FIELD SAMPLING PLAN
FOR THE
SOIL-GAS CONDUIT INSTALLATION AND SAMPLING AT THE
NORTH FRANKLIN STREET SITE
VILLAGE OF WATKINS GLEN, NEW YORK - SITE #8-49-002
WORK ASSIGNMENT D003825-09.5

Prepared For

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION
REMEDIAL BUREAU

Prepared By

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JULY 2005

FIELD SAMPLING PLAN

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1.0 INTRODUCTION

This Field Sampling Plan (FSP) is designed to provide detailed step-by-step procedures for the soil-gas conduit installation and sampling to be conducted in the vicinity of the North Franklin Street site located in the Village of Watkins Glen, Schuyler County, New York (Figure 1). This FSP will serve as the field procedures manual to be strictly followed by all URS Corporation (URS) personnel. Adherence to these procedures will ensure the quality and defensibility of the field data collected. In addition to the field procedures outlined in this document, all personnel performing field activities must do so in compliance with the appropriate guidelines presented in the New York State Department of Health Generic Community Air Monitoring Plan presented in Appendix A.

The objective of the current investigation is to assess the potential presence of soil vapor contamination resulting from contaminated groundwater. The contaminated groundwater is the result of historic activities at the North Franklin Street site, which is currently being remediated.

1.1 Site Description

The North Franklin Street Class 2 inactive hazardous waste site (Site #8-49-002) is an approximately 0.3-acre parcel of land situated in the Village of Watkins Glen, Schuyler County, New York. The site is located in an urban area approximately 400 feet south of Seneca Lake, as shown on Figure 1. The site is located approximately 0.25 mile north of the Sciorie's Dry Cleaners site, Site-ID #8-49-003, located at 129-135 East 4th Street. Two structures currently exist on site (shown on Figure 2). The building referred to as the "Former Auto Museum" is a single-story metal building on a concrete slab. The second structure is referred to as the "Former Dry Cleaning Building." This is a two-story brick building that also includes two unoccupied single-story brick sheds to the east. Both of these buildings have housed a variety of businesses in the past, including a machine shop and dry cleaning operations. A real estate company currently occupies the "Former Dry Cleaning Building". A subsurface depressurization (SSD) system is currently in operation at the "Former Dry Cleaning Building".

2.0 MOBILIZATION

2.1 Mobilization/Demobilization

The Contractor shall provide a Geoprobe® direct-push rig (or equivalent) with a two-man crew and the necessary support vehicle(s) and equipment to sustain the crew without delays in schedule. The direct-push rig shall be operational at all times and will be inspected for hydraulic leaks and general condition by a URS representative prior to site entry. The direct-push rig shall be capable of advancing borings to depths of up to 10 feet below grade. The borings may be installed through concrete or asphalt paving.

2.2 Utility Clearance

The soil-gas conduits will be installed on public property as close as possible to privately owned parcels. Proposed sampling locations will be identified and marked with paint or flagging prior to installation. The soil-gas conduit locations are subject to final approval in the field by the NYSDEC. URS will clear public utilities in areas designated for intrusive activities.

3.0 SOIL GAS INVESTIGATION

A direct push drilling system (Geoprobe® or equivalent) will be used to complete the locations for up to 14 new soil-gas conduits. Permanent soil-gas conduits will be installed at selected boring locations to allow for the collection of soil-gas samples. The soil-gas conduit locations are subject to final approval in the field by the NYSDEC. The water table is estimated to be between 2 and 10 feet bgs. Up to four temporary piezometers constructed of 1-inch diameter polyvinyl chloride (PVC) screen and riser may be installed to determine the location of the water table if existing monitoring wells are not in close proximity to the soil–gas conduit locations. Once the location of the water table has been determined by the URS geologist, the soil-gas conduit borings will be advanced to a depth comparable to the depth of foundation footings of nearby buildings (to be determined in the field) or to approximately 1-foot above the top of water table, where the water table is less than 6 feet bgs.

3.1 Direct Push Procedures

Each of the soil-gas monitoring points will be "permanent" monitoring points. The monitoring points will be installed using the following direct-push procedures.

Direct Push Procedures:

1. Inspect the equipment to ensure proper working condition.
2. Thoroughly decontaminate the down hole equipment prior to and between locations using soap and water.
3. Attach the drive head assembly to the sample rods.
4. Drive probe rods to the desired depth using a Point Holder (AT-13B) and an Implant.
5. Anchor/Drive Point (PR-14) with a hydraulic press. DO NOT disengage the drive point when desired depth is achieved.

6. Soil-gas monitoring points will be installed in the borings using the methods for construction described below.

3.2 Soil-Gas Conduit Installation and Construction Procedures

Summary: A method for construction of soil-gas monitoring points within unconsolidated material, which enables acquisition of soil-gas samples for laboratory testing. The soil-gas conduit borings will be advanced to a depth comparable to the depth of foundation footings of nearby buildings or to approximately 1-foot above the top of water table, where the water table is less than 6 feet bgs. The soil-gas monitoring points will be installed using the procedures described below.

Installation Procedures:

1. Implants shall be 6 inches in length (e. g., Geoprobe® AT86 series) and are to be constructed of double woven stainless steel wire screen. Implants shall have a pore diameter of 0.0057 inch, which is equivalent to a 0.007 slot well screen. The bottom of the implants must have a post run tubing (PRT) style thread, the same fitting style used with Geoprobe® PRT vapor sampling tools. The top connection with the Teflon or polyethylene tubing shall be stainless steel swage-lock or clamp fitting to prevent leakage during sample collection. The connection to the sampling summa canister shall be made through the use of 1/8th inch ID Teflon or polyethylene tubing.

2. Once the rods have been advanced to the desired depth, attach appropriate tubing to the implant to be installed. **Allow at least 48 inches of tubing length longer than the required depth of the implant.** Cover or plug the end of the tubing.

3. Remove the pull cap from the rods and lower the implant and tubing down inside the diameter of the rods until the implant hits the top of the Anchor/Drive Point. Note the length of the tubing to ensure proper depth has been reached.

4. Rotate tubing counterclockwise while exerting a gentle downward force to engage the PRT threads. Pull up on the tubing lightly to test the connection. DO NOT cut excess tubing.

5. Position a probe rod pull plate or manual probe rod jack on the top of the probe rod. Exert downward pressure on the tubing while pulling the probe rods up. Pull up about 12 inches.

6. Thread excess tubing through the bottom of a funnel and position funnel over top of probe rod. The funnel will be used to facilitate installation of glass beads or sand into the borehole around the screened portion of the implant.

7. Pour glass beads or sand into the funnel and down the inside diameter of the probe rods around the outside of the tubing and around the screen of the implant. Use tubing to "stir" beads or sand into place. [NOTE: beads, sand, and bentonite can only be installed in the Vadose (unsaturated zone above the water table).

8. Lift up an additional 18 to 24 inches and insert a bentonite seal above beads or sand. It may be necessary to use distilled water to "chase" the seal down the rods.

9. Pull remaining rods out of the hole and complete with grout.

10. Cut any excess tubing and cut the flush-mount well risers just below the ground surface. Plug the tubing with a cap or plug.

11. Backfill to 6 inches below the top with concrete.

12. Install a protective casing (road box) and set it into the concrete backfill.

13. Lock the protective casing cover.

14. Document well construction in the field notebook and later on a Soil-Gas Implant Construction Detail diagram (Appendix B).

3.3 Soil-Gas Conduit Sampling Procedures

Summary: To collect representative soil-gas samples, soil-gas monitoring well tubing must be adequately sealed to prevent ambient air from being sampled. The soil-gas conduits must be purged prior to sampling. Sampling should commence immediately after purging.

The soil-gas conduits will be sampled at least 24-hours after installation. The samples will be labeled following procedures described below. The samples will be analyzed for the parameters indicated in Table 1.

1. Open the soil gas monitoring well box (if present) and inspect the existing tubing. Check for any signs of cracks, clogging or any other characteristics that may impact the collection of a representative sample.

2. Apply a bentonite slurry to the ground surface in an approximate 2-ft diameter circle. Place an approximately 2 ft by 2 ft square of plastic sheeting over the bentonite slurry. Poke a hole, only as large as needed, for the sampling tube to penetrate the plastic. Seal the plastic sheeting/tube interface with a small amount of bentonite slurry.

3. Place the enclosure over the wellhead, run well tubing through in the top outlet. Use plumber's putty to seal the interface between the tubing and the top of the enclosure.

4. Seal enclosure at the ground surface with a bentonite slurry.

5. Connect helium (99.999%) cylinder to side port of enclosure.

6. Release enough helium to displace any ambient air in enclosure. Continue flushing the inside of the enclosure with helium gas.

7. Connect the tubing to the vacuum pump. Use only new teflon tubing if needed for length and new silicone tubing for leak free unions. Do not reuse any tubing between sample locations.

8. Purge the soil gas monitoring well for five minutes. Flow rates for purging and sampling must not exceed 0.2 liters per minute (L/min) to minimize outdoor air infiltration during purging/sampling. Record start and stop time. Verify air is being drawn from the monitoring well by placing finger on the vacuum pump outlet tube to check for positive pressure. Helium cylinder should be open during the purge time, enough to cause a positive pressure within the enclosure.

9. After purging completed, disconnect the vacuum pump from the tubing.

10. Connect the Mark Helium Detector (Model 9822) to soil-gas conduit tubing. Obtain readings. Absence of helium (< 20%) assures that the implant seal is competent and ambient air is not entering the soil gas conduit.

Using Flow Controllers With a Built-in Pressure Gauge

1. Attach the flow controller provided by the laboratory to the Summa canister inlet (you must have one for each summa canister). **Do not reuse flow controllers** between locations. Each flow controller is pre-set by the laboratory to collect the sample over a one hour period.

2. Attach tubing from the soil-gas conduit to the flow controller on the Summa canister. All tubing used in this step should be the same tubing that was used in the purging process.

3. Open Summa canister valve completely and record the time and pressure. If the canister does not show a vacuum, do not use.

4. The helium cylinder should remain open during sampling set-up to cause a positive pressure in the enclosure. Because of the one-hour sampling time, more than one location may be sampled at the same time (with staggered starting times). When you are ready to move onto the next location, stop the flow of the helium with the valve on the regulator, and seal ports on the enclosure to maintain the helium atmosphere within the enclosure.

5. After one hour, close the Summa canister valve completely and record the time and pressure.

6. Disconnect the tubing.

7. There should still be a slight vacuum in the Summa canister. If no vacuum remains in the canister, do not send the canister for analysis. Retake the sample using the same procedure with a fresh canister.

8. Remove the flow controller.

9. If the canister does not show a significant net loss in vacuum after sampling, evaluate and document the problem. If necessary, use another summa canister to recollect the sample and **contact the project manager immediately.**

10. Connect the Mark Helium Detector (Model 9822) to soil-gas conduit tubing. Obtain and record readings. Absence of helium (< 20%) assures that the conduit seal is competent and ambient air is not entering the soil-gas conduit.

11. Replace the box cover.

12. Ship canister standard overnight, with COC, to STL Knoxville for TO-15 analysis.

Using Flow Controllers Without a Built-in Pressure Gauge

1. Attach the pressure gauge provided by the laboratory to the summa canister, open valve completely, record reading, close valve completely, and remove the pressure gauge. If the canister does not show a vacuum, do not use.

2. Attach flow controller provided by the laboratory to the summa canister inlet (one for each summa canister). **Do not reuse flow controllers between locations**. Each flow controller is pre-set by the laboratory to collect the sample over a one hour period.

3. Attach tubing from the soil-gas conduit to the flow controller on the summa canister. All tubing used in this step should be the same tubing that was used in the purging process.

4. Open summa canister valve completely and record the time.

5. The helium cylinder should remain open during sampling set-up to cause a positive pressure in the enclosure. Because of the one-hour sampling time, more than one location may be sampled at the same time (with staggered starting times). When you are ready to move onto the next location, stop the flow of the helium with the valve on the regulator, and seal ports on the enclosure to maintain the helium atmosphere within the enclosure.

6. After one hour, close the summa canister valve completely. Record the time.

7. Disconnect tubing.

8. Remove the flow controller, attach the pressure gauge to the summa canister, open valve completely, record reading, close valve completely, and remove the pressure gauge. There should still be a slight vacuum in the summa canister. If no vacuum remains in the canister, do not send the canister for analysis. Retake the sample using the same procedure with a fresh canister.

9. If the canister does not show a significant net loss in vacuum after sampling, evaluate and document the problem. If necessary, use another summa canister to recollect the sample and **contact the project manager immediately**.

10. Connect the Mark Helium Detector (Model 9822) to soil-gas conduit tubing. Obtain and record reading. Absence of helium (< 20%) assures that the conduit seal is competent and ambient air is not entering the soil-gas conduit.

11. Replace box cover.

12. Ship canister standard overnight, with COC, to STL Knoxville for TO-15 analysis

Soil-Gas Sampling Quality Control

1. Field duplicates will be collected by attaching the T-fitting supplied by the laboratory to the end of the tubing from the soil-gas conduit. A summa canister with a flow controller is attached to each end of the T-fitting. For sampling, both summa canister valves are opened and closed simultaneously.

2. Ambient blanks will be collected by simply opening the summa canister (with a flow controller) valve for the designated one-hour time frame. One ambient blank is required for each day samples are collected.

3. Equipment blanks are collected by duplicating conditions, equipment, and supplies (e.g., tubing) used to collect the soil-gas samples. The sampling equipment is connected to a pressurized summa canister provided by the laboratory containing zero grade air for the designated one-hour time frame.

4. Care should be taken so that no samples are collected during or near an area where vehicle or other equipment exhaust is being discharged.

3.4 Documentation

The field sampling team must maintain a sample log sheet (Appendix B) summarizing the following data:

1. Sample Identification
2. Date and time of sample collection
3. Sampling depth
4. Identity of samplers
5. Sampling methods and devices
6. Purge volumes
7. Volume of soil vapor extracted
8. The Summa canister vacuum before and after samples collected
9. Chain of custody and shipping information

The supervising geologist will log the time and material expenditures for later verification of contractor invoices. Upon completion of daily drilling activities, the geologist will complete the daily drilling record form (Appendix B). Following completion of the program, the geologist will transfer field notes onto standard forms for the investigation report.

The proper completion of the following forms/logs will be considered correct procedure for documentation during the drilling program:

1) Field Log Book - weather-proof hand-bound field book

2) Daily Drilling Records (Appendix B)

3.) Boring Logs (Appendix B)

4.) Soil Gas Implant Construction Detail Diagrams (Appendix B)

3.5 Disposal of Drill Cuttings

Summary: Disposal of boring spoils will be performed in accordance with NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-89-4032, November 21, 1989. However, it is anticipated that a minor volume of non-hazardous soil may be generated from the soil-gas conduit installation

Procedure:

1. Spoils will be stored on site in 1A2 open head 55-gallon steel drums.

2. Transport drums to staging area at the North Franklin Street site at the end of each day.

3. The boring spoils generated during Geoprobe activities are presumed not to be a hazardous waste as defined in 40 CFR Part 261. Therefore, hazardous waste characterization sampling for disposal will not be performed. The drums may be disposed of at a facility licensed to accept hazardous waste, if necessary.

4.0 SURVEYING AND MAPPING

Project surveying will provide data necessary to plot soil-gas conduit locations on the existing base map. All surveying will be performed under the supervision of a New York State licensed land surveyor and following the requirements of the Project Management Work Plan.

Control for this project shall be based upon site control, which has been established for prior work. Horizontal control is referenced to New York State Plane, North American Datum 1927 (NAD27) east zone coordinate system, vertical control is referenced to National Geodetic Vertical Datum 1929 (NGVD29).

5.0 SAMPLE LABELING

Summary: In order to prevent misidentification and to aid in the handling of environmental samples collected during the field investigation, the following procedures will be used:

Procedure:

1. Affixed to each sample container will be a lab issued tag. The serial number of the canister will be noted on the sampling sheet and on the COC. The following information will be written on each tag with a pen:

   - Site name
   - Sample identification
   - Project number
   - Date/time
   - Sampler's initials
   - Analysis required

2. Each sample location (i.e., soil-gas conduit and ambient) will be assigned a unique identification alphanumeric code. An example of this code and a description of its components are presented below:

Examples

1. SG-1 8-8.5'

   SG-1 8-8.5 = Soil-Gas Conduit 1, 8-8.5 foot interval

2. YYYYMMDD-AB-1

   YYYYMMDD = date (e.g., 20050120 for January 20, 2005)

   -AB = outdoor air ambient blank

   -1 = first ambient blank sample of the day

3. YYYYMMDD-FD-2

   YYYYMMDD = date (e.g., 20050120 for January 20, 2005)

   -FD = field duplicate blank

   -2 = second field duplicate sample of the day

List of Abbreviations

Primary Sample Type

SG = Soil gas sample

Blank Sample Type

-AB = outdoor ambient blank air sample

-FD = field duplicate

-1 = indicates sequential number of particular blank (e.g., -1 indicates the sample is the first of this type of blank collected for that day).

6.0 SAMPLE SHIPPING

Summary: Proper documentation of sample collection and the methods used to control these documents are referred to as chain-of-custody procedures. Chain-of-custody procedures are essential for presentation of sample analytical chemistry results as evidence in litigation or at administrative hearings held by regulatory agencies. Chain-of-custody procedures also serve to minimize loss or misidentification of samples and to ensure that unauthorized persons do not tamper with collected samples.

Procedure:

1. The chain-of-custody (COC) record (Appendix B) should be completely filled out, with all relevant information.

2. The original COC goes with the samples. It should be placed in a Zip lock bag and placed inside the box containing a summa canister. The sampler should retain a copy of the COC.

3. Summa canisters are shipped in the same boxes the laboratory used for shipping.

4. Place the lab address on top of sample box. Affix numbered custody seals across box lid flaps. Cover seals with wide, clear tape.

5. Ship samples via overnight carrier the same day that they are collected if possible. Shipping samples one day after collection is permitted if required.

7.0 FIELD SAMPLING INSTRUMENTATION

URS-owned and rented field sampling equipment will require no maintenance beyond decontamination between sampling locations. The use of disposable filters for the PID is recommended. Calibration procedures for electronic instruments can be found in the equipment operating manuals. Calibration and maintenance procedures for the common instrumentation that will be used during field investigations are discussed in the equipment operating manuals. A copy of the manufacturer's operating manual for each instrument will be kept with the instrument or the operator. All field sampling equipment will be calibrated as recommended by the manufacturer. The calibration procedures and results will be recorded in the field notebook.

7.1 Preventative Maintenance

In case of an emergency, the equipment rental vendor, other URS offices, and/or the instrument manufacturer will be contacted. Instrumentation rental vendors, which provide overnight UPS/Federal Express service, are listed below.

Vendor:

Ashtead Technology Rentals: Rochester, New York: 1-800-242-3910

8.0 SAMPLING EQUIPMENT CLEANING PROCEDURES

Summary: To assure that no outside contamination will be introduced into the samples/data, thereby invalidating the samples/data, the following cleaning protocols will apply for all equipment used to collect samples/data during the field investigations. Geoprobe™ equipment and will be brush cleaned between locations.

Procedures:

1. Thoroughly clean equipment with laboratory-grade soap and water, until all visible contamination is gone.
2. Rinse with water, until all visible evidence of soap is removed.
3. Rinse several times with deionized water.
4. Air dry before using.
5. If equipment will not be used immediately, wrap in aluminum foil.

TABLES

TABLE 1

SUMMARY OF ANALYTICAL PARAMETERS

SOIL-GAS CONDUIT INSTALLATION

WORK ASSIGNMENT NO. D003825-09.5

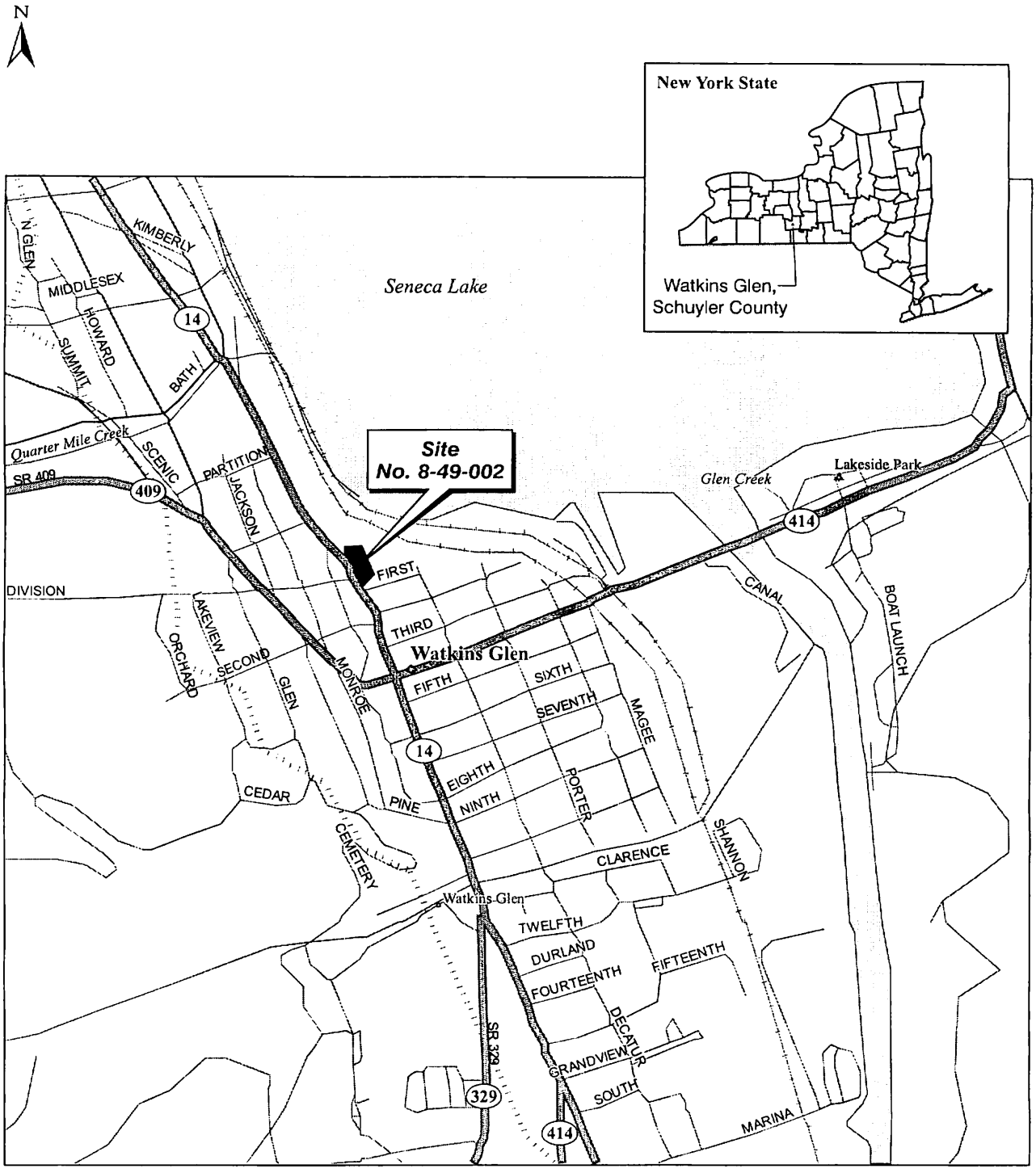
Parameter	Method Number/ Reference[1,2]	Estimated Number of Samples	Field QA/QC Samples		Total No. of Samples
			Field Duplicates	Ambient Blanks	
I. Soil Gas					
VOCs	TO-15	14	2	1	17

NOTES:

1. NYSDEC Analytical Services Protocol (ASP), June 2000 Edition.
2. Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition, January 1999.

MS/MSD – Matrix spike/matrix spike duplicate

FIGURES

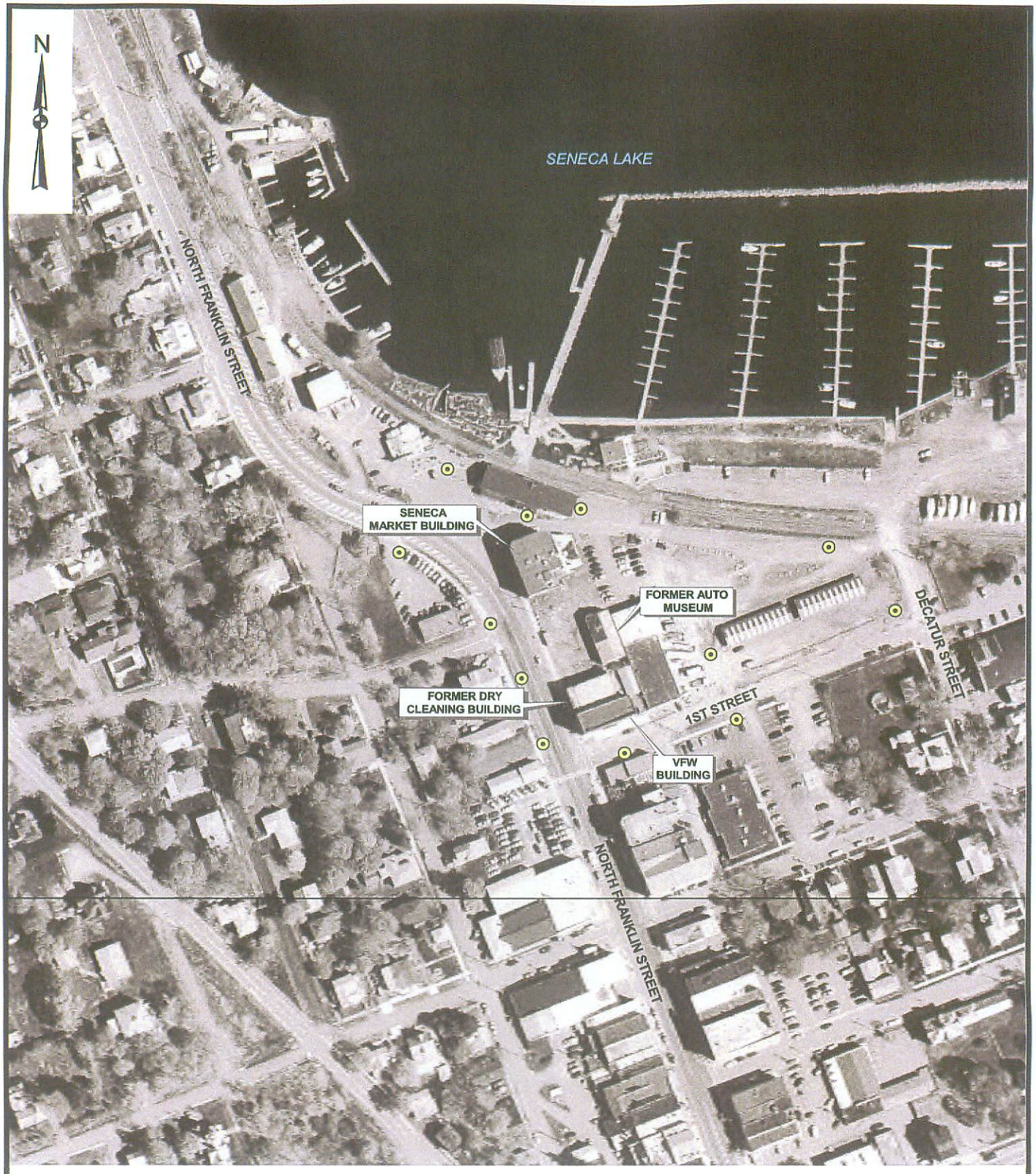


AG13546-35388.17-121798-NPV

URS

NORTH FRANKLIN STREET
SITE LOCATION MAP

FIGURE 1



Legend

⊙ Proposed Soil-Gas Conduit Location

200 0 200 Feet

URS	NORTH FRANKLIN STREET PROPOSED SOIL-GAS CONDUIT LOCATIONS	FIGURE 2

N:\11173258.00000\DB\GIS\DEC2000\n_franklin.apr PROPOSED SOIL GAS SAMPLING LOCATIONS
6/29/2005

APPENDIX A

NEW YORK STATE DEPARTMENT OF HEALTH GENERIC COMMUNITY AIR MONITORING PLAN

New York State Department of Health
Generic Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical-specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for volatile organic compounds (VOCs) and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate NYSDEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a **continuous** basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- 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 for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

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

All 15-minute 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.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored **continuously** at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. 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 exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/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 150 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 150 mcg/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 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

All readings must be recorded and be available for State (DEC and DOH) personnel to review.

June 20, 2000

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APPENDIX B

FIELD ACTIVITY FORMS

URS CORPORATION

77 Goodell Street
Buffalo, New York 14203
Telephone: (716)-856-5636
Fax: (716)-856-2545

DATE _____

DAY	S	M	T	W	TH	F	S

DAILY CONSTRUCTION REPORT

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85 and up
WIND	Still	Moder	High	Report No.	
HUMIDITY	Dry	Moder	Humid		

PROJECT:_____
CONTRACTOR_____
URS JOB No._____
URS PROJECT MANAGER:_____

CONTRACTOR FIELD FORCE

Name of Contractor	Non-manual	Manual	Remarks

VISITORS

Time	Representing	Representing	Remarks

EQUIPMENT AT THE SITE:

CONSTRUCTION ACTIVITIES:

SHEET_____OF_____

☐ X - designates info on backside of page

BY: _____ Title: _____
REVIEWED BY: _____ Project Manager: _____

DAILY CONSTRUCTION REPORT (cont'd)

REPORT No._____

PROJECT:_____
CONTRACTOR:_____
URS JOB No._____

DATE_____

CONSTRUCTION ACTIVITIES (cont'd):

SHEET_____OF_____

BY_____TITLE_____
REVIEWED BY:_____PROJECT MANAGER

DAILY DRILLING RECORD

URS Corporation

PROJECT TITLE: _____ DATE: _____

CLIENT: _____ CONTRACTOR: _____

FROM	TO	PRODUCTIVE HOURS	ACTIVITIES/COMMENTS
TOTAL PRODUCTIVE HOURS			LEVEL B / LEVEL C / LEVEL D (CIRCLE ONE SELCTION)

LABOR:

UNITS	

MATERIALS / SUPPLIES:

UNITS	

WEATHER:

_____
URS ONSITE COORDINATOR

_____
CONTRACTOR REPRESENTATIVE

URS Corporation									TEST BORING LOG	
									BORING NO:	
PROJECT:									SHEET:	1 of 1
CLIENT:									JOB NO.:	
BORING CONTRACTOR:									BORING LOCATION:	
GROUNDWATER:					CAS.	SAMPLER	CORE	TUBE	GROUND ELEVATION:	
DATE	TIME	LEVEL	TYPE	TYPE		Macrocore			DATE STARTED:	
				DIA.		2"			DATE FINISHED:	
				WT.		--			DRILLER:	
				FALL		--			GEOLOGIST:	
				* POCKET PENETROMETER READING					REVIEWED BY:	

DEPTH	SAMPLE			BLOWS	REC%	DESCRIPTION				REMARKS	
FEET	STRATA	NO.	TYPE	PER 6"	ROD%	COLOR	CONSIST HARD	MATERIAL DESCRIPTION	USCS	PID	Moist
		1	2" MC								
5		2	2" MC								
10		3	2" MC								
15											
20											
25											
30											

COMMENTS: Geoprobe 5400 using 2" macrocore to a depth of	PROJECT NO.
	BORING NO.

DRILLING SUMMARY

Geologist:

Drilling Company:

Driller:

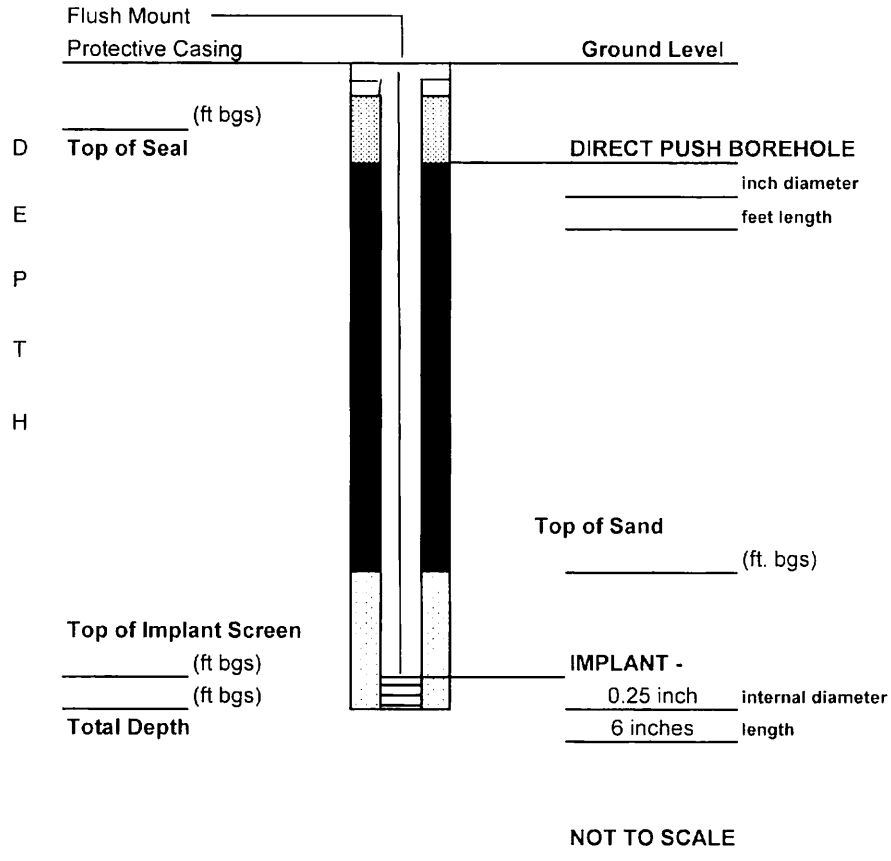
Rig Make/Model:

Date:

GEOLOGIC LOG

Depth(ft.)	Description

WELL DESIGN



CASING MATERIAL	*SCREEN MATERIAL*	*FILTER MATERIAL*
Surface: Well: 3/8 inch OD polyethylene tubing	Type: 6 inch stainless steel implant Pore Diameter: 0.0057 inch	Type: Sand Setting: *SEAL MATERIAL* Type: Bentonite Sand Setting:

COMMENTS:

Implant conncted to anchor point at bottom of boring. 3/8 inch outside diameter (OD) poly tubing connected from implant to surface for soil gas sampling.

LEGEND

- Cement/Bentonite Grout
- Bentonite Seal
- Silica Sandpack

Client: NYSDEC	Location:	Project No.:
U R S Corporation	SOIL GAS CONDUIT CONSTRUCTION DETAILS	Well Number:

URS

DAILY INSTRUMENT CALIBRATION CHECK SHEET

DATE	INSTRUMENT	BATTERY CHECK OK?	ZERO ADJUST OK?	CALIBRATION GAS (PPM)	READING (PPM)	CALIBRATED BY

Summa Canister Sampling Field Data Sheet

Site: _____

Samplers: _____

Date: _____

Sample #					
Location					
Summa Canister ID (Lab ID, if provided)					
Additional Tubing Added	NO/ YES - How much	NO/ YES - How much	NO/ YES - How much	NO/ YES - How much	NO/ YES - How much
Purge Time (Start)					
Purge Time (Stop)					
Total Purge Time (min)					
Pressure Gauge - before sampling					
Sample Time (Start)					
Sample Time (Stop)					
Total Sample Time (min)					
Pressure Gauge - after sampling					
Canister Pressure Went To Ambient Pressure?	YES / NO	YES / NO	YES / NO	YES / NO	YES / NO
General Comments:					

CHAIN OF CUSTODY RECORD

URS

PROJECT NO. | SITE NAME

SAMPLERS (PRINT/SIGNATURE)

LAB _____

COOLER _____ of _____

PAGE _____ of _____

DELIVERY SERVICE: _____ AIRBILL NO.: _____

LOCATION IDENTIFIER	DATE	TIME	COMP/ GRAB	SAMPLE ID	MATRIX	TOTAL NO.# OF CONTAINERS	TESTS / BOTTLE TYPE AND PRESERVATIVE	REMARKS	SAMPLE TYPE	BEGINNING DEPTH (IN FEET)	ENDING DEPTH (IN FEET)	FIELD LOT NO. # (ERPIMS)

MATRIX CODES

AA - AMBIENT AIR; SE - SEDIMENT; SH - HAZARDOUS SOLID WASTE; SL - SLUDGE; WP - DRINKING WATER; WW - WASTE WATER; WG - GROUND WATER; SO - SOIL; DC - DRILL CUTTINGS; WL - LEACHATE; GS - SOIL GAS; WC - DRILLING WATER; WO - OCEAN WATER; WS - SURFACE WATER; WQ - WATER FIELD QC; LH - HAZARDOUS LIQUID WASTE; LF - FLOATING/FREE PRODUCT ON GW TABLE

SAMPLE TYPE CODES

TB# - TRIP BLANK; SD# - MATRIX SPIKE DUPLICATE; RB# - RINSE BLANK; FR# - FIELD REPLICATE; N# - NORMAL ENVIRONMENTAL SAMPLE; MS# - MATRIX SPIKE; (# - SEQUENTIAL NUMBER (FROM 1 TO 9) TO ACCOMMODATE MULTIPLE SAMPLES IN A SINGLE DAY)

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME	SPECIAL INSTRUCTIONS
RELINQUISHED BY (SIGNATURE)	DATE	TIME	RECEIVED FOR LAB BY (SIGNATURE)	DATE	TIME	

Distribution: Original accompanies shipment, copy to coordinator field files

URSF-075C/1 OF 1/ColCR/GCM