Department of Environmental Conservation

Division of Environmental Remediation

# Site Management Plan

# Envirotek I Site,
# 153 Fillmore Avenue, Tonawanda,
# Erie County, New York

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New York State Department of Environmental Conservation
Region 9
270 Michigan Avenue
Buffalo, New York 14203-2915

# Site Management Plan

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## Erie County, New York


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## 1.0 INTRODUCTION

The Envirotek I Site (the Site), located at 153 Fillmore Avenue in the City of Tonawanda, Erie County, New York (Figures 1-1 and 1-2), was remediated in 2001 and 2002 by the City of Tonawanda and Erie County under a Voluntary Cleanup (VC) Agreement (Site No. V00379, Index No. B9-0583-00-08) with the New York State Department of Environmental Conservation (NYSDEC). The property was subsequently sold to Manth Manufacturing, Inc. by the City of Tonawanda on October 24, 2003.

At the time the Site was remediated, environmental easements and Site Management Plans were not required by the NYSDEC. As a result, a Site Management Plan was never drafted for the Envirotek I Site. The components of such a plan, however, were contained in the March 18, 2003 report entitled "*Final Report For 153 Fillmore Avenue, City of Tonawanda*" (Final Report), and in the Sales Agreement between Manth Manufacturing and the City of Tonawanda. The long term requirements for the Site include the following:

- **Institutional Controls:** Institutional controls consist primarily of deed restrictions specifically prohibiting the use of the property for anything other than commercial/industrial activities without a waiver from the NYSDEC. The property cannot be used for any type of residential, agricultural, or school/day care purposes, and the use of groundwater as a source of potable or industrial water is prohibited without prior NYSDEC approval and proper treatment;

- **Soils Management Plan:** The remediation of the property included the placement of a one foot thick clean soil cover over most of the Site. Asphalt was placed over the Site in some locations for use as parking and access to Site Buildings. The Soils Management Plan requires that the cover system be maintained. Any disturbance of the cover must follow specific soil management procedures for disturbed soils with restoration of the cover system to its original, pre-disturbance conditions; and

- **Groundwater Monitoring Plan:** Eight groundwater monitoring wells (MW-1 thru MW-8) were installed along the perimeter of the Envirotek I Site during the voluntary clean-up program (Figure 1-3). The Groundwater Monitoring Plan requires the sampling of these wells with analysis to ensure that no significant offsite migration of residual contamination occurs.

In accordance with the Sales Agreement, the City of Tonawanda is responsible for implementing the Groundwater Monitoring Plan, while Manth Manufacturing is responsible for complying with a five-page document entitled "*Deed Restriction*" that was prepared by the NYSDEC and attached to the Sales Agreement. This Deed Restriction contained the long term provisions for the Site as outlined above.

## 1.1 Purpose for the Site Management Plan

A review of the Sales Agreement reveals that there are slight inconsistencies within the Deed Restriction, and between the Deed Restriction and the Final Report. In addition, at the start of long-term groundwater monitoring in 2007, two of the wells were found to be damaged (MW-4 and MW-7), while three of the downgradient wells (MW-1 thru MW-3) could not be located (Figure 1-3). Because groundwater monitoring did not start until five years after remediation activities were complete, it was decided to sample the existing wells to determine if groundwater monitoring was still required. The groundwater results from 2007 and 2008 indicate that concentrations of volatile organic compounds (VOCs) and metals remain elevated, and that the potential exists for contaminants to migrate from the Site via groundwater towards Ellicott Creek. To evaluate this potential, in March 2009 the NYSDEC requested that the City of Tonawanda replace wells MW-1 and MW-2, and incorporate them into the groundwater monitoring program beginning with the 2009 sampling event.

Due to the inconsistencies described above and the alteration of the monitoring well network, the NYSDEC determined that modification to the existing long term plans was required. These modifications are included in this formal Site Management Plan (SMP), which complies with 6 NYCRR Part 375-1.8. This SMP provides a detailed description of all procedures required to manage remaining contamination at the Site, including: (1) management of all Institutional and Engineering Controls with certification of those controls; (2) soils management; (3) groundwater monitoring; (4) completion of annual inspections; and (5) submittal of Periodic Review Reports. This SMP includes three plans: (1) an Institutional and Engineering Control Plan; (2) a Soils Management Plan; and (3) a Groundwater Monitoring Plan. These individual plans are consistent with the long term requirements for the Envirotek I Site that are contained in the Final Report and Deed Restriction, but are also consistent with the requirements of the Part 375 regulations.

## 1.2 Site Management Plan Organization

Following this introductory section (Section 1.0), the remaining sections of this Site Management Plan are organized as follows:

- **Section 2.0, Site Description and History:** This section briefly describes the Envirotek I Site, and presents a brief summary of the investigations and remedial activities that were completed at the Site;

- **Section 3.0, Institutional and Engineering Control Plan:** This section contains the Institutional and Engineering Control Plan for the Site, and includes the Institutional and Engineering Controls Certification Form and reporting requirements;

- **Section 4.0, Soils Management Plan:** This section contains the Soils Management Plan for the Site, and includes cover maintenance and repair requirements;

- **Section 5.0, Groundwater Monitoring Plan:** This section contains the Groundwater Monitoring Plan for the Site, and includes reporting requirements; and

- **Section 6.0, References:** This section contains a list of references utilized or cited in this Site Management Plan.

## 2.0 SITE DESCRIPTION AND HISTORY

### 2.1 Site Description

The Envirotek I Site is located at the 153 Fillmore Avenue in the City of Tonawanda, Erie County, New York (Figures 1-1 and 1-2). The total area of the Site is approximately 1.7 acres. The Site is located in a mixed industrial, commercial and residential setting, and is bordered to the east by an active railroad line, to the north and south by small commercial/industrial facilities, and to the west by Fillmore Avenue (Figure 1-2). Ellicott Creek is located approximately 350 feet west of Fillmore Avenue (Figure 1-2).

### 2.2 Site History

Between 1946 and 1957, the property was occupied by the National Manufacturing Corporation, while the Tonawanda Roofing and Paint Company was located adjacent to 153 Fillmore Avenue to the north. Local workers report that roofing materials were produced at the National Manufacturing Corporation and were installed by the Tonawanda Roofing and Paint Company. In 1957, National Manufacturing Corporation added paint manufacturing facilities at the subject property. Raw materials for paint production were shipped to the facility in bulk and stored in both above-ground (ASTs) and underground storage tanks (USTs). National Manufacturing Corporation closed the facility in 1981.

In 1981, Envirotek Ltd, a solvent recycling company, reopened the facility as a Resource Conservation and Recovery Act (RCRA) treatment, storage, and disposal facility (TSDF). Containers of RCRA hazardous wastes were transported to the facility where they were stored pending reshipment to RCRA disposal facilities. Containers of RCRA characteristic ignitable, corrosive, and toxic hazardous wastes were stored at the facility from 1981 to 1986. A number of containers were left at the facility when Envirotek Ltd abandoned the property in 1988.

The NYSDEC contacted the United States Environmental Protection Agency (USEPA) concerning the Envirotek I property on June 29, 1987. The USEPA conducted a Preliminary Assessment (PA) under the Comprehensive Environmental Response, Compensation and Liabilities Act (CERCLA) on November 29-30, 1988. The PA disclosed that an estimated 770, 55-gallon drums and 1,000 smaller containers of RCRA flammable, combustible, and corrosive hazardous wastes were present at the Site. Several process vessels, four large ASTs, two UST's, and six transformers were also present on the property.

On July 18, 1989 the USEPA initiated remedial action activities at the Site. These activities were completed on October 15, 1990, and included:

- The identification and categorization of all RCRA hazardous wastes;
- The repackaging of 31,165 gallons of liquids and 11,655 pounds of solids for off-site incineration;
- The repackaging of 204 cubic yards of solids for off-site disposal in a landfill; and
- The repackaging of 61,975 pounds of solids for off-site recycling.

A summary of the remedial action activities completed by the USEPA are presented in a 1990 report entitled "*Federal On-Scene Coordinator's Report – Envirotek I, Tonawanda, Erie County, New York.*"

In 1997, the NYSDEC conducted a limited site investigation to determine if the Site posed a significant threat to human health or the environment. This investigation consisted of the collection of five surface water/sediment samples from Ellicott Creek and eight surface soil samples from the Site with analysis for Target Compound List (TCL) volatile organic compounds (VOCs), TCL semivolatile organic compounds (SVOCs), TCL pesticides, TCL polychlorinated biphenyls (PCBs), Target Analyte List (TAL) metals and cyanide. The results of this investigation indicated that there was no impairment to creek sediment or surface water related to the Site. Surface soil at the Site, however, contained polycyclic aromatic hydrocarbons (PAHs), PCBs, and numerous metals at concentrations that exceeded the NYSDEC soil cleanup objectives. The highest concentrations were observed in the northeastern portion of the Site.

In 2001, a Site Investigation was completed at the Site by the URS Corporation as part of the Voluntary Cleanup Agreement. The primary contaminants detected at the Site included VOCs and SVOCs in surface soils, subsurface soils, and groundwater. Metals and PCBs were also detected in surface soils and groundwater. The results of this investigation are presented in a 2002 report entitled "*Site Investigation/ Remedial Alternatives Report*", and summarized in more detail in the Soils Management Plan that appears in Section 4.0 of this SMP.

### 2.3 Site Geology and Hydrogeology

The 1986 United States Department of Agriculture (USDA) Soil Conservation Service Soil Survey of Erie County, New York describes the soil type in the Tonawanda area as Urban land soil consisting of nearly level urbanized areas and areas of well drained to poorly drained soils and disturbed soils, on lowland plains. At the Envirotek I Site, these soils are overlain by 0 to 4 feet of fill materials consisting predominantly of sandy loam with some cinders, concrete and brick fragments, and traces of wood and metal.

The native soils in the Tonawanda area were deposited during the last ice age in glacial/post-glacial ancestral lakes and consist of silt, sand and clay deposits. At the Envirotek I Site, native soils consist

predominantly of light brown to grey, fine grained sandy silt, fine to medium grained sand, and fine to coarse grained sand and gravel. These native soils are underlain by a stiff, reddish brown silty clay that was encountered at depths ranging from 12.0 to 14.0 feet across the Site.

The uppermost bedrock formation underlying the Envirotek I Site is the Camillus Shale. This formation, however, was not encountered at the Site during any of the investigations completed there.

During the 2001 Site Investigation, groundwater at the Site was encountered at depths ranging from 1.56 to 7.08 feet below ground surface. A groundwater contour map generated from these water level data indicates a radial flow pattern centered on well MW-7 with more unidirectional flow across the western portion of the Site (Figure 2-1). In general, groundwater flow is to the west towards Ellicott Creek, which is located approximately 350 feet west of the Site.

### 2.4 Site Remediation

The remedial activities completed at the Envirotek I Site were separated into two phases. Phase I, completed in 2001, consisted of the demolition and removal of various structures, the removal of three underground storage tanks, backfilling with clean material, and the stockpiling of approximately 2,000 cubic yards of contaminated soil and debris from the UST removal in the northeastern portion of the Site. This stockpile was located over an area of the Site that was most significantly impacted by PAHs, metals and PCBs. To address this contamination, the approved remedial action work plan specified that 6 to 12 inches of soil below the original ground surface would be excavated during removal of the stockpile. This additional soil would be sent off-site for disposal.

Phase II of the remedial action, completed in October 2002, consisted of the following:

- Excavation, removal, and disposal of contaminated soils from Phase I;
- Decontamination and removal of four above ground storage tanks;
- Removal and disposal of coatings on tanks containing asbestos;
- Removal of piping, supports and associated structures;
- Sampling, analysis, and characterization of various Site materials;
- Removal and off-site disposal of 11.6 tons of hazardous materials;
- Crushing of 200 cubic yards of concrete with on-site placement as fill material;
- Installation of a one foot thick clean soil cover over the entire Site; and
- Asphalt paving for two parking areas and building access.

The clean soil cover was placed over the entire property to minimize the potential for future contaminant exposure. To complete this task, perimeter soils were excavated to a depth of one foot so that the subsequent placement of the soil cover would match the existing grade of the adjacent properties and roadways. Remediation photos suggest that wells MW-1 and MW-2 were destroyed at this time. The excavated soils were placed over the northeastern portion of the Site where the soil stockpile from Phase I had been located.

It is important to note that when the soil stockpile was removed during Phase II of the remedial action the area was not over-excavated as originally proposed. By letter dated May 22, 2002 the NYSDEC approved a modification to the remedial action work plan. This modification stipulated that, in lieu of the over excavation of soils under the stockpile, existing soils from "clean" areas of the Site could be used as supplementary cover material over this portion of the Site. This modification was intended to provide a thicker soil cover over the impacted soils and to allow for more positive drainage from the area, thus limiting precipitation infiltration into the subsurface soils.

## 3.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN

### 3.1 Institutional and Engineering Controls

The Envirotek I Site was remediated in 2001 and 2002 by the City of Tonawanda and Erie County under a Voluntary Cleanup Agreement with the NYSDEC. Finalization of this agreement required the imposition of Institutional Controls (IC) regarding future use of the property. These Institutional Controls were accomplished through a Deed Restriction, which was filed in the Erie County Clerk's Office on October 31, 2003 (Appendix A). The Deed Restriction:

- Prohibits the Site from ever being used for purposes other than the Contemplated Use (commercial or industrial) without a written waiver from the NYSDEC. Under no circumstances is the property to be used for any type of residential, agricultural or school/day care purpose;

- Prohibits the use of groundwater underlying the Site without treatment to render it safe for drinking water or industrial purposes, as appropriate, unless the user first obtains permission to do so from the NYSDEC;

- Requires the Volunteer and Volunteer's successors to continue in full force and effect any Institutional and Engineering Controls the NYSDEC requires the Volunteer to put into place and maintain; and

- Provides that the Volunteer, on behalf of itself and its successors, consents to the enforcement by the NYSDEC of the prohibitions and restrictions of the Deed Restriction, and agrees not to contest such enforcement.

***The Institutional Controls placed on the Envirotek I property through the Deed Restriction have been incorporated into the Institutional and Engineering Control Plan without modification.***

In addition to the Institutional Controls discussed above, the Envirotek I Site also contains an Engineering Control (EC) that is described as follows:

- A cover system consisting of a one foot thick clean soil cover, asphalt pavement, concrete sidewalks, and concrete building slabs.

Procedures for the inspection of this cover system are provided in this Institutional and Engineering Control

Plan, while procedures for the maintenance and repair of the cover system are provided in the Soils Management Plan that appears in Section 4.0 of this SMP.

The Institutional and Engineering Controls placed on the Envirotek I Site are designed to:

- Prevent ingestion or direct contact with contaminated soil, fill and groundwater;
- Prevent inhalation of, or exposure to, contaminants volatilizing from contaminated soil, fill and groundwater; and
- Prevent migration of contaminants off-site via groundwater or surface water runoff.

### 3.2 Institutional Control and Engineering Control (IC/EC) Certification

Periodic certifications, indicating that all Institutional and Engineering Controls (IC/ECs) at the Site are in-place and effective, is mandated by various statutory and/or regulatory authorities under the New York Environmental Conservation Law and its implementing regulations. These regulations require that an (IC/EC) Certification, prepared by the Site owner and/or professional engineer, be submitted annually (or at a frequency approved by the NYSDEC). This IC/EC Certification will certify that the Institutional and Engineering Controls put in place are unchanged from the previous certification, and that nothing has occurred at the Site that will impair the ability of the controls to protect public health or the environment. ***The IC/EC Certification requirement has been added to the Site Management Plan, and will be completed on an annual basis.***

The Site owner will be required to complete and submit the IC/EC Certification Form (Appendix B) to the NYSDEC by the date specified in Section 3.4 of this plan. Other reports required by this SMP (e.g., the Periodic Review Report, Groundwater Monitoring Report) should be submitted along with the IC/EC Certification Form. Note that this form must be submitted even if an IC/EC cannot be certified; however, the certification process will not be considered complete until corrective action is conducted and all controls are certified.

Step-by-step instructions for completing the IC/EC Certification Form are given in Appendix B. Information concerning current IC/ECs at the Site may be obtained from the NYSDEC's Environmental Site Database at www.dec.ny.gov/chemical/8437.html. This database also contains other information about the Site including location, owner, description (includes current status), environmental assessment, and health

assessment.

### 3.3 Periodic Inspections

A comprehensive inspection of the Envirotek I Site will be conducted annually to determine and document the following:

- Whether the cover system continues to perform as designed;
- Whether the cover system continues to be protective of human health and the environment;
- Compliance with the requirements of this SMP and the Deed Restriction;
- Whether Site records are complete and up to date; and
- Whether changes are needed to the cover system or the groundwater monitoring program.

The reporting requirements for the annual inspection are outlined in Section 3.4.

### 3.4 Periodic Review Report

A Periodic Review Report, currently entitled "*Annual Compliance Statement Report*", will be submitted to the NYSDEC by February 15th of each year. The Periodic Review Report will follow the current format, which includes the following:

- An Introduction;
- A Site Description and History section;
- A Compliance Statement, which will include the following:
    - Soils Management Plan Compliance;
    - Groundwater Monitoring Plan compliance; and
    - Cover Maintenance Provisions compliance;
- A Conclusions section, which will include the following:
    - Compliance of the remedy with the requirements of the Deed Restriction and SMP;
    - Any new conclusions or observations regarding Site contamination based upon the annual inspection or data generated by the Groundwater Monitoring Plan;
    - Recommendations regarding any necessary changes to the remedy and/or the Groundwater Monitoring Plan; and
    - Overall performance and effectiveness of the remedy;
- The Institutional and Engineering Controls Certification Form;
- The Property Agreement and Deed Restriction;

- The Groundwater Monitoring Report completed by the City of Tonawanda;
- Any pertinent correspondence during the reporting period;
- Site photographs; and
- Environmental professional resumes.

One hard-copy of the Periodic Review Report, along with an electronic copy in "pdf" format, should be submitted to the NYSDEC Region 9 Office in Buffalo, New York.

### 3.5 Notifications

Notifications will be submitted by the property owner or City of Tonawanda to the NYSDEC as needed for the following reasons:

- 60-day advance notice of any proposed changes in Site use;

- 10-day advance notice of any proposed ground-intrusive activities;

- 10-day advance notice of any groundwater monitoring activities;

- Notice within 48-hours of any damage or defect to the cover system that reduces or has the potential to reduce the effectiveness of the Engineering Control, including a summary of actions taken, or to be taken, to mitigate the damage or defect;

- Notice within 48-hours of any emergency, such as a fire, flood, or earthquake, that reduces or has the potential to reduce the effectiveness of the cover system, including a summary of actions taken, or to be taken, to mitigate the damage or defect; and

- Follow-up status reports on actions taken to respond to any emergency event requiring ongoing response actions shall be submitted to the NYSDEC within 45 days and shall describe and document the actions taken to restore the effectiveness of the cover system.

Notifications should be made to the NYSDEC Region 9 Office in Buffalo, New York.

## 4.0 SOILS MANAGEMENT PLAN

### 4.1 Objective

The objective of this Soils Management Plan is to set guidelines for the maintenance and repair of the cover system at the Envirotek I Site, and for the management of soil and fill disturbed during any future intrusive work that breaches this cover system. This Soil Management Plan was developed from the NYSDEC's generic Simple Soils Management Plan and modified to conform with the elements of the Soils Management Plan contained in the Final Report and Deed Restriction.

### 4.2 Nature and Extent of Contamination

The data obtained during the investigation and remediation of the Envirotek I Site reveal that the contaminants of concern at this Site for surface soil consist primarily of semivolatile organic compounds (SVOCs) and metals. The primary SVOCs of concern include benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene and indeno(1,2,3-cd)pyrene. These contaminants belong to a class of SVOCs known as polycyclic aromatic hydrocarbons (PAHs). PAHs are a group of over 100 different chemicals that are ubiquitous in the environment. Sources of PAHs include incomplete combustion of coal, oil, gasoline, garbage, wood and incinerators. PAHs are also found in coal tar, crude oil, creosote, roofing tar, medicines, dyes, plastics and pesticides. The primary metals of concern in surface soil include barium, cadmium, chromium, lead and mercury.

The contaminants of concern at this Site for subsurface soil consist primarily of volatile organic compounds and semivolatile organic compounds. The primary VOCs of concern include acetone, benzene, ethylbenzene and xylene, while the primary SVOCs of concern include benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and chrysene.

The contaminants of concern at this Site for groundwater consist primarily of volatile organic compounds and metals. The primary VOCs of concern include dichloroethene and vinyl chloride, although historic groundwater samples also contained benzene, ethylbenzene, toluene, trichloroethene and xylene. The primary metals of concern in groundwater include aluminum, cadmium, iron, lead and manganese.

### 4.3 Contemplated Use

Following the remediation of the Envirotek I Site, the property was purchased by Manth Manufacturing for use as parking and warehousing for the company's existing manufacturing operations at 131 Fillmore Avenue. The Deed Restriction specifically prohibits the use of the Site for any type of residential, agricultural or school/day care purposes.

## 4.4 Purpose and Description of the Cover System

The purpose of the cover system is to prevent public exposures with contaminated soil, fill and groundwater, and to prevent the migration of contaminants off-site via groundwater or surface water runoff. The cover system at the Envirotek I Site consists of the following:

- A one foot thick clean soil cover without a demarcation layer;

- A one foot thick asphalt and subbase cover at two area used for parking and for access to Site buildings;

- A concrete and subbase cover consisting of sidewalks and the floors of Site buildings. Vapor barriers are not present under any of the concrete buildings slabs.

## 4.5 Cover System Maintenance and Repair

As described in the Final Report, the cover system will be periodically inspected and maintained. Maintenance includes controlling surface erosion and run-off from the Site, and includes proper maintenance of the vegetative cover. In the event that damage to the cover system is observed (e.g., ruts, erosion, cracked or broken asphalt, etc.), repairs will be made to restore the cover system to its pre-damaged condition. These repairs are required to maintain the integrity of the cover system.

As described in the Deed Restriction and Final Report, future use of the Site should preclude, whenever possible, excavation or disturbance of the cover system. Should any future intrusive work breach the cover system, the requirements of Sections 4.6 thru 4.9 of this Soils Management Plan must be followed. Once the intrusive activities are complete, the cover system must be restored in a manner that is consistent with the original construction as detailed in the Final Report. If the type of cover system changes from that which existed prior to the intrusive activities (i.e., a soil cover is replaced by asphalt, concrete or a building), a figure showing the modified surface should be included in the subsequent Periodic Review Report, and in any updates to the Site Management Plan. The Periodic Review Report should also certify that all intrusive and cover system repair activities were conducted in conformance with this Soil Management Plan.

## 4.6 Management of Subsurface Soil and Fill

The purpose of this section is to provide environmental guidelines for the management of soil and fill encountered during any future intrusive work that breaches the cover system. This Soils Management Plan includes the following conditions:

- Any breach of the cover system, including for the purposes of construction or utilities work, must be replaced or repaired using an acceptable borrow source free of industrial and/or other potential sources of chemical or petroleum contamination. The repaired area must be covered with clean soil and reseeded, or covered with impervious product such as concrete or asphalt to prevent future erosion;

- During any intrusive activities that breach the cover system, the Contingency Plan of Section 4.7 must be implemented, if conditions so warrant. Dust monitoring and control techniques (e.g., wetting road surfaces, covering soil stockpiles, stopping intrusive activities during windy conditions, etc) must also be implemented;

- Soil and fill excavated at the Site that is intended to be removed from the property must be managed, characterized, and properly disposed of in accordance with NYSDEC regulations and directives (see Section 4.8 for more detail);

- Soil and fill excavated at the Site may be reused as backfill material on-site provided it contains no visual or olfactory evidence of contamination, and is placed beneath a cover system component as described in Section 4.4;

- Any off-site material brought to the Site for filling and grading purposes shall be from an acceptable borrow source free of industrial and/or other potential sources of chemical or petroleum contamination. Off-site borrow sources will be subject to the collection of one representative composite sample per source. The sample should be analyzed for TCL VOCs, TCL SVOCs, TCL pesticides, TCL PCBs, TAL metals and cyanide by a NYSDOH ELAP-certified laboratory. The soil will be acceptable for use as cover material provided that all parameters meet the 6 NYCRR Part 375 residential soil cleanup objectives (Appendix C); and

- Prior to any construction activities, workers are to be notified of Site conditions with clear instructions regarding how the work is to proceed. Invasive work performed at the property will be performed in accordance with all applicable local, state, and federal regulations to protect worker health and safety, including all applicable personal protective equipment.

### 4.7 Contingency Plan

If underground storage tanks or other previously unidentified contaminant sources are encountered

during future intrusive work, excavation activities will be suspended until sufficient equipment is mobilized to address the situation. Such findings will be promptly communicated by phone to the NYSDEC Region 9 Office in Buffalo, New York. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. Representative samples of product, soil and fill will be collected for chemical analysis to determine the nature of the material and proper disposal method. The samples should be analyzed for TCL VOCs, TCL SVOCs, TCL pesticides, TCL PCBs, TAL metals and cyanide by a NYSDOH ELAP-certified laboratory. Disposal of this material should take place as described in Section 4.8.

A discussion concerning the discovery of underground storage tanks or other previously unidentified contaminant sources must be included in the subsequent Periodic Review Report. A discussion of the analytical results and the method of disposal must also be included in the report.

### 4.8 Disposal of Subsurface Soil and Fill

Soil and fill that is excavated at the Site but cannot be used as fill below the cover system will be further characterized prior to transportation off-site for disposal at a permitted facility. For excavated soil and fill with visual evidence of contamination (i.e., staining or elevated PID measurements), one composite sample and one duplicate sample will be collected for every 100 cubic yards of material. For excavated soil and fill that does not exhibit visual evidence of contamination but must be sent for off-site disposal, one composite sample and one duplicate sample will be collected for every 2,000 cubic yards of material. A minimum of one composite sample and one duplicate sample will be collected for volumes less than 2,000 cubic yards.

The composite sample will be collected from five locations within each stockpile. A duplicate composite sample will also be collected. PID measurements will be recorded for each of the five individual locations. If elevated PID measurements are documented, one grab sample will be collected from the individual location with the highest PID measurement. If none of the individual samples exhibit PID readings, one grab sample will be selected at random. The composite sample will be analyzed for pH (EPA Method 9045C), TCL SVOCs, TCL pesticides, TCL PCBs, TAL metals and cyanide by a NYSDOH ELAP-certified laboratory. The grab sample will be analyzed for TCL VOCs.

Samples will be composited by placing equal portions of soil and fill from each of the five composite sample locations into a pre-cleaned, stainless steel (or Pyrex glass) mixing bowl. The soil and fill will be thoroughly homogenized using a stainless steel trowel or disposable scoop, and transferred to pre-cleaned sample bottles provided by the laboratory. The sample bottles will be labeled and a chain-of-custody form

will be prepared.

Additional characterization sampling for off-site disposal may be required by the disposal facility. To potentially reduce off-site disposal requirements/costs, the owner or site developer may also choose to characterize each stockpile individually.

If the analytical results indicate that concentrations exceed the standards for RCRA characteristics, the material will be considered a hazardous waste and must be properly disposed off-site at a permitted disposal facility within 90 days of excavation. If the analytical results indicate that the soil is not a hazardous waste, the material will be properly disposed off-site at a non-hazardous waste facility. Stockpiled soil cannot be transported on or off-site until the analytical results are received from the laboratory.

### 4.9 Subgrade Material

Subgrade material used to backfill excavations or placed to increase Site grades must meet the following criteria.

- Excavated on-site soil and fill that appears to be visually impacted shall be sampled and analyzed as described in Section 4.8. If analytical results indicate that contaminants are present at concentrations below the 6 NYCRR Part 375 commercial soil cleanup objectives (Appendix C), the soil and fill can be used as backfill on-site;

- Any off-site material brought to the Site for filling and grading purposes shall be from an acceptable borrow source free of industrial and/or other potential sources of chemical or petroleum contamination, and cannot otherwise be defined as a solid waste in accordance with 6 NYCRR Part 360-1.2(a);

- If the contractor designates a source as “virgin” soil, it shall be further documented in writing to be native soil material from areas not having supported any known prior industrial or commercial development or agricultural use;

- Virgin soil will be subject to the collection of one representative composite sample per source. The sample should be analyzed for TCL VOCs, TCL SVOCs, TCL pesticides, TCL PCBs, arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver and cyanide by a NYSDOH ELAP-certified laboratory. The soil will be acceptable for use as backfill provided that all parameters meet

the 6 NYCRR Part 375 commercial soil cleanup objectives (Appendix C);

- Non-virgin soil will be tested via collection of one composite sample per 500 cubic yards of material from each source. If more than 1,000 cubic yards of soil are borrowed from a given off-site non-virgin source, and both samples of the first 1,000 cubic yards meet the 6 NYCRR Part 375 commercial soil cleanup objectives (Appendix C), the sample collection frequency will be reduced to one composite for every 2,500 cubic yards of additional soils from the same source, up to 5,000 cubic yards. For borrow sources greater than 5,000 cubic yards, sampling frequency may be reduced to one sample per 5,000 cubic yards, provided all earlier samples met the 6 NYCRR Part 375 commercial soil cleanup objectives (Appendix C).

## 5.0 GROUNDWATER MONITORING PLAN

### 5.1 Objective

The effectiveness of the remedy implemented at the Envirotek I Site will be monitored by collecting groundwater quality readings in the field using a water quality meter and by collecting groundwater samples for chemical analysis. The analytical results will be evaluated to determine if contaminants at the Site are decreasing over time and to ensure that no significant off-site migration of residual contamination occurs.

### 5.2 Monitoring Well Network

Eight groundwater monitoring wells (MW-1 thru MW-8) were installed along the perimeter of the Envirotek I Site under the Voluntary Cleanup Agreement (Figure 1-3). The Groundwater Monitoring Plan contained in the Deed Restriction and Final Report requires the annual sampling and analysis of the five downgradient monitoring wells (MW-1 thru MW-4) and MW-8, with the biennial (every two years) sampling of potential source wells (MW-5 thru MW-7). At the start of long-term groundwater monitoring in 2007, however, two of the wells were found to be damaged (MW-4 and MW-7), while three of the downgradient wells (MW-1 thru MW-3) could not be located. As a result, only monitoring wells MW-5 thru MW-8 were sampled and analyzed during the 2007 and 2008 groundwater sampling events. The results from these sampling events indicated that concentrations of volatile organic compounds and metals remain elevated, and that the potential existed for contaminants to migrate off-site towards Ellicott Creek. To evaluate this potential, in March 2009 the NYSDEC requested that the City of Tonawanda replace wells MW-1 and MW-2, and incorporate them into the monitoring well network beginning with the 2009 groundwater sampling event. As result, the current monitoring well network includes wells MW-1R, MW-2R, and MW-4 thru MW-8 (Figure 5-1). Well MW-4 is for gauging purposes only.

### 5.3 Water Level Measurements and Assessment of Groundwater Flow

During the 2001 Site Investigation, groundwater at the Site was encountered at depths ranging from 1.56 to 7.08 feet below ground surface. The water levels obtained in 2007 and 2008 were generally consistent with the 2001 water levels, with the exception of well MW-7, which had water levels ranging from 11.40 to 13.20 feet below ground surface. A groundwater contour map generated from the 2001 water level data indicated a radial flow pattern centered on well MW-7 with more unidirectional flow across the western portion of the Site (Figure 2-1). In general, groundwater flow was to the west towards Ellicott Creek, which is located approximately 350 feet west of the Site. Groundwater contour maps were not generated in 2007 or 2008 due to the absence of wells MW-1 thru MW-3, and the damage to well MW-4.

During all future sampling events, all Site monitoring wells will be gauged, with the data tabulated, plotted, and evaluated to determine if the groundwater flow pattern remains similar to that documented in 2001. Prior to arrival at the Site, the water level indicator will be cleaned by rinsing with potable water, washing with a solution of laboratory detergent (alconox or equivalent) and potable water, and rinsing with deionized water. The water level indicator will also be similarly cleaned between wells. Decontamination water can be handled as investigation derived waste (see Section 5.6).

## 5.4 Groundwater Sampling Procedures

Groundwater samples will be collected annually from monitoring wells MW-1R, MW-2R, and MW-5 thru MW-8 using the low-flow purging and sampling technique. The procedures to be followed are summarized in the following subsections.

### 5.4.1 Equipment Decontamination

Prior to arrival at the Site, the water quality meter and flow-through cell (if utilized) will be cleaned by rinsing with potable water, washing with a solution of laboratory detergent (alconox or equivalent) and potable water, and rinsing with deionized water. The flow through cell and water quality meter will also be similarly cleaned between wells. Decontamination water can be handled as investigation derived waste (see Section 5.6).

New disposable polyethylene tubing (for placement down into the well and connecting to the flow through cell) and silicone tubing (for the pump head) will be used at each location. Therefore, there will be no need to clean the sample tubing.

A variable speed peristaltic pump will be used to purge groundwater from the monitoring wells. Groundwater will remain within the polyethylene and silicone tubing and will not come in contact with the pump, so the pump will not need to be decontaminated between monitoring locations.

### 5.4.2 Equipment Calibration

The water quality meter and organic vapor meter are two pieces of equipment used in the groundwater monitoring program that require calibration. Equipment will be calibrated in accordance with the manufacture's requirements.

### 5.4.3 Purging Procedure

Prior to sampling, each monitoring well will be purged using a peristaltic pump and dedicated tubing.

Before accessing the wells, field personnel will make observations concerning the general exterior conditions (e.g., conditions of the surface seals, damage to the protective casings, missing locks, etc.). These observations will be noted on groundwater field sampling records (see Appendix D for an example), which will be used to record notes and data at each monitoring well location.

An organic vapor meter equipped with a photoionization detector (PID) and a 10.2 eV ultraviolet lamp will be used to screen the top of the riser immediately after removing the well cap. Organic vapor readings, if any, will be recorded on the groundwater field sampling record for that well.

Prior to the start of purging, a static water level will be measured from the top of the riser and recorded on the groundwater field sampling record for that well. New polyethylene tubing will be lowered into the well and positioned at the approximate center of the well screen. Well construction details are summarized in Table 5-1, while the well construction diagrams are given in Appendix E.

The peristaltic pump will be started and operated at a flow rate that minimizes drawdown of the water column within the well. The first set of water quality readings will be collected when water begins to flow from the discharge tubing. If a flow through cell is utilized, the first set of water quality readings will be collected when the cell is completely full and water begins to flow out. Readings will be recorded every three to five minutes once a constant head has been established and will continue until water quality readings (pH, conductivity, dissolved oxygen, temperature, oxidation-reduction potential, and turbidity) stabilize for three successive readings. Stabilization will occur when readings are within ± 0.1 for pH, ± 3% for conductivity, ± 10% for dissolved oxygen, ± 10% for temperature, ± 10mV for oxidation reduction potential and ± 10% for turbidity. Stabilization of these parameters provide an indication that water drawn from the well is representative of the groundwater in the surrounding formation. If readings stabilize prior to the removal of one well volume, purging and water quality monitoring will continue until one well volume is removed. Once a constant head is established, pumping rates should not be altered as this could change the chemistry within the well (i.e., stagnant water within the well mixing with formation water entering the well).

Purge water can be handled as investigation derived waste (see Section 5.6).

### 5.4.4 Sampling Procedure

Once the water quality readings have stabilized and at least one well volume has been purged, a groundwater sample will be collected for chemical analysis. The polyethylene tubing connecting the pump to the flow-through cell will be taken “out of line” and used to fill the sample bottles. Pre-clean sample

bottles will be provided by the laboratory. To minimize the chance of cross contamination, groundwater to be collected for analysis will not enter the flow-through cell. After the appropriate sample bottles have been filled, the pump will be shut off and the tubing removed from the monitoring well and pump head. This tubing will be disposed of as solid waste. The flow-through cell and water quality meter will be decontaminated as described in Section 5.4.1.

Once groundwater sampling has been completed at each well, the depth of the well will be measured and compared to the well construction data. This step will be completed at the end to minimize agitation and suspension of sediment prior to sampling. If significant sediment has accumulated within the well, a bailer should be used to remove additional water and sediment from the well.

### 5.5 Sampling Schedule and Analytical Methods

Groundwater samples will be collected annually from monitoring wells MW-1R, MW-2R, and MW-5 thru MW-8 using the low-flow purging and sampling technique described above. Groundwater monitoring will continue until contaminant concentrations remain consistently low and it can be documented that off-site migration of residual contamination is not occurring.

Samples will be delivered under chain of custody to a NYSDOH ELAP-certified laboratory for analysis of TCL VOCs by USEPA Method 8260 and TAL metals by USEPA Method 200.7 (mercury will be analyzed by USEPA Method 245.2) with the results reported using ASP Category A. A Data Usability Summary Report (DUSR) will not be required. During each sampling event, one duplicate sample and one trip blank will be used for quality control.

### 5.6 Investigation Derived Waste

Investigation derived waste (e.g., purge water, decontamination water) generated during the implementation of the Groundwater Monitoring Plan can be discharged directly to the ground surface. This water, however, should be discharged at a location that will not impact the groundwater sample. All tubing, used personal protective equipment and used disposable equipment should be placed in garbage bags for subsequent disposal.

### 5.7 Monitoring Well Repairs, Replacement and Decommissioning

If silt accumulation occurs in any well in the monitoring well network, the well will be physically agitated/surged and redeveloped. In addition, repairs and/or replacement of wells will be completed based upon assessments of structural integrity and overall performance. Decommissioning of wells should follow

the NYSDEC's 2007 Monitoring Well Decommissioning Policy.

The NYSDEC must be notified prior to any repair, replacement or decommissioning of monitoring wells at the Envirotek I Site. The repair, replacement or decommissioning process will be documented in the subsequent Groundwater Monitoring Report, which is described in detail in Section 5.8. Well decommissioning without replacement will be completed only with the prior approval of the NYSDEC. Monitoring wells that are decommissioned because they have been rendered unusable will be reinstalled in the nearest available location, unless otherwise approved by the NYSDEC.

### 5.8 Groundwater Monitoring Report

A Groundwater Monitoring Report, currently entitled "*Annual Report, Monitoring and Sampling Results*", will be submitted to the NYSDEC by September 15th of each year. The Groundwater Monitoring Report will include the following:

- An Introduction;
- A Site Description and History section;
- A Groundwater Monitoring Activities section, which will include the following:
    - Date of the sampling event;
    - Description of the field activities conducted;
    - A listing of the wells sampled and/or gauged;
    - Purging and sampling methods;
    - Disposition of purge water;
    - Analytical methods; and
    - Any changes to the monitoring well network from the previous year;
- A Groundwater Monitoring Results section, which will include the following:
    - Site hydrogeology;
    - Sampling results in comparison to the Class GA ambient water quality standards;
    - Sampling results in comparison to historical analytical results; and
    - Quality assurance/quality control results;
- A Conclusions section;
- Figures, which will include, at a minimum, the following:
    - Site Location Map;
    - Monitoring Well Location Map;
    - Groundwater Contour Map;

    - Iso-Concentration Maps; and
    - Concentration versus Time plots;
- Tables, which will include, at a minimum, the following:
    - Field parameter results;
    - Groundwater gauging results;
    - Monitoring well data (e.g., well depth, casing diameter, well volume, purged volume, etc); and
    - Data summary tables, which will include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted;
- Groundwater field sampling records; and
- Laboratory Analytical Results.

One hard-copy of the Groundwater Monitoring Report, along with an electronic copy in "pdf" format, should be submitted to the NYSDEC Region 9 Office in Buffalo, New York.

## 6.0 REFERENCES


Erie County, 2003, Final Report for 153 Fillmore Avenue, City of Tonawanda: URS Corporation, Buffalo, New York.

NYSDEC, 1998, Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations: New York State Department of Environmental Conservation, Division of Water Technical and Operational Guidance Series (1.1.1), Albany, New York.

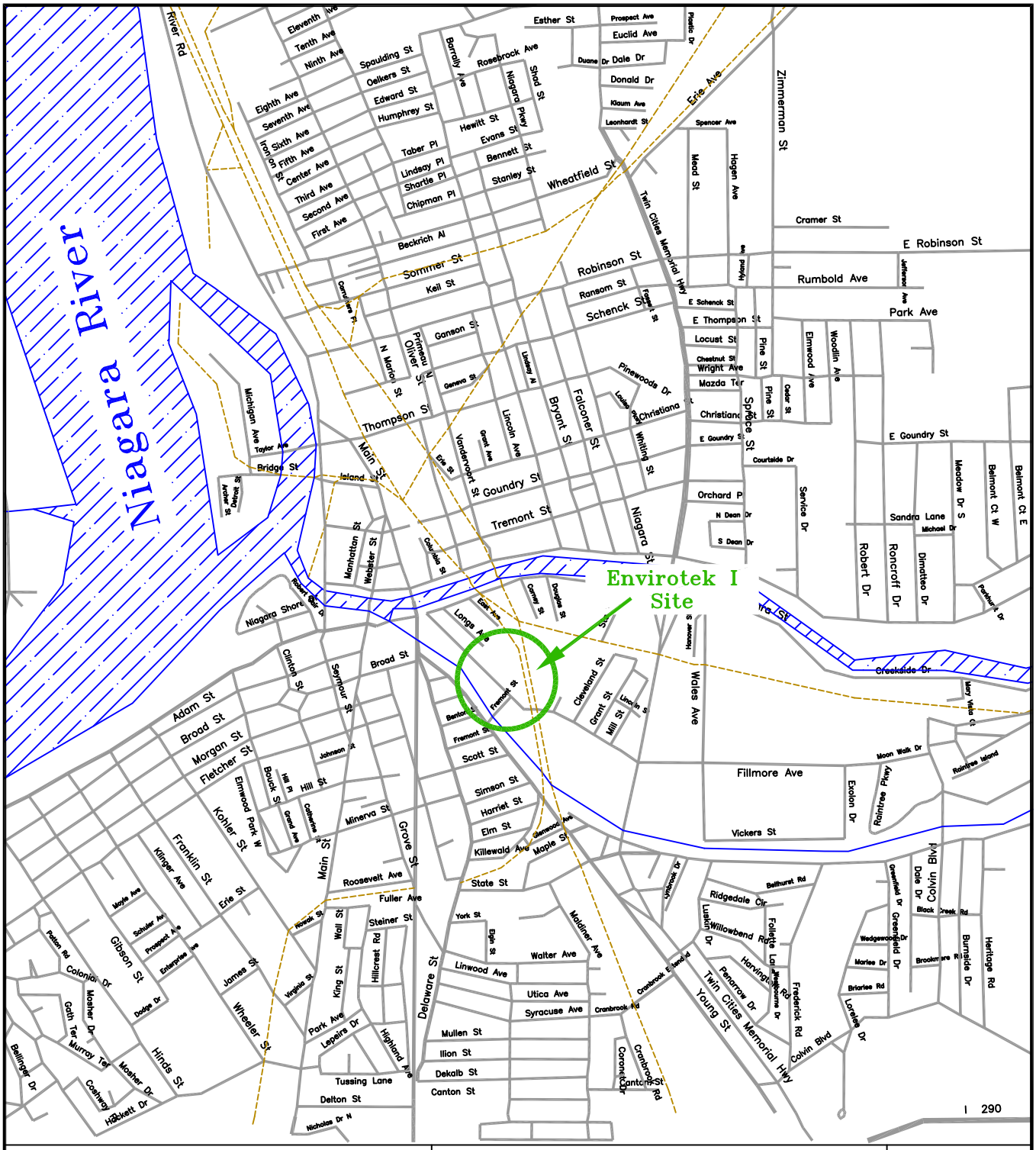
NYSDEC, 2002, Draft DER-10 Technical Guidance for Site Investigation and Remediation: New York State Department of Environmental Conservation, Division of Environmental Remediation, Albany, New York.

NYSDEC, 2007, Monitoring Well Decommissioning Policy: New York State Department of Environmental Conservation, Division of Environmental Remediation, Albany, New York.

URS, 2002, Site Investigation/Remedial Alternatives Report for 153 Fillmore Avenue Tonawanda, New York: URS Corporation, Buffalo, New York.

USDA, 1986, Soil Survey of Erie County, New York: United States Department of Agriculture, Soil Conservation Service, Washington, D.C.

Weston, 1990, Federal On-Scene Coordinator's Report – Envirotek I, Tonawanda, Erie County, New York: Roy F. Weston, Inc., Edison, New Jersey.




Tonawanda East Quadrangle &
Tonawanda West Quadrangle

Scale Depends on Final Plotted Size

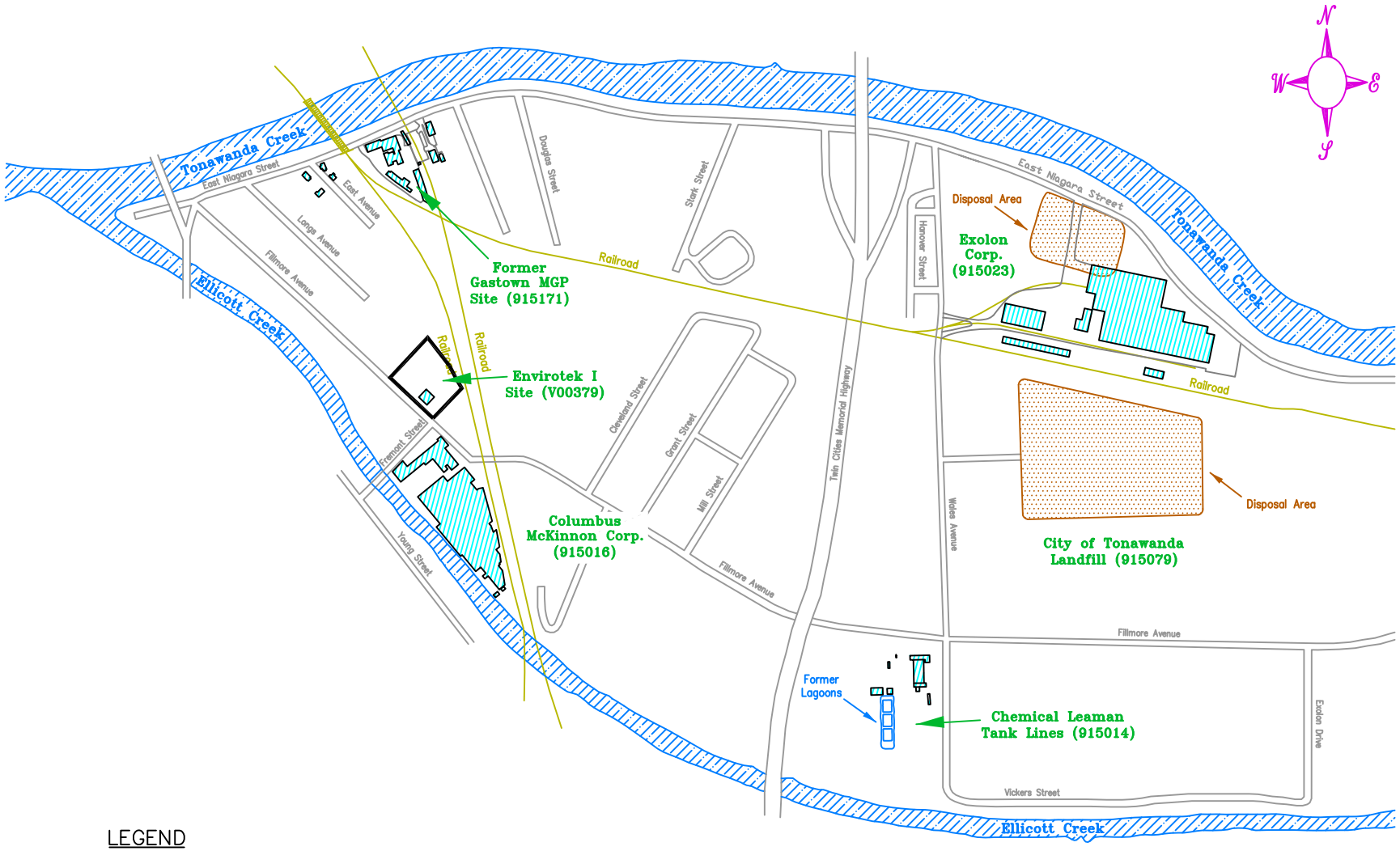
# SITE LOCATION MAP

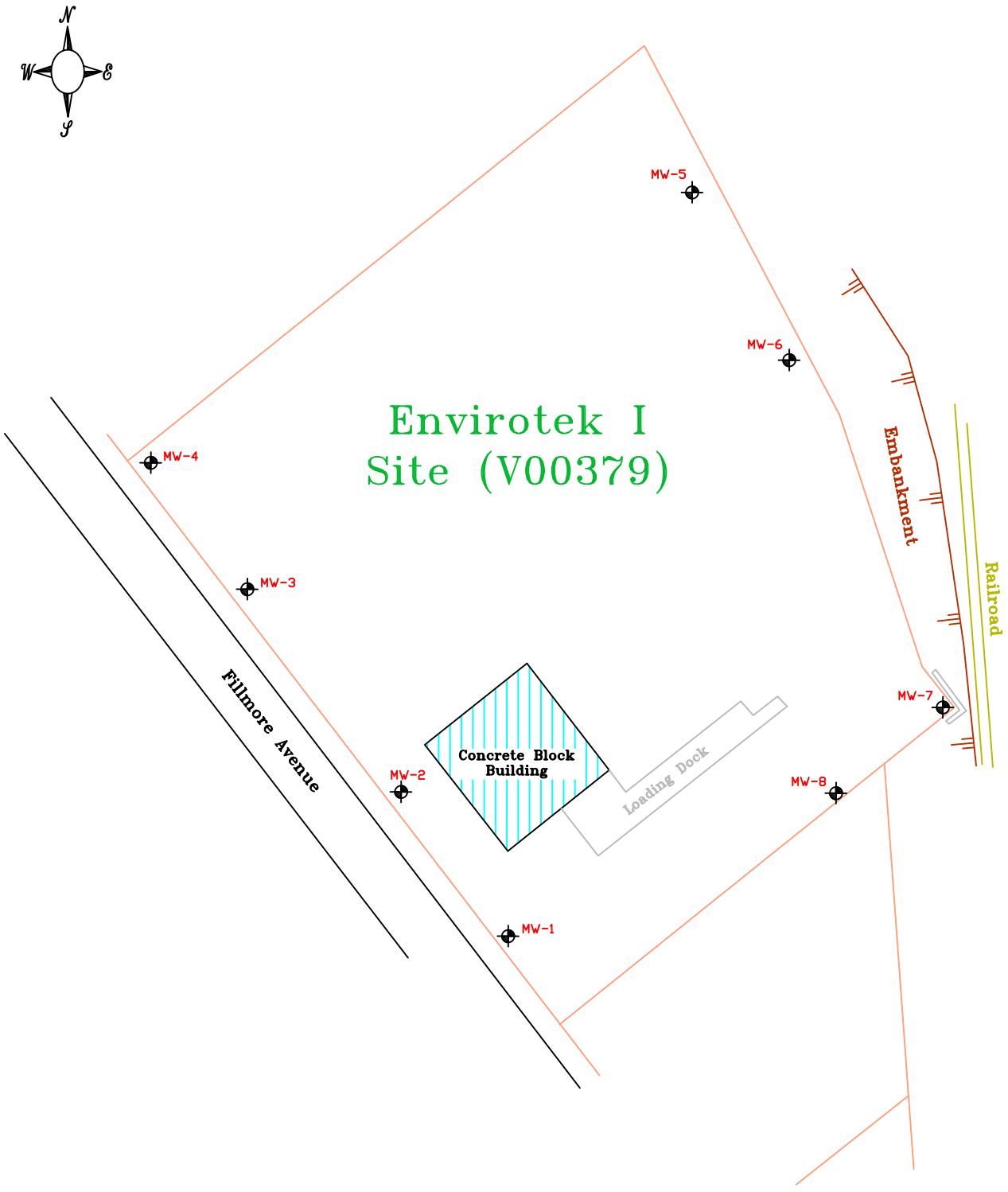
DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 03/13/09 | DRAWING: Location Map.dwg

SITE: ENVIROTEK I SITE

FIGURE 1-1


N
W
E
S
Tonawanda Creek
East Niagara Street
East Avenue
Longe Avenue
Fillmore Avenue
Ellicott Creek
Douglas Street
Stark Street
Railroad
Former
Gastown MGP
Site (915171)
Envirotek I
Site (V00379)
Tremont Street
Cleveland Street
Grant Street
Mill Street
Young Street
Columbus
McKinnon Corp.
(915016)
Twin Cities Memorial Highway
Hanover Street
Disposal Area
Exolon
Corp.
(915023)
Wales Avenue
City of Tonawanda
Landfill (915079)
Former
Lagoons
Chemical Leaman
Tank Lines (915014)
Exolon Drive
Vickers Street
SCALE IN FEET
0 250 500 750 1000
LEGEND
EXISTING BUILDING
LANDFILLS OR DISPOSAL PITS
TONAWANDA ISLAND MAP
DIVISION OF ENVIRONMENTAL REMEDIATION
DATE: 03/13/09
DRAWING: Tonawanda Map.dwg
SITE NAME: ENVIROTEK I SITE
FIGURE 1-2




LEGEND:

MONITORING WELL

SCALE IN FEET

0 40.0 80.0 120

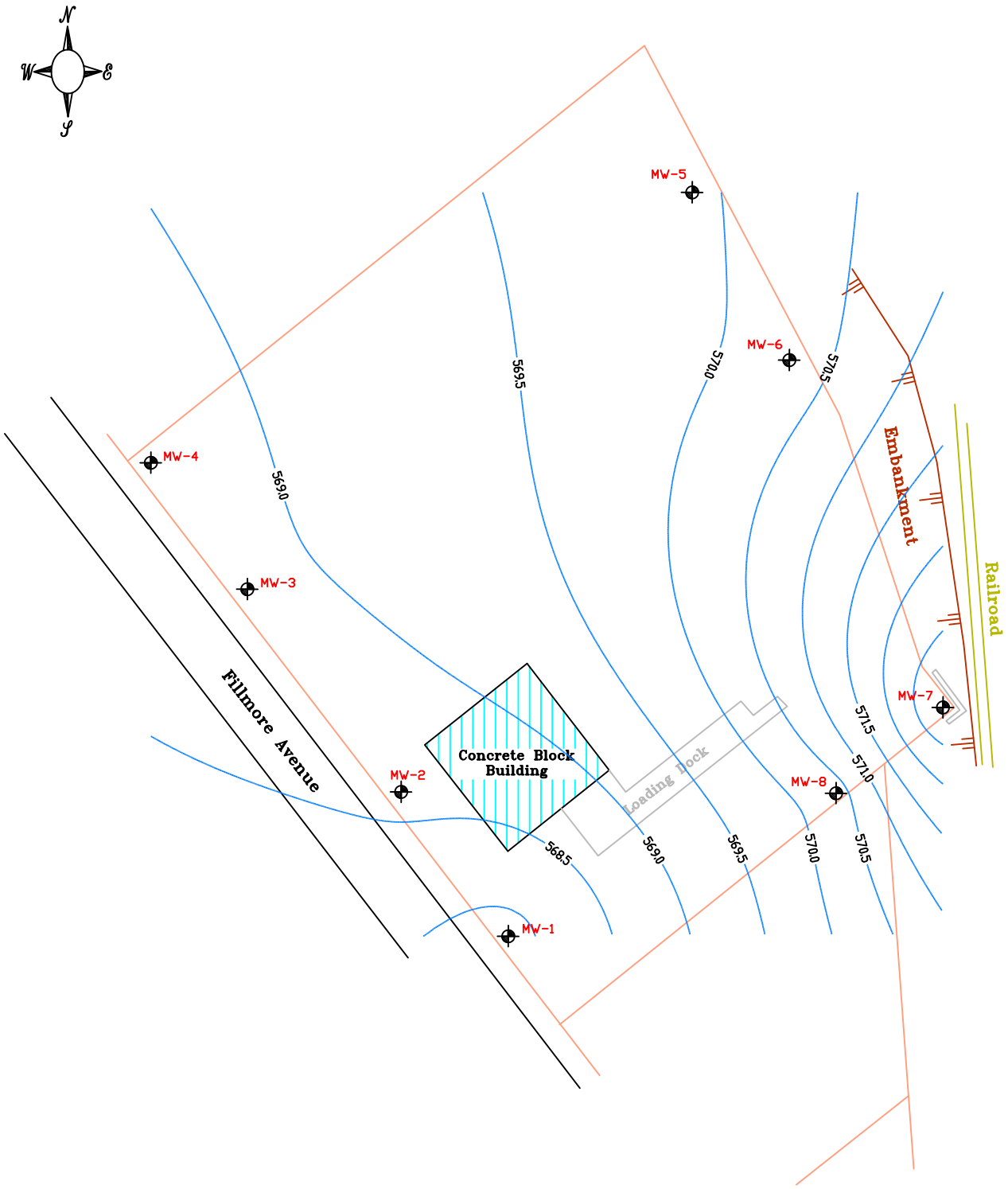
HISTORICAL MONITORING WELL LOCATION MAP

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 03/13/09 DRAWING: Envirotek I.dwg

SITE: ENVIROTEK I SITE

FIGURE 1-3




LEGEND:

MONITORING WELL

SCALE IN FEET
0 40.0 80.0 120

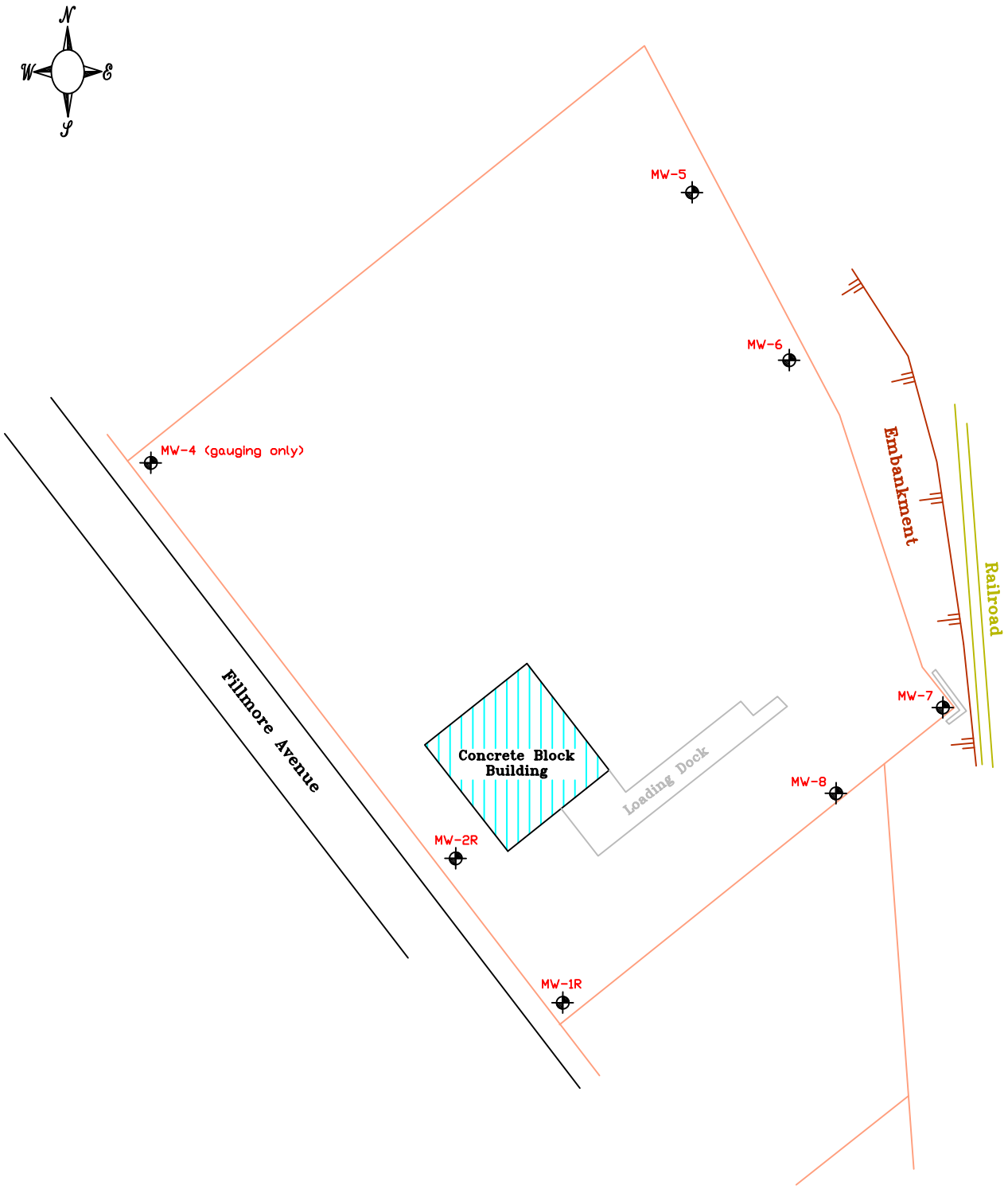
GROUNDWATER CONTOUR MAP
(OCTOBER 17, 2001)

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 03/13/09 DRAWING: Envirotek I.dwg

SITE: ENVIROTEK I SITE

FIGURE 2-1




SCALE IN FEET
0 40.0 80.0 120

LEGEND:

MONITORING WELL

**Note: The locations of wells MW-1R and MW-2R are approximate as they have not yet been installed.**

**CURRENT & PROPOSED MONITORING WELL LOCATION MAP**

DIVISION OF ENVIRONMENTAL REMEDIATION

DATE: 03/13/09 DRAWING: Envirotek I.dwg

SITE: ENVIROTEK I SITE

FIGURE 5-1

**Table 5-1.**
**Construction Summary for the Monitoring Wells Installed at the Envirotek I Site.**

| Well Number | Easting | Northing | Ground Surface Elevation (ft. amsl) | Top of Riser Elevation (ft. amsl) | Filter Pack Interval (ft. bgs) | Filter Pack Interval (ft. amsl) | Well Screen Interval (ft. bgs) | Well Screen Interval (ft. amsl) | Water Bearing Unit Screened |
|---|---|---|---|---|---|---|---|---|---|
| MW-1R | 5024.358 | 10066.637 | 574.90 * | 574.80 | 2.5 to 13.5 | 572.40 to 561.40 | 3.5 to 13.5 | 571.40 to 561.40 | clayey silt; sandy silt; gravely silt; coarse sandy gravel |
| MW-2R | 4935.566 | 10174.806 | 575.29 * | 575.19 | 2.5 to 13.5 | 572.79 to 561.79 | 3.5 to 13.5 | 571.79 to 561.79 | sandy silt; clayey silt; silty gravel |
| MW-4 | 4837.472 | 10307.069 | 574.92 | 574.82 | 2.0 to 13.5 | 572.92 to 561.42 | 3.5 to 13.5 | 571.42 to 561.42 | sandy silt; fine to coarse sand and gravel |
| MW-5 | 5084.944 | 10430.674 | 574.32 | 578.32 | 1.5 to 12.0 | 572.82 to 562.32 | 2.0 to 12.0 | 572.32 to 562.32 | clayey silt; sandy silt; silty clay |
| MW-6 | 5129.385 | 10354.057 | 574.28 | 578.13 | 1.0 to 11.4 | 573.28 to 562.88 | 1.4 to 11.4 | 572.88 to 562.88 | sandy silt; sand; fine to coarse sand and gravel |
| MW-7 | 5199.566 | 10195.317 | 585.11 | 586.26 | 12.5 to 23.5 | 572.61 to 561.61 | 13.5 to 23.5 | 571.61 to 561.61 | clayey silt; sand; fine to coarse sand and gravel |
| MW-8 | 5150.740 | 10156.104 | 574.85 | 578.43 | 1.0 to 12.0 | 573.85 to 562.85 | 2.0 to 12.0 | 572.85 to 562.85 | sandy silt; sand; fine to coarse sand and gravel |

**ft. amsl** **Feet above mean sea level.**
**ft. bgs** **Feet below ground surface.**
***** **Estimated elevation.**

# APPENDIX A

# DEED RESTRICTION

ERIE COUNTY CLERKS OFFICE
County Clerk's Recording Page

Return To:

BOX 290

Index DEED LIBER

Book 11061 Page 5082

No. Pages 0008

Instrument DEED

Date : 10/31/2003

Time : 12:43:47

Control # 200310310904

CITY OF TONAWANDA

MANTH MANUFACTURING INC

MANTH
DUANE

OLDTT

TT# TT 2003 008540

Employee ID BEV

| | | |
|---|---|---|
| COUNTY | $ | 29.00 |
| STATE E&A | $ | 41.00 |
| COE STATE | $ | 4.75 |
| TRANSFER | $ | 304.00 |
| NFTA TT | $ | 380.00 |
| COUNTY E&A | $ | 9.00 |
| COE COUNTY | $ | 1.00 |
| COE ST GEN | $ | 14.25 |
| | $ | .00 |
| Total: | $ | 783.00 |

STATE OF NEW YORK
ERIE COUNTY CLERKS OFFICE

TRANSFER TAX

WARNING - THIS SHEET CONSTITUTES THE CLERK'S ENDORSEMENT, REQUIRED BY SECTIONS 319&316-a (5) OF THE REAL PROPERTY LAW OF THE STATE OF NEW YORK. DO NOT DETACH. THIS IS NOT A BILL.

CONSIDERATN $ 76,000.00

TRANSFER TAX $ 684.00

DAVID J SWARTS
COUNTY CLERK

D110615082

Bargain and Sale Deed - Corporation

Bk 290

# This Indenture, made the 24th day of October, 2003,

Between THE CITY OF TONAWANDA, a municipal corporation organized under the laws of the State of New York, having an office for the transaction of business at 200 Niagara Street, Tonawanda, New York 14150, party of the first part and MANTH MANUFACTURING, INC., having an office for the transaction of business located at 131 Fillmore Avenue, Tonawanda, New York 14150, and DUANE MANTH, residing at 727 Fairmont Avenue, North Tonawanda, New York 14120, parties of the second part,

Witnesseth, that the parties of the first part, in consideration of SEVENTY-SIX THOUSAND DOLLARS ($76,000.00) lawful money of the United States, paid by the parties of the second part to THE CITY OF TONAWANDA, it does hereby grant and release unto the parties of the second part, their successors and assigns forever,

All that Tract or Parcel of Land, situate in the City of Tonawanda, County of Erie and State of New York, being part of Great Lot No. 83, of the Niagara River Reservation, and being bounded and described as follows:

BEGINNING at a point in the northeasterly line of Fillmore Avenue at its intersection with the northwesterly line of Fremont Street extended easterly; thence northwesterly along said northeasterly line of Fillmore Avenue, 325 feet to the southwest corner of lands conveyed to Tonawanda Roofing Paint Co., Inc. by deed recorded in Liber 7314 of Deeds at page 175; thence northeasterly along the southeasterly line of said lands conveyed to Tonawanda Roofing and Paint Col, Inc. and parallel with said northeasterly line of Fremont Street as extended a distance of 231.00 feet to the westerly right of way of Penn-Central Railroad; thence southeasterly parallel with Fillmore Avenue along said westerly right of way of Penn Central Railroad, 325 feet; thence southwesterly along the northwesterly lien of Fremont Street extended easterly 231.00 feet to the point or place of beginning.

ALSO, ALL THAT TRACT OR PARCEL OF LAND, situate in the City of Tonawanda, County of Erie and State of New York, being part of Great Lot No. 83 of the Niagara River Reservation, described as follows:

BEGINNING at a point in the westerly line of lands conveyed to the New York Central Railroad Company by deed recorded in Erie County Clerk's Office in Liber 1429 of Deeds at page 192 at the southeasterly corner of lands conveyed to Tonawanda Roofing and Paint Co., Inc. by deed recorded in Erie County Clerk's Office in Liber 7314 of Deeds at page 175; thence easterly along the extension easterly of the southerly line of lands so conveyed to Tonawanda Roofing and Paint Co., Inc. by aforesaid deed 73 feet to a point; thence southerly 190.03 feet to a point 40 feet easterly of the westerly line of lands so conveyed to aforesaid Railroad by aforesaid deed as measured at right angles to aforesaid westerly line; thence continuing southerly 120 feet to a point 25 feet north of the intersection of aforesaid westerly line of lands so conveyed to aforesaid Railroad by aforesaid deed and the northwesterly line of Fremont Street extended northeasterly; thence northerly along the westerly line of lands so conveyed to the New York Central Railroad Company by aforesaid deed 300 feet to the point of beginning.

-10
Cr 90 Grp
DIB-7

Together with the appurtenances and all the estate and rights of the party of the first part in and to said premises.

To have and to hold the premises herein granted unto the party of the second part, its successors and assigns forever.

In Witness Whereof, the party of the first part has caused its corporate seal to be hereunto affixed, and these presents to be signed by its duly authorized officer this 24th day of October, 2003.

THE CITY OF TONAWANDA

by: Jack E Gallagher
Jack E. Gallagher, Mayor

State of New York )
: SS.:
County of Erie )

On the 24th day of October, 2003, before me, the undersigned, a Notary Public in and for the State, personally appeared Jack E. Gallagher, personally known to me or proved tome on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or the person on behalf of which the individual acted, executed the instrument.

Ronald C. Trabucco
Notary Public

RONALD C. TRABUCCO, Esq.
Notary Public State of New York
Qualified in Erie County
My Commission Expires Sept. 30, 20 05

## ***DEED RESTRICTION***

The City and/or Owner shall prohibit the Site from ever being used for purposes other than for the Contemplated Use without the express written waiver of such prohibition by the Department, or if at such time the Department shall no longer exist, any New York State department, bureau, or other entity replacing the Department;

shall prohibit the use of the groundwater underlying the Site without treatment rendering it safe for drinking water or industrial purposes, as appropriate, unless the user first obtains permission to do so from the Department, or if at such time the Department shall no longer exist, any New York State department, bureau, or other entity replacing the Department;

shall require Volunteer and Volunteer's successor and assigns to continue in full force and effect any institutional and engineering controls the Department requires Volunteer to put into place and maintain; and

shall provide that Volunteer, on behalf of itself and its successor and assigns, hereby consents to the enforcement by the Department, or if at such time the Department shall no longer exist, any New York State department, bureau, or other entity replacing the Department, of the prohibitions and restrictions that this Paragraph X requires to be recorded, and hereby covenants not to contest such enforcement.

information and site improvements). All previously installed monitoring wells were left in place for future use. This work was completed under the direct supervision of the City of Tonawanda City Engineer.

**Substantial deviations from approved Remedial Work Plan**

The attached letter dated 5/22/02 from the New York State Department of Conservation is the only item that substantially deviated from the plans developed by URS dated 4/2002.

## Institutional Controls

The property at 153 Fillmore Avenue has been remediated by the City of Tonawanda and Erie County under a Volunteer Cleanup Agreement (Site #V00379-9, Index #B9-0583-00-08) with the New York State Department of Environmental Conservation (NYSDEC). Finalization of the Agreement requires the imposition of institutional controls regarding future use of the property. These institutional controls consist primarily of deed restrictions specifically prohibiting the use of the property for anything other than commercial/industrial activities without an express written waver from the NYSDEC. Under no circumstances is the property to be used for any type of residential, agricultural or school/day care purpose. In addition, the use of groundwater as a source for potable or industrial water without NYSDEC approval and proper treatment is strictly prohibited.

Additional provisions associated with the protecting the integrity of the remedial actions at the site include the Soils Management Plan and Groundwater Monitoring Plan generally outlined in the following paragraphs.

## Soils Management Plan

The remedial alternative selected for the volunteer cleanup at 153 Fillmore Avenue included the placement of a one foot thick clean soil cover over the entire site. Where practical, as an alternative to the soil cover, a layer of asphalt was placed over original site soils. The purpose of the soil/asphalt cap was to eliminate potential exposures to original site soils that contain contaminants at levels below remedial cleanup criteria. These contaminants include RCRA metals, Target Compound List (TCL) volatile and semi-volatile compounds.

Future use of the site should preclude, wherever possible, excavation or disturbance of the remedial cap. Should any excavation be required where the depth of excavation exceeds one foot, a soils management plan would be required to minimize the risk of exposures, contaminant migration and to insure proper soil disposal. Approval for such excavation plans would be required from the NYSDEC and would include as a minimum:

The use of personal protective equipment by excavation workers to prevent exposures,

The implementation of runoff control techniques,

The implementation of dust monitoring and control techniques,

Sample, and analysis at a NYSDEC approved laboratory, for soils destined for off site disposal,

Contingency plans for encountering suspected hazardous waste,

The implementation of decontamination techniques for excavation equipment,

Soil transportation and disposal at an appropriate NYSDEC approved landfill as dictated by soil sample results,

Provisions for the restoration of the soil cap to original, predisturbance condition.

## Groundwater Monitoring Plan

The investigation conducted at 153 Fillmore to determine the proper remedial alternative required the installation of eight perimeter groundwater monitoring wells. The wells are located along the property lines with four (MW-1 through 4) adjacent to the westerly property line along Fillmore Avenue, three (MW-5 through 7) along the easterly property line and one (MW-8) located along the southerly property line.

To assure that no significant offsite migration of residual contamination occurs, groundwater monitoring will be required utilizing the existing monitoring wells. Annual sampling and analysis of the five down-gradient monitoring wells (MW-1 through 4) and MW-8 is required. Biennial sampling of potential source wells (MW-5 through 7) is also required. Groundwater samples should be analyzed at a NYSDEC approved laboratory for TCL volatile and semi-volatile organics and RCRA metals. Sampling should be conducted in accordance with USEPA QA procedures and NYSDEC contract laboratory protocols, INCLUDING ELAP CERTIFICATION.

Sampling data and laboratory analysis results must be submitted to the NYSDEC for review and be conducted for a minimum of three years. If the sample analytical data indicate consistently low contaminant levels such that it can be shown that offsite migration is not occurring, the owner may request from the NYSDEC a waiver from further groundwater monitoring.

## Soils Management Plan

The remedial alternative selected for the voluntary cleanup at 153 Fillmore Avenue included the placement of a one foot thick clean soil cover over the entire site. Where practical, as an alternative to the soil cover, a layer of asphalt was placed over original site soils. The purpose of the soil/asphalt cover was to eliminate potential exposures to original site soils that contain contaminants at levels below remedial cleanup criteria. These contaminants include RCRA metals, Target Compound List (TCL) volatile and semi-volatile compounds.

Future use of the site should preclude, wherever possible, excavation or disturbance of the remedial cover. Should any excavation be required where the depth of excavation exceeds one foot, a soils management plan would be required to minimize the risk of exposures, contaminant migration and to insure proper soil disposal. This plan includes the following steps:

- The use of personal protective equipment by excavation workers to prevent exposures.
- The implementation of runoff control techniques.
- The implementation of dust monitoring and control techniques.
- Sample and analysis at a NYSDOH ELAP certified laboratory, for metals, VOCs, SVOCs and PCBs, for soils destined for off site disposal.
- Contingency plans for encountering suspected hazardous waste.
- The implementation of decontamination techniques for excavation equipment.
- Soil transportation and disposal at an appropriate NYSDEC approved landfill as dictated by soil sample results.
- Soils may be returned to their on-site place of origin, but no other on-site or off-site use of excavated materials is allowed without the approval of NYSDEC.
- Provisions for the restoration of the one foot soil cover or equivalent measure to original, pre-disturbed condition.

Annual certifications and monitoring data is to be submitted to:

NYSDEC
Division of Environmental Remediation
270 Michigan Ave.
Buffalo, New York 14203

NYSDOH
584 Delaware Ave.
Buffalo, New York 14202

## Groundwater Monitoring Plan

The investigation conducted at 153 Fillmore to determine the proper remedial alternative required the installation of eight perimeter groundwater monitoring wells. The wells are located along the property lines with four (MW-1 through 4) adjacent to the westerly property line along Fillmore Avenue, three (MW-5 through 7) along the easterly property line and one (MW-8) located along the southerly property line.

To assure that no significant offsite migration of residual contamination occurs, groundwater monitoring will be required utilizing the existing monitoring wells. Annual sampling and analysis of the five down-gradient monitoring wells (MW-1 through 4) and MW-8 is required. Biennial sampling of potential source wells (MW-5 through 7) is also required. Groundwater samples should be analyzed at a NYSDOH ELAP certified laboratory for TCL volatile and semi-volatile organics and RCRA metals. Sampling should be conducted in accordance with USEPA QA procedures and NYSDEC contract laboratory protocols.

Sampling data and laboratory analysis results must be submitted to the NYSDEC for review and be conducted for a minimum of one year. If the sample analytical data indicate consistently low contaminant levels such that it can be shown that offsite migration is not occurring, the owner may request from the NYSDEC a waiver from further groundwater monitoring.

- Annual sampling and analysis of the five down-gradient monitoring wells (MW-1 through 4) and MW-8 is required.
- Biennial sampling of potential source wells (MW-5 through 7) is also required.
- Groundwater samples should be analyzed at a NYSDOH ELAP certified laboratory for TCL volatile and semi-volatile organics and RCRA metals.
- Sampling should be conducted in accordance with USEPA QA procedures and NYSDEC contract laboratory protocols.

The owner can request a revision to the sampling program (frequency and analites) after first year of monitoring is complete and data has been submitted.

Annual certifications and monitoring data is to be submitted to:

NYSDEC
Division of Environmental Remediation
270 Michigan Ave.
Buffalo, New York 14203

NYSDOH
584 Delaware Ave.
Buffalo, New York 14202

# APPENDIX B

# INSTITUTIONAL AND ENGINEERING CONTROLS CERTIFICATION FORM

**Enclosure 1**
**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION**
**Site Management Periodic Review Report Notice**
**Institutional and Engineering Controls Certification Form**

**Site Details** **Box 1**

**Site No. V00379**

**Site Name Envirotek I**

Site Address: 153 Fillmore Avenue Zip Code: 14150

City/Town: Tonawanda

County: Erie

Allowable Use(s) (if applicable, does not address local zoning): Commercial and Industrial

Site Acreage: 1.7

**Verification of Site Details** **Box 2**

| | | YES | NO |
|---|---|---|---|
| 1. | Are the Site Details above, correct? | ☐ | ☐ |
| | If NO, are changes handwritten above or included on a separate sheet? | ☐ | |
| 2. | Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment since the initial/last certification? | ☐ | ☐ |
| | If YES, is documentation or evidence that documentation has been previously submitted included with this certification? | ☐ | |
| 3. | Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property since the initial/last certification? | ☐ | ☐ |
| | If YES, is documentation (or evidence that documentation has been previously submitted) included with this certification? | ☐ | |
| 4. | If use of the site is restricted, is the current use of the site consistent with those restrictions? | ☐ | ☐ |
| | If NO, is an explanation included with this certification? | ☐ | |
| 5. | For non-significant-threat Brownfield Cleanup Program Sites subject to ECL 27-1415.7(c), has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding offsite contamination are no longer valid? | ☐ | ☐ |
| | If YES, is the new information or evidence that new information has been previously submitted included with this Certification? | ☐ | |
| 6. | For non-significant-threat Brownfield Cleanup Program Sites subject to ECL 27-1415.7(c), are the assumptions in the Qualitative Exposure Assessment still valid (must be certified every five years)? | ☐ | ☐ |

**SITE NO. V00379**

**Description of Institutional Controls**

| Parcel | Institutional Control |
|---|---|
| S_B_L Image: **39.47-1-1.111** | Landuse Restriction<br>Soil Management Plan |

**Description of Engineering Controls**

| Parcel | Engineering Control |
|---|---|
| S_B_L Image: **39.47-1-1.111** | Cover System |

Attach documentation if IC/ECs cannot be certified or why IC/ECs are no longer applicable. (See instructions)

**Control Description for Site No. V00379**

**Parcel: 39.47-1-1.111**

Deed Restriction filed in the Erie County Clerk's Office on October 31, 2003.

**Periodic Review Report (PRR) Certification Statements**

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

| YES | NO |
|---|---|
| ☐ | ☐ |

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

| YES | NO |
|---|---|
| ☐ | ☐ |

3. If this site has an Operation and Maintenance (O&M) Plan (or equivalent as required in the Decision Document);

   I certify by checking "YES" below that the O&M Plan Requirements (or equivalent as required in the Decision Document) are being met.

| YES | NO |
|---|---|
| ☐ | ☐ |

4. If this site has a Monitoring Plan (or equivalent as required in the remedy selection document);

   I certify by checking "YES" below that the requirements of the Monitoring Plan (or equivalent as required in the Decision Document) is being met.

| YES | NO |
|---|---|
| ☐ | ☐ |

**IC CERTIFICATIONS**
**SITE NO. V00379**

**Box 6**

**SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE**

I certify that all information and statements in Boxes 2 and/or 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I _____ at _____,
print name print business address

am certifying as _____(Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

_____ _____
Signature of Owner or Remedial Party Rendering Certification Date

**IC/EC CERTIFICATIONS**

**Box 7**

**QUALIFIED ENVIRONMENTAL PROFESSIONAL (QEP) SIGNATURE**

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I _____ at _____,
print name print business address

am certifying as a Qualified Environmental Professional for the _____

(Owner or Remedial Party) for the Site named in the Site Details Section of this form.

_____ _____ _____
Signature of Qualified Environmental Professional, for the Owner or Remedial Party, Rendering Certification Stamp (if Required) Date

**Enclosure 2**

**Certification Instructions**

**I Verification of Site Details (Box 1 and Box 2):**

Answer the six questions in the Verification of Site Details Section. Questions 5 and 6 only refer to sites in the Brownfield Cleanup Program. The Owner and/or Qualified Environmental Professional (QEP) may include handwritten changes and/or other supporting documentation, as necessary.

**II Certification of Institutional/Engineering Controls (Boxes 3, 4, and 5):**

Review the listed IC/ECs, confirming that all existing controls are listed, and that all existing controls are still applicable. If there is a control that is no longer applicable the Owner/Remedial Party is to petition the Department requesting approval to remove the control.

In Box 5, complete certifications for all Plan components, as applicable, by checking the corresponding checkbox.

If you cannot certify "YES" for each Control and/or certify the other SM Plan components that are applicable, continue to complete the remainder of this Certification form. Attach supporting documentation that explains why the Certification cannot be rendered, as well as a statement of proposed corrective measures, and an associated schedule for completing the corrective measures. Note that this Certification form must be submitted even if an IC or EC cannot be certified; however, the certification process will not be considered complete until corrective action is completed.

If the Department concurs with the explanation, the proposed corrective measures, and the proposed schedule, a letter authorizing the implementation of those corrective measures will be issued by the Department's Project Manager. Once the corrective measures are complete, a new Periodic Review Report (with IC/EC Certification) is to be submitted within 45 days to the Department. If the Department has any questions or concerns regarding the Periodic Review Report and/or completion of the IC/EC Certification, the Project Manager will contact you.

**III IC/EC Certification by Signature (Box 6 and Box 7):**

If you certified "YES" for each Control, please complete and sign the IC/EC Certifications page. Where the only control is an Institutional Control on the use of the property the certification statement in Box 6 shall be completed and may be made by the property owner. Where the site has Institutional and Engineering Controls, the certification statement in Box 7 must be completed by a Professional Engineer or

Qualified Environmental Professional (see table below).

| Signature Requirements for Control Certification Page | | |
|---|---|---|
| **Type of Control** | **Example of EC** | **Required Signatures** |
| EC that does not include a treatment system or engineered cap | Fence, clean soil cover, individual house water treatment system, vapor mitigation system | A site or property owner or remedial party, and a QEP (P.E. license not required) |
| EC that includes a treatment system or engineered cap | Pump & treat system providing hydraulic control of a plume, Part 360 cap | A site or property owner or remedial party, and a QEP with a P.E. license |

**IV Definitions:**

**"Engineering Control"** (EC), means any physical barrier or method employed to actively or passively contain, stabilize, or monitor contamination, restrict the movement of contamination to ensure the long-term effectiveness of a remedial program, or eliminate potential exposure pathways to contamination. Engineering Controls include, but are not limited to: pavement, caps, covers, subsurface barriers, vapor barriers, slurry walls, building ventilation systems, fences, access controls, provision of alternative water supplies via connection to an existing public water supply, adding treatment technologies to such water supplies, and installing filtration devices on private water supplies.

**"Institutional Control"** (IC), means any non-physical means of enforcing a restriction on the use of real property that limits human and environmental exposure, restricts the use of groundwater, provides notice to potential owners, operators, or members of the public, or prevents actions that would interfere with the effectiveness of a remedial program or with the effectiveness and/or integrity of operation, maintenance, or monitoring activities at or pertaining to a remedial site.

**"Professional Engineer"** (P.E.), means an individual or firm licensed, or otherwise authorized under article 145 of the Education Law of the State of New York, to practice engineering.

**"Property Owner"** means, for purposes of an IC/EC certification, the actual owner of a property. If the site has multiple properties with different owners, the Department requires that the owners be represented by a single representative to sign the IC/EC Certification.

**"Oversight Document"** means any document the Department issues pursuant to each Remedial Program to define the role of a person participating in the investigation and/or remediation of a site or area(s) of concern. Examples of the various programs are:

- BCP (after approval of the BCP application by DEC) - Brownfield Site Cleanup Agreement;
- ERP (after approval of the ERP application by DEC) - State Assistance Contract;
- Federal Superfund Sites - Federal Consent Decrees, Administrative Orders on Consent or Unilateral Orders issued pursuant to CERCLA;
- Response Program - Order on Consent, or Stipulation pursuant to Article 12 of the Navigation Law (and the New York Environmental Conservation Law);
- State Superfund Program - Administrative Consent Order, Record of Decision;
- VCP (after approval of the VCP application by DEC) - Voluntary Cleanup Agreement; and
- RCRA Corrective Action Sites - Federal Consent Decrees, Administrative Orders on Consent or permit conditions issued pursuant to RCRA.

**"Qualified Environmental Professional"** (QEP), means a person who possesses sufficient specific education, training, and experience necessary to exercise professional judgment, to develop opinions and conclusions regarding the presence of releases or threatened releases to the surface or subsurface of a property or off-site areas, sufficient to meet the objectives and performance factors for the areas of practice identified by this Part. Such a person must:

- hold a current professional engineer's or a professional geologist's license or registration issued by the State or another state, and have the equivalent of three years of full-time relevant experience in site investigation and remediation of the type detailed in this Part; or

- be a site remediation professional licensed or certified by the federal government, a state or a recognized accrediting agency, to perform investigation or remediation tasks consistent with Department guidance, and have the equivalent of three years of full-time relevant experience.

**"Qualitative Exposure Assessment"** means a qualitative assessment to determine the route, intensity, frequency, and duration of actual or potential exposures of human and/or fish and wildlife to contaminants.

**"Remedial Party"** means a person implanting a remedial program at a remedial site pursuant to an order, agreement or State assistance contract with the Department.

**"Site Management"** (SM), means the activities undertaken as the last phase of the remedial program at a site, which continue after a Certificate of Completion is issued. Site Management is conducted in accordance with a site management plan, which identifies and implements the IC/ECs required for a site, as well as any necessary monitoring and/or operation and maintenance of the remedy.

**“Site Management Plan”** (SMP), means a document that details the steps necessary to assure that the institutional and engineering controls required for a site are in-place, and any physical components of the remedy are operated, maintained and monitored to assure their continued effectiveness, developed pursuant to Section 6 of DER-10, Technical Guidance for Site Investigation and remediation.

**“Site Owner”** means the actual owner of a site. If the site has multiple owners of multiple properties with ICs and/or ECs, the Department requires that the owners designate a single representative for IC/EC Certification activities.

# APPENDIX C

# PART 375 SOIL CLEANUP OBJECTIVES

(b) Restricted use soil cleanup objectives.

**Table 375-6.8(b): Restricted Use Soil Cleanup Objectives**

| Contaminant | CAS Number | Protection of Public Health | | | | Protection of Ecological Resources | Protection of Ground-water |
|---|---|---|---|---|---|---|---|
| | | Residential | Restricted-Residential | Commercial | Industrial | | |
| **Metals** | | | | | | | |
| Arsenic | 7440-38-2 | 16[f] | 16[f] | 16[f] | 16[f] | 13[f] | 16[f] |
| Barium | 7440-39-3 | 350[f] | 400 | 400 | 10,000 [d] | 433 | 820 |
| Beryllium | 7440-41-7 | 14 | 72 | 590 | 2,700 | 10 | 47 |
| Cadmium | 7440-43-9 | 2.5[f] | 4.3 | 9.3 | 60 | 4 | 7.5 |
| Chromium, hexavalent [h] | 18540-29-9 | 22 | 110 | 400 | 800 | 1[e] | 19 |
| Chromium, trivalent [h] | 16065-83-1 | 36 | 180 | 1,500 | 6,800 | 41 | NS |
| Copper | 7440-50-8 | 270 | 270 | 270 | 10,000 [d] | 50 | 1,720 |
| Total Cyanide [h] | | 27 | 27 | 27 | 10,000 [d] | NS | 40 |
| Lead | 7439-92-1 | 400 | 400 | 1,000 | 3,900 | 63[f] | 450 |
| Manganese | 7439-96-5 | 2,000[f] | 2,000[f] | 10,000 [d] | 10,000 [d] | 1600[f] | 2,000[f] |
| Total Mercury | | 0.81[j] | 0.81[j] | 2.8[j] | 5.7[j] | 0.18[f] | 0.73 |
| Nickel | 7440-02-0 | 140 | 310 | 310 | 10,000 [d] | 30 | 130 |
| Selenium | 7782-49-2 | 36 | 180 | 1,500 | 6,800 | 3.9[f] | 4[f] |
| Silver | 7440-22-4 | 36 | 180 | 1,500 | 6,800 | 2 | 8.3 |
| Zinc | 7440-66-6 | 2200 | 10,000 [d] | 10,000 [d] | 10,000 [d] | 109[f] | 2,480 |
| **PCBs/Pesticides** | | | | | | | |
| 2,4,5-TP Acid (Silvex) | 93-72-1 | 58 | 100[a] | 500[b] | 1,000[c] | NS | 3.8 |
| 4,4'-DDE | 72-55-9 | 1.8 | 8.9 | 62 | 120 | 0.0033 [e] | 17 |
| 4,4'-DDT | 50-29-3 | 1.7 | 7.9 | 47 | 94 | 0.0033 [e] | 136 |
| 4,4'- DDD | 72-54-8 | 2.6 | 13 | 92 | 180 | 0.0033 [e] | 14 |
| Aldrin | 309-00-2 | 0.019 | 0.097 | 0.68 | 1.4 | 0.14 | 0.19 |
| alpha-BHC | 319-84-6 | 0.097 | 0.48 | 3.4 | 6.8 | 0.04[g] | 0.02 |
| beta-BHC | 319-85-7 | 0.072 | 0.36 | 3 | 14 | 0.6 | 0.09 |
| Chlordane (alpha) | 5103-71-9 | 0.91 | 4.2 | 24 | 47 | 1.3 | 2.9 |

**Table 375-6.8(b): Restricted Use Soil Cleanup Objectives**

| Contaminant | CAS Number | Protection of Public Health | | | | Protection of Ecological Resources | Protection of Ground-water |
|---|---|---|---|---|---|---|---|
| | | Residential | Restricted-Residential | Commercial | Industrial | | |
| delta-BHC | 319-86-8 | 100[a] | 100[a] | 500[b] | 1,000[c] | 0.04[g] | 0.25 |
| Dibenzofuran | 132-64-9 | 14 | 59 | 350 | 1,000[c] | NS | 210 |
| Dieldrin | 60-57-1 | 0.039 | 0.2 | 1.4 | 2.8 | 0.006 | 0.1 |
| Endosulfan I | 959-98-8 | 4.8[i] | 24[i] | 200[i] | 920[i] | NS | 102 |
| Endosulfan II | 33213-65-9 | 4.8[i] | 24[i] | 200[i] | 920[i] | NS | 102 |
| Endosulfan sulfate | 1031-07-8 | 4.8[i] | 24[i] | 200[i] | 920[i] | NS | 1,000[c] |
| Endrin | 72-20-8 | 2.2 | 11 | 89 | 410 | 0.014 | 0.06 |
| Heptachlor | 76-44-8 | 0.42 | 2.1 | 15 | 29 | 0.14 | 0.38 |
| Lindane | 58-89-9 | 0.28 | 1.3 | 9.2 | 23 | 6 | 0.1 |
| Polychlorinated biphenyls | 1336-36-3 | 1 | 1 | 1 | 25 | 1 | 3.2 |
| **Semivolatiles** | | | | | | | |
| Acenaphthene | 83-32-9 | 100[a] | 100[a] | 500[b] | 1,000[c] | 20 | 98 |
| Acenapthylene | 208-96-8 | 100[a] | 100[a] | 500[b] | 1,000[c] | NS | 107 |
| Anthracene | 120-12-7 | 100[a] | 100[a] | 500[b] | 1,000[c] | NS | 1,000[c] |
| Benz(a)anthracene | 56-55-3 | 1[f] | 1[f] | 5.6 | 11 | NS | 1[f] |
| Benzo(a)pyrene | 50-32-8 | 1[f] | 1[f] | 1[f] | 1.1 | 2.6 | 22 |
| Benzo(b)fluoranthene | 205-99-2 | 1[f] | 1[f] | 5.6 | 11 | NS | 1.7 |
| Benzo(g,h,i)perylene | 191-24-2 | 100[a] | 100[a] | 500[b] | 1,000[c] | NS | 1,000[c] |
| Benzo(k)fluoranthene | 207-08-9 | 1 | 3.9 | 56 | 110 | NS | 1.7 |
| Chrysene | 218-01-9 | 1[f] | 3.9 | 56 | 110 | NS | 1[f] |
| Dibenz(a,h)anthracene | 53-70-3 | 0.33[e] | 0.33[e] | 0.56 | 1.1 | NS | 1,000[c] |
| Fluoranthene | 206-44-0 | 100[a] | 100[a] | 500[b] | 1,000[c] | NS | 1,000[c] |
| Fluorene | 86-73-7 | 100[a] | 100[a] | 500[b] | 1,000[c] | 30 | 386 |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | 0.5[f] | 0.5[f] | 5.6 | 11 | NS | 8.2 |
| m-Cresol | 108-39-4 | 100[a] | 100[a] | 500[b] | 1,000[c] | NS | 0.33[e] |
| Naphthalene | 91-20-3 | 100[a] | 100[a] | 500[b] | 1,000[c] | NS | 12 |

**Table 375-6.8(b): Restricted Use Soil Cleanup Objectives**

| Contaminant | CAS Number | Protection of Public Health | | | | Protection of Ecological Resources | Protection of Ground-water |
|---|---|---|---|---|---|---|---|
| | | Residential | Restricted-Residential | Commercial | Industrial | | |
| o-Cresol | 95-48-7 | 100[a] | 100[a] | 500[b] | 1,000[c] | NS | 0.33[e] |
| p-Cresol | 106-44-5 | 34 | 100[a] | 500[b] | 1,000[c] | NS | 0.33[e] |
| Pentachlorophenol | 87-86-5 | 2.4 | 6.7 | 6.7 | 55 | 0.8[e] | 0.8[e] |
| Phenanthrene | 85-01-8 | 100[a] | 100[a] | 500[b] | 1,000[c] | NS | 1,000[c] |
| Phenol | 108-95-2 | 100[a] | 100[a] | 500[b] | 1,000[c] | 30 | 0.33[e] |
| Pyrene | 129-00-0 | 100[a] | 100[a] | 500[b] | 1,000[c] | NS | 1,000[c] |
| **Volatiles** | | | | | | | |
| 1,1,1-Trichloroethane | 71-55-6 | 100[a] | 100[a] | 500[b] | 1,000[c] | NS | 0.68 |
| 1,1-Dichloroethane | 75-34-3 | 19 | 26 | 240 | 480 | NS | 0.27 |
| 1,1-Dichloroethene | 75-35-4 | 100[a] | 100[a] | 500[b] | 1,000[c] | NS | 0.33 |
| 1,2-Dichlorobenzene | 95-50-1 | 100[a] | 100[a] | 500[b] | 1,000[c] | NS | 1.1 |
| 1,2-Dichloroethane | 107-06-2 | 2.3 | 3.1 | 30 | 60 | 10 | 0.02[f] |
| cis-1,2-Dichloroethene | 156-59-2 | 59 | 100[a] | 500[b] | 1,000[c] | NS | 0.25 |
| trans-1,2-Dichloroethene | 156-60-5 | 100[a] | 100[a] | 500[b] | 1,000[c] | NS | 0.19 |
| 1,3-Dichlorobenzene | 541-73-1 | 17 | 49 | 280 | 560 | NS | 2.4 |
| 1,4-Dichlorobenzene | 106-46-7 | 9.8 | 13 | 130 | 250 | 20 | 1.8 |
| 1,4-Dioxane | 123-91-1 | 9.8 | 13 | 130 | 250 | 0.1[e] | 0.1[e] |
| Acetone | 67-64-1 | 100[a] | 100[b] | 500[b] | 1,000[c] | 2.2 | 0.05 |
| Benzene | 71-43-2 | 2.9 | 4.8 | 44 | 89 | 70 | 0.06 |
| Butylbenzene | 104-51-8 | 100[a] | 100[a] | 500[b] | 1,000[c] | NS | 12 |
| Carbon tetrachloride | 56-23-5 | 1.4 | 2.4 | 22 | 44 | NS | 0.76 |
| Chlorobenzene | 108-90-7 | 100[a] | 100[a] | 500[b] | 1,000[c] | 40 | 1.1 |
| Chloroform | 67-66-3 | 10 | 49 | 350 | 700 | 12 | 0.37 |
| Ethylbenzene | 100-41-4 | 30 | 41 | 390 | 780 | NS | 1 |
| Hexachlorobenzene | 118-74-1 | 0.33[e] | 1.2 | 6 | 12 | NS | 3.2 |
| Methyl ethyl ketone | 78-93-3 | 100[a] | 100[a] | 500[b] | 1,000[c] | 100[a] | 0.12 |

**Table 375-6.8(b): Restricted Use Soil Cleanup Objectives**

| Contaminant | CAS Number | Protection of Public Health | | | | Protection of Ecological Resources | Protection of Ground-water |
|---|---|---|---|---|---|---|---|
| | | Residential | Restricted-Residential | Commercial | Industrial | | |
| Methyl tert-butyl ether | 1634-04-4 | 62 | 100[a] | 500[b] | 1,000[c] | NS | 0.93 |
| Methylene chloride | 75-09-2 | 51 | 100[a] | 500[b] | 1,000[c] | 12 | 0.05 |
| n-Propylbenzene | 103-65-1 | 100[a] | 100[a] | 500[b] | 1,000[c] | NS | 3.9 |
| sec-Butylbenzene | 135-98-8 | 100[a] | 100[a] | 500[b] | 1,000[c] | NS | 11 |
| tert-Butylbenzene | 98-06-6 | 100[a] | 100[a] | 500[b] | 1,000[c] | NS | 5.9 |
| Tetrachloroethene | 127-18-4 | 5.5 | 19 | 150 | 300 | 2 | 1.3 |
| Toluene | 108-88-3 | 100[a] | 100[a] | 500[b] | 1,000[c] | 36 | 0.7 |
| Trichloroethene | 79-01-6 | 10 | 21 | 200 | 400 | 2 | 0.47 |
| 1,2,4-Trimethylbenzene | 95-63-6 | 47 | 52 | 190 | 380 | NS | 3.6 |
| 1,3,5- Trimethylbenzene | 108-67-8 | 47 | 52 | 190 | 380 | NS | 8.4 |
| Vinyl chloride | 75-01-4 | 0.21 | 0.9 | 13 | 27 | NS | 0.02 |
| Xylene (mixed) | 1330-20-7 | 100[a] | 100[a] | 500[b] | 1,000[c] | 0.26 | 1.6 |

All soil cleanup objectives (SCOs) are in parts per million (ppm).
NS=Not specified. See Technical Support Document (TSD).

**Footnotes**

[a] The SCOs for residential, restricted-residential and ecological resources use were capped at a maximum value of 100 ppm. See TSD section 9.3.

[b] The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3.

[c] The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm. See TSD section 9.3.

[d] The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSD section 9.3.

[e] For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the SCO value.

[f] For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.

[g] This SCO is derived from data on mixed isomers of BHC.

[h] The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.

[i] This SCO is for the sum of endosulfan I, endosulfan II, and endosulfan sulfate.

[j] This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts). See TSD Table 5.6-1.

# APPENDIX D

# GROUNDWATER FIELD SAMPLING RECORD

EXAMPLE

**STEARNS & WHELER, LLC**
**GROUNDWATER FIELD SAMPLING RECORD**

SITE 153 Fillmore Ave DATE 07/26/07

Samplers: Brian Doyle SAMPLE ID MW-05
Sheila Negron-Vazquez

Depth of well (from top of casing)..... 15.5 ft EL
Initial static water level (from top of casing).... 9.4 ft EL

Evacuation Method:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Peristaltic | X | Centrifugal | | 1 in. casing: | 6.1 | ft. of water x .09 = | 0.55 gallons |
| Airlift | | Pos. Displ. | | 2 in. casing: | | ft. of water x .16 = | gallons |
| Bailer | | >>> No. of bails | | 3 in. casing: | | ft. of water x .36 = | gallons |

Well Volume Calculation

Volume of water removed 1.65 gals.

> 3 volumes: **yes** no

dry: yes **no**

Field Tests:

| | | |
|---|---|---|
| Temp: | 28.40 | C |
| pH | 5.31 | |
| Conductivity | 0.023 | mS/cm |
| DO% | 440.2 | % |
| Turbidity | 27.4 | NTUs |
| Oxidation Reduction Potential (ORP) | 131.8 | mV |

Sampling: Time: 3:00 PM

Sampling Method:

| | |
|---|---|
| Peristaltic Pump | X |
| Disposable Bailer | |
| Disposable Tubing | X |

Observations:

Weather/Temperature: Clear, 85° F

Physical Appearance and Odor of Sample: No odor, clear

Comments: Well purged to dry. Equipment error was reported for the percentage of dissolved oxygen in the groundwater.

# APPENDIX E

# WELL CONSTRUCTION DIAGRAMS

# Stearns & Wheler, LLC

Environmental Engineers and Scientists

**Boring/Well: MW-1**

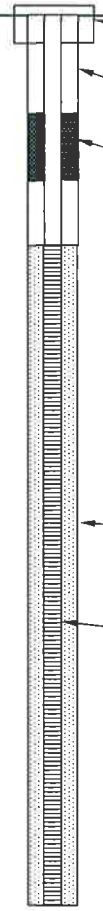
Page 1 of 1

Project No. 71164.11
Start Date: 07/08/09
Finish Date: 07/08/09

Weather: Partly Clear 70°

**Project Name:** 153 Fillmore Avenue Groundwater Monitoring
Drilling Co.: SJB Services
S&W Representative: BPD/DER
Drill Rig Type: Hollow Stem Auger
Drilling Method: Spilt Spoon

| Depth (ft) | Sample No. | Recovery (%) | # of Blows | USCS Classification | Sample Description | Well Schematic | Comments |
|---|---|---|---|---|---|---|---|
| | S-1 | 63 | 5 | | | | |
| 1 | | | 5 | | | | |
| | | | 4 | GW | Gray Gravel with cobbles (Fill) 1.5 | | |
| 2 | | | 9 | CL | Reddish-brown Silty Clay with gravel (Fill) | | |
| | S-2 | 83 | 4 | | - dry | | |
| 3 | | | 3 | | - asphalt 3.0' | | |
| | | | 21 | ML | Tan Clayey Silt | | |
| 4 | | | 10 | | -wet | | |
| | S-3 | 17 | 1 | | | | |
| 5 | | | 2 | | | | |
| | | | 1 | | 5.5' | | |
| 6 | | | 1 | ML | Dark brown Gravely Silt | | |
| | S-4 | 94 | 2 | | 6.5' | | |
| 7 | | | 3 | MH | Grayish tan fine Sandy Silt | | |
| | | | 5 | | -wet | | |
| 8 | | | 6 | | - grades to grayish, brown Silt | | Sandpack filter |
| | S-5 | 92 | 1 | | | | |
| 9 | | | 2 | | | | |
| | | | 2 | | 9.5' | | 0.20" Slot Well Screen |
| 10 | | | 6 | OL | Grayish Clayey Silt | | |
| | S-6 | 58 | 1 | | -wet | | |
| 11 | | | 3 | | 11.0' | | |
| | | | 6 | MH | Light brownish, gray fine Sandy Silt | | |
| 12 | | | 8 | | 12.0' | | |
| | S-7 | 92 | 8 | GW | Gray coarse Sandy Gravel with 1" cobbles | | |
| 13 | | | 8 | | -wet, no odor 13.0' | | |
| | | | 24 | CH | Grayish-brown Silty Clay | | |
| 14 | | | 25 | | | | |
| | | | | | | | |
| 15 | | | | | | | |
| | | | | | Augered to 15.5' | | |
| 16 | | | | | | | |



# Stearns & Wheler, LLC

Environmental Engineers and Scientists

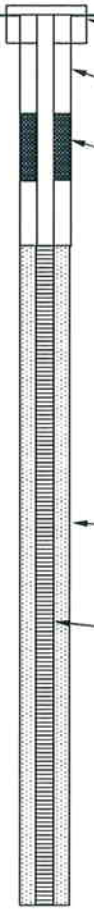
**Boring/Well: MW-2**

Page 1 of 1

Project No. 71164.11
Start Date: 07/08/09
Finish Date: 07/08/09

Weather: Partly Clear 70°

**Project Name:** 153 Fillmore Avenue Groundwater Monitoring
Drilling Co.: SJB Services
S&W Representative: BPD/DER
Drill Rig Type: Hollow Stem Auger
Drilling Method: Spilt Spoon

| Depth (ft) | Sample No. | Recovery (%) | # of Blows | USCS Classification | Sample Description | Well Schematic | Comments |
|---|---|---|---|---|---|---|---|
| | | | 7 | ML | Dark brown Silt (Fill) |  | Curb Box |
| 1 | S-1 | 79 | 8 | | -dry, loose 1.0' | | Cement Grout |
| | | | 7 | ML | Reddish-brown Clayey Silt (fill) | | |
| 2 | | | 4 | | 2.0' | | Bentonite Seal |
| | | | 5 | MH | Grayish Sandy Silt | | |
| 3 | S-2 | 88 | 7 | | - modeled with light orange 3.0' | | |
| | | | 8 | | - some gravel | | |
| 4 | | | 9 | | -grades to reddish, brown silt | | |
| | | | 2 | | | | |
| 5 | S-3 | 88 | 3 | | 5.0' | | |
| | | | 2 | | Brownish gray, fine Sandy Silt | | |
| 6 | | | 2 | | - wet | | |
| | | | 1 | | | | |
| 7 | S-4 | 83 | 1 | | | | |
| | | | 3 | | - grades to reddish, brown Silt | | Sandpack filter |
| 8 | | | 3 | | | | |
| | | | 5 | | | | |
| 9 | S-5 | 71 | 7 | | | | 0.20" Slot Well Screen |
| | | | 29 | | | | |
| 10 | | | 16 | ML | Grayish Clayey Silt with cobbles 9.5' | | |
| | | | 1 | GW | Grayish Silty Gravel with 2" cobbles | | |
| 11 | S-6 | 38 | 31 | | - wet | | |
| | | | 26 | | - no odor | | |
| 12 | | | 25 | | | | |
| | | | 19 | | | | |
| 13 | S-7 | 83 | 20 | | 13.0' | | |
| | | | 9 | CH | Grayish-brown Silty Clay 13.5' | | |
| 14 | | | 7 | | Augered to 13.5' | | |
| | | | | | | | |
| 15 | | | | | | | |
| | | | | | | | |
| 16 | | | | | | | |

## DRILLING SUMMARY

Geologist:
Scott McCabe

Drilling Company:
Zebra

Driller:
Dominic Pino

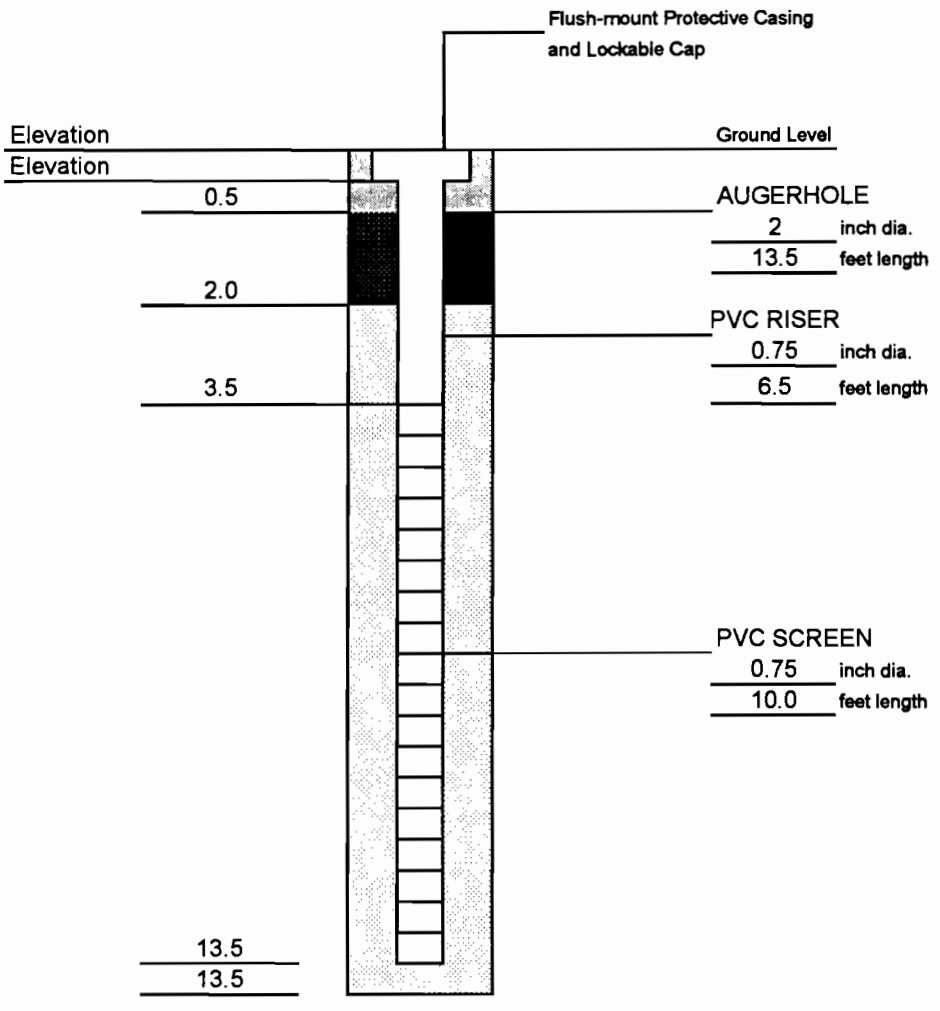
Rig Make/Model:
Mule-mounted GH-40 geoprobe

Date:
7/27/01

## GEOLOGIC LOG

| Depth(ft.) | Description |
|---|---|
| 0-.5 | Gravel |
| .5-2.0 | Fine to coarse sand some gravel and asphalt |
| 2.0-4.0 | Silt, trace fine sand |
| 4.0-9.5 | Fine sandy silt |
| 9.5-13.5 | Fine to coarse sand and gravel |

## WELL DESIGN




Not to Scale

| CASING MATERIAL | SCREEN MATERIAL | FILTER MATERIAL |
|---|---|---|
| Surface: Steel flush-mount - 5 inch ID | Type: 3/4 inch ID-Sch. 40 PVC | Type: #2 NSF silica sand Setting: 2.0-13.5 |
| Monitor: 3/4 inch ID-Sch. 40 PVC | Slot Size: .010" | SEAL MATERIAL: Type: Bentonite Chips Setting: .5-2.0 |

*COMMENTS:*

*LEGEND*

- Cement/Bentonite Grout
- Bentonite Seal
- Silica Sandpack

**Client: City of Tonawanda** | **Location: 153 Fillmore Avenue** | **Project No.: 0500035842.00**

**URS Corporation** | **MONITORING WELL CONSTRUCTION DETAILS** | **Well Number: MW-4**

**DRILLING SUMMARY**

Geologist:
Scott McCabe

Drilling Company:
Zebra

Driller:
Dominic Pino

Rig Make/Model:
Mule-mounted GH-40 geoprobe

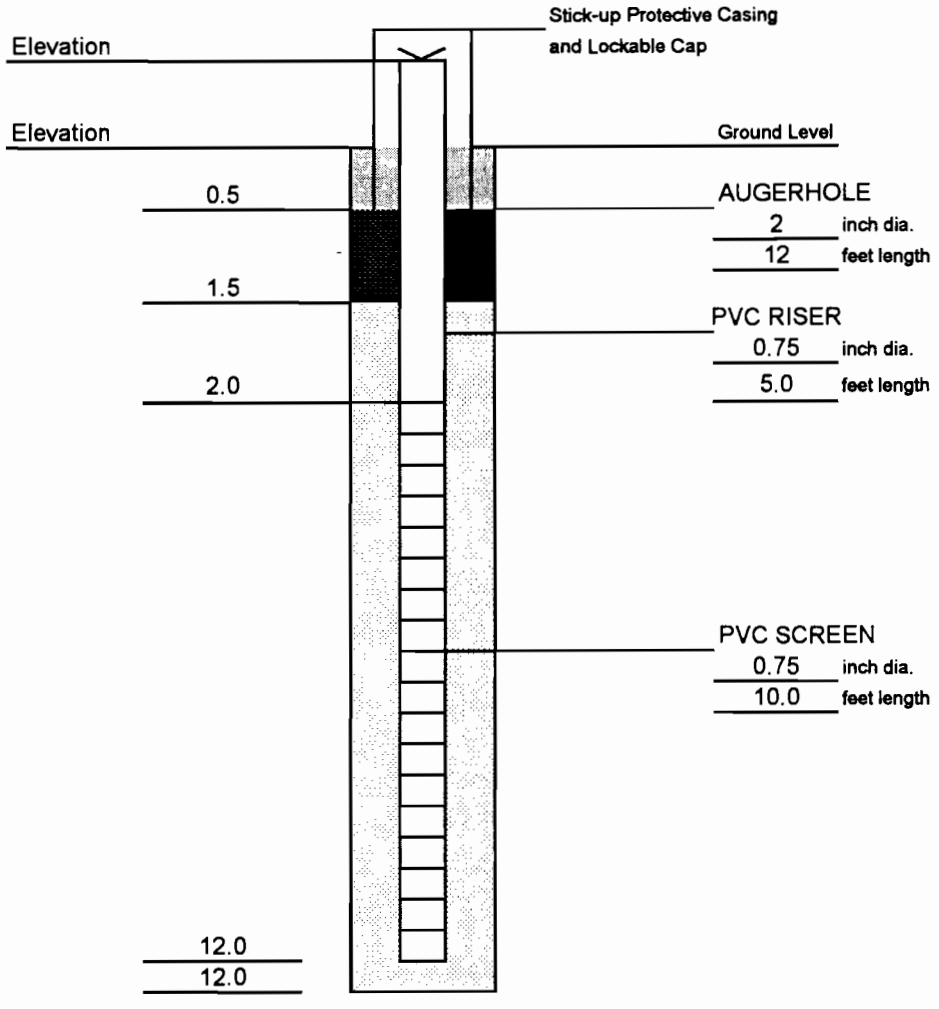
Date:
7/27/01

## GEOLOGIC LOG

| Depth(ft.) | Description |
|---|---|
| 0-2.0 | Fill: Fine to coarse sand, some cinders, coal |
| 2.0-4.0 | Clayey silt, trace fine sand |
| 4.0-10.5 | Fine sandy silt |
| 10.5-12.0 | Silty clay |

(DEPTH (ft))

## WELL DESIGN




Not to Scale

| CASING MATERIAL | SCREEN MATERIAL | FILTER MATERIAL |
|---|---|---|
| Surface: Steel stick-up - 5 inch ID | Type: 3/4 inch ID-Sch. 40 PVC | Type: #2 NSF silica sand Setting: 1.5-12.0 |
| Monitor: 3/4 inch ID-Sch. 40 PVC | Slot Size: .010" | SEAL MATERIAL: Type: Bentonite Chips Setting: .5-1.5 |

*COMMENTS:*

*LEGEND*

- Cement/Bentonite Grout
- Bentonite Seal
- Silica Sandpack

**Client: City of Tonawanda** | **Location: 153 Fillmore Avenue** | **Project No.: 0500035842.00**

**URS Corporation** | **MONITORING WELL CONSTRUCTION DETAILS** | **Well Number: MW-5**

## DRILLING SUMMARY

Geologist:
Scott McCabe

Drilling Company:
Zebra

Driller:
Dominic Pino

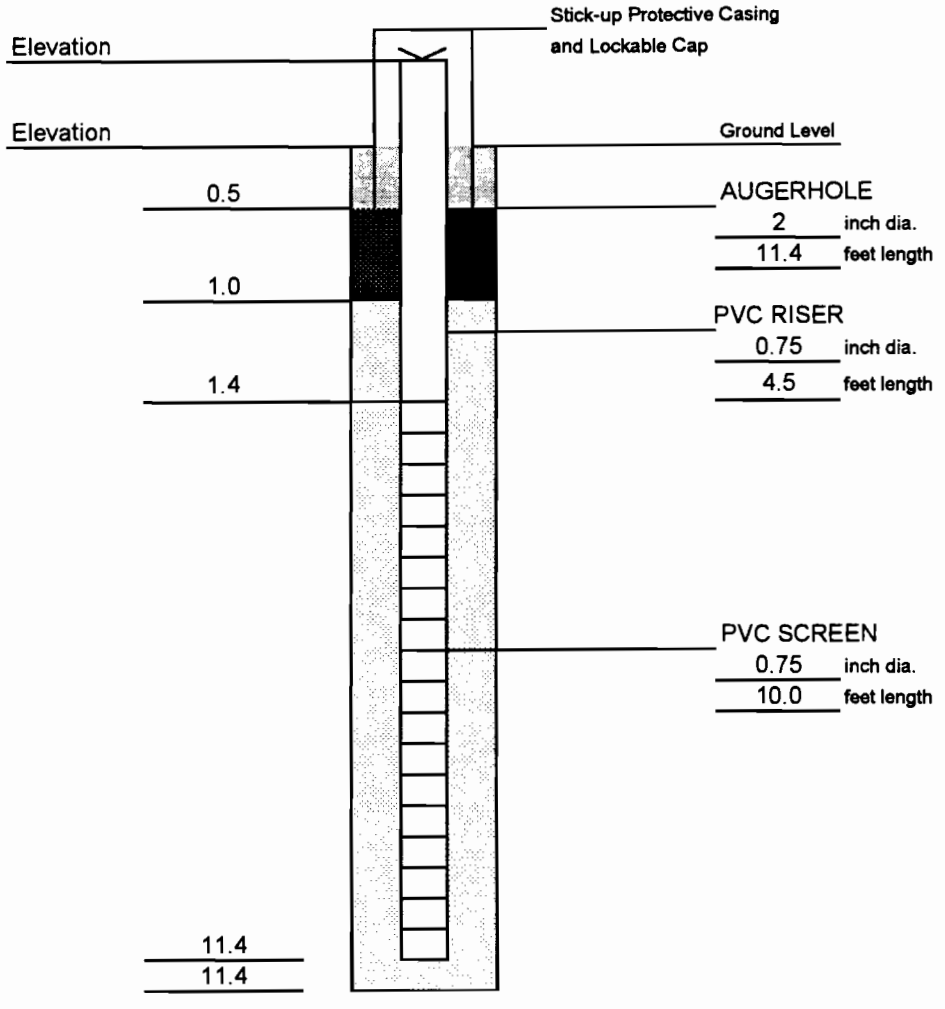
Rig Make/Model:
Mule-mounted GH-40 geoprobe

Date:
7/27/01

## GEOLOGIC LOG

| Depth(ft.) | Description |
|---|---|
| 0-1.5 | Fill: Fine to coarse sand, and gravel |
| 1.5-3.0 | Clayey silt |
| 3.0-7.0 | Fine sandy silt |
| 7.0-10.5 | Fine to medium sand |
| 10.5-11.4 | Fine to coarse sand and gravel |

DEPTH (ft)




Not to Scale

## WELL DESIGN

| CASING MATERIAL | SCREEN MATERIAL | FILTER MATERIAL |
|---|---|---|
| Surface: Steel stick-up - 5 inch ID | Type: 3/4 inch ID-Sch. 40 PVC | Type: #2 NSF silica sand Setting: 1.0-11.4 |
| Monitor: 3/4 inch ID-Sch. 40 PVC | Slot Size: .010" | SEAL MATERIAL: Type: Bentonite Chips Setting: .5-1.0 |

COMMENTS:

LEGEND

- Cement/Bentonite Grout
- Bentonite Seal
- Silica Sandpack

Client: City of Tonawanda | Location: 153 Fillmore Avenue | Project No.: 0500035842.00

**URS Corporation** | MONITORING WELL CONSTRUCTION DETAILS | Well Number: MW-6

## DRILLING SUMMARY

Geologist:
Scott McCabe

Drilling Company:

Zebra

Driller:
Dominic Pino

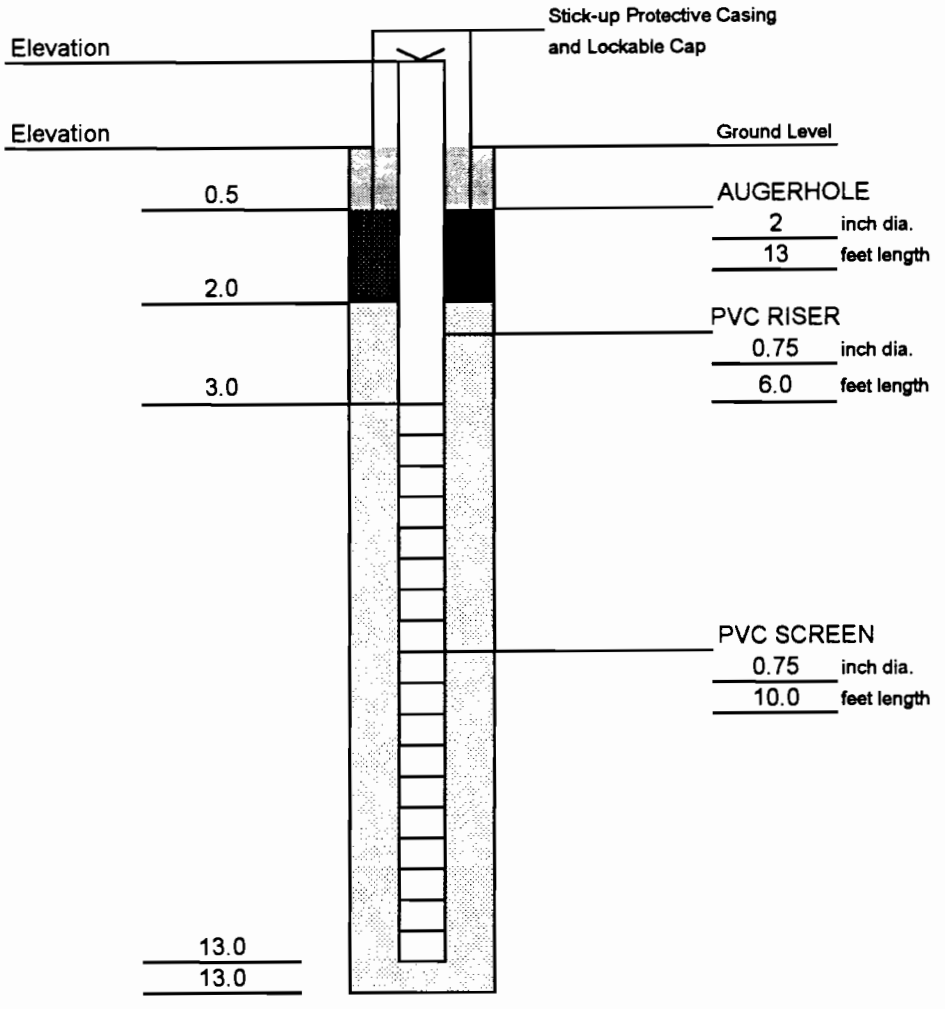
Rig Make/Model:
Mule-mounted GH-40 geoprobe

Date:
7/27/01

## GEOLOGIC LOG

| Depth(ft.) | Description |
|---|---|
| 0-1.0 | Fill: fine to coarse sand and gravel |
| 1.0-8.0 | Clayey silt |
| 8.0-11.0 | Fine to medium sand |
| 11.0-13.0 | Fine to coarse sand and gravel |

D
E
P
T
H
(ft)




Not to Scale

## WELL DESIGN

| CASING MATERIAL | | SCREEN MATERIAL | | FILTER MATERIAL | |
|---|---|---|---|---|---|
| Surface: | Steel stick-up - 5 inch ID | Type: | 3/4 inch ID-Sch. 40 PVC | Type: #2 NSF silica sand | Setting: 2.0-13.0 |
| Monitor: | 3/4 inch ID-Sch. 40 PVC | Slot Size: | .010" | SEAL MATERIAL<br>Type: Bentonite Chips | Setting: .5-2.0 |

COMMENTS:

LEGEND

- Cement/Bentonite Grout
- Bentonite Seal
- Silica Sandpack

Client: City of Tonawanda

Location: 153 Fillmore Avenue

Project No.: 0500035842.00

**URS Corporation**

MONITORING WELL CONSTRUCTION DETAILS

Well Number: MW-7

## DRILLING SUMMARY

Geologist:
Scott McCabe

Drilling Company:
Zebra

Driller:
Dominic Pino

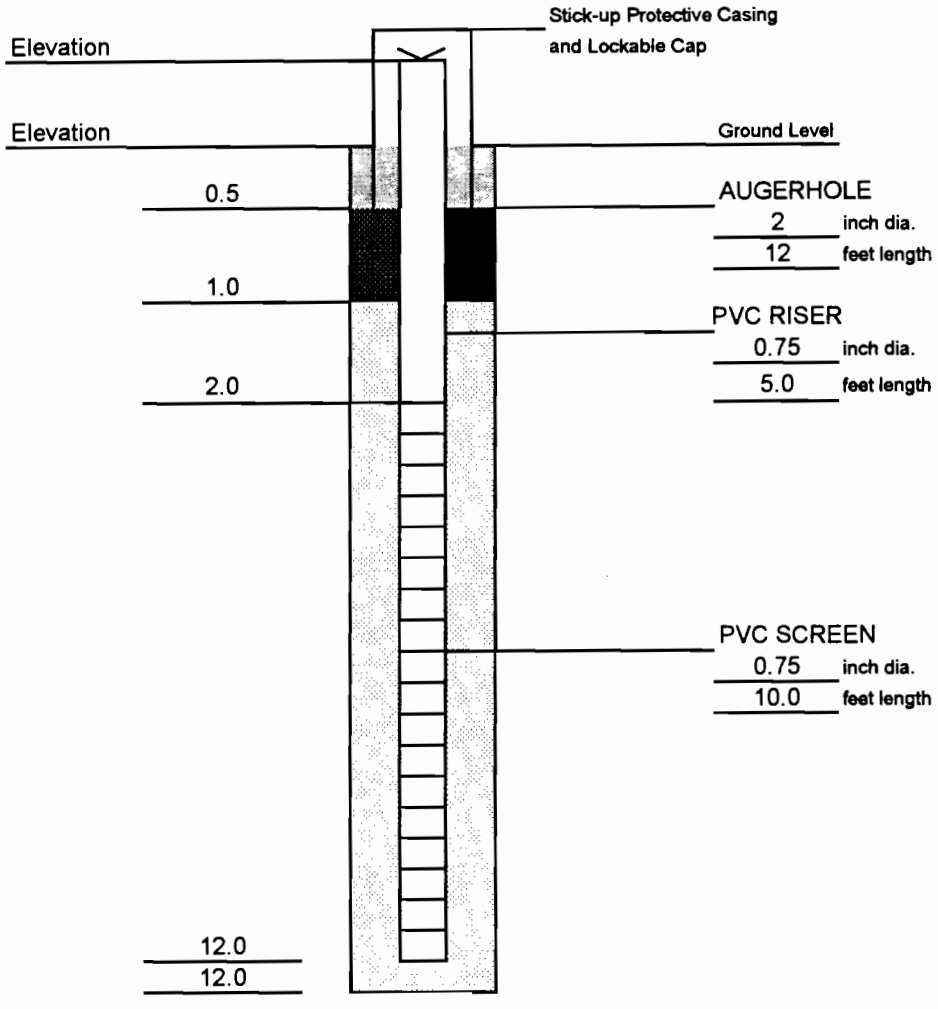
Rig Make/Model:
Mule-mounted GH-40 geoprobe

Date:
7/27/01

## GEOLOGIC LOG

| Depth(ft.) | Description |
|---|---|
| 0-.2 | Concrete |
| .2-1.0 | Fine to coarse sand and gravel |
| 1.0-4.0 | Silty clay |
| 4.0-9.0 | Fine sandy silt |
| 9.0-10.0 | Fine sand, some gravel |
| 10.0-12.0 | Fine to coarse sand and gravel |

## WELL DESIGN




Not to Scale

| CASING MATERIAL | SCREEN MATERIAL | FILTER MATERIAL |
|---|---|---|
| Surface: Steel stick-up - 5 inch ID | Type: 3/4 inch ID-Sch. 40 PVC | Type: #2 NSF silica sand Setting: 1.0-12.0 |
| Monitor: 3/4 inch ID-Sch. 40 PVC | Slot Size: .010" | SEAL MATERIAL<br>Type: Bentonite Chips Setting: .5-1.0 |

*COMMENTS:*

*LEGEND*

- Cement/Bentonite Grout
- Bentonite Seal
- Silica Sandpack

| | | |
|---|---|---|
| lient: City of Tonawanda | Location: 153 Fillmore Avenue | Project No.: 0500035842.00 |
| URS Corporation | MONITORING WELL CONSTRUCTION DETAILS | Well Number: MW-8 |