



SITE MANAGEMENT PLAN

WORK ASSIGNMENT D004440-36

**POULTNEY STREET SITE
VILLAGE OF WHITEHALL**

**SITE NO. 5-28-019
WASHINGTON COUNTY, NY**

Prepared for:
NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
625 Broadway, Albany, New York
Joseph Martens, Commissioner

DIVISION OF ENVIRONMENTAL REMEDIATION

URS Corporation
77 Goodell Street
Buffalo, New York 14203

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BUFFALO, NEW YORK 14203**

MARCH 2012

**POULTNEY STREET
SITE MANAGEMENT PLAN
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1.0 INTRODUCTION

1.1 General

This Site Management Plan (SMP) has been prepared under New York State Department of Environmental Conservation (NYSDEC) Work Assignment No. D004440-36 for the Poultney Street remedial construction project. The purpose of this SMP is to provide general guidance for long-term maintenance of the containment area, cover system, monitoring wells, and fence associated with remediation at the Poultney Street site. Section 5.3 of this document will address monitoring of the groundwater quality based on sample collection from the wells. This SMP should be considered as a working document that must be updated and revised periodically if components or procedures are modified.

The purpose of this SMP, in accordance with the Record of Decision (ROD), is to provide guidance for the following:

- Maintaining the integrity of the cover system;
- Long term monitoring of groundwater; and
- Maintenance of the security fence.

1.2 Project Background

The NYSDEC proposed a remedy of soil excavation and monitored natural attenuation in the January 2004 ROD. A pre-design investigation determined that a soft basal clay layer, which lies beneath contaminated soils, would not support conventional excavation techniques. Due to the findings of the pre-design investigation, other remedial alternatives were re-evaluated and an alternate remedy was selected. The October 2008 ROD Amendment incorporates containment of the waste mass within a sheet pile wall tied into the basal clay layer, covering the waste mass with an engineered cap as the proposed remedy, treatment of the contaminated groundwater plume by monitoring natural attenuation, and long-term monitoring of groundwater.

A description of the project site can be found in Section 2.0.

2.0 SITE DESCRIPTION

The Poultney Street site is located on an island, near U.S. Route 4 in the Village of Whitehall, Washington County, New York (Figure 1). The island is zoned light industrial. The Poultney Street site is an undeveloped parcel of land, approximately two acres in size, and is a portion of a 10-acre property that is owned by the Clarendon and Pittsford Railroad Company. The 10-acre property encompasses land on both the north and south sides of their active railroad line. Neighboring the Poultney Street site is the former E.B. Metals facility to the north, and active, raised railroad embankment to the south, the Champlain Canal to the west, and Wood Creek to the east. Wood Creek is located approximately 800 feet from the site. Access to the site is off of NY State Route 4, referred to locally as Poultney Street, and across the former E.B. Metals facility.

The site consists of a drum staging area on the western portion of the property, and a former fire training area near the center of the property. In the early 1970s, the site was used for training exercises by seven local fire departments. The local fire departments brought containers of flammable materials, solicited and obtained from various sources, to the property for fire extinguishing training and practice. In 1989, forty drums were identified and subsequently shipped offsite for proper disposal.

The remedial design of the sheet pile wall and cover system and the construction of the remedial components were both completed in 2011. A 6-foot high chain-link fence was constructed to limit access to the capped area.

3.0 SITE REMEDIAL ACTION

3.1 Site Remedial Action

The remedial action for Poultney Street site includes the following:

- Installation of a watertight sheet pile wall that is keyed into the underlying basal gray clay approximately 20 feet below ground surface to contain the area of contaminated soil.
- Installation of an engineered cap that was designed and constructed in conformance with the requirements of 6 NYCRR Part 360 solid waste regulations over the area of contaminated soil.

4.0 CAP MANAGEMENT SYSTEM

This section covers the routine inspection and maintenance of the landfill cap, and other miscellaneous features of the remediation. If inspectors find other problems, corrective action such as those described below in the intermittent and contingency maintenance sections will be developed.

4.1 Routine Inspection

Inspections of various components of the cap system will be performed at the frequency identified in Table 1. Table 2 presents a basic, minimal checklist for routine site inspections. Each of the components will be inspected for the items identified in the respective paragraphs below:

Cap Grading promotes controlled drainage by eliminating depressions in the cap. Depressions can reoccur after closure due to decomposition of the underlying waste. Only minor settlement of the Poultney Street cap area is anticipated because underlying waste is comprised almost entirely of compacted soil, but excessive or localized settlement could cause subsidences which could cause water to pond or concentrate runoff. Pondered water could kill vegetation, promote cap veneer instability, or promote infiltration through the cap into the underlying contaminated soil. Concentrated runoff, where stormwater collects as shallow concentrated flow, can lead to significant erosion of the cover soil.

Significant depressions may also cause rupture of the underlying cap components, including the geosynthetic liner. Though such damage would be difficult to identify without subsurface investigation, the possibility of such damage should be borne in mind when evaluating the impact of subsidences and other changes in cap grading.

Check for the following:

- Obvious subsidences, depressions, or cracks
- Evidence of ponded water
- Stressed vegetation
- Evidence of signs of erosion occurring at a localized change in grade

- Animal burrows

Cap Vegetation prevents erosion of the cap soils. Inadequate cap vegetation will allow erosion to occur in the barren area, and could be caused by mowing too low, inadequate moisture, soil compaction, infertile soils, bad seed, ponded water, or other causes.

Check for the following:

- Areas of sparse, dead, or missing vegetation
- Small rill erosion
- Animal burrows

Groundwater Monitoring Wells and Piezometers allow for sampling and monitoring of groundwater at the site in proximity to the capped containment area.

Monitoring wells listed in Table 3 should be checked for the following:

- Signs of damage to the casing or collar
- Degraded condition of the lock and cover
- Degraded condition of the weep hole from casing
- Evidence of tampering

Gates, Fences, and other Security Features should be fully inspected at each visit to ensure that no unauthorized access is occurring to the site. Additionally, signs of other site usage should be noted.

Check for the following:

- Cutting or bending of fence fabric
- Missing locks, hinges, etc. from gates
- Motorbike or snowmobile tracks
- Shotgun shell casings
- Cans or other trash
- Other signs of unauthorized access or vandalism

4.2 Routine Maintenance

Routine maintenance will consist of the activities discussed in the following paragraphs.

Mowing shall be performed at least twice yearly, as necessary to maintain a dense vegetation cover on the cap, and to suppress the growth of woody vegetation. Mowing height shall be no lower than 6 inches. Woody vegetation should be removed from within the fenced area. Herbaceous vegetation can remain.

Fertilization/Soil Amendment shall be performed annually, and as indicated in the information submitted in accordance with the results of agricultural soil testing performed during cap construction. These results will identify the fertilizer application rate recommended for the cap vegetation and the topsoil supplied. Fertilization shall only occur when no rain is anticipated for at least 48 hours.

Debris Removal shall be performed at each scheduled maintenance visit. Debris includes large branches, sticks, rocks, or trash that could accumulate and impair cap drainage.

4.3 Intermittent Maintenance

Like routine maintenance measures, intermittent maintenance measures can be anticipated to be necessary during the post-closure maintenance period. Unlike routine maintenance measures, however, the necessary frequency or schedule of these measures cannot be anticipated. They should be performed on an as-needed basis only, when indicated by the results of the routine site inspections.

In all cases, the following paragraphs address only the basic maintenance procedures necessary to repair the problem. All work should be performed to the same standards and quality as outlined in the original construction specifications (Contract Documents for the Poultney Street Site Remedial Construction Project), unless otherwise deemed necessary for successful maintenance. The cause of the problem must be identified and addressed in the maintenance corrective action. The corrective action must be appropriate and intended to minimize the likelihood that the problem will reoccur. Elimination of the cause may require a greater amount of work than simply repairing the problem area with the specified routine maintenance procedure.

Regrading and Repair of the cap will be necessary to address significant subsidences, erosion, sloughing, animal burrows, etc. The following steps should be employed as appropriate:

- The damaged area should be prepared for repair by removal of segregated pockets of eroded soil or stone. The edges of the damaged area should be laid back to at least a 1V:1H slope, and cleaned of loose material, to facilitate bonding with newly placed soil.
- Extreme care must be exercised in removal of soil from above the underlying geosynthetics. No work (cleaning, laying-back, etc.) should be performed within 6 inches of the geosynthetics, unless damage to the geosynthetic has already occurred. If it has, the geosynthetic must first be repaired (including removal of overlying soil as necessary), and the soil components of the cap repaired subsequently.
- The soil materials used in the repair should meet the same criteria as did the original materials used in the cap construction, and should be placed in the same manner. Reference to the project specifications and Record Drawings will be necessary to determine the components of the final cover at the repair area. Materials meeting the project specifications should be placed to the lift thicknesses specified, and compacted. The soil may be compacted with small (walk-behind) vibratory or sheeps-foot equipment. No in-place density testing will be necessary, however, for small repairs. Compaction need only be performed to an un-yielding state.
- Vegetation should be established on the repair area, in accordance with the following paragraph, as soon as possible.

Vegetative Re-establishment will be necessary to repair areas of sparse, missing, or dead vegetation on the cap, including areas that have been regraded, as follows:

- Evaluate the need for fertilization or soil amendment, and perform as necessary
- Scarify the area, if necessary
- Seed with the appropriate permanent seed mixture
- Incorporate an additional temporary seed mixture if necessary
- Cover with temporary or permanent erosion control matting, as appropriate

4.4 Contingency Maintenance

Should any problem occur that is not addressed in the previous paragraphs, contingency maintenance measures must be taken:

1. Within 48 hours of detection, as appropriate, notify the individuals listed in Table 4 of the nature of the problem.
2. Perform temporary corrective measures as soon after detection as possible to keep the problem from worsening.
3. Within 7 days of detection, prepare and distribute a Corrective Action Plan that addresses the following:
 - The nature and extent of the problem
 - The apparent cause of the problem
 - Temporary corrective measures taken
 - Recommended corrective action
 - Recommended schedule of implementation
 - Recommended monitoring schedule for repaired area

The Plan must be submitted to all of the individuals listed in Table 4. Within an additional 7 days, all appropriate parties shall agree upon the Action Plan and its schedule of implementation. The contingency action will be monitored and reported in accordance with the requirements of the approved Corrective Action Plan.

5.0 WELLS

5.1 Routine Inspection

Groundwater monitoring wells and piezometers will be sampled as specified in Section 5.3. At those times, the components of the wells should be inspected, including specifically the condition of the riser and the turbidity of the water (i.e., the possible need for redevelopment). During routine inspections, the outside of the protective casing should be inspected for the following:

- Condition of lock and cover
- Signs of damage to casing or collar
- Condition of the weep hole from casing
- Evidence of tampering

5.2 Routine Maintenance

Routine maintenance activities for groundwater monitoring wells and piezometers include the following:

- Maintain access to the well and control surrounding vegetation, weeding, etc. No herbicides or pesticides may be used without written approval by the NYSDEC.
- Replace damaged well caps and locks to keep out rodents and prevent unauthorized access.
- Extend or repair well casing if required.
- Replace well identification tag if missing or unreadable.
- Install or repair protective bollards for wells located in high-traffic areas.
- Rehabilitate and clear well of accumulated sediment if required.

5.3 Long Term Monitoring

Groundwater sampling consists of annual sampling of all monitoring wells and piezometers listed on Table 3. These sampling locations are shown on Figure 2. Monitoring wells will be sampled following procedures presented in Section 5.3.2.

Groundwater samples shall be collected during the first annual sampling event for baseline parameters. The baseline parameters consist of target compound list (TCL) volatile

organic compounds (VOCs) plus tentatively identified compounds (TICs) following United States Environmental Protection Agency (USEPA) SW846 Method 8260B. In addition, Quality Assurance/Quality Control (QA/QC) samples will be collected at the frequencies as shown on Table 5. The volume of sample, bottle type, and preservation required for the groundwater samples is provided in Table 6.

Subsequent to the baseline event, groundwater samples will be collected on an annual basis and will be analyzed for TCL VOCs plus TICs following USEPA SW846 Method 8260B. In addition, QA/QC samples will be collected at the frequencies as shown on Table 5. The volume of sample, bottle type, and preservation required for the groundwater samples is provided in Table 6.

5.3.1 Hydraulic Monitoring

Prior to the annual groundwater sampling event, a synoptic round of groundwater levels will be obtained from the wells listed in Table 3. The ground water measurements will assist in determining the direction(s) of ground water flow. Groundwater levels measurements will be obtained using an electronic water level indicator using the following procedure:

Procedure:

1. Clean the water level probe and the lower portion of cable following standard decontamination procedures and test water level meter to ensure that the batteries are charged.
2. Lower the probe slowly into the monitoring well until the audible alarm indicates water.
3. Read the depth to the nearest hundredth of a foot from the graduated cable using the mark on the riser pipe as a reference.
4. Repeat the measurement for confirmation and record the water level.
5. Remove the probe from the well slowly, drying the cable and probe with a clean "Chem Wipe" or paper towel.
6. Replace the well cap and lock protective cap in place.
7. Decontaminate the water level meter if additional measurements are to be taken.

5.3.2 Groundwater Sampling

Groundwater samples will be collected from the wells listed in Table 3 using low flow sampling techniques. Purge water from wells within the containment area will be collected and containerized. After the water is taken outside the limits of the cap, it will be allowed to infiltrate into the ground surface. Purge water from wells outside of the cap will be allowed to infiltrate into ground surface up gradient of the well location being sampled. Purging will require the removal of one to three volumes of standing water by pumping at a rate of less than one (1) liter per minute. Drawdown must not exceed ten percent of the standing water column. Sampling should commence immediately after purging. Monitoring well purging will be completed using the low-flow purging technique as follows:

1. The well cover will be unlocked and carefully removed to avoid having any foreign material enter the well. The interior of the riser pipe will be monitored for organic vapors using PID. If a reading of greater than 5 ppm is recorded, the well will be vented until levels are below 5 ppm before purging begins.
2. Using an electronic interface probe/water level detector, the water level below top of casing will be measured. The depth of the well will be measured to determine the volume of water in the well. The end of the probe will be decontaminated between wells.
3. Calibrate field instruments (e.g., pH, specific conductance, PID, turbidity).
4. Purge the required water volume (i.e., until stabilization of pH, temperature, specific conductivity, and turbidity) using a low-flow pump and dedicated HDPE tubing. New dedicated tubing will be used for each well.
5. Purge the well until the water quality parameters have stabilized. The stabilization criteria are: specific conductivity - 3% full-scale range; pH - 0.10 pH unit; dissolved oxygen - 10%, Turbidity - 10% and oxidation/reduction (redox) potential - +/- 10 units.
6. Purging of three well volumes is not necessary if the indicator parameters are stable. However, at least one (1) well volume must be purged before sampling can begin. During purging, it is permissible to by-pass the flow cell until the groundwater has cleared.
7. Indicator parameters of pH, conductivity, dissolved oxygen, oxidation/reduction (redox) potential, turbidity, and temperature must be measured continuously using the flow cell.
8. Well purging data are to be recorded in the field notebook and on the Low Flow Purge Log (Appendix A).

Groundwater samples collected will be analyzed for the parameters listed in Table 5. The volume of sample, bottle type, and preservation required for the product samples is provided in Table 6. All samples will be recorded on a chain-of-custody (COC) and preserved appropriately.

6.0 RECORD KEEPING AND REPORTS

6.1 Records Management

Standardized forms shall be used to record the results of inspections, monitoring and maintenance activities that are described in Section 4.0 and Section 5.0. These forms are included in Appendix A.

6.2 Annual Reports

The Annual Site Management report shall summarize analytical results from the annual sampling event, summarize routine and intermittent maintenance performed, and present conclusions and recommendations of the annual project evaluation. A copy of the laboratory data shall be included in the appendix of the report. The Annual Site Management report will also include the following:

- The Department site identification number, site name, municipality, county that the site is located in, and date of the report should appear on the cover.
- Text detailing the site activities completed over the given calendar year.
- Tables with groundwater elevation data, detected analytes in groundwater with applicable criteria.
- A Data Usability Summary Report.
- A Location map.
- A Site map showing sampling and well locations.
- Maps showing the potentiometric surface of all water bearing zones.
- A map showing detected analytes in groundwater with applicable criteria.
- Completed sampling forms.
- Completed maintenance and inspection forms and field notes.
- A description of repairs made.
- Comments, conclusions and recommendations based on an evaluation and resolution of problems identified.
- Photographs.

6.3 Submittal Requirements

Annual reports shall be submitted within 60 days of the completion of the annual sampling event. All reports shall be submitted in an acceptable electronic format. Two paper copies of all reports will also be submitted to the NYSDEC.

TABLES

TABLE 1
LANDFILL CAP
SCHEDULE OF ROUTINE INSPECTIONS

Cap Component	Inspection Schedule
Cap Grading	Annually
Cap Vegetation	Annually
Groundwater Monitoring Wells and Piezometers	Annually
Fence and Gate	Annually

TABLE 2
LANDFILL CAP SYSTEM
MINIMUM CHECKLIST FOR ROUTINE INSPECTIONS

Component	Item	Number/Location/ Area Checked	Condition
Cap Grading	Obvious subsidences, depressions, or cracks Evidence of ponded water Stressed vegetation Signs of erosion occurring at a localized change in grade Evidence of breaching of toe Animal burrows Other:		
Cap Vegetation and Repaired Vegetation	Areas of sparse, dead, or missing vegetation Small rill erosion Animal burrows Other:		
Groundwater Monitoring Wells	Condition of lock and cover Signs of damage to casing or collar Condition of weep hole from casing Evidence of tampering Other:		
Fences and Gates	Cutting or bending of fence fabric Missing locks, hinges, etc. from gates Motorbike or snowmobile tracks Shotgun shell casings Beer cans or other trash Other signs of access or vandalism Condition of access road surface Other:		

TABLE 3
LIST OF WELLS FOR ROUTINE INSPECTION

(See Figure 2 for Well Locations)

<u>Wells</u>
MW - 1
MW - 2
MW - 3
MW - 4
MW - 5
MW - 6R
MW - 7
MW - 8
PZ - 3
PZ - 4
PZ - 7
PZ - 9
PZ - 12

TABLE 4
CONTACTS / TELEPHONE NUMBER LIST

[This table will be completed by the NYSDEC prior to the beginning of the maintenance period.]

<u>Name</u>	<u>Affiliation</u>	<u>Contact Information</u>
Mr. Michael A. Mason	NYSDEC	Remedial Bureau E, Section A Div. Environmental Remediation NYSDEC 625 Broadway, 12 th Floor, Albany, NY 12233-7017 Phone – (518) 402-9814 Fax – (518) 402-9819 mamason@gw.dec.state.ny.us

TABLE 5

SUMMARY OF SAMPLES TO BE COLLECTED AND ANALYTICAL PARAMETERS

Parameter	Method Number ¹	No. of Samples	QA/QC Samples			Total No. of Samples
			Field Duplicates	Trip Blanks	MS/MSD ²	
Baseline Event						
TCL ³ VOCs Plus TICs ⁴	8260B	13	1	2	1/1	18
Annual Events						
TCL ³ VOCs Plus TICs ⁴	8260B	13	1	2	1/1	18

NOTES:

1. NYSDEC Analytical Protocol (ASP), July 2005 Edition.
2. MS/MSD is Matrix Spike/Matrix Duplicate
3. TCL is Target Compound List, as listed in the USEPA CLP Statement of Work OLM04.2
4. TICs are Tentatively Identified Compounds

TABLE 6

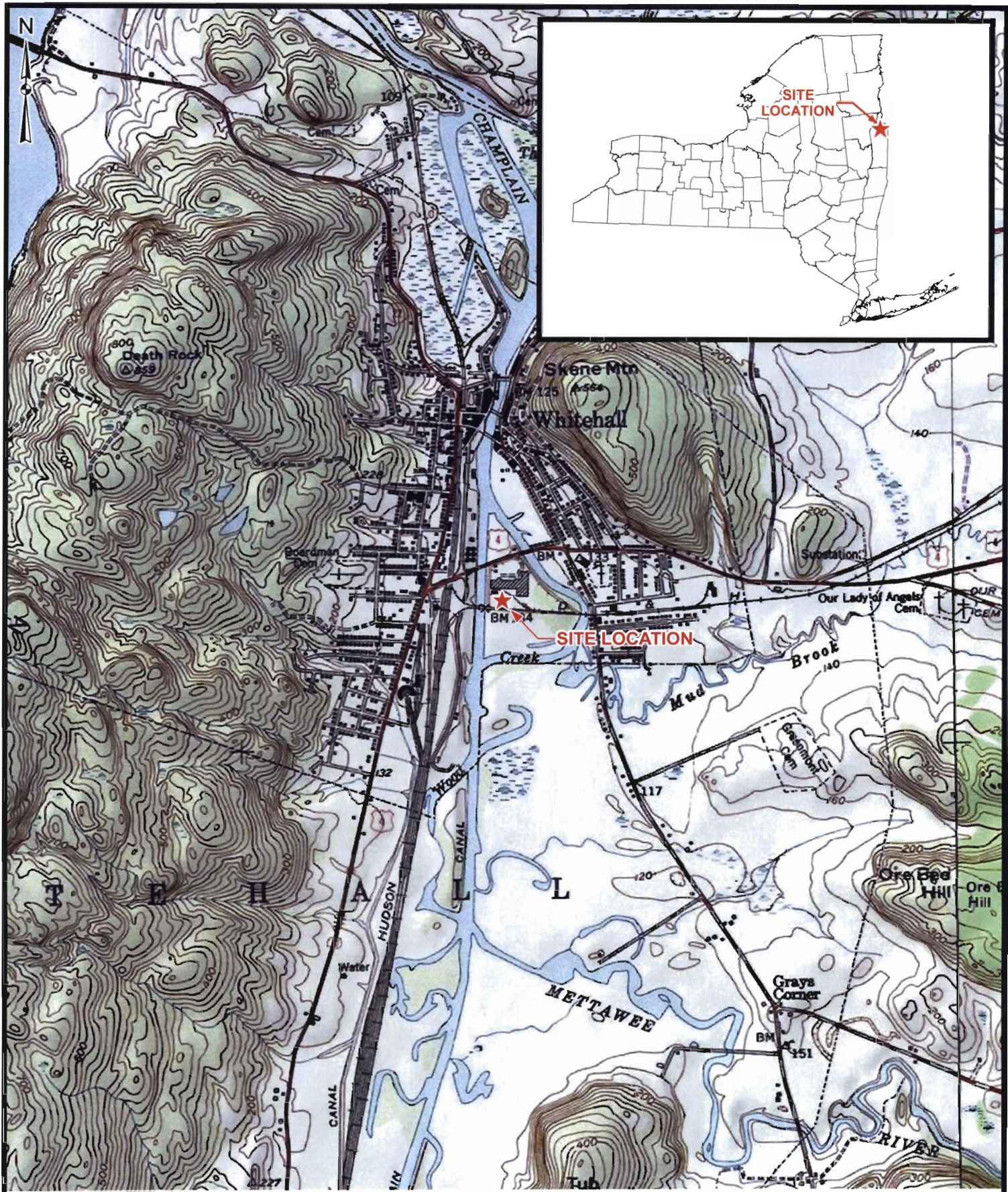
SAMPLE CONTAINER, PRESERVATION, AND HOLDING TIME REQUIREMENTS

Analytical Method/Parameter	Container Size/Type	No. of Containers to be Collected	Preservation	Maximum Holding Time (from VSTR¹)
8260B VOCs	40 ml septum seal vial	3	4°C, HCl	Analysis: 10 days

NOTES:

1. VSTR is validated time of sample receipt (at the laboratory).

FIGURES



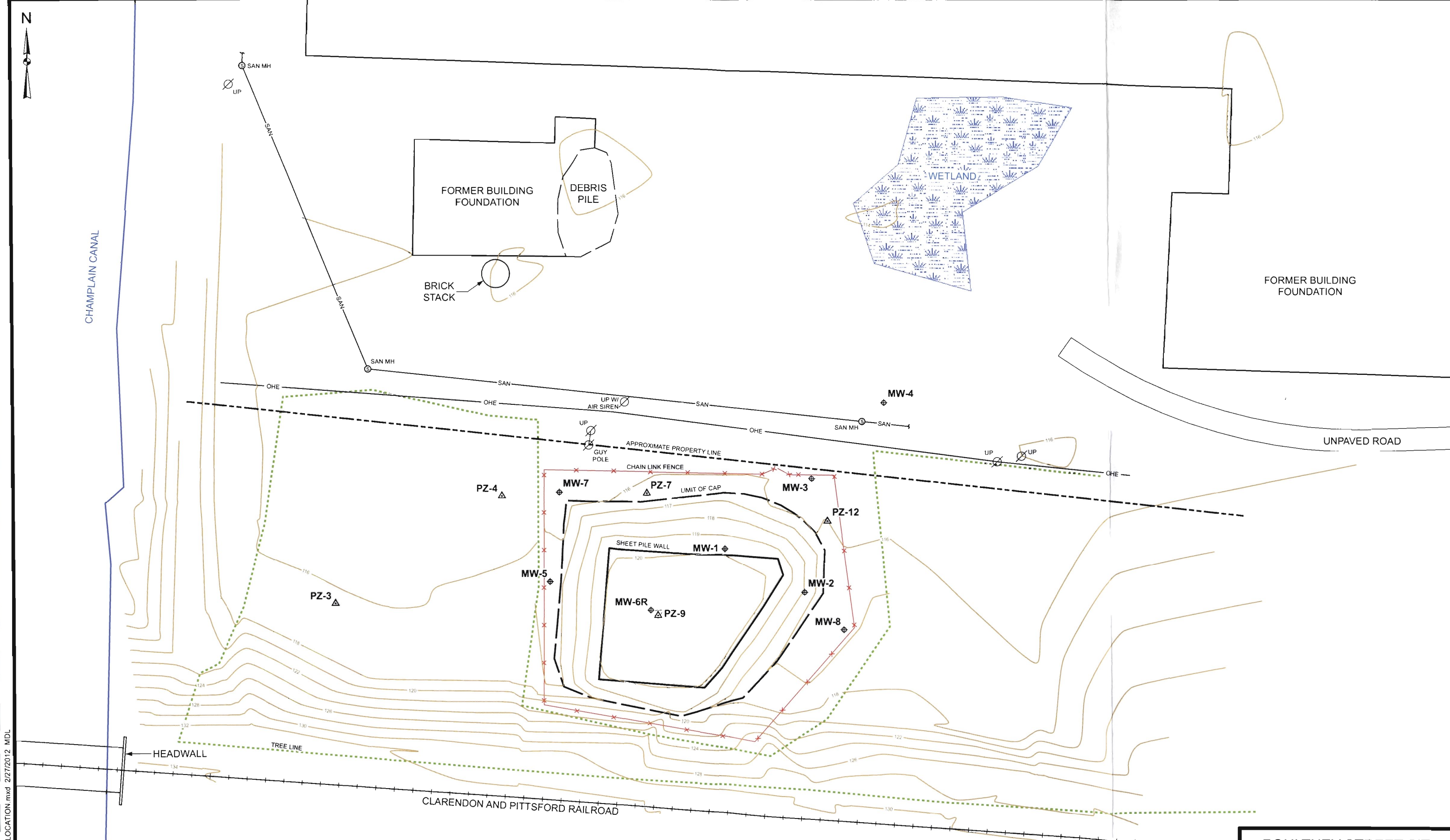
SOURCE:
USA Topo Maps © 2011 National Geographic Society

2,000 0 2,000 Feet



POULTNEY STREET SITE
WHITEHALL, NEW YORK
SITE LOCATION MAP

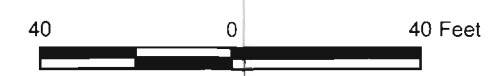
FIGURE 1



I:\11176429\GIS\MAPS\WELL LOCATION.mxd 2/27/2012 MDL

Legend

- ⊕ Monitoring Well
- △ Piezometer



POULTNEY STREET SITE
 WHITEHALL, NEW YORK
 WELL LOCATION PLAN

URS

FIGURE 2

APPENDIX A
SAMPLE FORMS

MONITORING WELL INSPECTION FORM

POULTNEY STREET SITE – POST CLOSURE

NYSDEC SITE NO. 5-58-019
INSPECTION LOG SHEET

Date: _____

Inspector: _____

Weather: _____

Signature: _____

Temperature: _____

Company: _____

Type: Winter Spring Summer Fall
(Circle One)

Item Inspected	Maintenance Needed (Y/N)	Comments	Inspector's Initials
Groundwater Monitoring Wells and Piezometers			
Vegetative Cover			
Final Cover Layers (Cap Settlement, etc.)			
Fence and Gate			
Other Items: (Specify)			
Other Items: (Specify)			

SITE NAME: _____

JOB# _____

DATE: _____

TIME: _____

WELL ID: _____

EXTERIOR INSPECTION

PROTECTIVE CASING: _____

MONITORING WELL INSPECTION FORM

LOCK/HASP: _____

HINGE/LID: _____

WELL PAD: _____

BOLLARDS: _____

LABEL/ID: _____

OTHER: _____

INTERIOR INSPECTION

WELL RISER: _____

ANNULAR SPACE: _____

WELL CAP: _____

WATER LEVEL: _____

DEPTH TO BOTTOM: _____

OTHER: _____

COMMENTS: _____

Inspector's Name: _____

