REMEDIAL ACTION WORKPLAN

FOR THE FORMER "SAKMANN" PROPERTY

LOCATED AT U.S. ROUTE 9W
TOWN OF HIGHLANDS
ORANGE COUNTY, NEW YORK

Voluntary Cleanup Site Number: V-00083-3
Index Number: W3-0962-03-07

January 2005
(Revised July 2007)
(Revised August 2007)

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The undersigned have reviewed this Remedial Action Workplan (RAWP) and certifies to Highlands Battlesite Properties, LLC that the information provided in this document is accurate as of the date of issuance by this office.

_____
Paul H. Ciminello
Ecosystems Strategies, Inc.

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Summary of Revisions to the Approved Remedial Investigation Workplan

This revised RAWP was originally approved as a "final" document by the NYSDEC and NYSDOH in January 2005, and recommended the following: 1) removal of an on-site fuel oil underground storage tank near a former restaurant building; 2) demolition of a former on-site garage; 3) removal of contaminated soil located beneath the garage; 4) investigation of soil and soil vapor at various locations to further characterize overall Site conditions and to document the effectiveness of tank closure and soil removal activities; 5) installation of a barrier layer of soil; and, 6) continued monitoring of on-site groundwater monitoring wells.

During the course of the environmental investigation and remediation, NYSDEC personnel requested specific modifications to the scope of work presented in the RAWP. These changes were incorporated into an approved Supplemental Workplan, issued in December 2005, which called for documentation of indoor air quality at the restaurant building and additional investigation of on-site soils.

Following building demolition and soil removal activities, contractors for the property owner imported soils for use as a barrier layer. This material was not from an approved source and a Scope of Work for Investigation of Imported Cover Soils (SOW) was developed to document soil quality. The soils were documented to be unacceptable for use as a clean cover; however, the NYSDEC determined that this material could remain on the Site as backfill. The owner subsequently imported certified clean soil from an acceptable source and completed the installation of the barrier layer.

The following tasks, as specified in the RAWP, Supplemental Workplan, and SOW have been accomplished as of the date of this revised RAWP:

- pre-remediation soil gas survey;
- demolition of the former garage structure;
- closure of the fuel-oil underground storage tank at the former restaurant building;
- Indoor air quality testing at the former restaurant;
- soil sampling at the former garage septic system and to the west of the building;
- excavation of contaminated soils at the former garage and UST;
- post-excavation confirmatory endpoint sampling;
- restoration of the site to original grade;
- documentation of the integrity of imported backfill materials and clean cover soils;
- installation of barrier soil layer; and,
- ongoing post-remediation groundwater sampling.

The approved Supplemental Workplan and SOW, at the request of the NYSDEC, have been incorporated into this revised RAWP. Significant areas of revision are noted in the text *in italics.*

REMEDIAL ACTION WORKPLAN

PREPARED FOR THE

FORMER "SAKMANN PROPERTY"

LOCATED IN THE TOWN OF HIGHLANDS

ORANGE COUNTY, NEW YORK

Executive Summary

(Note: Original Text from Approved 2005 Workplan)

This RAWP details remedial services proposed to address known soil contamination on the former "Sakmann" property located on U.S. Route 9W in the Town of Highlands, Orange County, New York. This Site has been historically used as a gasoline station and automotive repair facility (underground storage tanks [USTs] and appurtenant piping associated with the former gasoline station were closed-in-place in June, 1988). Soils located beneath the former automotive repair garage at the central portion of the site have been contaminated with volatile organic compounds (including chlorinated hydrocarbons, BTEX compounds, and MTBE) at concentrations above NYSDEC guidance levels. VOC contamination is likely to be limited to soils located directly beneath the building. Current analytical data confirm the continuing presence of low level groundwater contamination by MTBE. Low grade PAH and metals contamination has been documented in fill-type soils located to the north of the former garage.

Proposed future use of the site is anticipated to include a scenic and interpretive overlook and a tourist-oriented restaurant. All on-site uses will be conducted in support of the adjacent Highlands Battle Site operated by the Palisades Interstate Parks Commission (PIPC). Remediation will be completed following the demolition of the former garage structure.

Remedial actions are proposed to: 1) excavate VOC-contaminated soil from beneath the former garage building; 2) document the presence or absence of contamination at the septic system and excavate or cover soils in this area warranting remedial action; 3) excavate and remove an abandoned fuel-oil UST, along with any appurtenant piping and/or petroleum impacted soil, located near the former restaurant; and, 4) placement of a barrier layer (consisting of clean fill, asphalt paving, or other engineering equivalent) on the northern portions of the Site where low grade contamination is present in on-site fill materials. Upon completion of all remedial activities, a final Summary Report of Remedial Activities will be prepared and submitted to the NYSDEC for review, and a "No Further Action" letter will be issued by the NYSDEC.

No active remediation of on-site groundwater is anticipated at this time. All on-site groundwater wells (six monitoring wells and the potable water supply well) will be monitored quarterly (up to five quarters, or longer if required by the NYSDEC) to document the continued absence of significant groundwater contamination.

1.0 Introduction

1.1 Purpose

The purpose of this Remedial Action Workplan (RAWP) is to provide guidance on the manner in which site remediation services are provided to address known environmental conditions (see Section 1.3, below) on the former "Sakmann" property, located on U.S. Route 9W in the Town of Highlands, Orange County, New York (hereafter referred to as the "Site"). It is the expressed intent of this RAWP to provide specific actions which will adequately address each identified environmental condition such that upon completion of all activities no adverse health impacts will result from future development of the Site.

This RAWP has been submitted for review to the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH), and has incorporated specific comments made by these agencies; this RAWP, therefore, is considered to be a "Final" document. [Note: This revised document incorporates descriptions of investigative activities that were approved by the NYSDEC after the acceptance of the original document in 2005.]

1.2 Site Location and Description

The Site is defined as the approximately 1.5-acre former Sakmann Restaurant Corporation property and structures located at U.S. Route 9W, Hamlet of Fort Montgomery, Town of Highlands, Orange County, New York. A Site Location Map and a Proposed Remedial Activities Map are provided in Appendix A of this RAWP.

The property is an irregularly shaped parcel which has approximately 350 feet of frontage on the eastern side of U.S. Route 9W and approximately 150 feet of frontage on the northern side of Mine Dock Road. The southern third of the property is vacant forested land; the northern two-thirds contain two, one-story structures: the former Trading Post Restaurant (restaurant) and a former gasoline station/automotive repair facility (Garage). A paved parking lot is present to the west of the restaurant. The Garage is surrounded by paved parking areas to the south and west and by open areas of graded, gravelly fill to the north and east.

Topography in the area surrounding the Site slopes moderately to steeply downward to the east (toward the Hudson River, located approximately 0.25 mile to the east) and to the south (toward a small easterly flowing stream tributary to the Hudson River located approximately 0.05 mile south). Topography in the immediate vicinity of the on-site structures and parking lots, however, has been made relatively level through the placement of fill materials.

Six bedrock groundwater monitoring wells (installed by Envirotrac, LTD. in April and May, 2002) are located on the Site, to the west, north, and east of the garage. During well installation, overburden soils were documented to consist of sands containing gravel, rock fragments, and fill materials. Bedrock, consisting of fractured metamorphic rock, was encountered at depths ranging from approximately 6' to 30' below surface grade (bsg), and groundwater was detected at depths ranging from approximately 26' to 37' bsg. Based on static groundwater elevations, Envirotrac documented general groundwater flow to be to the east, toward the Hudson River. Existing groundwater elevation data supports this finding (see the Groundwater Flow Map in Appendix A).

1.3 Known Environmental Conditions of Concern

A Combined Phase I and II Environmental Site Assessment (Phase I and II ESA) of the former Sakmann Property was conducted by Ecosystems Strategies, Inc. (ESI) in September 2001. The Phase I and II ESA documented the presence of waste-oil contamination in the Garage basement due to discharges to a repair bay floor drain. Information provided by the then current tenant of the Garage indicated that the floor drain was receiving wastewater discharges containing de-greasers. Laboratory analysis of subsurface soils in the vicinity of the floor drain documented the presence of multiple volatile organic compounds (VOCs) at concentrations above NYSDEC guidance levels (including BTEX, MTBE and chlorinated hydrocarbons). Based on these findings a spill event (number 0107005) was reported to the NYSDEC in October, 2001 by representatives of the property owner. ESI concluded that the source of the subsurface contamination (and the visible waste-oil contamination in the basement) was likely to be the discharge of oil and chlorinated solvents to the northern Garage repair bay floor drain.

The Phase I and II ESA indicated that USTs associated with the former gasoline station (one 4,000-gallon, two 3,000-gallon, and two 2,000-gallon tanks, located near the southwestern and northwestern corners of the garage) were abandoned and closed-in-place on June 3, 1988, and that a fuel-oil UST of unknown capacity is located near the northwest corner of the restaurant.

The Phase I and II ESA additionally documented the presence of low-grade contamination by polynuclear aromatic hydrocarbons (PAHs) and metals in fill-type soils located to the north of the garage. No consistent pattern of contamination was documented during the subsurface investigation. ESI concluded that contaminated areas to the north of the Garage were likely to be limited in extent and recommended that response actions be confined to the installation of a protective barrier layer (e.g., clean fill or asphalt pavement).

In October, 2001, fieldwork conducted by HydroScience, Inc. indicated that the northern repair bay floor drain was not connected to any subsurface conduit and that the drain discharged directly to soils located beneath the concrete floor slab. The floor drain was reportedly sealed by HydroScience personnel following their subsurface investigation.

A Summary Report of Subsurface Investigation (Summary Report) documented additional on-site investigative work conducted by ESI in November and December, 2001. Soil borings were extended in the Garage repair bays, basement, and near the exterior eastern wall of the basement, in order to further delineate the horizontal and vertical extent of known contamination.

The Summary Report confirmed the presence of VOC contamination (including chlorinated hydrocarbons) in soils located under the Garage repair bay slab. Significant contamination was limited to subsurface soils located in close proximity to the floor drain and contamination was shown to diminish with increasing depth. TCLP laboratory data documented an elevated potential for contaminant migration in groundwater.

No significant levels of VOCs were detected in soil samples from beneath the basement floor or from the exterior basement wall. These findings supported the conclusion that contamination present under the repair bay floor did not significantly extend beneath the basement slab and that it is was unlikely that contaminants present in the basement interior had significantly migrated to exterior subsurface soils. The Summary Report, however, suggested that soils located underneath the basement slab, in close proximity to the southern basement wall, could potentially be contaminated with VOCs. A copy of the Summary Report is included as Appendix B of this RAWP.

Based on the findings of the Phase I and II ESA and the Summary Report, ESI recommended that the basement should be properly cleaned, and that contaminated soils located under the repair bay slab, and under the basement slab near the southern basement wall, be excavated and disposed of off-site. The total volume of contaminated soil warranting remedial action was estimated to be between 70 and 120 cubic yards (tetrachloroethylene concentrations in contaminated soils were documented at levels suggesting that excavated materials would require pretreatment prior to final disposal). No remediation of soils located beneath the northern portion of the basement slab was recommended *[note for 2007 revision: the garage has been demolished and all contaminated soils have been removed].*

A Preliminary Investigation Report documented the installation of on-site groundwater monitoring wells, and the results of soil and groundwater sampling, conducted by EnviroTrac Ltd. in April and May, 2002. Cis-1,2 dichloroethylene (DCE) and methyl tertiary-butyl ether (MTBE) were detected above NYSDEC groundwater quality standards in wells located to the east of the Garage (MW-2S and MW-3D). Peak concentrations of DCE (groundwater quality standard 5 µg/L) and MTBE (groundwater quality standard 10 µg/L) were 58 µg/L and 22 µg/L, respectively. Low levels of DCE (below groundwater quality standards) were detected in MW-2D and MW-3D, and low levels of MTBE were detected in MW-1D, MW-2D and MW-4S. Low levels of DCE and tetrachloroethylene (PCE, groundwater quality standard 5 µg/L) were detected at concentrations of 2.8 µg/L and 1.1 µg/L, respectively, in the potable supply well servicing the adjoining Provan property to the east.

The Preliminary Investigation Report also documented the presence of low levels of VOCs (primarily BTEX compounds) in soils located in the immediate vicinity of the Garage. Peak concentrations occurred to the north of the Garage at a depth of 7-9' bsg. Total xylenes were detected at concentrations marginally exceeding NYSDEC guidance levels (as per TAGM 4046); all other VOCs were detected at concentrations below guidance levels. No chlorinated hydrocarbons were detected in any soil samples.

Additional water sampling was conducted by ESI in July 2003, and February, May, and August 2004 (monitoring well MW-2S was not located by ESI during these sampling events). All samples were submitted for analysis of VOCs utilizing USEPA Method 8260. No VOCs were detected in a potable well water sample obtained in July 2003 from the Provan residence. Comparison of current analytical results with groundwater data from 2002 indicates that low-level groundwater contamination has been reduced, but continues to persist at the Site *[note for 2007 revision: post remedial groundwater sampling from June 2005 through April 2007 indicates an absence of significant groundwater contamination and documents remaining analytes at concentrations below guidance levels].* Groundwater quality data is provided as Appendix B of this RAWP.

1.4 Proposed Future Use of the Site

Proposed future use of the Site is anticipated to include a scenic overlook, tourist information/interpretive center, and a restaurant. Remediation will be completed as if the entire Site will be used for the most restrictive activities. Current site development plans include the demolition of the Garage *[note for 2007 revision: the garage has been demolished and the southern portion of the property is currently used as a parking lot].*

2.0 Proposed Site Remediation Services

This section of the RAWP details activities which are proposed to be conducted to address the known environmental conditions on the Site, as identified in Section 1.3, above. A Proposed Remedial Activities Map depicting relevant Site features, conditions of concern, and areas of proposed remedial activities, is provided in Appendix A of this RAWP. All proposed work will be conducted according to a site specific Health and Safety Plan (HASP), provided as Appendix C of this RAWP.

For the purpose of the work detailed in these specifications, the "Owner" is defined as Highlands Battlesite Properties, LLC, which will contract with the environmental consultant and/or remediation firm (hereafter referred to as the On-site Coordinator (OSC) to provide the services detailed below. A representative of the owner or Palisades Interstate Parks Commission (PIPC), serving as a liaison engineer (Owner's or Director's Representative) between contractor and DEC, will be involved to oversee the work.

2.1 Overview of Proposed Remediation Services

The proposed remedial services described in detail in subsequent sections of this RAWP consist of the following):

1. Demolition of the former garage structure (Section 2.3.1, below).

2. Excavation and removal of the abandoned fuel-oil UST located near the former restaurant building (Section 2.3.2, below);

3. Collection of soil samples in the vicinity of the septic system servicing the former garage, *and to the west of the buildin*g, to document the presence or absence of contamination (Section 2.3.3, below);

4. Excavation of contaminated soils in the vicinity of the former Garage structure (and, if necessary, at the abandoned fuel-oil UST and the septic system) and disposal of excavated soil at a properly permitted facility (Section 2.3.4, below);

5. Post-excavation soil sampling to document acceptable contaminant levels in remaining soils (Section 2.3.5 below);

6. Restoration of the site to original grade at the conclusion of all soil removal and soil sampling services (Section 2.3.6, below);

7. Placement of a barrier layer (Section 2.3.7) on areas of low-grade PAH and metals contamination located to the north of the former Garage structure (and, if warranted by the results of soil sampling, in the septic system area *and to the west of the building*;

8. Post-remediation groundwater sampling (monitored on a quarterly basis) to document the continued absence of significant groundwater contamination (Section 2.3.8); and,

9. Preparation of a final Report to the Owner and the NYSDEC (Section 2.3.9 below).

Prior to, or in conjunction with, the initiation of the actions described below in Sections 2.3.1 through 2.3.9, the tasks detailed in Section 2.2, below, will also be conducted.

2.2 Proposed Site Preparation Services

This section of the RAWP provides details on activities and services necessary to be initiated and/or completed prior to the implementation of Site remediation services.

2.2.1 Agency Notification

The NYSDEC will be notified in writing at least five (5) business days 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.

2.2.2 Equipment Calibration

A photo-ionization detector (PID) will be utilized to screen encountered materials for the presence of volatile vapors. The PID will be calibrated at the onset of each workday, and a written calibration log will be maintained for this project. The PID will be calibrated to read parts per million gas equivalents of isobutylene in accordance with protocols set forth by the equipment manufacturer.

2.2.3 Clean-up Levels

Site clean-up will be achieved when remaining soils in the area of excavation are documented to contain concentrations of VOCs at levels below NYSDEC Recommended Soil Clean-Up Objectives, as defined in the NYSDEC's Technical and Administrative Guidance Memorandum #4046 (TAGM), dated January 24, 1994, as modified by subsequent NYSDEC memoranda. A barrier layer (see Section 2.3.7 below) will be placed above low-grade PAH and metals contamination in soils located to the north of the former Garage and, if warranted, at the septic system *and west of the garage*), no clean-up levels with respect to these compounds are appropriate.

Post remediation groundwater samples will be collected to document acceptable groundwater concentrations of VOCs.

2.2.4 Site Remediation Coordination Activities

Prior to the initiation of fieldwork, all subcontractors will be notified of the components of the Health and Safety Plan (see 2.3.5, below). All necessary insurance certificates will be secured from subcontractors by the Owner and/or by the OSC.

An assessment of subsurface soil characteristics, including soil type, the presence of foreign materials, field indications of contamination (e.g., unusual coloration patterns, or odors), and instrument indications of contamination (i.e., PID readings) will be made by the OSC during all site remediation work.

The OSC will be responsible for identifying any soils which, in the opinion of the OSC, may contain elevated concentrations of contaminants and should, therefore, require special handling. Those soils identified by the OSC will be removed to the soil stockpiling area (see Section 2.3.3 below) for characterization and proper disposition. 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 Health and Safety Plan

The site-specific HASP will be reviewed with site personnel prior to the initiation of fieldwork. This HASP will be reviewed with the 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.

2.2.6 Community Air Monitoring Plan

Field monitoring of dust and VOCs will be conducted in accordance with the Community Air Monitoring Plan provided in Appendix D. Continuous Dust Monitoring will be performed at the upwind (background) and downwind perimeters of the exclusion zone during all soil excavation activities using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size and capable of integrating over a period of 15 minutes (or less).

Downwind particulate levels 100 $\mu g/m^3$ greater than background, or evidence of visible dust leaving the work area, will result in the implementation of dust suppression activities, including, but not limited to, watering the excavation area or ceasing excavation. Work will continue so long as the downwind particulate concentration is within 100 $\mu g/m^3$ of the upwind level; work will be stopped if the downwind particulate levels are greater than 100 $\mu g/m^3$ above the upwind level.

Monitoring for VOCs will occur periodically at the downwind perimeter of the work area. 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 instituted. PID readings in excess of 25 ppm above background will necessitate ceasing work and the implementation of monitoring at the nearest residential or commercial structure.

2.2.7 Pre-Remediation Soil Gas Survey *and Indoor Air Quality Testing*

A soil gas survey will be completed prior to the start of on-site remediation activities in order to further document existing site environmental conditions in the vicinity of the now vacant Trading Post Restaurant. Sampling will be conducted beneath the slab of the former restaurant and beneath the asphalt-paved parking lot, areas that are a potential source of trapped volatile organic vapors. If required by the NYSDEC and/or the NYSDOH, a second round of sampling will be conducted following the completion of remedial activities. The results of the soil gas survey(s) shall be used to 1) provide additional data regarding known on-site contamination, which could potentially be used to guide remediation activities, and 2) should the restaurant be reopened for public use, or if a new enclosed structure is to be built, provide guidance on the need for post-remediation air-quality testing and/or the need for the implementation of additional remedial strategies designed to produce acceptable indoor air-quality conditions.

Soil gas sampling locations shall be selected after consultation with NYSDEC personnel. It is anticipated that two to four borings will be extended beneath the restaurant foundation slab, and that four to eight borings will be extended in a grid pattern at asphalt covered portions of the parking lot. Borings will be extended to a maximum depth of 4 to 6' bsg using (as appropriate) properly decontaminated hand-held or machine-mounted Geoprobe equipment. A hollow, 1.5" steel rod with an expendable tip will be placed in each boring, the expendable tip will be removed from the rod, and an air-stone attached to ¼" Teflon tubing will be inserted into the rod and lowered to the invert of the boring. The rod will be removed and clean silica sand will be used to fix the air-stone in place. The boring will then be sealed using a non-VOC containing caulk, in order to prevent the infiltration of surface air. Each soil-gas boring will be sufficiently purged using a GilAir 3 air sampling pump. Soil-gas samples will be collected into Summa canisters following purging and will be submitted for laboratory analysis of VOCs (USEPA Method TO-15, detection limit 1 mcg/m^3). Purging and sampling flow rates will not exceed 0.2 liters/minute.

Indoor air-quality sampling will be conducted at the former Trading Post restaurant, following a NYSDEC/NYSDOH approved protocol. One air sample will be collected from an area located inside the basement and one sample will be collected from an outside location, which will serve as a background sample. Prior to sampling, a preliminary inspection and instrument screening of the building will be conducted to inventory any potential sources of VOCs. Samples will be collected into Summa canisters equipped with 1-hour flow controllers, in order to prevent sample interference cause by the momentary presence of sampling personnel or other persons in the vicinity of the canisters. Samples will be submitted for laboratory analysis of VOCs (USEPA Method TO-15, detection limit 1 mcg/m^3).

2.3 Proposed Specific Remediation Services

This section of the RAWP provides a detailed description of the remedial tasks that will be conducted at the subject property. During the course of all remedial activities, appropriate measures (e.g., vehicle traffic patterns, stormwater run-off controls) will be implemented to ensure that contaminated soil is minimally disturbed.

As required, an Engineering Evaluation of this proposed remediation is provided in Appendix E of this RAWP.

2.3.1 Demolition of Former Garage Building

The former Garage building will be demolished prior to soil excavation and site restoration activities. A pre-demolition survey will be conducted prior to building demolition in order to document the presence or absence of asbestos containing materials (ACMs), equipment containing PCBs, or other hazardous on-site materials. Any such identified materials will be removed from the structure before the start of building demolition, and will be properly disposed of off-site in accordance with applicable regulations. Regulated materials that are temporarily stockpiled on-site will be removed from the subject property at the end of each work day. Documentation of proper removal, including manifests and laboratory testing will be included in the final project report (see section 2.3.10).

Demolition debris and any other regulated materials will be disposed of in a manner consistent with applicable NYSDEC regulations (6 NYCRR, Part 360). Materials will be removed from the property by an appropriately licensed hauler who will be responsible for exiting the site and traveling on a pre-determined truck route. Trucks will be covered and leak-proof and appropriate measures will be taken to control the generation of fugitive dust from the trucks during transports. All manifests and supporting documentation of waste disposal will be obtained for inclusion in the final Report.

The OSC will be responsible for ensuring that all necessary demolition and disposal permits have been secured by subcontractors. The OSC will monitor survey and demolition activities to ensure that known areas of soil contamination are not disturbed and that any encountered materials requiring special handling are properly managed.

2.3.2 Excavation of Fuel-Oil UST

The abandoned fuel-oil UST located near the former restaurant building, along with any appurtenant piping and/or petroleum impacted soil, will be excavated and removed from the Site, following the procedure outlined below (protocols for the handling and disposal of excavated soils, and post excavation confirmatory endpoint sampling, are detailed in Sections 2.3.4 and 2.3.5, below).

The tank and ancillary piping will be exposed with a backhoe and excavated soils will be field screened for contamination. Soils exhibiting field evidence of contamination will be segregated and stockpiled on plastic. The tank will be opened and visually inspected. Encountered liquid will be identified (e.g., gasoline, fuel oil, etc.) and will be removed from the tank by a licensed liquid waste transporter/disposal firm. The tank will be removed from the ground, and a photographic record will be made of the tank (the condition of the tank will be further documented by a visual inspection of the interior of the tank, if possible). The tank will be cleaned of residual product and removed from the Site for off-site disposal.

Proper disposal manifests will be prepared and signed by the OSC as representative of the owner and documentation will be provided to the owner for inclusion in the final Report.

2.3.3 Investigation of Septic System *and Soils to West of Garage*

Subsurface soils in the vicinity of the septic system *and to the west of the garage* will be exposed using a backhoe. *At least four test pits and/or trenches will be extended west of the garage (in the vicinity of monitoring well MW-1S) to a maximum depth 12'.* Any septic system piping extending from the building will be followed until the terminus is located. Soil sampling will be conducted according to the protocols described in Section 2.3.5, including in the vicinity of all encountered septic system components (piping, septic tank, drywell, and/or leach field).

2.3.4 Excavation of Contaminated Soils

Known contaminated soils in the vicinity of the former Garage structure, and any significantly contaminated soils (i.e. analyte concentrations above NYSDEC guidance levels) encountered in test pits, will be excavated and removed from the Site (soils at the Garage will be excavated subsequent to demolition activities). All appropriate disposal documentation will be maintained by the Owner for inclusion in the final Report.

1. Surface material such as metals, wood, and other miscellaneous surface debris will be removed and stockpiled or properly disposed of off-site. Any subsurface debris encountered during the excavation of on-site soils will be disposed of in a manner consistent with applicable NYSDEC regulations (6 NYCRR, Part 360).

2. Excavation of soils will be conducted in a manner consistent with field conditions and technical observations from field personnel. At this time, it is anticipated that between 70 and 120 cubic yards of VOC-contaminated soil will be excavated for off-site disposal in the vicinity of the former Garage structure (the exact volume of soil will be determined by post-excavation confirmatory endpoint sample data). Excavation of soils in the vicinity of the UST and septic system will be based on observed field evidence of petroleum contamination and/or analytical data. Excavation will extend to the depth required to remove contaminated soil, or until practical limitations restrict soil removal (e.g., bedrock is encountered).

3. All excavated soils stored on-site will be placed on double-lined, 6-mil plastic sheeting and covered with a single sheet of 6-mil plastic. The stockpile will be located to minimize the likelihood of direct contact with standing water or water resulting from a storm event. The integrity of the overlaying plastic will be periodically inspected, and replacement of the plastic will occur when appropriate until such time as all soils are removed from the site.

4. All contaminated materials will be removed from the property by an appropriately licensed hauler who will be responsible for exiting the site and traveling on a pre-determined truck route. Trucks will be covered and leak-proof and appropriate measures will be taken to control the generation of fugitive dust from the trucks during transports.

2.3.5 Post-Excavation Soil Sampling

Soil samples will be collected using decontaminated stainless steel trowels and dedicated, disposable latex gloves. Samples will be place in pre-cleaned jars provided by the laboratory. After sample collection, the sample containers will be placed in a cooler prior to overnight transport to a NYSDOH-certified laboratory for analysis. Appropriate chain of custody procedures will be followed.

Area of Former Garage

Upon completion of excavation activities, soils proposed to remain on the Site will be sampled and analyzed for VOCs using USEPA Method 8260. The total number of confirmatory soil samples collected for laboratory analysis will depend on the final dimensions of the excavation. A minimum of three floor samples and one sample per sidewall (seven samples total) will be collected to document the integrity of remaining on-site soils.

Area of Septic System *and Area West of Garage*

Exposed soils will be visually inspected and screened with the PID. In the septic system area, a minimum of four to six soil samples will be collected from the strata most likely to have received liquid discharges, and from any overtly impacted areas. All samples will be analyzed for VOCs (USEPA Method 8260) and RCRA metals. *In the area west of the garage (the vicinity of monitoring well MW-1S), a minimum of one soil sample from each test pit will be collected and submitted for laboratory analysis, with collection biased toward areas of overtly contaminated materials. If encountered, samples will also be collected from the groundwater interface. All samples will be analyzed for total VOCs (USEPA Method 8260).* The need for additional analyses (i.e. PAHs and/or PCBs) at either location will be based on encountered field conditions and consultation with NYSDEC personnel.

Laboratory results which indicate that a release has occurred, or sufficient field evidence of a reportable spill, will be reported to the NYSDEC. If contamination above TAGM guidance levels is documented, the NYSDEC shall determine the need for response actions (i.e. soil removal and/or the installation of a protective barrier layer). Required response actions will be conducted, as appropriate, according to the protocols described in Sections 2.3.4, 2.3.6, and 2.3.7.

Area of UST

Underlying and surrounding soils will be visually inspected and screened with the PID. In the event that no field evidence of contamination is identified, a minimum of five soil samples will be collected for laboratory analysis (one sample from each wall, at a point no shallower than the corresponding midpoint of the former tank, and one sample from the base of the tank "grave" at a point underneath the midpoint of the former tank). If the excavated tank is greater than 2,000-gallons in capacity, a minimum of two samples will be collected from the base of the grave. Samples will be analyzed for SVOCs (PAHs only) using USEPA Method 8270 and VOCs (STARS list only) using USEPA Method 8021. *Manual soil borings will be extended, as necessary, to document any areas of remaining post excavation soil contamination.*

Laboratory results which indicate that a release has occurred, or sufficient field evidence of a reportable spill, will be reported to the NYSDEC. All encountered tanks will be properly registered with the NYSDEC.

2.3.6 Site Restoration in Soil Removal Area

The Site will be regraded to approximate original grade at the conclusion of all soil removal and inspection (including, if warranted, NYSDEC inspection) services. To the extent possible, on-site non-contaminated soils will be used for site regrading. In the event that soil importation is necessary, the Owner and/or OSC will secure only certified clean soil material.

2.3.7 Installation of Clean Soil Barrier Layer or Equivalent

A cover of clean soil will be placed as a barrier layer at: 1) all areas located to the north of the former Garage structure where low-grade PAH and metals contamination has been documented; and, 2) in the vicinity of the septic system *and to the west of the garage* (if warranted by documented contaminant concentrations and required by the NYSDEC). A barrier layer will not be required in any areas where impacted soils have been sufficiently excavated during the course of the soil remediation services described above (see Proposed Remedial Activities Map in Appendix A).

The OSC will be responsible for securing a source of certified clean soil for the owner. *In the event that any soil placed on the Site is from a non-approved source, samples of the imported material will be collected according to a NYSDEC approved, site-specific sampling plan. Material for use as a final cover must meet the NYSDEC Soil Cleanup Objectives (SCOs) for Protection of Public Health, Unrestricted Use, as specified in 6 NYCRR Part 375, Table 375-6.8(a). Any imported materials to be used as backfill must meet the SCOs for Protection of Public Health, Restricted Commercial Use, as specified in 6 NYCRR Part 375, Table 375-6.8(b).*

A marker layer consisting of an easily identifiable, non-biodegradable layer such as high visible porous plastic mesh will first be placed on all areas which are targeted for the placement of the barrier layer. After the marker layer has been appropriately placed, a minimum of 18 inches of certified clean soil material will be placed on the site in the designated areas. Soil material will be placed and compacted in lifts not exceeding 12 inches compacted depth. For all covered areas having exposed soils, the final layer of soil will contain sufficient organic matter to permit re-vegetation. This final layer may be replaced with topsoil in areas where final landscaping has been determined. All finished grades that receive topsoil shall be raked smooth, seeded and mulched, and water periodically as necessary to insure proper stabilization of soil areas.

The 18 inch soil barrier layer may also be substituted by any of the following:

- asphalt or concrete
- geocomposite liner (GCL)
- on-site buildings

The specific thickness of each of these alternative materials will be dependent on ultimate site development plans but will not be less than 3". The determination to utilize substitute materials will be made based on design considerations but will not be considered approved until written approval from the NYSDEC is received. A grading and cover plan illustrating the locations of structures, parking areas, landscaping and clean fill or equivalent substitute as well as the depth to contaminated soil will be provided to the NYSDEC after site development plans have been finalized. It will be the responsibility of the Owner to provide adequate justification for any and all proposed substitutes.

2.3.8 Post-Remediation Groundwater Sampling

At the completion of all soil excavation work, all six on-site groundwater monitoring wells (MW-1S, MW-1D, MW-2S, MW-2D, MW-3D, and MW-4S), the on-site potable supply well, (and, if necessary the downgradient offsite potable supply well servicing the adjoining Provan property), will be sampled quarterly (for five consecutive quarters) to document groundwater quality. The need for additional sampling rounds shall be determined by the NYSDEC.

Prior to the initiation of sampling procedures, basic climatological data (e.g., temperature, precipitation, etc.) and any field indications of contamination (e.g. well head PID readings for organic vapors) will be recorded in field logs. For all monitoring wells, static groundwater level will be measured from the top of the well casing (not protective casing) to the nearest 0.01 foot, and will be recorded in field logs.

All groundwater samples will be collected in a manner consistent with USEPA and NYSDEC sample collection protocols. All sample collection equipment will be properly decontaminated prior to the initiation of sampling and between sample locations to avoid cross-contamination.

On-site monitoring wells will be sampled utilizing USEPA "Low-Flow" methodology. At this time it is anticipated that sampling equipment will include a Grundfoss (stainless-steel) submersible pump, Horiba U-23 flow-through cell (twelve parameter), a Grundfoss Redi-Flow frequency modulator (pump control), and dedicated plastic tubing. All wells will be sampled with the pump located at the well bottom. Collection points for potable supply well samples will be located up-system of any water filtration or treatment systems. The potable water supply will be allowed to flow freely for a minimum of twenty minutes prior to the collection of samples.

Each water sample will be collected into two 40-ml sample vials (containing hydrochloric acid as a preservative) provided by the laboratory. After sample collection, the vials will be placed in a cool (4^{o} C), dry place prior to their transport to the laboratory. At the completion of sampling, all groundwater samples will be transported via overnight delivery to a New York State Department of Health-approved laboratory. Appropriate chain of custody procedures will be followed. Water samples will be submitted for analysis of VOCs (including MTBE), using USEPA Method 8260. All analyses will be performed by a certified NYSDOH approved laboratory.

After each sampling round, a memorandum tabulating groundwater data will be provided to the NYSDEC. Complete laboratory data package will be attached. After all sampling rounds have been completed, a complete assessment of groundwater quality will be prepared and included in the final Summary Report (see Section 2.3.9 below). Groundwater wells will be properly closed only upon receipt of written approval from the NYSDEC.

2.3.9 Post-Remediation Institutional Controls

The following actions will constitute post-remediation institutional controls at this Site:

A Deed Restriction will be prepared identifying the area subject to the barrier layer. The restriction will be designated on filed maps.

Annual inspections will be conducted of the barrier layer by a Project Engineer, licensed to practice in New York and to document any change in the layer's integrity. Identifications of substantive changes which, in the opinion of the Project Engineer, represent damage to the barrier layer will be made in writing to the owner and to the NYSDEC. The owner will provide to the NYSDEC evidence of restoration of the barrier layer.

2.3.10 Documentation of Site Remediation and/or Closure

At the completion of all Site closure services, a final Report summarizing all services performed on the subject property will be prepared. This Report will document the proper handling, removal, and off-site disposal of any wastes requiring special handling and will include results of any laboratory analyses generated during activities described in this RAWP. Also included in this Report will be maps illustrating Site closure activities. The NYSDEC will review the submitted Report and provide a written response to the Owner. As required, the final Report will be signed by a professional engineer licensed to practice in New York State.

2.3.11 Time Schedule

The schedule outlined below will be maintained unless revised by mutual consent of the NYSDEC and the Owner. All excavation and site restoration activities will commence subsequent to the demolition of the Garage.

Within ninety (90) days of the approval of the RAWP, the garage will be demolished the UST (and any surrounding contaminated soils) will be removed, soils contaminated with VOCs will be excavated, soil samples documenting remaining site integrity will be collected and analyzed, and site restoration activities in the vicinity of the VOC-contaminated soil removal area will have been completed.

Within thirty (30) days of final soil excavation, groundwater sampling will have been conducted.

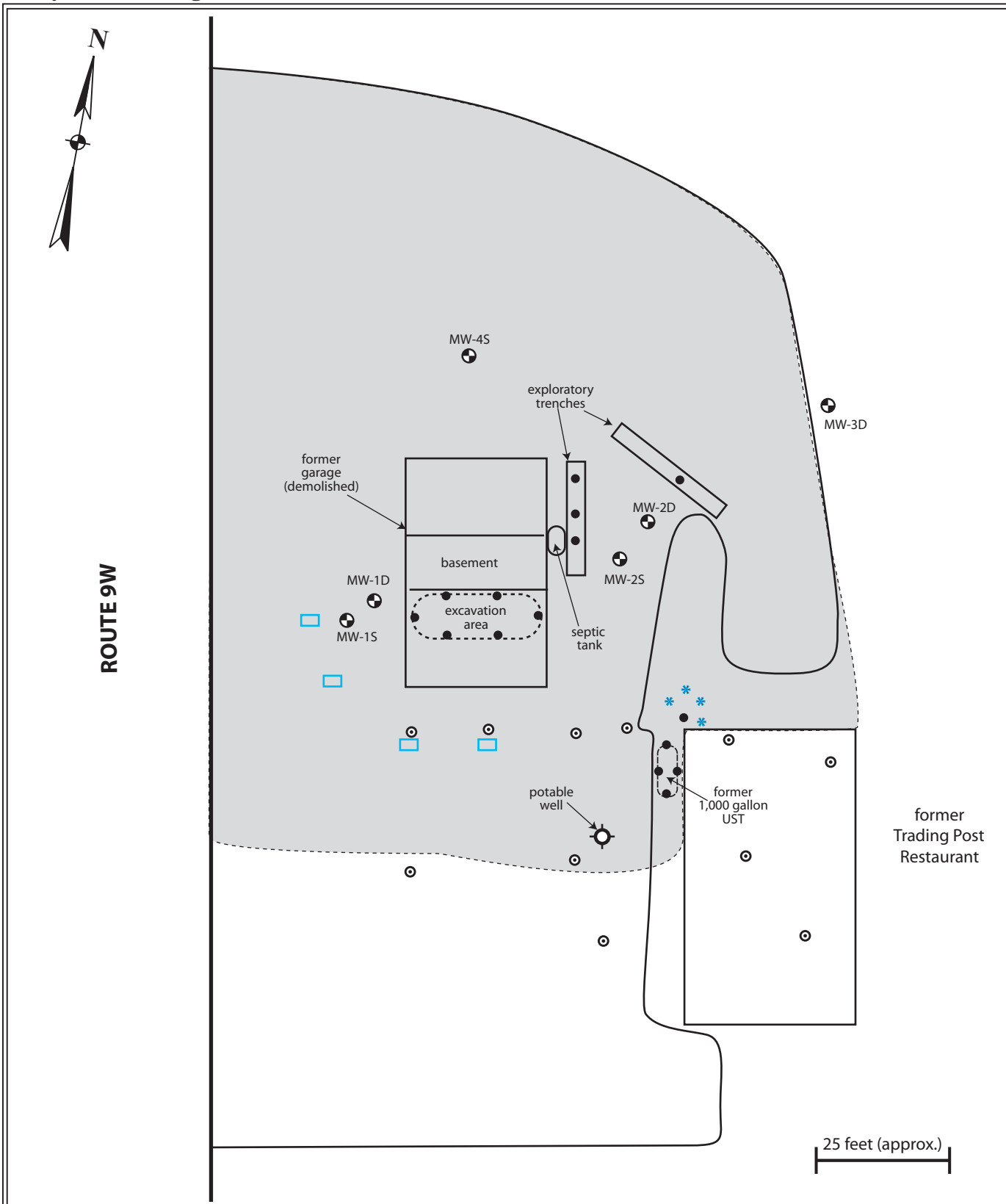
Within sixty (60) days of soil removal, the barrier layer for soils containing low-grade PAH and metals contamination will be installed.

Within sixty (60) days of completion of the barrier layer installation, a final Report will be submitted to the NYSDEC. Within fifty (50) days of the receipt of this Report, the NYSDEC will provide written response to the Owner as to the adequacy of Site Remediation Services. Satisfactory completion of all services will necessitate the NYSDEC issuing a “No Further Action” letter.

APPENDIX A

Maps

Site Location Map **Figure 1** Former Sakmann Property U.S. Route 9W Town of Highlands Orange County, New York	N	ESI File: SF01123.40 July 2007 Appendix A

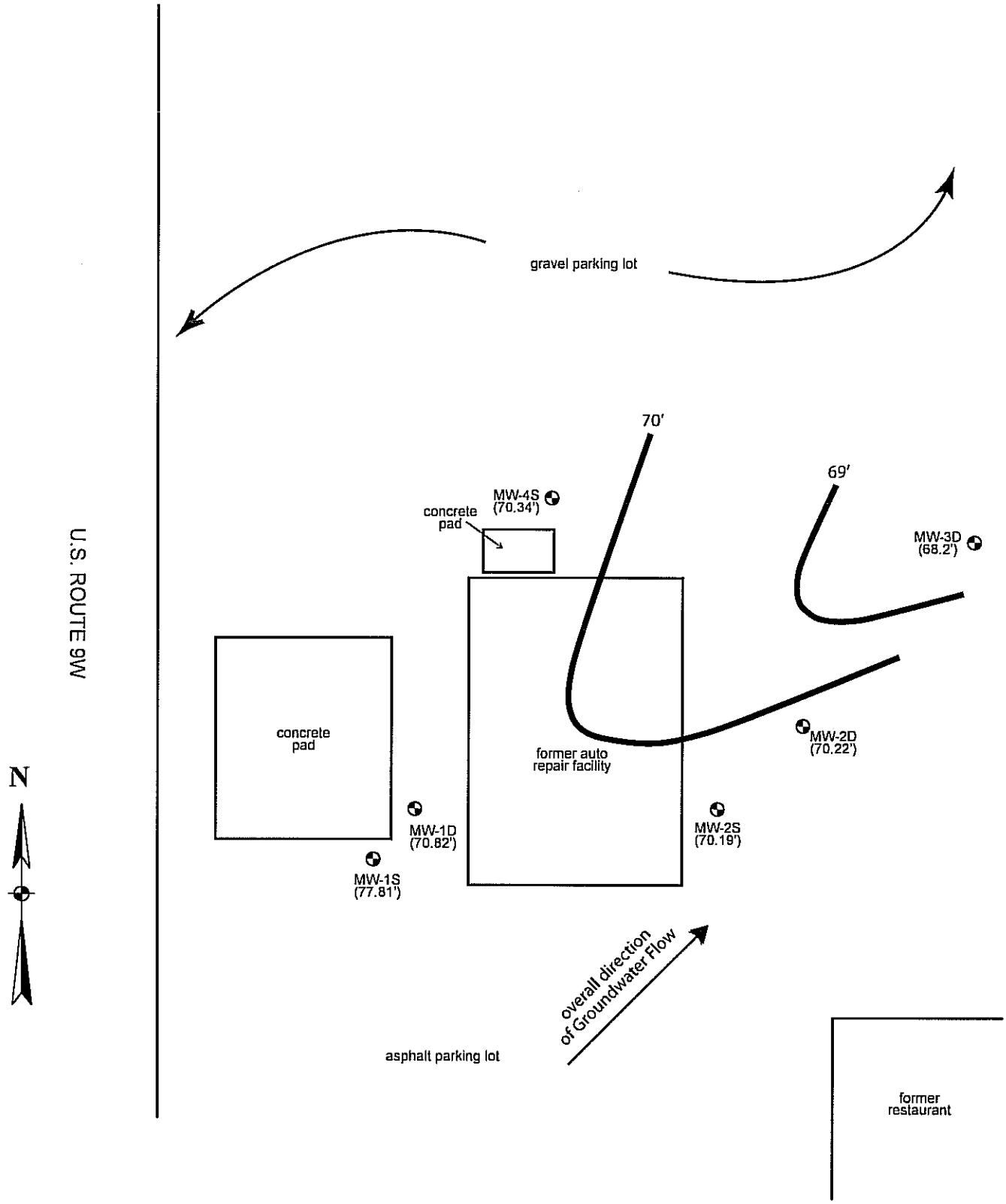


All feature locations are approximate. This map is intended as a schematic to be used in conjunction with the associated report, and it should not be relied upon as a survey for planning or other activities.

Proposed Remedial Activities Map
Figure 2
Former Sakmann Property
U.S. Route 9W
Town of Highlands
Orange County, New York

Legend:
- monitoring well
- proposed soil gas sample
- proposed soil sample
- proposed hand boring
- proposed test pit
- proposed barrier layer

ESI File: SF01123.40
July 2007
Scale as shown
Appendix A



All feature locations are approximate.
Map based on field measurements. All elevations are relative to an arbitrary benchmark of 100 feet.

Groundwater Flow Map- June 2006
Figure 3
Former Sakmann Property
U.S. Route 9W
Town of Highlands
Orange County, New York

Legend:
monitoring well with groundwater elevation noted parenthetically
MW-1S

ESI File: SF01123.40
July 2007
Not to Scale
Appendix A

APPENDIX B

Previous Environmental Reports

SUMMARY REPORT OF

SUBSURFACE INVESTIGATION

Performed on the Sakmann Restaurant Corporation Property

Located on U.S. Route 9W
Hamlet of Fort Montgomery, Town of Highlands,
Orange County, New York
(NYSDEC SPILL NUMBER 0107005)

January 9, 2002

Prepared By:

ECOSYSTEMS STRATEGIES, INC.
60 Worrall Avenue
Poughkeepsie, New York 12603
(845) 452-1658

ESI File Number: SF01123.30

SUMMARY REPORT OF

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January 9, 2002

ESI File Number: SF01123.30

Prepared By:
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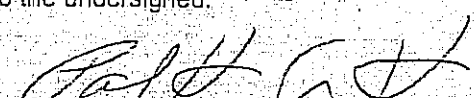
60 Worrall Avenue
Poughkeepsie, New York 12603

Prepared For:
Scenic Hudson Land Trust, Inc.
9 Vassar Street
Poughkeepsie, New York 12601

The undersigned has reviewed this Report and certifies to Scenic Hudson, Inc. 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

This Summary Report of Subsurface Investigation ("Report") chronicles field work performed by Ecosystems Strategies, Inc. ("ESI") on the Sakmann Restaurant Corporation property located at U.S. Route 9W, Hamlet of Fort Montgomery, Town of Highlands, Orange County, New York. The work summarized in this Report was performed to address potential environmental liabilities on specified portions of the subject property identified during a combined Phase I and II investigation conducted by ESI (see Section 1.4, Previous Environmental Reports, below).

The specific purpose of this Report is to summarize the work performed by ESI to document the presence or absence of subsurface soil contamination on the subject property and to suggest, if appropriate, further investigative and/or remedial options regarding identified on-site contamination.

This Report describes all field work methodologies for the work conducted by this office, includes discussions of the resulting analytical data from collected samples, and provides conclusions and recommendations drawn from the field work and analytical data.

1.2 Limitations

This written analysis summarizes the site characterization activities conducted on a specified portion of the Sakmann Restaurant Corporation property located at U.S. Route 9W, Hamlet of Fort Montgomery, Town of Highlands, Orange County, New York and is not relevant to other portions of this property or any other property. It is a representation of those portions of the property analyzed as of the respective dates of field work. This Report cannot be held accountable for activities or events resulting in contamination after the dates of field work.

Services summarized in this Report were performed in accordance with generally accepted practices and established NYSDEC protocols. Unless specifically noted, the findings and conclusions contained herein must be considered not as scientific certainties, but as probabilities based on professional judgement.

1.3 Site Location and Description

The subject property as defined in this Report consists of the approximately 1.5-acre Sakmann Restaurant Corporation property and structures located at U.S. Route 9W, Hamlet of Fort Montgomery, Town of Highlands, Orange County, New York. A map depicting the location of the subject property is provided in Appendix A of this Report.

The subject property is an irregularly shaped parcel which has approximately 350 feet of frontage on the eastern side of U.S. Route 9W and approximately 150 feet of frontage on the northern side of Mine Dock Road. The southern third of the subject property is vacant forested land. The northern two-thirds of the parcel contain two, one-story structures: the Trading Post Restaurant and a former gasoline station currently operated as Carmine's Automotive Repair ("Garage"). A paved parking lot is present to the west of the restaurant. The Garage is surrounded by paved parking areas to the south and west and by open areas of graded, gravelly fill to the north and east.

The specified portion of the property on which the subsurface investigation was conducted (hereafter referred to as the "Site") consists of the repair bays and basement of the Garage (locations previously identified as containing, or likely to contain, petroleum and chlorinated hydrocarbon contamination) and exterior portions of the subject property located immediately east of the Garage basement. A Field Work Map indicating specific site characteristics is located in Appendix A of this Report.

1.3.1 Site Hydrogeology

No site-specific investigation of groundwater depth or direction of flow is known to have been performed on the subject property; therefore, no documented determinations are provided in this Report. Observations made during two separate subsurface investigations (see Section 1.4, Previous Environmental Reports, below) did not reveal the presence of on-site groundwater. Review of The United States Department of Agriculture Soil Conservation Service's Soil Survey of Orange County, New York ("Soil Survey"), dated October 1981, indicated that depth to groundwater is likely to be greater than five feet below surface grade (bsg) on portions of the subject property containing deep soils and that shallow groundwater may be seasonally perched above bedrock on portions of the subject property containing shallow soils. Based on observations of the topography of the surrounding area, shallow groundwater is likely to flow in an easterly or southeasterly direction, towards drainage-ways flowing east toward the Hudson River.

1.3.2 Site Topography

Information on the subject property's topography was obtained from the review of the United States Geological Survey (USGS) Topographic Map of the Peekskill, New York Quadrangle (dated 1957, photorevised 1981) and observations made by this office.

According to the above-referenced topographic map, the topography of the area in the vicinity of the Site slopes moderately to steeply downward to the east (toward the Hudson River, located approximately 0.25 mile to the east) and to the south (toward a small easterly flowing stream tributary to the Hudson River located approximately 0.05 mile south). Surface elevations on the subject property range from approximately 140 feet above mean sea level (msl) on the northwestern portion to approximately 80 feet above msl on the extreme southern property line. According to observations made during the subsurface investigation of the subject property, the topography in the vicinity of the Site is relatively level. The differences noted above between observed and reported topographic conditions suggest that landfilling activities have occurred on-site. According to available information, the subject property has been subject to historic landfilling activities.

1.4 Previous Environmental Reports

A Combined Phase I and II Environmental Site Assessment ("Phase I and II ESA") of the Sakmann Restaurant Corporation property was conducted by ESI in September 2001. During the course of the investigation, ESI personnel observed overt evidence of waste oil contamination in the Garage basement and noted the presence of a repair bay floor drain in close proximity to the basement which contained standing waste oil. The tenants of the Garage reported to ESI personnel that this drain was receiving wastewater discharges containing de-greasers. Subsurface soils in the vicinity of the floor drain were sampled during the investigation and were found to contain multiple volatile organic compounds (VOCs) at concentrations above action levels (including MTBE and chlorinated hydrocarbons).

Based on these findings, the Phase I and II ESA concluded:

- that significant contamination warranting remedial action existed beneath the concrete slab;
- that these levels of contamination were required to be reported to the NYSDEC. The NYSDEC was contacted by personnel from HydroScience, Inc. (an environmental contractor engaged by the owner of the subject property) on October 5, 2001, and relevant information on the presence of petroleum contamination on the subject property was submitted to that agency. The NYSDEC has issued file number 0107005 for this spill event.
- that although the vertical and lateral extent of the contamination was not known it was likely that significant contamination was limited to subsurface soils in close proximity to the floor drain; and
- that the source of the subsurface contamination (and the visible contamination in the basement) was likely to be the discharge of oil and chlorinated solvents to the northern Garage repair bay floor drain.

The Phase I and II ESA recommended that additional borings be extended at the Garage floor slab and at the exterior perimeter of the slab to further characterize and define the extent of subsurface contamination and that contaminated soils located under the Garage slab should be excavated and properly removed off-site or should be properly treated *in-situ*.

On October 25, 2001 personnel from HydroScience extended a soil boring through the Garage floor drain to a depth of approximately six to seven feet below surface grade. According to information provided to this office by HydroScience, the floor drain was not connected to any subsurface conduit and appeared to discharge directly to soils located beneath the concrete floor slab. Chlorinated hydrocarbons (tetrachloroethylene and trichloroethylene) and xylenes were found above action levels in soils collected from this location. These findings support the conclusion of the Phase I and II ESA that contaminants have entered soils located beneath the Garage floor slab via discharges to the floor drain. The floor drain was reportedly sealed by HydroScience personnel following their subsurface investigation.

Relevant portions of the Phase I and II ESA and laboratory data from the HydroScience subsurface investigation of the floor drain are presented in Appendix B of this Report.

1.5 Objectives

The services conducted by ESI, which are summarized in this Report (See Section 2.0, below), were performed to determine the presence or absence of environmental liabilities resulting from the above-referenced previously identified areas of concern. The objectives of the work conducted by ESI were:

- To document the presence or absence, and the vertical and horizontal extent, of petroleum and/or chlorinated hydrocarbon contaminants in subsurface soils (and if applicable, groundwater) located near the Garage repair bay floor drain and under the slab of the Garage basement; and
- To suggest, if appropriate, further investigative and/or remedial options regarding identified subsurface or surface contamination.

2.0 SUBSURFACE INVESTIGATION

2.1 Summary of Services

In order to achieve the objective specified in Section 1.5 above, the following services were conducted by ESI on selected portions of the Site:

- Extended nine soil borings at interior portions of the Garage to a maximum depth of approximately eight feet below grade in the vicinity of the former floor drain located in the northern repair bay and other areas potentially impacted by historic site usage;
- Extended two soil borings at the Garage basement floor to a maximum depth of approximately eight feet below grade;
- Extended one soil boring at the exterior of the Garage near the eastern basement wall to a maximum depth of approximately nine feet below grade; and
- Documented the on-site presence or absence of contamination through sampling and laboratory analysis of subsurface soil samples for volatile organic compounds (VOCs) and PCBs.

This Report is divided into individual sections that describe the field work conducted by ESI on the subject property (Section 2.2), laboratory analysis of samples (Section 2.3), and conclusions and recommendations (Section 3.0).

2.2 Field Work Methodology

2.2.1 Site Preparation Services

Prior to the initiation of field work, a request for a complete utility markout of the subject property 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 cores.

2.2.2 Extension of Soil Cores

ESI personnel extended nine soil borings at interior portions of the Garage (repair bays) on November 29, 2001 and extended three soil borings at or near the Garage basement floor on December 18, 2001. A narrative description of the location of these borings is presented in Table 1. A Field Investigation Map indicating the boring locations and associated selected site features is provided in Appendix A of this Report.

All manual soil borings were extended by ESI personnel using a hand-held direct push sampling spoon equipped with a slide hammer and 1½ -inch outer diameter disposable acetate sleeves used to prevent the cross contamination of soil samples. Sampling was conducted at each boring location at two-foot intervals to a maximum depth of approximately eight to nine feet below grade or until refusal was reached. The sampling spoon was decontaminated prior to the initiation of field work and after the collection of each sample. Decontamination procedures were consistent with established United States Environmental Protection Agency (USEPA) and NYSDEC protocols.

A MiniRAE 2000 (Model PGM 7600) photo-ionization detector (PID) was utilized by ESI personnel to screen all encountered material for the presence of any volatile organic vapors where appropriate. Prior to the initiation of field work, this PID was properly calibrated to read parts per million calibration gas equivalents (ppm-cge) of isobutylene in accordance with protocols set forth by the equipment manufacturer.

An assessment of subsurface soil characteristics, including soil type, the presence of foreign materials, field indications of contamination (e.g., unusual coloration patterns, or odors), and instrument indications of contamination (i.e., PID readings) was made by ESI personnel during the extension of each soil coring. ESI personnel maintained independent field logs documenting the physical characteristics, PID readings 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 Table 1.

Samples of soil material were collected from each of the soil borings where appropriate (see Section 2.3.1 for specifics regarding sample collection methodology). Notations were made regarding the sampled material's physical characteristics (e.g., color, odor, etc.). At each sample location a sufficient volume of material was collected for the known required analyses and for any potential additional analyses. Subsurface soils encountered during the extension of the soil borings in the Garage repair bays and basement generally consisted of tan or brown coarse to medium sandy soil layers with varying degrees of moisture. Groundwater was not encountered during the extension of the soil cores.

Table 1: Field Observations

SAMPLE POINT	LOCATION [1,2,3]	DEPTH	SOIL CHARACTERISTICS	PID (ppb)	FIELD OBSERVATIONS
2HB-5	6.6' east 3.0' north	0 - 2' (sample)	Poor recovery, moist light brown medium to coarse sand	0.4	No evidence of contamination
		2 - 4' (sample)	Poor recovery, moist light brown medium to coarse sand	0.3	No evidence of contamination
		4 - 5' (sample) Refusal at 5'	Moist light brown medium to coarse sand, wet and dark near 6'	0.9	Strong petroleum odor
2HB-6	3.3' east 2.8' south	0 - 2'	No recovery	N/A	N/A
		2 - 3' (sample)	Dark gray loose moist medium to coarse sand grading to brown dense wet sand	38.0	Possible staining, strong petroleum odor
		3 - 5' (sample)	Dark brown moist medium to coarse sand	N/A	Strong petroleum odor and staining
		6 - 7' (sample)	Dark brown moist medium to coarse sand at 6' grading to tan dry loose sand	40.3	Strong petroleum odor and staining near 6'
2HB-7	1.25' south	0 - 2' (sample) Refusal at 2'	Dark brown moist medium to coarse sand	99.1	Staining and strong petroleum and "sweet" odors
2HB-8	0.2' west 2.7' north	0 - 2' (sample)	Dark brown moist to very moist medium to coarse sand	N/A	Staining and strong petroleum and "sweet" odors
		2 - 4' (sample) Refusal at 4'	Dark brown very moist medium to coarse sand	N/A	Heavy staining, sticky soil and strong petroleum and "sweet" odors
2HB-9	5.3' west 0.4' north	1.5 – 2.5' (sample)	Poor recovery, dark brown moist medium to coarse sand	N/A	Staining and strong petroleum odor
		2.5 - 4.5' (sample)	Poor recovery, dark brown moist medium to coarse sand (slightly drier than 1.5 - 2.5')	N/A	Less staining and odor than at 1.5 - 2.5'
		4.5 - 6.5' (sample)	Dark brown moist medium to coarse sand grading to tan loose sand	N/A	Dark soil stained, slight petroleum odor
		6.5 - 8.5' (sample)	tan dry loose medium to coarse sand with layer of coal fragments/ash grading to slightly moist light brown sand with pebbles	N/A	Possible slight petroleum odor

SAMPLE POINT	LOCATION [1,2,3]	DEPTH	SOIL CHARACTERISTICS	PID (ppb)	FIELD OBSERVATIONS
2HB-10	9.5' south	Aborted, refusal at surface immediately below slab	Shallow layer of wet/sticky dark brown medium to coarse sand observed immediately below slab	N/A	Obvious petroleum contamination on soil surface
2HB-10a	8.5' south	Aborted, refusal at surface immediately below slab	N/A	N/A	N/A
2HB-11	1.7' east 8.6' south	0 - 2' (sample)	Tan slightly moist loose medium to coarse sand	N/A	Possible slight petroleum odor
		3 - 5' (sample)	Poor recovery, tan slightly moist loose medium to coarse sand	N/A	No evidence of contamination
2HB-12	6.8' west 8.0' south	0 - 2' (sample)	Poor recovery, tan slightly moist loose medium to coarse sand	N/A	No evidence of contamination
		2 - 5'	No recovery	N/A	N/A
		5.5 - 7.5' (sample)	Tan slightly moist loose medium to coarse sand	N/A	No evidence of contamination
2HB-13	9.2' west 3.0' south	0 - 2' (sample)	Tan slightly moist loose medium to coarse sand with some coal fragments and brown sand/pebbles	N/A	No evidence of contamination
		3 - 5' (sample) Refusal at 5'	Tan slightly moist clayey dense medium to coarse sand	N/A	No evidence of contamination
B-1	20' west 6' north	0 - 2'	No recovery	N/A	N/A
		2 – 4' (sample)	Poor recovery, tan slightly moist loose medium to coarse sand	N/A	No evidence of contamination
		4 – 5' Refusal at 5' (sample)	Poor recovery, tan slightly moist loose medium to coarse sand	N/A	No evidence of contamination
B-2	7' west 6' north	0 - 2'	No recovery	N/A	N/A
		2 – 4'	No recovery	N/A	N/A
		4 – 6' (sample)	Poor recovery, tan slightly moist loose medium to coarse sand	N/A	No evidence of contamination
B-3	3' east 20' north	7 – 9' (sample)	Brown to tan slightly moist loose medium to coarse sand with brown to gray rock fragments	N/A	No evidence of contamination

Notes:
1. All borings extended at the Garage repair bays ("2HB" series) are located relative to the center of the former floor drain in the northern repair bay (located 16.5' east and 6.0' south of the northern end of the northern repair bay overhead door at western wall of Garage).
2. All interior borings extended at the Garage basement floor ("B1" and "B2") are located relative to the southeastern corner of the basement.
3. Boring "B-3" is located relative to the southeastern exterior corner of the Garage building.

N/A = not available

2.3 Sample Collection and Analysis

2.3.1 Sample Collection and Submission

All soil samples collected during the November 29, 2001 and December 18, 2001 field work conducted by ESI were obtained in a manner consistent with NYSDEC sample collection protocols. Decontaminated stainless steel trowels and dedicated gloves were used at each sample location to place the material into jars pre-cleaned at the laboratory. Prior to and after the collection of each material sample, the sample collection instrument was decontaminated to avoid cross-contamination between samples. Decontamination procedures were consistent with established USEPA and NYSDEC protocols.

After sample collection, the sample containers were placed in a cooler prior to transport to the laboratory. The soil samples were transported via overnight delivery to York Analytical Laboratories, Inc., a New York State Department of Health-certified laboratory (ELAP Certification Number 10854) for chemical analyses. Appropriate chain-of-custody procedures were followed.

Submission of samples for laboratory analysis was based on observations made by ESI personnel during the extension of the soil cores, including the presence or absence of elevated PID readings, unusual odors, discoloration, or any other unusual patterns. A sufficient number of samples were submitted for analysis to document the presence or absence of subsurface contamination beneath the Garage repair bays and basement floor.

Soil samples from boring locations 2HB-5, 2HB-6 and 2HB-9 through 2HB-13 were submitted for analysis of volatile organic compounds (VOCs) using USEPA Methods 8021 or 8010. Samples from boring locations 2HB-7 and 2HB-8 were submitted for analysis of volatile organic compounds (VOCs) using USEPA Methods 8021 and analysis of PCBs using USEPA Method 8080. Soil samples from boring location 2HB-8 were also submitted for TCLP analysis of VOCs using USEPA Methods 8021.

2.3.2 Action Levels

The term "action level," as defined in this Report, 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 soils relative to conditions that are likely to present a threat to public health, given the existing and probable future uses of the site. On-site soils 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 Report for petroleum hydrocarbons in soils are determined based on the NYSDEC's Technical and Administrative Guidance Memorandum #4046 dated January 24, 1994 ("TAGM") as modified by subsequent, relevant NYSDEC Records of Decision (ROD).

2.3.3 Analysis and Results

Provided below is a summary of the results of the laboratory analyses conducted on samples collected from locations 2HB-5 through 2HB-13 and B-1 through B-3. All detected compounds with their respective action levels are provided in either the following narrative or are summarized in Table 2 (see page 9). Complete copies of the Laboratory Reports are included as Appendix C. Recommendations regarding detected contaminants are located in Section 3.0 of this Report, Conclusions and Recommendations.

VOCs

Chlorinated hydrocarbons, BTEX compounds, MTBE and several other VOCs were detected above NYSDEC action levels in subsurface soils surrounding the former floor drain (2HB6

through 2HB9). The highest contaminant levels were found at 2HB8 0-2' (located between the former floor drain and the basement wall) and included tetrachloroethylene at 79,000 ppb, benzene at 7,500 ppb, MTBE at 2,100 ppb and total xylenes at 57,000 ppb. (Note: 1,2-dichloroethane, trichloroethylene and 1,2-dichloroethylene are reported as non-detected at this location; elevated laboratory detection limits, however, may be masking concentrations of these compounds).

Soil samples from 2HB5 (located at the northeast corner of the northern repair bay near the basement wall) contained low levels of chlorinated hydrocarbons (e.g. tetrachloroethylene at 160 ppb) and several VOCs below NYSDEC action levels. With the exception of soil sample 2HB-12 (5.5-7.5') that contained toluene at six ppb, samples from 2HB-9 (6.5-8.5') and 2HB11 through 2HB13 (located relatively distant from the former floor drain) contained no detected VOCs.

Laboratory data from sampling locations at the Garage repair bays generally show a significant decrease in contaminant concentrations with increasing depth and lateral distance from the location of the former floor drain. All detectable concentrations of VOCs in samples collected at depths greater than five feet bsg were below action levels; however, laboratory analysis of a soil sample collected from approximately six to seven feet beneath the floor drain by HydroScience (see Appendix B, Previous Environmental Reports) indicated detectable concentrations of chlorinated hydrocarbons (Tetrachloroethylene at 17,000 ppb and Trichloroethylene at 700 ppb) and total xylenes (2560 ppb) at or above action levels. These findings support the conclusion that significant VOC contamination (including chlorinated hydrocarbons) exists in soils located under the concrete slab; this contamination, however, appears to be limited to the area of the northern Garage repair bay in the vicinity of the former floor drain and is likely to be generally restricted to the upper eight feet of the soil column.

TCLP laboratory data for soil samples from 2HB8 detected elevated levels of several VOCs (tetrachloroethylene, toluene and xylenes), suggesting the potential for migration of these materials in water entering subsurface soils. These findings support the conclusion that the "free product" present in Garage basement is likely to contain contaminants (including chlorinated hydrocarbons) identified in soils located under the northern repair bay concrete slab.

Three soil samples were collected from beneath the Garage basement floor. Low levels of MTBE (6 ppb) and 1,3,5-trimethylbenzene (6 ppb) were detected at concentrations below action levels at B-1 (4-5'). Low levels of MTBE (27 ppb), 1,3,5-trimethylbenzene (5 ppb), tetrachloroethylene (27 ppb) and toluene (5 ppb) were detected at concentrations below action levels at B-2 (4-6'). No VOCs were found above specified method detection limits in soil sampled at B-1 (0.5-4'). Low levels of MTBE (13 ppb) were detected at B3 (7-9'), located exterior to the eastern basement wall. These findings support the conclusion that contamination present under the Garage repair bay floor does not significantly extend beneath the basement slab and that it is unlikely that contaminants present in the basement have significantly migrated to exterior subsurface soils. It is possible, however, that soils located underneath the southern margin of the basement slab in close proximity to the former floor drain are contaminated with VOCs.

PCBs

Two samples exhibiting strong field indications of contamination, 2HB-7 (0-2') and 2HB-8 (2-4'), were analyzed for total weight PCBs using USEPA Method 8080. The TAGM action level for PCBs in subsurface soils is 10 ppm. PCBs were not detected in sample 2HB-8 (2-4') above specified method detection limits. Total PCBs were detected in soil sample 2HB-7 (0-2') at 1.16 ppm, significantly below the action level. Previous testing of subsurface soils in the vicinity of the floor drain (see Appendix B, Previous Environmental Reports) indicated no detectable concentrations of PCBs at HB-2 (4-5.5') and HB-3 (4-6'), and very low detectable concentrations of PCBs (less than 0.06 ppm) at HB-4 (0.5-2.5) and HB-4 (4.5-6.5'). These findings support the conclusion that significant PCB contamination is not present in subsurface soils located beneath the Garage repair bays.

Table 2: Summary of Detected VOCs in Soil Samples (Garage Repair Bays)
(All results measured in µg/kg-ppb. Results in bold exceed designated action levels.)

Compound (USEPA Method 8021)	Action Level[1]	Sample Identification											
		2HB5 0-2'	2HB5 2-4'	2HB5 4-5'	2HB6 2-3'	2HB6 4-5'	2HB6 6-7'	2HB7 0-2'	2HB8 0-2'	2HB8 2-4'	2HB9 1.5-2.5'	2HB9 4.5-6.5'	2HB12 5.5-7.5'
Benzene	60	NA	NA	ND	ND	ND	ND	41	7,500	110	ND	ND	ND
n-Butylbenzene	10,000	NA	NA	ND	1,800	140	51	70	4,300	2,400	42	52	ND
sec-Butylbenzene	10,000	NA	NA	ND	ND	160	15	ND	1,200	570	25	13	ND
tert-Butylbenzene	10,000	NA	NA	ND	1,200	510	ND	95	4,000	2,100	ND	21	ND
1,2-Dichloroethane	100	ND	ND	ND	ND	ND	ND	ND	ND[3]	ND	ND	ND	ND
1,2-Dichloroethylene	400	ND	ND	55	3,400	2,500	250	350	ND[3]	440	500	120	ND
Ethylbenzene	5,500	NA	NA	ND	2,600	1,200	130	380	9,800	4,600	ND	35	ND
Isopropylbenzene	2,300	NA	NA	ND	420	180	18	39	1,300	660	14	13	ND
p-Isopropyltoluene	10,000	NA	NA	ND	250	ND	13	18	2,000	1,400	23	13	ND
Methyl tert-butyl ether (MTBE)	120	NA	NA	7	ND	ND	ND	84	2,100	260	58	11	ND
Naphthalene	13,000	NA	NA	ND	6,100	2,700	280	490	13,000	8,800	ND	130	ND
n-Propylbenzene	3,700	NA	NA	ND	1,500	630	60	120	5,200	2,600	15	28	ND
Tetrachloroethylene	1,400	160	69	39	11,000	4,100	570	3,200	79,000	35,000	4,200	930	ND
Toluene	1,500	NA	NA	ND	3,000	1,600	200	1,000	25,000	8,400	39	140	6
Trichloroethylene	700	18	ND	ND	140	ND	33	430	ND[3]	2,200	ND	ND	ND
1,2,4-Trimethylbenzene	10,000[2]	NA	NA	5,400	13,000	5,400	29	990	36,000	19,000	12	230	ND
1,3,5-Trimethylbenzene	3,300[2]	NA	NA	ND	4,100	1,900	170	270	11,000	5,500	210	140	ND
o-Xylene	1,200	NA	NA	ND	6,100	2,900	310	820	17,000	8,500	310	250	ND
p-&m-Xylenes	1,200	NA	NA	ND	12,000	5,200	47	1,600	40,000	19,000	9	230	ND
Total Xylenes	1,200	NA	NA	ND	18,100	8,100	357	2,420	57,000	27,500	319	480	ND

Notes:

1. Source: NYSDEC Technical and Administrative Guidance Memorandum #4046 ("TAGM") dated 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.
3. Elevated laboratory detection limits may be masking the presence of these compounds.

ND = Not Detected
NA = Not Analyzed

3.0 CONCLUSIONS AND RECOMMENDATIONS

This office has completed the services summarized in Section 2.0 on specified portions of the approximately 1.5-acre Sakmann Restaurant Corporation property located at U.S. Route 9W, Hamlet of Fort Montgomery, Town of Highlands, Orange County, New York. Services included the extension of twelve (12) soil borings at the on-site Garage to further document the extent of confirmed subsurface soil contamination in the vicinity of a floor drain and to document the presence or absence of subsurface soil contamination beneath the basement slab.

Based on the services provided and data generated, the following conclusions and recommendations (in bold) have been made.

1. A Combined Phase I and II Environmental Site Assessment ("Phase I and II ESA") of the Sakmann Restaurant Corporation property conducted by ESI in September 2001 reported the presence of subsurface VOC contamination in the vicinity of the northern Garage repair bay to a depth of approximately six feet. Additional testing was recommended to a) further define the lateral and vertical extent of subsurface contamination at the Garage repair bays; b) document the presence or absence of contamination under the basement portion of the building; and c) provide guidance on the likelihood of groundwater contamination from documented organic contaminants.

   The Phase I and II ESA documented soil contamination at levels warranting the reporting of a spill event to the NYSDEC. The NYSDEC was contacted by HydroScience personnel on October 5, 2001, and relevant information on the presence of petroleum contamination on the subject property was submitted to that agency. The NYSDEC has issued file number 0107005 for this spill event. This spill file is currently classified by the NYSDEC as having an "active" status.

   It is recommended that this Report be made available to the NYSDEC. All future investigative and remedial work at this Site should be submitted for review (and, as appropriate, for approval) by the NYSDEC to facilitate closure of spill file number 0107005. It is further recommended that any remedial work be conducted in conjunction with a Voluntary Cleanup Agreement or Consent Order.

   Estimated administrative costs: $10,000.

2. Borings were extended at interior locations of the basement (B1 and B2) and near the exterior eastern wall of the basement (B3) to document the presence or absence of hydrocarbon and chlorinated solvent contamination beneath the basement slab. No overt signs of contamination were detected at any of these borings. No significant levels of VOCs were detected in soil samples submitted for laboratory analysis. These findings support the conclusion that contamination present under the Garage repair bay floor does not significantly extend beneath the basement slab and that it is unlikely that contaminants present in the basement have significantly migrated to exterior subsurface soils.

   No remediation of soils located beneath the basement slab is recommended; however, see Conclusion and Recommendation number 3, below. The Garage basement should be properly cleaned and all contaminated debris materials should be disposed of according to all applicable regulations.

   Estimated cost of basement cleaning (excluding removal of any potential asbestos containing materials): $6,500 - $9,500

3. Chlorinated hydrocarbons, BTEX compounds, MTBE and several other VOCs were detected above NYSDEC action levels in subsurface soils surrounding the former floor drain. Laboratory data from these sampling points indicates that contamination tends to diminish with increasing depth. These findings support the conclusion that significant VOC contamination (including chlorinated hydrocarbons) exists in soils located under the concrete slab; this contamination,

however, appears to be limited to the area of the northern Garage repair bay in the vicinity of the former floor drain and is likely to be generally restricted to the upper eight feet of the soil column. It is possible that soils located underneath the basement slab, in close proximity to the southern basement wall, are also contaminated with VOCs. It is estimated that the total volume of contaminated soil warranting remedial action is between 70 and 120 cubic yards. These soils have been contaminated as a result of the discharge of a hazardous material (tetrachloro-ethylene, a.k.a. "PCE") into the floor drain and all soils generated at this Site will need to be managed as hazardous wastes. For budgetary purposes, it is assumed that all soils will require pretreatment prior to land disposal.

It is recommended that contaminated soils located under the Garage slab and under the Garage basement slab near the southern basement wall be excavated and properly removed off-site. PCE levels indicate that soils will require pretreatment in order to be properly disposed of at a permitted repository.

Estimated costs of removal of contaminated soil:

Soil excavation	*$6,000*
Laboratory charges	*$2,000*
Professional fees	*$8,000*
Soil Transport and disposal (@$360/ton)	*$38,000 - $65,000*
Total costs	*$54,000 - $81,000*

4. TCLP laboratory data document the potential for contaminants to migrate to on-site groundwater if the current barrier layer (i.e. the Garage building) is removed. Current groundwater data confirm the absence of these contaminants.

It is recommended that remedial actions include periodic monitoring of the on-site groundwater supply well to document the continued absence of contamination. The installation of groundwater monitoring wells is not recommended at this time.

Estimated cost of three years of monitoring: $1,000 - $3,000

5. Related field work conducted by HydroScience, Inc. indicates that the northern Garage repair bay floor drain is not connected to any subsurface pipes which lead to the septic system. The floor drain, therefore, may be a drywell as per USEPA regulations.

It is recommended that the floor drain be closed in accordance with USEPA guidelines.

Estimated costs of closure of the floor drain are included in the above recommendations.

Ecosystems Strategies, Inc.

Environmental Services and Solutions

24 Davis Avenue, Poughkeepsie, New York 12603-2332

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mail@ecosystemsstrategies.com

September 16, 2004

Seth McKee
Highlands Battle Site Properties, LLC
C/O Scenic Hudson Land Trust, Inc
One Civic Center Plaza, Suite 200
Poughkeepsie, NY 12601

Re: Letter Report of Groundwater Sampling performed on the former Sakmann Property located on U.S. Route 9W, Town of Highlands, Orange County, New York
ESI File: SF01123.41
NYSDEC Spill File: 0107005

Dear Mr. McKee:

This Letter Report of Groundwater Sampling (Letter Report) summarizes the investigative work performed by Ecosystems Strategies, Inc. (ESI) on the above-referenced property to document the presence or absence of petroleum hydrocarbons in on-site groundwater. ESI personnel sampled five (5) on-site monitoring wells (MW-1S, MW-1D, MW-2D, MW-3D and MW-4S) on August 26, 2004.

Summary of Services

The following services were performed by ESI:

- Conducted field screening and depth of groundwater measurements at each of the five (5) monitoring wells;
- Collected groundwater samples from each monitoring well and submitted the samples for laboratory analysis of volatile organic compounds (VOCs); and,
- Compared previous data from the EnviroTrac May 2002 groundwater sampling event and ESI's July 2003, February 2004, and May 2004 groundwater sampling event with current August 2004 groundwater sampling event results.

Fieldwork

Groundwater Sampling Methodology

ESI personnel sampled monitoring wells MW-1S, MW-1D, MW-2D, MW-3D and MW-4S on August 26, 2004. A Monitoring Well Location Map is provided as Attachment A to this Letter Report.

All wells were sampled utilizing the USEPA Low-Flow Method. Sampling equipment included a Grundfoss (stainless-steel) submersible Pump, Horiba U-23 Flow-Thru Cell (twelve parameter), and a Grundfoss Redi-Flow Frequency Modulator (pump control). Purge-water was screened for any visual or olfactory indications of petroleum contamination (see the Field Work Observations Section, below).

All groundwater samples were collected in a manner consistent with USEPA and New York State Department of Environmental Conservation (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 wells were sampled with the pump located at the well bottom. Each groundwater sample was collected into two 40-ml sample vials (containing hydrochloric acid as a preservative) provided by the laboratory. After sample collection, the vials 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 York Analytical Labs, Inc., a New York State Department of Health-approved laboratory (ELAP Certification Number 10854). Appropriate chain of custody procedures were followed.

Field Work Observations – August 26, 2004 Groundwater Sampling Event

All wells are flush mounted with the exception of MW-3D, which is a stick-up steel casing well. No positive PID readings were recorded during initial screening of the monitoring wells. No wells exhibited petroleum odors or sheens. Table 1, below, presents the depth to water recorded for wells MW-1S, MW-1D, MW-2D, MW-3D, and MW-4S.

Laboratory Analysis

Groundwater Protection Standards

The guidance levels identified in this Letter Report are determined based on the NYSDEC's Water Quality Regulations, Surface Water and Groundwater Classifications and Standards, 6 NYCRR Parts 700-705 (including amendments through August 4, 1999). All compounds referenced below are presented with their respective guidance levels.

August 26, 2004 Sampling Event

All groundwater samples were submitted for analysis of VOCs utilizing USEPA Method 8260. Methyl tertiary-butyl ether (MTBE) was identified at levels below the NYSDEC guidance level of 10 ppb in all wells sampled except at monitoring well MW-1S (MTBE not detected). MTBE was detected at a concentration of 8 ppb at well MW-1D, at a concentration of 1 ppb at well MW-4S, at a concentration of 3 ppb at well MW-3D, and at a concentration of 3 ppb at well MW-2D. 1,2-dicloroethylene was identified at a concentration of 5 ppb (NYSDEC guidance level of 5 ppb) at monitoring well MW-3D.

Laboratory analysis of groundwater samples from monitoring wells MW-1S, MW-1D, MW-2D, MW-3D, and MW-4S did not document any concentrations of other VOCs above laboratory minimum detection limits. Table 2, included as Attachment B, presents the VOC concentrations identified during this sampling round. Complete laboratory results for the groundwater sampling conducted May 25, 2004 are provided as Attachment C to this Letter Report.

Comparison of Current and Previous Laboratory Data

Laboratory data from the May 2004 sampling event indicates VOC concentrations remained stable or reduced relative to the May 2002, July 2003, February 2004,and May 2004 sampling events. Table 2, in Attachment B, present the VOC concentrations identified during this sampling round.

Table 1: Quarterly Depth to Water SF01123.41

Monitoring Well ID	Depth to Water 07/03	Depth to Water 02/04	Depth to Water 05/04	Depth to Water 08/04	Depth to Water 11/04
MW-1S	24.86'	26.20'	25.20'	24.90'	
MW-1D	31.33'	31.30'	31.84'	31.50'	
MW-4S	Meter Malfunction	31.41'	31.85'	31.60'	
MW-3D	33.35'	34.42'	34.20'	34.00'	
MW-2D	30.2'	30.72'	30.90'	30.57'	
MW-2S	Well not found	Well not found	Well not found	Well not found	

Conclusions

This office has completed the groundwater sampling services summarized above on the former Sakmann Property located on US Route 9W, Town of Highlands, Orange County, New York.

MTBE concentrations remained under NYSDEC guidance values for all monitoring wells. 1,2-dicloroethylene was identified at the NYSDEC guidance level of 5 ppb monitoring well MW-3D. No other VOCs were detected in any well sampled.

Based on the continued low level presence petroleum hydrocarbons in four of the five remaining on-site monitoring wells, it is the opinion of this office that active on-site remediation is not necessary. It is recommended that soil removal with subsequent monitoring well and subsurface soil sampling be performed.

Please review this information and call me at (845) 452-1658 should you have any questions or comments.

Sincerely,

ECOSYSTEMS STRATEGIES, INC.

Paul H. Ciminello
President

Attachment A - Monitoring Well Location Map
Attachment B - Table 2: Summary of VOCs in Groundwater
Attachment C - Complete Laboratory Results

cc: File

Table 2: Summary of VOCs in Groundwater (May 13, 2002, July 1, 2003, February 19, 2004, May 25, 2004, and August 26, 2004 Sampling Events)
All data provided in µg/l or ppb. Concentrations in bold exceed NYSDEC established guidance levels

Volatile Organic Compounds (Method 8260)	Guidance Levels	Sample Identification																												
		MW-1S					MW-1D					MW-4S					MW-3D					MW-2D					MW-2S				
		5/02	7/03	2/04	5/04	8/04	5/02	7/03	2/04	5/04	8/04	5/02	7/03	2/04	5/04	8/04	5/02	7/03	2/04	5/04	8/04	5/02	7/03	2/04	5/04	8/04	5/02	7/03	2/04	5/04	8/04
Benzene	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Well Not Found			
n-Butylbenzene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				
Bromomethane	5	ND	ND	ND	ND	ND	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				
Chloroform	7	ND	ND	ND	ND	ND	6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6	ND	ND	ND	ND	1				
Chloromethane	5	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				
Tert-Butylbenzene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				
1,2-Dichloroethylene (Total)	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	21	20	9	ND	5	1	21	ND	ND	ND	58				
Ethylbenzene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	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	ND	ND	ND	ND	ND	ND				
Toluene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				
Isopropylbenzene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				
MTBE	10	ND	ND	ND	ND	ND	ND	4	4	5	8	ND	3	1	1	1	19	9	4	7	3	ND	1	ND	2	3	22				
Naphthalene	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				
n-Propylbenzene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				
1,2,4-Trimethylbenzene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				
Tetrachloroethylene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	2	2	1	ND	ND	ND	2	ND	ND	ND	2				
1,3,5-Trimethylbenzene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				
o-Xylene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				
p/m-Xylene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				

Notes:

Guidance Levels based on: 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.

APPENDIX C

Health and Safety Plan

HEALTH AND SAFETY PLAN

FOR SITE REMEDIATION

PREPARED FOR THE

FORMER "SAKMANN PROPERTY"
LOCATED AT U.S. ROUTE 9W
TOWN OF HIGHLANDS
ORANGE COUNTY, NEW YORK

January 2005

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

ESI File Number: SF01123.40

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 remediation at the former "Sakmann Property" (the "Site"), located on U.S. Route 9W in the Town of Highlands, Orange County, New York. Site Location and Proposed Fieldwork Maps are attached to this HASP.

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 an irregularly shaped parcel which has approximately 350 feet of frontage on the eastern side of U.S. Route 9W and approximately 150 feet of frontage on the northern side of Mine Dock Road. The southern third of the property is vacant forested land. The northern two-thirds of the parcel contain two, one-story structures: the Trading Post Restaurant and a former gasoline station/automotive repair facility (Garage). A paved parking lot is present to the west of the restaurant. The Garage is surrounded by paved parking areas to the south and west and by open areas of graded, gravelly fill to the north and east. A Fieldwork Map is included as Attachment A of this HASP and illustrates the configuration of the Site as well as the areas of proposed remedial activities (see Section 1.3, below).

1.3 Work Activities

Environmental investigation activities are detailed in the Remedial Action Workplan (Workplan) dated January 2005. The specific tasks detailed in the Workplan are wholly incorporated by reference into this HASP. The Workplan was prepared in response to the New York State Department of Environmental Conservation's (NYSDEC's) Voluntary Cleanup Agreement (Index#: W3-0962-03-07). The tasks described in the Workplan are proposed to address the presence of: 1) elevated concentrations of volatile organic compounds (VOCs) in soils located in the immediate vicinity of the on-site Garage structure; 2) the presence of low level on-site groundwater contamination by VOCs; and, 3) the presence of low-level contamination by semi-volatile organic compounds (SVOCs) and metals in fill-type soils located to the north of the Garage.

The following field tasks will be performed subsequent to demolition of the Garage:

- Excavation of VOC-contaminated soil in the vicinity of the former Garage structure and disposal of this excavated soil at a properly permitted facility;
- Post-excavation soil sampling to document acceptable levels of VOCs in remaining soils;
- Restoration of the portion of the site where VOC-contaminated soils were removed to original grade at the conclusion of all soil removal and soil sampling services;
- Placement of a barrier layer on areas of low-grade SVOC and metals contamination located to the north of the former Garage structure; and,
- Post-remediation groundwater sampling (monitored on a quarterly basis) to document the continued absence of significant groundwater contamination.

2.0 HEALTH AND SAFETY HAZARDS

The potential exists for the presence of elevated levels of petroleum hydrocarbons and RCRA metals in on-site soils. During site remedial work (i.e., soil removal, fill placement, site grading, soil sampling) the possibility exists for on-site personnel to have contact with identified contaminated soils and vapor. The compounds may be released at levels which may present a skin contact hazard and an inhalation or ingestion hazard. Exposure to elevated concentrations of these compounds in groundwater potentially encountered during excavation activities is not anticipated.

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.

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 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 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). As outlined in Section 5.0, below, an upgrade to a higher level of protection will begin when PID readings and/or dust levels above specified limits are measured.

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.

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 P-5 Digital Dust Indicator 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 OSHA permissible exposure limits (PELs). A Community Air Monitoring Plan will be implemented for all fieldwork. A copy of the Community Air Monitoring Plan is provided as an attachment to the Workplan. Air monitoring will be conducted for VOCs, SVOCs, and dust. Monitoring will be conducted at all times that construction 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 and/or increase worker protective measures.

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 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., placement of traffic cones and warning tape) 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.

Table 1 in this HASP contains Emergency Response Telephone Numbers, and immediately following is a map detailing the directions to the nearest hospital. 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 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.

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: changes to work and health and safety plans; work accomplished and the current Site status; and monitoring results.

11.0 TABLES AND FIGURES

Table 1: Emergency Response Telephone Numbers

Emergency Agencies	Phone Numbers
EMERGENCY	**911**
Hudson Valley Hospital Center 1980 Crompond Road Cortlandt Manor, NY	(914) 737-9000 or 911
Highland Falls Police Department	(845)446-4911 or 911
Highland Falls Fire Department	(845)446-4911 or 911
Town of Highlands Supervisor	(845) 446-3398
Town of Highlands Municipal Office	(845) 446-4280

Figure 1: Directions to Hospital / Map

Exit Site and turn left (south) on U.S. Route 9W. Proceed to traffic circle.

At traffic circle, exit for U.S. Route 6 East (Bear Mountain Bridge).

Follow U.S. Route 6 East down the mountain until reaching a traffic circle.

At traffic circle follow the signs to Bear Mountain Parkway. Make a left at traffic light onto the Bear Mountain Parkway.

Continue on the Bear Mountain Parkway for about 2 miles, exit at Peekskill/Lake Mohegan.

Make a right turn onto U.S. Route 6 West.

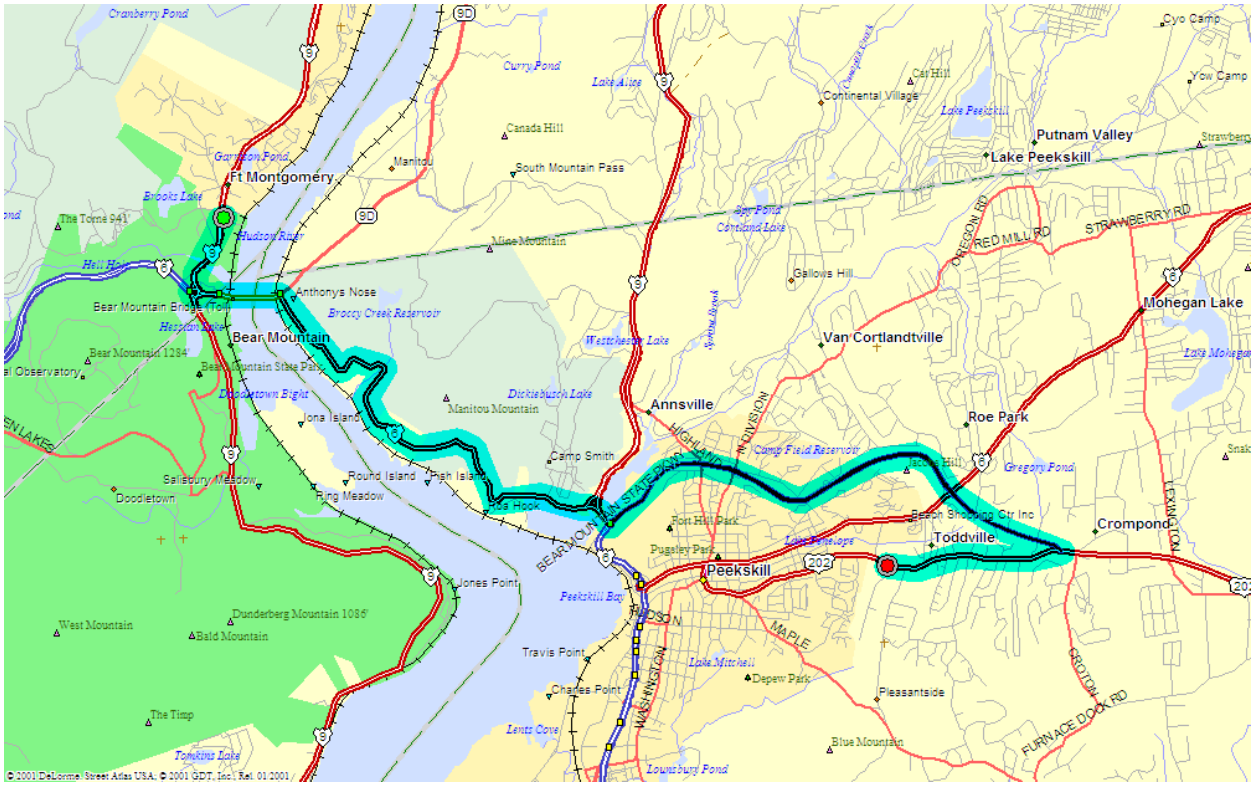
At the next traffic light make left onto Conklin Avenue, proceed to the end to stop sign.

At the stop sign, make a right onto Route 202 (Crompond Road).

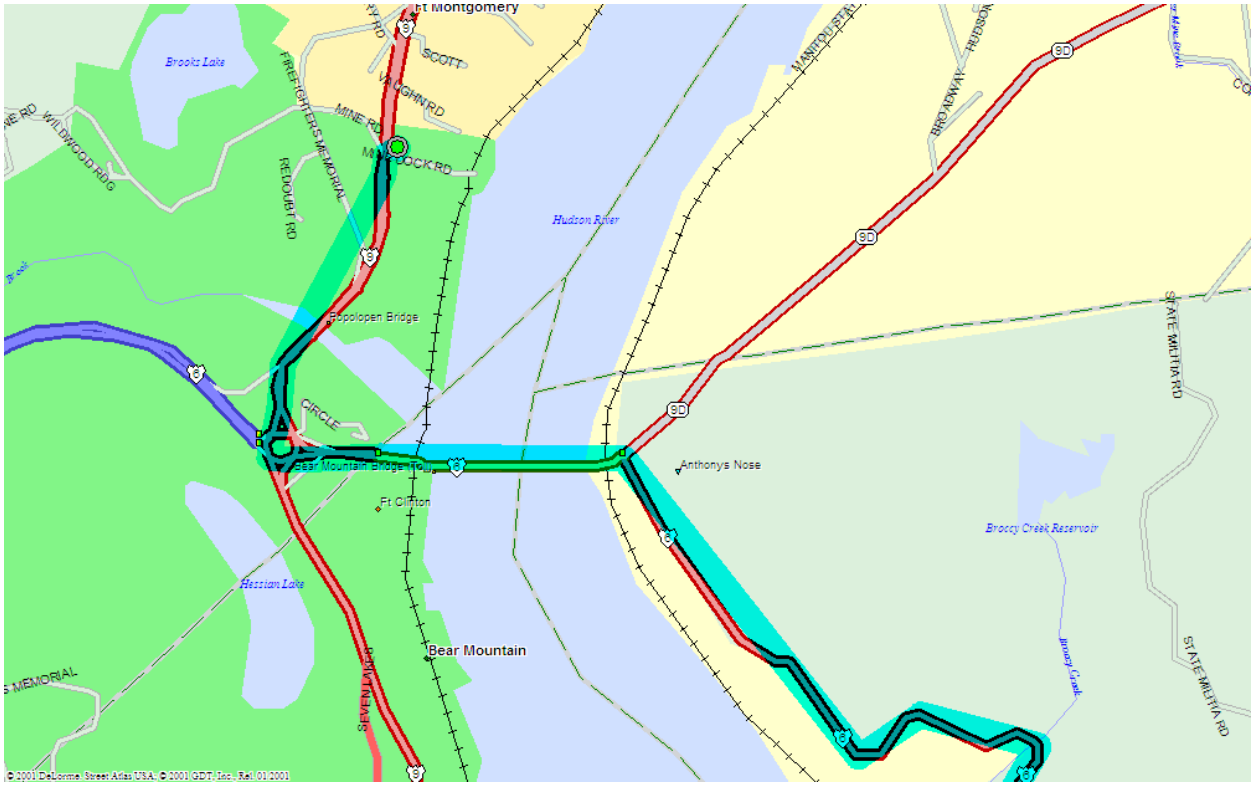
The entrance to Hudson Valley Hospital Center is on the right.

SEE MAP TO HOSPITAL ON FOLLOWING PAGE

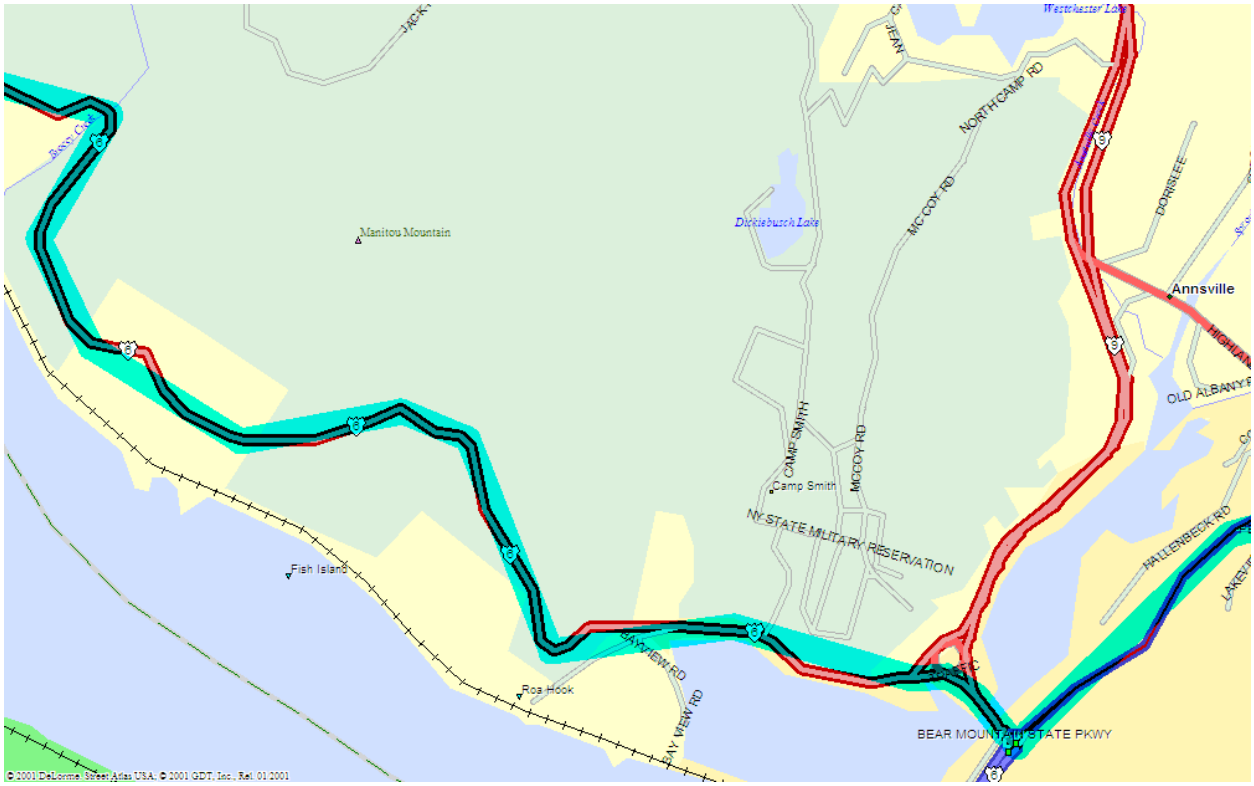
Overview of Route



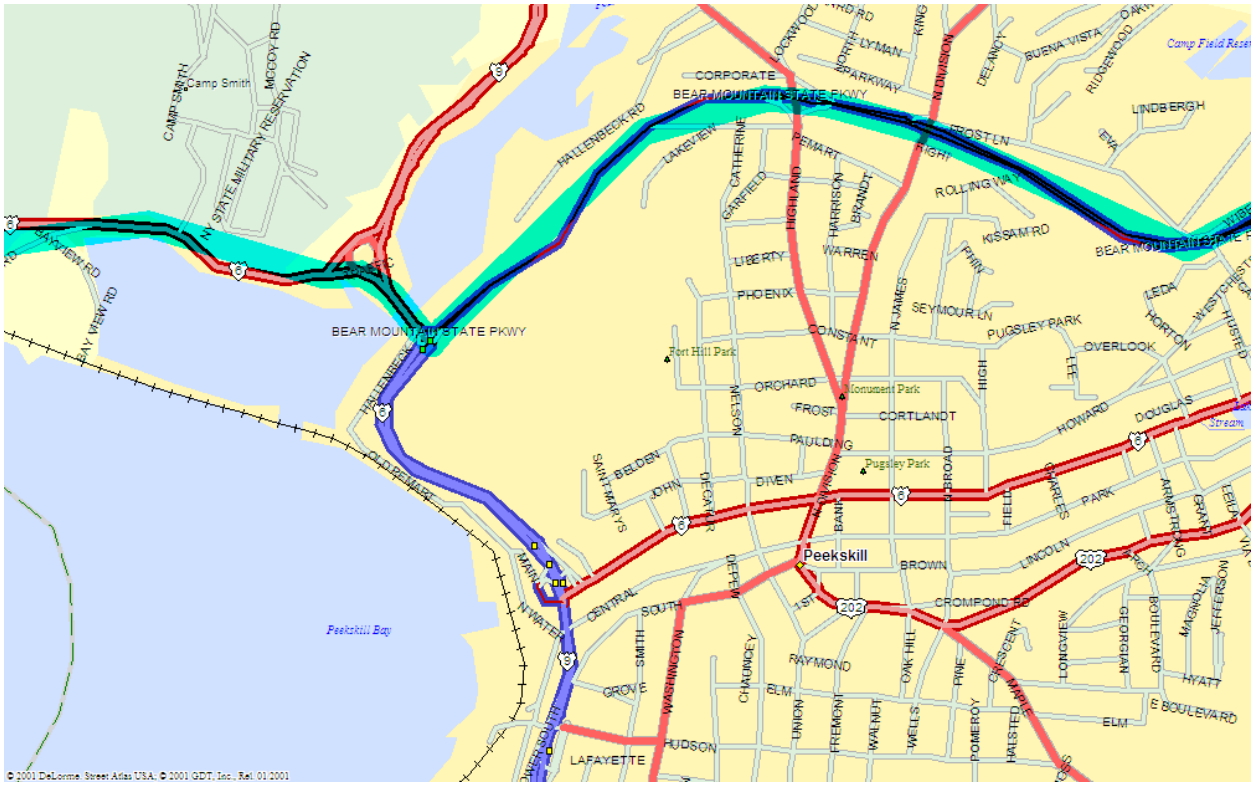
Enlarged View of Route (Map 1 of 4)



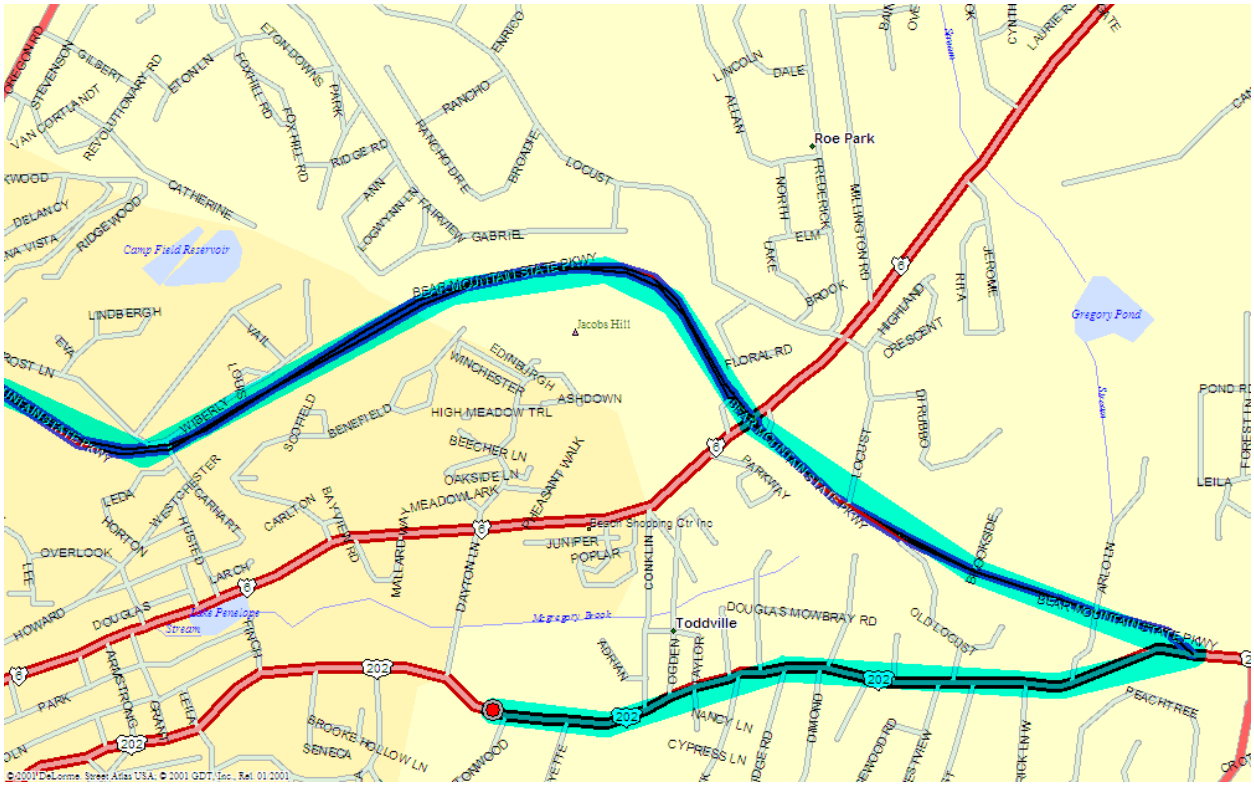
Enlarged View of Route (Map 2 of 4)



Enlarged View of Route (Map 3 of 4)



Enlarged View of Route (Map 4 of 4)



ATTACHMENT A

Site Location Map

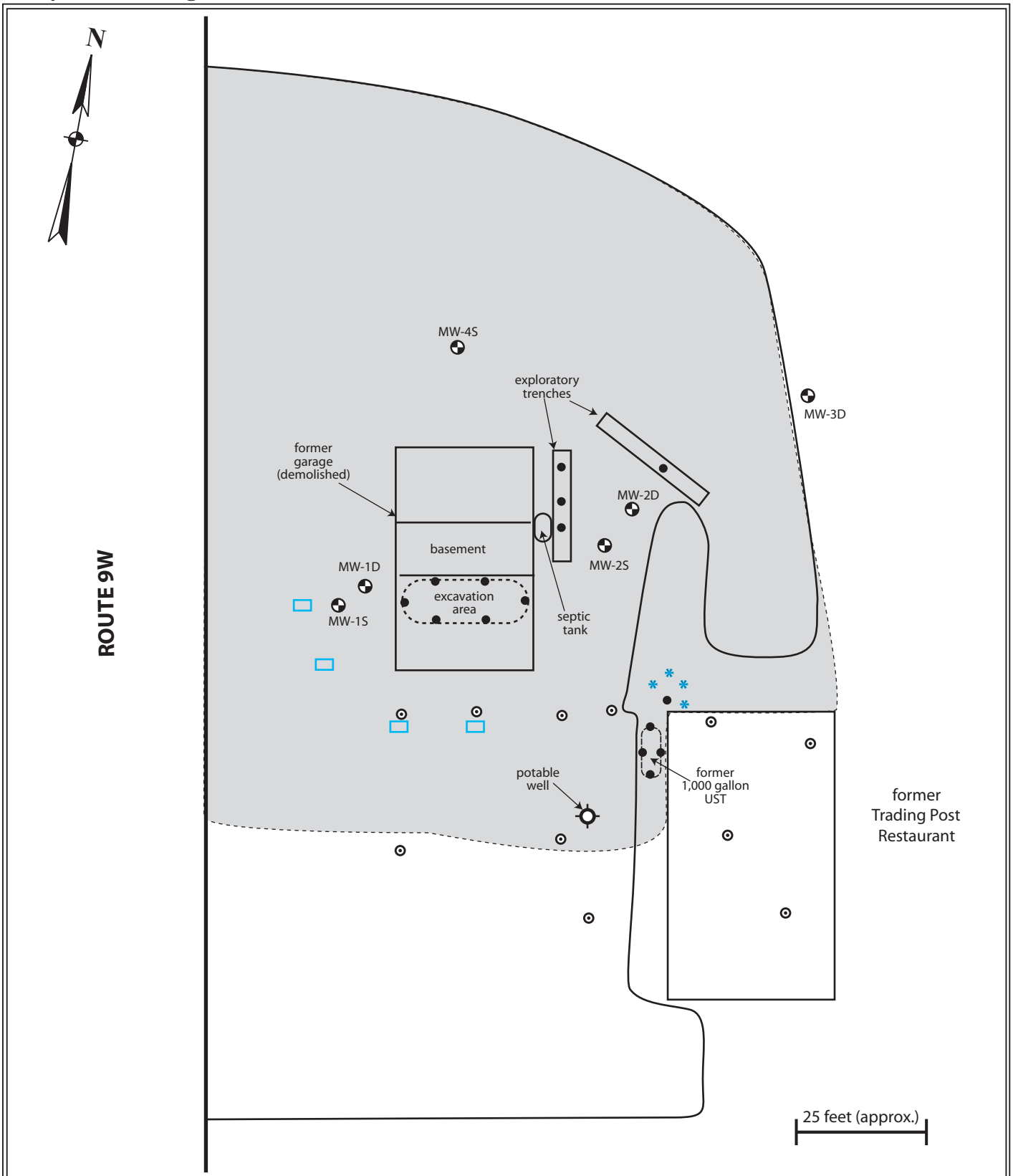
Former Sakmann Property
U.S. Route 9W
Town of Highlands
Orange County, New York

N

ESI File: SF01123.40

July 2007

Attachment A



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

Former Sakmann Property
U.S. Route 9W
Town of Highlands
Orange County, New York

Legend:
- monitoring well
- proposed soil gas sample
- proposed soil sample
- proposed hand boring
- proposed test pit
- proposed barrier layer

ESI File: SF01123.40

July 2007

Scale as shown

Attachment A

APPENDIX D

Community Air Monitoring Plan

Community Air Monitoring Plan

Real-time air monitoring for particulate levels and volatile organic compounds (VOCs) at the perimeter of the exclusion zone or work area will be necessary for the proposed scope of services. This Community Air Monitoring Plan includes protocols for VOC and particulate monitoring and appropriate response actions.

Particulate Monitoring, Response Levels, and Actions

The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedence of the action level. In addition, fugitive dust migration should be visually assessed during all work activities. All readings must be recorded and be available for State (DEC and DOH) personnel to review.

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the immediate work area (i.e., the exclusion zone) at temporary particulate monitoring stations.

If the downwind PM-10 particulate level is 100 micrograms per cubic meter ($\mu g/m^3$) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 100 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 100 $\mu g/m^3$ above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 100 $\mu g/m^3$ of the upwind level and in preventing visible dust migration.

VOC Monitoring, Response Levels, and Actions

Monitoring should be performed using a photoionization detector or other equivalent equipment. Equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. All readings must be recorded and be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

VOCs must be monitored at the downwind perimeter of the immediate work area on a periodic basis. In the event that consistent ambient air concentration exceedences are recorded (see below), continuous monitoring will be implemented. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions.

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 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 organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown. When work shutdown occurs, downwind air monitoring, as directed by the Safety Officer, will be implemented to ensure that vapor emission does not impact the nearest residential or commercial structure at levels exceeding 5 ppm over background.

APPENDIX E

Engineering Evaluation

ENGINEERING EVALUATION

FOR REMEDIATION ACTIVITIES
ON THE FORMER "SAKMANN" PROPERTY

LOCATED AT

U.S. ROUTE 9W
TOWN OF HIGHLANDS
ORANGE COUNTY, NEW YORK

Voluntary Cleanup Site Number: V-00083-3

January 2005

Prepared by

DEWKETT ENGINEERING, P.C.
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Jefferson Akins, P.E.
Project Engineer

TABLE OF CONTENTS

1.0 INTRODUCTION

This Engineering Evaluation is provided for the subject parcel as part of the voluntary clean-up agreement proposed to New York State as defined in the August 2004 Workplan For Site Remediation Activities (Workplan) prepared by Ecosystems Strategies Inc. (ESI) and Dewkett Engineering, P.C. This report identifies the contamination present at the former "Sakmann" property (the "Site"), located on U.S. Route 9W in the Town of Highlands, Orange County, New York and demonstrates the remedy proposed for the agreement. The remedy is critiqued according to 6 NYCRR Part 375-1.10(c) factors, these being elaborated upon in Section 4.0 of this evaluation.

1.1 Site History

The subject property is an irregularly shaped parcel which has approximately 350 feet of frontage on the eastern side of U.S. Route 9W and approximately 150 feet of frontage on the northern side of Mine Dock Road. The southern third of the property is vacant forested land; the northern two-thirds contain two, one-story structures: the Trading Post Restaurant and a former gasoline station/automotive repair facility ("Garage"). A paved parking lot is present to the west of the restaurant. The Garage is surrounded by paved parking areas to the south and west and by open areas of graded, gravelly fill to the north and east.

The Garage is the location of a former automotive repair facility. Contamination by volatile organic compounds (VOCs) has been documented in subsurface soils located in the immediate vicinity of the structure. Fill soils located to the north of the Garage are contaminated with low-levels of poly-nuclear aromatic hydrocarbons (PAHs) and metals.

2.0 PROPOSED FUTURE SITE RE-USE

The future use of the Site is proposed to be passive recreation, as well as commercial and/or tourism related activities. Remediation will be completed as if the entire Site will be used for the most restrictive activities (i.e. passive recreation). Current site development plans include the demolition of the Garage.

3.0 PROPOSED ENVIRONMENTAL REMEDIATION

As described in the Workplan, two areas warranting remediation are present on the Site:

- VOCs, including chlorinated solvents, are present at concentrations exceeding NYSDEC guidance levels in subsurface soils in the immediate vicinity of the Garage.
- Low-grade contamination by PAHs and metals is present in fill-type soils located to the north of the Garage.

The Workplan details a proposed remedial plan which includes the demolition of the Garage, the proper excavation and off-site disposition of VOC contaminated soils, and the importation of a soil cover (or equivalent) to overlay contaminated fill soils to the north of the Garage. On-site groundwater (known to be contaminated with low levels of VOCs) will be monitored quarterly to document the continued absence of significant groundwater contamination.

3.1 Proposed Operation and Maintenance

No active maintenance programs are proposed. Institutional controls to ensure the long term integrity of the barrier layer(s) will be implemented and certified annually by a Professional Engineer licensed in New York.

4.0 EVALUATION OF ENVIRONMENTAL REMEDIATION

Factors listed in 6 NYCRR Part 375-1.10(c) are used to qualify the remedial measures proposed. The proposed remedy addresses the factors noted in 375-1.10 (c) as discussed below:

4.1 Protection of Human Health and the Environment

The proposed remedy is protective of both human health and the environment by removing the contaminants of concern (VOCs) or providing a sufficient cover on top of PAH and metal containing soils to minimize the likelihood of direct human contact. Current analytical data suggest that on-site VOC contamination may have impacted groundwater quality. The removal of on-site soils known to be impacted by VOCs is likely to lead to improvements in groundwater quality. The Workplan specifies quarterly groundwater monitoring to document groundwater quality.

All excavations performed during site remediation shall be monitored using a photoionization detector (PID) in order to note the presence of any vaporous volatile organic compounds. Action levels and contingency measures will have been defined within the HASP.

4.2 Standards, Criteria & Guidance

Site investigations to date have determined VOCs, PAHs, and metals to be the primary contaminants of the site. Guidance levels for these contaminants are defined in the Workplan.

The proposed remedial actions will result in SCGs being attained for VOCs in soils.

4.3 Short-term Effectiveness and Impacts

Monitoring of all excavations for vaporous compounds in worker air space shall prevent hazardous work environments. Also the handling time for any contaminated soils shall be minimized to the greatest extent practicable. Additionally the Community Air Monitoring Program will provide assurance that the environment local to the site is not impacted during or after construction. These construction monitoring measures are somewhat common practices for protection of human health.

4.4 Long-term Effectiveness and Performance

The excavation and disposal of the VOC contaminated soil shall effectively remove this contaminant source and the proposed capping system shall isolate any PAH and metals contaminated soils from human and ecological contact. VOC contaminated soils will be removed by a licensed hauler and delivered to a permitted repository with appropriate waste handling and tracking forms maintained. Given groundwater data to date, it is unlikely that additional contamination will migrate or pose a threat to the human community or environment. In this method, the remedy is considered to be permanent with institutional controls put in place to ensure that contact with soils beneath the cap is precluded to the greatest extent possible.

4.5 Reduction of Toxicity, Mobility or Volume

The proposed remedial scope of work entails the removal of approximately 70 – 120 cubic yards of soils containing elevated levels of VOCs and the placement of a clean fill cap to prevent exposure via direct contact with soils containing elevated PAH and metals concentrations. The toxicity and mobility of the remaining materials (i.e. elevated PAHs and metals in soils) will not be altered by the proposed remediation. The mobility of remaining compounds is expected to be minimal.

4.6 Implementability

Similar VOC contaminated soil removal and soil cap installation programs have been successfully applied at similar sites. No impediments to the implementation of these two remedial actions appear to exist.

4.7 Cost

Costs associated with the removal and disposal of the limited quantity of VOC contaminated soil are relatively small as compared with other technologies. Likewise the importation of a soil cover was determined to be more cost effective than the alternative of soil excavation; additionally, this option does not necessitate the exposure of contaminated soils as excavation/disposal would.

4.8 Community Acceptance

No major issues of public concern have surfaced through the course of the project to date.

5.0 CONCLUSION

The mitigative measures proposed in the Workplan appear well suited to the site conditions and contaminants present. The approach is quite simple and straight forward, which leads to a high anticipated success rate in attaining the remedial action objectives in a cost-effective and efficient manner.