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Engineering & Support Center
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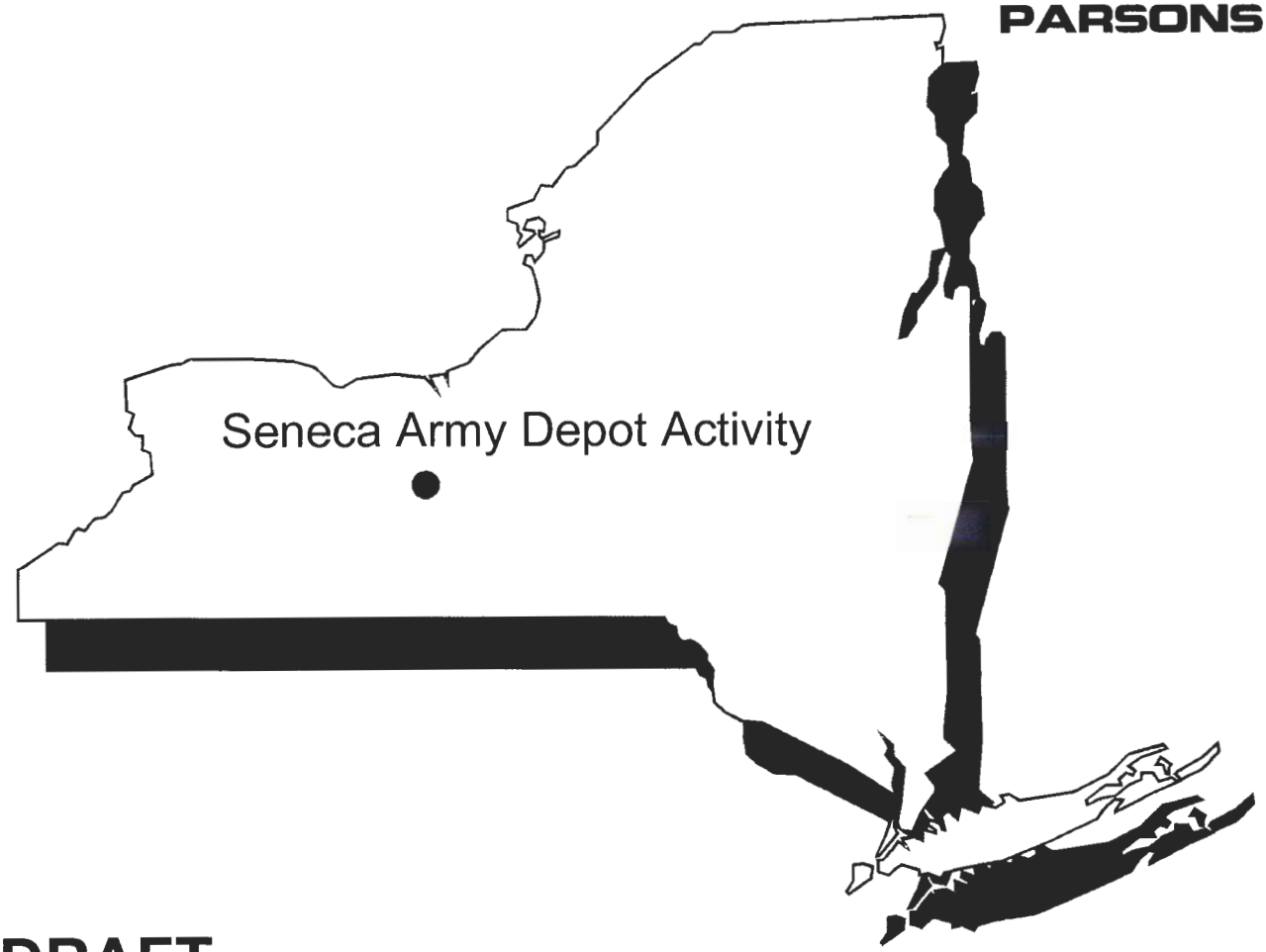

DRAFT
MONITORING WELL ABANDONMENT WORK PLAN

SENECA ARMY DEPOT ACTIVITY

EPA Site ID# NY0213820830
NY Site ID# 8-50-006
CONTRACT NO. DACA87-02-D-0005
DELIVERY ORDER NO. 0027

March 2005

US Army, Engineering & Support Center
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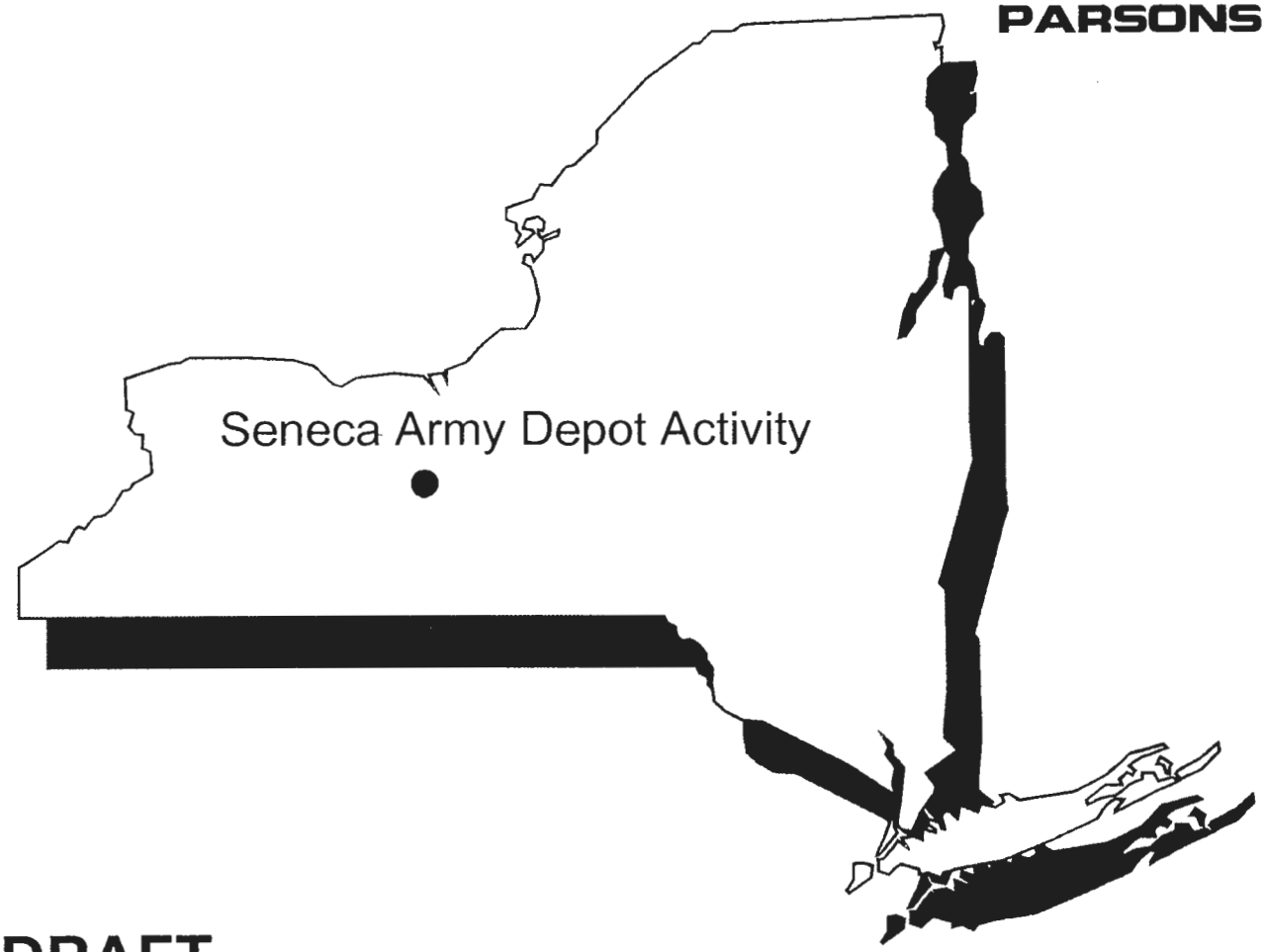

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March 2005

Monitoring Well Abandonment Workplan

Prepared for:

Seneca Army Depot Activity
Romulus, New York

and

US Army Corps of Engineers
Huntsville Center

Prepared by:

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Contract No.: DACA87-02-D-0005
Delivery Order No.: 27
744354 March 2005

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1.0 INTRODUCTION

The purpose of this work plan is to describe proposed abandonment procedures for a number of existing monitoring wells located at thirteen sites within the Seneca Army Depot Activity (SEDA) in Romulus, New York. This work will be conducted by Parsons Engineering Science, Inc. (Parsons) on behalf of the U.S Army Corps of Engineers (Army) under Delivery Order 27 on Contract DACA87-02-D-0005.

Since September of 2003, the Army has successfully completed the transfer of more than 7000 acres of SEDA to the Seneca County Local Redevelopment Authority. The transfer of land was made possible when the Army, Region II of the U.S. Environmental Protection Agency (EPA), and NYSDEC finalized a Record of Decision for 20 No Action and six No Further Action at SEDA.

At this time, the Army has determined that 45 wells that are located within 13 former Solid Waste Management Units identified as SEADs 9, 32, 33, 34, 44A, 44B, 58, 62, 64A, 64B, 64C, 64D, and 70 can be abandoned as they are no longer needed for continuing Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) investigations and studies. Therefore, the Army has commissioned Parsons to prepare and submit a workplan for regulatory agency review and approval that describes procedures that will be used to safely abandon the unneeded monitoring wells at the sites.

Parsons has prepared this workplan in accordance with procedures and recommendations provided in the New York State Department of Environmental Conservation's (NYSDEC's) Guidance Document "Groundwater Monitoring Well Decommissioning Procedures" (Malcolm Pirnie, 1996). In accordance with the information provided within the NYSDEC's guidance manual, the Army and Parsons understand that "a well is successfully decommissioned when:

- Migration of existing or future contaminants into an aquifer or between acquifers can not occur.
- Migration of existing or future contaminants in the vadose zone cannot occur.
- The potential for vertical or horizontal migration of fluids in the well or adjacent to the well is minimized.
- Aquifer yield and hydrostatic head are conserved."

Per NYSDEC's guidance, there are 11 elements to be addressed in decommissioning a monitoring well at a hazardous waste site:

- Reviewing Site Data
- Selecting the Well Decommissioning Method
- Preparing a Site-Specific Health and Safety Plan
- Preparing a Materials Handling and Disposal Plan
- Establishing Decontamination Procedures
- Locating and Setting-up on the Well
- Removing the Protective Casing
- Decommissioning of Screen and Riser
- Selecting Mixing and Placing Grout
- Backfilling and Site Restoration, and
- Quality Assurance/Quality Control (QA/QC) Procedures

Details of each of these items are provided in the ensuing work plan.

The Army is planning to abandon monitoring wells at the following listed sites. Many of these wells are located in sites where No Action (NA) or No Further Action (NFA) Records of Decisions (RODs) have already been finalized. Furthermore, at several other sites, NA or NFA RODs are under development and are expected to be submitted and approved within the next six to twelve months. Additionally, in a few cases, RODs including land use controls (LUCs) restricting use of the land for residential purposes and access to and use of the groundwater have been finalized. Finally, for the remainder of the sites, the site conditions found at the sites have not been shown to pose a threat, and the land has already been transferred under deed to other entities. A summary listing of the number of wells and the present status of each of the sites is provided below.

- SEAD-9 – Old Scrap Wood Site (3 wells) – NA ROD in place
- SEAD-33 – Building 121 – Underground Waste Oil Tank (2 wells) – NA ROD in place
- SEAD-34 – Building 319 – Underground Waste Oil Tanks (2) (2 wells) – NFA ROD in place
- SEAD-43 – Old Missile Propellant Test Lab & Herbicide/Pesticide Storage Building (4 wells) – NA/NFA ROD being prepared
- SEAD-44A – Quality Assurance Test Laboratory (3 wells) – NA/NFA Draft ROD being prepared

- SEAD-44B – Quality Assurance Test Laboratory (3 wells) – NA/NFA Draft ROD being prepared
- SEAD-58 – Debris Area Near Booster Station 2131 (4 wells) – land transferred
- SEAD-62 – Nicotine Sulfate Disposal Area (3 wells) – land transferred
- SEAD-64A – Garbage Disposal Area (4 wells) – LUC ROD in place
- SEAD-64B – Garbage Disposal Area (3 wells) – NA/NFA ROD being prepared
- SEAD-64C – Garbage Disposal Area (5 wells) – land transferred
- SEAD-64D – Garbage Disposal Area (5 wells) – NA/NFA ROD being prepared
- SEAD-70 – Fill Area Adjacent to Building T-2110 (4 wells) – no groundwater concern; soil removal pending.

A complete list of the 45 wells to be abandoned and their current regulatory status is contained in **Table 1.1**.

2.0 DATA REVIEW AND ANALYSIS

Available data from each of the affected sites (SEADs 9, 32, 33, 34, 44A, 44B, 58, 62, 64A, 64B, 64C, 64D, and 70) were obtained and reviewed, pursuant to the requirements identified in the NYSDEC's guidance document. Extensive data analysis has been performed at all of the sites discussed in this Workplan, and data from each of the sites were presented and used as the basis of human health and ecological risk assessments performed by the Army with results being reported in 2002. The Final Decision Document – Mini Risk Assessment (Parsons, May 2002) concluded that none of the sites posed a threat to human health or the environment based on their planned future intended use.

The pertinent investigations performed at each site will be summarized in **Section 2.2** of this document. As a historical data review has already been performed, the work remaining in the project includes the selection of a decommissioning method for each of the wells, the actual decommissioning of the wells themselves and the preparation of a closure report summarizing the work performed during the project.

The work proposed in this report will be performed as part of the United States Army Corps of Engineers (USACOE) remedial response activities under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). It will follow the requirements of the New York State Department of Environmental Conservation (NYSDEC), the United States Environmental Protection Agency, Region II (EPA), and the Federal Facilities Agreement (FFA).

2.1 Background Information

Prior to construction of the Seneca Army Depot Activity (SEDA or the Depot), the site was used for farming; the SEDA was constructed in 1941. The 10,600-acre Depot was owned by the United States Government and operated by the Department of the Army until late 2000, when portions of the Depot were deeded over to the State of New York (Prison) and the Seneca County Industrial Development Authority (SCIDA) for redevelopment and reuse. In September 2003, nearly 7,000 acres were transferred to the SCIDA as conservation/recreation land. SEDA was proposed for inclusion on the National Priority List (NPL) as a Federal Facility site in July of 1989; the Depot's listing was approved by Congress and its listing was finalized in August of 1990. In accordance with requirements of Section 120 of CERCLA (Title 42, *U.S. Code*, § 9620), the US Army, the EPA, and the NYSDEC negotiated and signed a Federal Facilities Agreement (FFA) or an Interagency Agreement (IAG) governing site

investigation and remediation of the Depot in January 1993. This agreement determined that future investigations were to be based on CERCLA guidelines and RCRA was considered an Applicable or Relevant and Appropriate Requirement (ARAR) pursuant to Section 121 of CERCLA. In October 1995, SEDA was designated as a facility to be closed under the provisions of the Base Realignment and Closure (BRAC) process. In 2000, the facility was closed.

2.2 Site Descriptions

There are 13 sites where existing monitoring wells will be decommissioned during the project. A risk assessment performed for each site determined that none posed a threat to human health or the environment based on their intended use; therefore, the wells are no longer necessary for further analysis of site conditions. Brief descriptions of each site are contained below, along with summaries of any submitted reports and the proposed or agreed to plans for each.

2.2.1 SEAD-9 – Old Scrap Wood Site

SEAD-9 is located on the east-central portion of the Depot about 400 feet north of the intersection of East Kendaia Road and East Patrol Road (**Figure 1-1**). A dirt road here leads to a cul-de-sac where construction debris was deposited from 1977 to 1984 and scrap wood only from 1984 to 1986. Periodically between 1985 and 1992, the Depot fire department used this area for training when they burned scrap wood that could not be sold.

The area was investigated by Parsons as part of the Expanded Site Inspection (ESI) for Eight Moderately Low Priority Areas of Concern (AOCs), the results of which were detailed in a December 1995 Report (Parsons, 1995a). The 2002 Mini Risk Assessment (MRA) determined that SEAD-9 did not pose a threat to human health or the environment given its intended use as part of the industrial area. SEAD-9 was also included in a July 2003 PRAP (Parsons, 2003a) along with 27 other Solid Waste Management Units (SWMUs) that were all proposed as either No Action or No Further Action sites. The EPA signed a Record of Decision (Parsons, 2003b), which included SEAD-9 and a majority of the other PRAP sites, in September 2003.

2.2.2 SEAD-33 – Building 121 – Underground Waste Oil Tank

SEAD-33 is located on the east-central portion of the Depot (**Figure 1-1**) and is comprised of the 30,000-gallon, steel underground waste oil tank at Building-121. A limited sampling program was performed in the area of the tank in 1994, with no contaminants detected above limits set forth in the NYSDEC Technical Administrative Guidance Memorandums (TAGMs). The MRA determined that SEAD-33 did not pose a threat to human health or the environment given its intended use as part of the industrial area, and it was included in the No Action/No Further Action PRAP and ROD.

2.2.3 SEAD-34 – Building 319 – Underground Waste Oil Tanks (2)

SEAD-34 is located on the east-central portion of the Depot **(Figure 1-1**) and is comprised of the two underground waste oil tanks, one 30,000-gallon and one 20,000-gallon, at Building-319. A limited sampling program was performed in the area of the tank in 1994, with no contaminants detected above TAGMs. The MRA determined that SEAD-34 did not pose a threat to human health or the environment given its intended use as part of the industrial area.

2.2.4 SEAD-43 – Old Missile Propellant Test Lab & Herbicide/Pesticide Storage Building

SEAD-43 is located in the southeast corner of the Depot **(Figure 1-1**) and is comprised of Building 606 and the surrounding grounds. The building was reportedly used as a missile propellant test laboratory in the 1960s and was used as storage building for herbicides and pesticides from 1976 until the 1990s. The site was investigated extensively for toxic waste contamination during the ESI for Eight Moderately Low Priority AOCs and was investigated in 1999 for ordnance and explosives (OE) contamination. An Army memorandum dated April 6, 2000 classified the site No DOD Action Indicated based on the results of the OE surveys, and the MRA determined that SEAD-43 did not pose a threat to human health or the environment based on its future use as part of a correctional facility of the State of New York.

2.2.5 SEAD-44A – Quality Assurance Test Laboratory

SEAD-44A is located in the southeast corner of the Depot approximately 1,000 feet east of Brady Road and 1,500 feet north of South Patrol Road (**Figure 1-1**). The approximately 15-acre site was originally occupied by Building 416 and a number of earthen berms that ran parallel to a dirt road through the site. The berms were most likely used to contain detonations caused during the QC testing of 40mm rifle-fired

grenades. The building was dismantled prior to 1999, although the exact date of removal is not known, and the berms were bulldozed as part of an OE removal project in 2000. The site is currently a vacant field.

The site was investigated for toxic waste contamination during the ESI for Eight Moderately Low Priority AOCs and was also surveyed for OE contamination during a number of investigations. A characterization study was performed by Army personnel in 1999 in support of the Explosive Safety Submission (ESS) (USACE, 2000), after which the boundaries of the site were expanded to approximately 25 acres. All 25 acres were fully cleared or vegetation prior to an OE clearance operation performed in 2000. The results of this clearance are discussed in Parsons' Final OE Engineering Evaluation/Cost Analysis (EE/CA) (2004a) and EODT's Final Report for the Ordnance and Explosive Removal Action at Seneca Army Depot Activity 44A (2001). A final OE clearance was performed in 2001, after which a recommendation was made that the site be released for unrestricted use with respect to OE (Weston, 2003). The MRA determined that SEAD-44A did not pose a threat to human health or the environment with respect to toxic waste based on its future use as part of a correctional facility of the State of New York.

2.2.6 SEAD-44B – Quality Assurance Test Laboratory

SEAD-44B, located in the southeastern portion of the Depot, runs along the east side of Brady Road and occupies an area that is approximately 350 feet by 200 feet (**Figure 1-1**). Within this area are the structural remains of two buildings, an abandoned concrete foundation, and a dilapidated metal shack. The buildings were part of a QA test area for pyrotechnics, chemical smoke (CS) grenades, and other fire devices. The site was investigated during the ESI for Eight Moderately Low Priority AOCs, and the MRA determined that SEAD-44B did not pose a threat to human health or the environment based on its future use as part of a correctional facility of the State of New York.

2.2.7 SEAD-58 – Debris Area Near Booster Station 2131

SEAD-58 is located in the west-central portion of the Depot approximately 355 feet northeast of Booster Station 2131 (**Figure 1-1**) and is characterized by two areas separated by a drainage swale. It was rumored that unknown types of debris, possibly including DDT, were dumped in both of the areas. The site was investigated during the ESI for Eight Moderately Low Priority AOCs, and the MRA determined

that SEAD-58 did not pose a threat to human health or the environment based on its future use as part of the conservation/recreation area.

2.2.8 SEAD-62 – Nicotine Sulfate Disposal Area

SEAD-62, located in the southeastern portion of the Depot (**Figure 1-1**), measures approximately ¼ mile by ½ mile and is characterized by mostly undeveloped land with the exception of ammunition storage igloos and buildings on the western perimeter. It was rumored that two drums of nicotine sulfate may have been disposed of in the vicinity of Buildings 606 and 612, which are two of the buildings on the western side of this AOC. The site was investigated during the ESI for Seven Low Priority AOCs, the results of which were detailed in an April 1995 Report (Parsons, 1995b). The Mini Risk Assessment determined that SEAD-62 did not pose a threat to human health or the environment based on its future use as part of a correctional facility of the State of New York.

2.2.9 SEADs-64A – Garbage Disposal Area

SEAD-64A is located south of the storage pad at the intersection of 7th Street and Avenue A (**Figure 1-1**). The site was used as a solid waste disposal area between 1974 and 1979 when the solid waste incinerator at the Depot was not in operation. It was used primarily as a landfill for household items, although the SWMU Classification Report states that metal drums and some industrial items may have been disposed of in the landfill. The site was investigated during the ESI for Seven Low Priority AOCs, and the MRA determined that SEAD-64A did not pose a threat to human health or the environment based on its intended use as part of the warehouse area. SEAD-64A was included in the PRAP for SWMUs Requiring Land Use Controls (Parsons, 2003c) in December 2003, and the EPA signed a Record of Decision (ROD) (Parsons, 2004b) for those sites in September 2004.

2.2.10 SEAD-64B – Garbage Disposal Area

SEAD-64B is located immediately north of Ovid Road near Building 2086 in the southern end of the Depot (**Figure 1-1**). As with SEAD-64A, the site was used as a solid waste disposal area between 1974 and 1979 and was used primarily as a landfill for household items but may have been used for some industrial waste. The site was investigated during the ESI for Seven Low Priority AOCs, and the MRA determined that SEAD-64B did not pose a threat to human health or the environment based on its future use as part of a correctional facility of the State of New York.

2.2.11 SEAD-64C – Garbage Disposal Area

SEAD-64C is located at the intersection of East Patrol Road and South Patrol Road in the southeastern corner of the Depot (**Figure 2-1**). In 1980, the site was proposed as a possible location for a sanitary landfill; however, it is unclear how much dumping, if any, was ever done in this location. The site was investigated during the ESI for Seven Low Priority AOCs, and the MRA determined that SEAD-64C did not pose a threat to human health or the environment based on its future use as part of a correctional facility of the State of New York.

2.2.12 SEAD-64D – Garbage Disposal Area

SEAD-64D is an approximately 2,700-foot by 1,200-foot area adjacent to the West Patrol Road in the southwestern corner of the Depot (**Figure 2-1**). This area is generally heavily vegetated, although a number of north-south and east-west trending firebreaks have been cut through it. As with SEADs 64A and 64B, SEAD-64D was used for household solid waste and possibly some industrial waste disposal during the years the incinerator was not in operation. The site was investigated during the ESI for Seven Low Priority AOCs, and the MRA determined that SEAD-64C did not pose a threat to human health or the environment given its future use as part of the conservation/recreation area.

2.2.13 SEAD-70 – Fill Area Adjacent to Building T-2110

The fill area that comprises SEAD-70 is located on the southern side of East-West Baseline Road approximately 750 feet west of the intersection with North-South Patrol Road (**Figure 2-1**). The AOC is a mounded landfill once used for construction debris. It is on the southeastern side of Building T-2110, which is a collapsed wooden barn. The site was investigated during the ESI for Seven Low Priority AOCs, and the MRA determined that SEAD-70 did not pose a threat to human health or the environment based on its future use as part of the conservation/recreation area.

3.0 TASK PLAN FOR MONITORING WELL ABANDONMENT

3.1 Selection of Decommissioning Method

The NYSDEC Well Decommissioning Procedures list four potential methods for monitoring well abandonment; casing pulling, overdrilling, grouting the casing in place, or perforating the casing followed by grouting it in place. The Decommissioning Procedures guidance also provides a flowchart for use in selecting an appropriate abandonment method (**Figure 3-1**). A number of choices on the chart's decision tree can be made based on existing information summarized on the boring log or the well completion form, or based on a review of analytical data collected at the site which documents the contamination history of each well. Most of the boring logs and well completions for the wells proposed for abandonment are contained in **Appendices A and B**, respectively, and the chemical analysis data for any soil or groundwater samples collected at the well location are contained in the documents referenced in **Section 2.2**. Boring logs and well completions were not available for the wells located in SEADs-33 or –34 or for wells MW64C-6 through MW64C-9. Despite the lack of logs or completions for these few wells, it is assumed that these wells will be fairly similar to the rest of the wells constructed at SEDA.

Upon review of the historical well data, a number of broad generalities can be seen for all of the wells being decommissioned. The lithologic properties identified around all of the wells are fairly similar, as all of them extend through two or three similar lithologic units; fill, glacial till, and/or extremely weathered shale bedrock. Other than those areas on the Depot where competent bedrock is exposed, a single distinct unit of glacial till covers the site, and all of the wells in question pass though this till. In some cases the till is overlain by fill imported for construction purposes, and some of the wells also extend into a layer of extremely weathered shale overlying the competent shale bedrock. However, none of the subject wells extend appreciably into the competent shale bedrock underlying the Depot. Therefore, all of the wells are classified as overburden wells rather than bedrock wells. Also, none of the three lithologic units are considered a confining layer, so all of the wells are considered to have been constructed in an unconfined aquifer. Finally, none of the SEADs involved were found to pose a hazard to human health or the environment, so the wells can be considered uncontaminated for the purposes of the project.

The general characteristics of all of the wells targeted for abandonment at the Depot lead to one final decision point in the flowchart, which is whether or not the riser can be effectively and completely

pulled. As the success of this operation can only be determined in the field, an attempt will be made to pull the risers of all of the wells being decommissioned out of the ground. If the casing breaks or if it is impossible to remove any portion of the casing, the well will be grouted in place. Since none of the wells scheduled for abandonment under this effort are four inches in diameter or larger, wells requiring grouting in place, due to breakage or the inability to pull any portion of the casing, inability to pullwill not be perforated.

3.2 Decommissioning Plan

3.2.1 Preliminary Inspection

Once the decommissioning workplan is approved, the Army plans to decommission wells in groups according to the SEADs involved. The SEAD groupings are shown on **Table 1-1**. An effort will be made to decommission as many wells as possible during each mobilization to the site. Prior to the initiation of the abandonment process at any of the SEADs, Parsons personnel will perform a thorough investigation of each well at that site. The inspection of each well will ensure that they are accessible to the equipment needed in the decommissioning process and that there are no other issues (i.e. bees/wasps in the protective casing, excessive mud or standing water) that need to be resolved. Any necessary brush cutting and removal will be competed prior to the decommissioning contractor's arrival on-site. Following the inspection, a proposed order will be created for the abandonment of wells by SEAD location. Ideally, the order will be determined by the proximity of SEADs to one another, but modifications may be made as needed to allow individual sites time to dry out if necessary.

3.2.2 Decommissioning Procedures

As stated in **Section 3.1**, an initial attempt will be made to pull the casings of all wells selected for abandonment. If the casing cannot be pulled for some reason or if the casing breaks while it is being pulled, the well will be decommissioned by grouting the casing in place. Regardless of the decommissioning method ultimately used on each well, the top five feet of the casing will be removed and the hole will be backfilled with clean fill and the site restored. The specific procedures to be followed during the project are detailed below. All personnel involved in the fieldwork will wear level D personal protective equipment as detailed in the Site Specific Health and Safety Plan, which is contained in **Appendix C**.

Casing Pulling

The casing pulling technique will involve lifting the casing out of the constructed hole using a drill rig, backhoe, or other form of suitable equipment. The bottom of the casing will first be punctured using a stainless steel cone pentrometer, which will be left at the bottom of the hole. The well will then be flushed with water, if necessary, to remove any sand present in the bottom of the casing. The casing will then be slowly pulled out using a steady, continuous lifting force while grout is simultaneously tremied into the open void produced at the bottom of the well. In this manner, grout will continuously fill in the space vacated by the casing. Grout will be added as the casing is removed until the grout level stabilizes at approximately 5 feet below the ground surface (bgs). A ferrous metal marker will be embedded in the top of the grout to indicate the location of the former well, and the rest of the open hole will be filled with clean fill.

During the casing pulling and grouting process, any materials removed from the hole will be collected and transferred into DOT-approved 55-gallon drums or a roll-off container pending characterization and disposal. As available data from the sites indicate that the sites do not pose a threat to human health or the environment, all of the materials collected during the planned decommissioning actions will be considered non-hazardous. The well construction materials stored in roll-off containers (e.g., casings, concrete rubble, bollards) will be stockpiled and disposed of at a construction debris landfill, or in the case of the bollards, possibly stockpiled for subsequent reuse at another site if needed. The groundwater and soil collected in 55-gallon drums will be disposed of on-site according to NYSDEC Technical and Administrative Guidance Memorandum (TAGM) #4032. All equipment used during the decommissioning process will still be steam cleaned after each well.

Grouting in Place

If a well's casing cannot be pulled, or if it breaks off while it is being pulled, the casing or remaining parts of the casing will be grouted in place. Under this method, the casing is first tremie-filled with grout to a depth of five feet bgs. Once this level has been reached, a metal marker is embedded in the wet grout, and then the casing is cut off above the metal marker at a five-foot depth. The cut-off top of the casing and the associated well materials will then be removed from the ground. As with the casing pulling method, all materials removed from the former well location will be collected and stored pending appropriate characterization and disposal. All equipment used in the process will be decontaminated

after the completion of each well.

Backfilling and Site Restoration

The protective casings for each well and the bollards surrounding non-flush mount wells will also be removed. Following the stabilization of the grout at five feet bgs and the removal of at least the top five feet of casing, the remainder of the abandoned well hole will be backfilled with clean fill. After completing the infill of the former well hole, the well's protective casing will be removed by breaking up the concrete surrounding the casing and jacking or hoisting the casing out of the ground. All well collar and protective casing materials removed will be treated in the same fashion as those removed with the well casing. The bollards surrounding non-flush mount wells will be also removed and either collected in a central location for subsequent disposal as construction debris by the Army or recycled by the decommissioning contractor for use at other sites. Additional holes created during the removal of the well collar, the protective casing, and protective bollards will be re-graded with clean fill.

Upon the complete removal of the well materials, including all protection, the site will be restored to the condition of the area surrounding the former borehole. Concrete and asphalt locations will be repaired using equivalent materials of the same thickness; vegetated areas will be reseeded, and topsoil will be used in other areas.

4.0 PLANS AND MANAGEMENT

4.1 Referenced Plans

The following plans for Seneca Army Depot Activity are incorporated by reference into this document:

- Accident Prevention Plan and Generic Site-Wide Health and Safety Plan for Seneca Army Depot Activity (Parsons, 2005)
- **Appendix C**: Site-Specific Safety and Health Plan (SSHP), Monitoring Well Abandonment at Various Locations

4.2 Scheduling

The Army plans to begin well abandonment at approved SEADs in May 2005. The proposed schedule for performing this work is presented in **Figure 4-1**.

4.3 Staffing

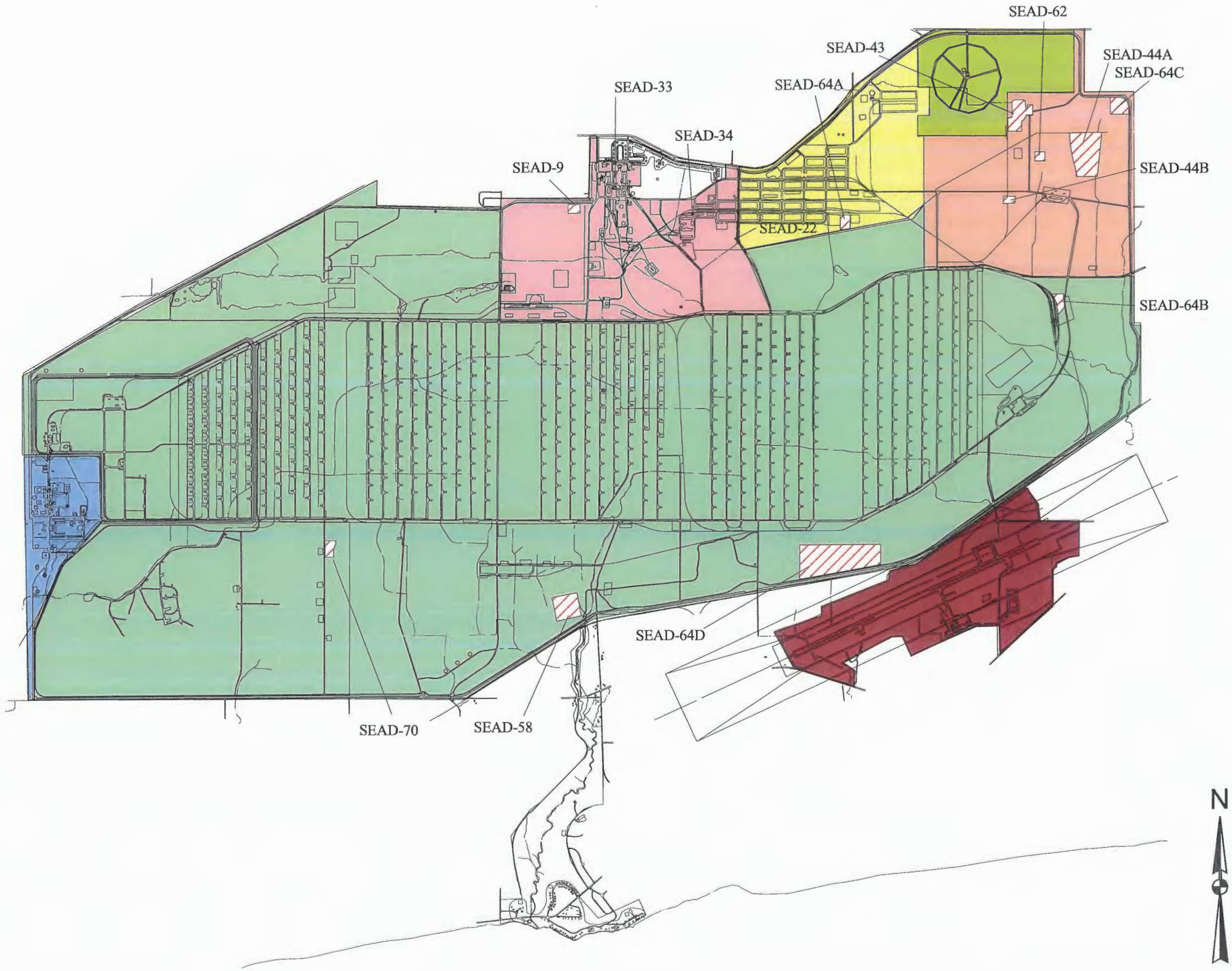
The project team organization for performing the work described in this Workplan is presented in **Figure 4-2**.

TABLES

Table 1-1
Wells to be Abandoned
Seneca Army Depot Activity

Group	Site	Well ID	Depth of Well from Ground (ft)	Grouted length?	Construction
A	SEAD-9	MW9-1	5.2	2.5	PVC
	SEAD-9	MW9-2	5.3	1.9	PVC
	SEAD-9	MW9-3	10.2	2.5	PVC
	SEAD-33	MW33-1	est 10 ft	unknown	
	SEAD-33	MW33-2	est 10 ft	unknown	
	SEAD-34	MW34-1	est 10 ft	unknown	
	SEAD-34	MW34-2	est 10 ft	unknown	
	SEAD-43	MW43-1	15	3	PVC
	SEAD-43	MW43-2	18.4	2.7	PVC
	SEAD-43	MW43-3	18.7	2.7	PVC
	SEAD-43	MW43-4	13.4	3.1	PVC
Subtotal A			**126.2**		
B	SEAD-44A	MW44A-1	10.8	3	PVC
	SEAD-44A	MW44A-2	30.1	14	PVC
	SEAD-44A	MW44A-3	13.5	2.5	PVC
	SEAD-44B	MW44B-1	11.8	3.1	PVC
	SEAD-44B	MW44B-2	12.8	3.4	PVC
	SEAD-44B	MW44B-3	14.4	3.1	PVC
	SEAD-58	MW58-1	11.2	3.5	PVC
	SEAD-58	MW58-2	9.6	3	PVC
	SEAD-58	MW58-3	10.6	3	PVC
	SEAD-58	MW58-4	9.5	3	PVC
Subtotal B			**134.3**		
C	SEAD-62	MW62-1	8.1	2.7	PVC
	SEAD-62	MW62-2	9.8	3.7	PVC
	SEAD-62	MW62-3	18	4.5	PVC
	SEAD-64A	MW64A-1	11.7	2.9	PVC
	SEAD-64A	MW64A-1A	12	3	PVC
	SEAD-64A	MW64A-2	8	2.7	PVC
	SEAD-64A	MW64A-3	8.7	2.7	PVC
	SEAD-64B	MW64B-1	15.7	3	PVC
	SEAD-64B	MW64B-2	14	2.5	PVC
	SEAD-64B	MW64B-3	26.2	7.5	PVC
	SEAD-64C	MW64C-1	16.1	2.5	PVC
	SEAD-64C	MW64C-6	est 10	unknown	PVC
	SEAD-64C	MW64C-7	est 10	unknown	PVC
	SEAD-64C	MW64C-8	est 10	unknown	PVC
	SEAD-64C	MW64C-9	est 10	unknown	PVC
Subtotal C			**188.3**		
D	SEAD-64D	MW64D-1	5.3	2.5	PVC
	SEAD-64D	MW64D-2	9	2.8	PVC
	SEAD-64D	MW64D-3	7.6	3.9	PVC
	SEAD-64D	MW64D-4	9.6	3.3	PVC
	SEAD-64D	MW64D-5	7.2	3.3	PVC
	SEAD-70	MW70-1	10.4	2.5	PVC
	SEAD-70	MW70-2	11.6	3	PVC
	SEAD-70	MW70-3	9.4	3.3	PVC
	SEAD-70	MW70-4	10.1	2.5	PVC
Subtotal D			**80.2**		

FIGURES



LEGEND

SEAD containing wells to be abandoned

Intended Land Use

- Airfield
- Conservation/Recreation
- Fed to Fed Transfer
- Industrial
- Institutional
- Prison
- Warehouse

0.2 0 0.2 0.4 0.6 0.8 Miles

PARSONS

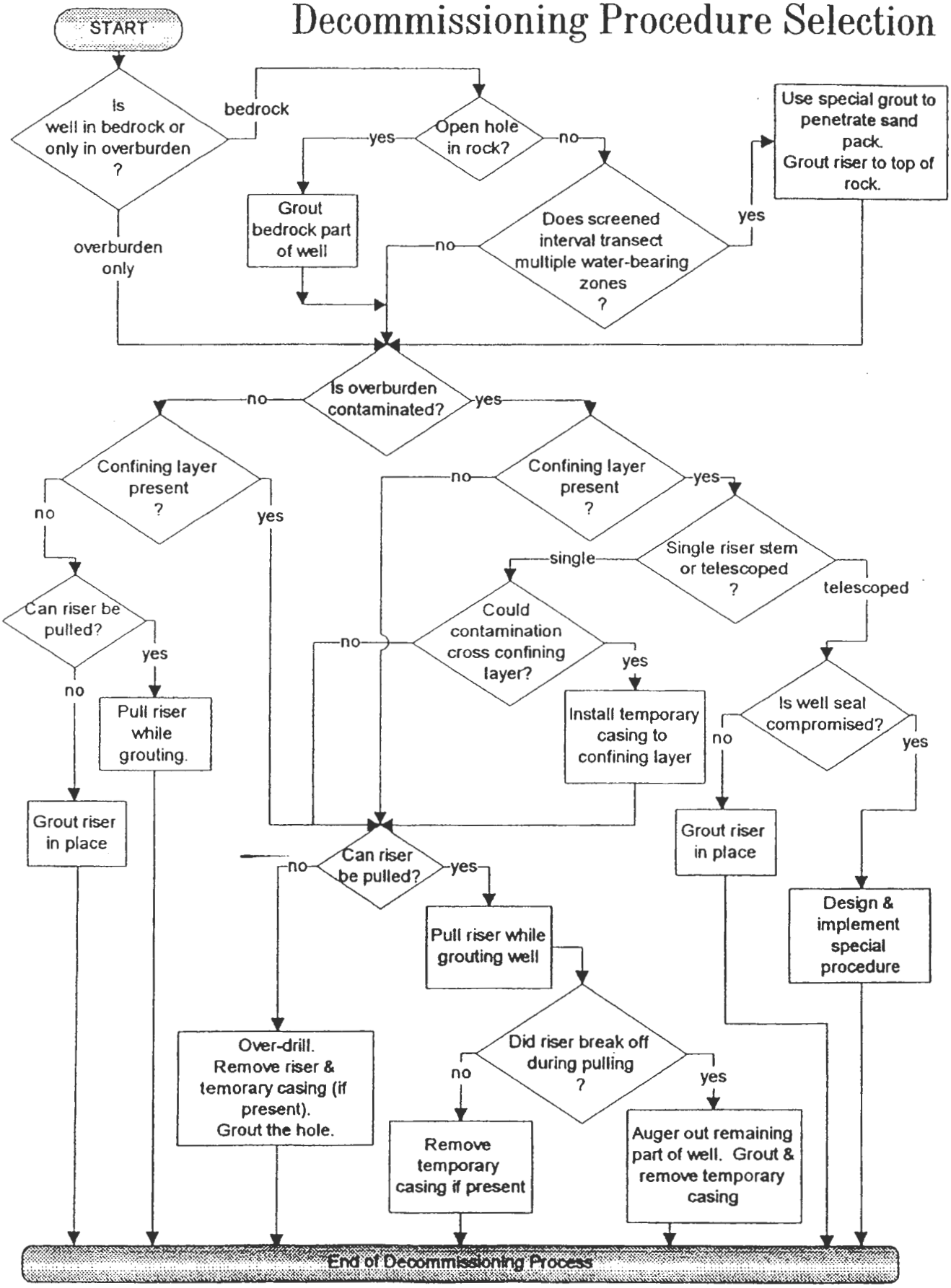
SENECA ARMY DEPOT ACTIVITY

WORKPLAN FOR MONITORING WELL ABANDONMENT

FIGURE 2-1
SEADS WITH MONITORING WELLS TO BE ABANDONED

DATE: REV: MARCH 2005

Figure 3-1
Decommissioning Procedure Selection



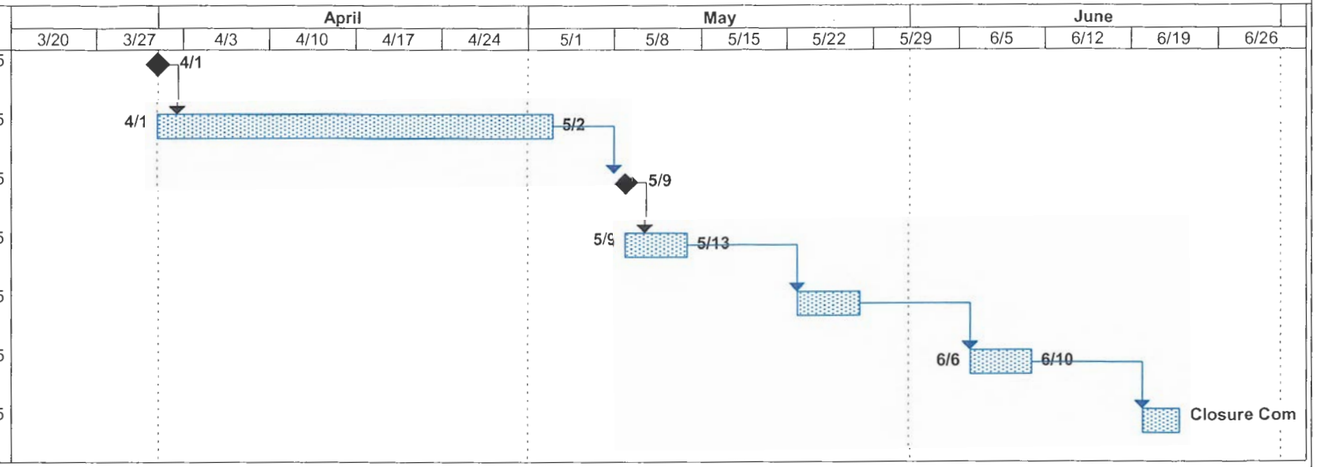
(Groundwater Monitoring Well Decommissioning Procedures, Malcolm Pirnie, 1996)

PLATE 1

FIGURE 4-1
CLOSURE SCHEDULE - MONITORING WELL ABANDONMENT
Various SEADs

Seneca Army Depot Activity - Romulus, New York

ID	ID	Task Name	Duration	Start	Finish
1	1	Submit Well Abandonment Plan	0 days	Fri 4/1/05	Fri 4/1/05
2	2	Regulatory Review of Abandonment Plan	32 days	Fri 4/1/05	Mon 5/2/05
3	3	Begin Well Abandonment	0 days	Mon 5/9/05	Mon 5/9/05
4	4	Abandonment of Wells in Group A	5 days	Mon 5/9/05	Fri 5/13/05
5	5	Abandonment of Wells in Group B	5 days	Mon 5/23/05	Fri 5/27/05
6	6	Abandonment of Wells in Group C	5 days	Mon 6/6/05	Fri 6/10/05
7	7	Abandonment of Wells in Group D	3 days	Mon 6/20/05	Wed 6/22/05

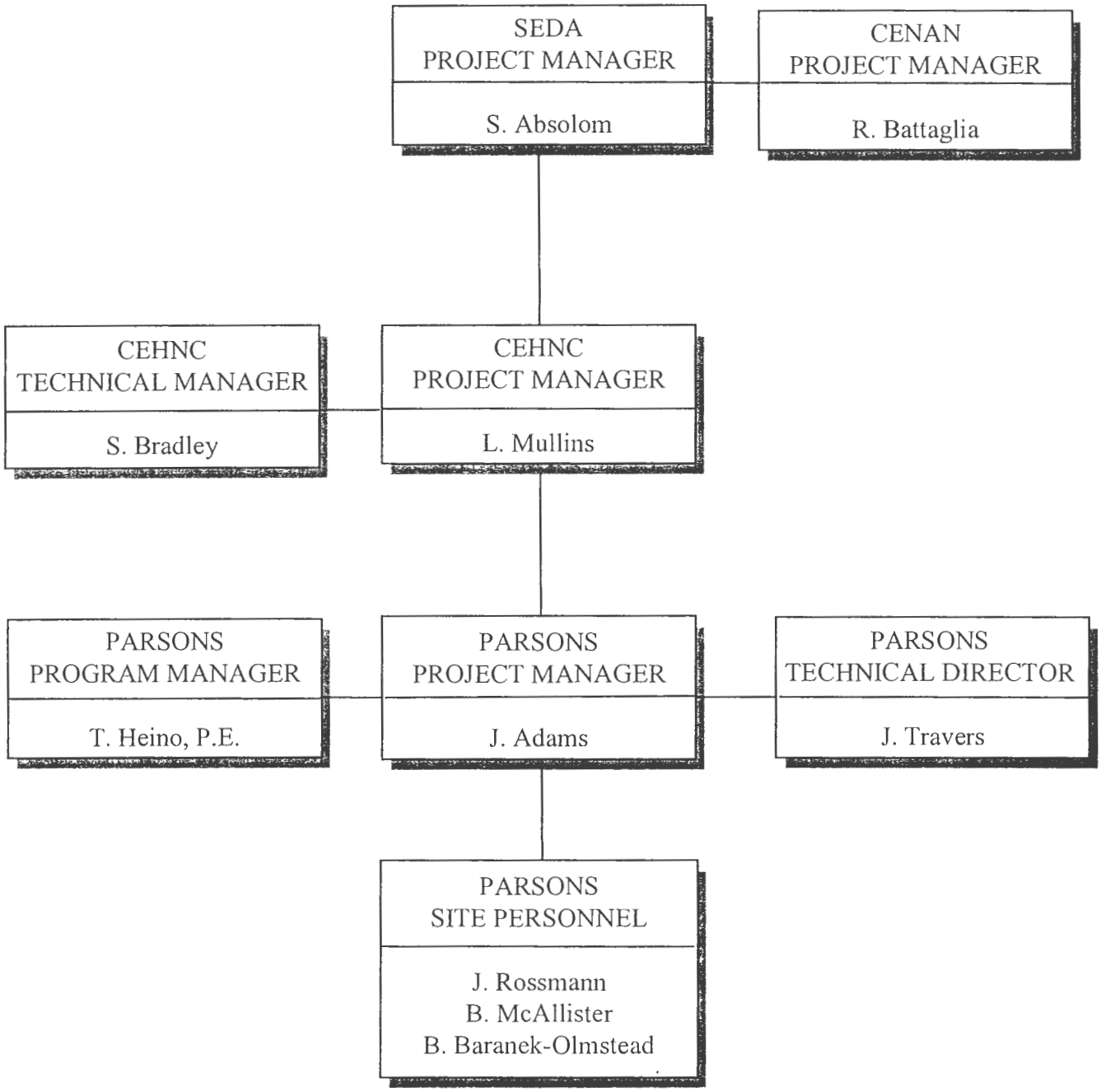


Project: Fig 4-1
Date: Wed 3/9/05

Task | Milestone | Rolled Up Task | Rolled Up Progress | External Tasks | Group By Summary

Progress | Summary | Rolled Up Milestone | Split | Project Summary

FIGURE 4-2
PROJECT TEAM ORGANIZATION FOR THE
INVESTIGATION AT MOUND AREA, EBS SITE 109(7),
SENECA ARMY DEPOT ACTIVITY



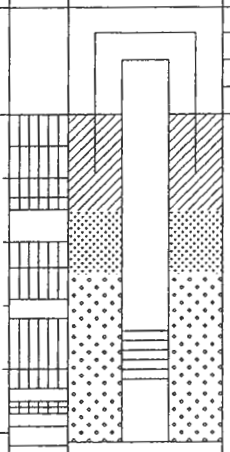
APPENDIX A

COMPLETION REPORT OF WELL No. MW9-1

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 03/21/94
WELL INSTALLATION COMPLETED: 03/21/94

WELL LOCATION (N/E): 1000604.2 750938.1
REFERENCE COORDINATE SYSTEM: NEW YORK STATE PLAN
GROUND SURFACE ELEVATION (ft): 747.3
DATUM: NAD 1983
GEOLOGIST: F. O'LOUGHLIN
CHECKED BY: KK

STRATA: MICRO DESCRIPTION (from boring log)	DEPTH (ft)
ML	0
ML	
ML	
ML	
ML	
ML	
ML	
ML	
ML	5.2
ML	



SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
			TPC	
			TR	
			TC	
		0.0	GS	747.3
		1.5	TBS	745.8
		2.5	TSP	744.8
		3.4	TSC	743.9
		4.3	BSC	743.0
		5.2	POW	742.1

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 4.5

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: .9

SURFACE SEAL
Type: CEMENT
Interval: 1.5

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1

SANDPACK
Type: #1, #3
Interval: 2.55

WELL DEVELOPMENT DATA
Date: 5/13/94
Method: BAIL/PUMP
Duration: 110 DAYS
Rate: 308 L/MIN

Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.6	7.6	420	19.5

WATER LEVELS

Date	Time	Depth, TR
4/1	1245	3.84
4/14	1150	5.40
7/19	1004	5.87

LEGEND

SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC	TOP OF PROTECTIVE CASING
TR	TOP OF WELL RISER
GS	GROUND SURFACE
TG	TOP OF GROUT
TBS	TOP BENTONITE SEAL
TSP	TOP OF SANDPACK
TSC	TOP OF SCREEN
BSC	BOTTOM OF SCREEN
TD	TOTAL DEPTH
POW	POINT OF WELL

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Seneca Army Depot
Romulus, New York

COMPLETION REPORT OF WELL No. MW9-1

COMPLETION REPORT OF WELL No. MW9-2

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 03/09/94
WELL INSTALLATION COMPLETED: 03/09/94

WELL LOCATION (N/E): 1000653.0 750473.7
REFERENCE COORDINATE SYSTEM: NEW YORK STATE PLAN
GROUND SURFACE ELEVATION (ft): 731.5
DATUM: NAD 1983
GEOLOGIST: F. O'LOUGHLIN
CHECKED BY: KK

STRATA MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
					TPC	
					TR	
					TC	
	0			0.0	GS	731.5
ML				1.0	TBS	730.5
ML				1.9	TSP	729.6
ML				2.5	TSC	729.0
				4.5	BSC	727.0
	5.3 5			5.3	POW	726.2

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 4.75

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 2

SURFACE SEAL
Type: CEMENT
Interval: 1.0

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: .9

SANDPACK
Type: #1, #3
Interval: 3.4

WELL DEVELOPMENT DATA
Date: 3/17/94
Method: BAIL
Duration: 65 MIN
Rate: 1.4 L/MIN
Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.07	1.5	500	3.18

WATER LEVELS

Date	Time	Depth, TR
3/17	1015	2.11
3/17	1115	2.30

LEGEND

SURFACE SEAL, GROUT, SEAL, SANDPACK, GRAVEL, SAND, SILT, CLAY, NO RECOVERY

TPC TOP OF PROTECTIVE CASING
TR TOP OF WELL RISER
GS GROUND SURFACE
TG TOP OF GROUT
TBS TOP BENTONITE SEAL
TSP TOP OF SANDPACK
TSC TOP OF SCREEN
BSC BOTTOM OF SCREEN
TD TOTAL DEPTH
POW POINT OF WELL

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COMPLETION REPORT OF WELL No. MW9-2

COMPLETION REPORT OF WELL No. MW9-3

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 03/20/94
WELL INSTALLATION COMPLETED: 03/20/94

WELL LOCATION (N/E): 1000346.4 750523.7
REFERENCE COORDINATE SYSTEM: NEW YORK STATE PLAN
GROUND SURFACE ELEVATION (ft): 734.4
DATUM: NAD 1983
GEOLOGIST: F. O'LOUGHLIN
CHECKED BY: KK

STRATA MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
					TPC	
					TR	
					TC	
	0			0.0	GS	734.4
ML ML						
ML				1.5	TBS	732.9
SM				2.5	TSP	731.9
				3.4	TSC	731.0
SM SP	5					
SP ML						
ML ML				9.0	BSC	725.4
	10.2 10			10.2	POW	724.2

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 4.6

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: .9, 3.95

SURFACE SEAL
Type: CEMENT
Interval: 1.5

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1

SANDPACK
Type: #1, #3
Interval: 7.65

WELL DEVELOPMENT DATA
Date: 4/1/94
Method: BAIL/PUMP
Duration: 87 MIN
Rate: 1.5 L/MIN

WATER LEVELS

Date	Time	Depth,TR
4/1	1330	1.68
4/1	1447	5.12

Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
6.86	6.4	750	3.05

LEGEND
SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC TOP OF PROTECTIVE CASING
TR TOP OF WELL RISER
GS GROUND SURFACE
TG TOP OF GROUT
TBS TOP BENTONITE SEAL
TSP TOP OF SANDPACK
TSC TOP OF SCREEN
BSC BOTTOM OF SCREEN
TD TOTAL DEPTH
POW POINT OF WELL

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COMPLETION REPORT OF WELL No. MW9-3

COMPLETION REPORT OF WELL No. MW43-1

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 03/22/94
WELL INSTALLATION COMPLETED: 03/22/94

WELL LOCATION (N/E): 987079.1 754460.0
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 764.8
DATUM: NAD 1983
GEOLOGIST: F. O'LOUGHLIN
CHECKED BY: KK

STRATA: MICRO DESCRIPTION (from boring log)	DEPTH (ft)
ML	0
ML	
ML-CL	
-	
ML-CL	
GM	
GM	
-	
GM	
	5
-	
GM	
-	
GM	
GM	
	10
-	
CL	
CL	
-	
-	
CL	
-	
-	
	15.0
-	
-	

SYMBOL / WELL DETAILS

DEPTH (ft)		ELEVATION (ft)
	TPC	
	TR	
	TC	
0.0	GS	764.8
2.0	TBS	762.8
3.0	TSP	761.8
4.7	TSC	760.1
13.9	BSC	750.9
15.0	POW	749.8

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 5.5

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 9

SURFACE SEAL
Type: CEMENT
Interval: 2.0

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1

SANDPACK
Type: #1, #3
Interval: 12

WELL DEVELOPMENT DATA
Date: 3/20/94
Method: BAIL
Duration: 125 MIN
Rate: 1.5 L/MIN
Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.29	5.5	385	0.67

WATER LEVELS

Date	Time	Depth,TR
3/20	1430	2.46
3/20	1615	2.88

LEGEND
SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC	TOP OF PROTECTIVE CASING
TR	TOP OF WELL RISER
GS	GROUND SURFACE
TG	TOP OF GROUT
TBS	TOP BENTONITE SEAL
TSP	TOP OF SANDPACK
TSC	TOP OF SCREEN
BSC	BOTTOM OF SCREEN
TD	TOTAL DEPTH
POW	POINT OF WELL

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COMPLETION REPORT OF WELL No. MW43-1

COMPLETION REPORT OF WELL No. MW43-2

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 03/19/94
WELL INSTALLATION COMPLETED: 03/19/94

WELL LOCATION (N/E): 987117.2 754149.1
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 762.5
DATUM: NAD 1983
GEOLOGIST: F. O'LOUGHLIN
CHECKED BY: KK

STRATA: MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
					TPC	
					TR	
					TC	
	0			0.0	GS	762.5
ML						
ML-CL						
ML-CL				1.7	TBS	760.8
ML				2.7	TSP	759.8
				3.3	TSC	759.2
GM	5					
ML						
GM						
ML						
ML						
ML	10					
ML						
GM						
GM						
GM						
	15					
GC						
				17.3	BSC	745.2
	18.4			18.4	POW	744.1

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 3.85

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 3.95, 8.95

SURFACE SEAL
Type: CEMENT
Interval: 1.7

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1

SANDPACK
Type: #1, #3
Interval: 15.7

WELL DEVELOPMENT DATA
Date: 3/23/94
Method: BAIL
Duration: 3 DAYS
Rate: .109 L/MIN
Final Measurements:

WATER LEVELS

Date	Time	Depth, TR
3/21	1345	2.16
3/22	1114	9.80
3/23	1215	8.08

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.20	8.5	550	1.79

LEGEND
SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC TOP OF PROTECTIVE CASING
TR TOP OF WELL RISER
GS GROUND SURFACE
TG TOP OF GROUT
TBS TOP BENTONITE SEAL
TSP TOP OF SANDPACK
TSC TOP OF SCREEN
BSC BOTTOM OF SCREEN
TD TOTAL DEPTH
POW POINT OF WELL

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Romulus, New York

COMPLETION REPORT OF WELL No. MW43-2

COMPLETION REPORT OF WELL No. MW43-3

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 03/15/94
WELL INSTALLATION COMPLETED: 03/15/94

WELL LOCATION (N/E): 987371.6 753848.5
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 760.7
DATUM: NAD 1983
GEOLOGIST: F. O'LOUGHLIN
CHECKED BY: KK

STRATA MICRO DESCRIPTION (from boring log)	DEPTH (ft)
ML	0
ML	
GM	
ML-CL	
GM-GC	
GM-GC	5
GM-GC	
GP	
ML-CL	
ML-CL	
GP	
ML	
GM	
	10
GM-GC	
GC	
GC	
	15
GM	
GM-GC	18.8
GM-GC	

SYMBOL / WELL DETAILS

	DEPTH (ft)		ELEVATION (ft)
TPC			
TR			
TC			
GS	0.0	GS	760.7
TBS	1.7	TBS	759.0
TSP	2.7	TSP	758.0
TSC	3.6	TSC	757.1
BSC	17.6	BSC	743.1
POW	18.7	POW	742.0

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 4.6

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 4, 9

SURFACE SEAL
Type: CEMENT
Interval: 1.7

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1

SANDPACK
Type: #1, #3
Interval: 16

WELL DEVELOPMENT DATA
Date: 3/18/94
Method: BAIL
Duration: 101 MIN
Rate: 2 L/MIN
Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.01	8.5	700	7.51

WATER LEVELS

Date	Time	Depth,TR
3/18	1030	2.78
3/18	1214	3.56

LEGEND

SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC	TOP OF PROTECTIVE CASING
TR	TOP OF WELL RISER
GS	GROUND SURFACE
TG	TOP OF GROUT
TBS	TOP BENTONITE SEAL
TSP	TOP OF SANDPACK
TSC	TOP OF SCREEN
BSC	BOTTOM OF SCREEN
TD	TOTAL DEPTH
POW	POINT OF WELL

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Romulus, New York

COMPLETION REPORT OF WELL No. MW43-3

COMPLETION REPORT OF WELL No. MW43-4

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 03/17/94
WELL INSTALLATION COMPLETED: 03/17/94

WELL LOCATION (N/E): 987469.7 753487.1
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 757.0
DATUM: NAD 1983
GEOLOGIST: K. KELLY
CHECKED BY: KK

STRATA: MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
					TPC	
					TR	
					TC	
	0			0.0	GS	757.0
ML						
ML-CL						
ML-CL						
-				2.1	TBS	754.9
GM-GC						
GM-GC				3.1	TSP	753.9
-				4.1	TSC	752.9
GM						
GM						
GM	5					
-						
GM						
GM						
GM						
GM						
-						
GM						
-						
GM						
GM						
GM						
-	10					
GM-GC						
-						
-						
-				12.3	BSC	744.7
-						
	13.4			13.4	POW	743.6

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 4.85

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: .9, 2, 3.95

SURFACE SEAL
Type: CEMENT
Interval: 2.1

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1

SANDPACK
Type: #1, #3
Interval: 10.3

WELL DEVELOPMENT DATA
Date: 3/19/94
Method: BAIL/PUMP
Duration: 75 MIN
Rate:
Final Measurements:

WATER LEVELS

Date	Time	Depth,TR
3/19	0900	1.70
3/19	1000	3.08

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.06	6	550	7.62

LEGEND

SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC TOP OF PROTECTIVE CASING
TR TOP OF WELL RISER
GS GROUND SURFACE
TG TOP OF GROUT
TBS TOP BENTONITE SEAL
TSP TOP OF SANDPACK
TSC TOP OF SCREEN
BSC BOTTOM OF SCREEN
TD TOTAL DEPTH
POW POINT OF WELL

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COMPLETION REPORT OF WELL No. MW43-4

COMPLETION REPORT OF WELL No. MW44A-1

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 02/16/94
WELL INSTALLATION COMPLETED: 02/16/94

WELL LOCATION (N/E): 985665.4 753526.7
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 752.9
DATUM: NAD 1983
GEOLOGIST: F. O'LOUGHLIN
CHECKED BY: KK

STRATA: MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
					TPC	
					TR	
					TC	
	0			0.0	GS	752.9
ML						
ML						
ML						
-				2.0	TBS	750.9
ML						
ML				3.0	TSP	749.9
ML						
-						
ML						
-	5					
				5.8	TSC	747.2
ML						
-						
-						
ML						
-						
				9.7	BSC	743.2
ML	10					
ML						
	10.8			10.8	POW	742.2

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 6.25

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 4

SURFACE SEAL
Type: CEMENT
Interval: 2

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE
Interval: 2-3

SANDPACK
Type: #1, #3
Interval: 7.75

WELL DEVELOPMENT DATA
Date: 3/5/94
Method: BAIL
Duration: 73 MIN
Rate: 2.1 L/MIN
Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.41	6	315	3.47

WATER LEVELS

Date	Time	Depth, TR
3/5	1500	2.12
3/5	1605	2.30

LEGEND
SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC TOP OF PROTECTIVE CASING
TR TOP OF WELL RISER
GS GROUND SURFACE
TG TOP OF GROUT
TBS TOP BENTONITE SEAL
TSP TOP OF SANDPACK
TSC TOP OF SCREEN
BSC BOTTOM OF SCREEN
TD TOTAL DEPTH
POW POINT OF WELL

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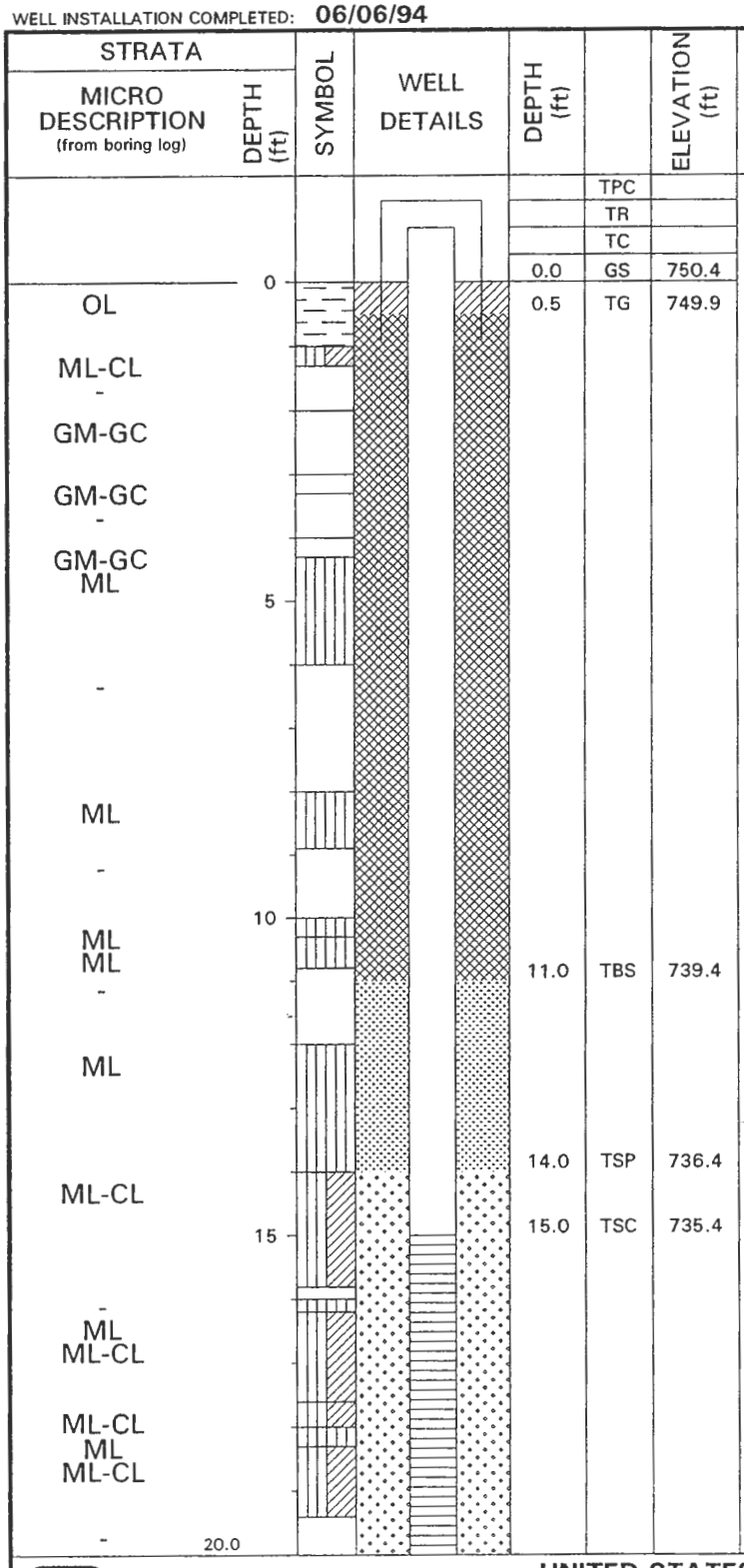
COMPLETION REPORT OF WELL No. MW44A-1

COMPLETION REPORT OF WELL No. MW44A-2

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 06/06/94
WELL INSTALLATION COMPLETED: 06/06/94

WELL LOCATION (N/E): 985425.4 753032.5
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 750.4
DATUM: NAD 1983
GEOLOGIST: K. KELLY
CHECKED BY: KK



WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 16

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 3.9, 8.9

SURFACE SEAL
Type: CEMENT
Interval: .5

GROUT
Type: BENTONITE/CONCRETE
Interval: 10.5

SEAL
Type: BENTONITE PELLETS
Interval: 3

SANDPACK
Type: #1, #3
Interval: 16.05

WELL DEVELOPMENT DATA
Date: 7/6/94
Method: BAIL/PUMP
Duration: 16 DAYS
Rate: .205 L/MIN

WATER LEVELS

Date	Time	Depth,TR
6/20	1555	15.68
6/23	1315	29.70
7/6	0915	16.55

Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.18	13	87	13

LEGEND
SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC TOP OF PROTECTIVE CASING
TR TOP OF WELL RISER
GS GROUND SURFACE
TG TOP OF GROUT
TBS TOP BENTONITE SEAL
TSP TOP OF SANDPACK
TSC TOP OF SCREEN
BSC BOTTOM OF SCREEN
TD TOTAL DEPTH
POW POINT OF WELL

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COMPLETION REPORT OF WELL No. MW44A-2

COMPLETION REPORT OF WELL No. MW44A-2

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT NO: 720519-01000
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY

GROUND SURFACE ELEVATION (ft): 750.4
GEOLOGIST: K. KELLY
CHECKED BY: KK

STRATA MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)	WELL CONSTRUCTION DETAILS
							(See Page 1)
	20						
ML-CL CL CL CL ML ML GM GM GM CL SM							
	25						
GM - ML SP GC - - ML-CL -				28.9	BSC	721.5	
30.1	30			30.1	POW	720.3	

LEGEND

- SURFACE SEAL
- GROUT
- SEAL
- SANDPACK
- GRAVEL
- SAND
- SILT
- CLAY
- NO RECOVERY

TPC	TOP OF PROTECTIVE CASING
TR	TOP OF WELL RISER
GS	GROUND SURFACE
TG	TOP OF GROUT
TBS	TOP BENTONITE SEAL
TSP	TOP OF SANDPACK
TSC	TOP OF SCREEN
BSC	BOTTOM OF SCREEN
TD	TOTAL DEPTH
POW	POINT OF WELL

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COMPLETION REPORT OF WELL No. MW44A-2

COMPLETION REPORT OF WELL No. MW44A-3

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 06/06/94
WELL INSTALLATION COMPLETED: 06/06/94

WELL LOCATION (N/E): 985174.1 752661.6
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 748.2
DATUM: NAD 1983
GEOLOGIST: F. O'LOUGHLIN
CHECKED BY: KK

STRATA: MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
					TPC	
					TR	
					TC	
	0			0.0	GS	748.2
ML						
ML				1.5	TBS	746.7
-						
ML				2.5	TSP	745.7
-				3.5	TSC	744.7
	5					
ML						
-						
-						
SM						
ML						
ML						
-						
ML	10					
-						
-				12.5	BSC	735.7
	13.5			13.5	POW	734.7

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval:

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 9

SURFACE SEAL
Type: CEMENT
Interval: 1.5

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE
Interval: 1

SANDPACK
Type: #1, #3
Interval: 11

WELL DEVELOPMENT DATA
Date: 6/21/94
Method: BAIL
Duration: 2 DAYS
Rate: .577 L/MIN
Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.8	10.8	550	11.0

WATER LEVELS

Date	Time	Depth,TR
6/20	1410	15.24
6/21	1105	7.9

LEGEND

SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC	TOP OF PROTECTIVE CASING
TR	TOP OF WELL RISER
GS	GROUND SURFACE
TG	TOP OF GROUT
TBS	TOP BENTONITE SEAL
TSP	TOP OF SANDPACK
TSC	TOP OF SCREEN
BSC	BOTTOM OF SCREEN
TD	TOTAL DEPTH
POW	POINT OF WELL

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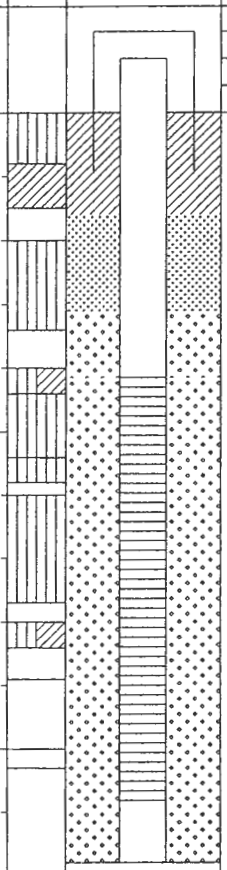
COMPLETION REPORT OF WELL No. MW44A-3

COMPLETION REPORT OF WELL No. MW44B-1

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 03/21/94
WELL INSTALLATION COMPLETED: 03/21/94

WELL LOCATION (N/E): 988170.5 751781.0
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 745.3
DATUM: NAD 1983
GEOLOGIST: F. O'LOUGHLIN
CHECKED BY: KK

STRATA MICRO DESCRIPTION (from boring log)	DEPTH (ft)
ML	0
CL	
ML	
ML	
ML-CL	
ML	5
ML	
ML	
ML-CL	
	10
	12.2



DEPTH (ft)		ELEVATION (ft)
	TPC	
	TR	
	TC	
0.0	GS	745.3
1.6	TBS	743.7
3.1	TSP	742.2
4.2	TSC	741.1
11.0	BSC	734.3
11.8	POW	733.5

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 4.85

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 2, 4

SURFACE SEAL
Type: CEMENT
Interval: 1.6

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE CHIPS
Interval: 1.5

SANDPACK
Type: #1, #3
Interval: 8.7

WELL DEVELOPMENT DATA
Date: 4/1/94
Method: BAIL/PUMP
Duration: 130 MIN
Rate: .1028 L/MIN

WATER LEVELS

Date	Time	Depth, TR
4/1	1115	1.85
4/1	1304	10.48

Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.50	6	400	30.1

LEGEND

SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC	TOP OF PROTECTIVE CASING
TR	TOP OF WELL RISER
GS	GROUND SURFACE
TG	TOP OF GROUT
TBS	TOP BENTONITE SEAL
TSP	TOP OF SANDPACK
TSC	TOP OF SCREEN
BSC	BOTTOM OF SCREEN
TD	TOTAL DEPTH
POW	POINT OF WELL

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COMPLETION REPORT OF WELL No. MW44B-1

COMPLETION REPORT OF WELL No. MW44B-2

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 03/08/94
WELL INSTALLATION COMPLETED: 03/08/94

WELL LOCATION (N/E): 988170.7 751447.4
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 741.5
DATUM: NAD 1983
GEOLOGIST: F. O'LOUGHLIN
CHECKED BY: KK

STRATA: MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL / WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
				TPC	
				TR	
				TC	
	0		0.0	GS	741.5
PT ML					
ML-CL ML			2.0	TBS	739.5
ML ML ML			3.4	TSP	738.1
ML-CL			4.4	TSC	737.1
ML	5				
ML GM SP					
ML-CL SP					
ML ML	10				
			11.7	BSC	729.9
ML-CL	12.8		12.8	POW	728.7

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 5

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: .9, .9, 4

SURFACE SEAL
Type: CEMENT
Interval: 2

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1.4

SANDPACK
Type: #1, #3
Interval: 9.4

WELL DEVELOPMENT DATA
Date: 3/15/94
Method: BAIL
Duration: 75 MIN
Rate:
Final Measurements:

WATER LEVELS

Date	Time	Depth, TR
3/15	0925	1.14
3/15	1040	1.40

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.25	6	340	22.1

LEGEND
SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC	TOP OF PROTECTIVE CASING
TR	TOP OF WELL RISER
GS	GROUND SURFACE
TG	TOP OF GROUT
TBS	TOP BENTONITE SEAL
TSP	TOP OF SANDPACK
TSC	TOP OF SCREEN
BSC	BOTTOM OF SCREEN
TD	TOTAL DEPTH
POW	POINT OF WELL

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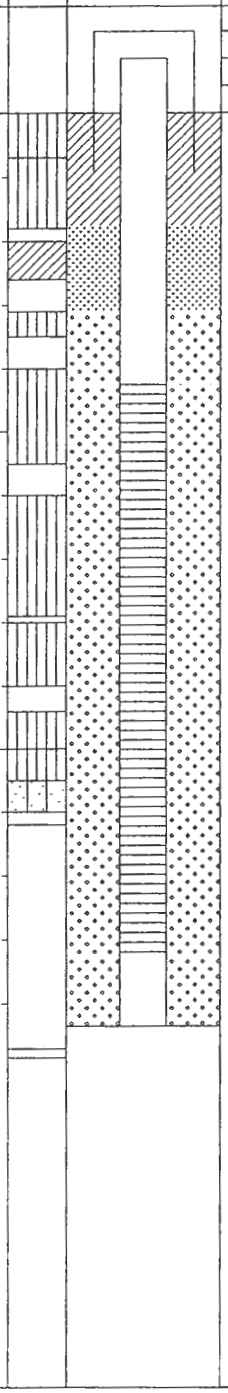
COMPLETION REPORT OF WELL No. MW44B-2

COMPLETION REPORT OF WELL No. MW44B-3

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 03/20/94
WELL INSTALLATION COMPLETED: 03/20/94

WELL LOCATION (N/E): 988015.1 751421.9
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 741.5
DATUM: NAD 1983
GEOLOGIST: F. O'LOUGHLIN
CHECKED BY: KK

STRATA: MICRO DESCRIPTION (from boring log)	DEPTH (ft)
ML	0
ML	
CL	
ML	
ML	5
ML	
ML	
ML	10
ML	
SM	
	14.9



DEPTH (ft)		ELEVATION (ft)
	TPC	
	TR	
	TC	
0.0	GS	741.5
1.8	TBS	739.7
3.1	TSP	738.4
4.3	TSC	737.2
13.3	BSC	728.2
14.4	POW	727.1

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 5.3

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 9

SURFACE SEAL
Type: CEMENT
Interval: 1.75

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE
Interval: 1.35

SANDPACK
Type: #1, #3
Interval: 11.75

WELL DEVELOPMENT DATA
Date: 3/31/94
Method: BAIL/PUMP
Duration: 10 DAYS
Rate: .433 L/MIN

WATER LEVELS

Date	Time	Depth, TR
3/22	1455	1.72
3/31	0822	2.06

Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.34	7.5	465	.83

LEGEND
SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC	TOP OF PROTECTIVE CASING
TR	TOP OF WELL RISER
GS	GROUND SURFACE
TG	TOP OF GROUT
TBS	TOP BENTONITE SEAL
TSP	TOP OF SANDPACK
TSC	TOP OF SCREEN
BSC	BOTTOM OF SCREEN
TD	TOTAL DEPTH
POW	POINT OF WELL

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COMPLETION REPORT OF WELL No. MW44B-3

COMPLETION REPORT OF WELL No. MW58-1

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 03/31/94
WELL INSTALLATION COMPLETED: 03/31/94

WELL LOCATION (N/E): 1000107.7 739368.6
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 617.9
DATUM: NAD 1983
GEOLOGIST: K. KELLY
CHECKED BY: KK

STRATA MICRO DESCRIPTION (from boring log)	DEPTH (ft)
ML	0
ML	
ML-CL	
ML-CL	
ML	
GM	
GC	
ML	
GM	5
GM	
ML	
SP	
ML-CL	
GM	
	10
	11.0

SYMBOL / WELL DETAILS

DEPTH (ft)		ELEVATION (ft)
	TPC	
	TR	
	TC	
0.0	GS	617.9
2.5	TBS	615.4
3.5	TSP	614.4
4.6	TSC	613.4
10.3	BSC	607.7
11.2	POW	606.8

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 5.1

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 4, .8

SURFACE SEAL
Type: CEMENT
Interval: 2.5

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1

SANDPACK
Type: #1, #3
Interval: 7.65

WELL DEVELOPMENT DATA
Date: 5/15/94
Method: BAIL/PUMP
Duration: 100 MIN
Rate:
Final Measurements:

WATER LEVELS

Date	Time	Depth, TR
5/15	1130	2.14
5/15	1335	2.77

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.15	8.7	390	38.9

LEGEND

SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC	TOP OF PROTECTIVE CASING
TR	TOP OF WELL RISER
GS	GROUND SURFACE
TG	TOP OF GROUT
TBS	TOP BENTONITE SEAL
TSP	TOP OF SANDPACK
TSC	TOP OF SCREEN
BSC	BOTTOM OF SCREEN
TD	TOTAL DEPTH
POW	POINT OF WELL

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COMPLETION REPORT OF WELL No. MW58-1

COMPLETION REPORT OF WELL No. MW58-2

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 04/01/94
WELL INSTALLATION COMPLETED: 04/01/94

WELL LOCATION (N/E): 1000232.2 739160.9
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 614.9
DATUM: NAD 1983
GEOLOGIST: K. KELLY
CHECKED BY: KK

STRATA: MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
					TPC	
					TR	
					TC	
	0			0.0	GS	614.9
ML ML ML-CL						
-				2.0	TBS	612.9
ML-CL CL				3.0	TSP	611.9
-						
-				4.5	TSC	610.5
ML-CL GM GM ML	5					
GM GM ML						
ML -						
-				8.5	BSC	606.5
-						
	9.6			9.6	POW	605.4

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 5.2

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 4

SURFACE SEAL
Type: CEMENT
Interval: 2.0

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1

SANDPACK
Type: #1, #3
Interval: 6.55

WELL DEVELOPMENT DATA
Date: 5/16/94
Method: BAIL/PUMP
Duration: 2 DAYS
Rate: .300 L/MIN
Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.19	9.6	400	16.4

WATER LEVELS

Date	Time	Depth, TR
5/15	1445	1.85
5/16	1140	7.20

LEGEND
SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC TOP OF PROTECTIVE CASING
TR TOP OF WELL RISER
GS GROUND SURFACE
TG TOP OF GROUT
TBS TOP BENTONITE SEAL
TSP TOP OF SANDPACK
TSC TOP OF SCREEN
BSC BOTTOM OF SCREEN
TD TOTAL DEPTH
POW POINT OF WELL

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COMPLETION REPORT OF WELL No. MW58-2

COMPLETION REPORT OF WELL No. MW58-3

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 04/02/94
WELL INSTALLATION COMPLETED: 04/02/94

WELL LOCATION (N/E): 1000163.5 738946.0
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 610.3
DATUM: NAD 1983
GEOLOGIST: K. KELLY
CHECKED BY: KK

STRATA MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
					TPC	
					TR	
					TC	
	0			0.0	GS	610.3
ML						
ML-CL CL				2.0	TBS	608.3
CL GC				3.0	TSP	607.3
ML-CL GM				4.0	TSC	606.4
	5					
				9.7	BSC	600.7
	10					
	10.5			10.6	POW	599.8

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 5.2

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 4, .8

SURFACE SEAL
Type: CEMENT
Interval: 2

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1

SANDPACK
Type: #1, #3
Interval: 7.55

WELL DEVELOPMENT DATA
Date: 5/16/94
Method: BAIL/PUMP
Duration: 340 MIN
Rate: .5 L/MIN
Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.1	10.5	390	42

WATER LEVELS

Date	Time	Depth, TR
5/16	0840	2.09
5/16	1400	10.0

LEGEND
SURFACE SEAL, GROUT, SEAL, SANDPACK, GRAVEL, SAND, SILT, CLAY, NO RECOVERY

TPC TOP OF PROTECTIVE CASING
TR TOP OF WELL RISER
GS GROUND SURFACE
TG TOP OF GROUT
TBS TOP BENTONITE SEAL
TSP TOP OF SANDPACK
TSC TOP OF SCREEN
BSC BOTTOM OF SCREEN
TD TOTAL DEPTH
POW POINT OF WELL

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COMPLETION REPORT OF WELL No. MW58-3

COMPLETION REPORT OF WELL No. MW58-4

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 04/04/94
WELL INSTALLATION COMPLETED: 04/04/94

WELL LOCATION (N/E): 999963.8 739060.1
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 612.8
DATUM: NAD 1983
GEOLOGIST: K. KELLY
CHECKED BY: KK

STRATA: MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
					TPC	
					TR	
					TC	
	0			0.0	GS	612.8
ML						
ML						
-				2.0	TBS	610.8
ML						
ML-CL				3.0	TSP	609.8
ML						
-						
CL				4.4	TSC	608.4
CL	5					
-						
-						
GM						
-						
GC						
-						
-				8.4	BSC	604.5
-						
-						
-	9.5			9.5	POW	603.4

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 5.2

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 3.95

SURFACE SEAL
Type: CEMENT
Interval: 2

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1

SANDPACK
Type: #1, #3
Interval: 6.45

WELL DEVELOPMENT DATA
Date: 5/16/94
Method: BAIL/PUMP
Duration: 60 MIN
Rate: 1.5 L/MIN
Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.7	11	380	5.18

WATER LEVELS

Date	Time	Depth, TR
5/16	1430	3.07
5/16	1540	3.5

LEGEND
SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC TOP OF PROTECTIVE CASING
TR TOP OF WELL RISER
GS GROUND SURFACE
TG TOP OF GROUT
TBS TOP BENTONITE SEAL
TSP TOP OF SANDPACK
TSC TOP OF SCREEN
BSC BOTTOM OF SCREEN
TD TOTAL DEPTH
POW POINT OF WELL

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COMPLETION REPORT OF WELL No. MW58-4

COMPLETION REPORT OF WELL No. MW62-1

PROJECT: SEVEN LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 03/28/94
WELL INSTALLATION COMPLETED: 03/28/94

WELL LOCATION (N/E): 986972.2 753046.3
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 751.3
DATUM: NAD 1983
GEOLOGIST: F. O'LOUGHLIN
CHECKED BY: FO

STRATA MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
					TPC	
					TR	
					TC	
	0			0.0	GS	751.3
OL ML CL				1.5	TBS	749.8
ML				2.7	TSP	748.6
ML				3.9	TSC	747.4
ML	5					
ML				7.3	BSC	744.0
	8.1			8.1	POW	743.2

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 5

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 2, .8

SURFACE SEAL
Type: CEMENT
Interval: 1.5

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1.2

SANDPACK
Type: #1, #3
Interval: 5.3

WELL DEVELOPMENT DATA
Date: 6/28/94
Method: BAIL/PUMP
Duration: 8 DAYS
Rate: .1 L/MIN
Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.65	16.4	800	30

WATER LEVELS

Date	Time	Depth, TR
6/21	1640	2.34
6/25	0820	6.68
6/28	1130	8.41

LEGEND
SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC TOP OF PROTECTIVE CASING
TR TOP OF WELL RISER
GS GROUND SURFACE
TBS TOP BENTONITE SEAL
TSP TOP OF SANDPACK
TSC TOP OF SCREEN
BSC BOTTOM OF SCREEN
TD TOTAL DEPTH
POW POINT OF WELL

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COMPLETION REPORT OF WELL No. MW62-1

COMPLETION REPORT OF WELL No. MW62-2

PROJECT: SEVEN LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 06/27/94
WELL INSTALLATION COMPLETED: 06/27/94

WELL LOCATION (N/E): 986879.4 752433.9
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 747.5
DATUM: NAD 1983
GEOLOGIST: K. KELLY
CHECKED BY: FO

STRATA: MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
					TPC	
					TR	
					TC	
				0.0	GS	747.5
	0					
ML, CL				1.5	TBS	746.0
CL, CL, CL				3.7	TSP	743.8
ML				4.7	TSC	742.8
	5					
ML, ML, ML, ML, ML, SM				8.7	BSC	738.9
SP	9.8			9.8	POW	737.7

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 5.75

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 3.96

SURFACE SEAL
Type: CEMENT
Interval: 1.5

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1

SANDPACK
Type: #1, #3
Interval: 6.1

WELL DEVELOPMENT DATA
Date: 7/18/94
Method: BAIL/PUMP
Duration: 14 DAYS
Rate: .226 L/MIN

Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.44	14.5	600	27

WATER LEVELS

Date	Time	Depth,TR
7/5	1530	1.9
7/6	1105	8.7
7/13	0930	8.5

LEGEND
SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC TOP OF PROTECTIVE CASING
TR TOP OF WELL RISER
GS GROUND SURFACE
TBS TOP BENTONITE SEAL
TSP TOP OF SANDPACK
TSC TOP OF SCREEN
BSC BOTTOM OF SCREEN
TD TOTAL DEPTH
POW POINT OF WELL

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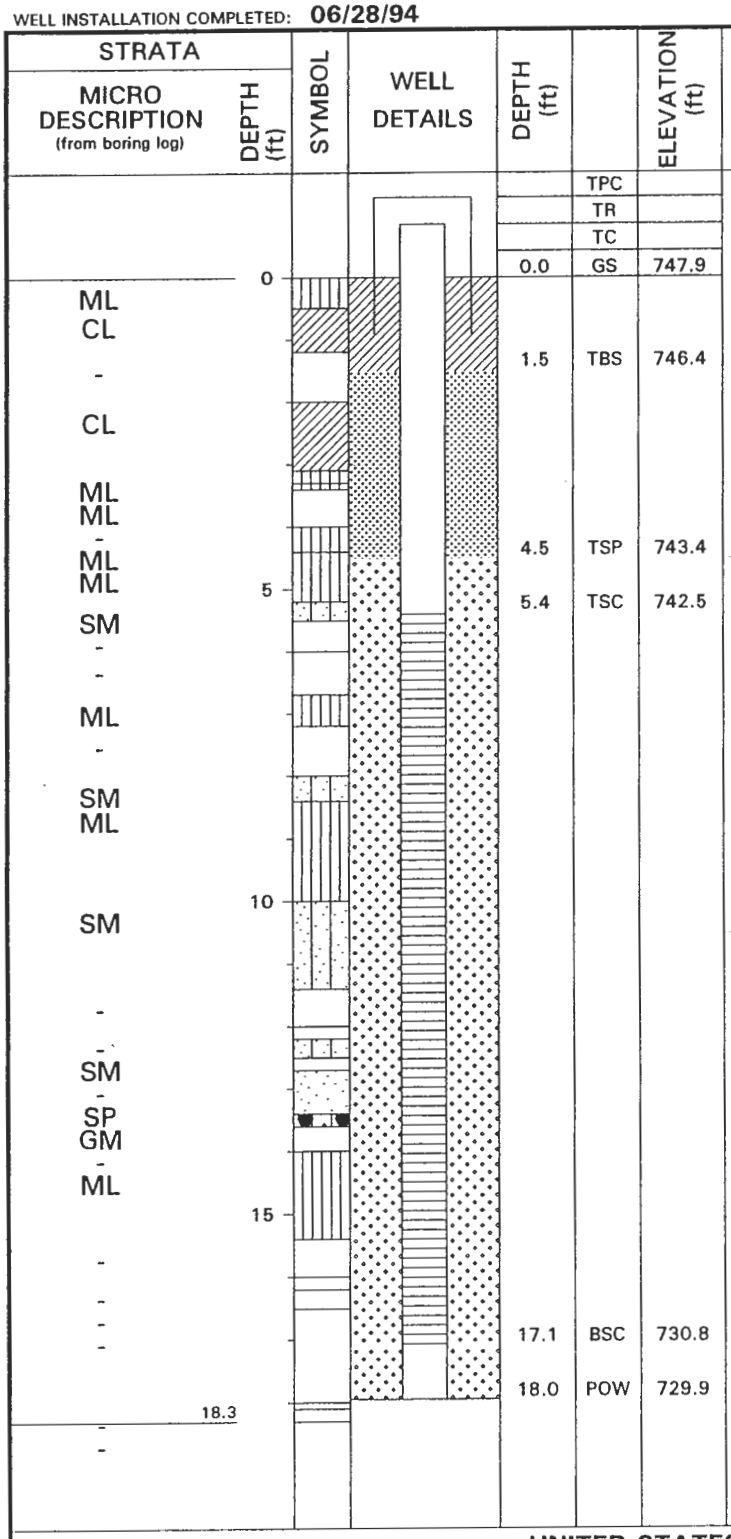
COMPLETION REPORT OF WELL No. MW62-2

COMPLETION REPORT OF WELL No. MW62-3

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**
DRILLING CONTRACTOR: **EMPIRE SOILS INVESTIGATIONS**
DRILLING METHOD: **HOLLOW STEM AUGER**
WELL INSTALLATION STARTED: **06/27/94**
WELL INSTALLATION COMPLETED: **06/28/94**

WELL LOCATION (N/E): **986348.3 752362.3**
REFERENCE COORDINATE SYSTEM: **New York State Plane**
GROUND SURFACE ELEVATION (ft): **747.9**
DATUM: **NAD 1983**
GEOLOGIST: **K. KELLY**
CHECKED BY: **FO**



WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: **4**
Type: **RISER**
Interval: **3.5**

RISER
Diameter: **2**
Type: **SCH. 40-PVC**
Interval:

SCREEN
Diameter: **2**
Type: **SCH. 40-PVC/0.010**
Interval: **8.95, 1.95**

SURFACE SEAL
Type: **CEMENT**
Interval: **1.5**

GROUT
Type: **N/A**
Interval: **N/A**

SEAL
Type: **BENTONITE PELLETS**
Interval: **1**

SANDPACK
Type: **#1, #3**
Interval: **13**

WELL DEVELOPMENT DATA
Date: **7/12/94**
Method: **BAIL/PUMP**
Duration: **7 DAYS**
Rate: **.1767 L/MIN**
Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.16	10.6	510	20

WATER LEVELS

Date	Time	Depth, TR
7/6	1130	3.28
7/12	1535	11.5

LEGEND
SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC TOP OF PROTECTIVE CASING
TR TOP OF WELL RISER
GS GROUND SURFACE
TBS TOP BENTONITE SEAL
TSP TOP OF SANDPACK
TSC TOP OF SCREEN
BSC BOTTOM OF SCREEN
TD TOTAL DEPTH
POW POINT OF WELL

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COMPLETION REPORT OF WELL No. MW62-3

COMPLETION REPORT OF WELL No. MW64A-1

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**
DRILLING CONTRACTOR: **EMPIRE SOILS INVESTIGATIONS**
DRILLING METHOD: **HOLLOW STEM AUGER**
WELL INSTALLATION STARTED: **04/02/94**
WELL INSTALLATION COMPLETED: **04/02/94**

WELL LOCATION (N/E): **992409.1 750892.2**
REFERENCE COORDINATE SYSTEM: **New York State Plane**
GROUND SURFACE ELEVATION (ft): **745.8**
DATUM: **NAD 1983**
GEOLOGIST: **F. O'LOUGHLIN**
CHECKED BY: **FO**

STRATA: MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
					TPC	
					TR	
					TC	
	0			0.0	GS	745.8
ML						
ML				1.7	TBS	744.1
ML				2.9	TSP	742.9
				4.0	TSC	741.8
ML						
ML	5					
SM						
				9.6	BSC	736.2
	10					
	10.7					
				11.7	POW	734.1

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 5

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 5, 1

SURFACE SEAL
Type: CEMENT
Interval: 1.7

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1.2

SANDPACK
Type: #1, #3
Interval: 7.8

WELL DEVELOPMENT DATA
Date: 7/10/94
Method: BAIL/PUMP
Duration: 48 DAYS
Rate:
Final Measurements:

WATER LEVELS

Date	Time	Depth,TR
5/23	1045	10.86
5/24	0725	11.71
7/9	1400	10.50

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.07	13.8	460	3.6

LEGEND
SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC	TOP OF PROTECTIVE CASING
TR	TOP OF WELL RISER
GS	GROUND SURFACE
TBS	TOP BENTONITE SEAL
TSP	TOP OF SANDPACK
TSC	TOP OF SCREEN
BSC	BOTTOM OF SCREEN
TD	TOTAL DEPTH
POW	POINT OF WELL

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COMPLETION REPORT OF WELL No. MW64A-1

COMPLETION REPORT OF WELL No. MW64A-1A

PROJECT: SEVEN LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 03/31/94
WELL INSTALLATION COMPLETED: 03/31/94

WELL LOCATION (N/E): 992205.5 750789.3
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 744.5
DATUM: NAD 1983
GEOLOGIST: F. O'LOUGHLIN
CHECKED BY: FO

STRATA MICRO DESCRIPTION (from boring log)	DEPTH (ft)
ML	0
ML	
CL	
ML	
ML	
ML	5
	10
	12.3

SYMBOL / WELL DETAILS

	DEPTH (ft)		ELEVATION (ft)
TPC			
TR			
TC			
GS	0.0		744.5
TBS	1.5		743.0
TSP	3.0		741.5
TSC	4.1		740.4
BSC	10.9		733.6
POW	12.0		732.5

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 5

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 4, 2

SURFACE SEAL
Type: CEMENT
Interval: 1.5

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1.5

SANDPACK
Type: #1, #3
Interval: 9

WELL DEVELOPMENT DATA

Date:
Method:
Duration:
Rate:
Final Measurements:

WATER LEVELS

Date	Time	Depth, TR

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)

LEGEND

SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC	TOP OF PROTECTIVE CASING
TR	TOP OF WELL RISER
GS	GROUND SURFACE
TBS	TOP BENTONITE SEAL
TSP	TOP OF SANDPACK
TSC	TOP OF SCREEN
BSC	BOTTOM OF SCREEN
TD	TOTAL DEPTH
POW	POINT OF WELL

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COMPLETION REPORT OF WELL No. MW64A-1A

COMPLETION REPORT OF WELL No. MW64A-2

PROJECT: SEVEN LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 04/01/94
WELL INSTALLATION COMPLETED: 04/01/94

WELL LOCATION (N/E): 992447.6 750496.9
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 739.2
DATUM: NAD 1983
GEOLOGIST: F. O'LOUGHLIN
CHECKED BY: FO

STRATA MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
					TPC	
					TR	
					TC	
	0			0.0	GS	739.2
ML				1.5	TBS	737.7
ML				2.7	TSP	736.5
ML				3.7	TSC	735.6
ML						
ML	5					
				7.1	BSC	732.1
	8.2			8.0	POW	731.2

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 5

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 1, 3

SURFACE SEAL
Type: CEMENT
Interval: 1.5

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE CHIPS
Interval: 1.2

SANDPACK
Type: #1, #3
Interval: 5.3

WELL DEVELOPMENT DATA
Date: 7/19/94
Method: BAIL/PUMP
Duration: 57 DAYS
Rate:
Final Measurements:

WATER LEVELS

Date	Time	Depth,TR
5/23	1330	7.42
7/10	1630	7.22
7/19	1520	9.40

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
6.78	18.9	1000	33

LEGEND
SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC TOP OF PROTECTIVE CASING
TR TOP OF WELL RISER
GS GROUND SURFACE
TBS TOP BENTONITE SEAL
TSP TOP OF SANDPACK
TSC TOP OF SCREEN
BSC BOTTOM OF SCREEN
TD TOTAL DEPTH
POW POINT OF WELL

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COMPLETION REPORT OF WELL No. MW64A-2

COMPLETION REPORT OF WELL No. MW64A-3

PROJECT: SEVEN LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 04/01/94
WELL INSTALLATION COMPLETED: 04/01/94

WELL LOCATION (N/E): 992302.2 750529.2
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 737.8
DATUM: NAD 1983
GEOLOGIST: F. O'LOUGHLIN
CHECKED BY: FO

STRATA MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
					TPC	
					TR	
					TC	
	0			0.0	GS	737.8
ML						
ML				1.5	TBS	736.3
ML				2.7	TSP	735.1
ML				3.6	TSC	734.2
	5					
				7.6	BSC	730.2
	8.7			8.7	POW	729.1

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 5

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 4

SURFACE SEAL
Type: CEMENT
Interval: 1.5

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE CHIPS
Interval: 1.2

SANDPACK
Type: #1, #3
Interval: 6

WELL DEVELOPMENT DATA
Date: 5/23/94
Method: BAIL/PUMP
Duration: 120 MIN
Rate: .400 L/MIN
Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.09	10.9	460	3.24

WATER LEVELS

Date	Time	Depth, TR
5/23	1350	6.59
5/23	1610	7.03

LEGEND
SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC TOP OF PROTECTIVE CASING
TR TOP OF WELL RISER
GS GROUND SURFACE
TBS TOP BENTONITE SEAL
TSP TOP OF SANDPACK
TSC TOP OF SCREEN
BSC BOTTOM OF SCREEN
TD TOTAL DEPTH
POW POINT OF WELL

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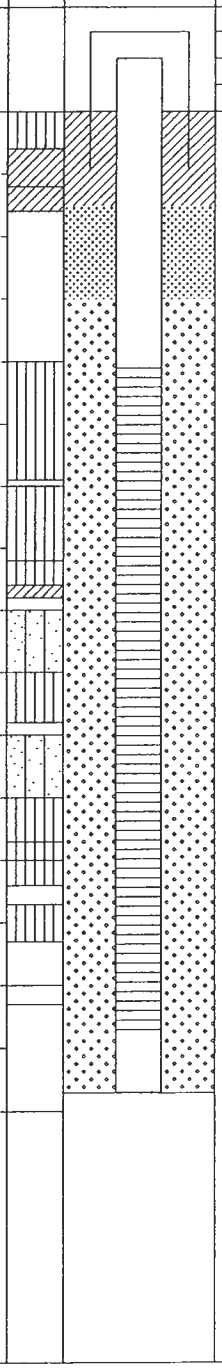
COMPLETION REPORT OF WELL No. MW64A-3

COMPLETION REPORT OF WELL No. MW64B-1

PROJECT: SEVEN LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 05/13/94
WELL INSTALLATION COMPLETED: 05/14/94

WELL LOCATION (N/E): 985851.5 748724.3
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 705.9
DATUM: NAD 1983
GEOLOGIST: F. O'LOUGHLIN
CHECKED BY: FO

STRATA MICRO DESCRIPTION (from boring log)	DEPTH (ft)
ML	0
CL	
CL	
ML	5
ML	
ML	
CL	
SM	
ML	
SM	10
ML	
ML	
ML	
ML	
	15
	16.0



	DEPTH (ft)		ELEVATION (ft)
TPC			
TR			
TC			
GS	0.0	GS	705.9
TBS	1.5	TBS	704.4
TSP	3.0	TSP	702.9
TSC	4.1	TSC	701.8
BSC	14.8	BSC	691.1
POW	15.7	POW	690.2

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 5

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 9, .8

SURFACE SEAL
Type: CEMENT
Interval: 1.5

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1.5

SANDPACK
Type: #1, #3
Interval: 12.7

WELL DEVELOPMENT DATA
Date: 5/24/94
Method: BAIL/PUMP
Duration: 180 MIN
Rate:
Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.00	9.7	680	49.3

WATER LEVELS

Date	Time	Depth,TR
5/24	0935	3.29
5/24	1210	4.64

LEGEND

SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC	TOP OF PROTECTIVE CASING
TR	TOP OF WELL RISER
GS	GROUND SURFACE
TBS	TOP BENTONITE SEAL
TSP	TOP OF SANDPACK
TSC	TOP OF SCREEN
BSC	BOTTOM OF SCREEN
TD	TOTAL DEPTH
POW	POINT OF WELL

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COMPLETION REPORT OF WELL No. MW64B-1

COMPLETION REPORT OF WELL No. MW64B-2

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**
DRILLING CONTRACTOR: **EMPIRE SOILS INVESTIGATIONS**
DRILLING METHOD: **HOLLOW STEM AUGER**
WELL INSTALLATION STARTED: **05/14/94**
WELL INSTALLATION COMPLETED: **05/15/94**

WELL LOCATION (N/E): **985864.1 748302.3**
REFERENCE COORDINATE SYSTEM: **New York State Plane**
GROUND SURFACE ELEVATION (ft): **702.2**
DATUM: **NAD 1983**
GEOLOGIST: **F. O'LOUGHLIN**
CHECKED BY: **FO**

STRATA: MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
					TPC	
					TR	
					TC	
	0			0.0	GS	702.2
ML						
ML						
ML						
SM				1.5	TBS	700.7
CL						
ML				2.5	TSP	699.7
				3.9	TSC	698.4
ML						
ML	5					
ML						
ML						
ML						
ML						
ML	10					
ML						
ML						
				12.9	BSC	689.4
	14.0			14.0	POW	688.3

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 5

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 9

SURFACE SEAL
Type: CEMENT
Interval: 1.5

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1

SANDPACK
Type: #1, #3
Interval: 11.45

WELL DEVELOPMENT DATA
Date: 5/24/94
Method: BAIL/PUMP
Duration: 102 MIN
Rate:
Final Measurements:

WATER LEVELS

Date	Time	Depth, TR
5/24	1505	4.23
5/24	1630	5.56

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.09	9.6	590	38.7

LEGEND

SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC	TOP OF PROTECTIVE CASING
TR	TOP OF WELL RISER
GS	GROUND SURFACE
TBS	TOP BENTONITE SEAL
TSP	TOP OF SANDPACK
TSC	TOP OF SCREEN
BSC	BOTTOM OF SCREEN
TD	TOTAL DEPTH
POW	POINT OF WELL

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COMPLETION REPORT OF WELL No. MW64B-2

COMPLETION REPORT OF WELL No. MW64B-3

PROJECT: SEVEN LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 05/12/94
WELL INSTALLATION COMPLETED: 05/13/94

WELL LOCATION (N/E): 986003.6 748385.3
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 709.2
DATUM: NAD 1983
GEOLOGIST: F. O'LOUGHLIN
CHECKED BY: FO

STRATA: MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
					TPC	
					TR	
					TC	
	0			0.0	GS	709.2
ML						
ML - - SM CL - ML						
	5			5.0	TBS	704.2
ML ML ML						
				7.5	TSP	701.7
ML CL - CL						
				8.6	TSC	700.6
	10					
- CL ML ML ML SM						
- ML -	15					
SM ML -						
	20.0					

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 10

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 2, 9, 4

SURFACE SEAL
Type: CEMENT
Interval: 1.5

GROUT
Type: BENTONITE/CEMENT
Interval: 3.5

SEAL
Type: BENTONITE PELLETS
Interval: 2.5

SANDPACK
Type: #1, #3
Interval: 18.7

WELL DEVELOPMENT DATA
Date: 5/25/94
Method: BAIL/PUMP
Duration: 205 MIN
Rate:
Final Measurements:

WATER LEVELS

Date	Time	Depth,TR
5/25	0905	12.55
5/25	1145	15.89

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
6.80	9.0	870	1.68

LEGEND
SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC TOP OF PROTECTIVE CASING
TR TOP OF WELL RISER
GS GROUND SURFACE
TBS TOP BENTONITE SEAL
TSP TOP OF SANDPACK
TSC TOP OF SCREEN
BSC BOTTOM OF SCREEN
TD TOTAL DEPTH
POW POINT OF WELL

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COMPLETION REPORT OF WELL No. MW64B-3

COMPLETION REPORT OF WELL No. MW64B-3

PROJECT: SEVEN LOW PRIORITY AOCs
PROJECT NO: 720518-01000
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY

GROUND SURFACE ELEVATION (ft): 709.2
GEOLOGIST: F. O'LOUGHLIN
CHECKED BY: FO

STRATA: MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
ML	20					
ML						
	25			25.4	BSC	683.8
	26.2			26.2	POW	683.0

WELL CONSTRUCTION DETAILS

(See Page 1)

LEGEND

- SURFACE SEAL
- GROUT
- SEAL
- SANDPACK
- GRAVEL
- SAND
- SILT
- CLAY
- NO RECOVERY

TPC	TOP OF PROTECTIVE CASING
TR	TOP OF WELL RISER
GS	GROUND SURFACE
TBS	TOP BENTONITE SEAL
TSP	TOP OF SANDPACK
TSC	TOP OF SCREEN
BSC	BOTTOM OF SCREEN
TD	TOTAL DEPTH
POW	POINT OF WELL

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COMPLETION REPORT OF WELL No. MW64B-3

COMPLETION REPORT OF WELL No. MW64C-1

PROJECT: SEVEN LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 05/16/94
WELL INSTALLATION COMPLETED: 05/16/94

WELL LOCATION (N/E): 984365.9 753991.2
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 764.2
DATUM: NAD 1983
GEOLOGIST: F. O'LOUGHLIN
CHECKED BY: FO

STRATA: MICRO DESCRIPTION (from boring log)	DEPTH (ft)
ML	0
ML	
ML	
ML	
ML	
ML	5
SP	
ML	
ML	
ML	
ML	10
SM	
SM	
SM	
ML	15
	16.1

SYMBOL / WELL DETAILS

	DEPTH (ft)		ELEVATION (ft)
		TPC	
		TR	
		TC	
	0.0	GS	764.2
	1.5	TBS	762.7
	2.5	TSP	761.7
	3.5	TSC	760.7
	15.3	BSC	748.9
	16.1	POW	748.1

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 5

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 1.95, 9

SURFACE SEAL
Type: CEMENT
Interval: 1.5

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1

SANDPACK
Type: #1, #3
Interval: 15.6

WELL DEVELOPMENT DATA
Date: 6/24/94
Method: BAIL/PUMP
Duration: 2 DAYS
Rate: .750 L/MIN
Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.58	9.8	590	30

WATER LEVELS

Date	Time	Depth,TR
6/23	1600	5.21
6/24	1230	11.4

LEGEND

SURFACE SEAL, GROUT, SEAL, SANDPACK, GRAVEL, SAND, SILT, CLAY, NO RECOVERY

TPC TOP OF PROTECTIVE CASING
TR TOP OF WELL RISER
GS GROUND SURFACE
TBS TOP BENTONITE SEAL
TSP TOP OF SANDPACK
TSC TOP OF SCREEN
BSC BOTTOM OF SCREEN
TD TOTAL DEPTH
POW POINT OF WELL

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COMPLETION REPORT OF WELL No. MW64C-1

COMPLETION REPORT OF WELL No. MW64D-1

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**
DRILLING CONTRACTOR: **EMPIRE SOILS INVESTIGATIONS**
DRILLING METHOD: **HOLLOW STEM AUGER**
WELL INSTALLATION STARTED: **03/28/94**
WELL INSTALLATION COMPLETED: **03/28/94**

WELL LOCATION (N/E): **993059.7 741523.1**
REFERENCE COORDINATE SYSTEM: **New York State Plane**
GROUND SURFACE ELEVATION (ft): **666.6**
DATUM: **NAD 1983**
GEOLOGIST: **K.KELLY**
CHECKED BY: **FO**

STRATA MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
					TPC	
					TR	
					TC	
	0			0.0	GS	666.6
ML						
CL				1.5	TBS	665.1
CL				2.5	TSP	664.1
CL						
GM				3.6	TSC	663.1
GC				4.4	BSC	662.3
GC						
CL	5.3			5.3	POW	661.4
	5					

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 4.2

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: .8

SURFACE SEAL
Type: CEMENT
Interval: 1.5

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1

SANDPACK
Type: #1, #3
Interval: 2.75

WELL DEVELOPMENT DATA
Date: 6/25/94
Method: BAIL/PUMP
Duration: 3 DAYS
Rate: .232 L/MIN
Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.45	15.9	700	2.5

WATER LEVELS

Date	Time	Depth,TR
6/23	1430	4.71
6/25	1315	5.5

LEGEND

SURFACE SEAL, GROUT, SEAL, SANDPACK, GRAVEL, SAND, SILT, CLAY, NO RECOVERY

TPC	TOP OF PROTECTIVE CASING
TR	TOP OF WELL RISER
GS	GROUND SURFACE
TBS	TOP BENTONITE SEAL
TSP	TOP OF SANDPACK
TSC	TOP OF SCREEN
BSC	BOTTOM OF SCREEN
TD	TOTAL DEPTH
POW	POINT OF WELL

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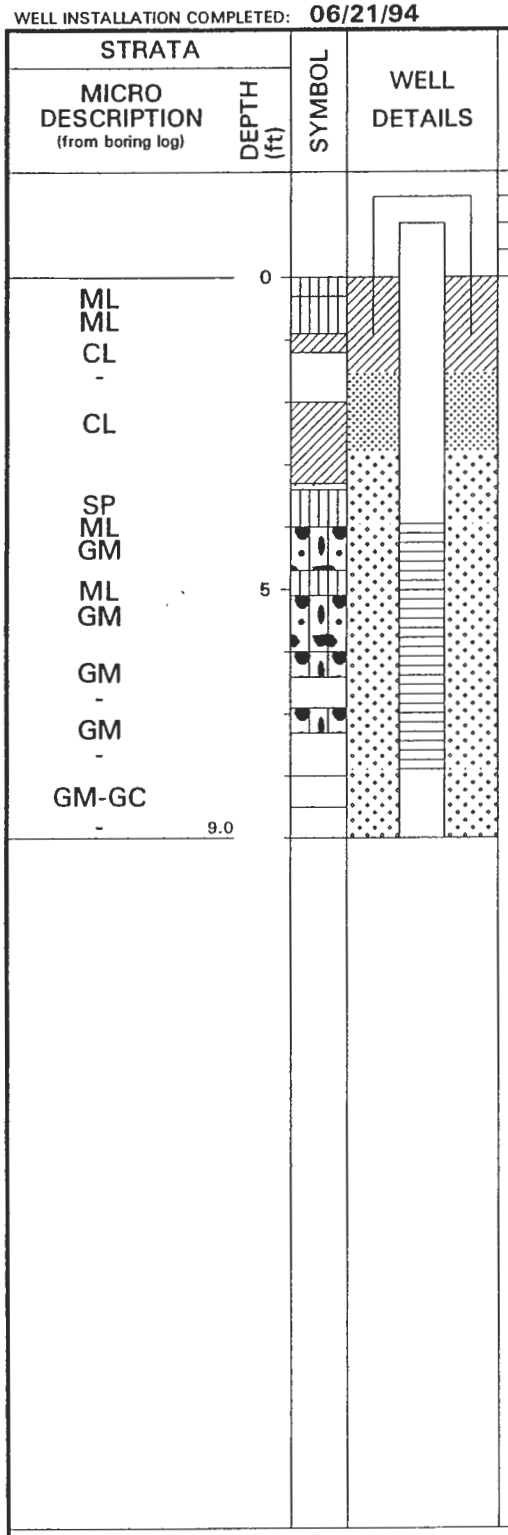
COMPLETION REPORT OF WELL No. MW64D-1

COMPLETION REPORT OF WELL No. MW64D-2

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**
DRILLING CONTRACTOR: **EMPIRE SOILS INVESTIGATIONS**
DRILLING METHOD: **HOLLOW STEM AUGER**
WELL INSTALLATION STARTED: **06/21/94**
WELL INSTALLATION COMPLETED: **06/21/94**

WELL LOCATION (N/E): **993638.6 740197.6**
REFERENCE COORDINATE SYSTEM: **New York State Plane**
GROUND SURFACE ELEVATION (ft): **633.7**
DATUM: **NAD 1983**
GEOLOGIST: **K.KELLY**
CHECKED BY: **FO**



WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: **4**
Type: **RISER**
Interval: **3.5**

RISER
Diameter: **2**
Type: **SCH. 40-PVC**
Interval: **5**

SCREEN
Diameter: **2**
Type: **SCH. 40-PVC/0.010**
Interval: **3.95**

SURFACE SEAL
Type: **CEMENT**
Interval: **1.5**

GROUT
Type: **N/A**
Interval: **N/A**

SEAL
Type: **BENTONITE PELLETS**
Interval: **1.3**

SANDPACK
Type: **#1, #3**
Interval: **6.3**

WELL DEVELOPMENT DATA
Date: **6/28/94**
Method: **BAIL**
Duration: **170 MIN**
Rate: **.720 L/MIN**
Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.2	14	450	2.54

WATER LEVELS

Date	Time	Depth,TR
6/28	0955	4.05
6/28	1240	4.48

LEGEND
SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC	TOP OF PROTECTIVE CASING
TR	TOP OF WELL RISER
GS	GROUND SURFACE
TBS	TOP BENTONITE SEAL
TSP	TOP OF SANDPACK
TSC	TOP OF SCREEN
BSC	BOTTOM OF SCREEN
TD	TOTAL DEPTH
POW	POINT OF WELL

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COMPLETION REPORT OF WELL No. MW64D-2

COMPLETION REPORT OF WELL No. MW64D-3

PROJECT: SEVEN LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 06/20/94
WELL INSTALLATION COMPLETED: 06/20/94

WELL LOCATION (N/E): 993017.4 740735.8
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 647.3
DATUM: NAD 1983
GEOLOGIST: K.KELLY
CHECKED BY: FO

STRATA MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
					TPC	
					TR	
					TC	
	0			0.0	GS	647.3
ML ML				1.5	TBS	645.8
CL CL						
CL				3.9	TSP	643.4
ML				4.9	TSC	642.4
	5					
ML GM-GC				6.9	BSC	640.4
ML				7.6	POW	639.7
	7.8					

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 6.15

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 1.95

SURFACE SEAL
Type: CEMENT
Interval: 1.5

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 2.4

SANDPACK
Type: #1, #3
Interval: 4.2

WELL DEVELOPMENT DATA
Date: 6/27/94
Method: BAIL/PUMP
Duration: 110 MIN
Rate: VARIABLE
Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.30	13.5	500	12

WATER LEVELS

Date	Time	Depth,TR
6/27	1445	3.72
6/27	1435	4.90

LEGEND
SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC TOP OF PROTECTIVE CASING
TR TOP OF WELL RISER
GS GROUND SURFACE
TBS TOP BENTONITE SEAL
TSP TOP OF SANDPACK
TSC TOP OF SCREEN
BSC BOTTOM OF SCREEN
TD TOTAL DEPTH
POW POINT OF WELL

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COMPLETION REPORT OF WELL No. MW64D-3

COMPLETION REPORT OF WELL No. MW64D-4

PROJECT: SEVEN LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 06/20/94
WELL INSTALLATION COMPLETED: 06/20/94

WELL LOCATION (N/E): 992533.5 741082.2
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 659.7
DATUM: NAD 1983
GEOLOGIST: K.KELLY
CHECKED BY: FO

STRATA: MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
					TPC	
					TR	
					TC	
	0			0.0	GS	659.7
ML - CL - GM-GC - ML -				1.5	TBS	658.2
				3.3	TSP	656.5
ML - ML SM GM GM GM - GM GC GC - CL - - -	5			4.6	TSC	655.2
				8.5	BSC	651.2
	9.9			9.6	POW	650.1

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 5.55

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 3.95

SURFACE SEAL
Type: CEMENT
Interval: 1.5

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1.75

SANDPACK
Type: #1, #3
Interval: 6.6

WELL DEVELOPMENT DATA
Date: 6/27/94
Method: BAIL
Duration: 124 MIN
Rate: .540 L/MIN
Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.09	12	500	1.41

WATER LEVELS

Date	Time	Depth, TR
6/27	0900	7.94
6/27	1100	8.42

LEGEND

SURFACE SEAL, GROUT, SEAL, SANDPACK, GRAVEL, SAND, SILT, CLAY, NO RECOVERY

TPC TOP OF PROTECTIVE CASING
TR TOP OF WELL RISER
GS GROUND SURFACE
TBS TOP BENTONITE SEAL
TSP TOP OF SANDPACK
TSC TOP OF SCREEN
BSC BOTTOM OF SCREEN
TD TOTAL DEPTH
POW POINT OF WELL

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COMPLETION REPORT OF WELL No. MW64D-4

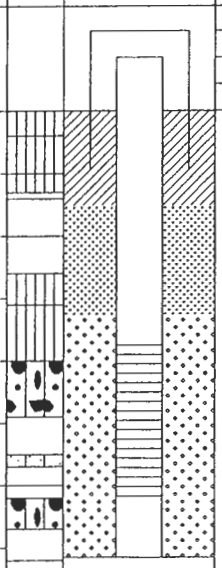
COMPLETION REPORT OF WELL No. MW64D-5

PROJECT: SEVEN LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 06/22/94
WELL INSTALLATION COMPLETED: 06/22/94

WELL LOCATION (N/E): 991371.4 740724.3
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 651.0
DATUM: NAD 1983
GEOLOGIST: K.KELLY
CHECKED BY: FO

STRATA MICRO DESCRIPTION (from boring log)	DEPTH (ft)
	0
ML	
ML	
ML	
-	
-	
GM-GC	
ML	
ML	
GM	
-	5
SM	
-	
-	
GM	7.2
-	

SYMBOL / WELL DETAILS



	DEPTH (ft)		ELEVATION (ft)
		TPC	
		TR	
		TC	
	0.0	GS	651.0
	1.5	TBS	649.5
	3.3	TSP	647.8
	3.8	TSC	647.3
	6.3	BSC	644.7
	7.2	POW	643.9

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 5.9

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 1.95

SURFACE SEAL
Type: CEMENT
Interval: 1.5

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1.75

SANDPACK
Type: #1, #3
Interval: 3.85

WELL DEVELOPMENT DATA
Date: 7/10/94
Method: BAIL/PUMP
Duration: 10 DAYS
Rate: .411 L/MIN
Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
7.00	13.3	470	15

WATER LEVELS

Date	Time	Depth,TR
6/28	1330	7.26
7/10	1535	6.06
7/10	1635	6.64

LEGEND

SURFACE SEAL	GRAVEL
GROUT	SAND
SEAL	SILT
SANDPACK	CLAY
	NO RECOVERY

TPC	TOP OF PROTECTIVE CASING
TR	TOP OF WELL RISER
GS	GROUND SURFACE
TBS	TOP BENTONITE SEAL
TSP	TOP OF SANDPACK
TSC	TOP OF SCREEN
BSC	BOTTOM OF SCREEN
TD	TOTAL DEPTH
POW	POINT OF WELL

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Romulus, New York

COMPLETION REPORT OF WELL No. MW64D-5

COMPLETION REPORT OF WELL No. MW70-1

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**
DRILLING CONTRACTOR: **EMPIRE SOILS INVESTIGATIONS**
DRILLING METHOD: **HOLLOW STEM AUGER**
WELL INSTALLATION STARTED: **05/11/94**
WELL INSTALLATION COMPLETED: **05/11/94**

WELL LOCATION (N/E): **1007329.9 740889.1**
REFERENCE COORDINATE SYSTEM: **New York State Plane**
GROUND SURFACE ELEVATION (ft): **636.5**
DATUM: **NAD 1983**
GEOLOGIST: **F. O'LOUGHLIN**
CHECKED BY: **FO**

STRATA: MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
					TPC	
					TR	
					TC	
	0			0.0	GS	636.5
ML						
ML						
ML				1.5	TBS	635.0
CL				2.5	TSP	634.0
ML						
				3.7	TSC	632.8
ML						
	5					
ML						
ML						
				9.6	BSC	626.9
	10					
	10.4			10.4	POW	626.1

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 5.2

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 4, .9

SURFACE SEAL
Type: CEMENT
Interval: 1.5

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1

SANDPACK
Type: #1, #3
Interval: 7.95

WELL DEVELOPMENT DATA
Date: 5/17/94
Method: BAIL/PUMP
Duration: 95 MIN
Rate:
Final Measurements:

WATER LEVELS

Date	Time	Depth,TR
5/17	1020	2.51
5/17	1142	4.42

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
6.8	7.8	470	15.3

LEGEND

- SURFACE SEAL
- GROUT
- SEAL
- SANDPACK
- GRAVEL
- SAND
- SILT
- CLAY
- NO RECOVERY

TPC	TOP OF PROTECTIVE CASING
TR	TOP OF WELL RISER
GS	GROUND SURFACE
TBS	TOP BENTONITE SEAL
TSP	TOP OF SANDPACK
TSC	TOP OF SCREEN
BSC	BOTTOM OF SCREEN
TD	TOTAL DEPTH
POW	POINT OF WELL

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COMPLETION REPORT OF WELL No. MW70-1

COMPLETION REPORT OF WELL No. MW70-2

PROJECT: SEVEN LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 04/04/94
WELL INSTALLATION COMPLETED: 04/04/94

WELL LOCATION (N/E): 1007329.8 740555.6
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 635.4
DATUM: NAD 1983
GEOLOGIST: K. KELLY
CHECKED BY: FO

STRATA MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
					TPC	
					TR	
					TC	
	0			0.0	GS	635.4
GM ML						
ML				1.8	TBS	633.6
CL				3.0	TSP	632.4
CL				4.0	TSC	631.4
CL						
ML	5					
ML						
ML GM-GC						
	10					
				10.7	BSC	624.7
11.6				11.6	POW	623.8

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 5.15

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 3.95, 1.95

SURFACE SEAL
Type: CEMENT
Interval: 1.8

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1.2

SANDPACK
Type: #1, #3
Interval: 8.55

WELL DEVELOPMENT DATA
Date: 5/17/94
Method: BAIL/PUMP
Duration: 105 MIN
Rate:
Final Measurements:

WATER LEVELS

Date	Time	Depth,TR
5/17	1245	2.51
5/17	1412	3.18

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
6.63	9.4	800	3.14

LEGEND
SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC TOP OF PROTECTIVE CASING
TR TOP OF WELL RISER
GS GROUND SURFACE
TBS TOP BENTONITE SEAL
TSP TOP OF SANDPACK
TSC TOP OF SCREEN
BSC BOTTOM OF SCREEN
TD TOTAL DEPTH
POW POINT OF WELL

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COMPLETION REPORT OF WELL No. MW70-2

COMPLETION REPORT OF WELL No. MW70-3

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**
DRILLING CONTRACTOR: **EMPIRE SOILS INVESTIGATIONS**
DRILLING METHOD: **HOLLOW STEM AUGER**
WELL INSTALLATION STARTED: **04/05/94**
WELL INSTALLATION COMPLETED: **04/05/94**

WELL LOCATION (N/E): **1007173.3 740552.3**
REFERENCE COORDINATE SYSTEM: **New York State Plane**
GROUND SURFACE ELEVATION (ft): **636.3**
DATUM: **NAD 1983**
GEOLOGIST: **K. KELLY**
CHECKED BY: **FO**

STRATA: MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
					TPC	
					TR	
					TC	
	0			0.0	GS	636.3
ML						
				2.0	TBS	634.3
ML						
CL				3.3	TSP	633.0
CL						
CL				4.3	TSC	632.0
CL						
CL	5					
CL						
CL						
CL						
SM						
				8.3	BSC	628.0
	9.4			9.4	POW	626.9

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 5.15

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 3.95

SURFACE SEAL
Type: CEMENT
Interval: 2

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1.3

SANDPACK
Type: #1, #3
Interval: 6.1

WELL DEVELOPMENT DATA
Date: 5/17/94
Method: BAIL/PUMP
Duration: 80 MIN
Rate:
Final Measurements:

WATER LEVELS

Date	Time	Depth,TR
5/17	1510	3.07
5/17	1615	4.65

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
6.83	8.6	670	15.6

LEGEND
SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC TOP OF PROTECTIVE CASING
TR TOP OF WELL RISER
GS GROUND SURFACE
TBS TOP BENTONITE SEAL
TSP TOP OF SANDPACK
TSC TOP OF SCREEN
BSC BOTTOM OF SCREEN
TD TOTAL DEPTH
POW POINT OF WELL

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COMPLETION REPORT OF WELL No. MW70-3

COMPLETION REPORT OF WELL No. MW70-4

PROJECT: SEVEN LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
WELL INSTALLATION STARTED: 05/11/94
WELL INSTALLATION COMPLETED: 05/11/94

WELL LOCATION (N/E): 1007055.2 740563.3
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 636.3
DATUM: NAD 1983
GEOLOGIST: F. O'LOUHGLIN
CHECKED BY: FO

STRATA MICRO DESCRIPTION (from boring log)	DEPTH (ft)	SYMBOL	WELL DETAILS	DEPTH (ft)		ELEVATION (ft)
					TPC	
					TR	
					TC	
	0			0.0	GS	636.3
ML CL				1.5	TBS	634.8
ML				2.5	TSP	633.8
				3.6	TSC	632.7
SC	5					
ML SM						
SM SM SM				9.3	BSC	627.0
	10.1 10			10.1	POW	626.2

WELL CONSTRUCTION DETAILS

PROTECTIVE COVER
Diameter: 4
Type: RISER
Interval: 3.5

RISER
Diameter: 2
Type: SCH. 40-PVC
Interval: 4.25

SCREEN
Diameter: 2
Type: SCH. 40-PVC/0.010
Interval: 4.9

SURFACE SEAL
Type: CEMENT
Interval: 1.5

GROUT
Type: N/A
Interval: N/A

SEAL
Type: BENTONITE PELLETS
Interval: 1

SANDPACK
Type: #1, #3
Interval: 7.6

WELL DEVELOPMENT DATA
Date: 5/23/94
Method: BAIL/PUMP
Duration: 6 DAYS
Rate: .230 L/MIN

WATER LEVELS

Date	Time	Depth,TR
5/18	0825	2.22
5/23	2.42	2.42

Final Measurements:

pH	Temperature (degrees C)	Conductivity (micromhos/cm)	Turbidity (NTU)
6.93	10.1	690	3.59

LEGEND
SURFACE SEAL
GROUT
SEAL
SANDPACK
GRAVEL
SAND
SILT
CLAY
NO RECOVERY

TPC TOP OF PROTECTIVE CASING
TR TOP OF WELL RISER
GS GROUND SURFACE
TBS TOP BENTONITE SEAL
TSP TOP OF SANDPACK
TSC TOP OF SCREEN
BSC BOTTOM OF SCREEN
TD TOTAL DEPTH
POW POINT OF WELL

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COMPLETION REPORT OF WELL No. MW70-4

APPENDIX B

LOG OF BORING NO. MW9-1

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
ASSOCIATED UNIT/AREA: SEAD-9
PROJECT NO: 720519-01000
DATE STARTED: 03/21/94
DATE COMPLETED: 03/21/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3" SPLIT SPOONS

DEPTH TO WATER (ft): 3.6
BORING LOCATION (N/E): 1000604.2 750938.1
REFERENCE COORDINATE SYSTEM: NEW YORK STATE PLA
GROUND SURFACE ELEVATION (ft): 747.3
DATUM: NAD 1983
INSPECTOR: KK, MB
CHECKED BY: KK

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	2 4 8 8	2.00	1.5	0	BGD	0.5 1.0 1 1.3 1.5		Dark brown SILT, little organic, little very fine Shale fragments, soft, wet. Dark brown to reddish brown SILT, some grey Clay, little very fine to medium Shale fragments, trace organic, medium stiff, moist to wet. Dark brown to reddish brown SILT, little very fine Sand, little grey Clay, little fine to medium Shale fragments, medium stiff, moist to wet. AA, some very fine Sand, saturated.	ML ML ML ML -
						2.0		No Recovery	
.02	14 34 32 36	2.00	2.0	0	BGD	2 2.4 2.9 3 3.2		Light brown SILT, little very fine Sand, little fine to coarse Shale fragments and Gravel, trace Clay, medium stiff, saturated. AA, wet to saturated. Fractured grey SHALE, competent, massive, dry.	ML ML -
						4.0		AA, (2-2.4'), some very fine Sand, saturated to wet.	ML
.03	30 32 100/.2	1.20	0.9	0	BGD	4 4.3 4.5 4.6 4.7 5 4.9		Red, fine Sand in the bottom of the spoon. AA, (3.2-4.0'), saturated. Gray, massive weathered SHALE, little Silt and very fine Sand with fine Shale fragments interbedded, saturated. AA, (3.2-4.0'), saturated. AA, (4.3-4.5'). AA, (3.2-4.0'), saturated. No Recovery	ML - ML ML - -
								BORING TERMINATED AT 5.2' AUGER REFUSAL	

NOTES: No samples were collected for chemical analysis.

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LOG OF BORING MW9-1

LOG OF BORING NO. MW9-2

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
\SSOCIATED UNIT/AREA: SEAD-9
PROJECT NO: 720519-01000
DATE STARTED: 03/09/94
DATE COMPLETED: 03/09/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3" SPLIT SPOONS

DEPTH TO WATER (ft): 1.5
BORING LOCATION (N/E): 1000653.0 750473.7
REFERENCE COORDINATE SYSTEM: NEW YORK STATE PLA
GROUND SURFACE ELEVATION (ft): 731.5
DATUM: NAD 1983
INSPECTOR: FO, KK
CHECKED BY: KK

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	1 2 3 3	2.00	1.6	0	BGD	0.8		Dark brown SILT, trace Organics, trace(-) coarse Gravel, soft, wet.	ML
						1		Light brown SILT, little Clay, trace Organics, trace fine to coarse Gravel, medium stiff, moist to saturated.	ML
						1.6			
						2.0		No Recovery	-
.02	44 90 75 100/.3	1.80	1.8	0	BGD	2		AA, saturated.	ML
						2.4		Fractured, weathered and competent dark grey SHALE, trace Silt, loose, saturated.	-
						3			
						3.8		No Recovery	-
						4			
						5			
								BORING TERMINATED AT 5.3'	

NOTES: No samples were taken for chemical analysis. Bedrock encountered at 4.0', forced augers to 5.3' to install well.

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LOG OF BORING MW9-2

LOG OF BORING NO. MW9-3

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
ASSOCIATED UNIT/AREA: SEAD-9
PROJECT NO: 720519-01000
DATE STARTED: 03/20/94
DATE COMPLETED: 03/20/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3" SPLIT SPOONS

DEPTH TO WATER (ft): 1.1
BORING LOCATION (N/E): 1000346.4 750523.7
REFERENCE COORDINATE SYSTEM: NEW YORK STATE PLA
GROUND SURFACE ELEVATION (ft): 734.4
DATUM: NAD 1983
INSPECTOR: KK, KS
CHECKED BY: KK

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	1 2 4 4	2.00	1.6	0	BGD	0.4		Dark brown SILT, trace Organics, very soft, saturated.	ML
						1.1		AA, dark brown to light brown, little Clay, soft, saturated.	ML
						1.6		AA, little very fine Sand, trace fine Sand, very soft, saturated.	ML
						2.0		No Recovery	-
.02	6 7 10 13	2.00	1.9	0	BGD	3.9		AA, grading to fine Sand, little Silt, trace Clay, trace very fine Sand, soft to medium dense, wet to saturated.	SM
.03	12 20 25 25	2.00	1.9	0	BGD	4.0		No Recovery	
						4.3		AA, trace Organics, saturated.	SM
								Light brown fine SAND, little very fine Sand, little fine to coarse Shale fragments and Gravel, loose, wet to saturated.	SP
						5.9			
.04	22 45 75 100/.4	1.90	1.9	0	BGD	6.0		No Recovery	
						6.2		AA, saturated.	SP
								AA, grading to very fine SAND, trace fine to medium Shale fragments and Gravel, trace Silt, trace fine Sand, loose, wet to saturated.	ML
						7.9			
.05	44 65 100/.3	1.30	1.3	0	BGD	8.0		Light brown very fine SAND, little Silt, trace fine to medium Shale fragments and Gravel, medium dense, wet.	ML
						8.6		Light brown very fine SAND, little fine to medium Shale fragments and Gravel, trace fine Sand, trace coarse Shale fragments and Gravel, medium dense, wet.	ML
						9.3		No Recovery	-
						10.0			

NOTES: No samples were taken for chemical analysis.

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LOG OF BORING MW9-3

PROJECT: **EIGHT MODERATELY LOW PRIORITY AOCs**
PROJECT NO: **720519-01000**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**

GROUND SURFACE ELEVATION: **734.4**
INSPECTOR: **KK, KS**
CHECKED BY: **KK**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.06	100/.2	0.20	0.2	0	BGD			Fractured, competent grey SHALE, saturated.	
								BORING TERMINATED AT 10.2' AUGER REFUSAL	

NOTES: No samples were taken for chemical analysis.

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LOG OF BORING MW9-3

LOG OF BORING NO. MW43-1

PROJECT: **EIGHT MODERATELY LOW PRIORITY AOCs**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**
ASSOCIATED UNIT/AREA: **SEAD-43,56,69**
PROJECT NO: **720519-01000**
DATE STARTED: **03/22/94**
DATE COMPLETED: **03/22/94**
DRILLING CONTRACTOR: **EMPIRE SOILS INVESTIGATIONS**
DRILLING METHOD: **HOLLOW STEM AUGER**
SAMPLING METHOD: **3" SPLIT SPOONS**

DEPTH TO WATER (ft): **9.6**
BORING LOCATION (N/E): **987079.1 754460.0**
REFERENCE COORDINATE SYSTEM: **New York State Plane**
GROUND SURFACE ELEVATION (ft): **764.8**
DATUM: **NAD 1983**
INSPECTOR: **KK,MB**
CHECKED BY: **KK**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	7 4 4 6	2.00	1.6	0	BGD	0.4		Dark brown SILT, trace Organics, very stiff, wet (frozen).	ML
						1.0		Grading downward from dark brown to light brown SILT, trace Organics, soft, moist to wet.	ML
						1.6		Light brown SILT + mottled orange-yellow brown CLAY, trace(-) medium Gravel, trace Organics, medium stiff, moist to wet.	ML-CL
						2.0		No Recovery	-
.02	6 30 22 15	2.00	1.4	0	BGD	2.4		AA, (1-1.6'), trace fine to medium weathered Shale fragments, saturated.	ML-CL
						3.2		Fractured, massive grey SHALE, Quartz veins, little olive grey Silt, loose, saturated.	GM
						3.6		Light brown SILT, some(+) fine to medium weathered Shale fragments, medium stiff, moist.	GM
						4.0		No Recovery	-
.03	12 12 16 18	2.00	1.9	0	BGD	5.9		Light brown SILT + fine to coarse weathered SHALE fragments, medium dense, saturated.	GM
						6.0		No Recovery	-
.04	25 35 32 25	2.00	2.0	0	BGD	7.5		Light brown very fine SAND, some fine to coarse Shale fragments, little Silt, trace medium Sand, medium dense, saturated.	GM
						7.7		Fractured, massive competent, grey SHALE, wet.	-
.05	12 22 28 28	2.00	2.0	0	BGD	8.3		Olive grey SILT, some fine to coarse grey Shale fragments, medium stiff, moist to saturated.	GM
						9.6		Light brown SILT, some fine to coarse grey Shale fragments, little grey Clay, trace Silt, medium stiff, moist (saturated on Shale fragments).	GM
						10.0		Fractured, weathered, coarsely to finely bedded grey SHALE, saturated.	-

NOTES: No samples were collected for chemical analysis.

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Romulus, New York

LOG OF BORING MW43-1

PROJECT: **EIGHT MODERATELY LOW PRIORITY AOCs**
PROJECT NO: **720519-01000**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**

GROUND SURFACE ELEVATION: **764.8**
INSPECTOR: **KK,MB**
CHECKED BY: **KK**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.06	16 24 65 100/.2	1.70	1.7	0	BGD	10.4 11 11.3 11.7 12.0		Light brown to olive grey CLAY, fine to coarse grey Shale fragments, trace Silt, medium dense, saturated. AA, (10-10.4'), no Silt, moist to wet (little saturation on Shale fragment surfaces). Highly fractured, finely laminated, grey SHALE, saturated. No Recovery	CL CL - -
.07	100/.3	0.30	0.3	0	BGD	12 12.1 12.3		Dark grey CLAY, highly weathered Shale fragments, very stiff, moist. Fractured, finely bedded, competent grey SHALE, dry. No Recovery	CL - -
						13 14.0			
.08	100/.3	0.30	0.3	0	BGD	14 14.3		Highly fractured, competent and weathered grey SHALE, saturated. No Recovery	- -
						15		BORING TERMINATED AT 15' AUGER REFUSAL	

NOTES: No samples were collected for chemical analysis.

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Romulus, New York

LOG OF BORING MW43-1

LOG OF BORING NO. MW43-2

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
ASSOCIATED UNIT/AREA: SEAD-43,56,69
PROJECT NO: 720519-01000
DATE STARTED: 03/19/94
DATE COMPLETED: 03/19/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3" SPLIT SPOONS

DEPTH TO WATER (ft): 6.0
BORING LOCATION (N/E): 987117.2 754149.1
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 762.5
DATUM: NAD 1983
INSPECTOR: KK,MB
CHECKED BY: KK

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	4 6 7 12	2.00	1.5	0	BGD	0.7		Dark brown SILT, some very fine Sand, trace fine Gravel, trace Organics, very stiff, dry to moist (frozen).	ML
						1.1		Dark to light brown SILT, little(+) mottled grey Clay, trace fine to medium Shale fragments and Gravel, soft, moist to wet.	ML-CL
						1.5		Light brown to dark grey SILT + mottled grey CLAY, trace fine Shale fragments, stiff, dry to moist.	ML-CL
						2.0		No Recovery	-
.02	8 10 10 12	2.00	1.9	0	BGD	3.9		Light brown SILT, little mottled grey Clay, little fine to medium Shale fragments and Gravel, stiff, dry to moist.	ML
.03	9 10 14 16	2.00	0.1	0	BGD	4.0		No Recovery	
						4.1		Coarse gravel-sized, grey SHALE fragments, some light brown Silt and Clay.	GM
						6.0		No Recovery	-
.04	28 28 43 60	2.00	2.0	0	BGD	6.6		Light brown SILT, little Clay, little fine to medium Shale fragments and Gravel, trace Organics, soft, wet to saturated.	ML
						7.1		Grey SHALE, little light brown Silt and very fine Sand, trace yellow medium Sand, dry.	GM
						7.6		Light brown SILT + very fine SAND, little fine to medium Shale fragments and Gravel, trace yellow medium Sand, loose, slightly moist.	ML
						8.0		Light brown to tan very fine SAND, little Silt, little fine to medium Shale fragments and Gravel, loose, dry to slightly moist.	ML
.05	41 49 64 100/.3	1.80	1.8	0	BGD	8.8		Light brown SILT, little very fine Sand, little fine to medium Shale fragments and Gravel, trace Clay, stiff, dry to slightly moist.	ML
						9.0		Fractured, massive grey SHALE, dry.	-
						9.4		Weathered, finely laminated grey SHALE, trace light brown Silt, trace very fine Sand, loose, dry.	-
						9.8		Light brown SILT, little fractured grey Shale fragments and Gravel, stiff, dry.	ML

NOTES: No samples were collected for chemical analysis.

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LOG OF BORING MW43-2

PROJECT: **EIGHT MODERATELY LOW PRIORITY AOCs**
PROJECT NO: **720519-01000**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**

GROUND SURFACE ELEVATION: **762.5**
INSPECTOR: **KK,MB**
CHECKED BY: **KK**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.06	25 100/.4	0.90	0.9	0	BGD	10.0		AA, (8-8.8').	ML
						10.6		Grey fractured SHALE, dry.	-
						10.9		No Recovery	-
						11			
						12.0			
.07	50 75 100/.3	1.30	1.3	0	BGD	12		Light brown SILT, some grey fine to medium Shale fragments, medium stiff, dry.	GM
						12.3		Grey, weathered SHALE + CLAY, medium dense, slightly moist.	-
						12.7		AA, (12-12.3').	GM
						13		Grey fractured SHALE, dry.	
						13.1		AA, (12-12.3'), very stiff.	GM
						13.2		No Recovery	-
						13.3			
						14.0			
.08	25 38 38 50	2.00	2.0	0	BGD	14		Fractured, massive grey SHALE, little Clay, trace light brown Silt, medium dense, moist (saturated at 14.3 and 14.8').	-
						15.0		AA, (14-15'), Clay, saturated zones throughout.	-
						15			
						15.8			
NA	100/.3	0.30	0	NA	NA	16.0		Grey CLAY, some fine weathered Shale fragments, very stiff, moist to wet.	GC
						16		No Recovery	-
						17			
						18.0			
NA	100/.3	0.30	0	NA	NA	18		Fractured, competent SHALE, loose, dry.	-
						18.3		No Recovery	
								BORING TERMINATED AT 18.4' AUGER REFUSAL	

NOTES: No samples were collected for chemical analysis.

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LOG OF BORING MW43-2

LOG OF BORING NO. MW43-3

PROJECT: **EIGHT MODERATELY LOW PRIORITY AOCs**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**
ASSOCIATED UNIT/AREA: **SEAD-43,56,69**
PROJECT NO: **720519-01000**
DATE STARTED: **03/15/94**
DATE COMPLETED: **03/15/94**
DRILLING CONTRACTOR: **EMPIRE SOILS INVESTIGATIONS**
DRILLING METHOD: **HOLLOW STEM AUGER**
SAMPLING METHOD: **3" SPLIT SPOONS**

DEPTH TO WATER (ft): **6.0**
BORING LOCATION (N/E): **987371.6 753848.5**
REFERENCE COORDINATE SYSTEM: **New York State Plane**
GROUND SURFACE ELEVATION (ft): **760.7**
DATUM: **NAD 1983**
INSPECTOR: **KK,MB**
CHECKED BY: **KK**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	15 14 9 10	2.00	0.6	0	BGD	0.3		Dark brown SILT, little fine Sand, trace Organics, stiff, wet (frozen).	ML
						0.6		Dark brown SILT, little fine Sand, little medium Gravel, stiff, wet.	ML
								No Recovery	
						2.0			
.02	8 11 15 16	2.00	0.6	0	BGD	2.2		SHALE COBBLE.	GM
						2.6		Light brown CLAY + SILT, little fine to medium Shale fragments and Gravel, stiff, slightly moist(-).	ML-CL
								No Recovery	
						4.0			
.03	8 14 14 14	2.00	2.0	0	BGD	4.4		Light brown SILT + CLAY, some fine Shale fragments, medium stiff, wet(-).	GM-GC
								AA, (4-4.4'), some fine to medium Shale fragments and Gravel, medium stiff, wet(-).	GM-GC
						5.4		AA, (4.4-5.4'), some very fine Sand (red at 5.5'), soft, wet(+).	GM-GC
						6.0			
.04	15 15 18 20	2.00	2.0	0	BGD	6.5		Light brown fine SAND, some fine Shale fragments and Gravel, little Silt, trace coarse Sand, trace medium Sand, loose, saturated.	GP
						7.0		Light brown SILT + CLAY, little fine to coarse Shale fragments and Gravel, trace very fine Sand, medium stiff, wet(-).	ML-CL
								Light brown SILT + CLAY, trace very fine Sand, trace fine to coarse Shale and Gravel, stiff, moist.	ML-CL
						8.0			
.05	21 28 41 54	2.00	2.0	0	BGD	8.1		AA, (6-6.5').	GP
								Light brown SILT, little Clay, little fine to coarse Shale fragments and Gravel, stiff, moist(+).	ML
						9.3		Light brown to olive grey SILT, some very fine Sand, some fine to coarse weathered and competent Shale fragments and Gravel, trace Clay, trace fine Sand, stiff, wet(+).	GM
						10.0			

NOTES: No samples were collected for chemical analysis.

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LOG OF BORING MW43-3

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT NO: 720519-01000
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY

GROUND SURFACE ELEVATION: 760.7
INSPECTOR: KK,MB
CHECKED BY: KK

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.06	22 50 75 62	2.00	2.0	0	BGD	11 11.0		Olive grey SILT, some Clay, some fine to medium Shale fragments and Gravel, stiff, moist.	GM-GC
						11.3		Weathered grey SHALE, medium bedded.	-
						12.0		Grey CLAY, some weathered grey Shale fragments, some Silt, very stiff, slightly moist.	GC
.07	17 35 52 100/.4	1.90	1.9	0	BGD	12 13		AA, (11.3-12'), light brown Silt, saturated zones at 12.4 and 13.6'.	GC
						13.9			
.08	100/.3	0.30	0.3	0	BGD	14 14.0		No Recovery	-
						14.3		Fractured, weathered grey SHALE, loose, dry to saturated.	-
						15		No Recovery	-
						16.0			
.09	40 100/.4	0.90	0.9	0	BGD	16 16.2		Olive grey SILT + fine to coarse weathered SHALE fragments, loose, saturated.	GM
						16.9		Fractured, weathered, finely laminated, brittle grey SHALE, trace olive grey Silt, loose, saturated.	-
						17		No Recovery	-
						18.0			
.10	62 100/.2	0.80	0.7	0	BGD	18 18.2		Olive grey SILT + CLAY + fine to medium SHALE fragments, medium stiff, saturated.	GM-GC
						18.5			-
						18.7		AA, (16.2-16.9').	GM-GC
								AA, (18-18.2').	-
								No Recovery	
								BORING TERMINATED AT 18.8' AUGER REFUSAL	

NOTES: No samples were collected for chemical analysis.

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LOG OF BORING MW43-3

LOG OF BORING NO. MW43-4

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
ASSOCIATED UNIT/AREA: SEAD-43,56,69
PROJECT NO: 720519-01000
DATE STARTED: 03/17/94
DATE COMPLETED: 03/17/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3" SPLIT SPOONS

DEPTH TO WATER (ft): 6.0
BORING LOCATION (N/E): 987469.7 753487.1
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 757.0
DATUM: NAD 1983
INSPECTOR: KK,MB
CHECKED BY: KK

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	2 4 5 5	2.00	1.6	0	BGD	0.6		Dark brown SILT, little Organics, trace medium Sand, soft, wet.	ML
						1.0		Olive grey SILT + mottled grey and red CLAY, trace coarse Sand, trace Organics, stiff, wet(-).	ML-CL
						1.6		Olive grey SILT + mottled grey and red CLAY, little fine to coarse Shale fragments, medium stiff, wet (saturated(-) on Shale fragments.	ML-CL
						2.0		No Recovery	-
.02	11 15 14 30	2.00	1.6	0	BGD	2.4		Olive grey SILT, some mottled grey and orange Clay, some fine to medium Shale fragments, soft, saturated.	GM-GC
						3.6		Olive grey SILT + mottled grey and orange CLAY, some fine to coarse Shale fragments, medium stiff, moist to wet (little saturation on Shale fragments.	GM-GC
						4.0		No Recovery	-
.03	8 22 18 22	2.00	1.1	0	BGD	4.2		SHALE COBBLE.	GM
						4.8		Light reddish-brown SILT, some fine to medium Shale fragments, little Clay, stiff, moist.	GM
						5.1		AA, (4.2-4.8'), little saturation on Shale fragments.	GM
						6.0		No Recovery	-
.04	28 30 40 36	2.00	2.0	0	BGD	6.2		Light brown SILT, some fine to coarse Shale fragments, soft, saturated.	GM
						6.8		AA, (6-6.2'), medium stiff, wet (saturation on Shale fragments).	GM
						7.1		AA, (6.2-6.8'), medium stiff, saturated.	GM
						7.2		Olive grey SILT + grey weathered SHALE fragments, loose, saturated.	GM
						7.5		Fractured grey SHALE, trace olive grey Silt, loose, saturated.	-
						7.7		AA, (7.1-7.2').	GM
						8.0		Competent grey SHALE, some(+) weathered, massive grey Shale, trace Silt, dense, dry.	-
.05	22 38 38 45	2.00	2.0	0	BGD	9.2		Light brown SILT, some fine to coarse Shale fragments, little medium to coarse Sand, trace fine Sand, medium stiff, saturated.	GM
						10.0		Light brown to olive grey SILT, some fine to coarse Shale fragments, little medium Sand, stiff, moist (saturated on Shale fragments).	GM

NOTES: No samples were collected for chemical analysis.

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LOG OF BORING MW43-4

PROJECT: **EIGHT MODERATELY LOW PRIORITY AOCs**
PROJECT NO: **720519-01000**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**

GROUND SURFACE ELEVATION: **757.0**
INSPECTOR: **KK,MB**
CHECKED BY: **KK**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.06	16 32 100/.3	1.30	1.3	0	BGD	10.8		Light brown SILT + CLAY + grey fine to coarse SHALE fragments, loose, saturated.	GM-GC
						11		Fractured, weathered, finely laminated, brittle grey SHALE, medium dense, saturated.	-
						11.3		No Recovery	-
						12.0			
.07	100/.4	0.40	0.4	0	BGD	12		Fractured, weathered, finely laminated SHALE, medium dense, dry.	-
						12.4		No Recovery	-
						13			
								BORING TERMINATED AT 13.4' AUGER REFUSAL	

NOTES: No samples were collected for chemical analysis.

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LOG OF BORING MW43-4

LOG OF BORING NO. MW44A-1

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
ASSOCIATED UNIT/AREA: SEAD-44A
PROJECT NO: 720519-01000
DATE STARTED: 02/16/94
DATE COMPLETED: 02/16/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3" SPLIT SPOONS

DEPTH TO WATER (ft): 8.0
BORING LOCATION (N/E): 985665.4 753526.7
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 752.9
DATUM: NAD 1983
INSPECTOR: FO, KK
CHECKED BY: KK

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	7 5 7 10	2.00	1.4	0	BGD	0.2		Brown SILT + fine SAND, trace Organics, moist.	ML
						0.7		Brown SILT, trace Organics, moist.	ML
						1		AA, grey-brown with trace weathered Shale and fine Gravel, moist.	ML
						1.4		No Recovery	-
.02	8 10 15 22	2.00	1.4	0	BGD	2.0		AA, grey-brown with little Clay and little Shale, rock fragments at 0.7, saturated.	ML
						2			
						2.7		Light brown SILT with little Shale, moist.	ML
						3			
						3.2		AA, fine Sand, wet to saturated.	ML
						3.4		No Recovery	-
.03	17 24 32 30	2.00	0.8	0	BGD	4.0		Brown SILT with trace very fine Sand, trace fine to medium Shale, trace fine to medium Gravel, wet.	ML
						4			
						4.8		No Recovery	-
						5			
						6.0		Grey-brown SILT with trace very fine Sand, trace Clay, moist to wet.	ML
.04	36 62 103	1.75	0.5	0	BGD	6			
						6.3		Silty grey SHALE.	-
						6.5		No Recovery	-
						7			
						8.0		Grey-brown SILT + very fine SAND, some(-) fine to coarse Shale, saturated.	ML
.05	30 61 82 100/.3	2.00	2.0	0	BGD	8			
						8.7		Fractured black SHALE, saturated.	-
						9			
						9.5		AA, (8-8.7') saturated.	ML
						10			
						10.0			

NOTES: No samples were collected for chemical analysis.

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LOG OF BORING MW44A-1

PROJECT: **EIGHT MODERATELY LOW PRIORITY AOCs**
PROJECT NO: **720519-01000**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**

GROUND SURFACE ELEVATION: **752.9**
INSPECTOR: **FO, KK**
CHECKED BY: **KK**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.06	75 100/.1	0.60	0.6	0	BGD			Grey SILT with trace Clay, black Shale(10.2-10.4').	ML
								BORING TERMINATED AT 10.6' AUGER REFUSAL	

NOTES: No samples were collected for chemical analysis.

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LOG OF BORING MW44A-1

LOG OF BORING NO. MW44A-2

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
ASSOCIATED UNIT/AREA: SEAD-44A
PROJECT NO: 720519-01000
DATE STARTED: 06/06/94
DATE COMPLETED: 06/06/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3" SPLIT SPOONS

DEPTH TO WATER (ft): 25.4
BORING LOCATION (N/E): 985425.4 753032.5
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 750.4
DATUM: NAD 1983
INSPECTOR: ES,KK
CHECKED BY: KK

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	1 1 4 6	2.00	1.3	0	BGD	0		Dark brown TOPSOIL, Silt, little Clay, Shale fragments, moist.	OL
						1.0			
						1		Light brown SILT + CLAY, little Shale fragments, moist.	ML-CL
						1.3		No Recovery	-
						2.0			
.02	5 6 16 18	2.00	1.3	0	BGD	2		AA, some Shale fragments.	GM-GC
						3.0			
						3		AA, little Cobbles.	GM-GC
						3.3		No Recovery	-
						4.0			
.03	12 20 23 85	2.00	2.0	0	BGD	4		AA (3.0-3.3')	GM-GC
						4.3		Light brown SILT, little Clay, little Shale fragments, dense, moist.	ML
						5			
						6.0			
.04	100/.1	2.00	0	0	BGD	6		No Recovery	-
						7			
						8.0			
.05	43 100/.4	2.00	0.9	0	BGD	8		Light brown SILT, little very fine Sand, little Shale fragments, dense, dry to slightly moist.	ML
						8.9			
						9		No Recovery	-
						10.0			
						10			

NOTES: No samples were collected for chemical analysis.

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LOG OF BORING MW44A-2

PROJECT: **EIGHT MODERATELY LOW PRIORITY AOCs** GROUND SURFACE ELEVATION: **750.4**
PROJECT NO: **720519-01000** INSPECTOR: **ES,KK**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY** CHECKED BY: **KK**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.06	100 100/.2	2.00	0.8	0	BGD	10.3		Light grey SILT, little very fine Sand, little Shale fragments, dry to slightly moist.	ML
						10.8		Light grey SILT, little Shale fragments, dense, moist.	ML
						11		No Recovery	-
						12.0			
.07	29 42 74 80	2.00	2.0	0	BGD	12		AA (10.3-10.8')	ML
						13			
						14.0			
.08	35 50 70 100/.3	1.80	1.8	0	BGD	14		Light grey SILT + CLAY, little sub-rounded to angular fine to medium Shale fragments, little Silt, very stiff, dry to slightly moist.	ML-CL
						15			
						15.8			
						16.0		No Recovery	-
.09	28 48 63 90	2.00	2.00	0	BGD	16		Light grey SILT, little(-) Clay, little fine to medium subrounded to angular Shale fragments, loose, slightly moist.	ML
						16.2		AA, (14-15.8).	ML-CL
						17			
						17.6		AA, (14-15.8), moist.	ML-CL
						18.0			
.10	40 76 100/.4	1.40	1.4	0	BGD	18		Light grey SILT, little Clay, trace fine angular grey Shale fragments, loose, dry.	ML
						18.3		AA, (14-15.8), medium stiff, dry to moist.	ML-CL
						19			
						19.4		No Recovery	-
						20.0			
.11	38 75 90 95	2.00	2.0	0	BGD	20		AA, (14-15.8), medium stiff.	ML-CL
						20.5		Light grey brown CLAY, dense, dry to slightly moist.	CL
						20.9		AA, (20.5-20.9), trace fine to medium subrounded to angular grey Shale fragments, dry to slightly moist.	CL
						21			
						21.6			
						21.8		AA, moist.	CL
.12	35 50	2.00	2.0	0	BGD	22		Light grey brown SILT, some very fine Sand, trace(+) Clay, loose, moist.	ML
						22.0		Light grey brown SILT, some very fine Sand, trace(+) Clay, dense, slightly	ML
						22.5			

NOTES: No samples were collected for chemical analysis.

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Seneca Army Depot
Romulus, New York

LOG OF BORING MW44A-2

PROJECT: **EIGHT MODERATELY LOW PRIORITY AOCs**
PROJECT NO: **720519-01000**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**

GROUND SURFACE ELEVATION: **750.4**
INSPECTOR: **ES,KK**
CHECKED BY: **KK**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
	54							moist.	GM
	71					23.0		Dark grey coarse sand-sized SHALE fragments, little(-) light grey Silt, dense, wet.	GM
						23		Dark grey medium sand-sized SHALE fragments, little light grey Silt, medium dense, wet.	
						23.8			
						24.0		AA, wet to saturated.	GM
.13	40	1.90	1.9	0	BGD	24		Light grey-brown CLAY, trace fine grey Shale fragments, very dense, dry to slightly moist.	CL
	74					24.2		Light grey fine SAND, trace Silt, trace lenses of (23-23.8), wet.	SM
	84								
	100/.4					25			
						25.4		AA, (23-23.8), wet to saturated.	GM
						25.9			
						26.0			
.14	30	1.40	1.4	0	BGD	26		Light grey SILT, some fine Sand, little grey Shale fragments, loose, dry.	ML
	62					26.1		Light grey fine SAND, little very fine Sand, trace Silt, loose, wet to saturated.	SP
	100/.4					26.8			
						27.0		Dark grey medium sand-sized SHALE fragments, little lenses of light brown-grey Clay, loose, wet.	GC
						27			-
						27.4		Light grey-brown, highly weathered SHALE (weathered entirely to Clay), dense, dry to slightly moist.	-
						28.0		No Recovery	
.15	40	0.80	0.8	0	BGD	28		Light grey SILT + CLAY, little fine to medium grey Shale fragments, moist.	ML-CL
	100/.3					28.8			
								No Recovery	-
						29			
						30			
								BORING TERMINATED AT 30.1' AUGER REFUSAL	

NOTES: No samples were collected for chemical analysis.

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UNITED STATES ARMY
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LOG OF BORING MW44A-2

LOG OF BORING NO. MW44A-3

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
ASSOCIATED UNIT/AREA: SEAD-44A
PROJECT NO: 720519-01000
DATE STARTED: 06/06/94
DATE COMPLETED: 06/06/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3" SPLIT SPOONS

DEPTH TO WATER (ft): 6.5
BORING LOCATION (N/E): 985174.1 752661.6
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 748.2
DATUM: NAD 1983
INSPECTOR: FO
CHECKED BY: KK

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	2 3 4 6	2.00	1.2	0	BGD	0.5		Brown SILT, some very fine Sand, little organic material, loose, moist.	ML
						1.2		Grey-brown mottled SILT, little very fine Sand, trace(+) Clay, trace organic material, trace coarse Shale fragments, medium stiff, damp.	ML
						2.0		No Recovery	-
.02	12 14 18 17	2.00	1.3	0	BGD	3.3		Grey-brown SILT, some(-) very fine Sand, trace Clay, trace very fine Shale fragments, medium stiff, damp.	ML
								No Recovery	-
.03	24 22 24 34	2.00	0	0	BGD				
.04	38 100/.4	0.90	0.9	0	BGD	6.0		Light brown-grey SILT + very fine SAND, trace fine Shale fragments, stiff, damp, micaceous Shale at 6.5'.	ML
						6.7		Grey fractured SHALE, trace iron staining at 6.8', dry.	-
						6.9		No Recovery	-
.05	21 25 37 40	2.00	1.5	0	BGD	8.0		Light brown, fine SAND, little Silt, trace fine to medium Shale fragments, loose, wet to saturated.	SM
						8.4		Light brown, very fine SAND + SILT, trace fine Shale fragments, loose, saturated.	ML
						8.8		Light brown-grey very fine SAND + SILT, little fine Shale fragments, medium stiff, moist.	ML
						9.5		No Recovery	-
						10.0			

NOTES: No samples were collected for chemical analysis.

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LOG OF BORING MW44A-3

PROJECT: **EIGHT MODERATELY LOW PRIORITY AOCs**
PROJECT NO: **720519-01000**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**

GROUND SURFACE ELEVATION: **748.2**
INSPECTOR: **FO**
CHECKED BY: **KK**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.06	26 103	1.00	1.0	0	BGD			Grey-brown SILT, trace very fine Sand, trace fine Shale fragments, medium stiff, damp.	ML
						10.9			
						11		Grey weathered SHALE.	
						11.0		No Recovery	
.07	100/.1	0.10	0	NA	NA	12			
						13			
								BORING TERMINATED AT 13.5' AUGER REFUSAL	

NOTES: No samples were collected for chemical analysis.

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LOG OF BORING MW44A-3

LOG OF BORING NO. MW44B-1

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
ASSOCIATED UNIT/AREA: SEAD-44B
PROJECT NO: 720519-01000
DATE STARTED: 03/21/94
DATE COMPLETED: 03/21/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3" SPLIT SPOONS

DEPTH TO WATER (ft): 7.6
BORING LOCATION (N/E): 988170.5 751781.0
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 745.3
DATUM: NAD 1983
INSPECTOR: FO
CHECKED BY: KK

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	1 1 5 6	2.00	1.5	0	BGD	0.8		Brown SILT, little organic material, wet to saturated.	ML
						1.5		Orange, yellow, and grey CLAY, trace(+) Silt, trace organic material, trace Shale fragments, wet to saturated.	CL
						2.0		No Recovery	-
.02	9 18 26 28	2.00	1.4	0	BGD	3.4		Grey-brown SILT, little Clay, little fine to medium Shale fragments, trace coarse Shale fragments, soft, moist.	ML
						4.0		No Recovery	-
.03	11 23 25 34	2.00	1.8	0	BGD	4.4		Grey, brown, and yellow SILT + CLAY, trace(+) fine Shale fragments, stiff, moist.	ML-CL
						5.4		Light brown SILT, little Clay, little fine to medium Shale fragments, stiff, moist.	ML
						5.8		Light brown SILT, little fine to medium Shale fragments, stiff, moist.	ML
						6.0		No Recovery	-
.04	23 51 41 46	2.00	1.7	0	BGD	7.7		Light brown SILT, trace Clay, trace(+) fine to medium Shale fragments, moist to wet, (saturated from 7.6-7.7').	ML
						8.0		No Recovery	-
.05	59 100/.4	0.90	0.9	0	BGD	8.4		Yellow-brown SILT + CLAY, wet.	ML-CL
						8.9		Grey, fractured SHALE, trace(+) iron staining, wet.	-
						10.0		No Recovery	-

NOTES: No samples were collected for chemical analysis.

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LOG OF BORING MW44B-1

PROJECT: **EIGHT MODERATELY LOW PRIORITY AOCs** GROUND SURFACE ELEVATION: **745.3**
PROJECT NO: **720519-01000** INSPECTOR: **FO**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY** CHECKED BY: **KK**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.06	100/.25	0.25	0.25	0	BGD	10.3		AA, (8.4-8.9').	
								No Recovery	
						11			
						12.0			
.07	100/.15	0.15	0.15	0	BGD	12		AA, (8.4-8.9').	
								BORING TERMINATED AT 12.15' SPOON REFUSAL	

NOTES: No samples were collected for chemical analysis.

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LOG OF BORING MW44B-1

LOG OF BORING NO. MW44B-2

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
\SSOCIATED UNIT/AREA: SEAD-44B
PROJECT NO: 720519-01000
DATE STARTED: 03/08/94
DATE COMPLETED: 03/08/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3" SPLIT SPOONS

DEPTH TO WATER (ft): 6.5
BORING LOCATION (N/E): 988170.7 751447.4
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 741.5
DATUM: NAD 1983
INSPECTOR: FO,KK
CHECKED BY: KK

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	1 4 7 8	2.00	1.5	0	BGD	0.1		Organics, snow.	PT
						1.1		Olive grey SILT, some Clay, trace(-) fine Shale fragments and Gravel, trace Organics, soft, moist(+).	ML
						1.4		Yellow-brown SILT + CLAY, trace very fine Sand, medium stiff, moist.	ML-CL
						1.5		Yellow-brown SILT, some very fine Sand, little Clay, medium stiff, moist.	ML
						2.0		No Recovery	-
.02	8 15 14 20	2.00	1.9	0	BGD	2.3		AA, trace(-) fine Gravel.	ML
						2.5		AA, soft, wet (saturated at 2.3').	ML
						3.0		Yellow-brown SILT, little(-) Clay, little fine to medium Shale fragments and Gravel, trace very fine Sand, medium stiff, slightly moist.	ML
						3.9		Grades downward from Yellow-brown to brown-grey SILT, grading downward from little Clay to some Clay in mottled pods, little coarse Shale fragments and Gravel, stiff, dry to slightly moist.	ML-CL
.03	10 20 18 28	2.00	1.5	0	BGD	4.0		No Recovery	
						5.5		Brown-grey SILT, some Clay, little coarse Shale fragments, little fine Shale fragments and Gravel, stiff, dry to slightly moist-grading downward Shale fragments become more weathered, wet at 4.2'.	ML
						6.0		No Recovery	-
.04	55 42 34 21	2.00	1.6	0	BGD	6.2		AA, (4-5.5').	ML
						6.7		Massive to finely bedded weathered dark grey SHALE (fragments have horizontal fracture planes), some brown grey Silt, trace very fine Sand, moist (saturated from 6.5-6.7).	GM
						7.6		Very fine to fine light yellow-brown SAND, little fine to coarse Shale fragments, trace Silt, medium stiff, wet to saturated.	SP
						8.0		No Recovery	-
.05	14 16 24 20	2.00	1.7	0	BGD	8.2		Red-brown SILT + CLAY, trace fine Shale fragments and Gravel, very stiff, dry.	ML-CL
						9.5		AA, (6.7-7.6'), soft.	SP
						9.7		Very fine yellow-brown SAND + SILT, trace fine Shale fragments, moist.	ML
						10.0		No Recovery	-

NOTES: No samples were collected for chemical analysis.

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT NO: 720519-01000
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY

GROUND SURFACE ELEVATION: 741.5
INSPECTOR: FO,KK
CHECKED BY: KK

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.06	14 20 24 30	2.00	1.4	0	BGD	10.2		AA, (9.5-9.7').	ML
						11		Fractured, weathered, coarsely bedded SHALE, iron staining on joint surface, little olive grey Silt, loose, saturated.	-
						11.4		No Recovery	-
.07	100/.4	0.40	0.4	0	BGD	12.0 12			
						12.2		Light brown-grey SILT + CLAY, some fine Shale fragments, saturated.	ML-CL
						12.4		Finely laminated, fractured dark grey SHALE, loose, saturated.	-
								No Recovery	-

BORING TERMINATED AT 12.8'
AUGER REFUSAL

NOTES: No samples were collected for chemical analysis.

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LOG OF BORING MW44B-2

LOG OF BORING NO. MW44B-3

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
ASSOCIATED UNIT/AREA: SEAD-44B
PROJECT NO: 720519-01000
DATE STARTED: 03/20/94
DATE COMPLETED: 03/20/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3" SPLIT SPOONS

DEPTH TO WATER (ft): 10.5
BORING LOCATION (N/E): 988015.1 751421.9
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 741.5
DATUM: NAD 1983
INSPECTOR: FO
CHECKED BY: KK

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	1 2 5 8	2.00	1.8	0	BGD	0.7		Brown SILT + very fine SAND, little organic material, trace Shale fragments, wet.	ML
						1		Light yellow-brown SILT + very fine SAND, wet to saturated.	ML
						1.8			
						2.0		No Recovery	-
.02	8 15 18 29	2.00	1.5	0	BGD	2		Grey-brown CLAY, little(-) Silt, trace very fine Sand, trace fine Gravel, trace fine to medium Shale fragments, trace iron staining, trace saturated lenses.	CL
						2.6		Grey fractured SHALE, iron staining within fractured planes, saturated.	-
						3			
						3.1		Light brown SILT, trace fine to medium Shale fragments, dense, dry.	ML
						3.5		No Recovery	-
						4.0			
.03	20 31 37 41	2.00	1.5	0	BGD	4		Light brown SILT, little fine to medium Shale fragments, trace Cobble Shale fragments, dense, trace iron staining, dry to moist.	ML
						5			
						5.5		No Recovery	-
						6.0			
.04	51 57 75 100/.4	2.00	1.9	0	BGD	6		AA, (4-5.5'), very dense, moist.	ML
						7			
						7.9			
.05	28 57 81 93	2.00	2.0	0	BGD	8		No Recovery	
						8.0		AA, (6-7.9'), wet with trace saturated lenses.	ML
						9.0			
						9		Grey fractured SHALE.	-
						9.4		AA, (8-9'), moist.	ML
						10			
						10.0			

NOTES: No samples were collected for chemical analysis.

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Romulus, New York

LOG OF BORING MW44B-3

PROJECT: **EIGHT MODERATELY LOW PRIORITY AOCs**
PROJECT NO: **720519-01000**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**

GROUND SURFACE ELEVATION: **741.5**
INSPECTOR: **FO**
CHECKED BY: **KK**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.06	35 68 100/.4	1.40	1.2	0	BGD	10.5		Grey-brown SILT, little fine to medium Gravel, loose, moist.	ML
						11.0		Yellow-brown very fine SAND, some(+) Silt, trace(+) fine Shale fragments, wet to saturated.	SM
						11 11.2		Dark grey, fractured, slightly weathered SHALE, saturated.	-
								No Recovery	-
						12			
						13			
						14			
						14.7			
.07	100/.15	0.15	0.15	0	BGD			Dark grey, fractured SHALE.	-
								BORING TERMINATED AT 14.85' SPOON REFUSAL	

NOTES: No samples were collected for chemical analysis.

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LOG OF BORING MW44B-3

LOG OF BORING NO. MW58-1

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
ASSOCIATED UNIT/AREA: SEAD-58
PROJECT NO: 720519-01000
DATE STARTED: 03/31/94
DATE COMPLETED: 03/31/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3" SPLIT SPOONS

DEPTH TO WATER (ft): 2.7
BORING LOCATION (N/E): 1000107.7 739368.6
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 617.9
DATUM: NAD 1983
INSPECTOR: KK
CHECKED BY: KK

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	1 3 5 6	2.00	1.8	0	BGD	0.4		Light brown to dark brown SILT, little Clay, trace very fine Sand, trace Organics, soft, saturated.	ML
						0.7		Dark brown SILT, little Organics, trace iron-stained Clay, trace(-) medium Gravel, soft, moist to wet.	ML
						1		Grading from dark brown SILT, little iron-stained Clay to grey and iron-stained Clay, little Silt, trace Organics, trace (-) fine to medium Shale fragments and Gravel, soft to medium stiff.	ML-CL
						1.8			
						2.0		No Recovery	-
.02	5 12 10 8	2.00	1.9	0	BGD	2		AA, (0.7-1.8').	ML-CL
						2.4			
						2.7		Grading from AA, (0.7-1.8') to Silt, little very fine to fine Sand, some fine to coarse grey Shale fragments and Gravel, trace Clay, medium stiff, moist.	ML
						3		Dark brown SILT, some fine to coarse grey Shale fragments and Gravel, little(+) very fine to fine Sand, soft to medium stiff, saturated.	GM
						3.6			
						3.9		Grey iron-stained CLAY, some fine to coarse grey Shale fragments and Gravel, little Silt, medium stiff, moist.	GC
.03	7 7 9 13	2.00	1.7	0	BGD	4		No Recovery	ML
						4.3		Dark brown SILT, trace very fine to fine Sand, trace Clay, soft, moist to wet.	GM
						5		Dark brown very fine to fine SAND + SILT, some fine to coarse grey Shale fragments and Gravel, trace very coarse Gravel, loose, saturated.	
						5.7			
						6.0		No Recovery	-
.04	11 14 17 18	2.00	2.0	0	BGD	6		AA, (4.3-5.7').	GM
						6.3		Dark brown to olive grey SILT, little fine to medium grey Shale fragments, little very fine Sand, wet to saturated.	ML
						6.9		Dark brown very fine to fine SAND, some fine to coarse grey Shale fragments and Gravel, little Silt, soft, saturated.	SP
						7		Dark brown to olive grey SILT + CLAY, some fine to medium grey Shale fragments, moist to wet.	ML-CL
						7.3		Fine to coarse grey SHALE fragments + light brown SILT, trace Clay, loose, saturated.	GM
						7.6		Slightly weathered, fractured, iron-stained grey SHALE, trace light brown Clay, loose, saturated.	-
						8			
.05	23 24 29 65	1.90	1.9	0	BGD	8			
						9			
						9.9			
						10			

NOTES: No samples were collected for chemical analysis.

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Romulus, New York

LOG OF BORING MW58-1

PROJECT: **EIGHT MODERATELY LOW PRIORITY AOCs**
PROJECT NO: **720519-01000**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**

GROUND SURFACE ELEVATION: **617.9**
INSPECTOR: **KK**
CHECKED BY: **KK**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.06	50 100/.2	0.70	0.7	0	BGD	10.0 10.5 10.7 11		Finely laminated, fractured SHALE, loose, saturated. Grey Clay + fine to coarse grey SHALE fragments, soft, saturated. No Recovery	

BORING TERMINATED AT 11'
AUGER REFUSAL

NOTES: No samples were collected for chemical analysis.

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Seneca Army Depot
Romulus, New York

LOG OF BORING MW58-1

LOG OF BORING NO. MW58-2

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
ASSOCIATED UNIT/AREA: SEAD-58
PROJECT NO: 720519-01000
DATE STARTED: 04/01/94
DATE COMPLETED: 04/01/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3" SPLIT SPOONS

DEPTH TO WATER (ft): 3.3
BORING LOCATION (N/E): 1000232.2 739160.9
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 614.9
DATUM: NAD 1983
INSPECTOR: KK
CHECKED BY: KK

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	1 3 4 4	2.00	1.6	0	BGD	0.3		Dark Brown SILT, little Organics, soft, wet to saturated.	ML
						0.8		AA, (0-0.3'), trace Organics, trace(-) very fine Shale fragments, soft, wet.	ML
						1		Grading from iron-stained CLAY + light brown SILT to grey, iron-stained CLAY, trace(-) fine to coarse grey Shale fragments, trace fine Sand throughout, medium stiff, moist.	ML-CL
						1.6		No Recovery	-
						2.0			
.02	9 11 15 18	2.00	1.7	0	BGD	2		AA, (0.75-1.6'), saturated.	~~ML-CL~~
						2.1		Olive grey, iron-stained CLAY, trace(+) fine to coarse grey Shale fragments and Gravel grading to some fine to coarse grey Shale fragments and Gravel, medium stiff to stiff, moist.	CL
						3			
						3.3		Fractured, weathered SHALE, trace grey iron-stained Clay, saturated.	-
						3.7		No Recovery	-
						4.0			
.03	15 20 24 28	2.00	2.0	0	BGD	4		Olive grey SILT + CLAY, trace very fine Sand, trace(+) fine to medium grey Shale fragments and Gravel, soft to medium stiff, wet.	ML-CL
						4.3		Light brown SILT, some fine to medium grey Shale fragments and Gravel, little Clay, trace very fine Sand, medium stiff to stiff, moist.	GM
						4.8		Light brown SILT, some fine to medium grey Shale fragments and Gravel, little(+) very fine Sand, trace Clay, medium stiff, moist.	GM
						5		Light brown SILT, little very fine Sand, little fine to medium grey Shale fragments and Gravel, trace fine Sand, trace coarse grey Shale fragments, loose to medium dense, saturated.	ML
						5.0		AA, (4.8-5').	GM
						5.7		Olive grey SILT, some very fine Sand, some fine to medium grey Shale fragments, wet.	GM
						6		Olive grey very fine SAND, little Silt, little fine to coarse grey Shale fragments, trace fine Sand, loose, saturated.	ML
						6.0		Olive grey SILT + very fine SAND, little fine grey Shale fragments, medium stiff, moist.	-
						6.2		No Recovery	-
.04	25 28 100/.2	1.20	1.2	0	BGD	7		Fractured grey SHALE, trace grey Clay, saturated.	-
						7.0		No Recovery	
						7.2			
						8			
						8.0			
.05	100/.2	0.20	0.2	0	BGD	8.2			
						9			
						10		BORING TERMINATED AT 9.6'	

NOTES: No samples were collected for chemical analysis.

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LOG OF BORING MW58-2

PROJECT: **EIGHT MODERATELY LOW PRIORITY AOCs**
PROJECT NO: **720519-01000**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**

GROUND SURFACE ELEVATION: **614.9**
INSPECTOR: **KK**
CHECKED BY: **KK**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
								AUGER REFUSAL	

NOTES: No samples were collected for chemical analysis.

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LOG OF BORING MW58-2

LOG OF BORING NO. MW58-3

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
ASSOCIATED UNIT/AREA: SEAD-58
PROJECT NO: 720519-01000
DATE STARTED: 04/02/94
DATE COMPLETED: 04/02/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3" SPLIT SPOONS

DEPTH TO WATER (ft): 3.5
BORING LOCATION (N/E): 1000163.5 738946.0
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 610.3
DATUM: NAD 1983
INSPECTOR: KK
CHECKED BY: KK

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	1 3 8 30	2.00	1.8	0	BGD	0.9		Dark brown SILT, trace Organics, soft, moist.	ML
						1		Grey, iron-stained CLAY, some fine to medium grey Shale fragments, little Silt, trace coarse grey Shale fragments, medium stiff, wet.	ML-CL CL
						1.8			
						2.0		No Recovery	-
.02	12 11 8 12	2.00	1.7	0	BGD	2		Olive grey CLAY, iron-stained, little Silt, little(-) fine to medium grey Shale fragments and gravel, medium stiff, moist.	CL
						2.5		Olive grey CLAY, iron-stained, some grey, highly weathered Shale fragments, little(+) fine grey Shale fragments and Gravel, medium stiff, moist.	GC
						3			
						3.3		Olive grey CLAY + SILT, little very fine to fine Sand, little grey Shale fragments, medium stiff, moist to wet.	ML-CL GM
						3.7		No Recovery	-
NA	75 100/.4	0.90	0	0	NA	4			
						5			
						6.0			
.03	100/.2	0.20	0.2	0	BGD	6		SHALE and GRANITE fragments, dry.	-
						6.2		No Recovery	-
						7			
						8.0			
.04	100/.1	0.10	0.1	0	BGD	8		Fractured SHALE, fine Shale fragments, loose, saturated.	-
						8.1		No Recovery	-
						9			
						10			
						10.0			

NOTES: No samples were collected for chemical analysis.

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LOG OF BORING MW58-3

PROJECT: **EIGHT MODERATELY LOW PRIORITY AOCs**
PROJECT NO: **720519-01000**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**

GROUND SURFACE ELEVATION: **610.3**
INSPECTOR: **KK**
CHECKED BY: **KK**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.05	100/.2	0.20	0.2	0	BGD	10.2		Finely laminated, brittle grey SHALE, saturated.	-
								No Recovery	-
								BORING TERMINATED AT 10.5' SPOON REFUSAL	

NOTES: No samples were collected for chemical analysis.

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LOG OF BORING MW58-3

LOG OF BORING NO. MW58-4

PROJECT: EIGHT MODERATELY LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
\SSOCIATED UNIT/AREA: SEAD-58
PROJECT NO: 720519-01000
DATE STARTED: 04/04/94
DATE COMPLETED: 04/04/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3" SPLIT SPOONS

DEPTH TO WATER (ft): 3.1
BORING LOCATION (N/E): 999963.8 739060.1
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 612.8
DATUM: NAD 1983
INSPECTOR: KK,LR
CHECKED BY: KK

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	1 3 4 4	2.00	1.5	0	BGD	0.8		Dark brown SILT, little Organics, trace(-) fine Gravel, soft, wet to saturated.	ML
						1		Grading from dark brown SILT, trace(+) iron-stained grey Clay, trace(+) Silt, trace Organics throughout, soft to medium stiff, moist.	ML
						1.5		No Recovery	-
						2.0			
.02	3 4 5 5	2.00	1.6	0	BGD	2		AA, (0.8-1.5'), wet.	ML
						2.5		Olive grey SILT + CLAY, little very fine Sand, little fine to medium grey Shale fragments and Gravel, medium stiff to soft, wet to saturated.	ML-CL
						3		Olive grey SILT, some very fine to fine Sand, little fine to medium grey Shale fragments and Gravel, loose, saturated.	ML
						3.1		No Recovery	-
						3.6			
						4.0			
.03	3 5 36 59	2.00	1.7	0	BGD	4		Grey, iron-stained CLAY, trace coarse Gravel, medium stiff, wet.	CL
						4.2		Grey, iron-stained CLAY, little very fine Sand, little medium to coarse Gravel, trace fine grey Shale fragments, soft, saturated.	CL
						4.7		Fractured, slightly weathered grey SHALE fragments, trace grey Silt, saturated.	-
						5			
						5.7		No Recovery	-
						6.0			
.04	72 40 51 100/.3	1.80	1.8	0	BGD	6		Olive grey SILT, some fine grey Shale fragments, soft, saturated.	GM
						6.2		Fractured, slightly weathered grey SHALE, trace Silt, saturated.	-
						7			
						7.2		Olive grey CLAY, some highly weathered medium grey Shale fragments, medium stiff to stiff, saturated.	GC
						7.6		Slightly weathered grey SHALE, dry.	-
						7.8		No Recovery	-
.05	55 100/.1	0.60	0.6	0	BGD	8		Fine grey SHALE fragments + olive grey SILT, saturated.	-
						8.0		Fractured, weathered grey SHALE, trace olive grey Silt, saturated.	-
						8.3		No Recovery	-
						8.6			
						9			
						10		BORING TERMINATED AT 9.5'	

NOTES: No samples were collected for chemical analysis.

PROJECT: **EIGHT MODERATELY LOW PRIORITY AOCs**
PROJECT NO: **720519-01000**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**

GROUND SURFACE ELEVATION: **612.8**
INSPECTOR: **KK,LR**
CHECKED BY: **KK**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance	Sample Recovery	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
								AUGER REFUSAL	

NOTES: No samples were collected for chemical analysis.

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LOG OF BORING MW58-4

LOG OF BORING NO. MW62-1

PROJECT: SEVEN LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
ASSOCIATED UNIT/AREA: SEAD-62
PROJECT NO: 720518-01000
DATE STARTED: 03/28/94
DATE COMPLETED: 03/28/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3" SPLIT SPOONS

DEPTH TO WATER (ft): 5.7
BORING LOCATION (N/E): 986972.2 753046.3
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 751.3
DATUM: NAD 1983
INSPECTOR: FO
CHECKED BY: FO

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
								This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.	
.01	1 2 5 8	2.00	1.7	0	BGD	0.4		Brown SILT + organic material, wet to saturated.	OL
						0.9		Brown SILT, little organic material, wet to saturated.	ML
						1		Gray-brown-yellow CLAY, little Silt, trace organic material, trace very fine Sand, trace fine Shale fragments, moist to wet.	CL
						1.7			
						2.0		No Recovery	-
.02	13 18 16 20	2.00	1.6	0	BGD	2		Gray-brown CLAY + SILT, trace very fine Sand, trace fine to medium Shale fragments, medium stiff, moist.	ML
						2.9			
						3		AA and weathered Shale.	-
						3.4			
						3.6		Gray-brown SILT + CLAY + very fine SAND, moist.	ML
						4.0		No Recovery	-
.03	16 32 28 31	2.00	1.7	0	BGD	4		Dark gray fractured SHALE, wet to saturated.	-
						4.3			
						5		Light brown SILT, little Clay, little fine to medium Shale fragments, medium stiff, moist.	ML
						5.7			
						6.0		No Recovery	-
.04	100/.2	0.20	0.2	0	BGD	6		AA(4.3'-5.7') some fractured Shale, saturated.	ML
						6.2		No Recovery	-
						7			
						8			
								BORING TERMINATED AT 8.1' AUGER REFUSAL	

NOTES: Bottom of overburden at 6.2'. No samples were collected for chemical analysis. Lithology for (6.2-8.1) was determined from the drill cuttings while augering to refusal.

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LOG OF BORING MW62-1

LOG OF BORING NO. MW62-2

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**
ASSOCIATED UNIT/AREA: **SEAD-62**
PROJECT NO: **720518-01000**
DATE STARTED: **06/27/94**
DATE COMPLETED: **06/27/94**
DRILLING CONTRACTOR: **EMPIRE SOILS INVESTIGATIONS**
DRILLING METHOD: **HOLLOW STEM AUGER**
SAMPLING METHOD: **2" SPLIT SPOONS**

DEPTH TO WATER (ft): **9.2**
BORING LOCATION (N/E): **986879.4 752433.9**
REFERENCE COORDINATE SYSTEM: **New York State Plane**
GROUND SURFACE ELEVATION (ft): **747.5**
DATUM: **NAD 1983**
INSPECTOR: **KK**
CHECKED BY: **FO**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
								This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.	
.01	1 2 2 3	2.00	1.2	0	BGD	0.5		Dark brown SILT and CLAY, little Organics, soft, moist.	ML
						1 1.2		Light gray CLAY, trace Organics, soft moist, iron stained.	CL
						2.0		No Recovery	-
.02	6 15 90 10	2.00	1.1	0	BGD	2 2.3		AA(.5-1.2')	CL
						2.9		Light gray CLAY, little Silt, little very fine to fine gray, tan, and dark brown highly weathered Shale fragments, stiff, moist.	CL
						3 3.1		Tan CLAY, trace Silt, soft, moist.	CL
						4.0		No Recovery	-
.03	6 20 31 27	2.00	1.5	0	BGD	4 4.8		Light brown SILT, some very fine Sand, little fine gray Shale fragments, trace medium gray Shale fragments, little iron staining, medium stiff, moist.	ML
						5 5.2		Gray fractured SHALE, slightly weathered, dry, little iron staining.	-
						5.5		AA, (4-4.8').	ML
						6.0		No Recovery	-
.04	55 58 62 48	2.00	2	0	BGD	6 6.6		AA (5.2-5.5'), some gray fine to coarse Shale fragments.	ML
						7 7.5		Light brown SILT and very fine SAND, some fine to coarse gray Shale fragments, medium stiff, moist, little iron staining.	ML
						7.8		Light brown SILT and gray fractured SHALE, moist.	ML
.05	20 70 72 100/	1.70	1.7	0	BGD	8 8.4		Gray-brown CLAY and SILT, little fine to coarse gray Shale fragments, medium stiff, moist.	ML
						9.0		Gray-brown SILT and very fine SAND, little iron staining, little fine to medium gray Shale fragments, medium stiff, wet.	SM
						9 9.4		Very fine to medium SAND, little Shale fragments, saturated.	SP
						9.6		Fractured SHALE, little iron staining, saturated.	-
						9.7		AA(8.4-9')	-
						10			

NOTES: Boring was drilled approximately 10' west of boring MW62-2A. No samples were collected for chemical analysis. Bottom of overburden at 9.7'.

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LOG OF BORING MW62-2

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT NO: **720518-01000**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**

GROUND SURFACE ELEVATION: **747.5**
INSPECTOR: **KK**
CHECKED BY: **FO**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.	USCS
								DESCRIPTION	
								BORING TERMINATED AT 9.8' AUGER REFUSAL	

NOTES: Boring was drilled approximately 10' west of boring MW62-2A. No samples were collected for chemical analysis. Bottom of overburden at 9.7'.

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LOG OF BORING MW62-2

LOG OF BORING NO. MW62-2A

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**
ASSOCIATED UNIT/AREA: **SEAD-62**
PROJECT NO: **720518-01000**
DATE STARTED: **06/25/94**
DATE COMPLETED: **06/25/94**
DRILLING CONTRACTOR: **EMPIRE SOILS INVESTIGATIONS**
DRILLING METHOD: **HOLLOW STEM AUGER**
SAMPLING METHOD: **2" SPLIT SPOONS**

DEPTH TO WATER (ft): **NA**
BORING LOCATION (N/E):
REFERENCE COORDINATE SYSTEM: **New York State Plane**
GROUND SURFACE ELEVATION (ft): **NA**
DATUM: **NAD 1983**
INSPECTOR: **KK**
CHECKED BY: **FO**

This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	1 2 2 3	2.00	1.2	0	BGD	0.5		Dark brown SILT and CLAY, little Organics, soft, moist.	ML
						1		Light gray CLAY, trace organics, stiff, moist,little iron staining.	CL
						1.2		No Recovery	-
						2.0			
.02	6 15 90 10	2.00	1.1	0	BGD	2		AA(.5-1.2')	CL
						2.3		Light gray CLAY, little Silt, little very fine to fine highly weathered gray, tan, and dark brown Shale fragments, stiff, moist.	CL
						2.9		Tan CLAY, trace Silt, soft, moist.	CL
						3		No Recovery	-
						3.1			
						4.0			
.03	9 17 20 30	2.00	2.0	0	BGD	4		Light brown SILT and very fine SAND, little iron-stained Clay, gray little very fine to medium Shale fragments, stiff, dry to moist.	ML
						5			
						6.0			
.04	90 100/.4	0.90	0.9	0	BGD	6		Light brown to olive gray very fine SAND, some Silt, little very fine to fine highly weathered gray Shale fragments, very stiff, slightly moist to moist, little iron staining.	SM
						7			
						8.0			
.05	100/.1	0.10	0	NA	NA	8		No Recovery.	-
								BORING TERMINATED AT 8.5'	

NOTES: Terminated boring at 8.5'- encountered a boulder. No water bearing zones were observed during drilling. No samples were collected for chemical analysis. MW62-2 was relocated 10' east of MW62-2A.

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LOG OF BORING MW62-2A

LOG OF BORING NO. MW62-3

PROJECT: SEVEN LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
ASSOCIATED UNIT/AREA: SEAD-62
PROJECT NO: 720518-01000
DATE STARTED: 06/27/94
DATE COMPLETED: 06/28/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 2" SPLIT SPOONS

DEPTH TO WATER (ft): 8.4
BORING LOCATION (N/E): 986348.3 752362.3
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 747.9
DATUM: NAD 1983
INSPECTOR: KK
CHECKED BY: FO

This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	1 2 4 5	2.00	1.2	0	BGD	0.5		Gray-brown SILT, little Clay, little organic, soft, wet.	ML
						1.2		Iron-stained, gray CLAY, little Silt, trace organics, medium stiff, moist.	CL
						2.0		No Recovery	-
.02	5 10 14 15	2.00	1.4	0	BGD	3.1		Gray, iron-stained CLAY, little highly weathered, very fine gray Shale fragments, medium stiff, moist, trace(-) Organics.	CL
						3.3		Gray-brown SILT and very fine SAND, some very fine to medium gray Shale fragments, stiff, dry to slightly moist.	ML
						3.4		AA, (2.7-3.1'), no fine medium gray Shale fragments.	ML
						4.0		No Recovery	-
.03	12 16 16 100/.2	1.70	1.5	0	BGD	4.4		AA (2.3-3.4')	ML
						5.2		Gray-brown SILT and CLAY grading to Silt and very fine Sand, trace Clay, trace(+) very fine to medium gray Shale fragments, medium stiff, moist.	ML
						5.5		Gray-brown, very fine SAND, little Silt, trace(+) very fine to medium weathered gray Shale fragments and Gravel, medium stiff, wet to saturated.	SM
						6.0		No Recovery	-
.04	26 38 32 30	2.00	1.2	0	BGD	6.7		Gray fractured SHALE, dry.	-
						7.2		Grading from SILT and very fine SAND, trace Clay to very fine SAND, little Silt, little coarse sand-sized gray Shale fragments, little fine to medium gray Shale fragments, medium stiff to soft, moist to wet.	ML
						8.0		No Recovery	-
.05	35 56 43 35	2.00	2.0	0	BGD	8.4		Grading from very fine SAND, little Silt, to very fine to fine SAND, some fine to coarse gray Shale fragments, trace Silt, loose, wet.	SM
						10.0		Alternating lenses of fine SAND and SILT, and gray fractured SHALE, saturated.	ML

NOTES: Bottom of overburden at 14.5'. No samples were collected for chemical analysis.

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LOG OF BORING MW62-3

PROJECT: **SEVEN LOW PRIORITY AOCs** GROUND SURFACE ELEVATION: **747.9**
PROJECT NO: **720518-01000** INSPECTOR: **KK**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY** CHECKED BY: **FO**

This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.06	19 42 52 100/.2	1.70	1.4	0	BGD	11 11.4		Light gray very fine to fine SAND, little Silt, little very fine to medium gray Shale fragments, loose, saturated.	SM
						12.0		No Recovery	-
.07	32 64 62 43	2.00	1.6	0	BGD	12 12.2 12.5 12.7 13 13.4 13.6 14.0		Fractured SHALE, saturated. AA, (10-11.4). Highly weathered, highly fractured SHALE, wet. Very fine to fine SAND, little very fine to fine gray Shale fragments, very dense, moist. Very fine to medium gray SHALE fragments, some fine Sand, very dense, moist. No Recovery	- SM - SP GM -
.08	31 38 100/.4	1.40	1.4	0	BGD	14 15 15.4		Alternating lenses of dark gray SILT and very fine SAND, some very fine to medium gray Shale fragments, little Clay, and gray fractured and weathered SHALE, saturated	ML
						16.0		No Recovery	-
.09	9 100/.4	0.90	0.4	0	BGD	16 16.2 16.5 17		Gray highly weathered, finely laminated SHALE, saturated. Highly weathered, finely laminated SHALE and SILT, soft, saturated. No Recovery	- - -
.10	100/.3	0.30	0.3	0	BGD	18.0 18 18.1		Gray fractured SHALE, saturated. Fractured SHALE, dry.	- -

BORING TERMINATED AT 18.3'

NOTES: Bottom of overburden at 14.5'. No samples were collected for chemical analysis.

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LOG OF BORING MW62-3

LOG OF BORING NO. MW64A-1

PROJECT: SEVEN LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
ASSOCIATED UNIT/AREA: SEAD-64A
PROJECT NO: 720518-01000
DATE STARTED: 04/02/94
DATE COMPLETED: 04/02/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3" SPLIT SPOONS

DEPTH TO WATER (ft): 6.0
BORING LOCATION (N/E): 992409.1 750892.2
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 745.8
DATUM: NAD 1983
INSPECTOR: FO
CHECKED BY: FO

This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	DESCRIPTION	USCS
.01	3 9 9 8	2.00	1.4	0	BGD	0.3	Brown SILT, little organic material, trace fine Shale fragments.	ML
						1.4	Light brown SILT, trace Clay, trace fine to coarse Shale fragments, loose, moist	ML
						2.0	No Recovery	-
.02	8 8 10 12	2.00	1.2	0	BGD	3.2	Light brown SILT, trace very fine to fine Shale fragments, trace coarse Shale fragments, trace very fine Sand (2.9-3.2'), loose, moist.	ML
						4.0	No Recovery	-
.03	8 19 21 16	2.00	1.6	0	BGD	4.2	Pink-brown SILT + CLAY, trace fine to medium Shale fragments, loose, moist to wet.	ML
						5.6	Gray-brown SILT, trace(+) fine to medium Shale fragments, trace weathered Shale, dry, dry to moist.	ML
						6.0	No Recovery	-
.04	82 100/.1	0.60	0.6	0	BGD	6.4	Light brown very fine SAND, some(-) Silt, trace very fine Shale fragments, loose, saturated.	SM
						6.6	Gray fractured, slightly weathered SHALE, wet to saturated.	-
						8.0	No Recovery	-
.05	47 100/.25	0.75	0.6	0	BGD	8.6	Gray highly fractured, weathered SHALE, wet between fracture planes.	-
							No Recovery	-

NOTES: Bottom of overburden at 6.4'. The following samples were collected for chemical analysis: MW64A-1.00(0-2"), MW64A-1.02(2'-3.2'), MW64A-1.03(4'-5.6').

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LOG OF BORING MW64A-1

PROJECT: **SEVEN LOW PRIORITY AOCs** GROUND SURFACE ELEVATION: **745.8**
PROJECT NO: **720518-01000** INSPECTOR: **FO**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY** CHECKED BY: **FO**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations. DESCRIPTION	USCS
.06	100/.2	0.20	0	0	BGD			No Recovery	
								BORING TERMINATED AT 10.7' AUGER REFUSAL	

NOTES: Bottom of overburden at 6.4'. The following samples were collected for chemical analysis: MW64A-1.00(0-2"), MW64A-1.02(2'-3.2'), MW64A-1.03(4'-5.6').

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LOG OF BORING MW64A-1

LOG OF BORING NO. MW64A-1A

PROJECT: SEVEN LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
ASSOCIATED UNIT/AREA: SEAD-64A
PROJECT NO: 720518-01000
DATE STARTED: 03/31/94
DATE COMPLETED: 03/31/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3" SPLIT SPOONS

DEPTH TO WATER (ft): 6.0
BORING LOCATION (N/E): 992205.5 750789.3
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 744.5
DATUM: NAD 1983
INSPECTOR: FO
CHECKED BY: FO

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
								This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.	
.01	2 6 10 9	2.00	1.4	0	BGD	0.7		Brown SILT, some organic material, trace medium Shale fragments, moist.	ML
						1		Brown SILT, little Clay, trace(+) Shale fragments, trace organic material, loose, moist.	ML
						1.4		No Recovery	-
						2.0			
.02	10 10 9 10	2.00	1.6	0	BGD	2		Light brown CLAY, some Silt, trace fine Shale fragments (bedded/horizontal fracture planes), moist.	CL
						3.0		Light brown SILT, trace very fine Shale, trace organic material, loose, dry to moist	ML
						3			
						3.6		No Recovery	-
						4.0			
.03	9 12 18 20	2.00	1	0	BGD	4		Light brown SILT, slightly weathered, fractured Shale at 5', dry to moist.	ML
						5.0		No Recovery	-
						5			
						6.0			
.04	24 12 8 10	2.00	0.3	0	BGD	6		Light brown SILT, some very fine Sand, trace weathered Shale, saturated at tip.	ML
						6.3		No Recovery	-
						7			
						8.0			
.05	54 72 72 81	2.00	1.8	0	BGD	8		Gray weathered SHALE, trace Silt + Clay, saturated.	-
						9.1		Weathered SHALE + SILT + CLAY, trace(+) banded iron staining, moist.	-
						9			
						9.8			
						10			

NOTES: Bottom of overburden at 6.3'. No samples were collected for chemical analysis.

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LOG OF BORING MW64A-1A

LOG OF BORING NO. MW64A-2

PROJECT: SEVEN LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
ASSOCIATED UNIT/AREA: SEAD-64A
PROJECT NO: 720518-01000
DATE STARTED: 04/01/94
DATE COMPLETED: 04/01/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3" SPLIT SPOONS

DEPTH TO WATER (ft): 5.3
BORING LOCATION (N/E): 992447.6 750496.9
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 739.2
DATUM: NAD 1983
INSPECTOR: FO
CHECKED BY: FO

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
								This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.	
.01	3 6 8 10	2.00	0.4	0	BGD	0.4		Brown SILT, little organic material, trace fine Gravel, gray Shale at tip of spoon.	ML
								No Recovery	-
						1			
						2.0			
.02	9 9 15 10	2.00	1.3	0	BGD	2		Light brown SILT, some Clay, trace fine Shale fragments, medium stiff, moist	ML
						2.9			
						3		Light brown SILT + very fine SAND, trace(+) Clay, saturated. Fine Shale + coarse Gravel at tip, saturated, wet to saturated at: (2.2-2.8), (2.9-3.3).	ML
						3.3		No Recovery	-
						4.0			
.03	6 8 11 50	2.00	1.6	0	BGD	4		Light brown very fine SAND + SILT, trace Shale fragment, loose, wet with trace saturated lenses.	ML
						4.9			
						5		AA, (4-4.9') trace fine to medium Shale fragments, wet to saturated.	ML
						5.3			
						5.6		Dark gray, very fractured, slightly weathered SHALE, trace iron staining, saturated.	-
						6.0		No Recovery	-
.04	62 100/.4	0.90	0.9	0	BGD	6		AA(5.3'-5.6'), fracture planes filled with gray-brown Clay, saturated.	-
						6.9			
						7		No Recovery	-
						8.0			
.05	100/.2	0.20	.2	0	BGD	8		Dark gray fractured SHALE.	-
								BORING TERMINATED AT 8.2' AUGER REFUSAL	

NOTES: Bottom of overburden at 5.3'. No samples were collected for chemical analysis.

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LOG OF BORING MW64A-2

LOG OF BORING NO. MW64A-3

PROJECT: SEVEN LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
ASSOCIATED UNIT/AREA: SEAD-64A
PROJECT NO: 720518-01000
DATE STARTED: 04/01/94
DATE COMPLETED: 04/01/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3" SPLIT SPOONS

DEPTH TO WATER (ft): 4.0
BORING LOCATION (N/E): 992302.2 750529.2
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 737.8
DATUM: NAD 1983
INSPECTOR: FO
CHECKED BY: FO

This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	1 2 5 6	2.00	1.1	0	BGD	0.6		Brown SILT, little organic material, trace fine Shale fragments, loose, wet.	ML
						1.1		AA, light brown with trace organic material.	ML
						2.0		No Recovery	-
.02	7 8 8 12	2.00	1.7	0	BGD	3.3		Gray-brown SILT, trace(+) Clay, very fine Shale fragments, trace fine to medium Shale, trace(-) organic material, loose, trace wet lenses.	ML
						3.7		Gray-brown SILT, little fine to medium Shale fragments, trace very fine Sand, trace weathered Siltstone (3.3-3.5'), loose, wet to saturated.	ML
						4.0		No Recovery	-
.03	53 100/.15	0.65	0.6	0	BGD	4.6		Dark gray, highly fractured, weathered SHALE, trace iron staining, trace fossils, trace Silt + Clay between fracture planes, saturated.	-
						6.0		No Recovery	-
.04	50 100/.15	0.65	0.5	0	BGD	6.3		Gray, very fractured + moderately weathered SHALE, little gray Silt + Clay, wet.	-
						6.5		Gray, highly fractured + very weathered SHALE + SILT + CLAY, trace(+) mottling, moist to wet.	-
						8.0		No Recovery	-
.05	50 100/.2	0.70	0.5	0	BGD	8.5		Gray, highly weathered SHALE, wet to saturated between fracture plane.	-
								No Recovery	-
								BORING TERMINATED AT 8.7'	

NOTES: Bottom of overburden at 4'. No samples were collected for chemical analysis.

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LOG OF BORING MW64A-3

LOG OF BORING NO. MW64B-1

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**
ASSOCIATED UNIT/AREA: **SEAD-64B**
PROJECT NO: **720518-01000**
DATE STARTED: **05/13/94**
DATE COMPLETED: **05/14/94**
DRILLING CONTRACTOR: **EMPIRE SOILS INVESTIGATIONS**
DRILLING METHOD: **HOLLOW STEM AUGER**
SAMPLING METHOD: **3" SPLIT SPOONS**

DEPTH TO WATER (ft): **8.4**
BORING LOCATION (N/E): **985851.5 748724.3**
REFERENCE COORDINATE SYSTEM: **New York State Plane**
GROUND SURFACE ELEVATION (ft): **705.9**
DATUM: **NAD 1983**
INSPECTOR: **FO**
CHECKED BY: **FO**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
								This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.	
.01	1 2 4 5	2.00	1.6	0	BGD	0.6		Brown SILT, some organic material, trace very fine Sand, loose, moist, saturated at .55-.6'.	ML
						1.2		Gray-brown CLAY, little Silt, trace organic material, trace fine Shale fragments, wet to saturated.	CL
						1.6		Olive gray-brown CLAY, some weathered, fractured Shale, trace Silt, stiff, moist. Slightly plastic.	CL
								No Recovery	-
.02	9 21 25 30	2.00	0	0	BGD	4.0			
.03	10 17 20 22	2.00	1.9	0	BGD	5.9		Light brown SILT, little(-) fine to medium Shale fragments, trace very fine Sand, trace weathered Sandstone, stiff, dry.	ML
.04	25 30 21 22	2.00	1.8	0	BGD	6.0		No Recovery	
						7.2		AA(4'-5.9') no weathered Sandstone.	ML
						7.6		Light brown SILT, trace(+) Clay, trace fine to medium Shale fragments, stiff, dry.	ML
						7.8		Reddish brown-brown CLAY, little very fine Sand, trace Silt, trace fine to medium Shale.	CL
.05	44 65 75 100/.4	2.00	1.8	0	BGD	8.0		No Recovery	-
						9.0		Light brown very fine SAND, little Silt, little fine Gravel (8.4-8.7'), trace fine to coarse Shale fragments, trace cobble, medium stiff, saturated.	SM
						9.8		Light brown SILT, little very fine Sand, trace(+) fine to medium Shale, trace cobble, stiff, wet to saturated.	ML

NOTES: Bottom of overburden at 14'. No samples were collected for chemical analysis.

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LOG OF BORING MW64B-1

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT NO: **720518-01000**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**

GROUND SURFACE ELEVATION: **705.9**
INSPECTOR: **FO**
CHECKED BY: **FO**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
								This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.	
.06	18 31 36 75	2.00	2.0	0	BGD	10.0 11.0		Light brown very fine SAND, some Silt, trace fine to medium Shale, trace fine Gravel, medium stiff, saturated.	SM
						11		Light brown-gray SILT, some very fine Sand, trace fine to medium Shale fragments, trace(-) coarse Gravel, medium stiff, saturated.	ML
						11.7 12.0		Gray SILT + CLAY, trace fine to medium Shale, trace(-) coarse Shale fragments, stiff, wet to saturated.	ML
.07	31 37 40 52	2.00	1.3	0	BGD	12			ML
						12.4		Gray SILT + CLAY, trace(-) fine to medium Shale fragments, very stiff, dry.	-
						12.7		Dark gray weathered, very fractured SHALE, saturated.	ML
						13		AA, (12-12.4'), trace(+) fine to medium Shale fragments.	-
						13.3 14.0		No Recovery	-
.08	100/.3	0.30	0.3	0	BGD	14		Dark gray very fractured SHALE, saturated.	-
						14.3		No Recovery	-
						15			
						16			
								BORING TERMINATED AT 16'	

NOTES: Bottom of overburden at 14'. No samples were collected for chemical analysis.

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LOG OF BORING MW64B-1

LOG OF BORING NO. MW64B-2

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**
ASSOCIATED UNIT/AREA: **SEAD-64B**
PROJECT NO: **720518-01000**
DATE STARTED: **05/14/94**
DATE COMPLETED: **05/15/94**
DRILLING CONTRACTOR: **EMPIRE SOILS INVESTIGATIONS**
DRILLING METHOD: **HOLLOW STEM AUGER**
SAMPLING METHOD: **3" SPLIT SPOONS**

DEPTH TO WATER (ft): **8.3**
BORING LOCATION (N/E): **985864.1 748302.3**
REFERENCE COORDINATE SYSTEM: **New York State Plane**
GROUND SURFACE ELEVATION (ft): **702.2**
DATUM: **NAD 1983**
INSPECTOR: **FO**
CHECKED BY: **FO**

This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	3 5 7 7	2.00	1.8	0	BGD	0.4		Brown SILT, little organic material, trace very fine Sand, trace fine Shale fragments, loose, moist.	ML
						0.6		AA, fine Shale fragments, loose, moist.	ML
						1.2		Brown SILT, trace weathered fine Shale fragments and organic material, medium stiff, moist.	ML
						1.7		Tan, very fine SAND, some(-) Silt, trace mottling, medium stiff, wet to saturated.	SM
						1.9		Brown-gray CLAY, trace(+) Silt, trace weathered Shale fragments, stiff, moist.	CL
.02	8 18 15 17	2.00	1.7	0	BGD	2.0		No Recovery	ML
						3.7		Gray-brown SILT, trace Clay, trace fine to medium Shale fragments, trace fine Gravel, stiff, dry to damp.	
						4.0		No Recovery	-
.03	10 20 18 20	2.00	1.8	0	BGD	4.4		AA, (2-3.7').	ML
						4.6		Gray, very weathered, fractured SHALE.	-
						5.8		Light brown SILT, little very fine Sand, trace(+) fine to medium Shale fragments, medium stiff, moist to wet.	ML
						6.0		No Recovery	-
.04	38 34 44 50	2.00	1.9	0	BGD	7.9		AA, (4.6-5.8'). Saturated lens from 7.3'-7.4' Coarse gravel from 7.4'-7.6'+ 7.7'-7.9'	ML
						8.0		No Recovery	ML
.05	30 60 40 35	2.00	1.7	0	BGD	8.3		AA, fine Shale, wet.	-
						8.9		Black, very fractured, weathered SHALE, saturated.	
						9.4		Light brown SILT, trace very fine Sand, trace Shale fragments, moist.	ML
						9.5		Light brown very fine SAND + SILT, trace fine Shale fragments, wet.	ML
						9.7		AA, Fractured Shale, wet to saturated.	-
						10			

NOTES: Bottom of overburden at 10.8'. No samples were collected for chemical analysis.

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LOG OF BORING MW64B-2

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT NO: **720518-01000**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**

GROUND SURFACE ELEVATION: **702.2**
INSPECTOR: **FO**
CHECKED BY: **FO**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
								This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.	
.06	28 34 66 100/.3	1.70	1.5	0	BGD	10.0		No Recovery	ML
						10.8		Light brown SILT, little fine to medium weathered Shale fragments, trace very fine Sand, medium stiff, wet.	
						11		Gray, weathered SHALE, wet.	-
						11.4			
						11.5		AA(10'-10.8')	ML
								No Recovery	-
.07	100/.3	0.30	0	NA	NA	12			
						13			
						14		BORING TERMINATED AT 14'	

NOTES: Bottom of overburden at 10.8'. No samples were collected for chemical analysis.

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LOG OF BORING MW64B-2

LOG OF BORING NO. MW64B-3

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**
ASSOCIATED UNIT/AREA: **SEAD-64B**
PROJECT NO: **720518-01000**
DATE STARTED: **05/12/94**
DATE COMPLETED: **05/13/94**
DRILLING CONTRACTOR: **EMPIRE SOILS INVESTIGATIONS**
DRILLING METHOD: **HOLLOW STEM AUGER**
SAMPLING METHOD: **3" SPLIT SPOONS**

DEPTH TO WATER (ft): **16**
BORING LOCATION (N/E): **986003.6 748385.3**
REFERENCE COORDINATE SYSTEM: **New York State Plane**
GROUND SURFACE ELEVATION (ft): **709.2**
DATUM: **NAD 1983**
INSPECTOR: **FO**
CHECKED BY: **FO**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
								This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.	
.01	5 7 7 9	2.00	1.8	0	BGD	1 1.5		Light brown SILT, little very fine Sand, trace organic material and fine to medium Shale fragments, loose, moist. FILL	ML
						1.8		AA, no very fine Sand. FILL	ML
						2.0		No Recovery	-
.02	11 13 12 10	2.00	0.9	0	BGD	2 2.4		SHALE Cobble. FILL	-
						2.6		Light brown very fine to fine SAND, little Silt, loose, moist. FILL	SM
						2.9		Light brown-gray CLAY, little Silt, trace fine to medium Shale fragments, mottled, medium stiff, moist. FILL	CL
						3		No Recovery	-
						4.0			
.03	8 8 13 14	2.00	1.6	0	BGD	4 5.1		Light brown SILT, some Clay, little(-) very fine Sand, trace very fine to medium Shale fragments, dense, moist. FILL	ML
						5 5.6		AA,gray-brown Silt, medium stiff to stiff, dry to moist.	ML
						6.0		No Recovery	-
.04	13 10 8 11	2.00	1.7	0	BGD	6 6.5		Gray-brown very fine SAND + SILT, trace(+) Clay, trace fine to medium Shale fragments, loose, dry. BOTTOM OF FILL	ML
						7.0		Light brown-reddish (iron-stained) very fine SAND + SILT + organic material, loose, dry.	ML
						7 7.4		Tan-yellow very fine SAND + SILT + CLAY, trace medium coarse Gravel, medium stiff, moist.	ML
						7.7		Tan-yellow-pink-gray CLAY, little Silt, trace(+) very fine Sand, little mottling, stiff, moist.	CL
						8.0			-
.05	7 8 21 25	2.00	1.6	0	BGD	8		No Recovery	CL
						9		Light brown-gray CLAY, some Silt, trace organic material, trace fine to medium Shale fragments, little mottling, trace weathered Shale fragments, stiff, dry to moist, (moist from 8.4-9').	
						9.6			
						10 10.0		No Recovery	-

NOTES: Bottom of fill at 6.5'. Bottom of overburden at 21.2'. No samples were collected for chemical analysis.

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LOG OF BORING MW64B-3

PROJECT: **SEVEN LOW PRIORITY AOCs** GROUND SURFACE ELEVATION: **709.2**
PROJECT NO: **720518-01000** INSPECTOR: **FO**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY** CHECKED BY: **FO**

This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.06	21 23 35 41	2.00	2.0	0	BGD	10.6		AA, (8-9.6').	CL
						11		Light brown-gray SILT + CLAY, trace(+) very fine Sand, trace fine to medium Shale fragments, stiff, damp.	ML
						11.5			
						11.8		Light brown SILT + very fine SAND, trace fine to medium Shale fragments, medium stiff, moist.	ML
						12.0			ML
.07	61 65 100/.4	1.40	1.4	0	BGD	12		AA, wet to saturated.	SM
								Light brown very fine SAND, little medium to coarse Shale fragments, little(-) Silt, trace limestone fragments, trace black weathered Shale, medium stiff, moist.	
						13			
						13.4		No Recovery	-
						14.0			
.08	31 100/.4	0.90	0.8	0	BGD	14		Light brown-gray very fine SAND + SILT + dark gray fractured SHALE.	ML
						14.8		No Recovery	-
						15			
						16.0			
.09	21 31 42 50	2.00	1.8	0	BGD	16		Gray-brown very fine SAND, some(-) Silt, little very fine to coarse Shale, loose, saturated.	SM
						17			
						17.4		Gray-brown very fine SAND + SILT, trace(+) fine to coarse Shale fragments, medium stiff, moist to wet	ML
						17.8		No Recovery	-
.10	100/.2	0.20	0	NA	NA	18			
						19			
						20.0			
.11	35 68 100/.2	1.20	1.2	0	BGD	20		Gray-brown SILT, some very fine Sand, trace(+) fine to medium Shale fragments, medium stiff, moist to wet, saturated from 20.5-20.6').	ML
						20.7		Dark gray, weathered, fractured SHALE, saturated.	-
						21.0			
						21		Gray-brown SILT, trace(+) very fine Sand, trace fine to medium Shale fragments, stiff, moist.	ML
						21.2		No Recovery	-
						22.0			
.12	100/.2	0.20	0.1	0	BGD	22		Dark gray, weathered, fractured SHALE.	-
						22.1			-

NOTES: Bottom of fill at 6.5'. Bottom of overburden at 21.2'. No samples were collected for chemical analysis.

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Romulus, New York

LOG OF BORING MW64B-3

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT NO: **720518-01000**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**

GROUND SURFACE ELEVATION: **709.2**
INSPECTOR: **FO**
CHECKED BY: **FO**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
						23		This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.	
								No Recovery	
.13	100/.2	0.20	0	NA	NA	24			
						25			
						26.0			
.14	100/.2	0.20	0.2	0	BGD	26		Dark gray fractured SHALE.	
								BORING TERMINATED AT 26.2'	

NOTES: Bottom of fill at 6.5'. Bottom of overburden at 21.2'. No samples were collected for chemical analysis.

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LOG OF BORING MW64B-3

LOG OF BORING NO. MW64C-1

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**
ASSOCIATED UNIT/AREA: **SEAD-64C**
PROJECT NO: **720518-01000**
DATE STARTED: **05/16/94**
DATE COMPLETED: **05/16/94**
DRILLING CONTRACTOR: **EMPIRE SOILS INVESTIGATIONS**
DRILLING METHOD: **HOLLOW STEM AUGER**
SAMPLING METHOD: **3" SPLIT SPOONS**

DEPTH TO WATER (ft): **10**
BORING LOCATION (N/E): **984365.9 753991.2**
REFERENCE COORDINATE SYSTEM: **New York State Plane**
GROUND SURFACE ELEVATION (ft): **764.2**
DATUM: **NAD 1983**
INSPECTOR: **FO**
CHECKED BY: **FO**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
								This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.	
.01	3 3 6 9	2.00	1.6	0	BGD	0.5		Brown SILT, some organic material, trace very fine Sand, loose, moist.	ML
						1		Gray-brown CLAY + SILT, trace fine Shale fragments, trace very fine Sand, trace organic material, cobble at the tip of spoon, medium stiff to stiff, moist. Little plasticity.	ML
						1.6			
						2.0		No Recovery	-
.02	11 15 17 21	2.00	2.0	0	BGD	2		Gray brown CLAY + SILT, trace fine to coarse Shale fragments, trace(+) very fine Sand, dry.	ML
						2.4			
						2.7		Gray, weathered, fractured SHALE, wet.	-
						3		Gray-brown SILT, little Clay, trace(+) fine to coarse Shale fragments, trace very fine Sand, medium stiff, moist.	ML
						3.5			
						3.7		Shale Cobble.	-
						4.0		AA, (2.7-3.5').	ML
.03	14 23 39 43	2.00	2.0	0	BGD	4		Light brown SILT, little very fine Sand, trace fine to medium Shale fragments, trace cobbles at (5.3 + 5.9'), medium stiff, moist.	ML
						5			
						6.0			
.04	67 78 71 50	2.00	2.0	0	BGD	6		AA, No cobbles, trace coarse Shale fragments, trace fine Gravel, stiff, dry.	ML
						6.6			
						6.8		Very fine to fine SAND, trace fine Shale fragments, moist to wet.	SP
						7		AA, (6-6.6').	ML
						8.0			
.05	23 72 98 59	2.00	2.0	0	BGD	8		Light brown SILT, some very fine Sand, trace(+) fine to medium Shale, trace cobbles, medium stiff, moist.	ML
						8.6			
						9		Light brown SILT, little very fine Sand, little(-) fine to medium Shale, trace(-) coarse Shale fragments, stiff, damp to moist.	ML
						10			
						10.0			

NOTES: Bottom of overburden at 15'. No samples were collected for chemical analysis.

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LOG OF BORING MW64C-1

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT NO: **720518-01000**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**

GROUND SURFACE ELEVATION: **764.2**
INSPECTOR: **FO**
CHECKED BY: **FO**

This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.06	33 62 79 85	2.00	2.0	0	BGD	10.4		Light brown SILT + very fine SAND, trace fine to medium Shale fragments, trace(-) coarse Shale, loose, wet to saturated.	ML
						10.6		SHALE Cobble.	-
						11		Light gray-brown very fine SAND, some Silt, trace(+) fine to medium Shale, trace(-) limestone cobble, loose, damp to moist.	SM
.07	64 56 50 48	2.00	2.0	0	BGD	12.0 12			
						12.2		AA, trace fine Shale, saturated.	SM
						12.3		Dark gray, weathered, fractured SHALE, wet.	-
						13		Light gray-brown very fine SAND, some Silt, little fine to medium Shale fragments, trace Shale cobbles, loose, damp to wet.	SM
.08	30 44 100/.3	1.30	1.1	0	BGD	14.0 14			
						14.4		Dark gray, weathered + fractured SHALE, saturated.	-
						15.0		Gray-brown SILT, some very fine Sand, trace fine to medium Shale fragments, trace Shale cobble, loose, damp to moist.	ML
						15			
						15.1		Dark gray, weathered, fractured SHALE.	
								No Recovery	-
						16.0			
.09	100/.1	0.10	0.1	0	BGD	16		Dark gray, weathered SHALE, laminated, saturated.	
								BORING TERMINATED AT 16.1'	

NOTES: Bottom of overburden at 15'. No samples were collected for chemical analysis.

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LOG OF BORING MW64C-1

LOG OF BORING NO. MW64D-1

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**
ASSOCIATED UNIT/AREA: **SEAD-64D**
PROJECT NO: **720518-01000**
DATE STARTED: **03/28/94**
DATE COMPLETED: **03/28/94**
DRILLING CONTRACTOR: **EMPIRE SOILS INVESTIGATIONS**
DRILLING METHOD: **HOLLOW STEM AUGER**
SAMPLING METHOD: **3" SPLIT SPOONS**

DEPTH TO WATER (ft): **3.0**
BORING LOCATION (N/E): **993059.7 741523.1**
REFERENCE COORDINATE SYSTEM: **New York State Plane**
GROUND SURFACE ELEVATION (ft): **666.6**
DATUM: **NAD 1983**
INSPECTOR: **KK, LR**
CHECKED BY: **FO**

This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	1 2 6 8	2.00	1.5	0	BGD	1		Dark brown SILT, little organic, trace fine to medium Shale fragments and Gravel, soft, moist.	ML
						1.2			
						1.5		Light green-gray CLAY, iron staining, medium stiff, moist.	CL
						2.0		No Recovery	-
.02	9 18 40 40	2.00	1.7	0	BGD	2		Light olive gray CLAY, little fine to medium Shale fragments, trace Silt, soft, wet, iron staining.	CL
						2.7			
						3.0		Olive gray CLAY, some fine to medium Shale fragments, trace very fine Sand, trace Silt, very soft, wet to saturated.	CL
						3			GM
						3.7		Gray fractured, slightly weathered, SHALE, trace Silt, loose, saturated.	
						4.0		No Recovery	-
.03	30 39 100/.3	1.30	1.3	0	BGD	4		Gray fractured + weathered SHALE fragments and olive gray CLAY, trace very fine Sand, loose, saturated.	GC
						4.4		Gray fractured, SHALE, trace olive gray Clay, loose, saturated.	GC
						5.0			
						5			
						5.2		Light gray CLAY, iron staining, stiff, moist	CL
								Gray SHALE.	-

BORING TERMINATED AT 5.3'
AUGER REFUSAL

NOTES: Bottom of overburden at 3.0'. No samples were collected for chemical analysis.

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LOG OF BORING MW64D-1

LOG OF BORING NO. MW64D-2

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**
ASSOCIATED UNIT/AREA: **SEAD-64D**
PROJECT NO: **720518-01000**
DATE STARTED: **06/21/94**
DATE COMPLETED: **06/21/94**
DRILLING CONTRACTOR: **EMPIRE SOILS INVESTIGATIONS**
DRILLING METHOD: **HOLLOW STEM AUGER**
SAMPLING METHOD: **3" SPLIT SPOONS**

DEPTH TO WATER (ft): **3.6**
BORING LOCATION (N/E): **993638.6 740197.6**
REFERENCE COORDINATE SYSTEM: **New York State Plane**
GROUND SURFACE ELEVATION (ft): **633.7**
DATUM: **NAD 1983**
INSPECTOR: **KK, LR**
CHECKED BY: **FO**

This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	DESCRIPTION	USCS
.01	3 2 3 4	2.00	1.2	0	BGD	0.3	Dark brown SILT + very fine SAND, trace fine Gravel, some organics, soft, moist.	ML
						0.9	Brown SILT + CLAY, trace organics, very soft, moist to wet.	ML
						1.2	Tan-pink CLAY, little(-) brown Silt, trace fine Gravel, medium stiff, moist.	CL
						2.0	No Recovery	-
.02	3 5 5 6	2.00	2.0	0	BGD	3.3	AA (0.9-1.2'), yellow, red, pink, gray, light brown Clay, trace fine Gravel, trace medium Sand, medium stiff, moist.	CL
						3.4	Red + pink fine SAND, wet to saturated.	SP
						4.0	Brown-gray SILT + very fine SAND, little fine gray Shale fragments, little coarse Sand-sized gray Shale fragments, wet to saturated.	ML
.03	5 8 9 15	2.00	2.0	0	BGD	4.7	Gray fine to medium SHALE fragments + brown-gray very fine SAND, little Silt, loose, saturated.	GM
						5.1	Light gray CLAY + SILT, little fine gray Shale fragments, little coarse gray Shale fragments, soft, saturated.	ML
						6.0	Gray fine to coarse SHALE fragments + brown-gray, iron-stained SILT, loose, saturated.	GM
.04	21 38 45 59	2.00	1.3	0	BGD	6.4	Gray fine to medium SHALE fragments + gray SILT, saturated.	GM
						6.9	Gray highly fractured SHALE, trace gray Silt, saturated.	-
						7.3	AA, (6-6.4').	GM
						8.0	No Recovery	-
.05	100/.5	0.50	0.5	0	BGD	8.5	Gray coarse SHALE fragments + gray-brown CLAY + SILT, soft, saturated.	GM-GC
.06	100/.1	0.10	0	NA	NA		No Recovery	-
						9	BORING TERMINATED AT 9'	

NOTES: Bottom of overburden at 8.0'. No samples were collected for chemical analysis.

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LOG OF BORING MW64D-2

LOG OF BORING NO. MW64D-3

PROJECT: SEVEN LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
ASSOCIATED UNIT/AREA: SEAD-64D
PROJECT NO: 720518-01000
DATE STARTED: 06/20/94
DATE COMPLETED: 06/20/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 2" SPLIT SPOONS

DEPTH TO WATER (ft): 6.4
BORING LOCATION (N/E): 993017.4 740735.8
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 647.3
DATUM: NAD 1983
INSPECTOR: KK, LR
CHECKED BY: FO

This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	2 3 4 5	2.00	1.3	0	BGD	0.1		Dark brown SILT, some organics, soft, moist.	ML
								Grading from SILT + some Clay, to CLAY + some Silt, dark brown to tan, trace organics, trace(-) fine Gravel, soft, moist.	ML
						1			
						1.3		No Recovery	-
						2.0			
.02	8 10 15 17	2.00	1.6	0	BGD	2		AA (1.0-1.3'), tan Clay, some Silt, soft, iron-stained.	CL
						2.3		Tan-gray, heavily iron-stained CLAY, little Silt, trace organics, trace fine gray Shale fragments, stiff, dry.	CL
						2.9			
						3		Limestone Cobble.	-
						3.1		AA, (2.3-2.9'), some fine Sand, wet (3.2-3.4'), dry (3.4-3.6'), medium Shale fragments (3.6').	CL
						3.6		No Recovery	-
						4.0			
.03	16 20 20 20	2.00	2.0	0	BGD	4		Brown SILT + very fine SAND, some fine to medium gray Shale fragments, trace coarse Sand-sized gray Shale fragments, moist to wet.	ML
						5			
						5.7			
						6.0		AA, trace fine Shale fragments, loose, wet.	ML
.04	27 55 100/.4	1.40	1.4	0	BGD	6		Brown SILT + CLAY + gray fine to medium weathered SHALE fragments, stiff, moist, iron-stained.	GM-GC
						6.4		Gray weathered SHALE, trace Silt, loose, saturated.	-
						6.8		AA, (6.0-6.4').	ML
						7.0		Gray highly weathered SHALE, dry.	-
						7		No Recovery	-
						7.4			
								BORING TERMINATED AT 7.8'	

NOTES: Bottom of overburden at 7'. No samples were collected for chemical analysis.

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LOG OF BORING MW64D-3

LOG OF BORING NO. MW64D-4

PROJECT: SEVEN LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
ASSOCIATED UNIT/AREA: SEAD-64D
PROJECT NO: 720518-01000
DATE STARTED: 06/20/94
DATE COMPLETED: 06/20/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 2" SPLIT SPOONS

DEPTH TO WATER (ft): 3.5
BORING LOCATION (N/E): 992533.5 741082.2
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 659.7
DATUM: NAD 1983
INSPECTOR: KK, LR
CHECKED BY: FO

This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	DESCRIPTION	USCS
.01	4 7 9 12	2.00	1.5	0	BGD	0.4	Brown SILT + very fine SAND, little organics, trace(-) fine gray Shale fragments, soft, moist.	ML
						0.5	Gray fractured SHALE fragments, trace brown Silt, dry.	CL
						1.0	Red CLAY, little(-) brown Silt, trace organics, soft, moist.	
						1.3	Gray fractured SHALE fragments, dry.	-
						1.5	Fine to medium gray SHALE fragments + brown SILT + CLAY, trace very fine Sand, soft, moist.	GM-GC
						2.0	No Recovery	-
.02	40 38 15 12	2.00	1.9	0	BGD	2	AA, (1.3-1.5').	ML
						2.5	Gray highly weathered SHALE, dry. Also, .01 lense of light brown, moist Clay at (2.6'), (2.9'), and (3.2').	-
						3		
						3.5		
						3.9	Brown SILT, and very fine to fine Sand, little fine gray Shale fragments, soft, saturated.	ML
.03	6 7 9 8	2.00	1.7	0	BGD	4	No Recovery	
						4.3	Brown SILT, fine Sand and very fine Sand, little coarse Sand-sized gray Shale fragments, trace fine gray Shale fragments, soft, saturated.	ML SM
						4.6	Fine to coarse SAND, trace Shale fragments, trace Silt, loose, saturated.	GM
						4.8	SILT, very fine SAND + coarse SHALE fragments, loose, saturated.	GM
						5	AA, (4.3-4.6'), saturated.	GM
						5.2	AA, (5.2-5.7'), 4-4.3'), saturated.	
						5.7	No Recovery	-
						6.0	AA, (4.3-4.6), saturated.	GM
.04	9 14 12 18	2.00	2.0	0	BGD	6	Gray CLAY + fine to medium gray SHALE fragments, medium stiff, moist.	GC
						6.2	AA, (4.6-4.8'), wet to saturated.	GC
						6.4	Gray weathered + fractured SHALE, moist iron-stained.	-
						6.7	AA, (6.2-6.4'), iron-stained, moist.	CL
						6.9	Gray fractured SHALE, trace Silt, saturated.	-
						7	Gray highly weathered SHALE, dry to moist, trace iron staining.	-
						7.1		
						7.5		
.05	100/.3	0.30	0.3	0	BGD	8	No Recovery	-
						8.3		
						9	BORING TERMINATED AT 9.9'	

NOTES: Bottom of overburden at 7.5'. No samples were collected for chemical analysis.

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LOG OF BORING MW64D-4

LOG OF BORING NO. MW64D-5

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**
ASSOCIATED UNIT/AREA: **SEAD-64D**
PROJECT NO: **720518-01000**
DATE STARTED: **06/22/94**
DATE COMPLETED: **06/22/94**
DRILLING CONTRACTOR: **EMPIRE SOILS INVESTIGATIONS**
DRILLING METHOD: **HOLLOW STEM AUGER**
SAMPLING METHOD: **2" SPLIT SPOONS**

DEPTH TO WATER (ft): **6.2**
BORING LOCATION (N/E): **991371.4 740724.3**
REFERENCE COORDINATE SYSTEM: **New York State Plane**
GROUND SURFACE ELEVATION (ft): **651.0**
DATUM: **NAD 1983**
INSPECTOR: **KK, LR**
CHECKED BY: **FO**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
								This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.	
.01	2 2 4 7	2.00	1.3	0	BGD	0.4		Dark brown SILT, little organics, soft, moist.	ML
						1.0		Light brown SILT, little Clay, trace(-) fine gray Shale fragments, trace organics, soft, moist.	ML
						1.3		Gray brown SILT, soft, moist.	ML
						1.4		Gray limestone Cobble.	
						2.0		No Recovery	-
.02	12 18 15 14	2.00	2.0	0	BGD	2.6		Gray fine to medium SHALE fragments, medium to highly weathered, some light gray to light brown Silt + Clay, slightly moist.	GM-GC
						3.1		Light brown very fine SAND + SILT, little fine gray Shale fragments, little coarse gray Shale fragments, medium dense, moist to wet.	ML
						4.0		Light brown SILT + fine to medium weathered gray Shale fragments, trace fine Sand, medium stiff, moist to wet.	ML
.03	7 8 49 64	2.00	1.7	0	BGD	4.9		Light brown very fine SAND + fine to medium gray Shale fragments, medium to highly weathered, little coarse gray Shale fragments, saturated to wet.	GM
						5.5		Gray highly weathered SHALE, dry.	-
						5.7		Light brown SILT + very fine SAND, some fine to medium gray weathered Shale fragments, wet to moist.	SM
						6.0			-
.04	58 100/.2	0.70	0.7	0	BGD	6.2		No Recovery	-
						6.7		Highly weathered SHALE, dry to moist.	GM
								Gray fine to medium SHALE fragments, little light brown Silt, saturated.	
								No Recovery	-
								BORING TERMINATED AT 7.2'	

NOTES: Bottom of overburden at 6.7'. No samples were collected for chemical analysis.

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LOG OF BORING MW64D-5

LOG OF BORING NO. MW70-1

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**
ASSOCIATED UNIT/AREA: **SEAD-70**
PROJECT NO: **720518-01000**
DATE STARTED: **05/11/94**
DATE COMPLETED: **05/11/94**
DRILLING CONTRACTOR: **EMPIRE SOILS INVESTIGATIONS**
DRILLING METHOD: **HOLLOW STEM AUGER**
SAMPLING METHOD: **3" SPLIT SPOONS**

DEPTH TO WATER (ft): **5.3**
BORING LOCATION (N/E): **1007329.9 740889.1**
REFERENCE COORDINATE SYSTEM: **New York State Plane**
GROUND SURFACE ELEVATION (ft): **636.5**
DATUM: **NAD 1983**
INSPECTOR: **KK, FO**
CHECKED BY: **FO**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
								This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.	
.01	1 3 3 4	2.00	1.4	0	BGD	0.5		Brown SILT and very fine SAND, little(+) organic material, loose, moist to wet.	ML
						1.0		Tan-gray very fine SAND + SILT, trace organic material, moist to wet.	ML
						1.4		AA and Clay.	ML
						2.0		No Recovery	-
.02	3 4 4 5	2.00	1.4	0	BGD	2.4		Gray-brown CLAY, some Silt, little very fine Sand, loose, moist to wet.	CL
						3.4		Pink-brown-gray very fine SAND + SILT, trace fine to coarse Gravel, trace fine(-) Shale fragments, trace iron staining, wet to saturated.	ML
						4.0		No Recovery	-
.03	5 8 7 9	2.00	1.8	0	BGD	5.8		Light brown SILT and very fine SAND, little(-) Shale fragments, wet from (4-5.3'), saturated from (5.3-5.8').	ML
						6.0		No Recovery	-
.04	13 24 15 15	2.00	2	0	BGD	7.2		Light brown SILT, some very fine SAND, little(+) fine to medium Shale fragments, stiff, saturated.	ML
						8.0		AA, trace coarse Shale fragments.	ML
.05	55 100/.2	0.70	0.7	0	BGD	8.7		Dark gray, highly weathered, finely laminated, SHALE, saturated.	-
						10.0		No Recovery	-

NOTES: Bottom of overburden at 8.0'. The following samples were collected for chemical analysis: MW70-1.00(0-2"), MW70-1.02(2'-4'), MW70-1.03(4'-6').

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Seneca Army Depot
Romulus, New York

LOG OF BORING MW70-1

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT NO: **720518-01000**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**

GROUND SURFACE ELEVATION: **636.5**
INSPECTOR: **KK, FO**
CHECKED BY: **FO**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
								This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.	
.06	100/.4	0.40	0.2	0	BGD	10.2		Finely laminated SHALE, saturated	-
								No Recovery	-
								BORING TERMINATED AT 10.4'	

NOTES: Bottom of overburden at 8.0'. The following samples were collected for chemical analysis: MW70-1.00(0-2"), MW70-1.02(2'-4'), MW70-1.03(4'-6').

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Seneca Army Depot
Romulus, New York

LOG OF BORING MW70-1

LOG OF BORING NO. MW70-2

PROJECT: SEVEN LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
ASSOCIATED UNIT/AREA: SEAD-70
PROJECT NO: 720518-01000
DATE STARTED: 04/04/94
DATE COMPLETED: 04/04/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3" SPLIT SPOONS

DEPTH TO WATER (ft): 4.8
BORING LOCATION (N/E): 1007329.8 740555.6
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 635.4
DATUM: NAD 1983
INSPECTOR: KK
CHECKED BY: FO

This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	4 10 12 12	2.00	1.7	4.0	BGD	0.2		Dark brown SILT and fine gray SHALE fragments, some organics, loose, wet.	GM ML
						1.0		Dark brown SILT, some weathered fine to medium gray Shale fragments, medium stiff to stiff, moist.	
						1.7		Light brown CLAY + SILT, trace fine Gravel, stiff, moist to dry, iron stained.	ML
						2.0		No Recovery	-
.02	8 10 14 4	2.00	1.8	0	BGD	3.0		Gray iron-stained CLAY, trace coarse quartz Gravel, trace fine Shale fragments, stiff, moist to dry.	CL
						3.8		Highly weathered gray SHALE and CLAY, stiff, moist to dry.	CL
						4.0		No Recovery	-
.03	4 6 4 6	2.00	1.6	0	BGD	4.8		Olive gray iron-stained CLAY interbedded with weathered gray SHALE, medium stiff, moist, trace wetness on Shale fragments.	CL
						5.7		Olive gray SILT, some very fine to fine Sand, some very fine to medium gray Shale fragments, loose saturated.	ML
						6.0		No Recovery	-
.04	5 18 18 14	2.00	2.0	0	BGD	7.1		Light brown SILT and very fine SAND, some fine gray Shale fragments, some coarse Shale fragments, very loose, saturated.	ML
						7.9		Gray fractured, slightly weathered SHALE, trace olive gray Silt, saturated.	-
.05	11 21 45 100/.1	1.60	1.6	0	BGD	8.1		Olive gray SILT + CLAY, some fine to medium gray Shale fragments, medium stiff, moist, wet Shale fragments.	ML GM-GC
						8.7		Olive gray SILT + CLAY + coarse fractured SHALE fragments(weathered), medium stiff, saturated.	-
						9.6		Gray fractured, highly weathered SHALE, trace olive gray Clay, saturated.	
						10.0		No Recovery	-

NOTES: Bottom of overburden at 8.7'. No samples were collected for chemical analysis.

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Seneca Army Depot
Romulus, New York

LOG OF BORING MW70-2

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT NO: **720518-01000**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**

GROUND SURFACE ELEVATION: **635.4**
INSPECTOR: **KK**
CHECKED BY: **FO**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
								This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.	
.06	100/.1	0.10	0.1	0	BGD	10.1		Gray fractured SHALE, dry. No Recovery	
						11			
								BORING TERMINATED AT 11.6' AUGER REFUSAL	

NOTES: Bottom of overburden at 8.7'. No samples were collected for chemical analysis.

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Seneca Army Depot
Romulus, New York

LOG OF BORING MW70-2

LOG OF BORING NO. MW70-3

PROJECT: SEVEN LOW PRIORITY AOCs
PROJECT LOCATION: SENECA ARMY DEPOT, ROMULUS NY
ASSOCIATED UNIT/AREA: SEAD-70
PROJECT NO: 720518-01000
DATE STARTED: 04/05/94
DATE COMPLETED: 04/05/94
DRILLING CONTRACTOR: EMPIRE SOILS INVESTIGATIONS
DRILLING METHOD: HOLLOW STEM AUGER
SAMPLING METHOD: 3" SPLIT SPOONS

DEPTH TO WATER (ft): 5.3
BORING LOCATION (N/E): 1007173.3 740552.3
REFERENCE COORDINATE SYSTEM: New York State Plane
GROUND SURFACE ELEVATION (ft): 636.3
DATUM: NAD 1983
INSPECTOR: KK
CHECKED BY: FO

This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
.01	4 8 9 9	2.00	0.3	0	BGD	0.3		Brown SILT + CLAY, some organics, trace medium gray Shale fragments, loose, wet.	ML
								No Recovery	-
						2.0			
.02	8 14 17 15	2.00	2.0	0	BGD	2.5		Dark brown SILT + CLAY, trace(+) Gravel, trace organics, medium stiff, moist.	ML
								Gray iron-stained CLAY, trace fine to medium Gravel, stiff to very stiff, moist.	CL
						3.3			
						3.6		AA, little(+) fine to medium gray Shale fragments.	CL
						4.0		Gray weathered SHALE interbedded with gray iron-stained CLAY, Clay is moist, wetness on Shale fragments.	CL
.03	6 9 9 10	2.00	1.8	0	BGD	4.3		AA, (3.6-4.0').	CL
								AA, moist.	CL
						5.0			
						5.3		Gray iron-stained CLAY, trace medium gray Shale fragments and Gravel, soft to medium stiff, moist to wet.	CL
						5.8		AA, 0.05' lenses of some very fine Sand, wet, wetness on Shale fragments.	CL
						6.0		No Recovery	CL
.04	7 14 20 54	2.00	2.0	0	BGD	6.5		AA, (5.0-5.3') little(+) very fine Sand.	CL
								Light brown very fine SAND, little Silt, little fine gray Shale fragments, trace fine Sand, loose, wet.	SM
						7.5			
.05	60 100/.4	0.90	0.9	0	BGD	8.9		Gray fractured + weathered SHALE, saturated.	-
								No Recovery	-
								BORING TERMINATED AT 9.4' AUGER REFUSAL	

NOTES: Bottom of overburden at 7.5'. No samples were collected for chemical analysis.

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Romulus, New York

LOG OF BORING MW70-3

LOG OF BORING NO. MW70-4

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**
ASSOCIATED UNIT/AREA: **SEAD-70**
PROJECT NO: **720518-01000**
DATE STARTED: **05/11/94**
DATE COMPLETED: **05/11/94**
DRILLING CONTRACTOR: **EMPIRE SOILS INVESTIGATIONS**
DRILLING METHOD: **HOLLOW STEM AUGER**
SAMPLING METHOD: **3" SPLIT SPOONS**

DEPTH TO WATER (ft): **5.7**
BORING LOCATION (N/E): **1007055.2 740563.3**
REFERENCE COORDINATE SYSTEM: **New York State Plane**
GROUND SURFACE ELEVATION (ft): **636.3**
DATUM: **NAD 1983**
INSPECTOR: **FO**
CHECKED BY: **FO**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
								This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.	
.01	1 3 4 6	2.00	1.5	0	BGD	0.6		Brown SILT, little(+) organic material, trace Shale fragments, loose, wet.	ML
						1		Tan-gray CLAY, some Silt, little fine weathered Shale fragments, trace organic material, medium stiff, moist to wet.	CL
						1.5			
						2.0		No Recovery	-
.02	6 11 13 14	2.00	1.8	0	BGD	2		Light brown-gray SILT + CLAY + very fine SAND, trace(+) weathered Shale fragments, loose, wet, (saturated 2.5-2.7').	ML
						2.7		Gray-dark gray highly weathered, fractured SHALE with Clay filled fracture planes, little iron staining.	-
						3			
						3.8			
						4.0		No Recovery	-
.03	10 12 13 18	2.00	2.0	0	BGD	4		Light brown very fine SAND, little gray silty-Clay, trace(+) fine to coarse Shale fragments, stiff, moist to wet.	SC
						5			
						5.7			
						6.0		Light brown very fine SAND + SILT, trace fine to medium Shale fragments, loose, saturated.	ML
.04	25 37 44 50	2.00	1.8	0	BGD	6		Light brown very fine SAND, little Silt, trace weathered Shale fragments, trace fine to medium Gravel, trace iron staining, loose, wet, (saturated lens 6.6-6.7').	SM
						7			
						7.2			
						7.5		AA, saturated.	SM
						7.8		AA, (6-7.2') moist to wet.	SM
						8.0		No Recovery	-
.05	27 100/.4	0.90	0.9	0	BGD	8		Light brown very fine SAND, little Silt, little weathered Shale fragments, medium stiff, moist to wet. Shale at tip of spoon.	SM
						8.9			
						9		Dark gray weathered, fractured SHALE, moist to wet.	-
						10			

NOTES: Bottom of overburden at 8.9'. No samples were collected for chemical analysis. Lithology between (8.9-10.1') was based on drill cuttings noted while augering to refusal.

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Seneca Army Depot
Romulus, New York

LOG OF BORING MW70-4

PROJECT: **SEVEN LOW PRIORITY AOCs**
PROJECT NO: **720518-01000**
PROJECT LOCATION: **SENECA ARMY DEPOT, ROMULUS NY**

GROUND SURFACE ELEVATION: **636.3**
INSPECTOR: **FO**
CHECKED BY: **FO**

Sample Number	Blow Counts (# Blows per 6")	Sample Advance (ft)	Sample Recovery (ft)	VOC Screen-PID (ppm)	Rad Screen (cps)	Depth (ft)	Macro Lithology	DESCRIPTION	USCS
								This log is part of the report prepared by Engineering-Science, Inc. for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations.	
								BORING TERMINATED AT 10.1'	

NOTES: Bottom of overburden at 8.9'. No samples were collected for chemical analysis. Lithology between (8.9-10.1') was based on drill cuttings noted while augering to refusal.

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Seneca Army Depot
Romulus, New York

LOG OF BORING MW70-4

APPENDIX C

SITE-SPECIFIC HEALTH AND SAFETY PLAN

MONITORING WELL ABANDONMENT
VARIOUS LOCATIONS

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared By:

PARSONS
150 FEDERAL STREET, 4th FLOOR

BOSTON, MASS 02110

PARSONS REFERENCE NUMBER: 744354

Signed: _____ _____
Program Health and Safety Officer **Date**

Signed: _____ _____
Program Manager **Date**

TABLE OF CONTENTS

SECTION 1 - SITE INFORMATION, EMERGENCY CONTACTS, AND SCOPE OF WORK

1.1 INTRODUCTION

This document provides a site-specific Health and Safety Plan (HSP) for a monitoring well abandonment project to take place at 13 sites at Seneca Army Depot. General health and safety information for the Seneca Army Depot Activity is presented in the Generic Site-Wide Health and Safety Plan for Seneca Army Depot Activity (HASP), which is Appendix A of the Accident Prevention Plan (APP) (Parsons, 2005). This Generic Site-Wide HASP shall be referred to for safety practices in order to prevent hazards identified in this report and for any other information that may be applicable to the activities at the site.

This document will be reviewed in its entirety with all Parsons employees and subcontractors prior to the commencement of project work. All employees/subcontractors will sign the HSP certification in Section 9 of this document. A copy of this document is available at the Parsons on-site office for review. Additional copies of this document may be obtained by contacting Parsons Program Manager (Mr. Todd Heino) at 617-449-1405 or via email at todd.heino@parsons.com.

1.2 SITE INFORMATION

Project Name: Monitoring Well Abandonment
SENECA ARMY DEPOT

Job #: 744354

Jobsite Address: 5786 State Route 96
Romulus, NY 14541

Client: U.S. Army
Client Contact(s): Steve Absolom
Contact Phone #: 607-869-1309

Proposed date(s) of work: Starting May 15, 2005

1.3 EMERGENCY CONTACTS

CONTACT Police, Fire, Ambulance	NAME	PHONE 911
Program Health and Safety Officer (PHSO)	Timothy Mustard	1-303-764-8810
Program Manager	Todd Heino	1-617-449-1405
Site Health & Safety Officer (SHSO)	TBD	
Parsons Boston Health & Safety Representative	Jessica Smith	1-617-449-1574
Client Contact	Randy Battaglia	1-607-869-1523
State Spill Number		1-585-226-2466
National Response Center		1-800-424-8802
Poison Control Center		1-800-962-1253
Occupational Physician	Dr. Walker	1-800-874-4676 x 8788 or x 8763
Regional USEPA Emergency Response		1-732-548-8730
Parsons 24-Hour Emergency #		1-866-727-1411

1.4 MEDICAL EMERGENCY

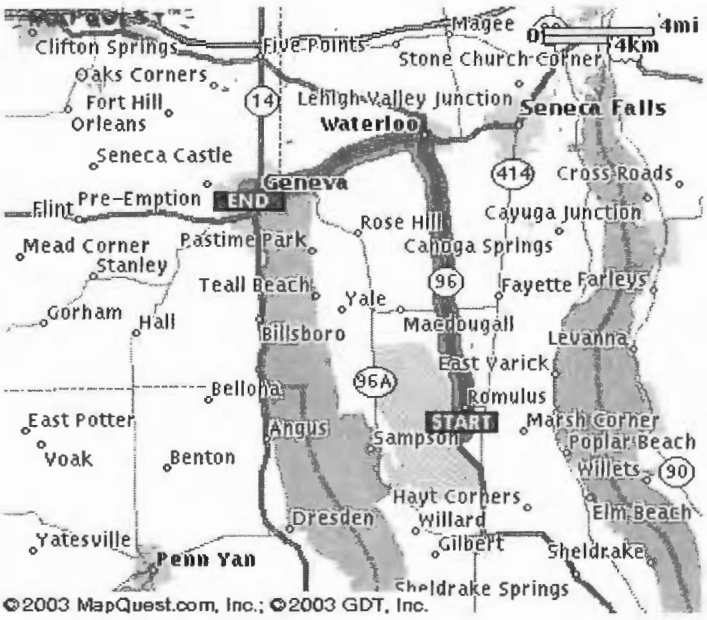
Primary Hospital

Primary Hospital Name:	Geneva General Hospital
Hospital Address:	196 North Street Geneva, NY 14456
Telephone Number:	1-315-787-4000
Name of Contact at Hospital:	None
Distance to Hospital:	18.7 miles

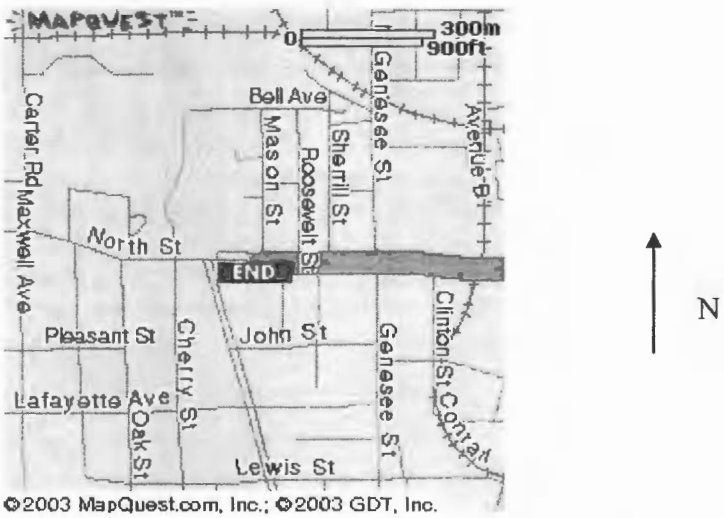
Directions to Primary Hospital (Shown in purple in Attached Map):

Take left onto Route 96 North. Turn left onto NY-5/US-20. Turn right onto CR-110. CR-110 becomes CR-110/E North Street. CR-110/E North Street becomes NY-14.

Map showing route from Seneca Army Depot, Main Gate to Geneva General Hospital - Primary Hospital



Close Up map of Hospital



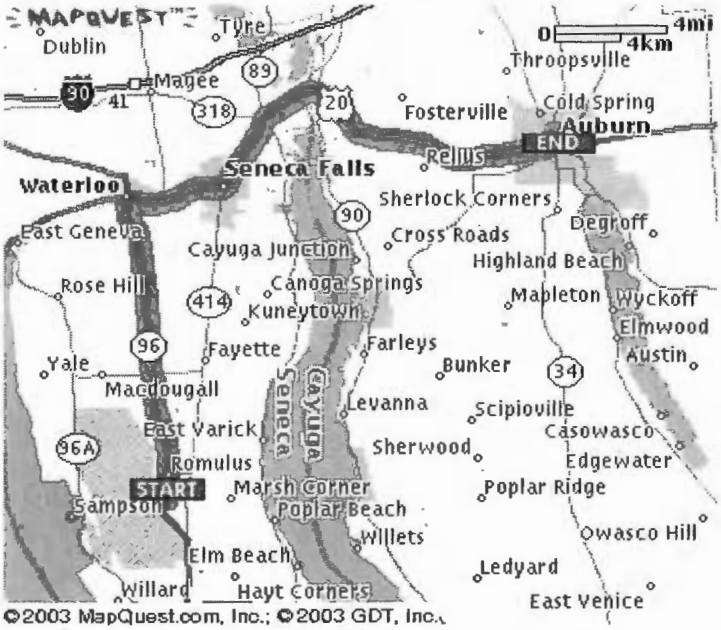
Secondary Hospital

Secondary Hospital Name:	Auburn Memorial Hospital
Hospital Address:	17 Lansing Street #1 Auburn, NY 13021
Telephone Number:	1-315-255-7011
Name of Contact at Hospital:	None
Distance to Hospital:	30.8 miles

Directions to Secondary Hospital:

Take left onto Route 96 North. Turn right onto NY-5/US-20. NY-5/US-20 becomes Ny-38/NY-5 E/US-20 E. Turn left onto NY-34.

Map showing route (in purple) from Seneca Army Depot, Main Gate to Auburn Memorial Hospital – Secondary Hospital



In the event of a medical emergency, if possible, injured personnel will be decontaminated according to the steps outlined in Section 5 of this document.

1.5 SCOPE OF WORK

The scope of work includes the decommissioning of a total of 45 existing monitoring wells at thirteen sites at the Depot; SEADs-9, 33, 34, 43, 44A and B, 58, 62, 64A-D, and 70. More specifically the following activities will be performed:

Proposed Project Objectives/Methods:

- Mobilization of personnel and equipment to the site
- Removal of approximately 45 well casings using a drill rig or backhoe
- Re-filling well holes with grout
- Removal of an unknown number of protective casings and the concrete holding them in place

- Removal of an unknown number of bollards
- Restoration of all former well locations following the removal
- Collection of excavated soil , groundwater, PPE, and well construction materials for disposal
- Demobilization of personnel and equipment from the site

Personnel Requirements:

All project personnel will be enrolled in a medical monitoring program, will be 40-hour HAZWOPER certified, and will be current in their 8-hour HAZWOPER refresher training. At least two project personnel will be currently certified in First Aid/CPR. At least one project team member will have HAZWOPER supervisory training. Copies of all certifications/clearances will be maintained in the onsite project files. For this project, there is no New Technology Program.

Project Health and Safety Budget: TBD

1.6 TYPE OF SITE (*Check as many as applicable)*

( ) Active	(X) Secure	( ) Uncontrolled	( ) Well Field	( ) Other:
(X) Inactive	( ) Unsecure	(X) Industrial	(X) Military	
( ) Enclosed Space	( ) Landfill	( ) Recovery	(X) Unknown	

1.7 SITE DESCRIPTION AND FEATURES: *Include principal operations and unusual features, i.e. containers, buildings, dikes, power lines, hills, slopes, rivers, etc.*

The Seneca Army Depot Activity (the Depot) lies between Cayuga and Seneca Lakes in New York's Finger Lake Region, near the communities of Romulus and Varick, NY. The Depot encompasses approximately 10,600 acres of historic farmland, which contains more than 900 buildings that provide more than 4.4 million square feet of space, including approximately 1.3 million square feet of storage space.

The 13 SEADs involved in the project are scattered across the Depot and vary greatly in intended use. Eight of the sites were landfill or other general debris disposal sites, two were/are the locations of waste oil storage tanks, and three were ordnance and explosive (OE) related sites. A risk assessment performed for each of the sites concluded that none of them posed any threat to human health or the environment given their proposed uses. The thirteen sites are shown in the attached figure.

1.8 VISITOR'S POLICY

It is Parsons' policy that a project Exclusion Zone (EZ) and support zone will be established. Visitors to the support zone will be briefed by a qualified person on the hazards expected on the site and the health controls required. See Section 5 of the Generic Site-Wide HASP for details on support zone visitors.

Site visitors will not be allowed into active work areas (EZs) without making arrangements with the resident Army client and Parsons well in advance of the planned visit. In addition, Parsons will deny visitor access to any active EZ unless they present written documentation of the following items:

- Appropriate, up-to-date hazardous waste operations training;
- Current participation in a medical surveillance program per requirements of 29 CFR § 1910.120; and
- Evidence of the ability to use a respirator in accordance with 29 CFR §1910.134.

Additional information regarding Parsons' EZ site visitor policy can be found in Section 4 of the Generic Site-Wide HASP.

1.9 SURROUNDING POPULATION: *(Check as many as applicable)*

(X) Residential (X) Industrial (X) Commercial (X) Rural ( ) Urban ( ) Other:

The sites are located within the areas of the Depot that have been designated as the site of planned industrial development, in the warehouse area, in the area of a New York State Correctional Facility, and in the conservation/recreation area. Residential areas are exterior of the former Depot property to the east and west.

1.10 HISTORY:

The Seneca Army Depot Activity (the Depot) was originally constructed and opened in 1941, and continued its military mission until September of 2000. The mission of the facility throughout its history included receipt, storage, distribution, maintenance, and demilitarization of conventional ammunition, explosives and special weapons.

Previous investigations have been performed at all of the sites in question. The various reports detailing the results of those investigations are summarized in Section 1.2 of the Monitoring Well Abandonment Workplan.

SECTION 2 - PROJECT TEAM ORGANIZATION

The following personnel are designated to carry out the stated job function on site. (Note: One person may carry out more than one job function.)

NAME	RESPONSIBILITIES	HEALTH CLEARANCE *Level*[1]	TASK(S) ON SITE?[2] *(Refer to Section 3.8 for on-site tasks)*
Todd Heino	Program Manager	N	N
Timothy Mustard	Program Health and Safety Officer	Y(s)	N
Jeff Adams	Project Manager	Y	N
TBD	Site Manager/Site Safety & Health Officer	Y(s)	Tasks 1,2,3,4
TBD	Field Technician	Y	Tasks 1,2,3,4

1. Indicates if current in HAZWOPER training [annual 8-hour refresher Yes or No (Y or N)] and the level of clearance. (s) indicates supervisor trained.
2. Indicates if involved in on-site tasks Yes or No (Y or N) and the tasks that will be conducted.

Parsons Project Chain of Command

The field technician will report directly to the Site Manager (who may also be the Site Health and Safety Officer). The Site Manager will report to the Project Manager and the SHSO. The SHSO will report to the Project Manager. The Project Manger will report to the Program Health and Safety Officer and Program Manager.

SECTION 3 - SAFETY AND HEALTH ANALYSIS

3.1 OVERALL HAZARD EVALUATION:

( ) High ( ) Medium (X) Low (X) Unknown

3.2 WASTE TYPES:

(X) Liquid (X) Solid ( ) Sludge ( ) Gas ( ) Unknown ( ) Other:

3.3 WASTE CHARACTERISTICS: (*Check as many as applicable.)*

( ) Corrosive ( ) Flammable ( ) Radioactive ( ) Toxic
( ) Volatile ( ) Reactive ( ) Inert Gas (X) Unknown
(X) Other: Non-hazardous

3.4 WORK ZONES: (*Attach Site Map Indicating Exclusion, Decontamination, and Support Zones, as Required)*

The sites involved in this project are indicated on the attached site map. The exclusion, support, and decontamination zone will vary for each site. During the casing pulling operation and the removal of the concrete base, protective casing, and any bollards present, the exclusion zone will be the area immediately surrounding the drill rig. Personnel will remain watchful of activities and the area around the drill rig. Any groundwater or soil removed from the well location will be drummed for later disposal. Well construction materials removed during the project will be collected in a roll-off container for later disposal. The support zone will surround the exclusion zone, and will contain equipment, tools, and first aid supplies. The decontamination zone will be collocated with the exclusion and support zones. Refer to the attached Activity Hazard Analysis for Decontamination Area set up.

3.5 PHYSICAL HAZARDS OF CONCERN: (*Check as many as applicable).*

(X)	Heat Stress (Seasonal)	( )	Radiological	( )	Organic Chemicals	( )	Confined Space
(X)	Cold Stress (Seasonal)	(X)	Biological *(ticks, bees, snakes, spiders, etc.)*	(X)	Slips, Trips, & Falls	(X)	Motorized Traffic
( )	Explosive/Flammable	(X)	Noise	(X)	Excavations	(X)	Heavy Machinery
( )	Oxygen Deficient	( )	Inorganic Chemicals	(X)	Clearing, Grub, & Tree Falling	(X)	Other - specify: Falling objects

Note: Please see the Generic Site-Wide Health and Safety Plan (Parsons, 2005) for detailed information on the checked items.

3.6 HAZARDOUS MATERIAL SUMMARY

MSDS for each hazardous material or chemical used on site will be kept in a binder at the jobsite. **It is not anticipated that any hazardous chemicals will be used or encountered during this project.**

Chemicals

( ) Acids	( ) Pickling Liquors	( ) Caustics	( ) Pesticides	( ) Dyes/Inks
( ) Cyanides	( ) Phenols	( ) Halogens	( ) Dioxins	
( ) Other specify:				

Solids

( ) Flyash	( ) Mill or Mine Tailings	( ) Asbestos	( ) Ferrous Smelter	( ) Non-Ferrous Smelter
( ) Metals	( ) Other specify:			

Sludges

( ) Paints	( ) Pigments	( ) Metal Sludges	( ) POTW Sludges	( ) Aluminum
( ) Distillation Bottoms	( ) Ethers	( ) Other Specify		

Solvents

( ) Halogenated	(X) Solvents	( ) Hydrocarbons	( ) Alcohols	( ) Ketones
( ) Esters	( ) Other specify			

Oils

( ) Oily Waste	( ) Gasoline	( ) Diesel Oil	( ) Lubricants	( ) PCBs
( ) Polynuclear Aromatics	( ) Other specify			

Others

( ) Laboratory	( ) Pharmaceutical	( ) Hospital	( ) Radiological	( ) Municipal
( ) Construction	( ) Munitions	( ) Other specify		

3.7 HEALTH HAZARD PARAMETERS OF HAZARDOUS SUBSTANCE OF CONCERN

Personnel may be exposed to the following substances on site. The primary hazards for each are identified.

Known Contaminants and Chemicals	Highest Observed Concentration (specify units and media)	PEL/TLV ppm or mg/m^3 (specify)	IDLH ppm or mg/m^3 (specify)	Symptoms and Effects of Acute Exposure	Additional information
Trichloroethene (TCE)	NA	100 ppm	1000 ppm	Irritated eyes/skin, vertigo, visual difficulty, fatigue, nausea, vomiting, tremors, drowsiness.	Combustible liquid but burns with difficulty.
Cis-1,2 Dichloroethene	NA	200 ppm	1000 ppm	Dermatitis, liver/kidney damage, animal carcinogen, corneal damage, nausea, headache, fatigue.	Flammable liquid.
Arsenic	NA – prevalent on depot	0.010 mg/m^3	5 mg/m^3	Ulceration of nasal septum, dermal, GI disturbances, respirator irritation, hyperpigmentation of skin.	None
Lead	NA – prevalent on depot	0.100 mg/m^3	100 mg/m^3	Weak, facial pallor, low-weight, malnutrition, constipation, abdominal pain, anemia, kidney disease, irritant in eyes, hypotension.	Noncombustible solid in bulk form.
Cadmium	NA – prevalent on depot	0.005 mg/m^3	9 mg/m^3	Pulmonary edema, dyspnea, cough, chest tight, headache, chills, muscle aches, nausea, vomit, diarrhea.	Burns in powder form.
Chromium	NA – prevalent on depot	0.5 mg/m^3	250 mg/m^3	Irritant to eyes, skin, lungs.	None

3.8 TASK DESCRIPTIONS: (*Attach Additional Sheets if Necessary)*

Task	Type	Primary	Contingency
1. Mobilization of personnel and equipment to the site	( ) Intrusive (X) Non-intrusive	( ) A ( ) B ( ) C (X) D (X) Modified Steel Toe Boots only	( ) A ( ) B ( ) C ( ) D (X) Exit Area
2. Casing pulling or cutting and removal	(X) Intrusive ( ) Non-intrusive	( ) A ( ) B ( ) C (X) D ( ) Modified	( ) A ( ) B ( ) C ( ) D (X) Exit Area
3. Re-filling of well holes with grout	( ) Intrusive (X) Non-intrusive	( ) A ( ) B ( ) C (X) D ( ) Modified	( ) A ( ) B ( ) C ( ) D (X) Exit Area
4. Removal of protective casings and bollards	( ) Intrusive (X) Non-intrusive	( ) A ( ) B ( ) C (X) D ( ) Modified	( ) A ( ) B ( ) C ( ) D (X) Exit Area
5. Restoration of all former well locations	( ) Intrusive (X) Non-intrusive	( ) A ( ) B ( ) C (X) D ( ) Modified	( ) A ( ) B ( ) C ( ) D (X) Exit Area
6. Collection of excavated soil, groundwater, well construction materials, and PPE for disposal	( ) Intrusive (X) Non-intrusive	( ) A ( ) B ( ) C (X) D ( ) Modified	( ) A ( ) B ( ) C ( ) D (X) Exit Area
7. Demobilization of personnel and equipment from the site	( ) Intrusive (X) Non-intrusive	( ) A ( ) B ( ) C (X) D (X) Modified Steel Toe Boots only	( ) A ( ) B ( ) C ( ) D (X) Exit Area

3.9 ACTIVITY HAZARD ANALYSIS

For this project, the following Activity Hazard Analyses (AHAs) will apply and are attached to this document:

- Monitoring Well Abandonment
- IDWs/Drum Moving
- Driving in the Ammo Area/Q
- Decontamination Area Set Up
- Site Walk/Visit
- Heavy and Motorized Equipment Operation
- Power and Hand Tool Operation
- Mobilization/Demobilization
- Tool/Equipment Decontamination
- Personnel Decontamination

Standard safe practices, as presented in the Generic Site-Wide Health and Safety Plan (Parsons, 2005) and summarized in this section, shall be employed while the work is conducted. These work practices shall include the proper use of specified personal protective equipment (PPE) and tools, proper decontamination procedures, and careful work around and continuous inspection of all physical hazards. Good housekeeping, including keeping the work area neat on a daily basis, shall be done to reduce risk from physical hazard. A "buddy sytem" shall be employed at all times. Fire extinguishers and hand-held eyewash will be available at the work site in the support zone.

SECTION 4 –PERSONAL PROTECTIVE EQUIPMENT

4.1 – PRIMARY PERSONAL PROTECTIVE EQUIPMENT

Tasks: 1 and 2 Level: ( ) A ( ) B ( ) C (X) D ( ) Modified (X) Primary ( ) Contingency	
Respiratory: (X) Not needed ( ) SCBA, Airline ( ) APR (Identify Type) ( ) Cartridge ( ) Escape Mask: ( ) Other: (Identify)	Protective. Clothing: ( ) Not needed ( ) Encapsulated Suit: ( ) Splash Suit ( ) Apron: (X) Tyvek Coverall: Optional to keep clothes clean ( ) Saranex Coverall ( ) Cloth Coverall ( ) Other:
Head and Eye: ( ) Not Needed ( ) Other: (X) Safety Glasses ( ) Face Shield (X) Hard Hat	Gloves: ( ) Not needed ( ) Undergloves: PVC or (X) Gloves: Nitrile, butyl rubber ( ) Overgloves:
Boots: ( ) Not needed (X) Steel-Toe ( ) Rubber ( ) Overboots ( ) Steel Shank ( ) Leather	Other: (specify below) (X) Insect Repellant ( ) Other: ( ) Floatation Device (X) Hearing Protection (X) Sun Screen ( ) Body harness ( ) Lifeline

4.2 – CONTINGENCY PERSONAL PROTECTIVE EQUIPMENT

If field conditions are encountered that render the work space unsafe (e.g., high levels of volatile organic compounds (VOCs), identification of buried asbestos-containing materials, buried drums, unusual odor, discolored soil, etc.) field personnel shall secure the area and exit. New information shall be discussed with the Project Manager and Health and Safety personnel. Health and safety personnel will consider PPE upgrades, as appropriate. Work may proceed at the direction of the SHSO.

SECTION 5 – DECONTAMINATION PROCEDURES *(Summarize below or attach diagram)*

Personnel Decontamination:

1. Equipment Drop
2. Surgical glove removal
3. Removal of safety glasses and hardhat

Equipment and Tool Decontamination:

Equipment and tool decontamination will consist of pressure washing followed by steam cleaning. Solvent and soap and water washes will be performed when required for sampling or for heavy contamination. Gross contamination, such as caked mud and dirt on the drill rig will be removed at the work site and placed back in the borehole or drummed with other project spoils if contaminant indicators (e.g., PID readings) warrant drumming of the soils.

Disposal Method:

Disposable personal protective equipment will be disposed of in a garbage bag for site trash pickup. If contamination is detected (i.e., elevated PID readings, visual evidence, or known contact with potentially contaminated liquids) personal protective equipment will be bagged separately from regular garbage.

Any decontamination fluids (i.e., detergent and water solutions, and rinse water) will be captured, containerized and held on site. All groundwater removed from the wells and any soil extracted with the well casings will be collected in 55-gallon drums for later disposal. All decommissioned well construction materials will be collected in a roll-off container for later disposal.

Activity Hazard Analyses for decontamination of personnel and equipment are attached to this document.

SECTION 6 – AIR MONITORING

Instrument	Task	Sampling Frequency	Action Levels	Guidelines	Comments
Photoionization Detector Type: OVM Target Parameter(s): VOCs	1,2,3,4	Continuous during intrusive work and upon opening well.	0 - 1 ppm >1 ppm for more than 5 minutes >10 ppm for more than 5 minutes	Continue in Level D. Allow to dissipate; use Level C protection if sustained Retreat to upwind location	( ) Not needed
Other *Specify:* Not Applicable Target Parameter(s):					(X) Not needed

Calibration Requirements for Photoionization Detector: TBD

Maintenance Requirements Photoionization Detector: TBD

SECTION 7 – EMERGENCY RESPONSE PLAN

7.1 CONTINGENCY PLANS *(Summarize Below)*

If work team observes hazards for which they are not prepared, they will withdraw from the area and call the Program Health and Safety Officer. No team member will perform work at the site unless accompanied by another person.

The Site Health & Safety Officer (SHSO) is the primary authority for directing operations at the site under emergency conditions. All communications both on and off site will be directed through the SHSO or designee. For on-site activities when another Contractor is present, the SHSO or designee will coordinate and communicate with the designated SHSO or designee for the Contractor.

If site conditions warrant evacuation, on-site staff will report to the Parsons field office in Building 123. All personnel will retreat to an upwind or off-site location and communicate site conditions to the SHSO, the Parsons Project Manager, the USACE Project Manager, and other appropriate authorities as conditions warrant.

Any personnel injured on site will be rendered first aid as appropriate and transported to competent medical facilities for further examination and/or treatment, as required. The preferred method of transport will be through a professional emergency transportation means, however, when this is not readily available or would result in excessive delays, other transport will be authorized. Under no circumstances will injured persons transport themselves to the hospital or doctors. An accident/incident report (see Appendices C and D of the Accident Prevention Plan (Parsons, 2005)) will be prepared and submitted for each occurrence of an accident/incident.

All incidents must be verbally reported immediately to the client and the Program Health and Safety Officer.

Additional details regarding emergency response are located in Section 16 of the Generic Site-Wide Health and Safety Plan (Parsons, 2005)

7.2 LOCATION OF PHONE NEAREST TO WORKPLACE

There is a phone in the Parsons on-site field office located in Building 123 in the Administrative Area. In addition, the SHSO and site personnel may use their personal cell phones or make other arrangements (i.e. two-way radios) for communications if necessary.

SECTION 8 – STANDARD OPERATING SAFETY PROCEDURES, ENGINEERING CONTROLS, AND WORK PRACTICES

Please refer to Section 11 of the Generic Site-Wide Health and Safety Plan (Parsons, 2005) for standard operating safety procedures, engineering controls, and work practices.

SECTION 9 - HEALTH AND SAFETY PLAN SIGNATURE FORM

PARSONS Health and Safety Program

All site personnel must sign this form indicating receipt and understanding of this Health and Safety Plan (HSP). Keep this original on site. It becomes part of the permanent project files. Send a copy (or fax to 617-946-9777) to Jessica Smith, the Parsons Boston Health and Safety Representative. Also notify her of project completion and progress reports.

Subcontractors must either submit their own Project Health and Safety Plan, or sign off on this one. If a subcontractor plan is submitted, it must be added to this document as an attachment, and forwarded to the Boston Health and Safety Representative.

CERTIFICATION:

SITE NAME: Seneca Army Depot Activity – Monitoring Well Abandonment

LOCATION: Romulus, NY

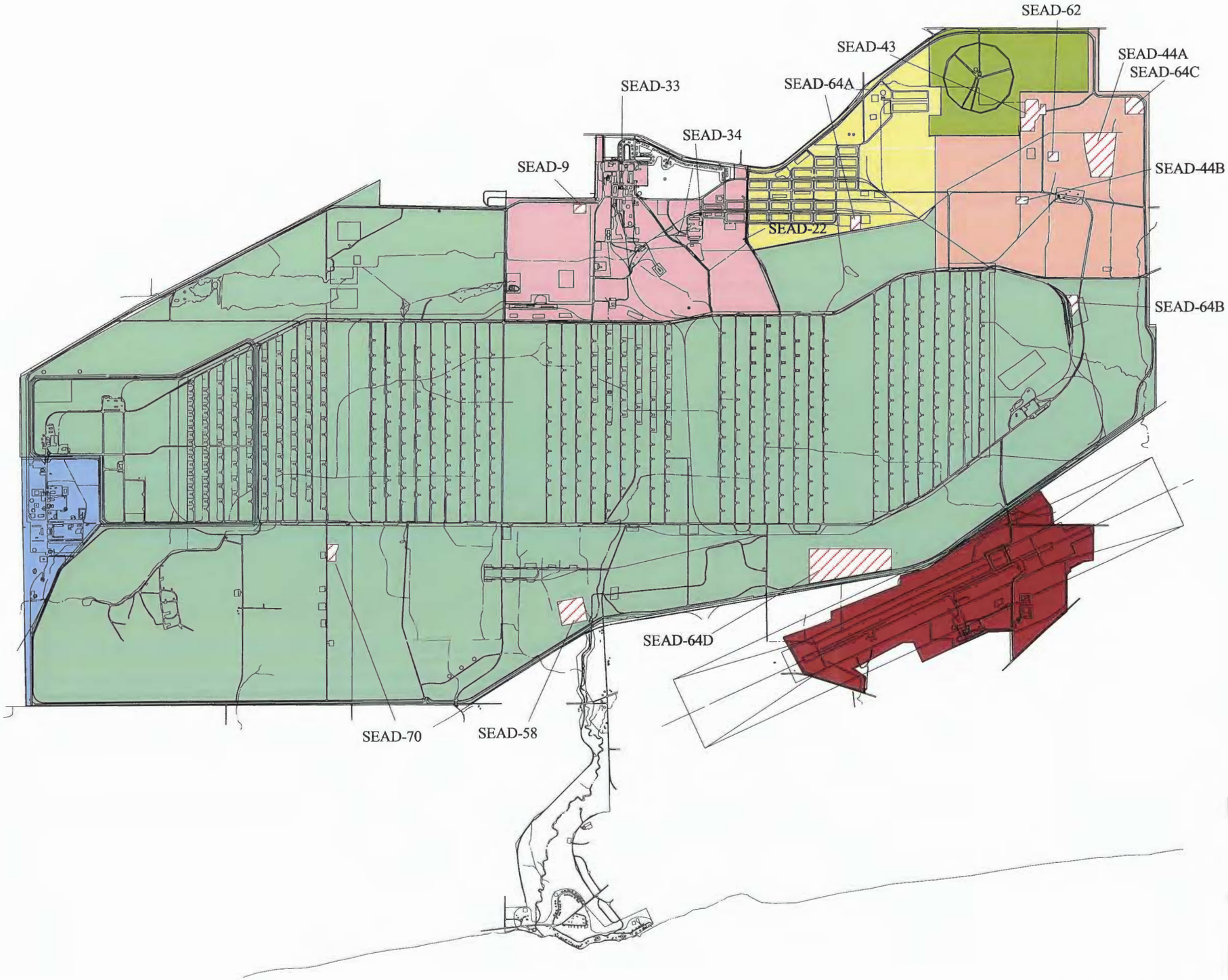
PROJECT NUMBER: 744354

I understand, and agree to comply with, the provisions of the HSP for the above-referenced site. I agree to report any injuries, illnesses or exposure incidents to the Site Health and Safety Officer (SHSO).

PRINTED NAME	SIGNATURE	DATE

Fax copy with signatures to the Boston Office (617) 946-9777 attention Jessica Smith.

ATTACHMENTS



LEGEND

SEAD containing wells to be abandoned

Intended Land Use

- Airfield
- Conservation/Recreation
- Fed to Fed Transfer
- Industrial
- Institutional
- Prison
- Warehouse

0.2 0 0.2 0.4 0.6 0.8 Miles

PARSONS

SENECA ARMY DEPOT ACTIVITY

WORKPLAN FOR MONITORING WELL ABANDONMENT

HEALTH & SAFETY PLAN
SEADS WITH MONITORING WELLS TO BE ABANDONED

DATE: REV: MARCH 2005

Workplace: Seneca Army Depot Activity
Activity being evaluated: Monitoring Well Abandonment
Summary: Activities that involve monitoring well abandonment.

Principal Steps:	Potential Hazards:	Controls:
General Site Activities	Operation of Motor Vehicle	Drivers will have a valid driver's license and will wear a seat belt at all times. Drivers are prohibited from using any communication devices (e.g., cell phones) while operating any motor vehicles. Personnel will be aware of road conditions and hazards, which include wildlife at the Depot. Personnel will practice defensive driving techniques.
	Site Hazardous Material Exposure	Training and safety awareness of potential exposure to contaminants at the site. Training of personal decontamination procedure. Appropriate PPE (tyvek coverall - optional, safety glasses, gloves, and steel-toe boots). HTW, radiation, and UXO training and safety awareness during site specific training and refreshed during morning tailgate briefing. Air monitoring for chemical agents and dust while digging. Use face shield as appropriate.
	Cold and Heat Stress Injuries	SHSO to implement heat stress/cold injury control program in accordance with the work plan.
	Tripping Hazards	Personnel awareness of potential slippery surfaces and tripping hazards. Inform field coordinator or SHSO of any slip, trip, or fall hazards.
	Biological Hazard (ticks, bees, mosquitoes, snakes, spiders, etc.)	Personnel awareness of potential exposure to biological hazards. Wear appropriate clothing (hat, long-sleeve shirt, long pants, gloves, and boots) and insect repellants. Wear thick gloves when clearing plants or debris from work area.
	Motorized/Pedestrian Traffic	Personnel exercise caution while working in the vicinity of a street and near vehicular traffic. Barriers, warning signs, designated walkways, or other safeguards must be provided where pedestrians are exposed to the risk of collision.
	Injury from Material Lifting	Personnel awareness of potential hazards from day-to-day material lifting.
	Injury from Hand Tool Operation	Personnel awareness of potential hazards from hand tool operation. SHSO will ensure that all tools used on site are in proper working order and are in good condition. Personnel to inform SHSO or project manager if tools require repair or replacement. Requirements outlined in EM385-1-1 Section 13 will be observed.

Workplace: Seneca Army Depot Activity
Activity being evaluated: Monitoring Well Abandonment
Summary: Activities that involve monitoring well abandonment.

Principal Steps:	Potential Hazards:	Controls:
Casing pulling, protective casing and bollard removal	Injury from Heavy Equipment or Equipment Roll Over	Operation of heavy equipment in accordance with the work plan. Spotter and equipment operator will maintain close communication. Spotter will ensure that his actions are clear to the operator at all times. Provide warning systems such as mobile equipment, barricades, hand or mechanical signals, or stop logs, to alert operators of the edge of an excavation. Use hardhat (as required). Personnel will generally remain 3 to 5 feet away from the item being removed. Personnel will remain watchful of activities in the area immediately surrounding the drill rig.
	Site Hazardous Material Exposure	Training and safety awareness of potential exposure to contaminants at the site. Training of personal decontamination procedure. Appropriate PPE (tyvek coverall - optional, safety glasses, gloves, and steel-toe boots). HTW, radiation, and UXO training and safety awareness during site specific training and refreshed during morning tailgate briefing. Air monitoring for chemical agents and dust while digging. Use face shield as appropriate.
	Injury from Power Tool Operation	Personnel awareness of potential hazards from power tool operation. Power tools will be inspected prior to use and will be maintained and adjusted by qualified personnel. Personnel to inform SHSO if tools require repair or replacement. Operations will be conducted by authorized and trained personnel. Other personnel shall stay away from the operation area. Requirements outlined in EM385-1-1 Section 13 will be observed.
	Fire Hazards	All motors must be shut off during refueling. Smoking in the vicinity of the drilling rig is not permitted. An A-B-C fire extinguisher must be maintained on the drilling rig and associated motorized equipment. Fuel containers will not be stored within 10' of the drilling rig motor. Fuel will be stored in UL approved safety containers with contents clearly labeled.
	Motorized/Pedestrian Traffic	Personnel exercise caution while working in the vicinity of a street and near vehicular traffic. Any pits generated during the project will be blocked off from general traffic to prevent hazards.
	Noise	Hearing protection will be worn in hazardous noise areas.

Workplace: Seneca Army Depot Activity
Activity being evaluated: Monitoring Well Abandonment
Summary: Activities that involve monitoring well abandonment.

Principal Steps:	Potential Hazards:	Controls:
Excavated Soil and Expelled Groundwater Loading In Drums	Site Hazardous Material Exposure	Training and safety awareness of potential exposure to contaminants at the site. Training of personal decontamination procedure. Appropriate PPE (tyvek coverall - optional, safety glasses, gloves, and steel-toe boots). HTW, radiation, and UXO training and safety awareness during site specific training and refreshed during morning tailgate briefing. Air monitoring for chemical agents and dust while digging. Use face shield as appropriate.

Workplace: Seneca Army Depot Activity
Activity being evaluated: Monitoring Well Abandonment

Summary: Activities that involve monitoring well abandonment.

Principal Steps:	Potential Hazards:	Controls:
	Noise	Hearing protection will be worn in hazardous noise areas. Requirements outlined in the HSP will be observed.
	Injury from Heavy Equipment or Equipment Roll Over	Operation of heavy equipment in accordance with the work plan. Spotter and equipment operator will maintain close communication. Spotter will ensure that his actions are clear to the operator at all times. Provide warning systems such as mobile equipment, barricades, hand or mechanical signals, or stop logs, to alert operators of the edge of an excavation. Use hardhat (as required).

Equipment/Materials to be Used: Backhoe, drill rig, and/or other similar large equipment.

Inspection Requirements: Personnel will conduct a daily inspection of PPE and equipment. Equipment will be inspected prior to use in accordance with the manufacturer's instructions. If during inspection or during use, equipment fails to function properly, it is to be turned in for repair/replacement. All safety guards designed on equipment will remain in place. If any safety device on equipment is missing, that piece of equipment will be placed out of service until it can be repaired/replaced. During site set-up, equipment-generating noise will be monitored by the SHSO to determine whether or not hearing protection is required.

Training Requirements: All on-site personnel will be current in OSHA training in accordance with 29 CFR 1910.120 (HAZWOPER), and be enrolled in a medical monitoring program with a current occupational physical with physician's certificate in accordance with 29 CFR 1910.120(f). Additional training (such as first aid/CPR, bloodborne pathogens, respiratory protection, confined space entry, etc.) will be provided as applicable. Personnel will be trained in the safe use of required equipment and in the required PPE. All personnel operating heavy equipment will provide proof of competency with the equipment to the SHSO prior to operating the equipment.

Name: Timothy S. Mustard, CIH
(person certifying that the evaluation has been performed)

Date: 2/24/2005
(date of evaluation)

Note(s):

1. This analysis serves as certification of hazard assessment and is in compliance with EM 385-1-1 Section 06.A.02 for Hazard Evaluation.

Workplace: Seneca Army Depot Activity
Activity being evaluated: IDWs / Drum Moving / Filling / Emptying
Summary: Activities that involve drum moving, filling and emptying

Principal Steps:	Potential Hazards:	Controls:
Transfer drums or MRC to / from transport vehicle	Tripping hazards	Worker awareness of potential slippery surfaces and tripping hazards.
	Cold and heat stress injuries	Implement cold and heat stress control program.
	Vehicle and heavy equipment traffic in work area	Operation of heavy equipment in accordance with the HSP. Be alert when working around heavy equipment. Ground guide for the backing of all vehicles. No heavy equipment will be operated without a ground guide. Barriers, warning signs, designated walkways, or other safeguards must be provided where pedestrians are exposed to the risk of collision.
	Noise	Hearing protection will be worn in hazardous noise areas.
	Back injury	Personnel will utilize proper lifting techniques, and team-lift techniques where needed.
Filling Drums	Injury from Hand Tool Operation	Personnel awareness of potential hazards from hand tool operation. SHSO will ensure that all tools used on site are in proper working order and are in good condition. Personnel to inform SHSO or project manager if tools require repair or replacement. Requirements outlined in EM385-1-1 Section 13 will be observed.
	Noise	Hearing protection will be worn in hazardous noise areas.
	Back injury	Personnel will use caution when shoveling dirt into a drum to avoid spraying rocks or dirt. If possible, only one worker will fill a drum at a time.
	Hand injury	Thick gloves will be worn while filling drums. Personnel will follow established procedures for opening or closing drums.
Emptying Drums	Injury from sliding/falling drum	Personnel will determine who will be in charge of the task, this person will direct all subsequent actions (Tip, Roll, Dump, etc.).
	Noise	Hearing protection will be worn in hazardous noise areas.
	Back injury	Personnel will utilize team-lift techniques for emptying all drums.
	Hand injury	Thick gloves will be worn while filling drums. Personnel will follow established procedures for opening or closing drums.
Drum / MRC Transport	Vehicle and heavy equipment traffic in work area	Operation of heavy equipment in accordance with the HSP. Be alert when working around heavy equipment. Ground guide for the backing of all vehicles. No heavy equipment will be operated without a ground guide. Barriers, warning signs, designated walkways, or other safeguards must be provided where pedestrians are exposed to the risk of collision.

Workplace: Seneca Army Depot Activity
Activity being evaluated: IDWs / Drum Moving / Filling / Emptying
Summary: Activities that involve drum moving, filling and emptying

Principal Steps:	Potential Hazards:	Controls:
	Operation of Motor Vehicle	Drivers will have a valid driver's license and will wear a seat belt at all times. Drivers are prohibited from using any communication devices (e.g., cell phones) while operating any motor vehicles. Personnel will be aware of road conditions and hazards, which include wildlife at the Depot. Personnel will practice defensive driving techniques.
	Injury from sliding/falling drum	Drums will be carefully loaded and secured prior to transport. Heavy gloves will be worn while moving or adjusting drums.
	Noise	Hearing protection will be worn in hazardous noise areas.

Equipment/Materials to be Used: Drum dolly, forklift, drum wrench, shovels.

Inspection Requirements: Personnel will conduct a daily inspection of PPE and equipment. Equipment will be inspected prior to use in accordance with the manufacturer's instructions. If during inspection or during use, equipment fails to function properly, it is to be turned in for repair/replacement.

Training Requirements: All on-site personnel will be current in OSHA training in accordance with 29 CFR 1910.120 (HAZWOPER), and be enrolled in a medical monitoring program with a current occupational physical with physician's certificate in accordance with 29 CFR 1910.120(f). Additional training (such as first aid/CPR, bloodborne pathogens, respiratory protection, confined space entry, etc.) will be provided as applicable. Personnel will be trained in the safe use of required equipment and in the required PPE. All personnel operating heavy equipment will provide proof of competency with the equipment to the SHSO prior to operating the equipment.

Name: Timothy S. Mustard, CIH
(person certifying that the evaluation has been performed)

Date: 2/24/2005
(date of evaluation)

Note(s):
1. This analysis serves as certification of hazard assessment and is in compliance with EM 385-1-1 Section 06.A.02 for Hazard Evaluation.

Workplace: Seneca Army Depot Activity
Activity being evaluated: Driving in the Ammo Area / "Q"
Summary: Activities that involve driving within the Ammo Area or Q

Principal Steps:	Potential Hazards:	Controls:
Driving within the Ammo Area	Access	Personnel will obtain the gate keys from SEDA personnel in Building 123, keys will be signed out, and must be returned upon to project completion.
	Operation of Motor Vehicle	Drivers will have a valid driver's license and will wear a seat belt at all times. Drivers are prohibited from using any communication devices (e.g., cell phones) while operating any motor vehicles. Personnel will be aware of road conditions and hazards, and will obey posted speed limits. Personnel will practice defensive driving techniques.
	Struck By	Personnel will be aware of wildlife hazards within the Q that may include but are not limited to: deer, turkeys. Personnel will drive slowly, and will stop if necessary to allow for wildlife passage.
	Imobilized Vehicle	Personnel will drive only on paved or cleared dirt roads, and will park their vehicles only on paved or dirt roads. Vehicles will be parked facing the exit, and keys will be left in or on the vehicle.
	Communication	Prior to commencement of daily activities, the method of communication will be discussed. Personnel that will be working within the Ammo Area will have either two-way radios or cellular phones with which to communicate with each other and with the field office.
Driving within the Q	Access	Personnel will obtain the gate control (garage door opener type) from SEDA personnel in Building 123, control will be signed out, and must be returned upon to project completion.
	Operation of Motor Vehicle	Drivers will have a valid driver's license and will wear a seat belt at all times. Drivers are prohibited from using any communication devices (e.g., cell phones) while operating any motor vehicles. Personnel will be aware of road conditions and hazards, and will obey posted speed limits. Personnel will practice defensive driving techniques.

Workplace: Seneca Army Depot Activity
Activity being evaluated: Driving in the Ammo Area / "Q"
Summary: Activities that involve driving within the Ammo Area or Q

Principal Steps:	Potential Hazards:	Controls:
	Struck By	Personnel will be aware of wildlife hazards within the Q that may include but are not limited to: deer, turkeys. Personnel will drive slowly, and will stop if necessary to allow for wildlife passage.

Equipment/Materials to be Used: Motor Vehicle.

Inspection Requirements: Motor vehicle will be in good working order.

Training Requirements: All on-site personnel will be current in OSHA training in accordance with 29 CFR 1910.120 (HAZWOPER), and be enrolled in a medical monitoring program with a current occupational physical with physician's certificate in accordance with 29 CFR 1910.120(f). Additional training (such as first aid/CPR, bloodborne pathogens, respiratory protection, confined space entry, etc.) will be provided as applicable. Personnel will be trained in the safe use of required equipment and in the required PPE. All personnel operating heavy equipment will provide proof of competency with the equipment to the SHSO prior to operating the equipment. All Parsons personnel will have completed the defensive driving training course.

Name: Timothy S. Mustard, CIH
(person certifying that the evaluation has been performed)

Date: 2/24/2005
(date of evaluation)

Note(s):
1. This analysis serves as certification of hazard assessment and is in compliance with EM 385-1-1 Section 06.A.02 for Hazard Evaluation.

Workplace: Seneca Army Depot Activity
Activity being evaluated: Decontamination Area Set-up
Summary: Activities involved with decontamination area set-up

Principal Steps:	Potential Hazards:	Controls:
General Site Activities	Operation of Motor Vehicle	Drivers will have a valid driver's license and will wear a seat belt at all times. Drivers are prohibited from using any communication devices (e.g., cell phones) while operating any motor vehicles. Personnel will be aware of road conditions and hazards, which include wildlife at the Depot. Personnel will practice defensive driving techniques.
	Site Hazardous Material Exposure	Training and safety awareness of potential exposure to contaminants at the site. Training of personal decontamination procedure. Appropriate PPE (tyvek coverall - optional, safety glasses, gloves, and steel-toe boots). HTW, radiation, and UXO training and safety awareness during site specific training and refreshed during morning tailgate briefing. Air monitoring for chemical agents and dust while digging. Use face shield as appropriate.
	Cold and Heat Stress Injuries	SHSO to implement heat stress/cold injury control program in accordance with the work plan.
	Tripping Hazards	Personnel awareness of potential slippery surfaces and tripping hazards. Inform Site Manager or SHSO of any slip, trip, or fall hazards. Practice good housekeeping, keep work areas neat.
	Biological Hazard (ticks, bees, mosquitoes, snakes, spiders, etc.)	Personnel awareness of potential exposure to biological hazards. Wear appropriate clothing (hat, long-sleeve shirt, long pants, gloves, and boots) and insect repellants. Wear thick gloves when clearing plants or debris from work area.
	Motorized/Pedestrian Traffic	Personnel exercise caution while working in the vicinity of a street and near vehicular traffic. Barriers, warning signs, designated walkways, or other safeguards must be provided where pedestrians are exposed to the risk of collision.
	Injury from Material Lifting	Personnel awareness of potential hazards from day-to-day material lifting.
	Injury from Hand Tool Operation	Personnel awareness of potential hazards from hand tool operation. SHSO will ensure that all tools used on site are in proper working order and are in good condition. Personnel to inform SHSO or project manager if tools require repair or replacement. Requirements outlined in EM385-1-1 Section 13 will be observed.
Decontamination area set-up.	Slips trip and falls	Be aware of tripping hazards.
	Back injury	Personnel will utilize proper lifting techniques. See Drum AHA if moving drums is involved.
	Vehicle and heavy equipment traffic in work area	Operation of heavy equipment in accordance with the HSP. Be alert when working around heavy equipment. Ground guide for the backing of all vehicles. No heavy equipment will be operated without a ground guide. Barriers, warning signs, designated walkways, or other safeguards must be provided where pedestrians are exposed to the risk of collision.

Workplace: Seneca Army Depot Activity
Activity being evaluated: Decontamination Area Set-up
Summary: Activities involved with decontamination area set-up

Principal Steps:	Potential Hazards:	Controls:
	Biological Hazard (ticks, bees, mosquitoes, snakes, spiders, etc.)	Personnel awareness of potential exposure to biological hazards. Wear appropriate clothing (hat, long-sleeve shirt, long pants, gloves, and boots) and insect repellants. Wear thick gloves when clearing plants or debris from work area.
	Electrocution	Inspect for buried and overhead utilities in the vicinity of the work area. A clearance permit shall be obtained from base personnel or utility companies prior to initiating intrusive operations.
	Injury from Power Tool Operation	All tools will be in good working order. No damaged equipment will be used until repaired or replaced. When power operated tools are designed to accommodate guards, the guard must be in place on the tool. Fuel powered tools may be refueled, serviced, or maintained only while the tools are stopped and not operating.
	Injury from Hand Tool Operation	Personnel awareness of potential hazards from hand tool operation. SHSO will ensure that all tools used on site are in proper working order and are in good condition. Personnel to inform SHSO or project manager if tools require repair or replacement. Requirements outlined in EM385-1-1 Section 13 will be observed.

Equipment to be used: Drums, lumber, sheet plastic, hand tools, power tools, decon buckets, brush, nominal 5% bleach solution detergent, and water.

Inspection Requirements: Equipment will be inspected by workers daily prior to use in accordance with the manufacturer's instructions. If during inspection or during use, equipment fails to function properly, equipment is to be turned in for repair/ replacement. If any safety device on equipment is missing, that piece of equipment will be placed out of service until it can be repaired or replaced. The SSHO will ensure prior to daily operations that the PDSs are ready for operations.

Training Requirements: All on-site personnel will be current in OSHA training in accordance with 29 CFR 1910.120 (HAZWOPER), and be enrolled in a medical monitoring program with a current occupational physical with physician's certificate in accordance with 29 CFR 1910.120(f). Additional training (such as first aid/CPR, bloodborne pathogens, respiratory protection, confined space entry, etc.) will be provided as applicable. Personnel will be trained in the safe use of required equipment and in the required PPE. All personnel operating heavy equipment will provide proof of competency with the equipment to the SHSO prior to operating the equipment.

Name: Timothy J. Mustard, CIH
(person certifying that the evaluation has been performed)

Date: 2/24/2005
(date of evaluation)

Note(s):
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Workplace: Seneca Army Depot Activity
Activity being evaluated: Site Walk / Visit
Summary: Activities where visitors to the site would enter the Exclusion Zone (active work area)

Principal Steps:	Potential Hazards:	Controls:
Site Walk / Visit	Operation of Motor Vehicle	Drivers will have a valid driver's license and will wear a seat belt at all times. Drivers are prohibited from using any communication devices (e.g., cell phones) while operating any motor vehicles (Parsons only). Visitors will be aware of road conditions and hazards, which include wildlife at the Depot. Visitors will practice defensive driving techniques.
	Site Hazardous Material Exposure	Visitors will be aware of potential exposure to contaminants at the site. Appropriate PPE (tyvek coverall - optional, safety glasses, gloves, and steel-toe boots).
	Tripping Hazards	Visitor awareness of potential slippery surfaces and tripping hazards. Inform field coordinator or SHSO of any slip, trip, or fall hazards.
	Biological Hazard (ticks, bees, mosquitoes, snakes, spiders, etc.)	Personnel awareness of potential exposure to biological hazards. Wear appropriate clothing (hat, long-sleeve shirt, long pants, gloves, and boots) and insect repellants. Wear thick gloves when clearing plants or debris from work area.
	Radiological Hazard Exposure	Safety awareness of radiological hazards. All visitors will wear personal radiation dosimeters while within the Exclusion Zone. All visitors shall be frisked using the Geiger-Mueller pancake-type detector prior to leaving the work area and prior to eating, smoking, or drinking.
	Noise	Hearing protection will be worn in hazardous noise areas.
	Vehicle and heavy equipment traffic in work area	Visitors will be alert when walking around heavy equipment.

Equipment/Materials to be Used: None.

Inspection Requirements: None.

Workplace: Seneca Army Depot Activity
Activity being evaluated: Site Walk / Visit
Summary: Activities where visitors to the site would enter the Exclusion Zone (active work area)

Principal Steps:	Potential Hazards:	Controls:

CONTINUED FROM THE PREVIOUS PAGE:

Training Requirements: All visitors must make arrangements with both the resident Army client and Parsons well in advance of the planned visit. Any visitors that wish to enter the Exclusion Zone (EZ) will provide written documentation of the following: appropriate, up-to-date hazardous waste operations training, current participation in a medical surveillance program per requirements of 29 CFR 1910.120, and evidence of the ability to use a respirator in accordance with 29 CFR 1910.134. If the EZ is a radiological site as described in EM 385-1-1 Section 06.E (c), approved visitors must be willing to participate in appropriate dosimetry use that is coordinated with the RSO.

Once approved, visitors will be briefed by a qualified person on the hazards expected at the site and the health controls required. They will be escorted by the site manager or his/her designee, and will follow all advice and instructions provided by the Parsons' Site Manager and SHSO.

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Workplace: Seneca Army Depot Activity
Activity being evaluated: Power and Hand Tool Operation
Summary: Activities that involve power or hand tool operation

Principal Steps:	Potential Hazards:	Controls:
Power Tool Operation	Hand Injury	Tools will be operated per the manufacturer's instructions. PPE will be worn as described in the HSP. In general, thick work gloves will be worn while operating power tools. Employees will be trained how to properly use new or unfamiliar equipment.
	Back Injury	Personnel will use proper lifting techniques, and will take breaks as needed to strech or change position.
	Eye Injury	Safety glasses and/or face shields will be worn while power tools are being used.
	Electrocution	Inspect for buried and overhead utilities in the vicinity of the work area. A clearance permit shall be obtained from base personnel or utility companies prior to initiating intrusive operations.
	General Use	All tools will be in good working order. No damaged equipment will be used until repaired or replaced. When power operated tools are designed to accommodate guards, the guard must be in place on the tool. Fuel powered tools may be refueled, serviced, or maintained only while the tools are stopped and not operating. Electrical power tools must be plugged into Ground Fault Circuit Interrupters (GFCI).
	Tripping	Work areas will be kept neat, unused tools will be put away. Power cords will be secured to the ground.
	Noise	Hearing protection will be worn in hazardous noise areas.
Hand Tool Operation	Hand Injury	Tools will be used in a correct and safe manner. PPE will be worn as described in the HSP. In general, thick work gloves will be worn while operating power tools. Employees will be trained how to properly use new or unfamiliar equipment.
	Back Injury	Personnel will use proper lifting techniques, and will take breaks as needed to strech or change position.
	Eye Injury	Safety glasses and/or face shields will be worn while hand tools are being used.
	General Use	All tools will be in good working order. No damaged equipment will be used until repaired or replaced.

Workplace: Seneca Army Depot Activity
Activity being evaluated: Power and Hand Tool Operation
Summary: Activities that involve power or hand tool operation

Principal Steps:	Potential Hazards:	Controls:
	Tripping	Work areas will be kept neat, unused tools will be put away.

Equipment/Materials to be Used: Any power or hand tools, ground fault circuit interrupters

Inspection Requirements: All tools will be inspected prior to use.

Training Requirements: All on-site personnel will be current in OSHA training in accordance with 29 CFR 1910.120 (HAZWOPER), and be enrolled in a medical monitoring program with a current occupational physical with physician's certificate in accordance with 29 CFR 1910.120(f). Additional training (such as first aid/CPR, bloodborne pathogens, respiratory protection, confined space entry, etc.) will be provided as applicable. Personnel will be trained in the safe use of required equipment and in the required PPE. All personnel operating heavy equipment will provide proof of competency with the equipment to the SHSO prior to operating the equipment.

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Workplace: Seneca Army Depot Activity
Activity being evaluated: Heavy and Motorized Equipment Operation
Summary: Activity involving use of heavy or motorized equipment

Principal Steps:	Potential Hazards:	Controls:
Transport to the site	Operation of Motor Vehicle	Drivers will have a valid driver's license and will wear a seat belt at all times. Drivers are prohibited from using any communication devices (e.g., cell phones) while operating any motor vehicles. Personnel will be aware of road conditions and hazards, which include wildlife at the Depot. Personnel will practice defensive driving techniques.
	Struck by passing vehicle	Erect signs stating "Danger Construction Zone" on orange background with black letters, post them at least 100 yards from both sides of traffic. Lights or reflectors shall be used on signs for night work.
	Struck By	All equipment and tools will be properly secured during transport. **All vehicles and equipment will comply with DOT and OSHA requirements.**
	Tip Over	Never move the equipment with the bucket upright. Set hydraulic leveling jacks before use (as applicable). Ensure the work area foundation is as stable as possible. Blades and buckets must be lowered to the ground and parking brakes set before shutting off a heavy equipment or vehicle.
	Backing	Use a ground guide along with a functioning back-up alarm (that is audible above the site noise) during equipment backing.
Heavy or Motorized Equipment Operation	Equipment Maintenance	The equipment must be maintained in a proper functioning condition. All motors must be shut off and electrical, mechanical and hydraulic components locked out of service when making repairs. Safety shutoff system must be tested daily and not disabled. Bleed off pressure on hydraulic lines before undoing fittings. Do not leave tools or parts loose on the equipment after maintenance has been performed.
	General use	All equipment must be inspected daily prior to use. Equipment must be operated and maintained in accordance with EM 385-1-1 and manufacturers guidelines. Vehicle cab must be kept free of all nonessential items, and all loose items must be secured. Safety glass must be used in windshields, windows, and doors. Cracked or broken glass must be replaced prior to use. Large construction motor vehicles and heavy equipment must be provided with necessary safety equipment (seat belts, rollover protection, emergency shutoff in case of rollover, and backup warning lights and audible alarms). Any equipment that is unattended must be immobilized and secured against accidental movement.
	Fire Hazards	All motors must be shut off during refueling. Smoking in the vicinity of the drilling rig is not permitted. An A-B-C fire extinguisher must be maintained on the drilling rig and associated motorized equipment. Fuel containers will not be stored within 10' of the drilling rig motor. Fuel will be stored in UL approved safety containers with contents clearly labeled.

Workplace: Seneca Army Depot Activity
Activity being evaluated: Heavy and Motorized Equipment Operation
Summary: Activity involving use of heavy or motorized equipment

Principal Steps:	Potential Hazards:	Controls:
	Operation of Motor Vehicle	Drivers will have a valid driver's license and will wear a seat belt at all times. Drivers are prohibited from using any communication devices (e.g., cell phones) while operating any motor vehicles. Personnel will be aware of road conditions and hazards, which include wildlife at the Depot. Personnel will practice defensive driving techniques. Operators of heavy equipment will be trained in the operation of such, and will provide documentation to the SHSO prior to operation.
	Tip Over	Never move the equipment with the bucket upright. Set hydraulic leveling jacks before use (as applicable). Ensure the work area foundation is as stable as possible. Blades and buckets must be lowered to the ground and parking brakes set before shutting off a heavy equipment or vehicle. Load composition, stability, stacking, unstacking and transport will be conducted in accordance with the site-specific HSP. If a load is in a raised position, an operator will attend to the controls. The maximum rated load for a lift vehicle will not be exceeded.
	Struck By	No part of any load will pass above a worker. Loads that might tip or fall must be secured. Loads will be transported as low to the ground as feasible.
	Vehicle and heavy equipment traffic in work area	Operation of heavy equipment in accordance with the HSP. Be alert when working around heavy equipment. Ground guide for the backing of all vehicles. No heavy equipment will be operated without a ground guide. Barriers, warning signs, designated walkways, or other safeguards must be provided where pedestrians are exposed to the risk of collision.
	Electrocution	Inspect for buried and overhead utilities in the vicinity of the work area. A clearance permit shall be obtained from base personnel or utility companies prior to initiating intrusive operations.
	Noise	Hearing protection will be worn in hazardous noise areas.

Equipment/Materials to be Used: Any heavy equipment (excavator, backhoe, forklift, etc.)

Inspection Requirements: Equipment will be inspected daily prior to use. Vehicle operators must check brakes, hydraulic lines, light signals, fire extinguishers, fluid levels, steering, tires, horn, and other safety devices.

Workplace: Seneca Army Depot Activity
Activity being evaluated: Heavy and Motorized Equipment Operation
Summary: Activity involving use of heavy or motorized equipment

Principal Steps:	Potential Hazards:	Controls:

CONTINUED FROM THE PREVIOUS PAGE:

Training Requirements: All on-site personnel will be current in OSHA training in accordance with 29 CFR 1910.120 (HAZWOPER), and be enrolled in a medical monitoring program with a current occupational physical with physician's certificate in accordance with 29 CFR 1910.120(f). Additional training (such as first aid/CPR, bloodborne pathogens, respiratory protection, confined space entry, etc.) will be provided as applicable. Personnel will be trained in the safe use of required equipment and in the required PPE. All personnel operating heavy equipment will provide proof of competency with the equipment to the SHSO prior to operating the equipment.

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Workplace: Seneca Army Depot Activity
Activity being evaluated: Project Mobilization / Demobilization
Summary: Activities involved with project mobilization and demobilization

Principal Steps:	Potential Hazards:	Controls:
Mobilization / Set up Work Area	Tripping hazards	Worker awareness of potential slippery surfaces and tripping hazards.
	Cold and heat stress injuries	Implement cold/heat stress control program.
	Biological Hazard (ticks, bees, mosquitoes, snakes, spiders, etc.)	Personnel awareness of potential exposure to biological hazards. Wear appropriate clothing (hat, long-sleeve shirt, long pants, gloves, and boots) and insect repellants. Wear thick gloves when clearing plants or debris from work area.
	Operation of Motor Vehicle	Drivers will have a valid driver's license and will wear a seat belt at all times. Drivers are prohibited from using any communication devices (e.g., cell phones) while operating any motor vehicles. Personnel will be aware of road conditions and hazards, which include wildlife at the Depot. Personnel will practice defensive driving techniques.
	Vehicle and heavy equipment traffic in work area	Operation of heavy equipment in accordance with the HSP. Be alert when working around heavy equipment. Ground guide for the backing of all vehicles. No heavy equipment will be operated without a ground guide. Barriers, warning signs, designated walkways, or other safeguards must be provided where pedestrians are exposed to the risk of collision.
	Imobilized Vehicle	Personnel will drive only on paved or cleared dirt roads, and will park their vehicles only on paved or dirt roads. Vehicles will be parked facing the exit, and keys will be left in or on the vehicle.
	Communication	Prior to commencement of daily activities, the method of communication will be discussed. Personnel that will be working within the Ammo Area will have either two-way radios or cellular phones with which to communicate with each other and with the field office.
	Noise	Hearing protection will be worn in hazardous noise areas.
	Hand tools	All tools will be in good working order. No damaged equipment will be used until repaired or replaced.
	Back injury	Personnel will utilize proper lifting techniques.
Demobilization / Restore site.	Tripping hazards	Worker awareness of potential slippery surfaces and tripping hazards.
	Cold and heat stress injuries	Implement cold/heat stress control program.

Workplace: Seneca Army Depot Activity
Activity being evaluated: Project Mobilization / Demobilization
Summary: Activities involved with project mobilization and demobilization

Principal Steps:	Potential Hazards:	Controls:
	Biological Hazard (ticks, bees, mosquitoes, snakes, spiders, etc.)	Personnel awareness of potential exposure to biological hazards. Wear appropriate clothing (hat, long-sleeve shirt, long pants, gloves, and boots) and insect repellants. Wear thick gloves when clearing plants or debris from work area.
	Vehicle and heavy equipment traffic in work area	Operation of heavy equipment in accordance with the HSP.. Be alert when working around heavy equipment. Ground guide for the backing of all vehicles. No heavy equipment will be operated without a ground guide. Barriers, warning signs, designated walkways, or other safeguards must be provided where pedestrians are exposed to the risk of collision.
	Noise	Hearing protection will be worn in hazardous noise areas.
	Hand tools	All tools will be in good working order. No damaged equipment will be used until repaired or replaced.
	Back injury	Proper lifting techniques.

Equipment/Materials to be Used: Common hand tools, vehicles, and forklift/crane.

Inspection Requirements: All equipment will be inspected daily by workers prior to use. If during inspection or during use, equipment fails to function properly, equipment is to be turned in for repair/ replacement. All safety guards designed on equipment will remain in place. If any safety device on equipment is missing, that piece of equipment will be placed out of service until it can be repaired or replaced.

Training Requirements: All on-site personnel will be current in OSHA training in accordance with 29 CFR 1910.120 (HAZWOPER), and be enrolled in a medical monitoring program with a current occupational physical with physician's certificate in accordance with 29 CFR 1910.120(f). Additional training (such as first aid/CPR, bloodborne pathogens, respiratory protection, confined space entry, etc.) will be provided as applicable. Personnel will be trained in the safe use of required equipment and in the required PPE. All personnel operating heavy equipment will provide proof of competency with the equipment to the SHSO prior to operating the equipment.

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Workplace: Seneca Army Depot Activity
Activity being evaluated: Personnel Decontamination
Summary: Activities involving personnel decontamination

Principal Steps:	Potential Hazards:	Controls:
Decontaminate personnel exiting from the EZ.	Site Hazardous Material Exposure	Training and safety awareness of potential exposure to contaminants at the site. Training of personal decontamination procedure. Appropriate PPE (tyvek coverall - optional, safety glasses, gloves, and steel-toe boots). HTW, radiation, and UXO training and safety awareness during site specific training and refreshed during morning tailgate briefing. Air monitoring for chemical agents and dust while digging. Use face shield as appropriate.
	Radiological Hazard Exposure	Training and safety awareness of radiological hazards during site-specific training. All survey personnel will wear personal radiation dosimeters during the work. All personnel and equipment shall be frisked using the Geiger-Mueller pancake-type detector prior to leaving the work area and prior to eating, smoking, or drinking. Detailed radiation decontamination procedures are included in Attachment A-2 and will be reviewed will personnel prior to commencement of project work.
	Eye injury	PPE (safety glasses, face shield) will be worn as required in the HSP.
	Slips trip and falls	Be aware of tripping hazards.
	Cold Stress/Heat Injuries	Implement cold injury/heat stress control program.
	General	Decontamination procedures may vary for each work area. Personnel will follow decontamination procedures outlined in the site-specific HSP. PPE and decon water will be collected and disposed of according to the HSP.
Support rescue personnel (as required).	Site Hazardous Material Exposure	Training and safety awareness of potential exposure to contaminants at the site. Training of personal decontamination procedure. Appropriate PPE (tyvek coverall - optional, safety glasses, gloves, and steel-toe boots). Personnel will follow decontamination procedures outlined in the site-specific HSP.
	Bloodborne Pathogens	Personnel will be trained in risks associated with bloodborne pathogens, in accordance with the Generic Site-Wide Health and Safety Plan.
	Cold/heat injuries	Implement cold injury/heat stress control program.
	Back injury	Personnel will utilize proper lifting techniques.

Workplace: Seneca Army Depot Activity
Activity being evaluated: Personnel Decontamination
Summary: Activities involving personnel decontamination

Principal Steps:	Potential Hazards:	Controls:
	Slips trip and falls	Be aware of tripping hazards.

Equipment/Materials to be Used: Decon buckets, brush, nominal 5% bleach solution, detergent, and water, Geiger-Mueller pancake-type detector, other radiation detection equipment, as necessary.

Inspection Requirements: All PPE will be inspected daily by workers prior to use.

Training Requirements: All on-site personnel will be current in OSHA training in accordance with 29 CFR 1910.120 (HAZWOPER), and be enrolled in a medical monitoring program with a current occupational physical with physician's certificate in accordance with 29 CFR 1910.120(f). Additional training (such as first aid/CPR, bloodborne pathogens, respiratory protection, confined space entry, etc.) will be provided as applicable. Personnel will be trained in the safe use of required equipment and in the required PPE. All personnel operating heavy equipment will provide proof of competency with the equipment to the SHSO prior to operating the equipment. Personnel will be trained in the site-specific decontamination procedures prior to commencement of Exclusion Zone work. Site-specific decontamination procedures will be outlined in the HSP.

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Workplace: Seneca Army Depot Activity
Activity being evaluated: Tool / Equipment Decontamination
Summary: Activities involving personnel decontamination

Principal Steps:	Potential Hazards:	Controls:
Process items through decontamination in accordance with HSP.	Site Hazardous Material Exposure	Training and safety awareness of potential exposure to contaminants at the site and decontamination procedure. Appropriate PPE (tyvek coverall - optional, safety glasses, gloves, and steel-toe boots). Personnel will follow decontamination procedures outlined in the site-specific HSP.
	Radiological Hazard Exposure	Training and safety awareness of radiological hazards during site-specific training. All survey personnel will wear personal radiation dosimeters during the work. Detailed radiation decontamination procedures are included in Attachment A-2 and will be reviewed will personnel prior to commencement of project work.
	Tripping hazards	Worker awareness of potential slippery surfaces and tripping hazards.
	Cold and heat stress injuries	Implement heat stress control program.
	Eye injury	PPE (safety glasses, face shield) will be worn as required in the HSP.
	General	Decontamination procedures may vary for each work area. Personnel will follow decontamination procedures outlined in the site-specific HSP. PPE and decon water will be collected and disposed of according to the HSP.
Remove gross contamination with brush.	Chemical warfare agents	CWM training and safety awareness. Personnel UXO safety awareness. All items found during the investigation will be assessed by UXO personnel prior to decontamination. If any suspect items not previously assessed are encountered work will stop to have the items investigated by a trained UXO specialist. Headspace analysis will be performed on all items prior to decontamination to ensure that personnel are wearing the proper PPE
	Site Hazardous Material Exposure	Training and safety awareness of potential exposure to contaminants at the site and decontamination procedure. Appropriate PPE (tyvek coverall - optional, safety glasses, gloves, and steel-toe boots).
	Radiological Hazard Exposure	Training and safety awareness of radiological hazards during site-specific training. Appropriate PPE will be worn.
	Eye Injury	PPE (safety glasses, face shield) will be worn as required in the HSP.

Workplace: Seneca Army Depot Activity
Activity being evaluated: Tool / Equipment Decontamination
Summary: Activities involving personnel decontamination

Principal Steps:	Potential Hazards:	Controls:
Place in decontamination bucket or rinse with decontamination solution.	Chemical warfare agents	CWM training and safety awareness. Personnel UXO safety awareness. All items found during the investigation will be assessed by UXO personnel prior to decontamination. If any suspect items not previously assessed are encountered work will stop to have the items investigated by a trained UXO specialist. Headspace analysis will be performed on all items prior to decontamination to ensure that personnel are wearing the proper PPE
	Site Hazardous Material Exposure	Training and safety awareness of potential exposure to contaminants at the site and decontamination procedure. Appropriate PPE (tyvek coverall - optional, safety glasses, gloves, and steel-toe boots).
	Radiological Hazard Exposure	Training and safety awareness of radiological hazards during site-specific training. Appropriate PPE will be worn.
	Eye Injury	PPE (safety glasses, face shield) will be worn as required in the HSP.
	Cold and heat stress injuries	Implement heat stress control program.
Clean with soap solution.	Chemical warfare agents	CWM training and safety awareness. Personnel UXO safety awareness. All items found during the investigation will be assessed by UXO personnel prior to decontamination. If any suspect items not previously assessed are encountered work will stop to have the items investigated by a trained UXO specialist. Headspace analysis will be performed on all items prior to decontamination to ensure that personnel are wearing the proper PPE
	Site Hazardous Material Exposure	Training and safety awareness of potential exposure to contaminants at the site and decontamination procedure. Appropriate PPE (tyvek coverall - optional, safety glasses, gloves, and steel-toe boots).
	Radiological Hazard Exposure	Training and safety awareness of radiological hazards during site-specific training. Appropriate PPE will be worn.
	Eye Injury	PPE (safety glasses, face shield) will be worn as required in the HSP.
Rinse with water.	Eye Injury	PPE (safety glasses, face shield) will be worn as required in the HSP.
	Cold and heat stress injuries	Implement heat stress control program.

Workplace: Seneca Army Depot Activity
Activity being evaluated: Tool / Equipment Decontamination
Summary: Activities involving personnel decontamination

Principal Steps:	Potential Hazards:	Controls:
Screen for contamination.	Hand Injury	Tools and instruments will be used in a correct and safe manner. PPE will be worn as described in the HSP. Employees will be trained how to properly use new or unfamiliar equipment.

Equipment/Materials to be Used: Decon buckets, brush, nominal 5% bleach solution, detergent, and water, Geiger-Mueller pancake-type detector, other radiation detection equipment, as necessary.

Inspection Requirements: All PPE will be inspected daily by workers prior to use.

Training Requirements: All on-site personnel will be current in OSHA training in accordance with 29 CFR 1910.120 (HAZWOPER), and be enrolled in a medical monitoring program with a current occupational physical with physician's certificate in accordance with 29 CFR 1910.120(f). Additional training (such as first aid/CPR, bloodborne pathogens, respiratory protection, confined space entry, etc.) will be provided as applicable. Personnel will be trained in the safe use of required equipment and in the required PPE. All personnel operating heavy equipment will provide proof of competency with the equipment to the SHSO prior to operating the equipment. Personnel will be trained in the site-specific decontamination procedures prior to commencement of Exclusion Zone work. Site-specific decontamination procedures will be outlined in the HSP.

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