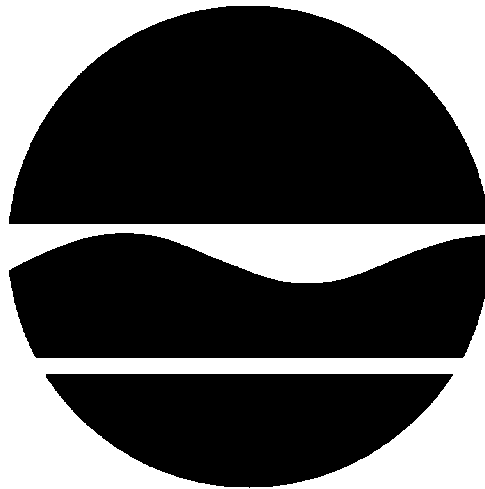


**PROPOSED REMEDIAL ACTION PLAN**  
**714 Broadway Site**  
**Environmental Restoration Project**  
**City of Schenectady, Schenectady County, New York**  
**Site No. E447034**

November 2006



Prepared by:

Division of Environmental Remediation  
New York State Department of Environmental Conservation

# ***A 1996 Clean Water/Clean Air Bond Act*** **Environmental Restoration Project** **PROPOSED REMEDIAL ACTION PLAN**

**714 Broadway Site**  
**City of Schenectady, Schenectady County, New York**  
**Site No. E447034**  
**November 2006**

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## **SECTION 1: SUMMARY AND PURPOSE OF THE PROPOSED PLAN**

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), is proposing a remedy for the 714 Broadway Site.

The 1996 Clean Water/ Clean Air Bond Act provides funding to municipalities for the investigation and cleanup of brownfields. Brownfields are abandoned, idled, or under-used properties where redevelopment is complicated by real or perceived environmental contamination. They typically are former industrial or commercial properties where operations may have resulted in environmental contamination. Brownfields often pose not only environmental, but legal and financial burdens on communities. Under the Environmental Restoration Program, the state provides grants to municipalities to reimburse up to 90 percent of eligible costs for site investigation and remediation activities. Once remediated, the property can then be reused.

As more fully described in Sections 3 and 5 of this document, underground and above-ground storage tanks resulted in the disposal of hazardous substances, including gasoline and fuel oil. These hazardous substances contaminated the soil at the site, and resulted in:

- a threat to human health associated with potential exposure to contaminated soil.

During the course of the investigation certain actions, known as interim remedial measures (IRMs), were undertaken at the 714 Broadway site in response to the threats identified above. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the site investigation/remedial alternatives report (SI/RAR). The IRM undertaken at this site included excavation and removal of four underground storage tanks and associated contaminated soil, plus removal of a 275-gallon above-ground fuel oil storage tank in the building.

Based on the implementation of the above IRM, the findings of the investigation of this site indicate that the site no longer poses a threat to human health or the environment; therefore No Further Action, with an environmental easement to address potential vapor intrusion issues, is proposed as the remedy for this site.

The proposed remedy, discussed in detail in Section 6, is intended to attain the remediation goals identified for this site in Section 6. The remedy must conform with officially promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, criteria and guidance are hereafter called SCGs.

This Proposed Remedial Action Plan (PRAP) identifies the preferred remedy and discusses the reasons for this preference. The Department will select a final remedy for the site only after careful consideration of all comments received during the public comment period.

The Department has issued this PRAP as a component of the Citizen Participation Plan developed pursuant to the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375. This document is a summary of the information that can be found in greater detail in the May 2006 "Tank Closures and Remedial Actions

Report” and other relevant documents. The public is encouraged to review the project documents, which are available at the following repositories:

**Schenectady County Public Library**

Reference Desk

99 Clinton Street

Schenectady, NY 12305-2083

Hours: M-Th 9:00 a.m. - 9:00 p.m., F-Sa 9:00 a.m. - 5:00 p.m., Su 1:00 p.m. - 5 :00 p.m.

Phone: (518) 388-4511

**NYSDEC Region 4 Office**

1150 North Westcott Road

Schenectady, NY 12306

Hours: Monday - Friday 8:30 - 4:00

Appointment requested; contact Allan Geisendorfer at (518) 357-2390

**NYSDEC Central Office**

625 Broadway, 12<sup>th</sup> Floor

Albany, NY 12233-7013

Hours: Monday - Friday 8:30 - 4:30

Appointment requested; contact Larry Alden, Project Manager, at (518) 402-9818

The Department seeks input from the community on all PRAPs. A public comment period has been set from November 22, 2006 through January 5, 2007 to provide an opportunity for public participation in the remedy selection process. A public meeting is scheduled for December 18, 2006 at the McChesney Room of the Schenectady County Public Library’s main branch, 99 Clinton Street, Schenectady, beginning at 7:00 p.m.

At the meeting, the results of the SI/RAR and IRM will be presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period will be held, during which verbal or written comments may be submitted on the PRAP. Written comments may also be sent to Mr. Alden at the above address through January 5, 2007.

The Department may modify the proposed remedy or select another based on new information or public comments. Therefore, the public is encouraged to review and comment on all of the alternatives identified here.

Comments will be summarized and addressed in the responsiveness summary section of the Record of Decision (ROD). The ROD is the Department’s final selection of the remedy for this site.

## **SECTION 2: SITE LOCATION AND DESCRIPTION**

The 714 Broadway Site is a 30-foot by 86-foot lot located on the corner of Broadway and Weaver Street (Figure 1) in the City of Schenectady, Schenectady County. The site consists of a small two-story building on the north half of the lot and an asphalt parking area on the south half of the lot (Figure 2). There are several businesses in the general vicinity of the site and residential housing is located a short distance up Crane Street, to the south. The Broadway Former Manufactured Gas Plant site is located just to the west, along Broadway.

The underlying, native soil at the site is primarily a mixture of silt and fine to medium sand. Groundwater was encountered at a depth of eight to ten feet below the ground surface. Soil around the underground storage tanks consisted of fill material including fine sands and silts with varying amounts of gravel and some brick.

## **SECTION 3: SITE HISTORY**

### **3.1: Operational/Disposal History**

According to historic maps, a two-story structure existed on the southern portion of the site since prior to 1900. Some time between 1930 and 1953 (probably closer to 1953), a two-story service station building was built on the northern half of the site. The southern half of the site was the location of four underground gasoline storage tanks and their associated fuel pumps. Three of the tanks had a capacity of 3,000-gallons and one had a 1,000-gallon capacity. A previous owner who purchased the property in approximately 1978 indicated that the gas pumps had been removed at the time of his purchase.

The service station building had two service bays and an office area on the first floor and an apartment on the second floor. In the southern service bay, vehicles could drive in over an open work pit that was about four feet deep. A cleanout pipe was in the west wall of the work pit and there was a small sump located on the floor of the north end. The northern service bay's floor was partially paved and had a manhole sump in the middle which was connected to a two-inch metal drain pipe which led to the south, under the building.

A small amount of liquid was present in the three larger (and deeper) gasoline storage tanks. This was probably groundwater that entered through the bottoms of the tanks during periods of high water. There was no indication that the tanks were left with product in them when they were abandoned prior to 1978.

Numerous small containers of various household chemicals (paints, asphalt driveway sealer, weed killer, etc.) were stored throughout the building.

### **3.2: Remedial History**

A consultant for the City of Schenectady performed a subsurface investigation of the buried fuel tanks in 2004. This investigation was mostly performed using direct push technology to collect groundwater and soil samples from the vicinity of the tanks.

## **SECTION 4: ENFORCEMENT STATUS**

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past owners and operators, waste generators, and haulers.

Since no viable PRPs have been identified, there are currently no ongoing enforcement actions. However, legal action may be initiated at a future date by the state to recover state response costs should PRPs be identified. The City of Schenectady will assist the state in their efforts by providing all information to the state which identifies PRPs. The City of Schenectady will also not enter into any agreement regarding response costs without the approval of the Department.

## **SECTION 5: SITE CONTAMINATION**

The City of Schenectady has recently completed a site investigation/remedial alternatives report (SI/RAR) to determine the nature and extent of any contamination by hazardous substances at this environmental restoration site.

### **5.1: Summary of the Site Investigation**

The purpose of the SI was to define the nature and extent of any contamination resulting from previous activities at the site. The SI was conducted between September 2005 and April 2006. The field activities and findings of the investigation are described in the SI report.

Soil and groundwater samples were collected for laboratory analysis (volatile and semivolatile organic compounds) to determine the extent of contamination around the underground storage tanks. The interior of the former service station building, including the service bays, work pit, and sumps, was investigated for signs of contamination. An inventory of the miscellaneous household chemical containers was assembled.

#### **5.1.1: Standards, Criteria, and Guidance (SCGs)**

To determine whether the soil and groundwater contain contamination at levels of concern, data from the investigation were compared to the following SCGs:

- Groundwater, drinking water, and surface water SCGs are based on the Department's "Ambient Water Quality Standards and Guidance Values" and Part 5 of the New York State Sanitary Code.
- Soil SCGs are based on the Department's Cleanup Objectives ("Technical and Administrative Guidance Memorandum [TAGM] 4046; Determination of Soil Cleanup Objectives and Cleanup Levels.")

Based on the SI results, in comparison to the SCGs and potential public health and environmental exposure routes, certain media and areas of the site required remediation. These are summarized in Section 5.1.2. More complete information can be found in the SI report.

### **5.1.2: Nature and Extent of Contamination**

This section describes the findings of the investigation for all environmental media that were investigated.

As described in the SI report, soil and groundwater samples were collected to characterize the nature and extent of contamination. As seen in Table 1, the main categories of contaminants that exceed their SCGs are volatile organic compounds (VOCs). For comparison purposes, where applicable, SCGs are provided for each medium.

Chemical concentrations are reported in parts per million (ppm) for soil.

Table 1 summarizes the degree of contamination for the contaminants of concern in post-IRM soil and compares the data with the SCGs for the site. The following are the media which were investigated and a summary of the findings of the investigation.

#### **Subsurface Soil**

Subsurface soil was investigated during the initial subsurface investigation. Five VOCs were found in two of four locations, but the concentrations were below the Department's soil cleanup objectives.

During the IRM (see Section 5.2), 165 tons of gasoline-impacted soil were excavated from around and beneath the storage tanks. This soil was readily identifiable visually or by its odor. Fifteen post-excavation soil samples were collected from the bottom and sidewalls of the excavated area to determine if residual contamination levels were below soil cleanup objectives (see Figure 2). One additional soil sample was collected during installation of one of the groundwater monitoring wells. VOCs were not detected at concentrations above the soil cleanup objectives in the bottom confirmatory samples. Three of the post-IRM confirmatory samples from the sidewalls, taken at a depth greater than nine feet, had some VOCs above the soil cleanup objectives (see Table 1). However, since these samples were biased toward contaminated areas, the actual volume of soil above the cleanup objectives was estimated to be less than five cubic yards. Additionally, excavation of these soils was precluded by the location (e.g., beneath the Weaver Street sidewalk or located beneath utilities at the eastern property boundary) and the effort to remove that small volume was determined to not be cost effective.

Subsurface soil contamination identified during the SI/RAR was addressed during the IRM described in Section 5.2.

#### **Groundwater**

Five groundwater samples were collected during the initial 2004 investigation. VOCs were not detected at concentrations above method detection limits. Groundwater samples were also collected from four groundwater monitoring wells installed after removal of the buried tanks. No site-related groundwater contamination of concern was identified during the SI/RAR. Therefore, no remedial alternatives need to be evaluated for groundwater.

## **5.2: Interim Remedial Measures**

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the SI/RAR.

In September and October 2005, the four underground storage tanks, and one above-ground fuel oil tank located inside the service station building, were removed as an IRM. All the tanks were excavated, cleaned, and shipped off-site as scrap metal. As previously mentioned, approximately 165 tons of gasoline-soaked contaminated soil were excavated and disposed off-site. Also, any fill pipes and associated connections were removed.

During tank removal, it was discovered that the four underground tanks were located inside a six-foot deep stone containment structure which was most likely the foundation of the building which existed on the site prior to the construction of the service station. Because contaminated soil was present beneath this foundation, almost all of the foundation had to be removed with the excavated soil.

As deeper soil was excavated, it was apparent that the contaminated soil was limited vertically (at a depth of about twelve feet), and was pinching out horizontally. After reaching the vertical limit of the contamination, the excavation continued horizontally until it became impractical to follow the contaminated soil further (e.g., it was located beneath the sidewalk or buried utilities, and the sidewalls of the excavation were collapsing). Fifteen post-excavation soil samples were collected from the sidewalls and floor of the trench in areas likely or suspected to have been contaminated. Based on the chemical analysis of the post-excavation samples and instrument readings taken in the excavation combined with visual evidence, it is estimated that a volume of less than five cubic yards of contaminated soil was left in the excavation. The excavation was then backfilled, first with overburden soil excavated from above the tanks then with imported clean sand and gravel. The excavated area was then topped with eight inches of subbase material, a binder course, and top course of asphalt pavement.

Four monitoring wells were installed (see Figure 2) to sample the groundwater beneath the site and to determine the flow direction. One of those wells was installed in the area where the tanks were excavated; the other three are installed around the perimeter of the excavation.

Soil from the small sump in the work pit was evaluated and found not to be contaminated. Visual evaluation and instrument screening did not indicate the soil was contaminated. The work pit itself was in good shape, with only some minor staining. The manhole sump in the north bay was inspected, cleaned, and sealed with concrete, and the miscellaneous household chemical containers were shipped off-site to a permitted disposal facility.

## **5.3: Summary of Human Exposure Pathways:**

This section describes the types of human exposures that may present added health risks to persons at or around the site.

An exposure pathway describes the means by which an individual may be exposed to contaminants originating from a site. An exposure pathway has five elements: [1] a contaminant source, [2] contaminant release and transport mechanisms, [3] a point of exposure, [4] a route of exposure, and [5] a receptor population.

The source of contamination is the location where contaminants were released to the environment (any waste disposal area or point of discharge). Contaminant release and transport mechanisms carry contaminants from the source to a point where people may be exposed. The exposure point is a location where actual or potential human contact with a contaminated medium may occur. The route of exposure is the manner in which a contaminant actually enters or contacts the body (e.g., ingestion, inhalation, or direct contact). The receptor population is the people who are, or may be, exposed to contaminants at a point of exposure.

An exposure pathway is complete when all five elements of an exposure pathway exist. An exposure pathway is considered a potential pathway when one or more of the elements currently does not exist, but could in the future.

There are no known completed exposure pathways for the site. Potential exposure pathways are discussed below.

#### Subsurface Soil

Direct contact, ingestion or inhalation of subsurface soil contaminated with VOCs are potential exposure pathways for future site workers who may contact subsurface soil during future construction work. Site visitors and trespassers could potentially be exposed to contaminants in subsurface soil through the inhalation of dust generated during future site excavation/construction work.

#### Soil Vapor

Volatile petroleum-related chemicals remaining in the subsurface soil, as described in Section 5.2, have the potential to be a source for soil vapor contamination and can pose a potential threat to indoor air quality of any buildings developed or re-occupied on the site.

#### **5.4: Summary of Environmental Assessment**

Only a small volume of contaminated soil exists at a depth of over eight feet beneath the site, under an asphalt cap. Therefore a viable exposure pathway to fish and wildlife receptors is not present.

#### **SECTION 6: SUMMARY OF THE REMEDIATION GOALS, PROPOSED REMEDY, AND THE PROPOSED USE OF THE SITE**

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. At a minimum, the remedy selected must eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous substances disposed at the site through the proper application of scientific and engineering principles.

Prior to the completion of the IRM described in Section 5.2, the remediation goals for this site were to eliminate or reduce to the extent practicable:

- the release of contaminants from soil into groundwater that may create exceedances of groundwater quality standards;
- exposures of persons at or around the site to gasoline-related VOCs in subsurface soil.

The main SCGs applicable to this project are as follows:

- ambient groundwater quality standards;
- The Department's soil cleanup objectives (TAGM 4046).

The Department believes that the IRM has accomplished the remediation goals and satisfied the SCGs for the site.

Based on the results of the investigations at the site, the IRM that has been performed, and the evaluation presented here, the Department is proposing No Further Action, with an environmental easement to address potential vapor intrusion issues, as the preferred alternative for the site. The Department believes that this alternative would be protective of human health and the environment and would satisfy all SCGs as described above. Overall protectiveness is achieved through meeting the remediation goals listed above.

Therefore, the Department concludes that No Further Action, with an environmental easement to address potential vapor intrusion issues, is needed. The elements of the IRM already completed are listed below:

1. Excavation and removal of four underground storage tanks and 165 tons of contaminated soil;
2. Backfilling of the excavation and paving the excavated area;
3. Removal of miscellaneous household chemical containers;
4. Cleaning and sealing the manhole sump in the north bay of the former filling station building;
5. Imposition of an institutional control in the form of an environmental easement that would require (a) compliance with the approved site management plan; and (b) the property owner to complete and submit to the Department a periodic certification of institutional and engineering controls.
6. Development of a site management plan which would include the following institutional and engineering controls: (a) continued evaluation of the potential for vapor intrusion for any buildings developed or re-occupied on the site, including provision for mitigation of any impacts identified.
7. The property owner would provide a periodic certification of institutional and engineering controls, prepared and submitted by a professional engineer or such other expert acceptable to the Department, until the Department notifies the property owner in writing that this certification is no longer needed. This submittal would: (a) contain certification that the institutional controls and engineering controls put in place are still in place and are either unchanged from the previous certification or are compliant with Department-approved modifications; (b) allow the Department access to the site; and (c) state that nothing has occurred that would impair the ability of the control to protect public health or the environment, or constitute a violation or failure to comply with the site management plan unless otherwise approved by the Department.

The proposed future use for the 714 Broadway site is commercial.

**TABLE 1**  
**Nature and Extent of Contamination**  
 October 2005

<b>SUBSURFACE SOIL</b>	<b>Contaminants of Concern</b>	<b>Concentration Range Detected (ppm)<sup>a</sup></b>	<b>SCG<sup>b</sup> (ppm)<sup>a</sup></b>	<b>Frequency of Exceeding SCG</b>
<b>Volatile Organic Compounds (VOCs)</b>	1,2,4-Trimethylbenzene	ND - 32	10	2 of 16
	1,3,5-Trimethylbenzene	ND - 15	3.3	1 of 16
	m & p Xylene	ND - 19	1.2	1 of 16
	n-Propylbenzene	ND - 9.1	3.7	3 of 16

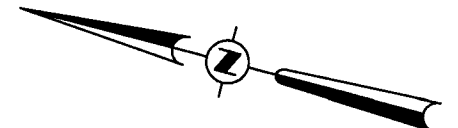
<sup>a</sup> ppm = parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;

<sup>b</sup> SCG = standards, criteria, and guidance values;

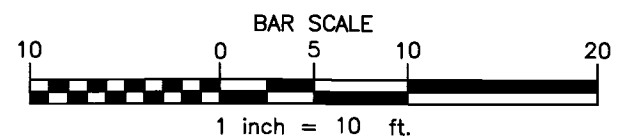
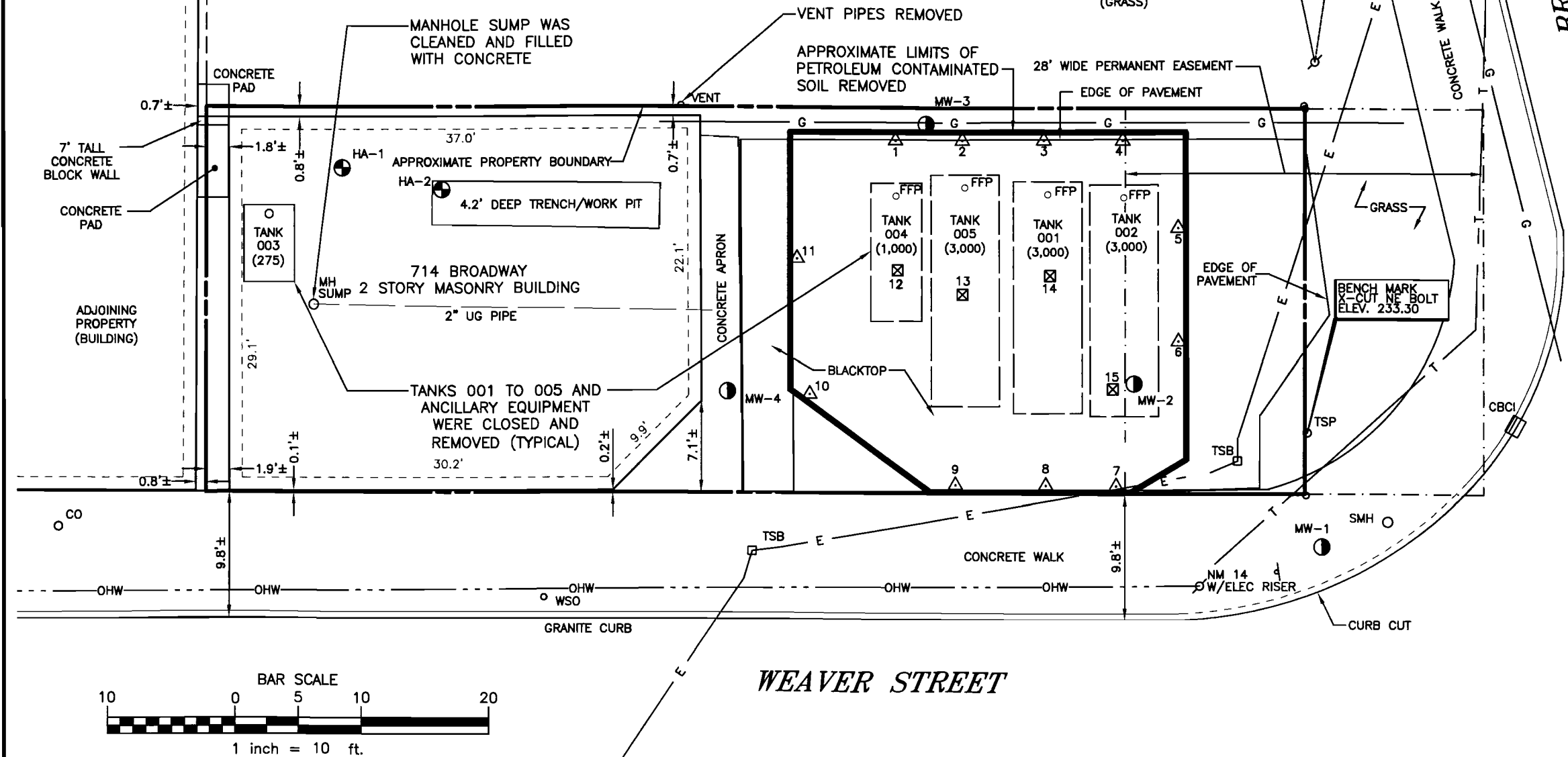
ND = Not Detected



SOIL SAMPLING ID TABLE					
No.	SOIL SAMPLE ID	DEPTH BELOW GRADE	No.	SOIL SAMPLE ID	DEPTH BELOW GRADE
1	TANK 4 EAST WALL	9'	9	TANK 5 WEST WALL	10'
2	TANK 5 EAST WALL	10'	10	NORTH WALL WEST	9'
3	TANK 1 EAST WALL	10'	11	NORTH WALL EAST	10'
4	TANK 2 EAST WALL	10'	12	TANK 4 FLOOR	10'
5	SOUTH WALL EAST	10'	13	TANK 5 FLOOR	12'
6	SOUTH WALL WEST	9'	14	TANK 1 FLOOR	11'
7	TANK 2 WEST WALL	9'	15	TANK 2 FLOOR	13'
8	TANK 1 WEST WALL	10'			



- LEGEND**
- ⊕ HA-1 APPROXIMATE HAND AUGER LOCATION ADVANCED 10/05 (TYPICAL)
  - ⊙ MW-1 MONITORING WELL LOCATION AND ID INSTALLED 10/06/05 (TYPICAL)
  - ⊠ 12 APPROXIMATE LOCATION OF CONFIRMATORY SOIL SAMPLE FROM EXCAVATION FLOOR. SEE SOIL SAMPLING ID TABLE (TYPICAL)
  - △ 1 APPROXIMATE LOCATION OF CONFIRMATORY SOIL SAMPLE FROM EXCAVATION SIDE WALL. SEE SOIL SAMPLING ID TABLE (TYPICAL)
  - CAPPED IRON ROD FOUND
  - ⊕ UTILITY POLE
  - ⊕ UTILITY POLE WITH LIGHT
  - GUY WIRE
  - OWH OVERHEAD WIRES
  - E UNDERGROUND ELECTRIC LINE
  - TSP TRAFFIC SUPPORT POLE
  - TSB TRAFFIC SIGNAL BOX
  - T UNDERGROUND TELEPHONE LINE
  - ⊕ HYD HYDRANT
  - WSO WATER SHUTOFF
  - W UNDERGROUND WATER LINE
  - G UNDERGROUND GAS LINE
  - CBCI CATCH BASIN (CURB INLET)
  - SMH SANITARY MANHOLE
  - CO SANITARY CLEANOUT
  - SIGN
  - FFP FUEL FILL PIPE



CAD DWG. FILE NAME: FINAL SOIL REM. MAP.DWG

NOTE:  
 1. THE LOCATIONS AND FEATURES DEPICTED ON THIS MAP ARE APPROXIMATE AND DO NOT REPRESENT AN ACTUAL FIELD SURVEY.  
 2. HOWEVER, THE MH SUMP, TRENCH/WORK PIT, EDGE OF PAVEMENT AND MONITORING WELLS WERE SURVEYED BY C.T. MALE ASSOCIATES, P.C. ON OCTOBER 31, 2005.  
 MAP REFERENCE:  
 1. BOUNDARY SURVEY, 714 BROADWAY, PREPARED BY C.T. MALE ASSOCIATES, P.C., DATED APRIL 22, 2005, DWG. NO. 05-332.

DATE	REVISIONS RECORD/DESCRIPTION	DRAFTED	CHECK	APPR.
	△ 1			
	△ 2			
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 C.T. MALE ASSOCIATES P.C.  
 DESIGNED :  
 DRAFTED : MMB  
 CHECKED : L. ROVERS  
 PROJ. NO: 05.5086  
 SCALE : 1"=10'  
 DATE : MAY 8, 2006

**TANK CLOSURES AND SOIL REMEDIATION LIMITS AND SAMPLING LOCATIONS MAP**

**TANK CLOSURES AND SOIL REMEDIATION 714 BROADWAY SITE**

CITY OF SCHENECTADY SCHENECTADY COUNTY, NY

**C.T. MALE ASSOCIATES, P.C.**  
 50 CENTURY HILL DRIVE, P.O. BOX 727, LATHAM, NY 12110  
 518.786.7400 \* FAX 518.786.7299  
 ARCHITECTURE & BUILDING SYSTEMS ENGINEERING \* CIVIL ENGINEERING  
 ENVIRONMENTAL SERVICES \* SURVEY & LAND INFORMATION SERVICES

**FIGURE 2**  
 SHEET 1 OF 2  
 DWG. NO: 05-0850