Work Plan

Interim Remedial Measure Brownfield Cleanup Program 950 Danby Road Ithaca, New York

BCP Site # C755012

January 2007

WORK PLAN
INTERIM REMEDIAL MEASURE
BROWNFIELD CLEANUP PROGRAM
950 DANBY ROAD
ITHACA, NEW YORK

Prepared for

South Hill Business Campus, LLC

Prepared by

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430 East Genesee Street
Syracuse, New York 13202

January 2007

Project No.B4001

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SECTION 1 - INTRODUCTION

This document presents an Interim Remedial Measure (IRM) Work Plan for the South Hill Business Campus, located on the west side of New York State Route 96B (Danby Road) in the Town of Ithaca, Tompkins County, New York (Figure 1-1). The site is presently occupied by a split level two- and four-story office and manufacturing building consisting of approximately 265,000 square feet. South Hill Business Campus, LLC will develop a portion of the existing office building into a multi-tenant professional office complex. The remaining portion of the existing structure (former manufacturing space) will be developed for use by light manufacturing, and some non-manufacturing business start-ups. The balance of the property, approximately 35 – 40 acres, may be developed in the future with compatible commercial uses.

The site has been accepted into the New York State Brownfield Cleanup Program (BCP Site No. C755012). In order to support the proposed future use of the property, a voluntary Remedial Investigation (RI) was completed at the site in accordance with a Brownfield Cleanup Agreement (BCA). When final RI data are received and reviewed, an RI Report will be prepared and submitted to NYSDEC for review and approval.

Preliminary findings of the RI indicate the presence of chlorinated organic compounds in groundwater and soil vapor samples that were taken, which will be discussed in full in the final RI Report. Although the results of indoor air testing do not indicate soil vapor intrusion into the building is currently a significant issue, the BCP Volunteer has elected to conduct an IRM as a precautionary measure to mitigate the future potential for soil vapor intrusion. This IRM Work Plan sets forth the conceptual design and implementation approach for a sub-slab depressurization (SSD) system at the South Hill Business Campus, as a preemptive measure to prevent potential future soil vapor intrusion.

1.1 – SITE DESCRIPTION

The site is located at 950 Danby Road, Ithaca, New York, and occupies approximately 42 acres (Figure 1-2). It is located approximately 850 feet above mean sea level (amsl) on the west/northwest flank of South Hill. Site topography slopes to the northwest towards the City of Ithaca, which is located approximately ½ mile north of the site at

approximately 393 feet amsl, resulting in approximately 460 feet of topographic relief between the site and the City.

Groundwater at the site is shallow, at less than 10 feet below ground surface (bgs) in most areas, and exists as a zone of saturation less than 5 feet thick atop bedrock. Bedrock at the site is also shallow, ranging in depth from only a few feet to a little more than 10 feet bgs, and rock outcrops exist in some areas of the site.

Improvements to the site consist of an interconnected building structure that includes a two-story manufacturing building of approximately 162,000 square feet, a four-story office building of approximately 38,000 square feet, and a two-story office building of approximately 65,000 square feet.

The offices and manufacturing buildings are of masonry construction, and are interconnected. The floors of the buildings are constructed of reinforced poured concrete slab. Poured reinforced concrete carried by structural steel frame and metal deck are present in the manufacturing building. Water and sewer service is provided to the site buildings by the City of Ithaca. Electric and natural gas service is provided by NYSEG (New York State Electric and Gas). The building is serviced by a heating, ventilation, and air conditioning system with a fresh air make up and outside exhaust. The facility is provided with hot water from two gas-fired boilers.

A tiered parking area is located west of the site buildings. The three tiers accommodate the downward sloping terrain in the western portion of the site.

The building area in which the SSD system will be installed consists of approximately 70,000 square feet of commercial space, of which approximately two-thirds is presently unoccupied (Figure 1-3). This portion of the building is the lowest occupied or potentially occupied space. The southern portion of this lower area overlies a suspected area of soil and groundwater contamination at the site based on preliminary RI results.

1.2 - IRM OBJECTIVES

The objective of the IRM is to eliminate, or minimize to the extent practicable, the potential for future building occupants to be exposed to soil vapors potentially derived

from soil and groundwater contamination at the site. In order to achieve this objective, vacuum extraction points will be installed through the floor slab at locations to be determined, and an in-line fan with an exhaust to the outside atmosphere will create a negative pressure field below the building floor slab that will prevent future intrusion of potential soil vapors.

The SSD system design will follow guidelines prescribed by the Environmental Protection Agency (USEPA), as presented in Appendix E of the New York State Department of Health (NYSDOH) *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (October 2006).

SECTION 2 - DESIGN REQUIREMENTS

The following describes the basic design concepts that will be incorporated into the SSD system, as prescribed by USEPA and NYSDOH. The final design of the SSD system will be based on findings of a pilot test and building inspection completed as the first step of the implementation process (see Section 3 – *Implementation Approach*). A final design document will be provided and submitted to the NYSDEC.

2.1 - GENERAL REQUIREMENTS

The SSD system will be designed by a New York State-licensed professional engineer (P.E.). Design documents will carry a P.E. stamp and signature, and the installation of the system will be documented in a report that will also carry a P.E. stamp.

Following installation, a documentation report will be prepared that establishes the SSD system was installed in accordance with the approved design. An Operations, Monitoring, and Maintenance (OM&M) Plan (see Section 3) will be prepared and provided to the building owner and tenants, to facilitate understanding of the system's design and operation.

2.2 - SYSTEM REQUIREMENTS

The principal design and installation requirements of the SSD system are identified below, and incorporate many design aspects of systems to mitigate radon exposure.

- Sealing. The operating principle of the SSD will be to create negative pressure (i.e. a vacuum) below the building floor slab relative to inside the building, which will prevent vapors below the slab from entering the building. To improve system performance, visible cracks, holes, and gaps in the floor will be filled with compatible caulks, non-shrink mortar, grouts, or expanding foam to create a seal that will prevent short-circuiting of air. Materials used as sealants will not contain any VOCs.

- Operation. The system vent fan will run on electrical power, and designed in such a manner to avoid excess energy usage. The system shall be designed to

avoid the creation of other health, safety, or environmental hazards to building occupants (e.g. backdrafting of natural draft combustion appliances), and shall also avoid compromising moisture and temperature controls and other comfort features, and to minimize noise.

- Vent Fan. The vent fan and discharge piping shall not be located within or below an occupied area of the building to avoid entry of subsurface vapors in the event of a fan leak.

- Exhaust. The vent pipe's exhaust shall be a minimum of 12 inches above the roof line of the building, and at least 10 feet above ground level. It shall be at least 10 feet (laterally) away from any openings in the building (i.e. doors, windows) that are less than 2 feet (vertically) below the exhaust point.

- Labeling. The SSD system shall be clearly labeled to identify its purpose, and a telephone number will be identified to call if there are any questions.

- Monitor. A pressure monitor shall be installed on the system to alert building occupants if the system stops working properly. The monitor may be a liquid gauge (a manometer), sound alarm, or needle display gauge. The monitor shall be placed in a visible location, and building manager will be made aware of it, how it works, and how it is read, and what to do if it indicates a problem.

2.3 - COMPONENT REQUIREMENTS

Figure 2-1 is a conceptual design schematic that identifies the main system components, which are discussed below.

2.3.1 Piping Requirements

- Piping will be schedule 40 PVC. All joints and connections shall be permanently sealed with adhesives as specified by the manufacturer of the pipe. Joints and connections shall be made air tight.

- External piping runs shall be insulated to avoid freezing and condensation.

- Vent pipes shall be fastened to the structure of the building with hangers, straps, or other supports that will secure the piping. Existing plumbing pipes, ducts, or mechanical equipment shall not be used to support SSD system pipe.

- Supports for vent pipes shall be installed at least every six (6) feet on horizontal runs. Vertical runs shall be secured either above or below the points of penetration through floors, ceilings, and roofs, or at least every 8 feet on runs that do not penetrate floors, ceilings or roofs.

- To prevent blockage of air flow into the bottom of the vent pipe (i.e. at the extraction point), the pipe shall be supported or secured in a permanent manner that prevents downward settlement into soil beneath the sub-slab aggregate material.

- Vent pipes shall be installed in a configuration that allows condensation and/or rainwater to drain downward into the ground beneath the slab.

- Vent pipes shall not block access to any areas requiring maintenance or inspection. Pipes shall not be installed in front of or interfere with any light sources, opening, door, window, or equipment access required by code.

2.3.2 Vent Fan Requirements

- The vent fan(s) shall be designed or otherwise sealed to reduce the potential for leakage of vapors from the vent fan housing.

- The vent fan(s) shall be installed in a configuration that avoids condensation buildup in the fan housing. Whenever possible, the fan should be installed in vertical runs on the vent pipe.

- Vent fan(s) mounted on the exterior of the building shall be rated for outdoor use.

- Vent fan(s) shall be installed in the vent pipe using removable couplings or flexible connections that can be tightly secured to both the fan and the vent pipe.

- The fan intake shall be screened to prevent intake of debris that could damage the fan. Screens shall be removable to enable cleaning and replacement.

2.3.3 Electrical

- Wiring of the vent fan shall conform to local regulations. The wiring may not be located in or chased through the installation ducting or any other heating or cooling ductwork.

- The fan(s) for this project will be mounted on the exterior side of the building. The use of an exterior fan prohibits the use of plugged cords to supply power to the fan. (If a plugged cord is used to supply power to the fan, it may not penetrate a wall or be concealed in a wall).

- High–flow vent fans typically rate at between 112 to 245 Watts. If the rated electricity requirements of the system fan exceeds 50 percent of the circuit capacity into which it will be connected, or if the total connected load on the circuit (including the vent fan) exceeds 80 percent of the circuit's rated capacity, a separate, dedicated circuit shall be installed to power the fan.

- An electrical disconnect switch or circuit breaker shall be installed to permit deactivation of the fan for maintenance or repair.

SECTION 3 - IMPLEMENTATION APPROACH

The proposed implementation approach for the SSD system is based on findings of the RI and previous investigations. The SSD system will be installed to operate near the source area of contamination defined by the RI, which is adjacent to the southwest portion of the building. Outside of this area, the RI did not identify potential contaminant sources.

In addition, facility personnel have indicated water seepage has historically occurred through the northeast building sidewall, north of the proposed SSD system. This condition is consistent with RI observations of groundwater seepage north of the building, as shallow groundwater perched on bedrock emerges at ground surface. Because saturated soil cannot transmit soil vapor, the potential for soil vapor intrusion is much lower in the northern portion of the building compared to the southern portion.

By this combination of factors, the SSD system will operate in the southern portion of the building. This approach, in combination with the final remedy that is chosen for implementation for this site, will provide an appropriate level of protection in accordance with the BCP.

Indoor and sub-slab air samples will be collected prior to the installation of the SSD system, as described below, to supplement RI air sampling data and verify an indoor air baseline prior to system installation. These samples will include building areas outside the proposed area of the SSD system. Post-installation indoor air samples will also be collected within 30 days of system start up. Additional indoor air samples may be collected as determined to be necessary by NYSDEC, as part of annual site management activities, until the final site remedy is implemented to eliminate potential soil vapor intrusion risk (see Section 4).

3.1 - BUILDING INVESTIGATION & PREPARATION

A visual inspection of the building will take place prior to initiating any mitigation work. The inspection will identify building characteristics and conditions that may affect the design, installation, and effectiveness of the SSD system:

- Cracks in floor slab

- Exposed earth
- Floor penetrations (sumps, drains, French drains, etc)
- Foundation wall construction (hollow block wall vs. poured solid wall)

Building representatives have confirmed that there are no sumps in the building. If cracks or other openings in the floor exist, they shall be sealed with a suitable material to create a permanent air-tight seal. Urethane caulk or non-shrink mortar is suitable for sealing floor cracks. Mortar or expandable foam may be appropriate for larger gaps, as may occur near the contact of the floor and sidewalls, and to seal the open tops of hollow block walls if present. Materials used to seal holes, cracks, and gaps shall not contain VOCs.

Openings, perimeter channel drains, or cracks that exist where the slab meets the foundation walls shall have a foam backer rod inserted prior to sealing (with urethane caulk or mortar) if the gap is greater than ½ inch in width. The sealing should be done in a way that maintains the channel feature as a water control system (if it determined that this is the function of the channel or gap).

Prior to SSD System installation, an additional round of indoor air samples will be collected from the lowest level of the building, at the same three (3) locations previously sampled during the RI (see Figure 2-2). The three samples will be taken to confirm RI sampling results to establish a pre-SSD system baseline. Indoor air sample collection will follow NYSDOH guidance (October 2006), in accordance with the approved RI Work Plan.

In addition, two (2) sub-slab air samples will be collected prior to SSD system installation, from the area outside the proposed SSD system design (Figure 2-2). These samples will be collected through 3/8 inch holes drilled through the floor slab, in accordance with NYSDOH guidance (October 2006). These two holes will remain open after sample collection to be used as pilot test holes during a pre-installation communication test (see Section 3.2).

3.2 - COMMUNICATION TEST

A sub-slab communication test will be completed to determine the radius of influence of a vacuum applied to the sub-slab aggregate. This will be done by drilling small diameter pilot holes (3/8 inch diameter) through the floor slab into the sub-slab aggregate material. Figure 2-2 shows a proposed orientation of twenty two (22) pilot holes, arranged in four arrays in the proposed SSD system area that each consist of a vacuum extraction hole (open circles) and four monitoring holes (solid circles). Two additional communication test holes will be drilled in the northern portion of the building outside the proposed SSD area. These two additional holes will also be used for sub-slab air sample collection (see Section 3.1).

Each hole will be temporarily sealed with modeling clay after it is drilled. One of the vacuum extraction holes will remain open, and a vacuum will be applied to it using an industrial shop vac. The clay seal will then be removed from one of the monitoring holes, and a smoke tracer will be used to determine if air is drawn in through the monitoring hole as the vacuum is applied. After the monitoring hole is tested in this manner, it will be resealed, and then another hole will be unsealed for a similar test. Each of the monitoring holes will be tested individually, in sequence. The airflow patterns observed by the smoke tubes at each monitoring hole will be used to determine the radius of influence of the vacuum applied at each extraction hole. This data will be used to determine the number of extraction points that will be needed to maintain negative pressure in the sub-slab aggregate.

3.3 - SYSTEM DESIGN

The data from the communication test will be used as a basis for the system design. A design document will be prepared, and submitted to NYSDEC for apporoval, that will include a summary of the communication test results, design details, equipment specification, and construction schedule. The number and location of extraction pipe rises will be determined, including the total length and diameter of pipe, the optimal layout of lateral connections, and the location of fans and external exhaust points. Specifications for the vent fan will be determined based on the number of extraction points and the length of pipe. High-flow [250-350 cubic feet per minute (cfm)] fans are usually required for large buildings. Depending on the cost of the fan versus the cost of

PVC pipe installation, it may be more cost effective to use multiple vent fans with fewer lateral (i.e. eliminating 100 feet of piping could offset the cost of an additional fan). The point(s) at which the vent pipe will penetrate the exterior building wall will be determined, with placement of the exterior vent fan and exhaust pipe.

The SSD system will be installed following NYSDEC approval of the design document. The installation approach will utilize a core drill to create holes in the floor slab for the vent pipes at each of the extraction points. The diameter of the cores will depend on the diameter of the vent pipe, which is likely to be 4 or 6 inches in diameter. The cores will be either 6 or 8 inches to provide ample space for the vent pipe to penetrate. A backer rod will be placed in the annulus between the pipe and the sidewall of the core, and the surface of the penetrations will be permanently sealed with air-tight urethane caulk (see Figure 2-1).

3.4 - SYSTEM INSTALLATION

A qualified construction contractor will be hired to install the SSD system as designed. The installation is expected to be completed within two weeks of initiating construction.

3.5 - SITE-SPECIFIC MANAGEMENT PLAN

A Site-Specific Management Plan will be prepared and provided to the building owner and property managers, with one copy provided to NYSDEC and one copy always on site. The Plan will describe the system design and operation, monitoring and maintenance requirements and schedule, provide troubleshooting guidance, points of contact for service, and manufacturer's information and specifications.

The Plan will provide a routine maintenance schedule that will commence within 18 months of SSD system start up, with maintenance checks and related activities occurring every 12 to 18 months thereafter (see Section 4).

SECTION 4 - POST-INSTALLATION MONITORING & REPORTING

The SSD system for the site is being installed as a preemptive IRM. The RI analytical results for indoor air samples do not clearly indicate that soil vapor intrusion is occurring. Although TCE was detected in indoor air samples and is a potential site-related constituent, its concentration in the indoor air samples was comparable to typical background ranges presented in the NYSDOH Guidance (October 2006), and below NYSDOH's recommended guidance level ($5\mu g/m^3$).

The future potential for soil vapor intrusion will be addressed by the final remedy that is selected for implementation at this site, to minimize the possibility that soil vapor intrusion may occur in the future. . Site remediation, in combination with the SSD system, should effectively mitigate the possibility of future soil vapor intrusion.

4.1 - PRESSURE FIELD EXTENSION TEST

Following SSD system installation, a qualitative pressure field extension (PFE) test will be completed, in accordance with NYSDOH guidance. This test will be conducted similar to the pre-installation communication test, by measuring the pressure differential between indoor air and sub-slab air through 3/8 inch pilot holes. The PFE test will be conducted as the SSD system operates, using a digital micromanometer or comparable instrument to verify that the SSD system is creating a vacuum beneath the slab. If adequate pressure is not occurring, the reason (e.g. improper fan operation) will be ideinfited and corrected.

4.2 - POST MITIGATION SAMPLING

Indoor air samples will be collected within 30 days of SSD system installation and start up. Three (3) indoor air samples will be taken, from the same locations as pervious RI and pre-installation samples.

Additional indoor air sampling may be conducted, following the intial round of post mitigation sampling, if needed to verify that the future potential of soil vapor intrusion does not exist. This additional sampling may be performed as part of annual site

management activities, while the final site remedy is selected, designed, and implemented, until it is determined that soil vapor intrusion potential no longer exists.

4.3 - MAINTENANCE CHECKS

The SSD system monitor will be checked weekly, and a system log will be maintained at the site. The basic elements of the maintenance checks will include:

- A visual inspection of the complete system (e.g. vent fan, piping, pressure gages, labeling systems)
- Identification and repair of leaks
- Inspection of exhaust or discharge point to verify no air intakes have been located nearby

Any apparent SSD system malfunctions or other items requiring correction will be immediately reported to the building owner, who will immediately contact a service representative to correct the malfunction such that the system will properly operate.

Any potential soil vapor intrusion points that are identified will be documented and sealed with suitable material to provide an air tight seal.

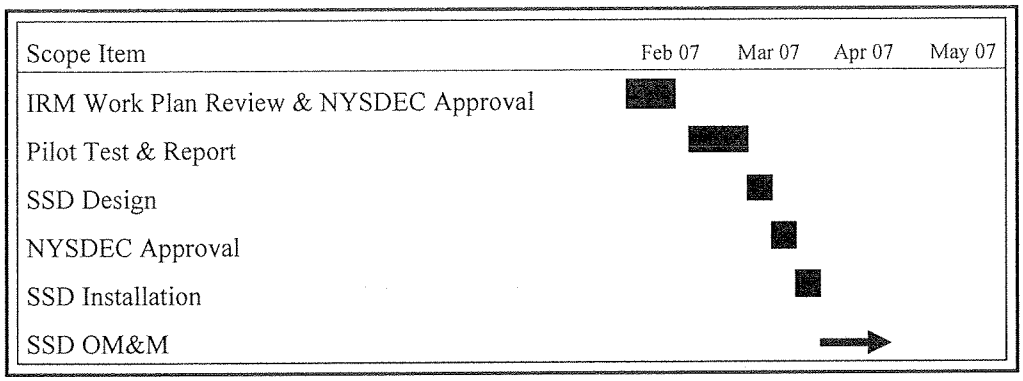
4.4 - ANNUAL MONITORING REPORT

An annual summary of monitoring and maintenance activities will be presented to NYSDEC in an Annual Monitoring Report. This Report will include weekly system maintenance logs, a description of any maintenance actions taken during the previous year, and a projection of probable maintenance needs for the following year, if any. The analytical results for indoor air samples collected during the previous 12 months, if any, will also be included.

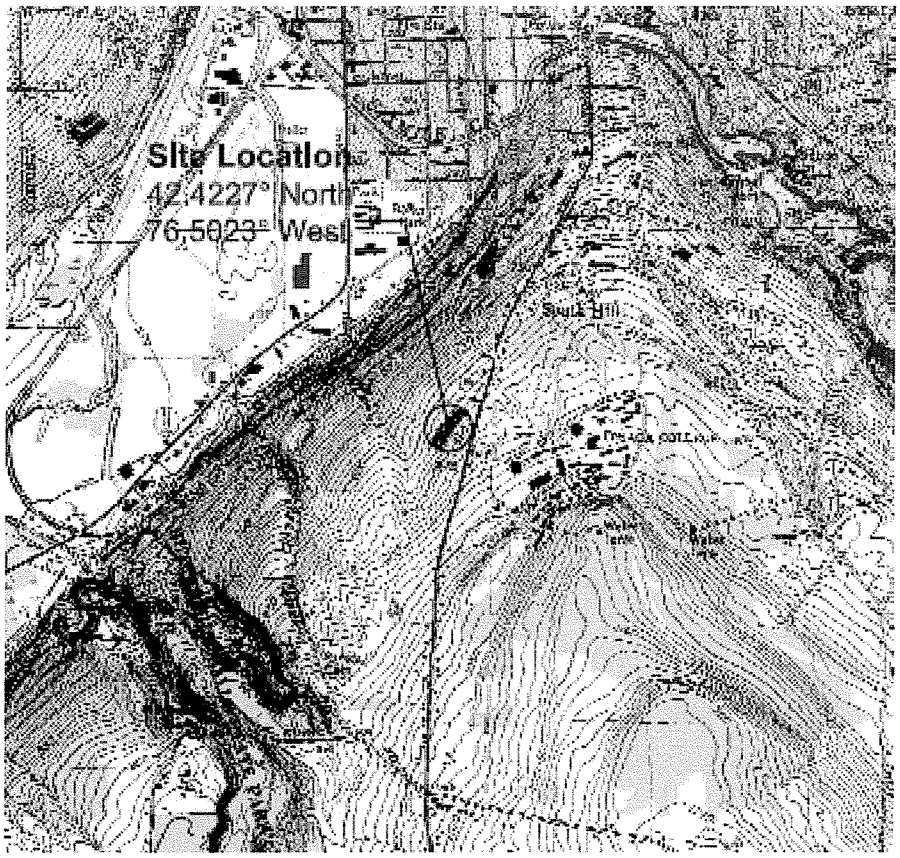
The Annual Monitoring Reports will be submitted in the first quarter of the following year. The Report will include a statement that the SSD system is still in place, in operation, and maintaining negative pressure in the sub slab.

SECTION 5 - SCHEDULE

The following schedule outlines the schedule for work plan approval, design, and installation of the proposed IRM SSD system.



Figures



QUADRANGLE LOCATION

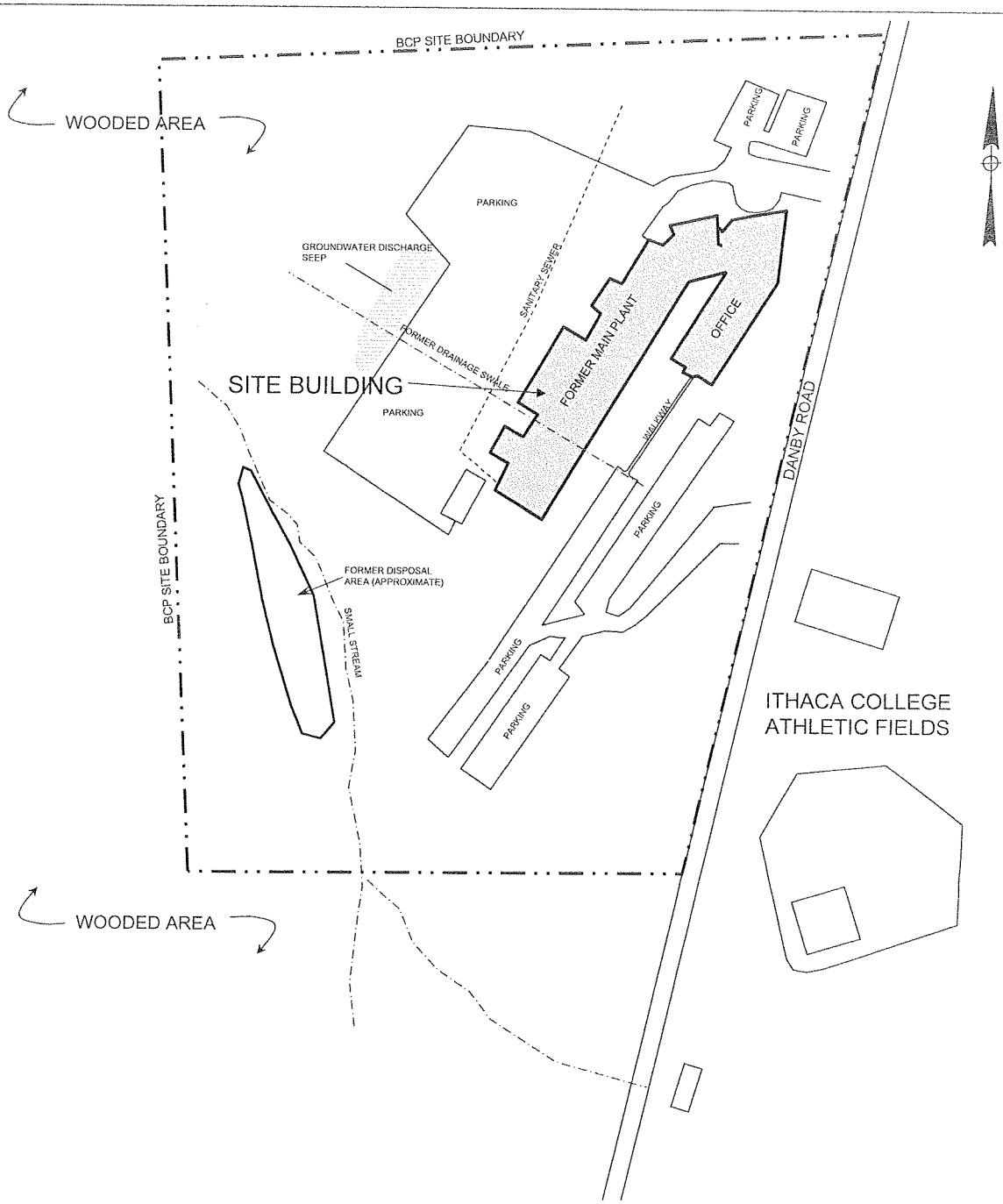
SCALE: 1" = 2,000'

1,000 0 1,000 3,000 5,000

Contour Interval: 10 Feet

Map Taken From: USGS 7.5 Minute Series
Topographic Quadrangles
Ithaca West (1989, Photorevised 1978) &
Ithaca East (1968, Photorevised 1978)
(www.nysgis.state.ny.us/quads/usgsdrg.htm)

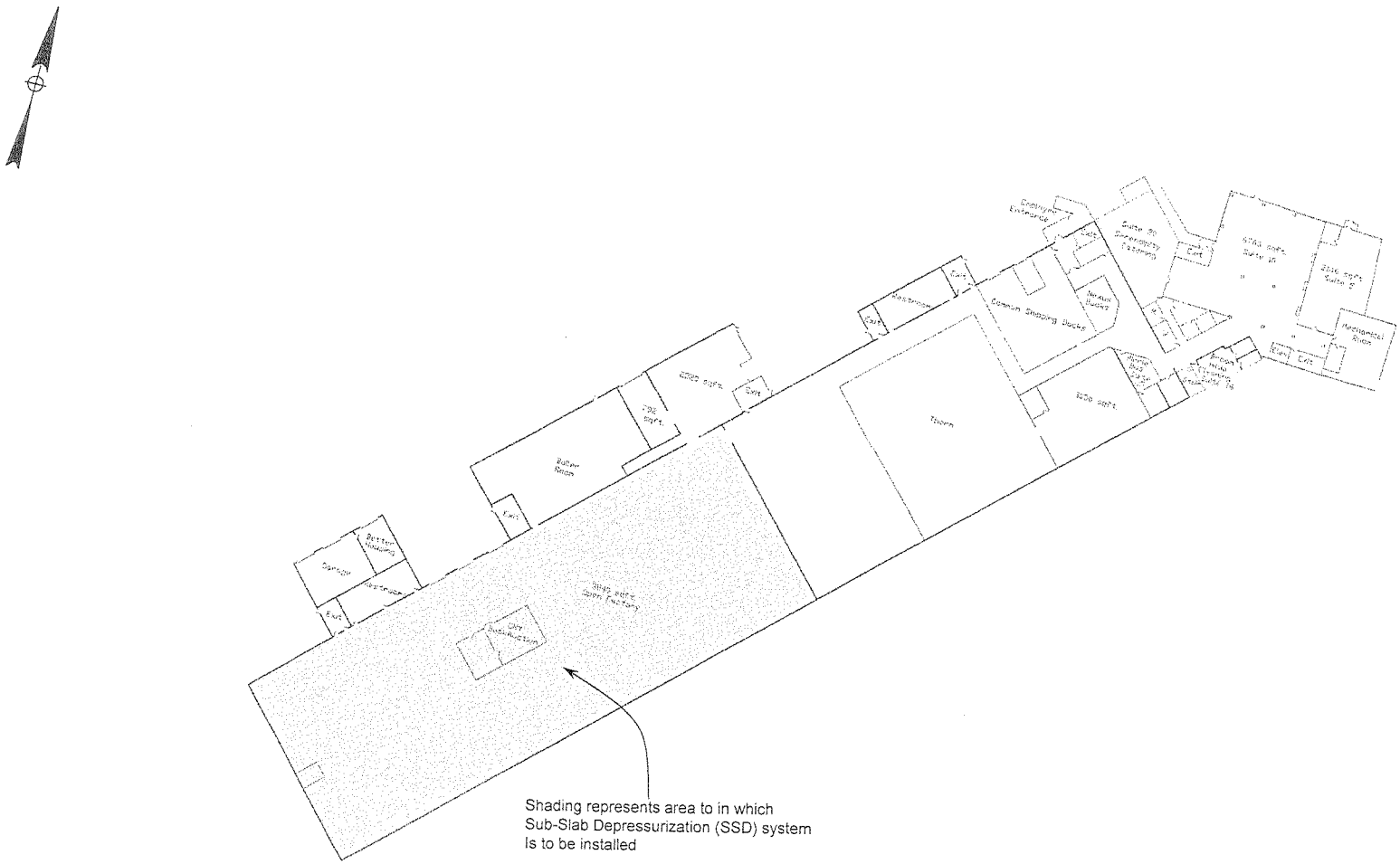
S&W Redevelopment of North America, LLC Syracuse, New York	IRM WORK PLAN SOUTH HILL BUSINESS CAMPUS, LLC BCP SITE NO C755012 ITHACA, NEW YORK
Oct 2006 B4001	**FIGURE 1-1** **SITE LOCATION**



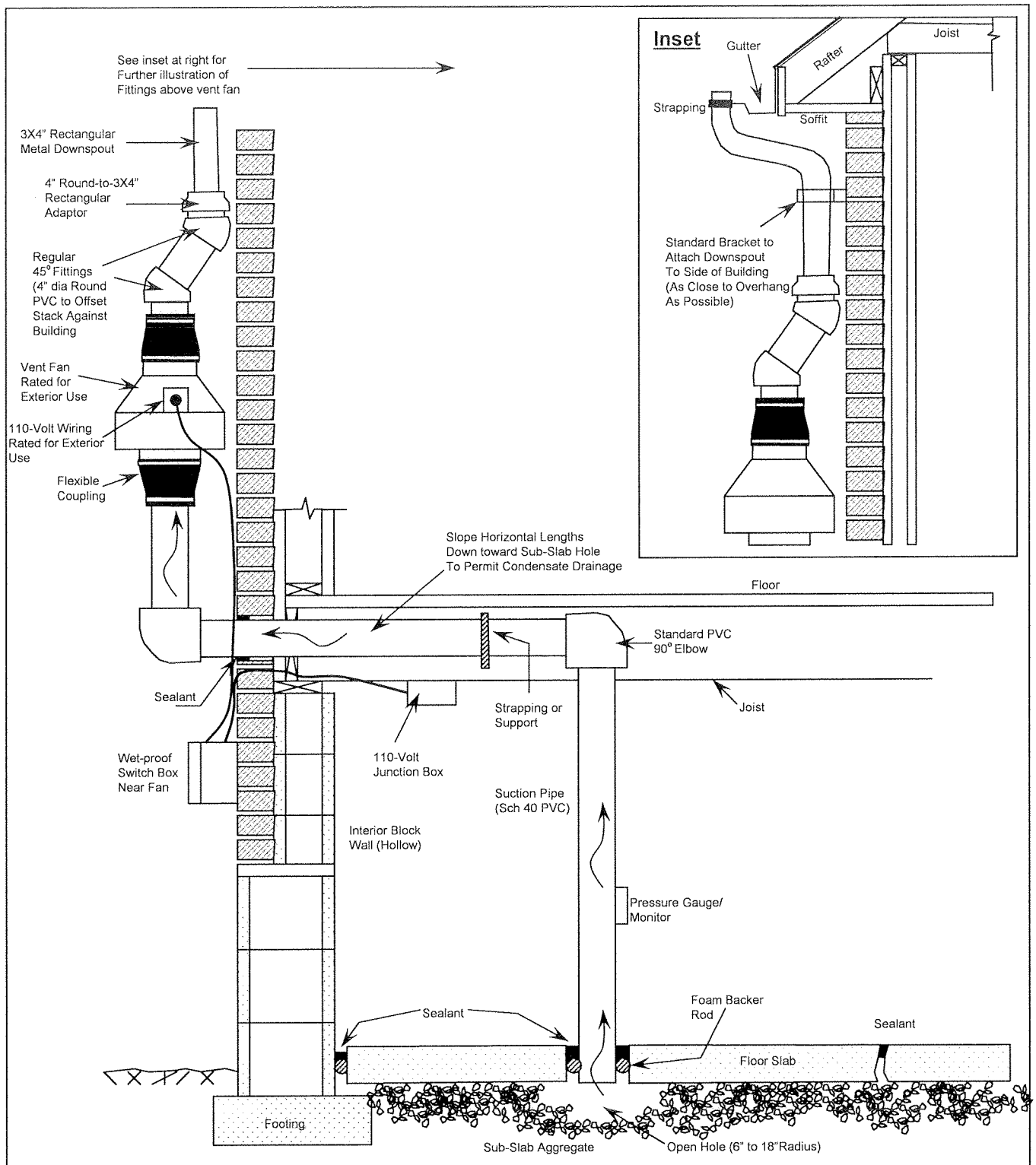
Site features and dimensions are approximate, to be confirmed by survey completed during Remedial Investigation.

0 125 250 500 feet

S&W Redevelopment of North America, LLC Syracuse, New York		IRM WORK PLAN SOUTH HILL BUSINESS CAMPUS, LLC BCP SITE NO C755012 ITHACA, NEW YORK
Jan 2007	B4001	FIGURE 1-2 SITE LAYOUT



S&W Redevelopment of North America, LLC Syracuse, New York	IRM WORK PLAN SOUTH HILL BUSINESS CAMPUS, LLC BCP SITE NO C755012 ITHACA, NEW YORK
Jan 2007 B4001	FIGURE 1-3 FLOOR PLAN OF LOWEST BUILDING LEVEL



Source:
USEPA 625/
R-93/011

Not
To Scale

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of North America, LLC

Syracuse, New York

Jan 2007 B4001

IRM WORK PLAN
SOUTH HILL BUSINESS CAMPUS, LLC
BCP SITE NO C755012
ITHACA, NEW YORK

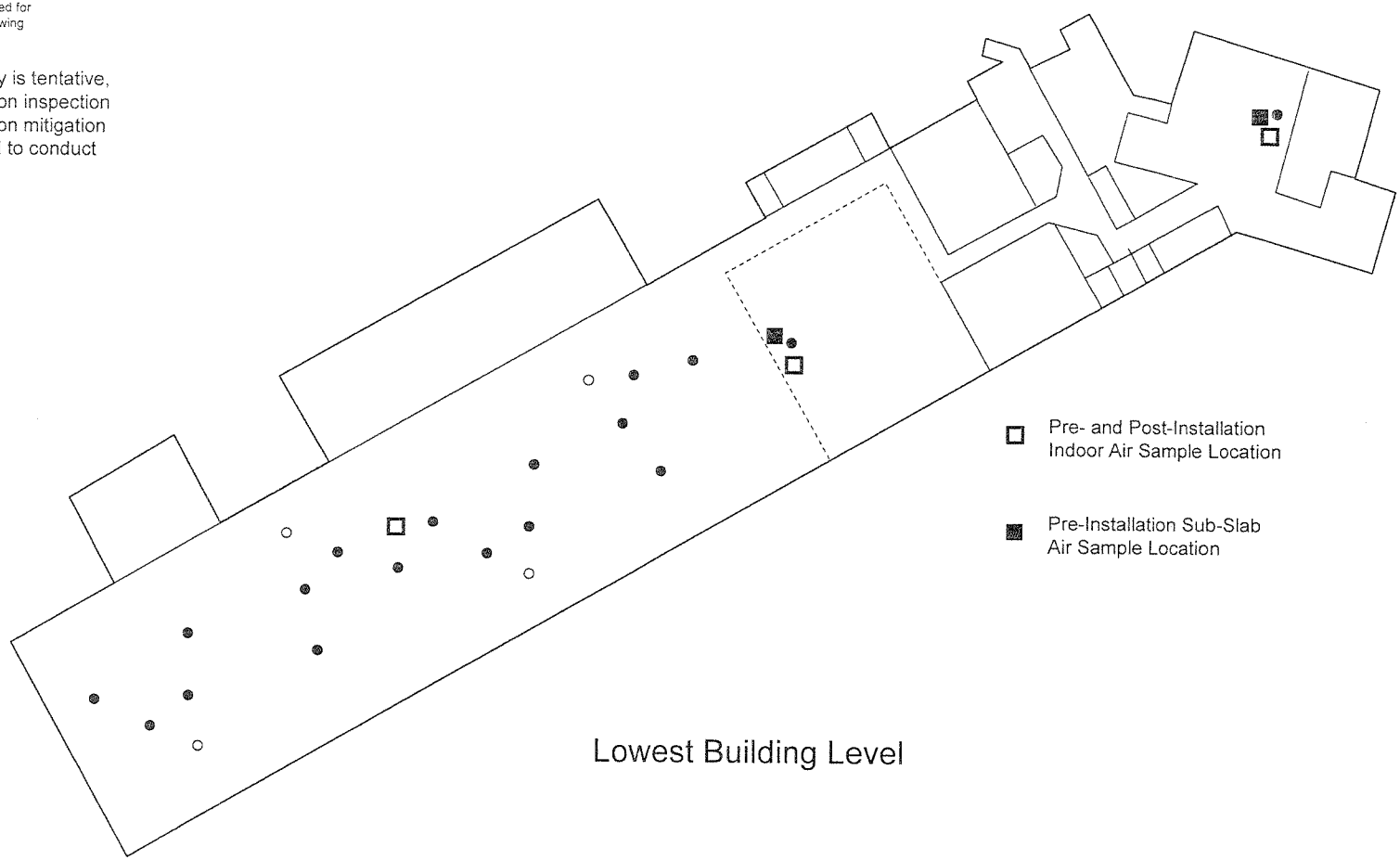
FIGURE 2-1
TYPICAL SUB-SLAB DEPRESSURIZATION
SYSTEM COMPONENTS

○ Proposed Vacuum Test Hole

● Proposed Monitoring Test Hole

All test holes will be 3/8 inch diameter. Communication test holes will also be used for Pressure Field Extension (PFE) test following SSD system start up.

Note: Proposed test hole array is tentative, and subject to change based on inspection of premises by a qualified radon mitigation contractor that will be retained to conduct the test.



0 50 100 ft

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BCP SITE NO C755012
ITHACA, NEW YORK

FIGURE 2-2
SUB-SLAB DEPRESSURIZATION
COMMUNICATION TEST PLAN

APPENDICES

Appendix A
Site Health & Safety Plan

APPENDIX A
SITE HEALTH AND SAFETY PLAN

A.1. SITE DESCRIPTION

Date ..... Date: January 2007 Revised: _____
Location ..... 950 Danby Road, Ithaca, NY
Hazards ..... Physical hazards associated with operation of electrical power tools and construction type work

A.2 ENTRY OBJECTIVES: The objective of site entry is to install a sub-slab depressurization system in the lowest level of the south Hill Business Campus Building.

A.3 ON-SITE ORGANIZATION AND COORDINATION. The following personnel are designated to carry out the stated job functions on site. (Note: One person may carry out more than one job function.)

Project Team Leader:	Daniel Ours or designee	(315) 422-4949
Site Safety Officer:	Donald Sorbello or designee	(315) 422-4949
Field Team Leader:	Jeffrey Kiggins or designee	(315) 422-4949
Field Team Members:	Designated as needed	(315) 422-4949

A.4 ON-SITE CONTROL. 950 Danby Road LLC or its designated agent will coordinate access control and security for the work area for each day of on site work. No unauthorized personnel should be within the established work area.

A.5 HAZARD EVALUATION.

A. Physical Hazards. Work will take place primarily in the building interior, although some work elements will occur outdoors as the system is constructed. The principal hazards associated with this project are physical ones associated with typical building renovation work. The primary hazards are related to operation of electrical power tools including drills and saws; the potential inhalation of concrete and plaster dust; slip, trip, and fall accidents as may occur relative to climbing or ladders and scaffolds; and heavy lifting.

1. **Heavy Lifting Method.** Personnel conducting work that may require lifting of heavy objects should use the following proper lifting techniques:
    - Feet must be parted, with one foot alongside the object being lifted and one foot behind. When the feet are comfortably spread a more stable lift can occur and the rear foot is in a better position for the upward thrust of the lift.
    - Use the squat position and keep the back straight. A straight back means the spine, back muscles, and organs of the body in correct alignment.

- To grip the item being lifted, the fingers and the hand are extended around the object being lifted, using the full palm. Fingers have very little power – use the strength of the entire hand.
- The load must be drawn close, and the arms and elbows must be tucked into the side of the body. Holding the arms away from the body increases the strain on the arms and elbows. Keeping the arms tucked in helps keep the body weight centered.

The body must be positioned so that the weight of the body is centered over the feet. This provides a more powerful line of thrust and also ensures better balance. Start the lift with a thrust of the rear foot. Do not twist.

2. **Slip/Trip/Hit/Fall.** These injuries are the most frequent of all injuries to workers. They occur for a wide variety of reasons, but can be minimized by the following practices:
   - Spot-check the work area to identify hazards;
   - Establish and utilize pathways that are most free of slip and trip hazards. Avoid pathways that are more hazardous;
   - Beware of trip hazards such as wet floors, slippery floors, and uneven terrain;
   - Carry only loads you can see over;
   - Keep work areas clean and free of clutter, especially in storage areas and walkways;
   - Communicate observed hazards to site personnel.

3. **Heat Stress.** Work will take place primarily indoors, which reduces the chance of exposure to extreme temperatures. However, all field personnel engaged in site work shall have completed training to recognize and avoid heat related illness. Proper training and preventive measures will aid in averting loss of worker productivity and serious illness. Heat stress prevention is particularly important because once a person suffers from heat stroke or heat exhaustion, that person may be predisposed to additional heat-related illness. To avoid heat stress, the following steps may be taken:

   - Adjust work schedules.

     Modify work/rest schedules according to monitoring requirements.

     Mandate work slowdowns as needed.

     Perform work during cooler hours of the day if possible or at night if adequate lighting can be provided.

- Provide shelter (air conditioned, if possible) or shaded areas to protect personnel during rest periods.

- Maintain worker's body fluids at normal levels. This is necessary to ensure that the cardiovascular system functions adequately. Daily fluid intake must approximately equal the amount of water lost in sweat, i.e., eight fluid ounces (0.23 liters) of water must be ingested for approximately every eight ounces (0.23 kg) of weight lost. The normal thirst mechanism is not sensitive enough to ensure that enough water will be drunk to replace lost sweat. When heavy sweating occurs, encourage the worker to drink more. The following strategies may be useful:

- Members of each Work Crew shall be properly trained by each Crew's respective employer to recognize the symptoms of heat-related illnesses.

4. **Adverse Weather Conditions.** Adverse weather conditions will generally not be an issue for work preformed indoors. Work that occurs outdoors on this project will be conducted mindful of the potential weather-related hazards. The Field Leader for each Work Crew will be responsible for deciding on the continuation or discontinuation of work for his/her Crew based on current and pending weather conditions. Electrical storms, tornado warnings, and strong winds are examples of conditions that would call for the discontinuation of outside work. Site operations should not be permitted during an electrical storm.

POTENTIAL HAZARD	PREVENTATIVE MEASURES
Slip/Trip/Falls	Use three points of contact to mount and dismount equipment. Continuously inspect work areas for slip, trip, & fall hazards. Be aware of surroundings. Practice good housekeeping.
Noise	Wear appropriate hearing protection.
Pinch Points	Keep hands, feet, & clothing away from moving parts/devices.
Utilities	Maintain proper utility clearances. All utilities should be properly located and marked out prior to start of work.
Heavy Lifting	Follow safe lifting practices. Lift items within your capabilities and assigned project role. Ask for assistance if necessary.
Heat/Cold Stress	Dress appropriately and follow HASP guidelines
Dangerous Weather	Consult local weather reports daily, watch for signs of

POTENTIAL HAZARD	PREVENTATIVE MEASURES
Conditions	severe weather, etc. Suspend or reduce work during severe weather.
Chemical hazards	Use ppbPID as indicated in HASP. Wear specified PPE. No smoking.

B. Chemical Hazards. A number of organic compounds have been identified at the site based on preliminary RI data, but these are not regarded as significant hazards associated with this particular work, or to building occupants in general. For general information purposes, the following substances are identified as known or suspected of being present on site, primarily as soil vapor and groundwater contamination. The primary hazards of each are identified, associated primarily with direct skin contact and inhalation.

SUBSTANCE	PRIMARY HAZARDS
Volatile Organics	
Trichloroethene	Eye & skin irritation, nausea, vomiting, headache
1,1 Dichloroethane	Skin irrit., liver, kidney, lung damage
1,2 Dichloroethene	Eye irrit, respiratory irrit, central nervous system
Vinyl chloride	Eye irrit, soar throat, dizziness, headache, nausea

A.6 PERSONAL PROTECTIVE EQUIPMENT. Based on evaluation of potential hazards, the following levels of personal protection have been designated for the applicable work areas or tasks:

LOCATION	JOB FUNCTION	LEVEL OF PROTECTION
Work zone	Site investigation	A B C (D) Other

Specific protective equipment for each level of protection is as follows:

Level A	Fully-encapsulating suit SCBA (disposable coveralls)
Level B	Splash gear (saranax-coated Tyvek suit) SCBA or airline respirators
Level C	Splash gear (Tyvek suit) Half-face canister respirator Safety glasses Boots Gloves Hard hat
Level D	**Work boots (steel toes)** **Leather or canvas work gloves** **Hard hat** **Dust mask**

Action Levels. Action levels shall be determined by monitoring of work zone breathing space with a portable photoionization detector (ppbPID) or comparable instrument. Measurement of a sustained concentration above ambient (background) conditions shall initiate action. The following criteria shall be used to determine appropriate action:

VOLATILE ORGANICS IN BREATHING ZONE (SUSTAINED AND ABOVE BACKGROUND)	LEVEL OF RESPIRATORY PROTECTION
0-5 ppm	Level D
5-200 ppm	Level C
200-1000 ppm	Level B - air line
1000+ ppm	Level B - SCBA

% LOWER EXPLOSIVE LIMIT (LEL)	ACTION
Above 10	Discontinue work and take remedial action

NO CHANGE TO THE SPECIFIED LEVELS OF PROTECTION SHALL BE MADE WITHOUT THE APPROVAL OF THE SITE SAFETY OFFICER AND THE PROJECT TEAM LEADER.

If the above criteria indicate the need to increase from Level D to a higher level of personal protection, work will be immediately suspended in that particular site area until the required personal protective equipment is made available, or until Level D conditions return.

A.7 **ON-SITE WORK PLANS.** The following personnel or designated alternate(s) will perform the field investigation.

Project Team Leader:.....Jeffrey Kiggins or designee
Work Party .....Allison Menges or designee

The work party was briefed on the contents of this plan prior to commencement of work.

A.8 **COMMUNICATION PROCEDURES.** The Project Team Leader should remain in communication with the Field Team Leader. A cellular phone will be used in the field.

Continuous horn blast is the emergency signal to indicate that all personnel should leave the Work Zone.

In the event that radio communications are used, the following standard hand signals will be used in case of failure of radio communications:

Hand gripping throat.....	Out of air; can't breathe
Grip partner's wrist or both hands around waist.....	Leave area immediately
Hands on top of head	Need assistance
Thumbs up	OK; I am all right; I understand
Thumbs down.....	No; negative

A.9 SITE HEALTH AND SAFETY PLAN.

A. A designated Site Safety Officer will be directly responsible to the Project Team Leader for safety recommendations on site. The Field Team Leader will be responsible for executing and enforcing the Site Health and Safety Plan.

B. **Emergency Medical Care.** The Cayuga Medical Center is located at 101 Dates Drive in the City of Ithaca, approximately 5 miles from the site. A map of the route to this facility is available at the field vehicle (attached).

First aid equipment is available on site at the following locations:

First aid kit Field vehicle

List of emergency phone numbers:

AGENCY/FACILITY	PHONE NUMBER
Police (Tompkins County Sheriff)	911
Fire	911
Ambulance	911
Cayuga Medical Center	(607) 274-4498

C. **Environmental Monitoring.** The following environmental monitoring instruments shall be used on site at the specified intervals:

- ppb RAE photoionization detector (PID). Continuous during installation of soil borings and soil gas monitoring probes.
- Dust (particulate) monitor. Continuous during installation of soil borings per Community Air Monitoring Plan (CAMP)

D. **Emergency Procedures.** The following standard procedures will be used by on-site personnel. The Site Safety Officer shall be notified of any on-site emergencies and be responsible for ensuring that the appropriate procedures are followed:

1. **Personnel Injury in the Work Zone.** Upon notification of an injury in the Work Zone, the designated emergency signal, a continuous horn blast, shall be sounded. A rescue team will enter the Work Zone (if required) to remove the injured person to safety. Appropriate first aid shall be initiated and contact should be made for an ambulance and with the designated medical facility (if required). No persons shall re-enter the Work Zone until the cause of the injury or symptoms is determined.

2. **Fire/Explosion.** Upon notification of a fire or explosion on site, the designated emergency signal, a continuous horn blast, shall be sounded and all site personnel assembled at the decontamination line. The fire department shall be alerted and all personnel moved to a safe distance from the involved area.

3. **Personal Protective Equipment Failure.** If any site worker experiences a failure or alteration of protective equipment that affects the protection factor, that person

and his/her buddy shall immediately leave the Work Zone. Re-entry shall not be permitted until the equipment has been repaired or replaced.

4. **Other Equipment Failure.** If any other equipment on site fails to operate properly, the Project Team Leader and Site Safety Officer shall be notified and then determine the effect of this failure on continuing operations on site. If the failure affects the safety of personnel or prevents completion of the Work Plan tasks, all personnel shall leave the Work Zone until the situation is evaluated and appropriate actions taken.

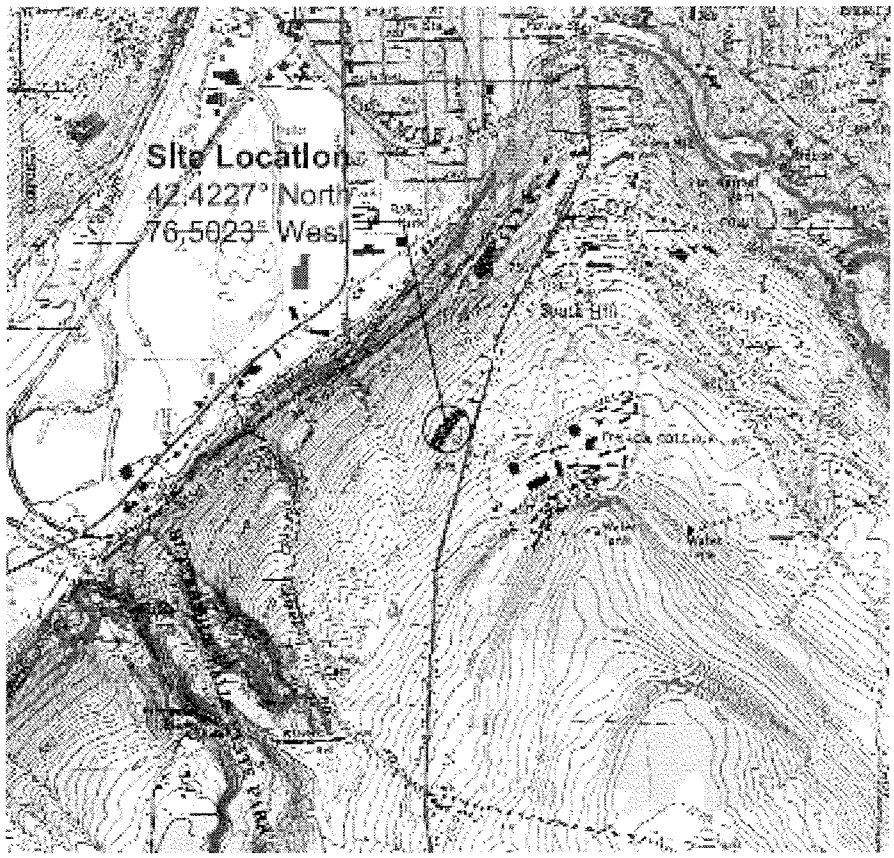
In all situations, when an on-site emergency results in evacuation of the Work Zone, personnel shall not re-enter until:

a. The conditions resulting in the emergency have been corrected.
b. The hazards have been reassessed.
c. The Site Health and Safety Plan has been reviewed.
d. Site personnel have been briefed on any changes in the Site Health and Safety Plan.

E. Personal Monitoring. The following personal monitoring will be in effect on site:

Personal exposure sampling: ppbRAE PID screening, sampling pumps/tubes , or organic vapor monitors.

Medical monitoring: The expected air temperature will be less than 70EF. If it is determined that heat stress monitoring is required (mandatory if over 70EF), the following procedures shall be followed: Monitoring body temperature, body weight, pulse weight.



QUADRANGLE LOCATION

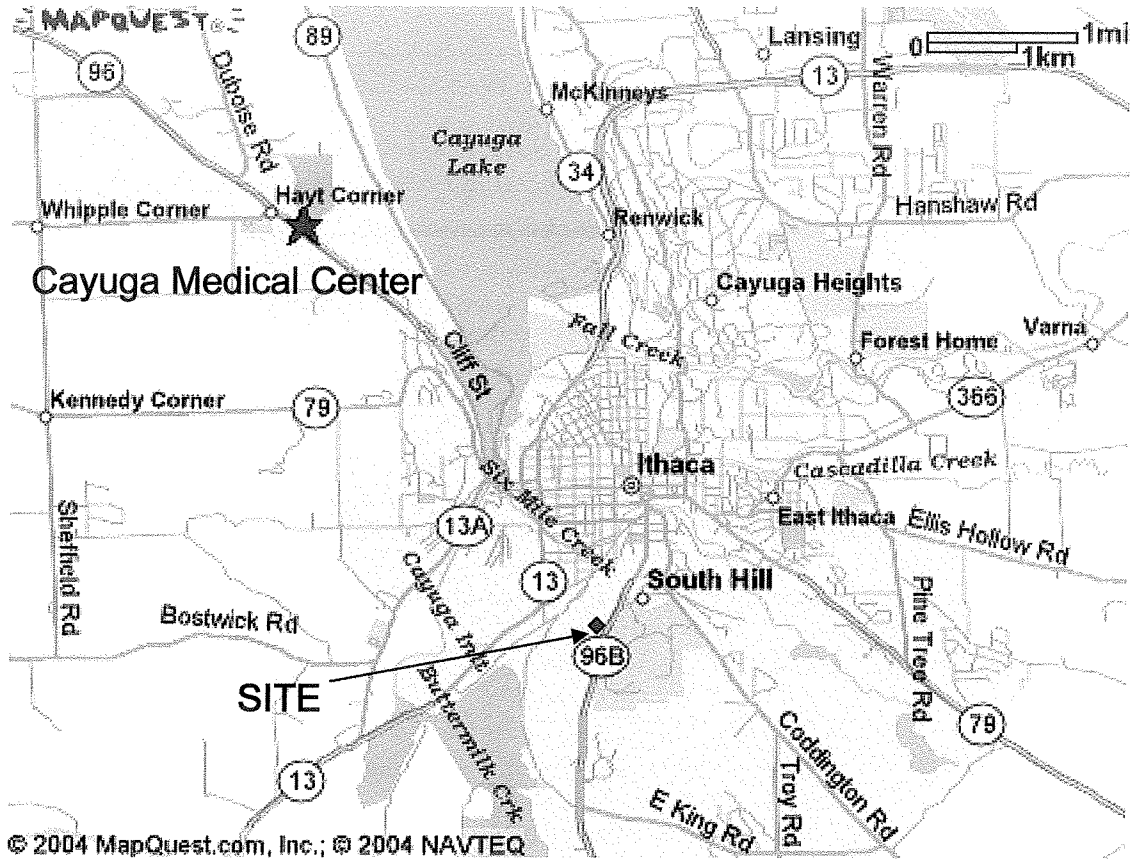
SCALE: 1" = 2,000'

1,000 0 1,000 3,000 5,000

Contour Interval: 10 Feet

Map Taken From: USGS 7.5 Minute Series
Topographic Quadrangles
Ithaca West (1989, Photorevised 1978) &
Ithaca East (1969, Photorevised 1978)
(www.nysgis.state.ny.us/quads/usgsdrg.htm)

S&W Redevelopment of North America, LLC Syracuse, New York	IRM WORK PLAN SOUTH HILL BUSINESS CAMPUS, LLC BCP SITE NO C755012 ITHACA, NEW YORK
Jan 2007 B4001	FIGURE 1-1 SITE LOCATION



1. Go North on NY 96B/Danby Road (1.1 miles)
2. NY 96B becomes S Aurora Street (0.1 mile)
3. Turn Left onto NY 79 W/E Seneca St (0.8 mile)
4. Turn Right onto NY 89/NY 96/Taughannock Blvd (<0.1 mile)
5. Turn Left onto NY 96/W Buffalo St. Continue to follow NY 96 (2.3 miles)
6. Turn Right onto Harris B Dates Dr (<0.1 mile)

Total Distance 4.69 miles

S&W Redevelopment of North America, LLC Syracuse, New York Sep 2006 Proj No. B4001	SOUTH HILL BUSINESS CAMPUS, LLC BCP SITE NO C755012 ITHACA, NEW YORK **FIGURE 1** **ROUTE TO HOSPITAL**

Appendix B
Community Air Monitoring Plan

APPENDIX B

COMMUNITY AIR MONITORING PLAN

B.1 - INTRODUCTION

The South Hill Business Campus BCP site is presently occupied by a split level two- and four-story office and manufacturing building consisting of approximately 280,000 square feet. South Hill Business Campus, LLC will develop a portion of the existing office building into a multi-tenant professional office complex.

In order to support the proposed future use of the property, a voluntary Remedial Investigation (RI) was completed at the site in accordance with a Brownfield Cleanup Agreement (BCA). Based on preliminary RI results, the Volunteers are taking the precautionary step of installing a sub-slab depressurization (SSD) system in the lowest level of the building to prevent potential future soil vapor intrusion. This work will occur as an Interim Remedial Measure under the Volunteer's BCA. As an Interim Remedial Measure (IRM), a Community Air Monitoring Plan (CAMP) is required to describe the measures that will be undertaken during work to monitor ambient air. Since the work will occur indoors, the CAMP will include air monitoring in the work area and the nearest occupied building space to the proposed work area.

B.2 - OBJECTIVES

The objective of this CAMP is to provide a measure of protection for building occupants from potential airborne contaminant releases that might arise as a result of the IRM work, which will include drilling holes through the floor slab and building foundation walls to install a SSD system. The principal contaminants of potential concern are volatile organic compounds that may exist as vapor below the floor slab, and small quantities of concrete dust that may be produced as holes are cored. It is anticipated that only small amounts of concrete dust may be generated in the immediate work area, and that occupants of adjoining building areas will have minimal risk of exposure. However, the work area will be isolated from occupied spaces using plastic sheeting to minimize the spread of dust from concrete coring. The objective of the air monitoring program will therefore be to monitor for the presence of organic vapors in air as the work is being conducted.

B.3 - METHODS

The CAMP will include monitoring for volatile organic compounds (VOCs). Particulate matter (e.g. airborne "dust") will not be monitored because only small amounts of concrete dust will be produced by the work, and this dust can be easily controlled by typical measures taken during indoor construction projects (e.g. wetting the work surface or using a vacuum to capture dust), which will minimize the spread of dust and the need for monitoring.

A ppbRAE photoionization detector (PID) will be used to measure VOCs in air. VOCs will be monitored in the work area, and the occupied area closest to the work area, at the beginning of each workday.

VOC concentrations will be measured continuously in the work area VOC concentrations will be checked periodically in the closest adjacent occupied area to provide a measure of assurance that contaminants are not being spread through the air. The PID will continuously record and store VOC measurements such that a 15-minute running average can be computed for the data each time the PID is checked.

- If the ambient air concentration for total organic vapors in the work area exceeds 5 parts per million (ppm) above background for a 15-minute average, work activity will be halted and monitoring will continue until levels decline to below 5 ppm over background. At this point, work will resume and monitoring will continue.

- If total organic vapor levels in the work area persist at levels above 5 ppm over background but less than 25 ppm, work activities will be halted, the source of the vapors will be identified, and corrective actions will be taken to abate emissions. Work will resume after organic vapor levels fall to below 5 ppm over background in the work area.

- If organic vapor levels exceed 25 ppm in the work area activities will be shut down. An appropriate course of action to abate emissions in order to resume work will be discussed with NYSDEC personnel.