposal of contaminants. The Volunteer must fully characterize the nature and extent of contamination onsite, and must conduct a "qualitative exposure assessment," a process that characterizes the actual or potential exposures of people, fish and wildlife to contaminants on the site and to contamination that has migrated from the site.

The Applicant in its Application proposes that the site will be used for unrestricted purposes.

To achieve this goal, the Applicant will conduct remedial activities at the site with oversight provided by NYSDEC. The Brownfield Cleanup Agreement executed by NYSDEC and the Applicant sets forth the responsibilities of each party in conducting a remedial program at the site.

Investigation

If the Applicant conducts a remedial investigation (RI) of the site, it will be performed with NYSDEC oversight. The Applicant must develop a remedial investigation work plan, which is subject to public comment as noted in Appendix D. The goals of the investigation are as follows:

1) Define the nature and extent of contamination in soil, surface water, groundwater and any other impacted media;

2) Identify the source(s) of the contamination;

3) Assess the impact of the contamination on public health and/or the environment; and

4) Provide information to support the development of a Remedial Work Plan to address the contamination, or to support a conclusion that the contamination does not need to be addressed.

The Applicant will prepare an RI Report after it completes the RI. This report will summarize the results of the RI and will include the Applicant's recommendation of whether remediation is needed to address site-related contamination. The RI Report is subject to review and approval by NYSDEC. Before the RI Report is approved, a fact sheet that describes the RI Report will be sent to the site's contact list.

NYSDEC will determine if the site poses a significant threat to public health and/or the environment. If NYSDEC determines that the site is a "significant threat," a qualifying community group may apply for a Technical Assistance Grant (TAG). The purpose of a TAG is to provide funds to the qualifying community group to obtain independent technical assistance. This assistance helps the TAG recipient to interpret and understand existing environmental information about the nature and extent of contamination related to the site and the development/implementation of a remedy.

An eligible community group must certify that its membership represents the interest of the community affected by the site, and that its members' health, economic well-being or enjoyment of the environment are potentially threatened by the site.

For more information about the TAG Program and the availability of TAGs, go online at: **www.dec.state.ny.us/website/der**

Remedy Selection

After NYSDEC approves the RI Report, the Applicant will be able to develop a Remedial Work Plan if remediation is required. The Remedial Work Plan describes how the Applicant would address the contamination related to the site.

The public will have the opportunity to review and comment on the draft Remedial Work Plan. The site contact list will be sent a fact sheet that describes the draft Remedial Work Plan and announces a 45-day public comment period. NYSDEC will factor this input into its decision to approve, reject or modify the draft Remedial Work Plan.

A public meeting may be held by NYSDEC about the proposed Remedial Work Plan if requested by the affected community and if significant substantive issues are raised about the draft Remedial Work Plan. Please note that, in order to request a public meeting, the health, economic well-being or enjoyment of the environment of those requesting the public meeting must be threatened or potentially threatened by the site. In addition, the request for the public meeting should be made within the first 30 days of the 45-day public comment period for the draft Remedial Work Plan. A public meeting also may be held at the discretion of the NYSDEC project manager in consultation with other NYSDEC staff as appropriate.

Construction

Approval of the Remedial Work Plan by NYSDEC will allow the Applicant to design and construct the alternative selected to remediate the site. The site contact list will receive notification before the start of site remediation. When the Applicant completes remedial activities, it will prepare a final engineering report that certifies that remediation requirements have been achieved or will be achieved within a specific time frame.

NYSDEC will review the report to be certain that the remediation is protective of public health and the environment for the intended use of the site. The site contact list will receive a fact sheet that announces the completion of remedial activities and the review of the final engineering report.

Certificate of Completion and Site Management

Once NYSDEC approves the final engineering report, NYSDEC will issue the Applicant a Certificate of Completion. This Certificate states that remediation goals have been achieved, and relieves the Applicant from future remedial liability, subject to statutory conditions. The Certificate also includes a description of any institutional and engineering controls or monitoring required by the approved remedial work plan. The site contact list will receive a fact sheet announcing the issuance of the Certificate of Completion.

An institutional control is a non-physical restriction on use of the brownfield site, such as a deed restriction that would prevent or restrict certain uses of the remediated property. An institutional control may be used when the remedial action leaves some contamination that makes the site suitable for some, but not all uses.

An engineering control is a physical barrier or method to manage contamination, such as a cap or vapor barrier.

Site management will be conducted by the Applicant as required. NYSDEC will provide appropriate oversight. Site management involves the institutional and engineering controls required for the brownfield site. Examples include: operation of a water treatment plant, maintenance of a cap or cover, and monitoring of groundwater quality.

5. Citizen Participation Activities

CP activities that have already occurred and are planned during the investigation and remediation of the site under the BCP are identified in Appendix D: Identification of Citizen Participation Activities. These activities also are identified in the flowchart of the BCP process in Appendix E. NYSDEC will ensure that these CP activities are conducted, with appropriate assistance from the Applicant.

All CP activities are conducted to provide the public with significant information about site findings and planned remedial activities, and some activities announce comment periods and request public input about important draft documents such as the Proposed Remedial Work Plan.

All written materials developed for the public will be reviewed and approved by NYSDEC for clarity and accuracy before they are distributed. Notices and fact sheets can be combined at the discretion, and with the approval of, NYSDEC.

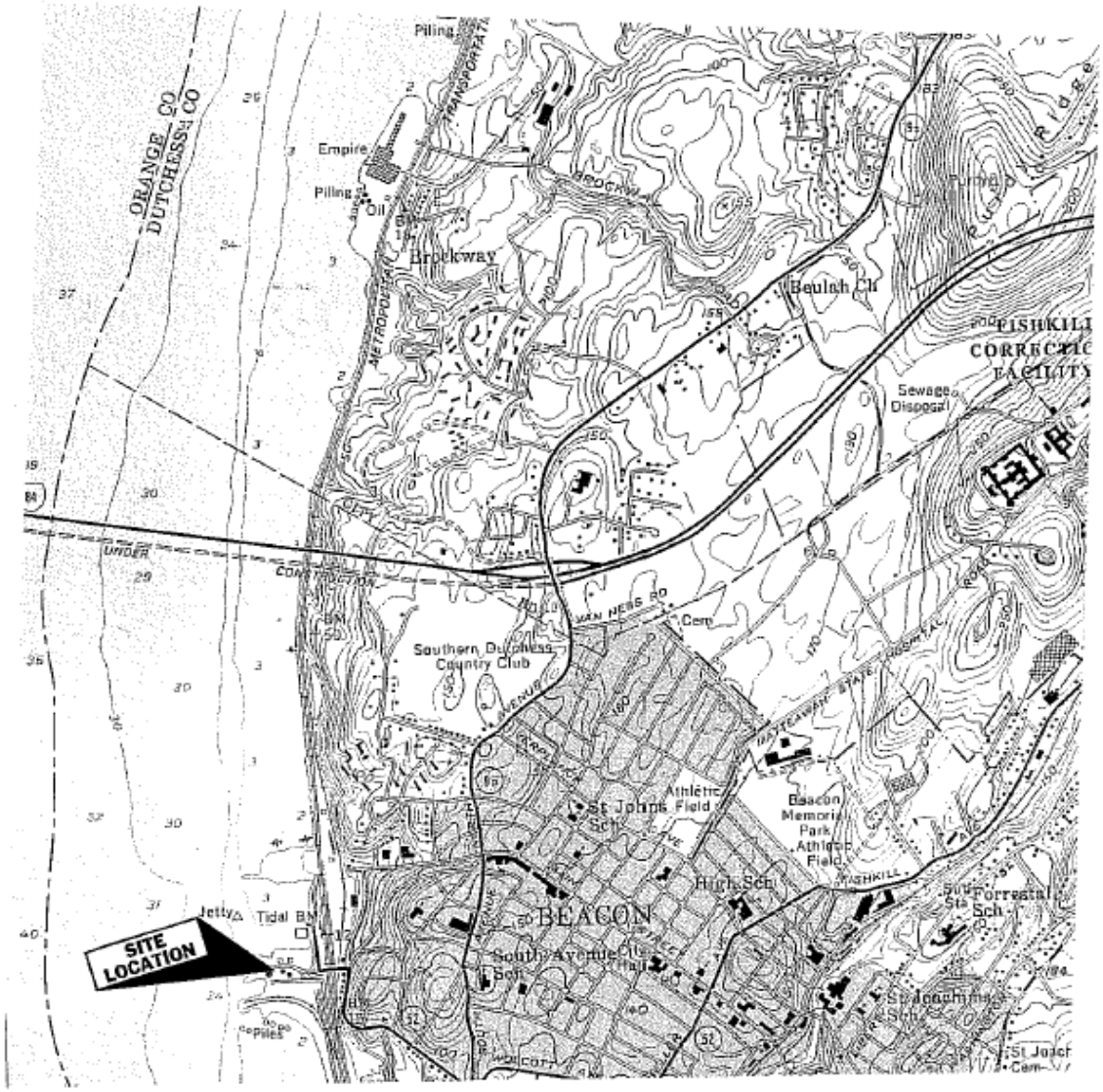
6. Major Issues of Public Concern

This section of the CP Plan identifies major issues of public concern, if any, that relate to the site. Additional major issues of public concern may be identified during the site's remedial process.

Remediation at Long Dock Beacon will benefit most stakeholders, who include residents of the City of Beacon and the State of New York, local environmental organizations, boaters, fishermen, and other users of the Hudson River. Remediation of this Site will provide new economic, educational, and recreational opportunities for stakeholders.

The environmental conditions at Long Dock Beacon have been studied over the past two decades, and are relatively well documented. Much remediation has already taken place on the Site. It is expected that further remediation of the site will eliminate and/or contain environmental contaminants at the Site so they will no longer have the potential to impact public health or Hudson River water quality.

Appendix A – Site Location Map



Source: U.S. Department of the Interior Geological Survey Topographic Map of the Wappingers Falls, NY Quadrangle, dated 1956 (photorevised 1981)

Site Location Map (Scale: 1:24000) Long Dock Beacon Red Flynn Drive, City of Beacon Dutchess County, New York	N	ESI File: SG96152.50 Date: April 2006 Attachment

Appendix B – Project Contacts and Document Repositories

Project Contacts

For information about the site's remedial program, the public may contact any of the following project staff:

New York State Department of Environmental Conservation (NYSDEC):
William Bennett
Project Manager
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233-7014
(518) 402-9662

Michael J. Knipfing
Citizen Participation Specialist
NYSDEC Region 3
21 South Putt Corners Rd
New Paltz, NY 12561
(845) 256-3154

New York State Department of Health (NYSDOH):
Bridget Callaghan
Project Manager
NYSDOH
Bureau of Environmental Exposure Investigation - Room 300
Flanigan Street
547 River Street
Troy, NY 12180-2216
(518) 402-7870

Post Remediaition Redevelopment:
Matthew D. Rudikoff
Foss Group Beacon LLC
427 Main Street, Suite 201
Beacon, NY 12508
(845) 831-1182
Website: www.longdockbeacon.com

Document Repositories

The document repositories identified below have been established to provide the public with convenient access to important project documents:

NYSDEC Region 3
21 South Putt Corners Rd
New Paltz, NY 12561
(845) 256-3154
Attn: Michael J. Knipfing
Phone: (845) 256-3154
Hours: Monday-Friday 9:00 am – 4:30 pm
(call for appointment)

Howland Public Library
313 Main Street
Beacon, New York
Phone: (845) 831-1165
Hours: Monday-Thursday 9:00 am – 8:00 pm
Friday-Saturday 9:00 am – 5:00 pm
Sunday 1:00 pm – 5:00 pm (Labor Day through Memorial Day)

Municipal Center, lower level
One Municipal Plaza
Beacon, New York
Phone: (845) 838-5025
Hours: Monday–Friday 8:30 am – 3:30 pm

Rivers and Estuaries Center
199 Main Street
Beacon, New York
Phone: (845) 838-1600

Appendix C – Brownfield Site Contact List

GOVERNMENT

Roger P. Akeley, Commissioner
D.C. Planning & Development
27 High St
Poughkeepsie, NY 12601

Rich Baldwin, PE
NYSDEC
21 S Putt Corners Rd
New Paltz, NY 12561

Darlene Bellis,Town Clerk
Town of Fishkill
807 Rte 52
Fishkill, NY 12524

William Bennett
NYSDEC
625 Broadway
Albany, NY 12233

Donna L. Benson, Or. County Clerk
O.C. Government Center
225 Main St
Goshen, NY 10924

Wayne C. Booth, Supervisor
Town of Newburgh
1496 Rte 300
Newburgh, NY 12550

Joseph Braun, City Administrator
One Municipal Plaza, Ste 1
Beacon, NY 12508

Dr. Michael C. Caldwell, Commissioner
Dutchess Co. Health Dept.
387-391 Main Mall
Poughkeepsie, NY 12601

Bridget Callaghan
NYSDEC
547 River St
Troy, NY 12180

Scott Chase, Manager
Water Resources
27 High St
Poughkeepsie, NY 12601

John L. Clarke
D.C. Planning & Development
24 High St
Poughkeepsie, NY 12601

Hon. Hilary R. Clinton
U.S. Senate
Washington, DC 20510

Anne Conroy, President
D.C. Economic Development Corp.
3 Neptune Rd
Poughkeepsie, NY 12601

David Crosby
NYSDEC
625 Broadway
Albany, NY 12233

Tim Dexter, Building Inspector
City of Beacon
1 Municipal Plaza
Beacon, NY 12508

Hon. Edward Diana, Or. County Executive
O.C. Government Center
225 Main St
Goshen, NY 10924

Peg Duke
NYSDEC
21 S Putt Corners Rd
New Paltz, NY 12561

Fran Dunwell
NYS DEC HR Estuary Program
21 S Putt Corners Rd
New Paltz, NY 12561

Sal Ervolina, PE
NYSDEC
625 Broadway
Albany, NY 12233

Chris Ericson, Chairman
Conservation Advisory Committee
22 Layfaette Ave
Beacon, NY 12508

Harold Evans
NYSDEC
625 Broadway
Albany, NY 12233

Kandall Fleischer
Metro North Railroad
347 Madison Ave
New York, NY 10017

Elizabeth Foster, 1st Ward
City of Beacon
1 Municipal Plaza
Beacon, NY 12508

Steve Gold, 4th Ward
City of Beacon
1 Municipal Plaza
Beacon, NY 12508

Clara Lou Gould, Mayor
City of Beacon
1 Municipal Plaza
Beacon, NY 12508

Etha Grogan
1 Municipal Plaza
Beacon, NY 12508

Jay Hibbs
29 School St
Beacon, NY 12508

Hon. Maurice Hinchey
Congressman, 26th Dist.
291 Wall St
Kingston, NY 12401

Patricia J. Hohman, Dutchess Co.
Clerk of Legislature
22 Market St
Poughkeepsie, NY 12601

Charles Kelly, 2nd Ward
City of Beacon
1 Municipal Plaza
Beacon, NY 12508

Hon. Sue Kelly Congresswoman,
19th Dist.
21 Old Main St Ste 107
Fishkill, NY 12524

Bradford Kendall, Chairman of
Legislature
Dutchess County
22 Market St
Poughkeepsie, NY 12601

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Environmental Citizens Coalition
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Band College Field Station
Annandale, NY 12504

NY-NJ Trail Conference
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Mt. Kisco, NY 10549

The Nature Conservancy
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Troy, NY 12180

Waterman Bird Club
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Adjacent Residents, Tenants, or Property Owners

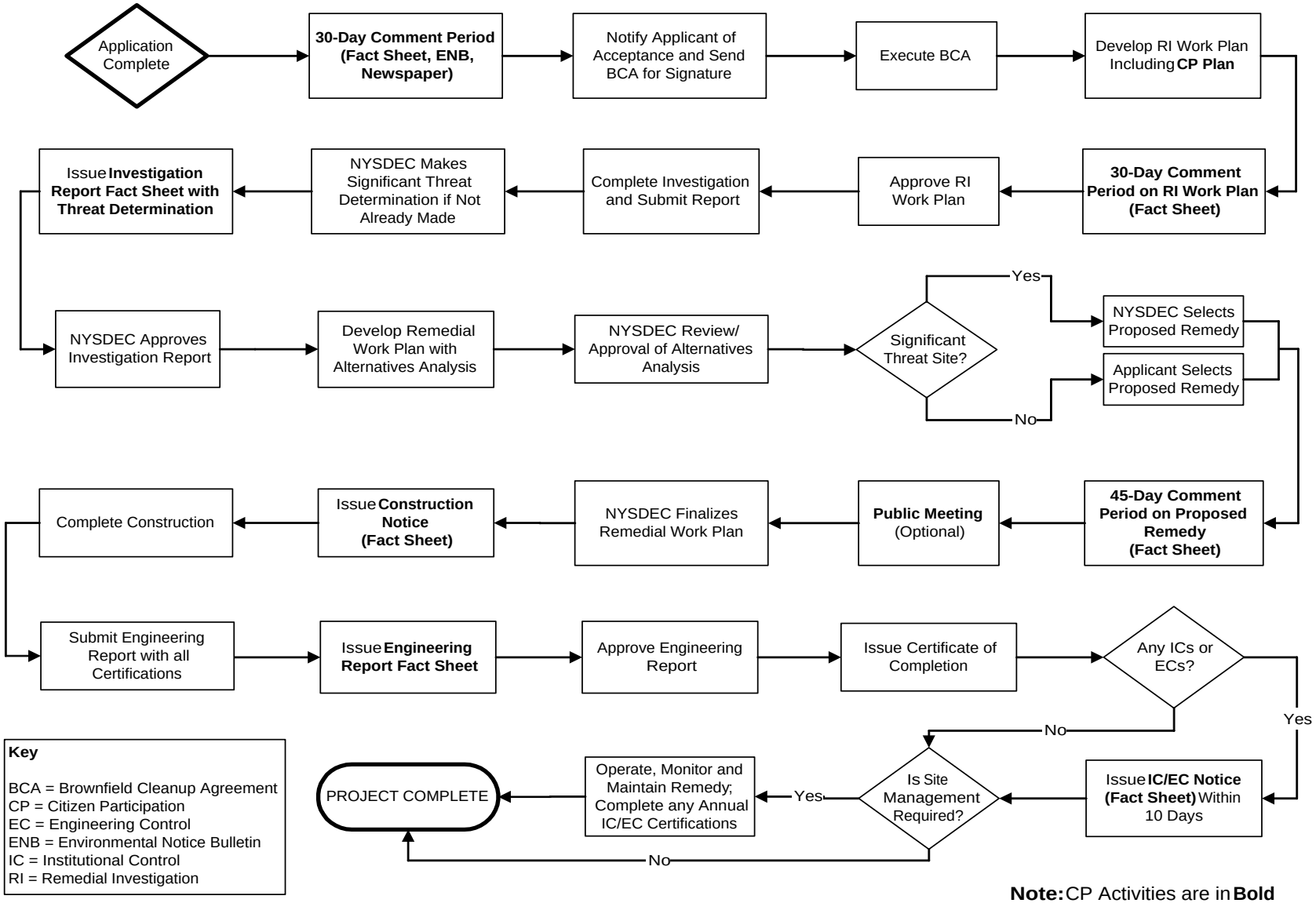
This segment of the Site's contact list is maintained in confidence in the NYSDEC official site file.

Appendix D – Identification of Citizen Participation Activities

Required Citizen Participation (CP) Activities	CP Activities) Occur at this Point
Application Process:	
• Prepare brownfield site contact list (BSCL) • Establish document repositories	At time of preparation of application to participate in BCP.
• Publish notice in Environmental Notice Bulletin (ENB) announcing receipt of application and 30-day comment period	When NYSDEC determines that BCP application is complete. The 30-day comment period begins on date of publication of notice in ENB. End date of comment period is as stated in ENB notice. Therefore, ENB notice, newspaper notice and notice to the BSCL should be provided to the public at the same time.
After Execution of Brownfield Site Cleanup Agreement:	
• Prepare citizen participation (CP) plan	Draft CP Plan must be submitted within 20 days of entering Brownfield Site Cleanup Agreement. CP Plan must be approved by NYSDEC before distribution.
After Remedial Investigation (RI) Work Plan Received:	
• Mail fact sheet to BSCL about proposed RI activities and announcing 30-day public comment period on draft RI Work Plan	Before NYSDEC approves RI Work Plan. If RI Work Plan is submitted with application, comment periods will be combined and public notice will include fact sheet. 30-day comment period begins/ends as per dates identified in fact sheet.

After RI Completion:	
• Mail fact sheet to BSCL describing results of RI	Before NYSDEC approves RI Report.
After Remedial Work Plan (RWP) Received:	
• Mail fact sheet to BSCL about proposed RWP and announcing 45-day comment period • Public meeting by NYSDEC about proposed RWP (if requested by affected community or at discretion of NYSDEC project manager in consultation with other NYSDEC staff as appropriate)	Before NYSDEC approves RWP. 45-day comment period begins/ends as per dates identified in fact sheet. Public meeting would be held within the 45-day comment period.
After Approval of RWP:	
• Mail fact sheet to BSCL summarizing upcoming remedial construction	Before the start of remedial construction.
After Remedial Action Completed:	
• Mail fact sheet to BSCL announcing that remedial construction has been completed • Mail fact sheet to BSCL announcing issuance of Certificate of Completion (COC)	At the time NYSDEC approves Final Engineering Report. These two fact sheets should be combined when possible if there is not a delay in issuance of the COC.

Appendix E – Brownfield Cleanup Program Process



Ecosystems Strategies, Inc. Environmental Services and Solutions
24 Davis Avenue, Poughkeepsie, New York 12603-2332 TEL: 845-452-1658 • FAX: 845-485-7083
mail@ecosystemsstrategies.com

Water Sample Log

Site: Long Dock Beacon
Job Number: SG96152.51

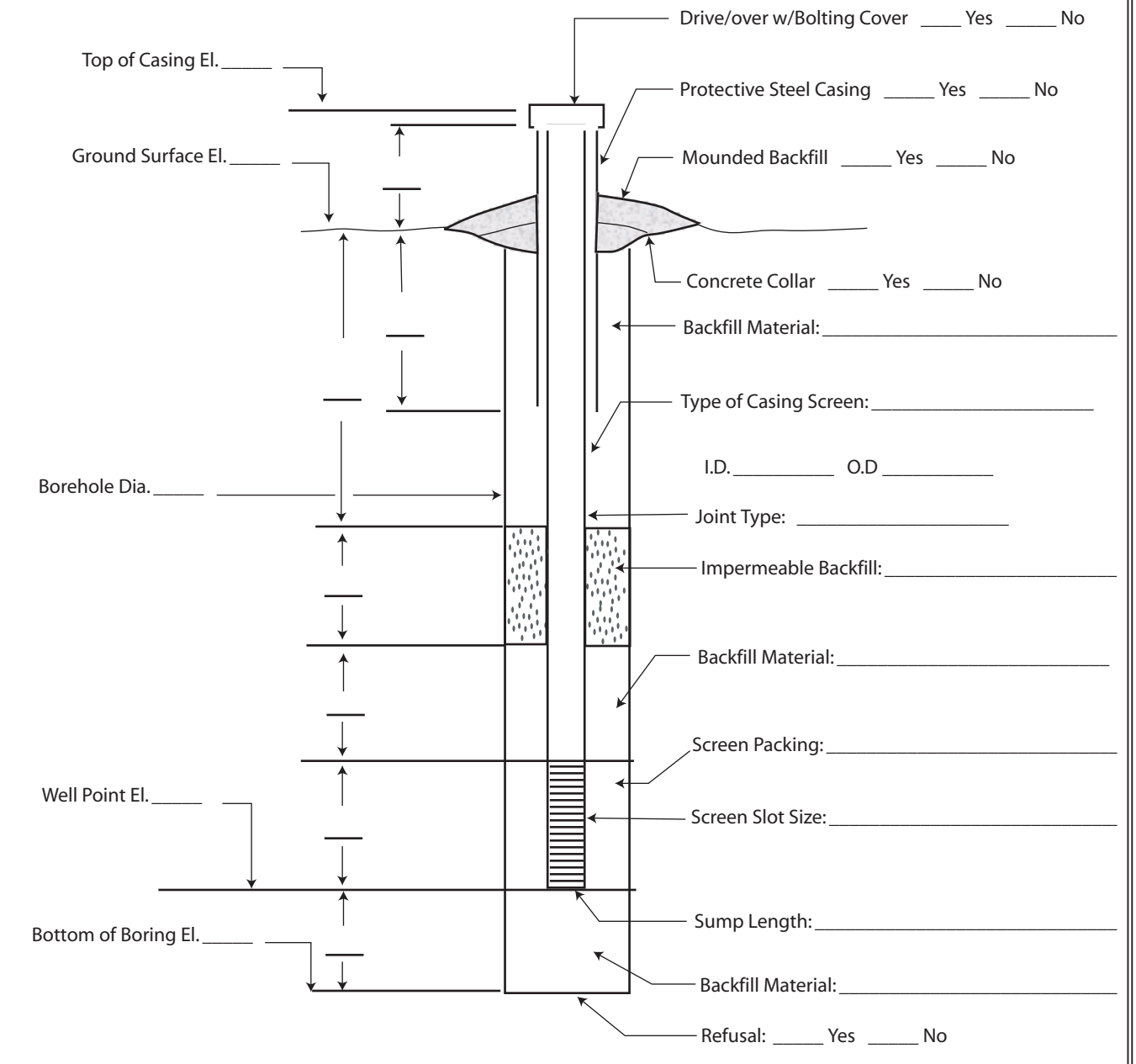
Sample Location: _____
Sample ID:_____

Type of sample: Surface/Groundwater/Other

Grab/Composite

Volume Collected:	Analysis	Preservative

Comments:_____



Materials Used:

Screen (PVC)
Riser (PVC)
Plug (PVC)
Slip Cap (PVC)
Silica Sand
Powdered Bentonite

Bentonite Pellets
Asphalt
Bentonite Chips
Concrete Mix
Portland

Locking Exp. Plug
Lock
D/O
S/U

Monitor Well Installation Detail

ESI File:

March 2004

Soil/Sediment Sample Log And Collection Record

ESI Job Number
SG96152.50

Site Location
Long Dock
Beacon, NY

Location ID:	**Boring / Test Pit / Sediment Sample Location:**

Equipment Used: Geoprobe (Hand / mechanized) / drill rig / excavator / back hoe p**re-probe/auger depth(s):**

Surface Material: bare soil / asphalt / concrete / surface gravel / bedrock / organic material **Notes:**

Sample Collection Interval: discreet surface sample / 2 feet (sleeve) / 4 feet (sleeve) / other:

Depth to saturated soil: not encountered / _____ ft bsg	**Refusal:** not encountered / refusal at _____ ft bsg	Void

Depth (feet bsg)	**Soil Profile and Field Observations**	
	Texture:	sand / loamy sand / sandy loam / sandy clay loam / sandy clay / loam / silt loam / clay loam / silty clay loam silty clay / silt / clay / organic muck / high organic content **Sand Size** v. coarse /coarse / med / fine / v. fine
Recovery	**Inclusions:**	gravel (coarse / med / fine) / stones / rock frags (sedimentary / crystalline) / organics (veg / woody / decayed) debris: brick / asphalt / concrete / coal / wood / metal / plastic / other
S/S/A *(except)*	**Color:**	**Intensity** light / medium / dark **Hue** yellow / orange / red / brown / black / gray **Modifier** yellowish / reddish / brownish / grayish / blackish / mottled / other
Sampled	**Moisture:**	dry / slightly moist / moist / very moist / wet **Soil Density:** non-cohesive / loose / dense / plastic / cemented
Grab _______ft	**Notes:**	**PID** ________ ppm N.E.C. / odor (slight / strong / fuel-oil / gas / chemical) / staining or sheen (light / heavy) free product (LNAPL / DNAPL) **Other:**
	Texture:	sand / loamy sand / sandy loam / sandy clay loam / sandy clay / loam / silt loam / clay loam / silty clay loam silty clay / silt / clay / organic muck / high organic content **Sand Size** v. coarse /coarse / med / fine / v. fine
Recovery	**Inclusions:**	gravel (coarse / med / fine) / stones / rock frags (sedimentary / crystalline) / organics (veg / woody / decayed) debris: brick / asphalt / concrete / coal / wood / metal / plastic / other
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	Texture:	sand / loamy sand / sandy loam / sandy clay loam / sandy clay / loam / silt loam / clay loam / silty clay loam silty clay / silt / clay / organic muck / high organic content **Sand Size** v. coarse /coarse / med / fine / v. fine
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Sampled	**Moisture:**	dry / slightly moist / moist / very moist / wet **Soil Density:** non-cohesive / loose / dense / plastic / cemented
Grab _______ft	**Notes:**	**PID** ________ ppm N.E.C. / odor (slight / strong / fuel-oil / gas / chemical) / staining or sheen (light / heavy) free product (LNAPL / DNAPL) **Other:**

Determination of Soil Texture

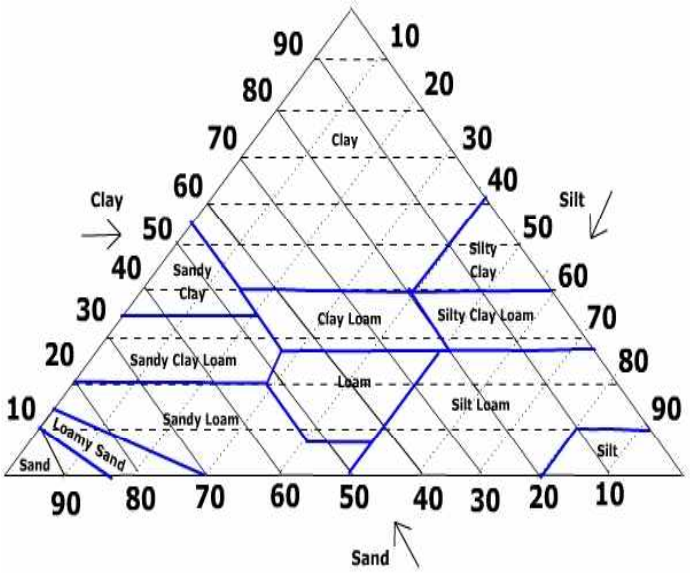
Estimate the percentages of Sand, Silt, and Clay

Exclude mineral materials >2.0 mm (gravel and stones)
Exclude non-mineral material (organic matter)

Sand: **feels rough/gritty when rubbed**
Silt: **Dry - feels smooth and powdery**
Wet - feels smooth but not sticky
Clay: **Dry - feels smooth**
Wet - feels sticky

As warranted, modify "sand" or "sandy" as follows:

Very coarse	**2.0**	**-**	**1.0 mm**
Coarse	**1.0**	**-**	**0.5 mm**
Medium	**0.5**	**-**	**0.25 mm**
Fine	**0.25**	**-**	**0.10 mm**
Very fine	**0.10**	**-**	**0.05 mm**



Boulder 300 mm or more Larger than a volleyball
Cobble 300 mm to 75 mm Volleyball - grapefruit - orange
Coarse gravel 75 mm to 20 mm Orange - grape
Fine gravel 20 mm to No. 4sieve (5 mm) Grape - pea
Coarse sand No. 4 sieve to No. 10 sieve Sidewalk salt
Medium sand No. 10 sieve to No. 40 sieve Openings in window screen
Fine sand No. 40 sieve to No. 200 sieve Sugar - table salt, grains barely visible

EXAMPLE (Minimum Requirements) Page____of____

Well PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Location (Site/Facility Name) Long Dock Beacon, Beacon, NY
Well Number_____ Date_____
Field Personnel Carl Kochersberger, Project Manager
Sampling Organization Ecosystems Strategies, Inc.
Identify MP_____

Depth to _____/_____ of screen
(below MP) top bottom
Pump Intake at (ft. below MP)_____
Purging Device; (pump type)_____

Clock Time 24 HR	Water Depth below MP ft	Pump Dial[1]	Purge Rate ml/min	Cum. Volume Purged liters	Temp. °C	Spec. Cond.[2] µS/cm	pH	ORP/ Eh[3] mv	DO mg/L	Turb-idity NTU	Comments

1. Pump dial setting (for example: hertz, cycles/min, etc).
2. µSiemens per cm(same as µmhos/cm)at 25 °C.
3. Oxidation reduction potential (stand in for Eh).