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
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The undersigned have reviewed this Remedial Action Workplan (Workplan) 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.

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Executive Summary

This Workplan 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. 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 ("Workplan") 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 Workplan 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 Workplan 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 Workplan, therefore, is considered to be a "Final" document.

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 Workplan.

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. Recent 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 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 Workplan.

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.

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 tert-butyl methyl 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. A copy of these groundwater quality data is provided as Appendix B of this Workplan.

1.4 Proposed Future Use of the Site

Proposed future use of the Site Proposed future use of the Site is anticipated to include a scenic overlook, a 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.

2.0 Proposed Site Remediation Services

This section of the Workplan 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 Workplan. All proposed work will be conducted according to a site specific Health and Safety Plan ("HASP"), provided as Appendix C of this Workplan.

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 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 Workplan 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, 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);

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 Workplan 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. As a barrier layer (see Section 2.3.7 below) is proposed to address the presence of low-grade PAH and metals contamination in soils located to the north of the former Garage (and, if warranted, at the septic system), no clean-up levels with respect to these compounds is 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

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.

2.3 Proposed Specific Remediation Services

This section of the Workplan 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 Workplan.

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

Subsurface soils in the vicinity of the septic system will be exposed using a backhoe. Piping extending from the building will be followed until the terminus of the septic system is located. Soil sampling will be conducted in the vicinity of all encountered system components (piping, septic tank, drywell, and/or leach field) according to the protocols described in Section 2.3.5.

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 the vicinity of the UST or septic system, 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

Exposed soils will be visually inspected and screened with the PID. 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. The need for additional analyses (i.e. PAHs and/or PCBs) 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 in the vicinity of the septic system, 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 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.

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) at the septic system area (if required by the NYSDEC). A barrier layer will not be placed 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.

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 Workplan. 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 Workplan, 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.