New York State Department of Environmental Conservation
Division of Environmental Remediation
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Alexander B. Grannis
Commissioner

November 26, 2007

Mr. Paul Ciminello
Ecosystems Strategies, Inc.
24 Davis Avenue
Poughkeepsie, New York 12603

Re: Remedial Investigaion Work Plan
Beacon Terminal, City of Beacon, Dutchess County
Brownfield Cleanup Agreement Site No. C314117

Dear Mr. Ciminello:

The New York State Department of Environmental Conservation (Department) in conjunction with the New York State Department of Health (NYSDOH) has completed its review of the revised draft Remedial Investigation Work Plan (RIWP) dated October 2007. Based upon the information and representations given, as well as the close of the Public Comment Period on November 25, 2007, with no public comments received, the RIWP for the above-referenced site is hereby approved.

Please contact me at your earliest convenience with the anticipated field work schedule, and be advised that the Department requires at least seven (7) days notice from the actual start of work. If you have any questions or concerns, please don't hesitate to contact me at (518) 402-9662, or by email at kabecker@gw.dec.state.ny.us.

Sincerely,

Kiera A. Becker

Kiera A. Becker
Project Manager
Remedial Bureau C
Division of Environmental Remediation

cc: E. Lawson – Ecosystem Strategies, Inc.

ec: R. Mitchell/M. Rivara (NYSDOH)

bc: K. Becker/FILE

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R. Schick
R. Pergadia (Reg 3)

REMEDIAL INVESTIGATION WORK PLAN

Prepared for the

Beacon Terminal Site
555 South Avenue
City of Beacon
Dutchess County, New York

NYSDEC Brownfields Program Site: C314117

Submitted July 2007
Revised October 2007

ESI File: BB04157.50

ECOSYSTEMS STRATEGIES, INC.
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Prepared By:

Ecosystems Strategies, Inc.
24 Davis Avenue
Poughkeepsie, New York 12603

Prepared For:

Beacon Terminal Associates, LLP
18 East 22nd Street
New York, New York 10010

The undersigned have reviewed this Draft Remedial Investigation Work Plan and certify to Beacon Terminal Associates, LLP 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

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1.0 INTRODUCTION

1.1 Purpose

The purpose of this Draft Remedial Investigation Work Plan (RIWP) is to: 1) summarize environmental investigative and interim remedial fieldwork previously performed by Ecosystems Strategies, Inc. (ESI) and other parties on the "Beacon Terminal Site" (hereafter referred to as the "Site"); and, 2) provide guidance on the manner in which additional site investigative services will be conducted, in order to address known and suspected on-site environmental conditions (see Section 1.3, below). It is the intent of this RIWP that, upon completion of all investigative activities, generated environmental data will be of sufficient quality and quantity for the submission of a completed Remedial Investigation Report (RIR) and a Remedial Work Plan (RWP) with an alternatives analysis to the New York State Department of Environmental Conservation (NYSDEC).

1.2 Site History and Description

The Site consists of tax parcel: # 751258 (11.07 acres) located in the City of Beacon, Dutchess County, New York (Section 5954, Block 16, Lot 751258). A Site Location Map is provided as Figure 1 in Appendix A. The Site is located adjacent to the northern edge of Fishkill Creek, approximately 2,000 feet east of the Hudson River, and has overall southerly slopes. The Site is presently improved with eight vacant industrial buildings (B-1, B-2, B-3, B-4, B-5A, B-5B, B-6, B-7, and B-8) formerly used for various manufacturing and warehousing purposes. These buildings occupy approximately fifty percent of the Site; the remainder of the property includes paved parking areas and undeveloped grassland and woodlands. A Site Map is provided as Figure 2 in Appendix A.

Floor drains and exterior drains were observed inside of buildings B-7 and B-8 and outside of buildings B-4, B-8, and B-6 by ESI in September 2007. However, the basement floor inside of most of the buildings is obscured with debris making identification of additional floor drains and sumps difficult. During site activities, an effort will be made to further identify sumps, floor drains, and other drainage features. These areas, if identified, will be targeted for the collection of soil, ground water, and/or soil vapor.

The following Environmental History was obtained from review of Site documentation provided by the Beacon Historical Society and previously issued documents:

The Site has a long history of known industrial use. A Site sketch and description, obtained from the Beacon Historical Society, depicts three buildings (now identified as buildings B-1 and B-2) on Site. These buildings were constructed in 1878 as the Tioranda Hat Works. Building B-1 is described as an engine room and boiler house, and building B-2 is described as the main factory housing felting, dyeing, carding, and wool sorting operations. Information regarding specific historical material handling, storage, and disposal is not readily available. However, review of historic Sanborn Maps indicates that the Site was occupied by the Tioranda Hat Works until at least 1919. Three of the present-day buildings (B-1, B-2, and B-4) were on-site at that time, with dyeing operations in the portions of buildings B-2 and B-4 most proximal to Fishkill Creek. Sanborn maps depict on-site hatworks facilities until at least 1946. However, by 1962 the complex, comprising all buildings currently on Site, is called "Beacon Terminal". Six of the buildings are shown as being in use by the Atlas Fiber Company, a fiber reclaimer, while one building (B-5A and B-5B) is occupied by Chemical Rubber Products, Inc. and one building (B-7) is occupied by BASF Colors & Chemicals. From approximately 1972 to 1995, the buildings were used for storage by various occupants. The buildings have remained vacant since at least 1995.

Petroleum products and other chemicals have historically been stored on-site. Four underground storage tanks (USTs) used for the storage of toluene are likely to have been installed in the early 1950s, when building B-5A was constructed. Six aboveground storage tanks (ASTs) used for the storage of lubricating oil, hydrochloric, and sulfuric acids, and at least ten USTs used for the storage of fuel oil, toluene, and other chemicals were documented on the Site in 1993. Neither these tanks nor their closures appear to have been properly documented. In addition, storage drums of varying sizes were found at a number of interior locations.

In 1996, ESI conducted a limited subsurface investigation in the vicinity of the toluene USTs. Ten borings (B-1 thorough B-10, Figure 3, Appendix A) were completed to a depth ranging from 7.0 feet below surface grade (bsg) to 11.0 feet bsg. Volatile organic compounds (VOCs) (benzene, toluene, and xylene) were detected at levels which exceed current NYSDEC Part 375 Soil Cleanup Objectives (SCOs) for Unrestricted Use. NYSDEC spill #9600893 (currently closed) was recorded for the Site at that time.

Work conducted at the Site in October 2000, as part of the Voluntary Cleanup Program Site #V00443-3, included the removal of four toluene USTs located just beyond the northern wall of Building 5A, at the junction with Building 5B. Post-excavation inspections documented water with a product sheen and numerous small holes in the tanks, and NYSDEC spill #0008142 (currently closed) was reported. Post-excavation soil sampling indicated elevated levels of toluene in sixteen of twenty-four confirmatory samples (levels ranging from 3,220 to 326,000 parts per billion (ppb), TAGM 4046 Recommended Soil Cleanup Objective [RSCO] 1,500 ppb). The majority of samples with elevated toluene levels (ten of sixteen) were drawn from the bottom of the excavation, suggesting deep penetration of the contaminant. Investigation of soils under the buildings or of soil vapor is not known to have been conducted. Although three monitoring wells were installed on Site (Figure 3, Appendix A), groundwater quality data is not available.

Soils from the excavation of the toluene USTs were stockpiled on-site. In May 2001, these stockpiled soils were sampled and found to contain elevated levels of toluene, with concentrations ranging from not detectable to 2,020,000 ppb. Subsequent stockpile sampling, in October 2002, did not find detectable levels of toluene or other organic compounds, indicating the volatization of toluene over time. In 2005, the soil stockpile was relocated to the northwestern corner of the Site and covered with at least 24 inches of clean cover soil, as documented in a previously submitted Soils Management Plan (May 2005).

Also in October 2000, all ASTs (with the exception of the four chemical holding tanks located in Building 2) were cleaned and removed from the Site, miscellaneous containerized liquids and solids were repackaged and scheduled for removal, and a 550-gallon UST was removed from the western side of Building 5B. The UST was reported to be full of water, with no observed sheen or odor. Photoionization detector (PID) readings were not recorded during the removal of this UST. Post-excavation sampling did not reveal detectable organic compounds. However, somewhat elevated metals were found in this area (lead at over 470 ppm, nickel at over 30 ppm, and zinc at over 100 ppm). These concentrations may be indicative of low-grade metals contamination throughout the Site.

In August 1995, five test pits (TP-1 through TP-5 Figure 3, Appendix A) were excavated east of the Site in the area of former sheds A and B. The test pits were completed to a depth ranging from 1.0 feet bsg to 6.5 feet bsg. Metals (arsenic and mercury) were detected at levels which exceed current NYSDEC Part 375 Soil Cleanup Objectives (SCOs) for Unrestricted Use. Additionally, two test pits were excavated west of the parking area and east of the City of Beacon Sewer, laboratory results; however, are not available.

Potential impacts to sediment in the Fishkill Creek resulting from operations on the Site have not been thoroughly evaluated (samples collected in 1995 revealed elevated levels of lead, ranging from 400 to 3,400 ppm). The tape manufacturer Tuck Industries (USEPA ID: NYD001396894) was formerly located approximately 1500 feet northeast of the Site and upstream on Fishkill Creek. This facility is listed in the USEPA CERCLIS database and was known to store drums of toluene, methyl ethyl ketone, and isopropyl alcohol. This facility may have impacted on-site sediment.

The Site is proposed for re-use as a residential condominium complex at the completion of remedial activities. According to the redevelopment plan, Buildings B-1 and B-2 will remain on Site while all other buildings (B-3, B-4, B-5A, B-5B, B-6, B-7, and B-8) will be razed. Information regarding the location of proposed structures is not available at this time. Upon availability, plans for the proposed construction will be included in the RIR.

1.3 Environmental Areas of Concern

The following Areas of Concern (AOCs) were identified during the Investigation Scoping meeting conducted at the Site on April 3, 2007 with NYSDEC representatives:

- Soil and groundwater quality beneath building B-5A and building B-5B, adjacent to former toluene tank area;
- Identified debris area in the western most portion of the Site;
- Soil and groundwater quality under the western parking lot;
- Soil and groundwater quality near the observed transformers adjacent to building B-1;
- The contents of the four chemical holding tanks located in building B-2;
- Sub-slab vapor quality in each building; and,
- The integrity of surface soil across the Site.

1.4 Completed Interim Remedial Measures

The following interim remedial measures have already been completed:

- Four toluene USTs, adjacent to building B-5A, and one 550 gallon UST adjacent to the western side of building B-5B, were removed from the Site.
- Toluene impacted soil generated during the removal of the four-toluene tanks was stockpiled on-site in the western parking lot. This soil was then buried on-site northeast of the stockpile area in accordance with a NYSDEC approved work plan after testing documented the absence of elevated levels of toluene.
- Three groundwater monitoring wells were installed across the Site.
- With the exception of four chemical holding tanks (of which the contents and quantities are unknown), all other identified ASTs and drums were removed from the Site.

2.0 PROPOSED SITE INVESTIGATION SERVICES

This section of the RIWP details proposed environmental investigative activities. A Proposed Fieldwork map, depicting relevant Site features and proposed fieldwork locations, is provided as Figures 4, in Appendix A. All proposed work will be conducted according to a site specific Health and Safety Plan, provided as Appendix B.

Ecosystems Strategies, Inc. (hereafter referred to as the On-Site Coordinator, "OSC") has been retained to oversee the provision of the environmental investigative services specified in this RIWP. The "Volunteer" (as specified in the BCP agreement) is defined as Beacon Terminal Associates, LLP, which will contract with the OSC and other environmental contractors as necessary to provide the services detailed below.

2.1 Overview of Proposed Services

The purpose of this RIWP is to provide guidance on the manner in which additional site investigative services will be conducted, in order to address known and suspected on-site environmental conditions (see Section 1.3, above). It is the expressed intent of this RIWP that, upon completion of investigative activities, generated environmental data will be of sufficient quality and quantity for the submission of a completed Remedial Investigation Report (RIR), and a Remedial Work Plan (RWP) with an alternatives analysis, according to the requirements of the NYSDEC.

The following specific tasks will be completed at the Site (see Figure 6, Appendix A):

1) Extension of between thirty-five (35) and forty (40) soil borings, including inside of the on-site structures and at selected locations throughout the Site (Section 2.3.2). Soils will be sampled, as appropriate, and submitted for laboratory analysis of contaminants of concern in order to document Site integrity (Section 2.3.3);

2) Collection of ten (10) surface soil samples throughout the Site, and collection of two (2) surface soil samples from off-site (Section 2.3.3);

3) Collection of sub-slab vapor samples from within each Site structure, and collection of two (2) soil vapor samples on the western side of the Site (Section 2.3.4);

4) Completion of six (6) borings as permanent, shallow overburden monitoring wells (Section 2.3.5), capable of providing reliable groundwater quality data throughout the investigative, remedial, and post-remedial phases of the project;

5) Collection and laboratory analysis of groundwater samples, in order to document the integrity of on-site groundwater resources (Section 2.3.5);

6) A Pathway Analysis and Criteria-Specific Analysis will be completed for the Site in order to determine potential impact to fish and wildlife (Section 2,3.6); and,

7) Investigation of the northern bank of Fishkill Creek and the collection of at least one (1) surface water sample, one (1) sediment sample, and one (1) soil sample, and collection of one (1) surface water sample and (1) one sediment sample from off-site (Section 2.3.7).

2.2 Site Preparation Services

2.2.1 Qualifications of On-site Remedial Personnel

Prior to the initiation of work, the identities and qualifications of the project managers and associated staff will be supplied to the NYSDEC. The Volunteer will ensure that qualified contractors are used. All on-site staff will be appropriately trained in accordance with Occupational Safety and Health Administration (OSHA) practices (29 CFR, Part 1910). The NYSDEC will also be notified of any changes in the senior on-site personnel. Prior to the initiation of fieldwork, a Site Health and Safety Officer will be designated by the Volunteer, and a complete Health and Safety Plan will be provided (see Section 2.2.2, below).

2.2.2 Health and Safety Plan

A site-specific Health and Safety Plan (HASP), incorporating a Community Health and Safety Plan, will be reviewed with site personnel and subcontractors prior to the initiation of specific fieldwork where contaminated media are likely to be encountered. All proposed work will be performed in "Level D" personal protective equipment. Field personnel (including subcontractors) will be prepared to continue services wearing more protective levels of equipment should field conditions warrant. A copy of the HASP is included in Appendix B. Unless determined otherwise, the OSC will provide staff to serve as the project's Health and Safety Officer.

2.2.3 Quality Assurance / Quality Control

Equipment

Prior to the initiation of fieldwork, all field equipment to be used during the work will be properly decontaminated in accordance with NYSDEC guidelines, and all field instruments will be properly calibrated in accordance with procedures set forth by the equipment manufacturer(s). Unless otherwise specified, a MiniRAE 2000 (Model PGM 7600) photo-ionization detector (PID) will be used for site-screening of organic vapors. The PID is calibrated to read parts per million calibration gas equivalents (ppm-cge) of isobutylene. Instrument calibration will be performed no more than 24 hours prior to the commencement of fieldwork, and a written record of calibration results will be provided in the project files.

Laboratory

All samples will be collected in accordance with applicable NYSDEC guidelines and will be submitted to a New York State Department of Health (NYSDOH) ELAP-certified laboratory using appropriate chain of custody procedures. At this time, it is anticipated that all samples will be transported by courier to Severn Trent Laboratories (STL) of Shelton, Connecticut (ELAP # 10602). Dedicated, laboratory supplied glassware will be used for sample collection. One trip blank and one field blank will be supplied for each day of fieldwork involving sample collection. Field personnel will maintain all samples at cold temperatures and complete all chain of custody forms.

Laboratory reports will include detailed Quality Assurance/Quality Control (QA/QC) analyses, which will be provided in the final RIR (Section 2.3.10). Category B deliverables, as defined in the analytical services protocol (ASP), will be submitted for confirmatory and final delineation samples (Category A or Category Spills laboratory data deliverables will be submitted for analyses conducted at all other locations). In addition, a Data Usability Summary Report (DUSR) will be prepared by a third, independent party, which maintains NYSDOH ELAP CLP Certification. Data validation will be conducted by an independent validator if required by the NYSDEC.

2.2.4 Fieldwork Monitoring

An assessment of subsurface soil characteristics, including soil type, the presence of foreign materials, and field and/or instrument indications of contamination (e.g., staining, odors, PID readings) will be made by the OSC. The OSC will be responsible for identifying any soils that in the opinion of the OSC may contain elevated concentrations of contaminants that warrant special handling. Those soils identified by the OSC will be removed to a specified soil stockpiling area for characterization and proper disposition. If applicable, the OSC will monitor the removal of all contaminated soil, including monitoring the trucks and establishing the designated truck routes. The OSC will also ensure that any unforeseen environmental conditions are managed in accordance with applicable federal and state regulations.

2.2.5 Notifications

The NYSDEC will be notified in writing at least two weeks prior to the initiation of any of the on-site work and during the course of the fieldwork if deemed necessary by on-site personnel. Changes to fieldwork scheduling will be provided via facsimile transmission and/or email. All applicable local agencies will also be notified prior to the initiation of Site work.

Prior to the implementation of any of the investigative tasks outlined in Section 2.3, below, a request for a complete utility markout of the subject property will be submitted 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 the initiation of work. Any utilities on the Site will be protected (as necessary) by the contractor or owner.

2.3 Proposed Site Investigation Services

This section of the RIWP provides a detailed description of the procedural and investigative tasks that will be conducted at the subject property.

2.3.1 Conduct Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP, see Appendix C) will be initiated during all ground intrusive activities that are reasonably likely to generate significant dust and/or vapors. The implementation of this Plan will document the presence or absence of specific compounds in the air surrounding the work zone, which may migrate off-site due to fieldwork activities. This plan provides guidance on the need for implementing more stringent dust and emission controls based on air quality data. Air monitoring will be conducted for VOCs and for dust.

Monitoring for VOCs will occur within 50 feet of the work zone using a PID. Recorded PID readings consistently in excess of 5 ppm will be considered evidence of unacceptable air emissions and proper procedures to reduce emissions will be immediately instituted. Ameliorative procedures may include reducing the surface area of contaminated soil being disturbed at one time, watering exposed soils to reduce fugitive odors, use of suppression substances, or stopping excavation activities.

Dust will be monitored at three locations on the Site: two downwind locations at the property line, and one upwind location at the property line. Specific locations will change daily, depending on the work being conducted and the direction of the wind. Monitoring for dust will be conducted using a digital dust indicator, or equivalent equipment, capable of documenting the presence of dust with particle sizes ranging from 0.1 to 15 microns. Dust levels in excess of 150 ug/m^3 will be evidence of unacceptable air quality, and proper procedures to reduce dust levels (identified above) will be immediately instituted by the contractor.

Air monitoring will be sensitive to the existing air pollution sources adjoining the Site. The Volunteer may request assistance from the NYSDEC or NYSDOH in modifying the Community Air Monitoring Plan to account for these sources.

2.3.2 Extension of Soil Borings

A total of thirty-five to forty soil borings will be extended throughout the Site, including in on-site structures. Borings will be extended (at a minimum) to the soil/groundwater interface using mechanized equipment or until refusal (drills will be utilized, as necessary, to breach concrete slabs). Borings to be completed as monitoring wells will be extended using a hollow-stem auger; all other borings will utilize direct push sampling technology. Boring equipment will be capable of collecting soil cores at discreet intervals and will utilize disposable acetate sleeves to prevent cross contamination. All equipment will be properly decontaminated according to NYSDEC guidelines. Based on field conditions, additional borings may be extended.

Recovered soil cores and drill tailings will be containerized (disposal of soil materials will be based on the results of laboratory analysis and consultation with NYSDEC personnel). All stored materials will be properly secured and covered to avoid runoff and prevent unauthorized access. Sampling and disposal of this material will be documented in the final RIR (Section 2.3.10).

The exact locations of all soil borings will be determined in the field in consultation with NYSDEC representatives. Boring locations will be measured to the nearest 0.5-foot relative to a permanent fixed on-site marker, and will be recorded in logbooks for inclusion in all final maps. Anticipated boring locations are depicted on the Proposed Fieldwork Map (Figure 4, Appendix A).

2.3.3 Soil Sampling

2.3.3.1 General Protocols

All encountered soils will be properly characterized in the field and findings will be recorded in logbooks. Material selected for sampling will be obtained in a manner consistent with NYSDEC sample collection protocols. Decontaminated stainless steel trowels and dedicated gloves will be used at each sample location to place the material into laboratory-supplied glassware. Prior to and after the collection of each material sample, the sample collection instrument will be properly decontaminated to avoid cross-contamination between samples.

Soils selected for sampling purposes will be composite or grab samples from discreet four-foot core intervals, grab samples from soils exposed in test pits, or grab samples from surface locations. Soil sampling will be biased towards surface soils (0 to 2 inches below ground surface after removal of the vegetative cover), soils at the groundwater interface, and any soils with elevated PID readings, unusual odors, discoloration, or, any other field evidence of contamination.

2.3.3.2 Surface Sampling Protocols

Ten surface soil samples will be collected throughout the Site and two surface soil samples will be collected from off-site. On-site sample locations will include areas of expected contamination (e.g., areas of observed overt evidence of contamination, low areas where spills may have accumulated, etc), and additional samples will be collected (as necessary) in order to ensure that there is adequate delineation. Samples will be collected from approximately 0-2 inches below original grade surface, after removal of vegetation (if applicable). Additional surface soil samples may be collected, should field conditions warrant. Proposed sample locations are identified on Figure 4 located in Appendix A.

2.3.3.3 Sampling Protocols at Electrical Transformer Area

Two soil borings will be extended adjacent to the electrical transformer located on the northern edge of Building B1. Soil samples will be collected within two feet of the fence with one sampling location located to the north of the transformer and the other location to the east. Soil borings and screening will be conducted at approximately four-foot intervals. The total sampling depth will be to refusal or the observed groundwater interface. One sample per boring will be submitted for laboratory analysis. Additional soil borings may be extended, if warranted by field conditions (e.g., soil staining or stressed vegetation).

If the transformer is determined to be out of service, one sample will be collected from the fluid inside of the transformer (if accessible).

2.3.3.4 Sampling Protocols at the CHG&E Sub Station Area

As part of the investigation, ownership of the CHG&E Sub Station (sub station) will be confirmed. If it is determined that the sub station is within the Site boundary, two surface soil samples will be collected and two soil borings will be extended near the sub station. The surface soil samples will be obtained from inside of the surrounding fence and the soil borings will be located just outside of the fence. In addition, if it is determined that the sub station is no longer in service and a sample can be obtained, fluid will be collected from inside of the transformer.

2.3.3.5 Sampling Protocols within Buildings 5A and 5B

Seven soil borings will be extended beneath the concrete slab in both buildings in the vicinity of the former toluene USTs. Upon breaching the slab, soil borings will be extended at four-foot intervals until the groundwater interface is reached or until refusal. Sampling will be conducted to fully delineate the vertical and horizontal extent of soil contamination resulting from the former toluene USTs. One sample per boring will be submitted for laboratory analysis. Additional soil borings may be extended, should field conditions warrant.

2.3.3.6 Sampling Protocols in Western Parking Area

Soils in the western parking area have not been investigated. This area was previously used as a staging area for toluene-impacted soils generated during the UST removal and over-excavation adjacent to Buildings 5A and 5B. Approximately four borings will be extended in this area until the groundwater interface is reached or until refusal. One sample from each boring will be submitted for laboratory analysis. Additional soil borings may be extended, should field conditions warrant.

2.3.3.7 Sample Submission

Samples Collected for Surface Soil Screening

All samples collected for surface soil screening will be analyzed for Target Analyte List (TAL) metals, VOCs via USEPA Method 8260, semi-volatile organic compounds (SVOCs) via USEPA Method 8270, polychlorinated biphenyls (PCBs) via USEPA Method 8082 and pesticides via USEPA Method 8081.

Samples Collected Adjacent to Electrical Transformer

Samples collected from soil borings adjacent to the electrical transformers will be submitted for laboratory analysis of VOCs via USEPA Method 8260, SVOCs via USEPA Method 8270, PCBs via USEPA Method 8082 and total weight Resource Conservation and Recovery Act (RCRA) metals via USEPA Method 6010 and Method 7471. Fluid from inside the transformer, if accessible, will be submitted for laboratory analysis of PCBs via USEPA method 8082. Toxicity Characteristic Leaching Procedure (TCLP) analyses will be performed on a select number of samples, determined in consultation with the NYSDEC, for those compounds documented at concentrations greater than 20 times the maximum contaminant level as specified in 40 CFR Part 261.

Samples Collected Adjacent to the Sub Station

All soil samples collected from the area of the sub station will be submitted for laboratory analysis of VOCs via USEPA Method 8260, SVOCs via USEPA Method 8270, PCBs via USEPA Method 8082 and total weight RCRA metals via USEPA Method 6010 and Method 7471. Fluid from inside the sub station, if accessible, will be submitted for laboratory analysis of PCBs via USEPA method 8082. Toxicity Characteristic Leaching Procedure (TCLP) analyses will be performed on a select number of samples, determined in consultation with the NYSDEC, for those compounds documented at concentrations greater than 20 times the maximum contaminant level as specified in 40 CFR Part 261.

Samples Collected within Building 5A and 5B

Samples collected from soil borings within Building 5A and 5B will be submitted for laboratory analysis of VOCs via USEPA Method 8260, SVOCs via USEPA Method 8270, PCBs via USEPA Method 8082 and total weight RCRA metals via USEPA Method 6010 and Method 7471. Toxicity Characteristic Leaching Procedure (TCLP) analyses will be performed on a select number of samples, determined in consultation with the NYSDEC, for those compounds documented at concentrations greater than 20 times the maximum contaminant level as specified in 40 CFR Part 261.

Samples Collected in Western Parking Area

Soil samples collected in the Western Parking Area will be submitted for laboratory analysis of VOCs via USEPA Method 8260, SVOCs via USEPA Method 8270 and total weight RCRA metals via USEPA Method 6010 and Method 7471.

2.3.4 Sub-Slab Vapor Sampling

Sub slab vapor screening will be conducted within all on-site structures. Buildings B1, B4, B5-B and B-6 will have one sub-slab sample collection location; all other buildings will have two sampling locations. Two soil vapor samples will also be collected on the western portion of the Site. A tracer gas (e.g., helium) will be used at all soil vapor sampling locations to verify that adequate sampling techniques are being implemented (i.e. to verify the absence of significant infiltration of outside air), in accordance with methodology specified in the NYSDOH's Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006). All proposed sampling locations are identified on Figure 4, Appendix A. All sampling locations are subject to change based upon field conditions (cracks in slab, preferential pathways, etc).

2.3.4.1 Pre-Sampling Building Inventory and Inspection

For all sub slab sampling conducted within structures, a building inspection will be conducted in order to 1) inventory any on-site products or equipment that may interfere or influence the sampling, and 2) evaluate the condition of the building and the foundation slab to identify any defects that may affect the proposed sampling or act as preferential pathways.

2.3.4.2 Sampling Methodology

The concrete slab floors will be breached with an electric drill and sub-slab gas sampling will be conducted directly beneath the slab (within any encountered subgrade aggregate fill materials). Sample tubing (0.188 inch inner diameter Teflon) will be inserted below the slab to a depth no greater than two inches into the sub-slab material (actual depth will be dependant on Site conditions and the cause of any significant deviation will be documented). Any space between the borehole and tubing will be sealed off with a non-VOC containing material to prevent surface air from entering the system. Air in the Teflon tubing will be screened for VOCs prior to purging.

For all sampling locations, the exact purge volume will be dependent on the boring depth and subsequent length of tubing. Three borehole and tubing volumes will be purged prior to collection. The purge rate will not exceed 0.2 liters per minute. If warranted, purge gas will be discharged outside of the building, via plastic tubing.

Following purging of ambient air from the collection device, soil gas samples will be collected over a one-hour period (at a rate not exceeding 0.2 liters per minute) into individual laboratory-certified clean Summa canisters equipped with one-hour flow regulators.

2.3.4.3 Sample Submission

Samples will be submitted for laboratory analysis of VOCs via USEPA method TO-15.

2.3.5 Groundwater Monitoring

Six (6) soil boreholes are proposed to be completed as new, shallow overburden groundwater monitoring wells [note: three monitoring wells currently exist on-site and will be used if acceptable to the NYSDEC]. A Proposed Fieldwork Map showing anticipated well locations is provided as Figure 4, in Appendix A. Additional monitoring wells may be installed if warranted by field conditions.

The existing monitoring wells will be evaluated in order to determine their suitability for use during this project. The wells will be compared to the construction logs, if available, to determine if sedimentation has occurred and if the wells should be redeveloped. The surface seal will be inspected and resealed if necessary. If one or more of the existing wells are not viable, new monitoring wells will be installed near the location of the previous wells.

2.3.5.1 Installation of Proposed Monitoring Wells

All monitoring wells will be constructed of two-inch PVC casing with 0.1-inch slotted PVC well screening across the water table. No glue will be used to thread the casing lengths. The wells will be constructed such that a minimum of 2.0 foot of screening will extend above the water table and approximately 8.0 feet of screening will extend below the water level. 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. Note: the length of the PVC screen, sand filter, and bentonite seal may be reduced (in that order) in order to accommodate a shallow water table. A locked cap with vent will be installed at the top of the PVC riser.

Wells will be completed as either stickup or drive-over wells, according to Site conditions, and will be protected by locked, metal casings. All monitoring wells will be surveyed vertically to the nearest 0.01 foot and horizontally to an accuracy of one-tenth of a second latitude and longitude. Well locations and other surveyed data will be provided in the final RIR on a certified map prepared by a State certified surveyor. The survey will document the vertical elevations of the top of the casing pipe and the ground surface elevation adjacent to each well.

Well construction logs showing components and details of well casing, well screen, filter pack, annular seal, and associated items will be provided in the final report.

2.3.5.2 Monitoring Well Development

Subsequent to installation, the wells will be developed with a properly decontaminated mechanical pump and dedicated polyethylene tubing in order to clear fine-grained material that may have settled around the well screen and to enhance the natural hydraulic connection between the well screen and the surrounding soils. Prior to development, the monitoring well casing will be opened and the well column immediately screened with a PID to document the presence of any volatile organic vapors. Water removed from the monitoring well will be visually inspected for indications of petroleum contamination. Well water removed in the course of development will be containerized (disposal of collected groundwater will be based on the results of laboratory analysis). This procedure will also be conducted on the three previously installed monitoring wells to ensure proper well development.

Well development will begin at the top of the saturated portion of the screening to prevent clogging of the pump within the casing. The pump will be raised and lowered one to two feet within various portions of the screened interval to force water back and forth through the screen. Repeated surging and pumping at intervals of less than five feet will be performed to the bottom of the screen until the discharged water appears clear. Upon completion, the pump assembly will be removed while the pump is still running to avoid discharge of purged water back into the well. The well will be considered developed when turbidity is determined to be less than 50 NTUs.

2.3.5.3 Groundwater Well Sampling

Groundwater samples will be collected during site investigative activities, and at subsequent quarterly intervals until such monitoring is deemed unnecessary by the NYSDEC. Provided below is a description of the proposed sampling protocol. All relevant data will be recorded in field logbooks:

1. Basic climatological data (e.g., temperature, precipitation, etc.) will be noted;

2. The protective casing on the well will be unlocked and the air in the wellhead will be screened for organic vapors using a calibrated PID;

3. The well's static water level will be measured to the nearest 0.01 foot relative to the top of the PVC casing using a decontaminated water level meter;

4. The volume of standing water in the well will be calculated (using well diameter, total well depth, and the measured depth of the standing water) to determine the amount of water to be purged from the well prior to sampling;

5. The well will be purged a minimum of three well volumes using a properly decontaminated mechanical pump and dedicated polyethylene tubing, or by hand using dedicated, disposable bailers. The purged volumes will be calculated by discharging the well water into a container of known volume. Purged water will be containerized, as necessary. The time at the beginning and the end of purging, and all observations (e.g., turbidity, odor, presence of a sheen, etc.) will be recorded;

6. The presumed least contaminated monitoring well will be sampled first, and sampling shall progress from the least contaminated monitoring well to the most contaminated well. Groundwater samples will be collected from the well using a dedicated, disposal bailer in accordance with procedures outlined according to NYSDEC protocol. During sample collection, the bailer will not touch the ground or any object except for the well casing);

7. The sampling of groundwater for metals analysis will occur when low turbidity conditions are attained (i.e., turbidity less than 50 NTUs) in the well water. If high turbidity conditions are encountered, the well will be redeveloped in order to reach acceptable turbidity conditions, and/or both unfiltered and filtered groundwater samples will be collected and analyzed for total and dissolved metals, respectively;

8. Groundwater samples will be placed in appropriately sized and preserved laboratory supplied glassware, and will be stored and transported at cold temperatures, following proper chain of custody procedures;

9. The protective cap on the well will be replaced and locked. The field sampling crew will move to the next most contaminated well and the process will be repeated.

2.3.5.4 Analysis of Groundwater Samples

Groundwater samples will be submitted for laboratory analysis of total and dissolved TAL Metals via USEPA method 6010, VOCs via USEPA Method 8260, SVOCs via USEPA Method 8270, and PCBs via USEPA Method 8082.

2.3.5.5 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 RIR (Section 2.3.7).

2.3.6 Pathway Analysis and Criteria-Specific Analysis

A Pathway Analysis and Criteria-Specific Analysis will be completed in order to determine potential impacts to fish and wildlife from existing Site conditions.

2.3.7 Investigation of the Northern Bank of Fishkill Creek

2.3.7.1 General Protocols

The sediment along the northern bank of Fishkill Creek will be probed in order to visually inspect for the presence of non-aqueous phase liquid (NAPL) or other contaminants. The area adjacent to the historic mineral oil tanks located between buildings B-4 and B-2 will be of special focus during this inspection.

2.3.7.2 Sampling Methodology

Sample locations will be determined by the conditions encountered on the Site. Sediment samples will be collected in areas of visual impact; however; if impact is not observed one surface water sample, one sediment (0-6 inches) sample, and one soil (6-12 inches) sample will be taken for comparison to data from sediment samples taken in 1995. The sediment and the soil samples will also be compared to the Division of Fish, Wildlife, and Marine Resources (DFWMR) sediment criteria and the protection of ecological resources values found in 6 NYCRR Part 375 Table 375 6.8b.

In addition, one surface water and one sediment sample will be collected upstream of the Site in order to evaluate background conditions.

2.3.7.3 Sample Submission

The surface water samples and the off-site sediment sample will be submitted for laboratory analysis of VOCs via USEPA Method 8260, PCBs via USEPA Method 8082, and USEPA TAL metals.

In order to evaluate impact to fish and wildlife, the on-site sediment sample (0-6 inches) will be submitted for analysis of total organic carbon by the "Lloyd-Kahn" method, VOCs via USEPA Method 8260, SVOCs via USEPA Method 8270, PCBs via USEPA Method 8082, pesticides via USEPA Method 8081 and Method 8141, dioxins/furans via USEPA Method 8280, USEPA TAL metals, and methylene blue active substances (MBAS) via Method 5540C. The on-site soil sample (6-12 inches) will be submitted for analysis of VOCs via USEPA Method 8260, SVOCs via USEPA Method 8270, PCBs via USEPA Method 8082, total cyanide via USEPA Method 9012, and USEPA TAL metals.

2.3.8 Excavation of Test Pits

2.3.8.1 General Protocols

Test pits will be excavated in the far western portion of the Site, (Figure 7, Appendix A). The purpose of the test pits is to observe the extent of debris and fill material in this area of the Site. During the extension of test pits, observations will be recorded on the material encountered, PID readings, total depth of test pit and any other significant information.

2.3.8.2 Test Pit Sampling Methodology

One soil sample will be collected from each test pit and submitted for analysis. Samples will be biased towards soil exhibiting elevated PID readings or visual evidence of contamination. If warranted by field conditions, additional soil samples will be obtained from the test pit locations and submitted for appropriate lab analysis.

2.3.8.3 Sample Submission

Samples collected from test pits will be submitted for laboratory analysis of VOCs via USEPA Method 8260, SVOCs via USEPA Method 8270, PCBs via USEPA Method 8082 and total weight RCRA metals via USEPA Method 6010 and Method 7471. Toxicity Characteristic Leaching Procedure (TCLP) analyses will be performed on a select number of samples, determined in consultation with the NYSDEC, for those compounds documented at concentrations greater than 20 times the maximum contaminant level as specified in 40 CFR Part 261.

2.3.9 Chemical Storage Tank Inspection

Four ASTs were observed in the western portion of Building B-2 during the scoping meeting. The contents of these ASTs are currently unknown. As part of this RIWP, these ASTs will be inspected to determine the contents and quantities of any residual material in each container. Upon confirmation of this information, arrangements will be made for the proper disposal of any observed material.

2.3.10 Preparation of Final Reports

A final RIR and a RWP with an alternatives analysis and a qualitative exposure assessment for human health will be submitted to the NYSDEC following the completion of site investigative services, in accordance with Division of Environmental Remediation Draft Technical Guidance for Site Investigation and Remediation requirements. The RIR and RWP will, respectively, 1) summarize and document all investigative activities conducted on the Site (including all relevant maps (Site/area of concern base map, sample location map, groundwater elevation contour map, and a map of extent of NAPL zones, if discovered), drawings, summary data tables, and complete laboratory reports), and 2) provide an analysis of potential remedial response actions (for use in developing a Remedial Work Plan RWP or Remedial Design RD, depending on the complexity of the selected remedy).

Quarterly groundwater monitoring reports will be provided to the NYSDEC as data becomes available. Such reports will include applicable maps, physical well data (e.g., groundwater levels), data summary tables and laboratory reports, and a discussion of results and specific recommendations for additional investigation, remediation, or monitoring.

3.0 TIME SCHEDULE

The following schedule is anticipated for this project, subject to revision by mutual consent of both the NYSDEC and the Participant:

Within 3 months of the approval of the RIWP:

- Installation of all monitoring wells
- Completion of all investigative activities

Within 5 months of the approval of the RIWP:

- Preparation of the final RIR, and RWP with alternatives analysis, and submission to the NYSDEC for review

APPENDIX A

Figures

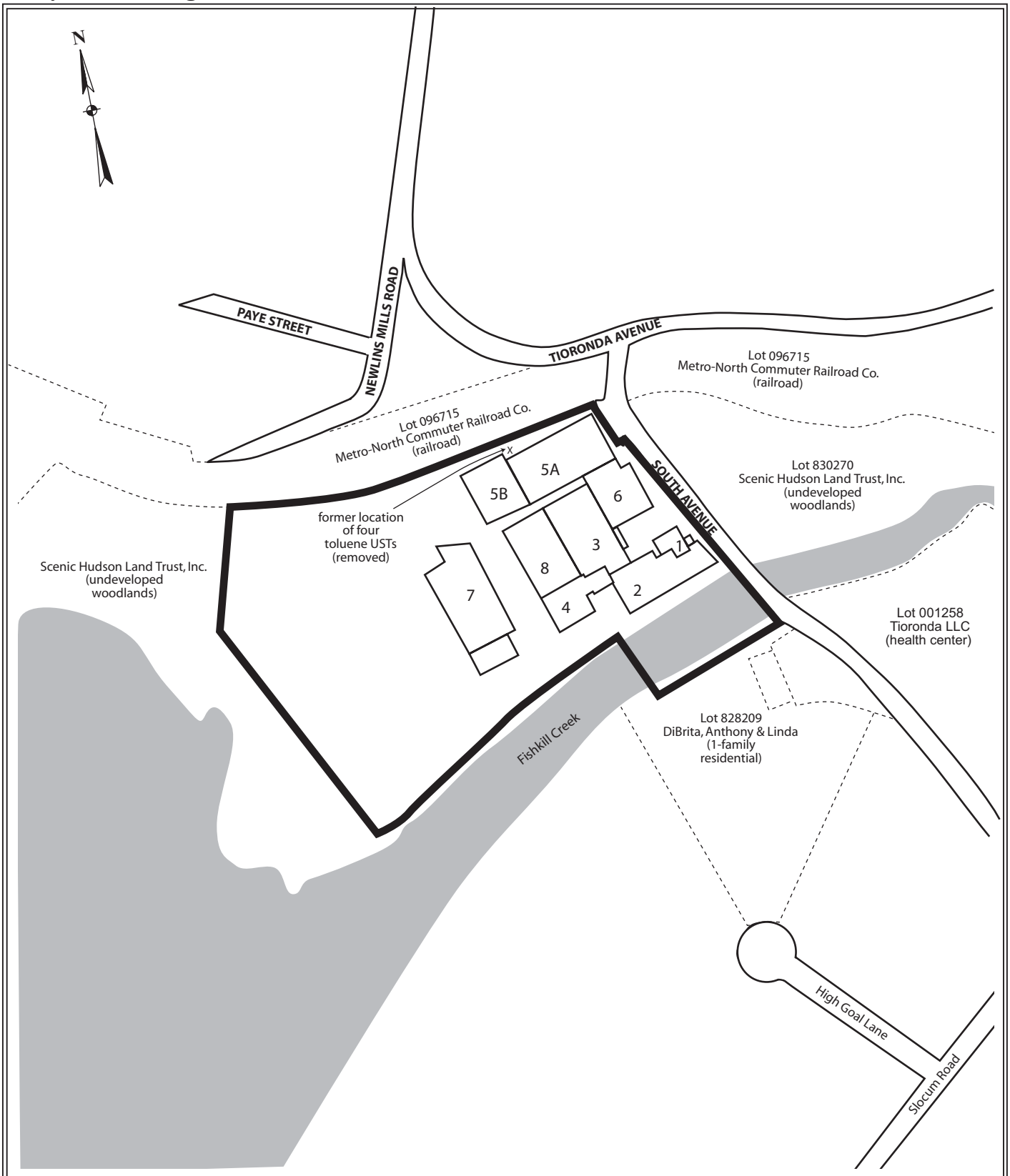
Site Location Map
Beacon Terminal Site
Site ID C314117
555 South Avenue
Beacon, New York

N

ESI File: BB04157.50

Date: October 2007

Attachment



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.

Figure 2 - Site Map

Beacon Terminal Site
555 South Avenue
Beacon, New York

Legend:

subject property border

ESI File: BB04157.50

September 2007

Scale 1" = 220'

Appendix A

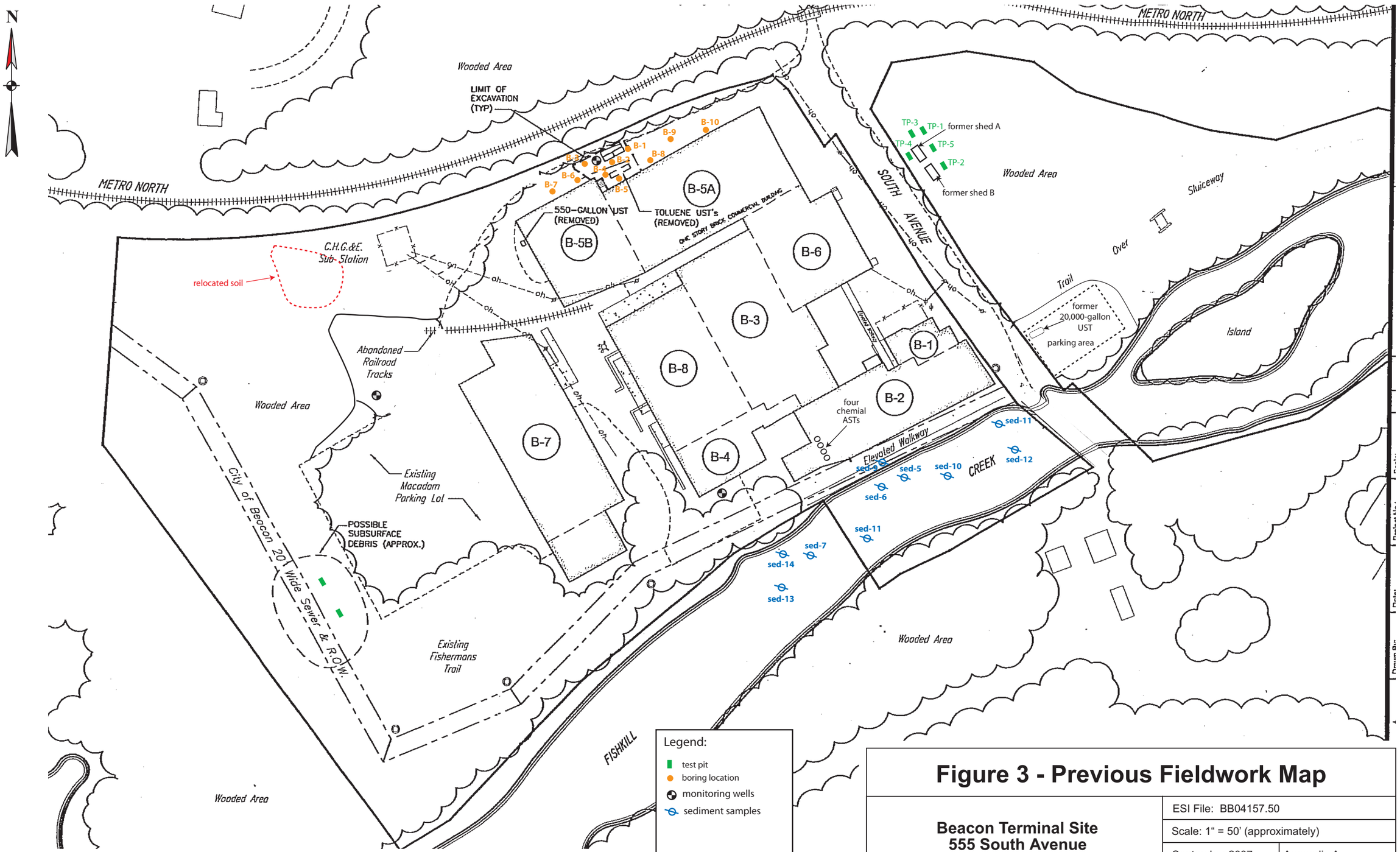


Figure 3 - Previous Fieldwork Map

Beacon Terminal Site **555 South Avenue** **Beacon, New York**	ESI File: BB04157.50
	Scale: 1“ = 50’ (approximately)
	September 2007 | Appendix A
	Ecosystems Strategies, Inc.

N

METRO NORTH

Wooded Area

LIMIT OF EXCAVATION (TYP)

B-1 B-2 B-3 B-4 B-5 B-6 B-7 B-8 B-9 B-10

B-5A

B-5B

550-GALLON UST (REMOVED)

TOLUENE UST's (REMOVED)

ONE STORY BRICK COMMERCIAL BUILDING

B-6

B-3

B-8

B-7

B-4

B-1

B-2

four chemial ASTs

Elevated Walkway

C.H.G.&E. Sub Station

relocated soil

Abandoned Railroad Tracks

Wooded Area

Existing Macadam Parking Lot

POSSIBLE SUBSURFACE DEBRIS (APPROX.)

City of Beacon 20' Wide Sewer & R.O.W.

Existing Fishermans Trail

Wooded Area

FISHKILL

Wooded Area

SOUTH AVENUE

TP-3 TP-1 former shed A

TP-4 TP-5

TP-2

former shed B

Wooded Area

Sluiceway

Over

Trail

former 20,000-gallon UST parking area

Island

sed-11 sed-12 sed-9 sed-5 sed-10 CREEK sed-6 sed-11 sed-7 sed-14 sed-13

Wooded Area

Legend:

- previous test pit
- previous boring location
- existing monitoring wells
- previous sediment samples
- proposed boring location
- proposed sub-slab point
- proposed soil vapor samples
- proposed surface samples
- proposed test pit
- proposed monitoring well

Figure 4 - Proposed Fieldwork Map

Beacon Terminal Site
555 South Avenue
Beacon, New York

ESI File: BB04157.50	
Scale: 1“ = 50’ (approximately)	
September 2007	Appendix A
Ecosystems Strategies, Inc.	

APPENDIX B

Health & Safety Plan

HEALTH AND SAFETY PLAN

FOR

SITE INVESTIGATION

(INCORPORATING COMMUNITY HEALTH AND SAFETY PLAN)

Beacon Terminal Site

555 South Avenue
City of Beacon
Dutchess County, New York

NYSDEC Brownfields Cleanup Program Site ID: C314117

September 2007
ESI File: BB04157.50

Prepared By

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Poughkeepsie, New York 12603
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TABLE OF CONTENTS

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 Ecosystems Strategies, Inc. (ESI) and designated subcontractors while performing site investigation activities at the "Beacon Terminal" Site located at 555 South Avenue, City of Beacon, Dutchess County, New York.

This HASP incorporates policies, guidelines, and procedures that have the objective of protecting the public health of the community during the performance of fieldwork activities, and therefore serves as a Community Health and Safety Plan (CHASP). The objectives of the CHASP are met by establishing guidelines to minimize community exposure to hazards during fieldwork, and by planning for and responding to emergencies affecting the public.

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, 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 Site as defined in this HASP is the Beacon Terminal Site, located at 555 South Avenue in the City of Beacon. A Site Location Map and a Proposed Fieldwork Map (illustrating the configuration of the Site as well as the areas of proposed investigative activities) are included in the Attachments of this HASP.

1.3 Work Activities

Environmental investigation activities are detailed in the Draft Remedial Investigation Work Plan (RIWP) dated September 2007. The specific tasks detailed in the RIWP are wholly incorporated by reference into this HASP. The RIWP was prepared as a requirement of the Developers participation in the New York State Department of Environmental Conservation (NYSDEC) Brownfields Cleanup Program (BCP), and describes investigative tasks required to adequately characterize on-site environmental conditions. Existing and suspected contamination includes hydrocarbon and metals impacted soils, groundwater and vapor.

The following field tasks will be performed:

- Investigation and sampling of soils using hand-held and mechanized boring equipment, and (as necessary) excavation machinery;
- Investigation of soil gas at selected boring locations; and,
- Installation and sampling of groundwater-monitoring wells at selected boring locations.

2.0 HEALTH AND SAFETY HAZARDS

2.1 Hazard Overview for On-site Personnel

The potential exists for the presence of elevated levels of hydrocarbons and metals in on-site soils and in groundwater. The possibility exists for on-site personnel to have contact with contaminated soils, groundwater, and vapor during site investigative work. Contact with contaminated substances may present a skin contact, inhalation, and/or ingestion hazard. These potential hazards are addressed in Sections 3.0 through 11.0, below.

2.2 Potential Hazards to the Public from Fieldwork Activities

The potential exists for the public to be exposed to identified contaminated soils, groundwater, and vapor, which may present a skin contact, inhalation, and/or ingestion hazard. Additional potential hazards to the public that are associated with fieldwork activities include mechanical/physical hazards, traffic hazards from fieldwork vehicles, and noise impacts associated with operation of mechanical equipment.

Impacts to public health and safety are expected to be limited to hazards that could directly affect on-site visitors and/or trespassers. These effects will be mitigated through site access and control measures (see Section 6.0, below). Specific actions taken to protect the public health (presented in Sections 3.0 through 11, below, and in the Community Air Monitoring Plan) are anticipated to minimize any potential off-site impacts from contaminant migration, noise, and traffic hazards.

3.0 PERSONAL PROTECTIVE EQUIPMENT

The levels of protection identified for the services specified in the RIWP 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 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 gloves (when handling soils and/or groundwater), and safety goggles (when decontaminating equipment). Personal protective equipment (PPE) will be worn at all times, as designated by this HASP. The requirement for the use of PPE by official on-site visitors shall be determined by the SSHO. All on-site visitors shall, at a minimum, be required to wear an approved hardhat and be provided with appropriate hearing protection as necessary.

The need for an upgrade in PPE will be determined based upon encountered Site conditions, including measurements taken in the breathing zone of the work area using a photo-ionization detector (PID). An upgrade to a higher level of protection will begin when PID readings above specified limits are measured, or as otherwise required by the SSHO (see Section 5.0, below).

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.

4.0 CONTAMINANT CONTROL

Precautions will be taken during dry weather (e.g., wetting or covering exposed soils) to avoid generating and breathing dust-generated from soils. A PID and a Dust Trak® dust monitor (or equivalent equipment) 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 and metals in the air are expected to be below the OSHA Permissible Exposure Limits (PELs). A Community Air Monitoring Plan (CAMP) will be implemented for all fieldwork (a copy of the CAMP is provided as an appendix to the RIWP). Air monitoring will be conducted for VOCs and dust. Monitoring will be conducted at all times that fieldwork activities which are likely to generate emissions are occurring. PID readings consistently in excess of 5 ppm, and dust levels in excess of 150 ug/m^3 will be used as an indication of the need to initiate personnel monitoring, increase worker protective measures, and/or modify or cease on-site operations in order to mitigate off-site community exposure.

PID and/or dust readings 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.

6.0 SITE ACCESS AND CONTROL

Site control procedures will be established to reduce the possibility of worker/visitor 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. Notices will be placed near the Site warning the public not to enter fieldwork areas and directing visitors to report to the Project Manager or SSHO. Measures will be taken to limit the entry of unauthorized personnel into the specific areas of field activity and to safely direct and control all vehicular traffic in and near the Site (e.g., placement of traffic cones and warning tape).

7.0 NOISE CONTROL

All fieldwork activities will be conducted in a manner designed to reduce unnecessary noise generation, and to minimize the potential for both on-site and off-site harmful noise levels. The Project Manager and SSHO will establish noise reduction procedures (as appropriate to the Site and the work) to meet these requirements.

8.0 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. All workers will be properly trained in accordance with OSHA requirements (29 CFR 1910). Personnel exiting the work zone(s) will be decontaminated prior to exiting the Site.

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 known of suspect on-site contaminants;
- 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.

9.0 DECONTAMINATION

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. Trucks will be brushed to remove materials adhering to their 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.

10.0 EMERGENCY RESPONSE

10.1 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 names and contact information for key site safety and management personnel, as well as other site safety contact telephone numbers, shall be posted at the Site).

Table 1 in this HASP contains Emergency Response Telephone Numbers, and immediately following is a map detailing the directions to the nearest hospital emergency room. This information will be maintained at the work 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.

10.2 Responsibilities

Prior to the initiation of on-site work activities, the SSHO will:

- 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.
- Confirm that first aid supplies and a fire extinguisher are available on-site.
- Have a working knowledge of safety equipment available.
- 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.

10.3 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.

10.4 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.

10.5 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.

10.6 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.

10.7 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.

10.8 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.

10.9 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.

10.10 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.

10.11 Emergency Equipment

The following on-site equipment for safety and emergency response will be maintained in the on-site vehicle of the SSHO:

- Fire extinguisher;
- First-aid kit; and,
- Extra copy of this Health and Safety Plan.

11.0 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.

11.1 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.

11.2 Heavy Equipment

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. All workers will be properly trained in accordance with OSHA requirements (29 CFR 1910). No workers will be permitted within any excavated areas without proper personal protective equipment (PPE), including, as warranted, respirators, Tyvek suits and/or gloves. Air monitoring for VOCs will be conducted in accordance with the HASP and the Community Air Monitoring Plan (RIWP appendices E and F).

11.3 Additional Safety Practices

The following are important safety precautions which will be enforced during this investigation:

- 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.
- 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.
- 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.
- Personnel and equipment in the work areas will be minimized, consistent with effective site operations.
- Unsafe equipment left unattended will be identified by a "DANGER, DO NOT OPERATE" tag.
- Work areas for various operational activities will be established.

11.4 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:

- Personnel on the Site, their arrival and departure times, and their destination on the Site.
- 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.
- Changes to the HASP.
- Daily information generated such as: changes to work and health and safety plans; work accomplished and the current Site status; and monitoring results.

12.0 TABLE AND FIGURES

Table 1: Emergency Response Telephone Numbers

Emergency Agencies	Phone Numbers
EMERGENCY	**911**
St. Luke's Hospital 70 Dubois Street, Newburgh	(845) 561-4400
Beacon Police Department	(845) 831-4111 or 911
Beacon Fire Department	(845) 569-7415 or 911
Beacon City Hall	(845) 838-5000
Beacon City Water/Sewer	(845) 834-5008
Beacon Water and Sewer Maintenance Department	(845) 831-3136

Figure 1: Directions to Hospital

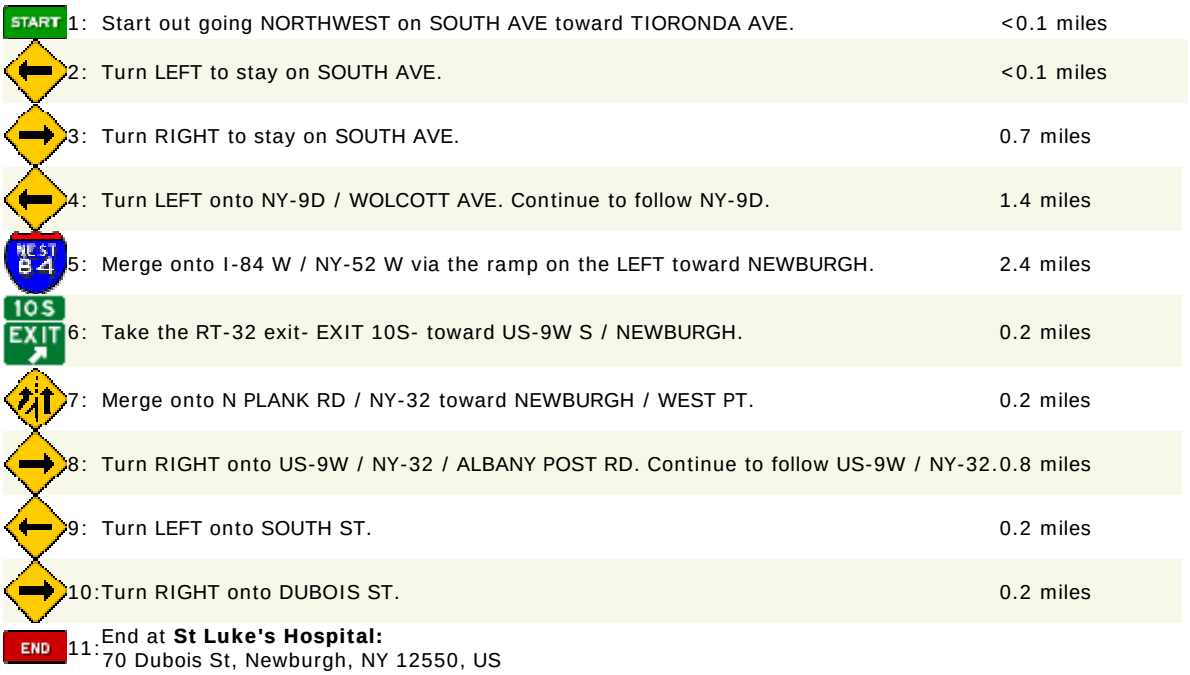

Figure 2: Map to Hospital (overview)

Site Location Map

Beacon Terminal Site
555 South Avenue
Beacon, New York

N

ESI File: BB04157.50

Date: October 2007

Attachment

N

METRO NORTH

Wooded Area

LIMIT OF EXCAVATION (TYP)

B-1 B-2 B-3 B-4 B-5 B-6 B-7 B-8 B-9 B-10

B-5A B-5B B-6 B-3 B-8 B-7 B-4 B-1 B-2

550-GALLON UST (REMOVED)

TOLUENE UST's (REMOVED)

ONE STORY BRICK COMMERCIAL BUILDING

SOUTH AVENUE

C.H.G.&E. Sub Station

relocated soil

Abandoned Railroad Tracks

Wooded Area

Existing Macadam Parking Lot

POSSIBLE SUBSURFACE DEBRIS (APPROX.)

City of Beacon 20' Wide Sewer & R.O.W.

Existing Fishermans Trail

Wooded Area

FISHKILL

four chemial ASTs

Elevated Walkway

CREEK

sed-1 sed-2 sed-3 sed-4 sed-5 sed-6 sed-7 sed-8 sed-9 sed-10 sed-11 sed-12 sed-13 sed-14

Wooded Area

TP-1 TP-2 TP-3 TP-4 TP-5

former shed A

former shed B

Wooded Area

Sluiceway

Over

Trail

former 20,000-gallon UST parking area

Island

Legend:

- previous test pit
- previous boring location
- existing monitoring wells
- previous sediment samples
- proposed boring location
- proposed sub-slab point
- proposed soil vapor samples
- proposed surface samples
- proposed test pit
- proposed monitoring well

Proposed Fieldwork Map

Beacon Terminal Site
555 South Avenue
Beacon, New York

ESI File: BB04157.50	
Scale: 1" = 50' (approximately)	
September 2007	Attachment
Ecosystems Strategies, Inc.	

APPENDIX C

Community Air Monitoring Plan

COMMUNITY AIR MONITORING PLAN FOR SITE INVESTIGATIVE ACTIVITIES

Beacon Terminal Site
555 South Ave
City of Beacon
Dutchess County, New York
ESI File: BB04157

Real-time air monitoring for volatile organic compounds (VOCs) and dust at the perimeter of the exclusion zone or work area will be necessary.

Dust will be monitored at three locations on the Site: two downwind locations at the property line, and one upwind location at the property line. Specific locations will change daily, depending on the work being conducted and the direction of the wind. Monitoring for dust will be conducted using a digital dust indicator, or equivalent equipment, capable of documenting the presence of dust with particle sizes up to 15 microns. Dust levels in excess of 150 ug/m^3 will be evidence of unacceptable air quality, and proper procedures to reduce dust levels will be immediately instituted by the contractor. Ameliorative procedures may include reducing the surface area of contaminated soil being disturbed at one time, watering exposed soils to reduce fugitive odors, use of suppression substances, or stopping excavation activities.

Periodic monitoring for VOCs will be required during all ground intrusive activities (e.g., test pitting and the installation of soil borings an/or monitoring wells), and during the collection of soil, and groundwater samples. Periodic monitoring might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling near roadways or occupied on-site buildings.

VOC Monitoring, Response Levels, and Actions

VOCs must be periodically monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone). Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using a photoionization detector (PID) that has been properly calibrated at least daily.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background.

- If the persistent organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

All PID readings must be recorded and be available for New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH) personnel to review.