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## REPORT

RCRA Facility Investigation  
Former Phillips Display Components Facility  
Seneca Falls, New York  
for  
GTE Operations Support Incorporated  
Volume I

URS Job No.: 27010-040-007  
June 28, 2002

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## EXECUTIVE SUMMARY

This RFI Report for the former Philips Display Components Facility in Seneca Falls, New York, was prepared by URS Corporation for GTE Operations Support Incorporated. The original RFI work plan was prepared by SECOR International in 1996. Three work plan addenda expanded the scope of the investigation, and were prepared and carried out by O'Brien & Gere Engineers, Inc. (O'Brien & Gere). Prior to the implementation of these work plans, various SWMUs and areas of concern had been investigated and closed by others between 1980 and 1995.

The purpose of the RFI is to identify releases from those SWMUs or areas of concern that may warrant corrective action, and use existing data to remove other areas from further consideration. This process focuses resources on those units or areas that pose unacceptable risks. Further investigation of Site hydrology and hydrogeology will be performed to develop strategies to mitigate the risks posed.

The original RFI objective was to characterize the nature and extent of residuals in environmental media. The objective was modified to include assessing the vertical extent of groundwater residuals transport and potential preferential migration pathways. As the investigation proceeded, these objectives were further refined to evaluate potential impacts at the soil-bedrock interface and in the bedrock aquifer. Work Plan Addenda described the installation of three bedrock interface monitoring wells and six bedrock monitoring wells, as well as the collection of a sample from the interceptor sewer effluent, a survey of the building sumps and pits, and an evaluation of indoor air quality. Changes to the work plans were made in consultation with NYSDEC. Indoor air evaluation procedures will be addressed in the near future. The main objective of this RFI report is to identify potential sources of Site-related residuals that may pose unacceptable risks.

The Site includes 85 acres in the Village of Seneca Falls, New York, with 13 acres of buildings and the remainder covered by asphalt parking lots, grassy areas, or woods. The Site is bordered by Van Cleef Lake and the Seneca River/Barge Canal to the south, undeveloped and agricultural areas to the north and east, and residential areas to the north and west, including the Prospect Hill Apartments, which were constructed and occupied in 2001. The apartment property was previously part of the Site and was used as a parking lot. The original Site buildings were constructed to manufacture pumps in 1914. In the 1940s, the plant expanded and began to manufacture black and white television tubes. During the 1960s, the plant began to manufacture color television tubes. The operation ceased and the facility was subsequently sold to the Seneca County Industrial Development Agency. In 1989, H.P. Neun Company, Inc. began leasing the Site and currently subleases building space to industrial/commercial tenants including offices, light manufacturing, and warehousing. The current land use is not expected to change in the foreseeable future.

Topography across the Site is generally flat although a 35-foot escarpment borders the southern boundary of the property adjacent to the river/canal. The property is underlain by fill material and 20-45 feet of glaciolacustrine silt and clay with varying amounts of sand to boulder-size material overlying bedrock. The limestone bedrock consists of an upper weathered zone, a thick and massive zone, and a deeper zone that is fractured and artesian. The glaciolacustrine and

bedrock units are likely not in direct hydraulic connection beneath the facility. Groundwater flow in the glaciolacustrine unit was estimated by O'Brien & Gere to be to the south/southeast at a rate of 1.5 to 2.5 ft/yr. Groundwater flow in the bedrock has yet to be adequately determined but appears to be to the south. Groundwater flow within the bedrock occurs principally through secondary porosity features such as fractures, joints, and bedding planes although vertical fractures were not evident in the two rock cores. Groundwater elevations in two of the bedrock wells at the base of the escarpment appear to be influenced by the surface water elevations in the adjacent lake and river/canal. The lake upstream of the dam appears to be locally recharging the bedrock groundwater, but groundwater in the upper weathered zone of bedrock normally discharges to the river/canal, which is at a much lower elevation than the lake. One bedrock well along the river is artesian. The screen for this well was set beneath the massive portion of the bedrock unit, into the deeper portion where fractures are present.

RCRA Corrective Action activities began with the RFA and a series of sampling visits in the early 1990s at five on-Site units that were eventually closed (Interim Drum Storage Area, Satellite Storage Area, former Underground Fuel Oil Tank, PCB Capacitor Storage Area, and a former open burning area). In addition, selected sumps, pits and floor drains were investigated but areas beneath floor slabs were not investigated, since the former plant buildings were declared to be an inaccessible SWMU. Removal and RCRA closure of the former wastewater sludge holding and effluent lagoons, the former incinerator and underground waste feed tanks, and former container storage areas were also completed. In addition, 11 methanol or fuel products USTs and associated soils impacted by releases have been closed. Installation of new sewer lines required the segregation and ultimate disposal of 2,300 tons of soils impacted with Site related constituents. Finally, numerous process tanks and units have been decontaminated and/or dismantled and disposed, thereby removing potential future sources of releases.

*Incinerator  
more info?*

*from where  
what const.  
when*

*Where were tanks that were removed?*

*records?*

*Where?  
Show on map?*

Groundwater samples have been collected regularly since 1993 to assess groundwater quality changes with time. Elevated levels of chlorinated solvents (TCE and daughter products) have been identified in three primary areas on the south side of the buildings. The data indicate that total chlorinated VOC concentrations decreased between 1993 and present. The distribution of these constituents indicates that Building 2 and Building 11 represent likely source areas. The Building 7 area, which lies between those two potential source areas, may represent the fringe area of one or both of the potential source areas, or may represent an unrelated diffuse area of impact. The presence of daughter products demonstrates that TCE is degrading in the environment and in some areas only daughter products remain. Historic drum failures of mixed chlorinated solvents are documented in or near each of these likely source areas. In addition, during the rerouting of the sewer lines, certain sections of the trenches were excavated and disposed because they had been impacted. These areas are also adjacent to or near Buildings 2, 7, and 11. A pit near Building 2 has been identified where TCE was managed historically.

DNAPL was visually identified by O'Brien & Gere (primarily TCE) as a heavy residual in the soil at 25-28 feet while installing a monitoring well outside of Building 2. However, this well is screened into the top of competent bedrock at 35 feet, and has remained dry since it was installed. Therefore, the potential for vertical migration to bedrock groundwater is low. DNAPL has not been visually identified elsewhere on the Site; however, the potential presence of DNAPL may be inferred from groundwater concentrations near Building 11. Free-phase

DNAPL has not been observed in groundwater in any of the monitoring wells at the Site. Other than TCE and daughter products, residuals that exceeded applicable guidance, standards, and/or background concentrations with a degree and frequency that warrants further evaluation include BTEX, acetone, cadmium, and zinc.

Many areas require no further action because the applicable guidance, standards, and/or background concentrations have not been exceeded, or the area is being addressed as part of another unit, including:

- **Building 9A** (See Section 2.6);
- **Building 13 Truck Dock Area** (See Section 2.12);
- **Historic Outfalls – Interceptor Trench Outfall only** (See Section 2.13);
- **Grassy Areas Near Buildings** (See Section 2.14);
- **Interceptor Sewer Areas - soil** (See Section 2.16);
- **Overburden Temporary Well Pairs** (See Section 2.17);
- **Bedrock Interface Wells** (See Section 2.18); and
- **Bedrock Monitoring Wells** (See Section 2.19).

*I don't think  
we ever agreed to  
all this*

Many other areas require no further action since the detected concentrations were of low frequency or marginally exceeded screening values, and are below values for unrestricted residential use, including:

- **Courtyard Area** (See Section 2.2);
- **Building 2A** (See Section 2.3);
- **Building 3 Sump** (See Section 2.4);
- **Six-inch Effluent Line Area** (See Section 2.8);
- **Building 9** (See Section 2.9);
- **MW-20 Area** (See Section 2.10);
- **Building 13 Fuel Oil Tank Area** (See Section 2.11);
- **Historic Outfall HO-3 only** (See Section 2.13); and
- **Fields East of the Buildings** (See Section 2.15).

The results of the RFI indicate that some investigative areas contain Site-related constituents at concentrations and frequencies that warrant further consideration, including:

- **Building 2** (See Section 2.3);
- **Building 7** (See Section 2.5);
- **Building 11** (See Section 2.7);
- **Historic Outfalls HO-1, 2, 4, 5, and 6/7** (See Section 2.13);
- **Interceptor Sewer Effluent** (See Section 2.20); and
- **Remaining Sumps and Pits** (See Section 2.21).

**RESOURCE CONSERVATION AND RECOVERY ACT  
FACILITY INVESTIGATION REPORT:  
FORMER PHILIPS DISPLAY COMPONENTS FACILITY  
GTE OPERATIONS SUPPORT INCORPORATED  
SENECA FALLS, NEW YORK**

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## **1.0 INTRODUCTION**

This Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Report for the former Philips Display Components Facility in Seneca Falls, New York (the "Site"), was prepared by URS Corporation (URS) on behalf of GTE Operations Support Incorporated (GTEOSI). The original work plan was prepared by SECOR International (SECOR) in 1996. The work plan addenda and field work were prepared and conducted by O'Brien & Gere. A description of the original work plan and the three work plan addenda is included in Attachment 1. Prior to the implementation of this work plan and addenda, various Solid Waste Management Units (SWMUs) and other areas had been investigated by others under the RCRA Corrective Action Program.

The original SECOR Work Plan, approved by New York State Department of Environmental Conservation (NYSDEC), was designed to investigate ten areas of the Site based on their past use. Prior to the implementation of the SECOR Work Plan, O'Brien & Gere prepared a work plan addendum expanding the scope of the investigation. NYSDEC approved the work plan addendum in October 2000. Following completion of the amended scope of work, O'Brien & Gere prepared work plan Addendum No. 2, which was developed and issued in collaboration with NYSDEC in January 2001. Finally, Addendum No. 3 was prepared to address various issues raised by NYSDEC at a meeting between NYSDEC, GTEOSI, and O'Brien & Gere, and was approved in May 2001. To date, the expanded scope of work has resulted in the investigation of 21 areas.

Although the installation of bedrock interface (BI) monitoring wells (MWs) was conceptually included in Addendum No. 1, Addendum No. 2 was issued to provide specific locations and to describe the Sonic® drilling method. Addendum 3 was based primarily on the finding that trichloroethene (TCE) and its breakdown products were present in subsurface soil above New York State (NYS) Technical and Administrative Guidance Manual #4046 guidance levels (TAGMs). Addendum 3 was designed to further evaluate whether identified compounds migrated to down gradient areas or environmental media and included the installation of six bedrock groundwater monitoring wells (MW-BR-01 through MW-BR-06). Addendum 3 also

included the collection of a sample from the interceptor sewer effluent, a survey of the building sumps and pits, and an evaluation of indoor air quality. The indoor air evaluation procedures have not been finalized, but indoor air issues will be addressed in the near future.

## 1.1 INVESTIGATION OBJECTIVES

The original RFI objectives were directed at characterizing the nature and extent of residuals in environmental media at select areas throughout the facility, and obtaining the data necessary to support a Corrective Measures Study, if necessary (SECOR 1996). The investigation objectives were modified to include assessing the vertical extent of groundwater residuals transport and potential preferential migration pathways. As the investigation proceeded and preliminary data was obtained, these modified objectives were further refined to include an evaluation of potential impacts at the soil-bedrock interface and in the bedrock aquifer. The underlying main objective of this investigation is to identify potential sources of Site-related residuals that might pose unacceptable risks.

## 1.2 REPORT ORGANIZATION

Section 1 of the report briefly describes the Site and environmental setting and Site background, although more detailed descriptions of the Site and regional setting, geology and hydrogeology, and Site history are included in the attachments, as well as maps and drawings depicting noteworthy features. Attachments 2 and 3 include the report references and an acronym list. Other attachments and appendices include a description of the methods used to collect Site data and present the collected data in tabular format. Appendices are also included for boring and well sampling logs, air monitoring logs, data validation reports and photographs. Section 2 of this report describes the data collected from each area and compares the data to screening criteria to evaluate potential sources of Site-related residuals. Section 3 summarizes the constituents and media across the Site as a whole, describes the likely source areas, and explains the approach used to further screen the data. Finally, Section 4 concludes with a description and justification for those areas that require no further action and those that do.

## 1.3 SITE DESCRIPTION

The Seneca Falls facility encompasses approximately 85 acres east of and adjacent to the Village of Seneca Falls in Seneca County, New York (Figure 1). The property includes a series of interconnected buildings covering approximately 13 acres (Figure 2). The remainder of the Site is covered by asphalt parking lots, grass, or woods. The property is bordered by Van Cleef Lake

and the Seneca River/Barge Canal to the south, undeveloped and agricultural areas to the north and east, and a residential area to the west. During its operation, numerous SWMUs have been identified and investigated at locations across the site (Figure 3).

#### 1.4 ENVIRONMENTAL SETTING

A general description of the key factors affecting Site and regional setting are included in this section. A detailed Site and regional setting description is included in Attachment 4.

The climate of Seneca County is classified as humid continental. A water surplus from December through April promotes groundwater recharge. However, late spring and summer months create water deficit conditions that normally prevent significant recharge. Water budget conditions change as climatic conditions fluctuate.

The Former Philips Display Components Site is in the northern portion of Seneca County, near the northwestern end of Cayuga Lake. The Central Lowland province makes up approximately the northern third of the County. Between the New York State Thruway and the northern ends of Seneca and Cayuga Lakes, the topography is nearly flat, with very little relief (Mozola 1951). The Site lies within the glacial lake plain of the Central Lowland province.

Topography across the Site is generally flat with the ground elevation decreasing towards the river/barge canal. A 35-foot escarpment borders the southern boundary of the property. The property is underlain by fill material of varying thickness, and approximately 20 to 45 feet of glaciolacustrine deposits consisting of silt and clay with varying amounts of fine to medium-grained sand to boulder-size material overlying bedrock. Thin sandy lenses were also observed within the glaciolacustrine deposits in several of the on-Site borings. These sand lenses are not of sufficient thickness or areal extent to be correlated across the Site. However, localized transport of groundwater residuals likely occurs within these thin sand lenses.

The glaciolacustrine materials are underlain by fractured limestone known as the Bertie Limestone. The Bertie Limestone is reported to be approximately 30 feet thick in Seneca County; however, at least 120 feet of limestone was penetrated at monitoring well MW-BR-01. The Camillus Shale underlies the Bertie Limestone and consists of calcareous shale layers with occasional thin dolomite limestone beds (Mozola 1951).

The bedrock within the county generally strikes east-west with a gentle regional southward dip (Crain 1974). Based on the elevations from bedrock wells, the top of bedrock slopes to the

northeast and south beneath the Site. A bedrock elevation contour map of the northern portion of Seneca County is shown on Figure 4. As shown on this figure, a relatively narrow bedrock trough is present near Seneca Falls. This trough lies to the north of and does not directly coincide with the Cayuga-Seneca Canal, and may therefore represent a paleochannel. Bedrock cores were collected on top of the escarpment north of the facility (MW-BR-02) and below the escarpment adjacent to the Cayuga-Seneca Canal (MW-BR-05). The core logs for these wells are contained in Appendix A. These core logs and those from other historic bedrock wells have been used to construct geologic cross section maps (Figure 5). The character of the bedrock encountered in the core holes can be described as slightly fractured to sound. The bedrock consists of an upper highly weathered zone, a massive dry zone, and a deeper fractured zone. Monitoring well MW-BR-04 is screened in this deeper fractured zone and is artesian.

The environmental setting and land use vary across the Site. The predominant current and anticipated future land use for the Site is industrial/commercial. There are four environmental settings/land uses on and adjacent to the Site. These settings include the industrial, undeveloped and agricultural, waterways, and residential. The Site is comprised of interconnected industrial buildings covering approximately 13 acres and associated infrastructure. The Site is bordered by undeveloped and agricultural areas to the north and east. The property is bordered by Van Cleef Lake and the Seneca River/Barge canal to the south. The Seneca Falls facility is bordered to the west by a residential apartment building, the Van Cleef Lake Apartments, which were constructed and occupied in 2001. This land was previously owned by the Former Philips Display Components and was used as a parking lot.

## 1.5 SITE HYDROGEOLOGY

A more detailed discussion of Site hydrogeology is contained in Attachment 4. The overburden and bedrock units are likely not in direct hydraulic connection. Groundwater flow in the overburden unit is predominantly to the southeast. Based on monitoring data and questionable well construction techniques, groundwater flow in the bedrock has yet to be adequately determined. Figure 6 depicts the potentiometric surface in the overburden unit. O'Brien & Gere concluded that the rate of groundwater flow within the overburden unit varies seasonally from approximately 0.007 ft/day (2.5 ft/year) to 0.004 ft/day (1.5 ft/year), to the south and southeast.

Groundwater flow within the bedrock hydrogeologic unit underlying the Site occurs principally through secondary porosity features such as fractures, joints, and bedding planes. Regional information indicates that two distinct sets of joints occur in Seneca County (Mozola 1951). Vertical fractures were not evident from the rock cores at wells MW-BR-02 and MW-BR-05.

Review of the static bedrock groundwater elevations shown on Figure 7 indicate that the bedrock wells at the base of the escarpment adjacent to Van Cleef Lake and the Cayuga-Seneca Canal (MW-BR-05 and MW-BR-06) are influenced locally by those surface water bodies. Van Cleef Lake is locally recharging the bedrock groundwater near MW-BR-06. In addition, the groundwater elevation at MW-BR-01, which is approximately 250 feet north of Van Cleef Lake, is similar to the lake elevation.

The groundwater elevation recorded at MW-BR-05 indicates that bedrock groundwater is locally discharging near the Cayuga-Seneca Canal. Bedrock groundwater near MW-BR-05 appears to be in good hydraulic connection with the Cayuga-Seneca Canal. Water levels in this well were noted to rise rapidly when the lock gate was opened to release water to the Canal and quickly decline upon gate closure. At certain times of the year the Cayuga-Seneca Canal appears to recharge the bedrock groundwater. At other times, the bedrock groundwater likely discharges to the Cayuga-Seneca Canal. This is particularly likely when the surface water elevation of the river is lowered during winter months. In addition, groundwater elevations at MW-8 to MW-BR-05 and the surface water elevation of the Cayuga-Seneca Canal indicate that bedrock groundwater flows to the south toward the Cayuga-Seneca Canal.

## 1.6 SITE HISTORY AND REGULATORY BACKGROUND

A general description of the key factors affecting Site history and regulatory background are included in this section. A detailed Site history and chain-of-title report is included in Attachment 5.

The five original Site buildings were constructed by Rumsey Pump in 1914. In the 1940s, Sylvania purchased the plant, expanded the facilities, and began the manufacture of black and white television tubes. During the 1960s, Sylvania began to manufacture color television tubes and eventually became GTE. Philips Display Components acquired the property in the early 1980s and continued production until the mid-1980s. The facility was subsequently sold to the Seneca County Industrial Development Agency (SECOR 1996). In 1989, H.P. Neun Company, Inc. began leasing the Site and currently subleases building space to several tenants. The facility is currently used for commercial and industrial purposes including offices, light manufacturing, and warehousing.

Between 1948 and 1972, the facility discharged process waters to Van Cleef Lake and the Seneca River/Barge Canal through several outfalls along the escarpment south of the facility. In 1971 and 1972, Sylvania segregated the sewer lines handling non-process wastewater (storm and

floor drains) from those handling process wastewater requiring treatment. In conjunction with these changes, an industrial wastewater treatment plant (IWWTP) was constructed and a sewer line was installed on the south side of the facility to divert the wastewater to the IWWTP. Plant wastewater was subsequently conveyed to a settling lagoon prior to discharge to the Seneca River/Barge Canal under a NYS Pollution Discharge Elimination System (SPDES) Permit (Chester 1995a). By 1992, the lagoons and IWWTP were decommissioned (Keystone 1992b). The SPDES permit was canceled in February 1990. Currently the sewer system conveys storm water runoff from roof drains and exterior catch basins and discharges the storm water to the Seneca River/Barge Canal.

Prior to this RFI, several soil and groundwater investigations were conducted between the early 1980s and 1996. A RCRA Part B application was also submitted by Phillips in 1984. The application was not formally processed by NYSDEC because Phillips withdrew the application during the Interim Status period, before a draft RCRA permit was issued by the State. The application was withdrawn in 1986 when Phillips chose to close the Interim Status hazardous waste management units (lagoons, incinerator, incinerator feed tanks, and container storage areas). The decision to withdraw the permit triggered RCRA Closure of the listed units, Post-Closure monitoring on the surface impoundments, and Corrective Action at SWMUs. A RCRA Post-Closure permit was never issued, and after three years of groundwater monitoring at the former impoundments, post-closure activities were discontinued. The hazardous waste management units were closed according to the *Report on Soil Sampling for Closure Documentation – Hazardous Waste Management Units* (Chester 1989). The RFI work plan (SECOR 1996), which was submitted to NYSDEC also states: “All regulated units at the facility have been closed in accordance with the Facility Closure Plan. Closure has been approved by the New York State Department of Environmental Conservation (NYSDEC).”

The Corrective Action activities began with the RCRA Facility Assessment (RFA) and a series of sampling visits in the early 1990s, and continuing into an RFI, reported herein. According to the RCRA Facility Assessment Sampling Visit Investigation Report (Chester 1994b), five on-Site units were originally investigated. The units investigated were the Interim Drum Storage Area, the Satellite Storage Area, the former Underground fuel oil tank, the polychlorinated biphenyl (PCB) Capacitor Storage Area, and a former open burning area. In addition, selected sumps, pits and floor drains were investigated. Investigations of areas beneath floor slabs were not performed, since the former plant buildings were declared to be an inaccessible SWMU (Chester 1994b). The current RFI investigation continues and expands on the investigation of these units.

## 1.7 RESULTS OF PREVIOUS INVESTIGATIONS

Investigations and remedial activities were conducted over the last 20 years to identify and address areas of environmental concern. The investigations were performed in conjunction with the operation and subsequent RCRA closure of the surface impoundments. The impoundment (Waste Water Effluent Settling Lagoon), which discharged to SPDES Outfall 001 in the Seneca River, was closed in conformance with RCRA regulations in 1987 (Chester 1994b). In addition to the closure of the impoundments and other regulated units under RCRA, 11 underground storage tanks (USTs) previously used to store methanol or fuel products have been closed (Keystone 1992, Chester 1994b). In 1993 and 1994, Chester Environmental collected samples of shallow soils/sediments adjacent to seven historic outfalls. Samples were analyzed for volatile organic compounds (VOCs), cadmium, chromium, lead, zinc, fluoride and pH. VOCs were not detected, although several inorganic compounds were detected at levels above the NYSDEC TAGMs.

To supplement the historic data collected during earlier Site investigations, a groundwater monitoring program was implemented. The groundwater monitoring was performed as a separate task from the work delineated in the RFI Work Plan. Groundwater samples have been collected regularly from on-Site monitoring wells since 1993. These sample data were used to assess whether groundwater quality has changed with time (O'Brien & Gere 1999). A summary of the groundwater data from 1993 through March 2002 is provided and compared to NYSDEC (Class GA) groundwater standards on Figure 8. As shown on this figure, the results of the groundwater monitoring activities indicate the presence of certain VOCs in several areas. Constituents in these areas can be generally divided into petroleum-related compounds and chlorinated solvent compounds.

The first group, petroleum-related compounds, specifically benzene, toluene, ethyl benzene, and xylene (BTEX), are present at relatively low levels and low frequency in the groundwater near several former USTs. These levels are localized due to the low permeability soils. Concentrations of petroleum-related compounds in groundwater appear to be decreasing. The decreasing levels are likely the result of attenuation via natural degradation processes.

The second group includes areas in which elevated levels of chlorinated solvents such as TCE and its daughter product cis-1,2-dichloroethene (cis-1,2-DCE), have been identified. In three areas represented by monitoring wells MW-23, MW-24, and MW-25, total concentrations in groundwater exceed 1.0 mg/l. The data indicate that total chlorinated VOC concentrations decreased between 1993 and present.

Figure 8 illustrates that the chlorinated VOCs are present primarily in the monitoring wells on the south side of the building. The wells are near both the building and industrial drain lines. The sewer interceptor line on the south side of the building, which runs nearly perpendicular to the predominant groundwater flow direction, was believed to intercept shallow groundwater. In this area, groundwater flow is toward Van Cleef Lake and the Seneca River/Barge Canal. The invert of the interceptor line is 10 to 15 feet below ground surface (bgs) with the deepest point at the eastern end of the facility. Prior to the RFI conducted in 2000 and 2001 by O'Brien & Gere, the trench backfill material was believed to be comprised of a permeable sewer bedding that could act as a preferential pathway for migration of subsurface residuals and redirect a portion of groundwater flow along the trench backfill to the eastern side of the Site. However, the RFI investigation indicated that sewer backfill material appears to be native soil indistinguishable from surrounding soils.

*Did sewer intercept line intercept? shallow bgs? It's so, where do?!*

## 1.8 PREVIOUS REMEDIAL WORK

Various remedial efforts have been implemented at the Site since 1986, when Philips decided to withdraw the RCRA permit application, triggering RCRA closure and corrective action. These efforts were often expansive in scope and took considerable resources and time to complete. A brief summary of remedial efforts at the Site include:

- Removal and RCRA closure of the former wastewater sludge holding and wastewater effluent lagoon, the former incinerator and underground waste feed tanks, and former container storage areas;
- Removal or in-place closure of numerous fuel and product underground storage tanks and associated soils impacted by releases; and
- Installation of new sewer lines that involved the segregation and ultimate disposal of 2,300 tons of soils impacted with Site related constituents.

*Figure?*

In addition, numerous process tanks and units have been decontaminated and/or dismantled with the generated wastes disposed of properly, thereby removing potential future sources of releases to the environment.

## 2.0 RFI SAMPLING AND DATA

The rationale for an environmental investigation and the sampling approach for each investigative area are provided in the RFI work plan and related documents cited in Section 1 and Attachment 1. This section of the RFI report summarizes the approach and results of the RFI by investigative area. Figures 9 and 10 respectively, summarize the soil and groundwater results. Boring logs, well sampling logs, and air monitoring logs generated by O'Brien & Gere during the RFI are included in Appendix A, B, and C, respectively. Summary tables of results for the investigations of soil, sediment, and groundwater are presented in Appendix D and E, and data validation reports are in Appendix F. A photolog showing field activities is presented in Appendix G. The RFI data were evaluated by comparing them to the published values listed below.

- For soil comparison values, NYSDEC TAGMs were used (United States Environmental Protection Agency [USEPA] Region 9 preliminary remediation goals [PRGs] *enriched in RFI 7 were they collected in an area* residential use were used if no TAGM value was available, and Site-specific background values were also used for inorganic compounds);
- For groundwater comparison values, NYSDEC Technical and Operational Guidance (TOGs) values for Class GA groundwater were used (USEPA Region 9 PRGs for tap water were used if no TOG value was available).

Since samples collected from temporary groundwater wells were very turbid, inorganic analysis included field-filtered and unfiltered samples. The results of filtered groundwater samples were compared to published criteria. The detected constituents that exceeded published comparison values are considered potential Site-related constituents. The results of TAGMs and background comparisons of Site soil data are presented in Appendix E, Tables E-1, E-2, and E-3; while results of groundwater data comparisons to Class GA values are presented in Tables E-4 and E-5. Figures 9 and 10 present summaries of Site data and the results of screening comparisons.

### 2.1 BACKGROUND EVALUATION

Chester Environmental (Chester) collected background soil samples in the former agricultural area northeast of the Site (Chester 1994b). Fourteen samples were collected from two soil borings that were advanced to 16 feet bgs. The samples were submitted for laboratory analysis for total metals fluoride, cadmium, chromium, lead, and zinc.

To investigate Site-specific background concentrations of metals in sediment and soil, samples were collected by O'Brien & Gere adjacent to the shore near Trinity Church, located upstream of the Site. These samples were submitted for laboratory analysis of VOCs, target analyte list (TAL) metals, and fluoride. The two background samples did not have concentrations of VOCs above TAGMs (Table E-1). The only VOC detected in the background samples was methylene chloride, a common laboratory artifact. It was detected in both samples at concentrations well below TAGMs. The background samples were compared for consistency with published values for background concentrations of inorganics listed in TAGMs.

Inorganic data is handled differently than organic compound data in the TAGM guidance. Most of the inorganic metals have the Site-specific background data specified as the recommended soil cleanup objective. Some metals also have a recommended value as an option, if Site-specific data are not available. Finally, most of the metals have a State or regional background value specified, if there is no recommended value or Site-specific background available. As discussed above, Region 9 PRGs for residential use (a very conservative criteria) were used as substitutes in those cases where no other recommended or State or Regional background criteria were available (antimony, silver, thallium, and fluoride).

In 2001, O'Brien & Gere collected two background soil/sediment samples for 24 inorganic analytes. In 1994, Chester collected 14 surface/subsurface soil samples for five common inorganic metals (Cd, Cr, Pb, Zn, and F). Overall, the concentrations of fluoride detected in the O'Brien & Gere background samples were consistent with the levels detected by Chester (1994b). Cadmium and chromium were detected in the O'Brien & Gere background samples at concentrations lower than those measured in 1994, while lead and zinc were measured at higher concentrations in the Fall 2000 sampling event than in 1994. The following table compares the Chester and O'Brien & Gere background data.

**BACKGROUND DATA COMPARISON TABLE**

Metal	Chester # of detects	Chester Range (mg/kg)	Chester Average (mg/kg)	O'Brien & Gere Average (mg/kg)
Cadmium	2 out of 14	1.3 and 1.7	1.5	0.20
Chromium	14 out of 14	12.3 to 26.4	16.0	10.0
Lead:	14 out of 14	10.8 to 30.3	15.9	37.3
Zinc:	14 out of 14	33.1 to 49.3	41.0	111.5
Fluoride:	14 out of 14	1.0 to 1.8	1.6	1.3

The State and regional values specified in TAGMs are considered representative background values, and the Chester and O'Brien & Gere values are Site-specific background values. Inorganic results from the Site were compared to these two background data sets. The O'Brien & Gere background samples contained concentrations of beryllium, iron, and zinc above the optional recommended levels in TAGMs. In each case, TAGMs allows the Site-specific value to also be used as the background value, so these values are not considered to be exceedences. Inorganic constituents were retained for further consideration if the concentration in the sample exceeded both Site-specific and State or regional background data or PRGs.

## 2.2 COURTYARD

On April 30, 1999, an area of distressed vegetation was observed in the Courtyard during a Site walkover. To identify the nature and potential source of the distressed vegetation and to evaluate the presence of chlorinated VOCs in the subsurface soils noted during the installation of a new sewer line, surface soil, subsurface soil, and groundwater samples were collected from the Courtyard. One surface soil sample, four subsurface soil samples, and two groundwater samples were collected and analyzed to characterize the Courtyard Area. Subsurface soil samples were analyzed for VOCs, semi-volatile organic compounds (SVOCs), and inorganics; groundwater samples were analyzed for VOCs; and surface soil samples were analyzed for VOCs and inorganics.

### *Surface Soil*

VOCs were not detected in the surface soil sample above TAGMs (Table E-1). Iron, nickel, and potassium were detected above the Site-specific value but below the regional background value. The following inorganic constituents were detected in surface soil above their respective Site-specific and regional background concentrations: cadmium, copper, mercury, and zinc (Table E-3). However, the mercury value was only barely exceeded (0.22 versus 0.2 mg/kg).

### *Subsurface Soil*

VOCs and SVOCs were not detected in subsurface soils above TAGMs (Table E-1 and E-2). Aluminum, beryllium, chromium, copper, manganese, and potassium were detected above the Site-specific but below the regional background value. Only nickel was detected in a subsurface soil sample in the Courtyard above its respective Site-specific and regional background values, although it barely exceeded the regional value (25.4 versus 25 mg/kg) in only one sample.

### Groundwater

The concentrations of TCE detected in both groundwater samples exceeded the Class GA values. Total xylenes in groundwater were also detected at levels just above Class GA values in one sample (Table E-4).

### Screening Summary

The only potentially Site-related soil constituents that exceeded both sets of background values are cadmium, copper, and zinc in the one surface soil sample. It appears that TCE and xylenes detected in groundwater must originate from an area other than the Courtyard, since no VOCs were detected in soil samples above TAGMs.

## 2.3 BUILDING 2 AND 2A AREA

Trenching activities conducted south of Buildings 2 and 2A indicated the presence of stained soils and a previously unknown UST. The UST and surrounding impacted soils were removed in January 1994. Soil samples collected during these excavation activities indicated the presence of several VOCs including cis-1,2-DCE, TCE, 1,3-dichlorobenzene (1,3-DCB), 1,4-DCB, and xylenes. Soil boring samples collected near Building 2 during the RFA contained detected concentrations of cis-1,2-DCE (SECOR 1996).

Previous groundwater sampling at monitoring well MW-24 located just southeast of Building 2, indicated the presence of chlorinated compounds that may be associated with process residuals. It had been speculated that potential sources of these residuals could be the previously unknown UST, the sump located in Building 3, the former process sewers associated with Outfall 2, and the interceptor sewer that discharged from this area (SECOR 1996).

*Sources of  
Building 2*

To better characterize the presence of Site-related constituents in the area near Building 2 and the area near Building 2A, soil borings were advanced for soil and groundwater sampling. After field screening for VOCs, soil samples were collected from each location at the approximate depth of sewers associated with former Outfall 2 and the interceptor sewer. Groundwater grab samples were also collected from the borings. Samples were sent to the laboratory for analysis of VOCs, TAL metals, and fluoride.

### Building 2A

One surface soil sample, two subsurface soil samples, and four groundwater samples were collected from the Building 2A area. Subsurface soil and groundwater samples were analyzed for VOCs. Surface soil samples were analyzed for inorganics.

### *Surface Soil*

Aluminum, antimony, beryllium, chromium, copper, iron, and potassium were detected above the Site-specific but below the regional background value. Only cadmium was above Site-specific and regional background values in the surface soil sample collected from this area (Table E-3).

### *Subsurface soils*

VOCs were not present in subsurface soils above TAGMs (Table E-1) in the Building 2A area.

### *Groundwater*

The compounds 1,2-dichloroethane (1,2-DCA), TCE, vinyl chloride (VC), and cis-1,2-DCE were detected in groundwater at concentrations greater than Class GA values (Table E-4). The constituent 1,2-DCA was not detected in three of the four samples and was detected just above the criteria at 1.0 ug/L (estimated concentration) in the fourth sample. VC was not detected in two wells and was detected at 3 ug/L in the remaining two wells, just above the criteria of 2 ug/L. Measured TCE concentrations ranged from 0.3 ug/L to 790 ug/L. Cis-1,2-DCE was not detected in two wells and was detected at 13 ug/L and 150 ug/L in the remaining two wells.

### *Screening Summary*

Cadmium was the only soil constituent that exceeded both sets of background values in the single surface soil sample collected. For groundwater, 1,2-DCA, TCE, VC, and cis-DCE in groundwater exceeded Class GA values, although the VC and 1,2-DCA concentrations only marginally exceeded the criteria and were estimated values. VOCs detected in groundwater appear to originate from a different area since no VOCs were detected in soil samples above TAGMs.

### **Building 2**

To investigate the presence of VOCs in media near Building 2, one surface soil, 23 subsurface soil, and 14 groundwater samples were collected and analyzed. For inorganics, one surface soil, eight subsurface soil, and nine groundwater samples were analyzed.

### *Surface soil*

Antimony, chromium, copper, iron, lead, nickel, potassium, silver, sodium, and fluoride were detected above the Site-specific background value but below the regional background value in the surface soil sample. The single surface soil sample collected from this area contained levels of cadmium, mercury, and zinc greater than Site-specific and regional background levels (Table E-3).

### *Subsurface soil*

The Building 2 area contained the highest detected concentrations of VOCs identified at the Site in subsurface soils. TCE was detected in all 23 subsurface soil samples and exceeded the TAGM in 18 of those samples (Table E-1). The detected concentrations of TCE ranged from 0.032 to 1,200 mg/kg. Other VOCs that exceeded their TAGM in at least one instance include 1,2-DCA, 1,1,2,2-tetrachloroethane (1,1,2,2-PCA), VC, acetone, toluene, and total xylenes. Measured concentrations of 1,2-DCA ranged from non-detected to 10 mg/kg and 1,1,2,2-PCA ranged from non-detected to 4.4 mg/kg. In addition, dense non-aqueous phase liquid (DNAPL) was observed via ultraviolet (UV) light screening in the soil during the installation of monitoring well MW-BI-01.

Aluminum, beryllium, chromium, copper, iron, nickel, potassium, and fluoride were detected above the Site-specific background value but below the regional background value in the subsurface soil samples (Table E-3). No inorganic analytes exceeded their Site-specific and regional background level in the subsurface soil samples.

### *Groundwater*

The Building 2 area contained the highest detected concentrations of VOCs identified at the Site in groundwater (Table E-4). Groundwater contained TCE at concentrations up to 230,000 µg/L. Groundwater from the area around Building 2 contained TCE, 1,2-DCA, cis-1,2-DCE, VC, and toluene at concentrations greater than their respective Class GA values (Table E-4). Concentrations of cis-1,2-DCE exceeded Class GA values in all 14 groundwater samples, while TCE and VC exceeded in 13 out of the 14 samples. Groundwater concentrations of four inorganic constituents (iron, magnesium, manganese, and sodium) were greater than the Class GA values (Table E-5).

### *Screening Summary*

Among the Site-related constituents detected in subsurface soil in the Building 2 area, TCE, VC, 1,2-DCA, and 1,1,2,2-PCA exceeded TAGM comparison values. In addition, evidence of DNAPL was observed in the soil at monitoring well MW-BI-01. In groundwater, TCE, VC, 1,2-DCA, cis-1,2-DCE, and toluene exceeded the Class GA values. Cadmium, mercury, and zinc were detected in surface soil above both background criteria, although no metals were detected above both criteria in subsurface soil. None of these three metals were detected in groundwater, although four other non-Site related metals/nutrients (iron, magnesium, manganese, and sodium) were detected slightly in excess of their respective criteria. Based on the data, the area around Building 2 appears to be a potential source area for chlorinated VOCs.

## 2.4 BUILDING 3 SUMP

Previous investigations at MW-24 indicated the presence of chlorinated compounds that may be associated with process residuals. The sump located in Building 3, which is just north of MW-24, had been identified as a potential source. A sample of sump water and a sludge/sediment sample were collected and submitted to the laboratory for analysis of VOCs, TAL metals, and fluoride, although the samples do not represent environmental media and evidence of leakage is not confirmed.

### *Sump Solids and Water*

Concentrations of VOCs in sump solids and water were below the TAGMs and Class GA values, respectively (Tables E-1 and E-4). The following inorganic constituents were detected in sump solids at concentrations above the Site-specific and regional background levels for soils: arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc (Table E-3). The water sample collected in the sump did not contain any inorganic constituents above Class GA values (Table E-5).

### *Screening Summary*

Although the sump samples were not collected from environmental media, soil and groundwater comparison values were used to provide some perspective on the relative magnitude of Site-related constituents present in the unit. Numerous inorganic analytes were detected in the solids sample above the comparison values. Only mercury is not commonly associated with picture tube manufacturing, based on USEPA data from that industry. Mercury was also detected at relatively low concentrations. However, none of these analytes were detected in the sump water above Class GA values, suggesting that the metals in the sump solids are not leachable.

## 2.5 BUILDING 7 AREA

Several USTs formerly located east of Building 7 were removed in October 1986. UST 005 held gasoline and USTs 006 and 007 contained diesel fuel. Soil samples collected during the RFA from this area did not indicate the presence of VOCs or SVOCs exceeding TAGMs. However, stained soils were noted in the backfill of the former USTs. Therefore, eight soil pile samples were collected from excavated material and were found to contain benzene, toluene, and xylene at concentrations above TAGMs. Groundwater samples were collected from MW-23 located south of Building 7, and contained TCE at concentrations up to 16,000  $\mu\text{g/L}$ . However, the TCE is not related to the USTs.

During the RFI, sample locations near Building 7 were chosen to evaluate the potential impacts from the former backfill areas of USTs 005, 006, and, 007 and the former process sewers associated with Outfall 3, which discharged from this area. At least one soil sample from each boring was analyzed for VOCs, TAL metals, and fluoride. Groundwater samples were also collected from select borings and analyzed for the same parameters. Nine subsurface soil samples and seven groundwater samples were analyzed to characterize the presence of VOCs, and five subsurface soil and groundwater samples were analyzed to characterize the presence of inorganics.

#### *Subsurface Soil*

VOCs were below TAGMs in seven of the nine subsurface soil samples analyzed (Table E-1). Benzene, 1,2-DCA, TCE, and total xylenes were each detected at concentrations greater than their TAGMs in one of the two other subsurface soil samples. Benzene and xylenes were detected in B7-03 and TCE and 1,2-DCA were detected in B7-04. The levels of aluminum, beryllium, chromium, iron, potassium, and fluoride measured in subsurface soils near Building 7 were above the Site-specific background value, but below the regional background values (Table E-3). No metals exceeded both criteria.

#### *Ground Water*

In groundwater at the Building 7 area, several VOCs were detected at concentrations above their Class GA values (Table E-4). Compounds including BTEX, 1,2-DCA, cis-1,2-DCE, and TCE exceeded their Class GA values in at least one of the seven groundwater samples. Several inorganic constituents were identified in the groundwater at the Building 7 area. Iron, magnesium, and sodium were each detected in at least one groundwater sample at concentrations greater than their respective Class GA values (Table E-5), although these are believed to be non-Site related metals/nutrients.

#### *Screening Summary*

Among the Site-related soil constituents detected in the Building 7 area, benzene, 1,2-DCA, TCE, and total xylenes exceeded TAGMs. In groundwater, BTEX, 1,2-DCA, cis-1,2-DCE, and TCE exceeded Class GA values. BTEX exceedences were in the same sample (B7-GW-03), which is also located closest to the former USTs. The chlorinated solvent results were distributed across the borings in the area at relatively low levels, with the exception of one boring located near MW-23. Based on the data, the immediate area around the former USTs appears to be a potential source area for BTEX compounds, although it is not clear if the chlorinated VOCs are related to Building 7 or an adjacent potential source area.

## 2.6 BUILDING 9A AREA

Building 9A is attached to the south end of Building 9. Soil boring locations near Building 9A were advanced to further evaluate the potential impacts from the former backfill area of USTs 005, 006, and, 007, outside of Building 9, near the former truck dock. These are the same USTs that were addressed as part of the Building 7 sampling. Borings were advanced south of Building 9A to a minimum depth of 12 feet bgs. Based on field screening results for VOCs, at least one soil sample from each boring was analyzed for VOCs and SVOCs. If groundwater was encountered, groundwater samples were collected and analyzed for VOCs, TAL metals, and fluoride. Five subsurface soil samples and two groundwater samples were collected.

### *Subsurface Soil*

At the Building 9A area, VOC and SVOCs were not detected above TAGMs in any of the five soil borings tested (Tables E-1 and E-2).

### *Groundwater*

Groundwater concentrations of TCE and cis-1,2-DCE were above Class GA values in both of the wells tested. Trans-1,2-DCE and VC were detected at concentrations greater than their Class GA values in one of the two wells (Table E-4). Inorganic constituents were present at levels above Class GA values in groundwater (Table E-5). Iron, magnesium, manganese, and sodium were each detected in at least one sample at concentrations greater than their respective Class GA values. As stated previously, these same four constituents are not believed to be Site related.

### *Screening Summary*

No VOCs or SVOCs exceeded the TAGMs soil criteria. For groundwater, cis- and trans-1,2-DCE, TCE, and VC exceeded Class GA values. However, the former petroleum storage tanks in the Building 9A area, which were the target of the investigation, are not the source of the chlorinated compounds detected in the groundwater. The groundwater constituents are likely attributable to impacts associated with Building 7.

## 2.7 BUILDING 11 AREA

Soil samples collected during the RFI indicated the presence of cis-1,2-DCE in two soil borings at concentrations above TAGMs. The measured concentrations of cis-1,2-DCE increased with increasing depth. In addition, groundwater samples collected from MW-22 (located south of Building 11) and MW-25 (located southeast of Building 11) contained TCE, cis-1,2-DCE, benzene and toluene at concentrations above NYSDEC standards for Class GA waters.

As part of the current RFI activities, additional soil and groundwater samples were collected near monitoring well MW-25 to evaluate potential residual migration along the interceptor sewer and other nearby potential sources, such as the former drum storage areas and the former TCE tank inside the building. Field screening for VOCs was conducted for soil samples collected from borings near Building 11. Groundwater samples were collected from the borings and analyzed for VOCs, TAL metals, and fluoride. Sixteen soil samples and eleven groundwater samples were analyzed for VOCs. Inorganic constituents were characterized via collection and analysis of one surface soil sample, thirteen subsurface soil samples, and seven groundwater samples.

#### *Surface Soil*

Aluminum, antimony, beryllium, chromium, iron, nickel, potassium, and fluoride were detected above the Site-specific background value, but below the regional background value in the one surface soil sample. The single surface soil sample collected from this area contained levels of cadmium and zinc greater than the Site-specific and regional background levels (Table E-3).

#### *Subsurface Soil*

In the Building 11 area, acetone, TCE, and toluene were detected above TAGMs in subsurface soil (Table E-1). TCE exceeded its TAGM in 5 of the 16 subsurface soil samples analyzed. The highest concentration of TCE in subsurface soil was at B11-SBS-02 (14 to 16 feet bgs), at a concentration of 140,000  $\mu\text{g}/\text{kg}$ . At greater depths from the same sample boring (24 to 26 feet bgs), TCE concentrations were lower (3,600  $\mu\text{g}/\text{kg}$ ) but still exceeded TAGMs. Toluene was detected in three of the samples, with the maximum detected concentration of 2,100  $\mu\text{g}/\text{kg}$ . The maximum concentration of acetone was 5,400  $\mu\text{g}/\text{kg}$ .

Aluminum, antimony, beryllium, chromium, iron, manganese (one sample), nickel, and potassium were detected above the Site-specific background value but below the regional background value in the subsurface soil samples (Table E-3). Only cadmium and magnesium (one sample) exceeded their Site-specific and regional background level in the samples. However, most of these values only barely exceeded the criteria (cadmium was 1.2 and 1.4 versus 1.0, and magnesium was 57,300 versus 55,100).

#### *Groundwater*

VOCs were detected at concentrations above Class GA values in 10 of the 11 wells sampled (Table E-4). The following eight VOCs were detected at levels above their respective TAGMs: 1,1,-DCA, 1,1,1-TCA, cis-1,2-DCE, acetone, chloroform, toluene, TCE, and VC (Table E-1). The highest concentrations of VOCs were detected near B11-GW-09 where TCE was detected at

230,000 µg/L. The highest concentrations of acetone and 1,1-DCA in the Building 11 area were located in B11-GW-09 and B11-GW-10. These boring locations are adjacent to former outdoor drum storage areas where releases are known to have occurred.

Inorganic constituents in groundwater were above screening criteria for 6 of the 24 analytes. Cadmium, iron, magnesium, manganese, sodium, and zinc were detected in groundwater from Building 11 at concentrations above Class GA values (Table E-5). However, only the cadmium and zinc are believed to be Site-related constituents. The other four metals/nutrients have been detected throughout the Site above Class GA values.

#### *Screening Summary*

The former drum storage areas south of Building 11 may be potential source areas for the identified VOCs, cadmium, and zinc, since these constituents were detected in both soil and groundwater samples above their respective criteria.

## **2.8 SIX-INCH EFFLUENT LINE AREA**

Static leak testing conducted in accordance with the Sewer Evaluation work plan indicated that the 6-inch effluent line had the potential for leakage (Keystone 1992). However, a subsequent video inspection did not reveal any major line breaks or failures. To investigate if the line is a source of Site-related constituents in the soil, borings were advanced within and below the sewer backfill material. Field screening for VOCs was conducted and soil samples from each of two borings were analyzed for VOCs, TAL metals, and fluoride.

#### *Subsurface soil*

Subsurface soils near the 6-inch effluent pipe did not contain VOCs above TAGM levels in either of the two samples analyzed (Table E-1). The subsurface soil samples detected inorganic constituents above Site-specific background values but below regional background values including aluminum, beryllium, chromium, iron, nickel, potassium, sodium, and fluoride (Table E-3). Arsenic, cadmium, and zinc were detected in one of the two samples at a concentration greater than both background criteria. However, the arsenic criteria was barely exceeded (12.8 versus 12.0 mg/kg).

*Two samples for a line that is almost 2000 ft long?*

#### *Screening Summary*

Cadmium and zinc are the only constituents detected in the subsurface soil near the 6-inch effluent pipe at concentrations in excess of both background values, although it is not clear that

the effluent line is the source of those constituents. Impacts observed at Building 11 may be the source of these constituents.

## 2.9 BUILDING 9 AREA

When trenching occurred approximately 35 feet south of former fuel oil UST 009 (located north of Building 9), stained soils were observed adjacent to the fill lines. One soil pile sample of excavated trench material contained concentrations of cis-1,2-DCE above TAGM levels. Benzo(a)anthracene, benzo(a)pyrene, and chrysene were also detected above their respective TAGM levels in one soil boring near the former UST. No SVOCs were detected in the other three soil borings located near the UST. Based on these previous findings, additional subsurface soil and groundwater samples were collected to characterize the area around Building 9. Each soil boring was advanced to a depth of at least 16 feet bgs. After field screening for VOCs, soil samples from each boring were analyzed for VOCs, SVOCs, and inorganics. If groundwater was encountered in sufficient quantity, samples were analyzed for VOCs. Six subsurface soil samples and four groundwater samples were collected.

*Why not included for soil removal? Not shown as S/NMU!*

*was excavated trench soil removed??*

### *Subsurface Soil*

In the Building 9 area, VOCs were not detected above TAGM levels in five of the six soil borings. The remaining boring contained only acetone above the TAGM level at B9-02 (Table E-1). SVOCs were detected above TAGM levels in one of the six subsurface soil samples (Table E-2). At location B9-04, benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, chrysene, and dibenzo(a,h)anthracene were present at concentrations above TAGM levels.

The subsurface soil samples detected the following inorganic constituents above Site-specific background values but below regional background values: aluminum, antimony (one sample with an estimated value), beryllium, chromium, iron, nickel, and potassium (Table E-3). Copper was detected in only one sample at a concentration greater than both background criteria.

### *Groundwater*

Groundwater from the Building 9 area contained 1,2-DCA and cis-1,2-DCE at low concentrations just above Class GA values (Table E-4), although none of these chlorinated solvent compounds were detected in soil samples.

### *Screening Summary*

Acetone, benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, dibenzo(a,h)anthracene, and chrysene were detected in subsurface soil at Building 9 at a concentration above their

TAGM levels in one sample each. The only constituent to exceed both background soil criteria was copper, in one of the six samples. The concentrations and distribution of soil constituents suggest that a small pocket of relatively immobile and low-level Site-related residuals exist in the Building 9 area near the former UST 009. The chlorinated solvent VOCs detected in groundwater above Class GA values appear to originate from another source area.

## 2.10 MW-20 AREA

MW-20 is located along the northern edge of the Site. Vinyl chloride and cis-1,2-DCE have been routinely detected in MW-20 at concentrations exceeding their respective Class GA values. However, the low concentrations of VC and cis-1,2-DCE have been declining since monitoring was initiated. The relatively minor impacts at MW-20 appear to be isolated and have minimal potential for impacting off-Site areas.

To evaluate whether two former drainage pipes near MW-20 have impacted groundwater, direct push soil borings and temporary groundwater sampling points were installed. Soil borings and temporary groundwater sampling points were located at the end of each pipe and between the pipes and MW-20. In addition, temporary groundwater grab sampling points were located between MW-20 and the northern property boundary. After field screening for VOCs, four subsurface soil samples and five groundwater samples were analyzed for VOCs. Additionally, three subsurface soil samples were collected for SVOCs and one surface soil sample was collected for inorganics.

### *Surface Soil*

Aluminum, beryllium, iron, nickel, potassium, and fluoride were detected at concentrations above their respective Site-specific background values but below the regional background values. The single surface soil sample collected in the MW-20 area contained only cadmium above both background values (Table E-3).

### *Subsurface Soil*

Concentrations of VOCs in subsurface soils were below TAGM levels in the five soil samples analyzed (Table E-1). SVOCs were present in subsurface soils above TAGM levels in two of the three subsurface soil samples analyzed (Table E-2). Benzo(a)pyrene is the only constituent that exceeded its TAGM level in boring SBS-01. Several polynuclear aromatic hydrocarbons (PAHs) exceeded their TAGM levels in boring SBS-04, including benzo(a)anthracene, benzo(a)pyrene, chrysene, and dibenzo(a,h)anthracene.

### *Ground Water*

Concentrations of VC and cis-1,2-DCE were above Class GA values in one groundwater sample (Table E-4).

### *Screening Summary*

Benzo(a)anthracene, benzo(a)pyrene, dibenzo(a,h)anthracene, and chrysene were detected in subsurface soil at Building 9 at a concentration above their TAGM levels. The only constituent to exceed both background soil criteria was cadmium, in the single surface soil sample. The concentrations and distribution of soil constituents suggest that a small pocket of relatively immobile and low-level Site-related residuals exist in the MW-20 area. The low concentration chlorinated solvent VOCs detected in groundwater above Class GA values appear to originate from another area, possibly off-Site.

*Seems unlikely*

## **2.11 BUILDING 13 FUEL OIL TANK AREA**

When trenching was conducted for installation of a new storm sewer line in the early 1990s, stained soils were observed near a former fuel oil tank. However, VOCs were not detected in soil samples collected from trench sidewalls and a soil pile. Soil samples collected during the RFA indicated the presence of eight SVOCs in the soil (0.5-2 feet bgs) at concentrations above their respective TAGM levels.

To evaluate soil conditions in the area, additional soil and groundwater samples were collected and analyzed. Based on field screening results for VOCs, soil samples from each of the soil borings were composited at 2-foot intervals and submitted for SVOCs analysis. If groundwater was encountered in sufficient quantity, samples were collected and screened using a field gas chromatograph (GC). Samples were then sent to the laboratory for VOC analysis based on the highest potential for contamination. Four groundwater samples and one subsurface soil sample were analyzed for VOCs, and four subsurface soil samples were analyzed for the presence of SVOCs.

### *Subsurface Soil*

VOCs in subsurface soils were all below TAGM levels (Table E-1) near the Building 13 fuel oil tank. Several PAHs were detected in subsurface soils slightly above TAGM levels (Table E-2) at one location. Soil boring SBS-01 (2 to 8 feet bgs) is the only boring where PAHs were detected at concentrations above TAGM levels. These PAHs are: benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, chrysene, and dibenzo(a,h)anthracene.

### *Ground Water*

Benzene and ethylbenzene were detected in groundwater at concentrations just above their Class GA values in one well each (Table E-4).

### *Screening Summary*

There were no VOCs detected in subsurface soils at concentrations above TAGM levels at the Building 13 fuel oil tank area, and only two VOCs were detected in groundwater at very low concentrations. However, five SVOCs were detected in subsurface soil at a level above TAGM levels in one boring. The concentrations and distribution of soil and groundwater constituents suggest that a small pocket of relatively immobile and low-level Site-related residuals exist in the area near the former Building 13 UST.

## **2.12 BUILDING 13 TRUCK DOCK AREA**

During a previous investigation near the Building 13 truck dock area, groundwater analysis indicated 1,1-DCE, cis-1,2-DCE, TCE, and VC at concentrations exceeding their respective Class GA criteria at two sample locations. However, analytical results from groundwater collected at several other sampling points in the vicinity did not detect concentrations above the criteria.

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As part of the current RFI, six direct push sampling points were advanced to a depth of at least 6 feet bgs near the Building 13 truck dock. Soil samples were collected at 2-foot intervals, screened in the field for VOCs, and analyzed for VOCs based on the field screening data. If groundwater was encountered in sufficient quantity, samples were collected and analyzed for VOCs. Two groundwater samples were collected based on the results of field GC screening of soil samples.

### *Subsurface Soil*

VOCs were not detected in subsurface soil (Tables E-1) above TAGM levels at the Building 13 truck dock area.

### *Groundwater*

VOCs were not detected in groundwater (Tables E-4) at concentrations in excess of Class GA values at the Building 13 truck dock area.

### *Screening Summary*

No Site-related constituents were detected in soil or groundwater at concentrations above the respective soil and groundwater screening values.

## **2.13 HISTORIC OUTFALLS**

The historic outfall (HO) areas were sampled to evaluate if the former surface water outfalls and the interceptor sewer trench outfall are potential sources of Site compounds. Surface soil/sediment samples were collected along Van Cleef Lake and along the canal area to evaluate the former outfalls. The samples were collected at the base of each of the historic outfalls and at the interceptor trench outfall (ITO). Sediment/soil samples were analyzed for VOCs, TAL metals, and fluoride. Three samples were collected from HO-1, HO-2, and the ITO; and one each was collected from HO-3, HO-4, HO-5, and HO-6/7.

### *Surface Soil Sediment*

Surface soil/sediment samples collected from the HOs did not contain VOCs above TAGM levels (Table E-1). Concentrations of some inorganic constituents exceeded background levels in surface soil (Table E-3). The following sections present the inorganic results by outfall area.

#### **HO-1**

Aluminum, antimony, beryllium, chromium, copper, iron, mercury, nickel, potassium, silver, and fluoride were detected above Site-specific background values, but below the regional background values. Constituents detected above both background values in surface soil at HO-1 include cadmium and zinc (Table E-3).

#### **HO-2**

Aluminum, antimony, beryllium, chromium, copper, iron, nickel, potassium, silver, and fluoride were detected above Site-specific background values, but below the regional background values. Constituents detected above both background values in surface soil at HO-2 include cadmium and zinc (Table E-3).

#### **HO-3**

Aluminum, beryllium, chromium, iron, nickel, potassium, and fluoride were detected above Site-specific background values, but below the regional background values. Constituents detected above both background values in surface soil at HO-3 include only cadmium (Table E-3).

#### HO-4

Aluminum, antimony, barium, beryllium, iron, nickel, potassium, and fluoride were detected above Site-specific background values, but below the regional background values. Constituents detected above both background values in surface soil at HO-4 include cadmium, chromium, and zinc (Table E-3).

#### HO-5

Aluminum, antimony, beryllium, chromium, iron, nickel, potassium, and fluoride were detected above Site-specific background values, but below the regional background values. Constituents detected above both background values in surface soil at HO-5 include cadmium and zinc (Table E-3).

#### HO-6/7

Aluminum, beryllium, iron, lead, nickel, potassium, and fluoride were detected above Site-specific background values, but below the regional background values. Constituents detected above both background values in surface soil at HO-6/7 include cadmium, copper, mercury, and zinc (Table E-3).

#### ITO

Three surface soil samples were collected from the ITO. Aluminum, antimony, beryllium, chromium, iron, nickel, potassium, and fluoride were detected above Site-specific background values, but below the regional background values. No constituents were detected above both background values in surface soil at the ITO (Table E-3).

#### *Screening Summary*

Surface soil/sediment samples collected from the historic outfalls contain several inorganic constituents at levels above both background criteria, with the most prevalent analytes being cadmium and zinc. ITO is an exception with no constituents above the relevant criteria, and HO-3 contained low levels of cadmium only.

### 2.14 GRASSY AREAS NEAR BUILDINGS

An investigation of the surface soils in grassy areas near on-Site buildings was performed to evaluate potential airborne deposition of Site related constituents. Surface soil samples were collected and composited from five grassy areas around the facility. These samples were collected according to New York State Department of Health (NYSDOH) draft guidance (NYSDOH 1995) and analyzed for TAL metals. Samples were collected from the grassy areas at

locations in the Courtyard, MW-20, Building 2, Building 2A, and Building 11. The results for each of these samples are presented in the area-specific sections. They are also summarized in this section as a way to generally characterize the grassy areas interspersed throughout the building area.

#### *Surface Soil*

Inorganic constituents were detected in surface soil samples at concentrations above Site-specific and regional background levels in each of the areas tested (Table E-3), as summarized below:

- Building 2: Antimony, chromium, copper, iron, lead, nickel, potassium, silver, sodium, and fluoride were detected above the Site-specific background value but below the regional background value in the surface soil sample. Cadmium, mercury, and zinc were greater than both background levels.
- Building 2A: Aluminum, antimony, beryllium, chromium, copper, iron, and potassium were detected above the Site-specific but below the regional background value. Only cadmium was above Site-specific and regional background values in the surface soil sample collected from this area.
- MW-20: Aluminum, beryllium, iron, nickel, potassium, and fluoride were detected at concentrations above their respective Site-specific background values but below the regional background values. Only cadmium was detected above both background values.
- Building 11: Aluminum, antimony, beryllium, chromium, iron, nickel, potassium, fluoride were detected above the Site-specific background value, but below the regional background value in the surface soil sample. Cadmium and zinc were greater than both background values.
- Courtyard: Antimony, iron, nickel, and potassium were detected above the Site-specific but below the regional background value. Cadmium, copper, mercury, and zinc were greater than both background values. However, the mercury value was only barely exceeded (0.22 versus 0.2 mg/kg).

#### *Screening Summary*

The following inorganic constituents were detected in surface soils at concentrations above both background values at the grassy areas, with the frequency noted: cadmium (5 out of 5), zinc (3 out of 5), copper (1 out of 5), and mercury (2 out of 5). These areas are being addressed as part of the specific building area each sample is associated with.

## 2.15 FIELDS EAST OF THE BUILDINGS

Surface soil samples were collected from the fields located east and southeast of the facility to identify potential airborne deposition of Site-related constituents in surface soil. Ten surface soil samples were collected and composited according to NYSDOH (1995) guidance and analyzed for TAL metals. The locations of samples FLD-SS-01 – 05 and 07 are approximately 300 to 600 feet away from the nearest edge of the Site buildings, in wooded or grassy areas. Sample locations FLD-SS-06, 08, 09 and 10 are inside of or adjacent to the Site roadways.

### *Surface Soil*

Aluminum, beryllium, chromium, iron, manganese, nickel, potassium, thallium, and fluoride were detected above Site-specific background values, but below the regional background values. Constituents detected above both background values in the ten surface soil samples at the east fields include cadmium, nickel (one sample), and zinc (two samples).

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### *Screening Summary*

The following constituents exceeded both background criteria: cadmium, nickel, and zinc. The highest concentrations of these constituents were detected in the samples near the roadway (06, 08, 09, and 10).

## 2.16 INTERCEPTOR SEWER AREA

Previous investigations were performed to assess the potential for the interceptor storm sewer to serve as a preferential migration pathway for Site-related constituents in groundwater. Therefore, soil and groundwater samples were collected to determine if the interceptor sewer bedding is a potential source of Site-related compounds/residuals. Soil borings were advanced to at least 12 feet, the approximate depth of the sewer bedding. After field screening, seven soil samples were analyzed for VOCs. Groundwater was encountered in four borings/temporary wells and samples were analyzed for VOCs in all four, but TAL metals and total fluoride were only collected from three locations, apparently because the well went dry.

### *Subsurface Soil*

Constituents in subsurface soils from along the interceptor sewer were all below TAGM levels (Table E-1).

### *Groundwater*

Low concentrations of TCE, VC, cis-1,2DCE, and 1,1-DCA were detected in the groundwater samples above the Class GA values. Low concentrations of the inorganic constituent's manganese, magnesium, and sodium were detected above the Class GA values.

### *Screening Summary*

Constituents in subsurface soils from the interceptor sewer area were below TAGM levels in all samples collected. Therefore, the VOCs detected in groundwater samples appear to be from other source areas. The temporary wells were located near Buildings 2 and 7, which are near suspected source areas. The inorganic constituents identified do not appear to be Site-related.

## **2.17 OVERBURDEN TEMPORARY WELL PAIRS**

The objective of the overburden groundwater sampling in well pairs was to identify the vertical distribution and extent of Site-related constituents. Well pairs consisted of a shallow well (15 feet bgs) and a deeper well (25 feet bgs) to assess potential water quality differences at various depths, and to provide water level information to help evaluate groundwater flow. Two well pairs were installed near Building 11 and one well pair was installed near Building 2. One sample was collected from each of the wells, for a total of six samples for VOCs.

### *Groundwater*

Well Pair 1 is located near Building 2. Both the shallow and deep wells contained concentrations of 1,2-DCA, cis-1,2-DCE, TCE, and VC at concentrations above Class GA values (Table E-4). Well Pair 2 is located near Building 11, just south of the pole barn. Both the shallow and deep well contained concentrations of the following VOCs above their respective Class GA values: cis-1,2-DCE, TCE, and VC (Tables E-4). Well Pair 3 is located near Building 11, just west of the former tank farm area. Constituents detected in the shallow well were below their respective Class GA values, although TCE was detected in the deep well at a concentration just above its Class GA value.

### *Screening Summary*

Several chlorinated VOCs were detected in the well pairs above Class GA values, with the exception of the shallow well at Well Pair 3. The concentrations were generally higher in the shallow wells, although the correlation was less apparent as overall concentrations decreased and there were fewer compounds for comparison. The detected constituents will be addressed as part of the Building 2 or Building 11 areas.

## 2.18 BEDROCK INTERFACE MONITORING WELLS

A total of three BI monitoring wells were installed. Two of the BI wells were installed at locations chosen in collaboration with NYSDEC. A third well, which was not scoped in the work plan addenda, was installed near the pole barn where VOCs were detected in groundwater and soil. These BI wells were installed to collect sufficient data to: evaluate whether a confining layer is present on-Site; avoid cross contamination between distinct lithologic zones separated by a definable confining layer; investigate the presence or absence of residual or dissolved solvents at the bedrock interface; and if residuals were detected, evaluate the potential for horizontal migration along the overburden-bedrock interface.

Six soil samples were collected from MW-BI-01, which is near Building 2; three samples were collected from MW-BI-02, which is near Building 7; and three samples were collected from MW-BI-03, which is near Building 11. These samples were analyzed for VOCs. The BI wells did not produce water, so no groundwater samples were collected during the RFI.

### *Subsurface Soil*

The samples collected from bedrock interface monitoring wells near Buildings 7 and 11 did not contain VOCs at concentrations above TAGM levels. The six samples were collected near Building 2 between 24 and 35 bgs, where bedrock was encountered. A thin sand lens was observed at 24 feet, and the impacted layer down to bedrock was composed of clay. The samples contained TCE at concentrations well above TAGMs, which likely caused other lesser constituents to be diluted out during analysis. The sample from 30 feet bgs had a TCE concentration of 1,200,000 ug/kg, approaching the soil saturation value of 1,300,000 ug/kg. In addition, soil screening via UV light indicated the presence of free product DNAPL within the soil core at about 28 ft bgs.

### *Screening Summary*

TCE in subsurface soil near Building 2 was detected at concentrations above its TAGM level. A few other chlorinated compounds were detected as well, but others were likely diluted out by the high TCE concentrations. Groundwater was not produced in any of the wells. The compounds detected in soil from MW-BI-02 and 03 were all below TAGM levels.

## 2.19 BEDROCK MONITORING WELLS

Existing RFI data (collected from soil borings, temporary groundwater wells, and bedrock interface monitoring wells), and the ongoing groundwater monitoring program were evaluated.

The existing data set did not provide a sufficient basis for evaluating the bedrock groundwater. In April 2001, in collaboration with NYSDEC, GTEOSI agreed to install six bedrock wells. Figure 8 presents the locations of bedrock monitoring wells, which were installed around the perimeter of the facility. Groundwater and subsurface soil samples from the six bedrock monitoring wells were submitted for VOC analyses. The objectives of this task were to evaluate the nature of bedrock groundwater and the flow direction at the Site; the potential for migration of Site-related residuals to bedrock groundwater; and the potential for off-Site migration of residuals in bedrock groundwater.

#### *Subsurface soil*

The concentrations of VOCs detected in the subsurface soils during installation of the bedrock wells were all below TAGM levels (Table E-1).

#### *Groundwater*

The well located south of the electric power substation near Van Cleef Lake (MW-BR-06) contained TCE above its Class GA value (Table E-4). None of the other bedrock monitoring wells contained VOCs at concentrations above their respective standards. However, the boring log for MW-BR-06 suggests that it does not monitor groundwater in the bedrock. Drilling ceased upon auger refusal at 72-74 feet bgs and the 30-foot screen covers a zone of silt and gravel layers, with some sand, not competent limestone bedrock. The boring log, however, indicates that the top of weathered bedrock was interpreted to start at 24 feet bgs. The well location probably represents the face of the escarpment that is normally under water due to the presence of the dam. The eroded face of the escarpment was probably filled in with lake sediments over the years following construction of the dam.

#### *Screening Summary*

There were no constituents detected in soil collected from the bedrock monitoring wells at concentrations above both TAGM levels. TCE in groundwater from well MW-BR-06 was above the Class GA value. However, the manner in which the well was constructed suggests that bedrock groundwater is not being monitored.

## **2.20 INTERCEPTOR SEWER EFFLUENT WATER**

During the RFI, the interceptor sewer bedding was evaluated by advancing soil borings along the sewer pathway (See Section 2.16 above). The materials surrounding the sewer pipe consisted of native-soils, which were primarily silty clays. Therefore, the bedding material does not appear to be a preferential migration pathway. Review of analytical results from the soil borings supports

this conclusion. While the sewer bedding has been ruled out as a migration pathway, infiltration into and transport of Site residuals via the interceptor sewer system has not been evaluated.

Storm water is collected from the facility roof drains and outdoor catch basins. Most of this runoff is collected via an interceptor sewer, which runs along the south side of the facility. An interceptor sewer flow house is located in the southeast corner of the Site and is the last location where storm water effluent is accessible before the sewer discharges directly into the canal. Some sewer laterals run through areas where Site related constituents have been detected. In the event of a breach in the sewer, effluent could act to transport infiltrated residuals from subsurface source areas to the sewer-discharge point in the Seneca River. A water sample was collected from the interceptor sewer flow house, which is located in the southeast corner of the Site. The flow house is the last location where the effluent is accessible before the sewer discharges into the Seneca River. The sample was analyzed for VOCs.

#### *Effluent Water*

The grab sample (EFF-FH-01) contained cis-1,2-DCE and TCE above NYS Class GA values.

#### *Sampling Summary*

Two chlorinated solvent compounds are present at low concentration in the effluent water, suggesting that infiltration through a sewer lateral is possible.

## **2.21 SURVEY OF REMAINING SUMPS AND PITS**

A sump and pit survey was performed as part of Addendum #3. The objective of the survey was to locate remaining Site sumps and pits. Many of the indoor sumps and pits were abandoned and filled with concrete during previous facility closure efforts (Chester 1995b). A total of 25 sumps, pits, or other subsurface structures were encountered and documented by O'Brien & Gere. The function or type of pit (cistern, steam condensate collection) was not determined. The survey was conducted by a team of two environmental professionals that systematically traversed the interior and exterior of the facility looking for subsurface structures that could have the potential to hold and transport water. When subsurface structures were encountered, the location was marked on a figure, a photograph was normally taken, and a brief description was noted. The only sump that has been sampled is in Building 3 (See Section 2.4). None of the other sumps and pits have been identified as potential sources of Site-related constituents in soil or groundwater. See Figure 11 and the photolog (Appendix G) for the locations of sumps and pits.

## 3.0 DATA SUMMARY

This section presents an evaluation of the impacts by Site-related residuals including the following:

- Identify specific residuals that are Site related;
- Identify the affected Site media;
- Identify potential source areas; and
- Assess whether the residuals exceed residential use criteria (unrestricted) values;

### 3.1 IDENTIFICATION OF SITE RELATED RESIDUALS AND MEDIA

For this evaluation, residual concentrations in soil and groundwater have been compared to NYSDEC TAGMs and TOGs recommended cleanup values, USEPA Region 9 PRGs, and background values. Residuals that exceeded applicable guidance, standards, and/or background concentrations have been identified for further evaluation. The residuals that have been detected above applicable guidance values, standards, and background values are summarized on Tables in Appendix E. The following subset of constituents have been identified as residuals that exceed the applicable guidance values, standards, or background values, with a degree and frequency that warrants further evaluation.

VOCs:

Soil: TCE, 1,2-DCA, VC, benzene; toluene; xylenes; acetone

Groundwater: TCE, 1,1-DCA, 1,2-DCA, VC, cis- and trans-1,2-DCE, 1,1,1-TCA, BTEX, chloroform, acetone

SVOCs:

Soil: benzo(a)pyrene; benzo(a)anthracene; benzo(b)fluoranthene, dibenzo(a,h)anthracene; chrysene; benzo(k)fluoranthene

Inorganics:

Soil: cadmium, copper, zinc

Groundwater: cadmium, zinc

### 3.2 POTENTIAL SOURCE AREAS

Several VOCs (TCE and daughter products in particular) have been detected in soil and groundwater at their highest concentrations in three areas along the southern portion of the Site. These areas are Building 2 near MW-24, Building 7 near MW-23, and Building 11 near MW-25. The specific sources of these constituents have not been confirmed, although historic drum failures are documented in or near each of these areas. The drums that failed contained mixed chlorinated solvents. In addition, during the rerouting of the process water sewer lines, several areas along the trenches were excavated and disposed because they had been impacted by Site related constituents. Many of these areas are adjacent to or near those sampling locations listed above. There have also been reports of a pit in or near Building 2 where TCE was dumped historically.

Bedrock interface monitoring well MW-BI-01 (located approximately 80 feet southwest of MW-24), is the only location where DNAPL was directly observed (at 25 to 30 feet bgs). DNAPL was observed in soil samples collected during installation of this well. Soil samples collected from this location indicate that the DNAPL consists primarily of TCE. The specific manner in which the DNAPL migrated to its current location is not completely understood. However, a sump in Building 3 was used to dump TCE historically and the first manhole at the end of that sewer line is adjacent to the location of this boring. A sand lens just above the impacted soil layers may also have allowed the TCE to migrate here from a location closer to the building. The presence of DNAPL below the water table near MW-BI-01 is likely a continuing source of residuals to overburden groundwater. However, the well is screened from 30-35 feet bgs and is set into the top of competent bedrock, but has remained dry since it was installed. Therefore, the potential for vertical migration to bedrock groundwater is reduced.

DNAPL has not been directly observed elsewhere on the Site. The TCE and related constituents detected in overburden and bedrock groundwater at the Site occur as dissolved phase constituents. However, the potential presence of DNAPL in the overburden soils may be inferred from concentrations of constituents in groundwater that are greater than 1% of their pure phase solubility ("1% rule of thumb" - USEPA 1994). For TCE, 1% of the pure phase solubility is equal to 11 mg/L. In the Building 11 area, just as in the Building 2 area, dissolved TCE was detected in overburden groundwater samples collected from temporary wells at concentrations in excess of this value, suggesting that DNAPL may exist in this area as well.

### 3.3 PRELIMINARY RISK COMPARISON

The previous sections have identified those constituents that are considered to be Site-related residuals. Although a complete exposure pathway analysis and risk assessment is not included in this report, a basic comparison to published risk values was conducted as a screening tool to eliminate from further consideration those constituents and media that do not pose unacceptable risk. The Region 9 PRGs have been used in this document previously in cases where a TAGM or TOG value was not available. In those cases, the residential soil exposure criteria or tap water criteria were used as a conservative surrogate value based on unrestricted use, even though the Site is clearly limited to industrial/commercial use currently and in the foreseeable future. The same PRG criteria are used again in the following section of this report, to determine whether the identified Site-related constituents warrant any future consideration.

## 4.0 CONCLUSIONS

The RFI has provided data that can be used to evaluate the potential impacts from Site-related constituents. Available data are sufficient to perform an evaluation of the current Site conditions and possible exposure pathways. A formal risk assessment may be necessary to determine what additional actions or controls may be necessary to reduce risk to acceptable levels. The purpose of the RFI is to identify releases from SWMUs or Areas of Concern (AOCs) that may warrant corrective action. Therefore, using the available data and Site information, certain areas can be removed from further consideration and others will be retained for additional possible actions (additional investigation, risk assessment, interim control measures, or corrective actions). This process is often iterative and results in a focusing of limited resources on those units or areas that represent the greatest risks to human health and the environment, until such risks are reduced or controlled to acceptable levels. A more detailed discussion of RFI conclusions is presented by investigative area in the remainder of this section.

### 4.1 AREAS REQUIRING NO FURTHER ACTION

Based on the results of the RFI, which are presented in Section 2, the following investigative areas require no further action (NFA) in the form of additional investigation or remedial action.

#### 4.1.1 NFA Based on Screening Comparison

Based on the results of the screening approach presented in Section 2, several investigative areas were screened out. That is, a comparison of analytical results with NYSDEC or surrogate screening values for these areas indicated that there were no Site-related constituents exceeding the screening values. The following areas, therefore, were screened out and require NFA.

- **Building 9A** (See Section 2.6)
- **Building 13 Truck Dock Area** (See Section 2.12)
- **Historic Outfalls - ITO only** (See Section 2.13)
- **Grassy Areas Near Buildings** (See Section 2.14) This “area” does not represent a specific potential release point or area. Rather, the samples referred to collectively here are incorporated into the specific building or release area where they were collected.
- **Interceptor Sewer Areas - soil** (See Section 2.16)

- **Overburden Temporary Well Pairs** (See Section 2.17) This “area” does not represent a specific potential release point or area. Rather, the samples referred to collectively here are incorporated into the specific building or release area where they were collected.
- **Bedrock Interface Wells** (See Section 2.18) This “area” does not represent a specific potential release point or area. Rather, the samples referred to collectively here are incorporated into the specific building or release area where they were collected.
- **Bedrock Monitoring Wells** (See Section 2.19) Only one constituent was above Class GA criteria in one well, and that well is not a true bedrock groundwater monitoring well.

#### 4.1.2 NFA Based on Qualitative Assessment

In addition to the areas with results indicating no exceedance of NYSDEC screening values for Site-related constituents, several investigative areas require NFA since the detected concentrations were of low frequency or marginally exceeded screening values, and are below the USEPA Region 9 PRGs for unrestricted residential use.

- **Courtyard Area** (See Section 2.2) The concentrations of cadmium, copper, and zinc in the single surface soil sample are orders of magnitude below the PRG residential soil criteria. The low concentrations of TCE and xylenes in groundwater are likely from another source area since no VOCs were detected above TAGM levels in any of the soil samples.
- **Building 2A** (See Section 2.3) The concentrations of cadmium in soil samples are orders of magnitude below the PRG residential soil criteria. The concentrations of TCE and daughter products in groundwater are from another source area (most likely the adjacent Building 2 area) since no VOCs were detected above TAGMs in any of the soil samples.
- **Building 3 Sump** (See Section 2.4) Numerous metals were detected above screening values for soils, but sump solids are not an environmental media and the sump is not considered a continuing source of Site-related constituents. The sump water itself, as well as soil and groundwater from B2-05, located immediately adjacent to the sump, contained no metals above any NYSDEC criteria. In addition, no VOCs were detected in the sump solids or water.
- **Six-inch Effluent Line Area** (See Section 2.8) Cadmium and zinc exceeded the screening comparison values in one of two soil samples. However, no other VOCs or metals were detected in excess of relevant criteria from samples in this area. The concentrations of cadmium and zinc in soil samples are well below the PRG residential soil criteria.

- **Building 9** (See Section 2.9) Acetone, copper, and five SVOC compounds were detected in one of six soil samples above TAGM levels. The acetone and copper concentrations are well below the residential soil PRG. The SVOC constituents appear to be in an isolated pocket of relatively immobile residuals near the former fuel oil UST. Two very low concentration TCE daughter products detected in groundwater above Class GA values appear to originate from another source area, since no chlorinated VOCs were detected in the six soil samples above TAGM levels.
- **MW-20 Area** (See Section 2.10) No VOCs were detected above TAGM levels in the four subsurface soil samples analyzed. Instead, several PAH compounds and cadmium were detected at low to moderate levels in two samples. These results do not explain the source of the TCE daughter products in MW-20 and are likely the result of historic fill materials in the ground in this area, which is near the historic railroad siding.
- **Building 13 Fuel Oil Tank Area** (See Section 2.11) Several SVOC compounds were detected above TAGM levels in only one of four samples at relatively low concentrations and no VOCs were detected. Benzene and ethyl benzene were detected at levels just above Class GA values in one well each, but may be from another source since no soil VOCs exceeded TAGM levels. The SVOCs represent an isolated pocket of relatively immobile residuals near the former fuel oil UST.
- **Historic Outfall HO-3 only** (See Section 2.13) Cadmium was the only constituent that exceeded the background criteria, but the value is well below the residential soil PRG.
- **Fields East of the Buildings** (See Section 2.15) A total of ten surface soil samples were collected from this area. Four metals were detected above TAGMs in several samples. However, those constituents are well below the residential soil PRGs.

## 4.2 AREAS WITH RESIDUAL SITE-RELATED CONSTITUENTS

The results of the RFI indicate that several investigative areas contain Site-related constituents at concentrations and frequencies that may warrant further consideration. TCE and its daughter products are the primary Site related constituents. Soil containing TCE and daughter products could be acting as ongoing potential sources to impact Site groundwater and/or surface water. Therefore, the primary focus of the RFI is to identify soils impacted with these constituents that may be acting as continuing sources to other media. Other areas of the Site have been impacted to a lesser degree by BTEX, acetone, cadmium, or zinc. The areas that warrant further consideration are presented below.

- **Building 2** (See Section 2.3) Based on the data obtained, it appears that this area likely represents a source area for TCE and its daughter products. A letter from a former plant manager indicates that there was a pit near the old paint shop in this area where TCE was dumped historically. Soil from the sewer trenches was removed and disposed due to impacts from Site related constituents. Indications of DNAPL were observed in the soil boring at monitoring well MW-BI-01 just down gradient from this area. This area should be a primary focus of future actions.
- **Building 7** (See Section 2.5) Low to moderate concentrations of TCE-related and BTEX-related compounds were detected in a majority of the samples in this area. Historic spills or impacted soils in sewer trenches are potential sources of the Site related constituents. However, it is possible that the impacts observed in this area are attributable to another nearby source (i.e. on the fringe of a more distinct source area).
- **Building 11** (See Section 2.7) TCE, acetone, and toluene, as well as cadmium and zinc have been identified above the relevant criteria in this area. The VOC concentrations in this area are substantial enough that this area could also be considered a possible source area. A former drum storage area where spills occurred was identified in this area and a historic map indicates that a TCE tank was present inside. No direct evidence of DNAPL was obtained from this area but it can be inferred from some of the groundwater values. This area should be a primary focus of future actions, in addition to the Building 2 area.
- **Historic Outfalls HO-1, 2, 4, 5, and 6/7** (See Section 2.13) Cadmium was the only constituent that exceeded the background criteria and the residential soil PRG. Additional risk assessment analysis may be required to determine the significance of these concentrations in the soil/sediment.
- **Interceptor Sewer Effluent** (See Section 2.20) Two chlorinated solvent compounds are present at low concentration in the effluent water, suggesting that infiltration through a sewer lateral is possible. This result should be confirmed and additional data should be collected to isolate the potential source of these constituents.
- **Remaining Sumps and Pits** (See Section 2.21) A total of 25 sumps, pits, or other subsurface structures were encountered and documented by O'Brien & Gere, although their functions were not determined. The only sump that has been sampled is in Building 3. None of the other sumps and pits have been identified as potential sources of Site-related constituents in soil or groundwater. Several sumps and pits contained water and were located near areas where constituents were detected in groundwater. More detailed information regarding the structure and function of these sumps and pits should be collected.

### 4.3 SITE-WIDE CONCLUSIONS

The distribution of the predominant Site related constituents (TCE and daughter products), is primarily in areas on the south (down gradient) side of the facility. Specifically, Building 2 and Building 11 represent likely or possible source areas. The Building 7 area, which lies between those two potential source areas, may represent the fringe area of one or both of the potential source areas, or may represent an unrelated diffuse area of impact. It is unclear if the identified constituents are the result of a single or multiple releases. However, they are contained in impermeable soils and were detected primarily in areas along the south side (down gradient) of the facility. In addition, the presence of daughter products demonstrates that TCE is degrading in the environment. In some areas, TCE is not detected and only the daughter products remain.

The goal of future efforts at the Site should involve a focusing of resources on those areas identified in Section 4.2 above, and completion/termination of efforts at other low and moderate priority areas of the Site. A large amount of historic data exists for this Site, and the low and moderate priority units or areas that do not pose an unreasonable risk to human health and the environment should be eliminated. As this iterative process moves forward, future efforts will be able to better target and resolve those areas identified in Section 4.2. Concurrent with this effort, further investigation of the Site hydrology and hydrogeology will be performed to develop successful strategies to mitigate the risks posed.

**ATTACHMENT 1**

**Attachment 1**  
**Former Phillips Display Components Facility**  
**Seneca Falls, New York**  
**OBG Site Characterization Methods**

**1.0 Work Plans**

The investigation activities carried out by O'Brien & Gere Engineers, Inc. (OBG) during the RFI were detailed in the following work plan documents:

- *RCRA Facility Investigation Work Plan* (SECOR 1996);
- *RFI Work Plan for the Former Philips Display Components Site Seneca Falls, New York Addendum No. 1* (OBG September 29, 2000);
- *RFI Work Plan for the Former Philips Display Components Site Seneca Falls, New York Addendum No. 2* (Bedrock Interface Wells) (OBG 2001a);
- *RFI Work Plan for the Former Philips Display Components Site Seneca Falls, New York Addendum No. 3* (Bedrock Ground Water Wells, Effluent Sample, and Sump Survey), (O'Brien & Gere 2001b); and
- Letter Re: Addendum #3 Indoor Air Sampling from Alvin Ludwig (GTEOSI) to Steve Malsam (New York State Department of Environmental Conservation (NYSDEC)) dated July 18, 2001.

The SECOR International, Inc. (SECOR) Work Plan (1996) provided the initial framework for the investigation. The plan, approved by New York State Department of Environmental Conservation (NYSDEC), was designed to investigate 10 areas of the Site based on their past use. These areas do not necessarily correspond to the Solid Waste Management Units (SWMUs) originally identified in the RCRA Facility Assessment (RFA) process. The investigative areas were numbered sequentially to correspond to nearby building additions or features such as the Courtyard. The following are the 10 initial investigative areas:

- Court Yard Area;
- Building 9 Area;
- Fuel Oil Tank Area;
- Six-inch Effluent Line;
- Building 11 Area;
- Building 7 Area;
- Building 2 Area;
- Historic Outfalls;
- MW-20 Area; and
- Building 13 Truck Dock Area.

Prior to the implementation of the SECOR Work Plan (1996), OBG prepared a Work Plan addendum expanding the scope of the investigation (OBG 2000). NYSDEC approved the Work Plan Addendum in October 2000. Following completion of the proposed scope of work, OBG prepared work plan Addendum No. 2 (OBG 2001a). Addendum No. 2 was developed in collaboration with NYSDEC and issued in January 2001 to install three groundwater monitoring wells at the bedrock interface. Finally, Addendum No. 3 was

prepared to install six bedrock monitoring wells and address indoor air questions raised by NYSDEC at an April 2001 meeting between NYSDEC, GTEOSI, and OBG. Addendum No. 3 was issued and approved in May 2001. The following sub-sections briefly describe the components of Addenda No. 1, No. 2 and No. 3. To date, the expanded scope of work has resulted in the investigation of 21 areas.

#### *Addendum 1*

Addendum 1 was prepared based on the findings of a Site walk-over conducted by OBG, a preliminary review of previous Site investigation reports, results of a June 1999 ground water sampling event (OBG 1999), and discussions held during a meeting at NYSDEC Regional Offices in Albany, New York. Representatives of NYSDEC, GTEOSI, and OBG attended the meeting. In October 2000, following NYSDEC approval, the SECOR Work Plan (1996) and Addendum No. 1 fieldwork was conducted.

#### *Addendum 2*

Although the installation of two bedrock interface (BI) monitoring wells (MWs) was conceptually included in Addendum No. 1, the analytical results of Addendum No. 1 were used to guide the selection of the specific locations of the two wells. A third bedrock interface well location was also selected at this time. Addendum No. 2, therefore, was issued to provide specific locations and to describe the drilling method (SONIC) that would be used to install bedrock interface wells.

The locations of two of the BI MWs were selected in collaboration with NYSDEC in September 2000. These locations are shown on Figure 1-2 of the initial work plan revision, dated September 29, 2000. The third BI MW (which was not scoped in the Addendum 1) was installed near the Pole Barn in an area where volatile organic compounds (VOCs) were previously detected in both soil and ground water. The BI MWs were installed to collect sufficient data to:

- Evaluate whether a confining layer was present on-Site;
- Avoid cross contamination between distinct lithologic zones separated by a definable confining layer;
- Investigate the presence or absence of residual or dissolved solvents at the bedrock interface; and
- If residuals were detected, evaluate the potential for horizontal migration along the overburden bedrock interface.

#### *Addendum 3*

Once the SECOR Work Plan, Addendum No. 1, and Addendum No. 2 tasks were completed and the data from these efforts interpreted, Addendum 3 was prepared. Addendum 3 was based primarily on the finding that TCE and its breakdown products were present in the subsurface above New York State (NYS) Technical and Administrative Guidance Manual (TAGM) #4046 guidance levels. Most of the detected constituents were located along the southern portion of the Site. Addendum 3 was designed to further evaluate whether TCE and its breakdown products could have migrated to bedrock or other environmental media. Addendum No. 3 describes the:

- Installation of six bedrock monitoring wells (BR-MW-01 through BR-MW-06);
- The collection of a sample from the interceptor sewer effluent; and
- A survey of the building sumps and pits.

As noted earlier, the Work Plan and its various addenda culminated in a total of 21 investigative areas. In addition to being discussed by matrix type, the investigative findings reported herein are discussed in terms of investigative areas. Areas 11 through 21 include:

- Background evaluation;
- Building 2/2A;
- Building 3 Sump;
- Building 9A;
- Building 13 Fuel Oil Tank;
- Historic Outfalls;
- Grassy Areas Near Buildings;
- Fields East of the Facility Building;
- Interceptor Sewer Bedding;
- Overburden Temporary Wells; and
- Bedrock Interface Monitoring Wells on the Southern Portion of the Site.

## **1.1 Investigation field activities**

This section summarizes the field activities of the RFI. The field activities are further described in the respective RFI work plan documents cited in Section 1. A Quality Assurance Project Plan (QAPP) contained in the RFI work plan addendum was followed during the investigation (OBG 2000). Data validation for the RFI Addendum analytical results (October 2000 field sampling) was conducted by MJW Corporation, under the supervision of OBG. Data validation for the RFI Addendum #3 analytical results (July 2001 field sampling) was conducted by OBG.

### **1.1.1 Community air monitoring program (CAMP)**

A Community Air Monitoring Plan (CAMP) was implemented during the RFI. The CAMP was conducted in accordance with the *New York Department of Health Generic Community Air Monitoring Plan* (NYSDOH 2000). CAMP results are included in Appendix C.

Exposure monitoring was conducted during investigative activities to evaluate if Site workers or the general public were exposed to chemicals during fieldwork and if so, to what extent. On-Site air monitoring included the use of two Mini Rae photoionization detectors (PIDs) and a portable aerosol monitor (DustTrak). Field analytical equipment was calibrated, and tested to see if it was in good working condition immediately prior to each day's use. This calibration ensured that the equipment was functioning within the allowable tolerances that were established by the manufacturer and required by the project.

In accordance with the approved New York State CAMP, ambient and source air samples were collected at the Site during subsurface investigations over the periods of October 16, 2000 through October 27, 2000, January 16, 2001, and January 17, 2001. The upwind and downwind locations of the air monitoring activities were selected by OBG, based on the locations of ground intrusive activities and the anticipated mean wind flow pattern during each sampling event. Wind flow pattern changes were monitored with a hand held wind directional device.

#### ***Particulate sampling***

A DustTrak Aerosol Monitor (DustTrak) equipped with a cyclone was used to sample ambient air for particulate less than or equal to 10 micrometers ( $\mu\text{m}$ ) in diameter. The work area and the perimeter of the Site were monitored for particulates using the DustTrak. The DustTrak detects the presence of total or respirable particulates through use of a laser photometer. A pump draws both solid and liquid particles through an optics chamber for measurement purposes.

The DustTrak was factory calibrated according to the procedures outlined in the operation manual. In addition to the factory calibration, prior to each sampling episode the instrument was zeroed using a factory zeroing cassette cartridge. The DustTrak draws ambient air at a constant volumetric flow rate of approximately 1.7 liters per minute. Sample collection was based on 15 minute averaging periods. The particulate data relevant to each sampling period was data logged.

#### ***VOC sampling***

Monitoring of VOCs was performed in accordance with the New York State CAMP. VOC air sampling was performed with a Mini RAE 2000 (Mini RAE) PID air sampler. The PID was equipped with a 10.7 eV lamp that is capable of detecting over 70 percent of VOCs on the NYSDECs target compound list (TCL). The PID was calibrated in the "Fresh Air" mode prior to and following each sampling episode.

The Mini RAE monitors total concentrations of many hazardous organic and some inorganic gases and vapors capable of ionizing and detecting compounds with an ionization potential of less than 10.7 eV. The main solvent detected at the Site, TCE, has an ionization potential of 9.45 eV. The instrument ionizes molecules using ultraviolet (UV) radiation by producing a current that is proportional to the number of ions present. The instrument was calibrated and recharged daily using a standard calibration gas specified by the manufacturer. Calibration data were recorded in field notebooks and on calibration log sheets. The monitoring data was data-logged at 15 minute intervals.

### **1.2. Site characterization methods**

This section describes the field methods used to characterize the Site including field modifications to the Work Plan. The Work Plan was intended to have sufficient flexibility to respond to field conditions. Field modifications included increasing the number and depths of soil borings to adequately characterize the nature and extent of residuals identified during field screening. NYSDEC concurred with the Work Plan modifications made in the field.

Field activities were performed while attempting to minimize disturbance to on-Site businesses and traffic patterns. The field activities were conducted from October 16 through November 3, 2000 and from January 16 through 19, 2001. Field efforts included:

- Utilities clearance,
- Field record maintenance,
- Soil and water sampling investigation; and
- Decontamination.

The field methods used are described in the following sections.

### **1.2.1 Utility clearance**

On-Site utilities, to the extent possible, were identified for the health and safety of field personnel and to prevent damage to underground utilities during intrusive activities. Prior to initiation of the field activities, sampling locations were designated and marked in concurrence with GTEOSI and NYSDEC. OBG contacted Underground Facilities Protection Organization (UFPO) to locate and mark Site utilities at 50 Johnston Street for each field event. UFPO coordinates the locations of utilities on public property and right-of-ways for those companies subscribing to their service. Therefore, OBG subcontracted Syracuse Utilities of Syracuse, New York to perform a supplemental utility clearance on the private portions of the property. For each field sampling effort, a Syracuse Utilities technician investigated the area around each proposed boring location using an inductive utility-locating instrument.

### **1.2.2. Field records**

Information related to the field investigation was recorded by the Project Coordinator and Field Geologist in field logbooks. The field logbooks were maintained to provide a daily record of significant events, observations, and measurements taken during the field investigation. Chain-of-custody forms were prepared for samples sent to the laboratory for analysis. Field logbooks and copies of chain-of-custody forms are maintained in the project file following completion of the fieldwork.

### **1.2.3. Soil and water sampling**

The objectives of the subsurface soil and ground water screening investigation were to evaluate potential sources, define the vertical and horizontal extent of impacts, and evaluate migration pathways of chlorinated VOCs in both soil and ground water. Screening was used throughout the investigation in the selection of samples for laboratory analysis. A detailed description of the sampling methods is provided in the RFI work plan documents cited in Section 1. The following sections, however, summarize the general screening and sample collection methods for soil and water samples.

## **Soil investigation**

Surface soils in grass and fields, soil/sediment along historic outfalls, sump solids/sediment, and subsurface soils were collected. The following sections present the approach to soil and solids sampling for the Site investigation.

### **Surface soil and sediment sampling**

Surface soils in grassy areas near buildings and in the fields east of the buildings were collected in accordance with NYSDOH protocols described in the Draft Technical Reference - 001 regarding Soil Samples for Characterizing Potential Human Exposures (NYSDOH 50370200/04/14/95). Grab samples were collected from the historic outfalls and from the Building 3 sump.

### **Subsurface soil boring and continuous soil sampling**

The initial RFI field investigation was completed from October 16 through November 3, 2000 in accordance with the approved RFI Work Plan Addendum. The objective of the investigation was to evaluate the nature and extent of process residuals related to former Site use. NYSDEC personnel participated in and concurred with the selection of the original soil boring locations defined in the Work Plan. The Work Plan Addendum (OBG 2000), however, was designed to accommodate additional borings in response to field results. The actual number of sampling locations, therefore, was greater than those listed, since the encountered field conditions or screening results warranted the collection of additional samples to meet overall program objectives. Figure 2 depicts the RFI sample locations.

Cores were obtained using a direct push methodology (Geoprobe®). With the exception of the Courtyard, which were 4-foot cores, Geoprobe® soil samples were collected using 2-foot soil cores within acetate sleeves. The soil cores started from the ground surface at each location, and proceeded to a depth dictated by the area being investigated and the presence or absences of headspace vapor readings. The boring depths were based on Site-specific areas of interest, the conditions encountered in the field, and field screening results. The overall approach was as follows:

**Sewers:** Areas of potential contamination around the historic outfall sewers or the interceptor sewers were to be probed to approximately 12 feet bgs since this was the anticipated depth to the bottom of sewer bedding. However, initial borings adjacent to sewers revealed that the sewer bedding was not a permeable bedding but native silt and clay soils. Therefore, since Site-related residuals were found at depths greater than 12 feet bgs in some areas, the sewer bedding was subsequently probed to greater depths.

**USTs:** Locations of suspected subsurface impacts due to petroleum fuels were investigated to at least 8 feet beneath the pavement.

**Buildings:** Borings placed near other wells or building areas were advanced to approximately 12 to 26 feet bgs.

Refusal was not encountered in most of the borings, however the swelling of the clays made direct push methodologies difficult. Soil boring logs are in Appendix A. Several borings were

given multiple designations (for example IS-SBS-5 and 5B) due to refusal or because elevated concentrations of VOC constituents were detected during field screening. A second boring was advanced next to the first to further delineate the vertical extent of residuals.

The samples were collected in 1-inch diameter acetate liners. The quantity of sample recovered was limited. Consequently, the proposed analytical parameters were prioritized based on field screening results and the volume of sample material recovered.

### **Subsurface soil screening**

For health and safety purposes, the acetate liners used inside the steel casings, were scanned immediately upon retrieval for the presence of headspace vapor readings (prior to opening and logging the soil core). Additionally, extensive field screening was performed to evaluate and select the soil interval(s) from the soil core to be sent to the laboratory for analysis.

Each core was screened in the field using a PID and at the discretion of the analyst, an UV light. The PID was used to evaluate the potential presence of VOCs and their general magnitude. Soil samples were collected from intervals where screening suggested the presence of elevated VOCs were present; that were discolored; appeared to contain residuals; or that may be of interest to the analyst. Headspace screening was conducted by placing a representative portion of each soil sample into a glass jar covered with aluminum foil and then allowing it equilibrate within the jar at room temperature for approximately 15 to 20 minutes. Readings were taken over a 20-second timeframe. The highest concentration of VOCs measured was recorded. At least one headspace analysis was conducted per core (acetate liner). UV light readings were used to evaluate the presence of non-aqueous phase liquid (NAPL). PID and UV light screening results were recorded on the Test Boring Log Forms.

Samples were selected for either field gas chromatography (GC) - (Photovac 10S7 or equivalent) analysis and/or laboratory analysis based on the frequency with which VOCs were encountered, the number of cores required to characterize a particular area, if cores exhibited NAPL via UV screening, and the type of materials encountered. In the absence of other factors, the ability to characterize the material encountered and to confirm the Mini Rae 2000 screening of samples formed the primary means of determining whether field GC or laboratory analysis of a sample was warranted. The objective of the GC analysis was to further document the presence and relative concentration of VOCs, minimize the number of samples requiring laboratory analysis and help support field decisions made to evaluate the nature and extent of residuals. Based on the quantity of laboratory samples scheduled to be collected from the Site, use of the field GC was limited. When used, the field GC reported the following analytes: tetrachloroethene (PCE), TCE, trans-1,2-dichloroethene(DCE), cis-1,2-DCE, and benzene, toluene, ethylbenzene, and xylenes (BTEX). The SOP for the field GC method is contained in the RFI Work Plan Addendum - Appendix A (OBG 2000).

If PID screening results did not provide information useful to select a soil sample to evaluate the former process sewers, a sample from the approximate depth of the sewer was retained for analysis using the field GC. In addition, appropriate QA/QC was performed in order to provide data to correlate and confirm the on-Site analyses, provide a set of validatable data for use in assessing risk, and examine the nature and extent of residuals .

Soils were described according to the Unified Soil Classification System (USCS) by an on-Site OBG scientist. Soil descriptions included: soil type, color, percent recovery, moisture content, odor and other observations such as organic content and cohesiveness. A representative portion of each sample was retained for analysis and labeled with: Site name, boring number, sample interval, date, and time of collection.

When more than one discrete subsurface zone within a soil boring exhibited evidence of process residuals, either by visual observation or by field screening, additional soil samples were collected and analyzed by the field GC. The GC screening was performed on portions of the core where PID screening suggested the highest levels of VOCs were present, that were discolored, or may have been of interest to the field scientist.

Each sample was given an identification number or designation. Sample identification was classified by matrix, location, depth (if applicable), sampler name, date, and time. Labels were attached to each sample container. Based on the objectives for the particular investigative area, analyses may have included VOCs, SVOCs, metals, and fluoride. Recovery rates often varied due to subsurface conditions from 0 to 100 percent.

### **Water investigation**

Temporary groundwater monitoring wells were set in most soil borings subsequent to soil sample collection. In addition, three bedrock interface monitoring wells and six bedrock ground water wells were installed. Finally, one water sample was collected from a sump/pit in Building 3 and one storm-water effluent sample was collected from the former flow house of the interceptor sewer system.

### **Temporary well installation**

The Geoprobe® rig was used to advance soil borings and place the temporary well points. The wells were placed within the soil borings, if applicable. Steel casing was driven to place several of the wells. The remaining wells were pushed into the borehole upon removal of the sampling equipment. The temporary wells were comprised of a 1-inch PVC well placed in a 2-inch diameter borehole.

*Temporary well gauging and sampling.* Temporary wells consisted of 1.1-inch diameter, 0.010-inch factory slotted, Schedule 80 PVC screen with end cap, threaded flush with a Schedule 40 PVC riser. Following installation, the wells were allowed to sit overnight to allow for water to accumulate in the borehole.

Prior to sampling, the water level and total well depth was measured with a water-level indicator. The samples were collected in a 2-foot long disposable bailer. Because of the slow recharge and sample volumes, inadequate sample volume was often obtained, limiting the suite of parameters for laboratory analysis. Ground water sample collection was prioritized in the following order: VOCs, SVOCs, metals, and fluoride, if applicable, in accordance with the QAPP. Because of high ground water turbidity, inorganic samples were filtered through a 0.45-micron filter. Both filtered and unfiltered metals samples were collected and analyzed. Well sampling logs are contained in Appendix B.

#### *Temporary well abandonment.*

The wells were backfilled with bentonite clay to maintain a permanent closure. The New York State recommended ground water monitoring well decommissioning procedures (NYSDEC 1995) were used to ensure that the well does not remain as a vertical hydraulic connection or conduit for groundwater or potential contamination between aquifers or zones and to eliminate physical hazards.

#### ***Bedrock interface monitoring wells***

A SONIC drilling technique, which is described in the RFI Addendum No. 2 work plan, was used to advance the bedrock interface wells. Cores were advanced and then retrieved for screening in 10-foot increments for borings 30 feet in depth. At depths greater than 30 feet, cores were advanced and retrieved in 5 foot increments in order to identify the presence of confining layers or dense non-aqueous phase liquid (DNAPL) and minimize the potential for cross contamination.

An OBG scientist was on-Site during the drilling and sampling operations to describe each soil sample consistent with the direct-push cores. Based on the results of screening, which was similar to the screening of direct push borings, at least one soil sample from each boring was collected. Samples were evaluated and selected at the discretion of the field personnel and sent to the laboratory for analysis via USEPA Method 8260B. A minimum of one soil sample was collected from each bedrock interface well.

Bedrock interface wells were installed 1 to 2 feet into bedrock. A 5 to 10 foot long well screen was set at the bottom of the borehole. A sand pack was installed around the screen extending at least 2 feet above the screen. A minimum 2-foot bentonite seal was installed at the top of the sand pack to seal off connection to the borehole. The remainder of the borehole was grouted and a protective casing installed.

#### **Bedrock Monitoring Wells**

Data were collected from soil borings, temporary ground water wells, and bedrock interface monitoring wells during the October 2000 and January 2001 field investigations. Subsequently, a preliminary review indicated that soil borings, temporary ground water wells, bedrock interface monitoring wells, and an ongoing ground water monitoring program were sufficient to evaluate the overburden ground water and the bedrock interface. However, data did not provide a sufficient basis for evaluating the bedrock ground water. Therefore, six bedrock wells were installed at the Site in April 2001. The objective of the installation of bedrock wells was to evaluate:

- the nature of and flow direction of bedrock ground water near the Site;
- the potential for migration of Site-related residuals to bedrock ground water; and
- the potential for off-Site migration of residuals in bedrock ground water.

The six bedrock monitoring wells were installed near locations that were discussed and agreed to with NYSDEC in April 2001. Well locations were selected to surround the facility and

collect information related to bedrock ground water. Figure 2 shows the locations of the wells. Approximate locations of the wells are:

- MW-BR-01 near the offices at the west side of the facility,
- MW-BR-06 south of the electric power substation near Van Cleef Lake,
- MW-BR-05 and MW-BR-04 along the southern property boundary along the Seneca River, and
- MW-BR-02 and MW-BR-03 along roadway areas north and east of the facility.

### **Building 2/3 Sump Water**

Both an unfiltered and field-filtered sump water sample was collected from the Building 3 sump and sent for analysis.

### **Sewer Effluent**

A grab sample of storm-water was collected from the interceptor sewer at the former flow house. Substantial storm water flow was observed in the flow house after a significant rain event. The grab sample was collected several days after the rain event while the storm sewer system was under low-flow conditions.

#### **1.2.4. Decontamination procedures**

Equipment used to collect subsurface soil and ground water samples was decontaminated between sampling locations. Decontamination fluids were collected in 55-gallon drums. Surface soil and sediment sampling equipment, such as spoons and trowels, were disposable or were decontaminated using the following procedure:

- scrub with non-phosphate detergent solution;
- potable water rinse;
- distilled water rinse; and
- air dry.

Investigation-derived waste, including soil cuttings, decontamination water, and disposable sampling equipment were segregated and containerized in approved 55 gallon drums and staged on-Site in an area specified by the Site operator. Subsequently, soil cuttings were disposed of at an approved disposal facility. Following submission of ground water sample results and the approval of the Seneca Falls municipal WWTP operator, purge water and decontamination water derived from the field investigation were disposed of via the sanitary sewer system on Johnston Street.

#### **1.2.5. Surveying**

A licensed surveyor performed a survey to record sample locations, building corners, fences, manhole driveways, and monitoring well elevations. Prior to fieldwork, each proposed sampling point located in a grassy area was marked with a stake, while surveyor shiners were used to mark locations on asphalt. Borings were advanced and grab samples collected as close as practical to the marked locations. If the proposed sample location was relocated, the

marker was also relocated. The locations were surveyed to place the soil sample locations on the Site map. The locations of the remaining Site features were based on historical facility maps.

The published elevation for the inner 4-inch PVC casing at existing monitoring well MW-26 was established as the benchmark for the Site vertical datum. The horizontal system was a local coordinate system. The bearings are related to deed bearings. For consistency, ground elevations are reported to the nearest 0.01-foot. The survey sample locations, primary building features, and key catch basin and manhole locations were digitized and incorporated into the Site map taken from the Work Plan.

#### **1.2.6. Analytical methods**

A QAPP, contained in the RFI work plan addendum (OBG 2000) was followed while performing the investigation. Analyses for environmental media sampled in investigative units followed the RFI work plan and related documents. The samples collected and analyses performed are summarized in Section 2 of the report. In concurrence with NYSDEC and according to the QAPP, the following analytical methods were followed.

- TCL VOCs – USEPA Method 8260B
- TCL SVOCs – USEPA Method 8270
- TAL Metals – USEPA Method 6010
- Fluoride – USEPA Method 340.2

Note: Both total and filtered samples were analyzed for TAL metals. Total and several decanted samples were analyzed for fluoride.

#### **1.2.7. Data validation and QA/QC summary**

Twenty percent of the data analyzed by the laboratory were validated using USEPA Contract Laboratory Program (CLP) validation procedures and checklist modifications as needed to comply with NYSDEC Analytical Services Protocol (ASP). The validated samples were representative of the full set of data. The validated samples chosen were evenly distributed between undetected, low hits, and high concentrations. Only a limited amount of those data validated required qualification and no data were rejected. The results of the data validation indicate that the data are acceptable and fully usable for all qualitative and quantitative purposes. The data validation reports are presented as Appendix F.

**ATTACHMENT 2**

**Attachment 2**  
**Former Phillips Display Components Facility**  
**Seneca Falls, New York**  
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**ATTACHMENT 3**

**Attachment 3**  
**Former Phillips Display Components Facility**  
**Seneca Falls, new York**  
**Acronym List**

AOC	Areas of Concern
ASP	Analytical Services Protocol
bgs	below ground surface
BI	Bedrock Interface
BTEX	benzene, toluene, ethylbenzene, xylene
CAH	chlorinated aliphatic hydrocarbon
CAMP	Community Air Monitoring Program
CLP	Contract Laboratory Program
DCA	Dichloroethane
DCB	Dichlorobenzene
DCE	Dichloroethene
DNAPL	dense non-aqueous phase liquid
ECL	Environmental Conservation Law
EDR	Environmental Data Resources
GA values	New York State Ambient Water Quality Standards and Guidance Values for ground water as a source of drinking water
GC	Gas chromatography
GTEOSI	GTE Operations Support Incorporated
HO	Historic Outfall
HWMU	Hazardous Waste Management Unit
ITO	Interceptor Trench Outfall
IWWTP	Industrial wastewater treatment plant
LDC	Landsmen Development Corporation
µm	Micrometer
MCL	Maximum contaminant level
mg/m <sup>3</sup>	Milligrams per cubic meter
msl	mean sea level
MW	monitoring well
NAPL	Non-aqueous phase liquids
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OBG	O'Brien & Gere Engineers
PAH	Polycyclic aromatic hydrocarbon (aka PNA or polynuclear aromatic hydrocarbon)
PCA	Tetrachloroethane
PCB	Polychlorinated biphenyl
PCE	Tetrachloroethene
PET	Potential evapotranspiration
PID	Photoionization detector

ppm	parts per million
PRG	Preliminary remediation goals
PVC	Polyvinyl chloride
QA/QC	Quality assurance and quality control
QAPP	Quality assurance project plan
RCRA	Resource Conservation & Recovery Act
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RQD	Rock quality designation
SOP	Standard Operating Procedures
SPDES	State Pollution Discharge Elimination System
SVOC	Semi-volatile organic compound
SWMU	Solid Waste Management Unit
TAGM	Technical and Administrative Guidance
	Memorandum
TAL	Target analyte list
TCA	Trichloroethane
TCE	Trichloroethene
TCL	Target compound list
UFPO	Underground Facilities Protection Organization
ug/L	micrograms per liter
URS	URS Corporation
USCS	Unified Soil Classification System
USGS	United States Geological Survey
USEPA	United States Environmental Protection Agency
UST	Underground storage tank
UV	Ultraviolet
VC	Vinyl chloride
VOC	Volatile organic compounds
WWTP	wastewater treatment plant



**Attachment 4**  
**Former Phillips Display Components Facility**  
**Seneca Falls, New York**  
**Site and Regional Setting**

## **1.0. Environmental setting**

This attachment describes the Site and regional setting of the Site in greater detail and includes sections on climate, soils, land use, geology, and hydrogeology.

### **1.1. Climate and water budget**

New York has a short but intense growing season with cool nights and warm humid but not hot days. The winters tend to be extremely cold. The mean annual temperature of Seneca County is 47.8 degrees Fahrenheit. Based on climatic data from Geneva, New York, an average of 32.60 inches of precipitation is received annually, with a low record of 22.81 inches and a high record of 40.41 inches. Approximately 30 percent of the total annual precipitation occurs between June and August (Crain 1974).

Precipitation data is used to calculate an area's water budget and estimate of groundwater recharge. The mean monthly potential evapotranspiration and overland runoff are subtracted from mean monthly precipitation to obtain a water surplus or deficit value. From December through April a water surplus generally exists in Seneca County and groundwater recharge can occur. However, the high potential evapotranspiration rate during the late spring and summer months creates water deficit conditions that normally prevent significant recharge and drops the moisture content of the soil below field capacity. The soil moisture deficit must be overcome before recharge can again occur. Since the average annual precipitation is approximately 32.60 inches and the total calculated evapotranspiration is estimated to be 22.60 inches, an average of 10 inches is available for runoff and recharge and to overcome soil moisture deficits (Crain 1974). Water budget conditions will change as climatic conditions fluctuate.

### **1.2. Site environmental setting and land use**

The environmental setting and land use varies across the Site's 85 acres. Since the Site is an industrial/commercial complex, this is the predominant current and anticipated future land use. However, there are four potential environmental settings/land uses on and adjacent to the Site, industrial, undeveloped, waterways, and residential. These settings are described below.

#### **Industrial area**

The industrial area includes a series of interconnected buildings covering approximately 13 of the Site's 85 acres. This area is characterized by man-made structures such as buildings, paved parking lots, and roadways. The industrial area is commonly accessed by people working in and visiting the industrial buildings.

### **Undeveloped area**

The portion of the Site not covered by buildings or the asphalt parking lot is grass, scrub vegetation, or woodland. The majority of this open space is on the east side of the Site. Most of this area is not commonly accessed by people and is, therefore, largely undisturbed.

### **Van Cleef Lake and the Seneca River/Barge Canal**

An escarpment forms a natural border between the Site and Van Cleef Lake and the Seneca River/Barge canal to the south. The waterways are located 500 feet south of the industrial buildings. Water is drained from Van Cleef Lake on an as needed basis (generally biannually) to allow for inspection of previous repair work<sup>1</sup> of nearby locks. The water levels will usually be lowered in January, and could remain drained until April. If additional repair work is required, the lake will be drained in consecutive years. The area does not appear to be used for recreational purposes.

### **Residential area**

The Seneca Falls facility is bordered to the west by a senior living complex, Prospect Hill Apartments. The apartments were constructed and occupied in 2001. This land was previously owned by the Former Philips Display Components and was used as a parking lot. Residential houses are also located northwest of the Site, on the north side of the railroad tracks.

## **1.3. Regional geology**

The following subsections provide descriptions of the physiographic setting, and regional unconsolidated and bedrock geology.

### **Physiographic setting**

The Former Philips Display Components Site is in Seneca Falls, New York. Seneca Falls is in the northern portion of Seneca County, on the northwestern end of Cayuga Lake. Seneca County lies within the Western Oswego River Basin. The Western Oswego River Basin encompasses approximately 2,600 square miles. This basin also includes portions of Wayne County to the north, Cayuga County to the east, Tompkins County to the southeast, Schuyler County to the south, and Ontario and Yates Counties to the west. The drainage within the basin is via a tributary to the Oswego River, which ultimately discharges to Lake Ontario (Crain 1974).

Seneca County lies within two physiographic provinces: the Appalachian Plateau province and the Central Lowland province. The Appalachian Plateau province makes up approximately the southern two-thirds of the County. The Appalachian Plateau is characterized by rolling hills and uplands with large and broad stream and lake valleys lying in between (Mozola 1951). In Seneca County, the Appalachian Plateau rises to nearly 2,000-feet above mean sea level (msl).

The Site lies within the glacial lake plain of the Central Lowland province. The Central Lowland province makes up approximately the northern third of the County. The topography of the Central Lowland is relatively flat with elevations between 400 – 600 feet msl. Drumlins, concentrated mainly to the north of the NYS Thruway (I-90), rise 100 – 300 feet above the

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<sup>1</sup> O'Brien & Gere Engineers, Inc. communication with Robert Horschneider, Water Engineer for Seneca River and Van Cleef Lake on October 2, 2001.

Lowland plains. The topography is nearly flat, with very little relief between the NYS Thruway and the northern ends of Seneca and Cayuga Lakes (Mozola 1951).

### **Regional unconsolidated deposits**

New York State was subjected to multiple glacial events during the Pleistocene Epoch (1.8 million years ago to 10,000 years ago). Each glacial episode destroyed to a large degree the geologic records of the previous glaciation. During the height of the Late Wisconsin glaciation (approximately 20,000 years ago), a continental ice sheet covered most of New York. The glacial margin extended across northeastern Pennsylvania and northern New Jersey to its southern limit along the length of Long Island, New York. The final retreat of glacial ice from the region occurred about 10,000 years ago.

Glacial drift was deposited beneath and in front of the last ice sheet during the Pleistocene Epoch creating a mantle of unconsolidated material covering nearly the entire bedrock surface of the County. The Pleistocene drift in the northern portion of Seneca County is thicker than that to the south (Mozola 1951). The glacial drift consisted of coarse-grained, stratified sands and gravels deposited by glaciofluvial environments, silts and clays deposited in glaciolacustrine environments, and till consisting of a heterogeneous mixture of non-stratified or poorly stratified material ranging in size from clay to boulders. Local alluvial deposits are confined to narrow bands adjacent to the streams from which they were formed (Mozola 1951). The alluvial material represents reworked till and other glacial deposits consisting of clays, silts, sands, and gravels.

### **Regional bedrock stratigraphy**

The bedrock within the Central Lowlands physiographic region is of Devonian and Silurian age. The Appalachian Plateau physiographic region bedrock is of Devonian-age. The bedrock generally strikes east-west with a gentle regional southward dip of approximately 50 feet per mile and is approximately 750 feet thick (Crain 1974). The bedrock from oldest to youngest are represented by the Camillus Shale and Bertie Limestone members of the Salina Group, and the Cobleskill Dolomite, Rondout Limestone, and Manlius Limestone. The local Devonian-age bedrock from oldest to youngest are represented by the Oriskany Sandstone, Onondaga Limestone, four shale members of the Hamilton Group, the Tully Limestone, three shale members of the Genesee Group, and shales and sandstones of the SONYEA, West Falls, and Java Groups (Crain 1974).

A bedrock elevation contour map of the northern portion of Seneca County is included as Figure 4. As shown on this figure, a relatively narrow bedrock trough (elevation contour of 400 feet msl) is present near Seneca Falls extending approximately midway between Seneca Falls and Waterloo to the west. This trough lies to the north of the Cayuga-Seneca Canal. As the trough does not directly coincide with the Cayuga-Seneca Canal, it may represent a paleochannel.

### **1.4. Site geology**

The geology underlying the Site consists of unconsolidated glaciolacustrine silts and clays with some gravel, cobbles, and sand overlying bedrock. The unconsolidated deposits were either fill or overburden of glaciolacustrine origin. The thickness of the unconsolidated materials ranges

from approximately 20 feet at bedrock monitoring well MW-BR-04 to approximately 45 feet at bedrock monitoring wells MW-BR-02 and MW-BR-03.

The overburden is composed of brown to gray silts and silty clays, and some fine sands. The sands that were encountered were in thin lenses, not of sufficient thickness or areal extent to be correlated across the Site. Gravel, cobbles, and boulders were also occasionally encountered in the glaciolacustrine deposits.

The glaciolacustrine materials are underlain by the Bertie Limestone. The Bertie Limestone is characterized as a hard, dense limestone exhibiting irregular conchoidal fractures. The limestone was deposited in beds ranging in thickness between 2- to 10-inches and is separated by thin friable shale partings. Although the Bertie Limestone is reported to be only 30 feet thick in Seneca County; approximately 120 feet of similar limestone was penetrated at monitoring well MW-BR-01. The band of limestone is responsible for the higher pH characteristic of the soils in the northern Finger Lakes Region. The limestone is underlain by Camillus Shale that consists of calcareous shale layers with occasional thin dolomitic limestone beds. Beds can be up to 4 inches thick, highly fractured, and characterized by irregular bedding planes and numerous voids (Mozola 1951).

Bedrock cores were collected on top of the escarpment north of the facility (MW-BR-02) and below the escarpment adjacent to the Cayuga-Seneca Canal (MW-BR-05). The core logs are in Appendix A. The bedrock encountered is described as dark gray limestone with numerous gypsum veins characterized as slightly fractured to sound. The upper 5 feet of bedrock at MW-BR-05 had a rock quality designation (RQD) of 68 percent, indicating fair rock quality. The remainder of the wells had RQDs ranging from 90 to 100 percent.

### **Topography**

Topography across the Site is generally flat with the ground elevation decreasing towards the barge canal. A 35-foot escarpment borders the south side of the Site. The elevation of the top of bedrock varies across the Site from a high of approximately 431 feet msl at MW-BR-01 to a low of approximately 377 feet msl at MW-BR-04. Based on this data, the top of bedrock appears to slope to the northeast and south beneath the Site.

### **1.6 Result of Hydrogeological Investigation**

A direct hydraulic connection does not appear to be present between the two subsurface groundwater flow units (overburden and bedrock). Historical groundwater flow data collected from the overburden unit indicates flow predominantly to the southeast. Based on monitoring data, groundwater flow in the bedrock unit has yet to be adequately determined. A discussion of these units is provided below.

#### **Overburden**

Figure 6 depicts the potentiometric surface in the overburden unit. The general overburden groundwater flow pattern appears relatively consistent over time. Based on the March and September 2001 overburden groundwater elevation measurements, the rate of groundwater flow (average linear velocity) to the south and to the southeast within the overburden unit was

calculated to be approximately 0.007 feet/day (2.5 feet/year) and 0.004 feet/day (1.5 feet/year), respectively. These velocities are based on Darcy's Law, modified to account for effective porosity as follows:

$$v = Ki/n_e$$

where "v" is velocity (feet/day), "K" is average hydraulic conductivity (0.10 feet/day), "i" is the calculated hydraulic gradient, and  $n_e$  is the effective porosity, assumed to be 0.18 based on the specific yield of a silt matrix (Fetter 1980). The average hydraulic conductivity value was obtained from a slug test conducted by Chester Environmental on monitoring wells MW-20 through MW-29. These results are presented in the *Interim Sampling Visit Investigation* report, Appendix D (Chester 1994).

### **Bedrock**

Groundwater flow within the bedrock hydrogeologic unit underlying the Site occurs principally through secondary porosity features such as fractures, joints, and bedding planes. Regional information indicates that two distinct sets of joints occur in Seneca County, dip joints and strike joints (Mozola 1951). The main set of joints or dip joints, trend between N. 15°-30° E. to N. 30°-45° W. The joint planes range between 46° to nearly vertical. The other set of joints (strike joints) trend from N. 60°-70° E. at right angles to the dip joints. Joint spacing ranged between 1- to 48-inches (Mozola 1951). Vertical fractures or joints were not evident from the rock cores at wells MW-BR-02 and MW-BR-05.

A groundwater contour map of the bedrock unit for the September 2001 monitoring period is shown on Figure 7. Some of the well data may not be reliable due to questionable construction methods used during installation. Review of the static bedrock groundwater elevations indicate that the bedrock wells located at the base of the escarpment (MW-BR-05 and MW-BR-06) are influenced locally by Van Cleef Lake and the Cayuga-Seneca Canal.

On September 26, 2001, surface and groundwater elevations were collected across the Site. The groundwater elevation recorded at MW-BR-06, which is located adjacent to Van Cleef Lake (near the dam), was 405.11 feet msl. The surface water elevation of Van Cleef Lake was 430.2 feet msl. This would indicate that Van Cleef Lake was locally recharging the bedrock groundwater near MW-BR-06. In addition, the groundwater elevation of 430.51 feet msl at MW-BR-01, which is located approximately 250 feet north of Van Cleef Lake, was similar to the lake elevation.

The groundwater elevation recorded at MW-BR-05 was 384.49 feet msl. In comparison, the surface water elevation of the Cayuga-Seneca Canal was 383.7 feet msl. This would indicate that bedrock groundwater was locally discharging near the Cayuga-Seneca Canal. Bedrock groundwater near MW-BR-05 appears to be in good hydraulic connection with the Cayuga-Seneca Canal. Water levels in this well were noted to rise rapidly when the lock gate was opened (to release water to the canal) and quickly decline upon gate closure. In addition, groundwater elevations at MW-8 to MW-BR-05 and the surface water elevation of the Cayuga-Seneca Canal indicate that bedrock groundwater flows to the south toward the Cayuga-Seneca Canal.

Given the inconsistent water levels at wells MW-BR-02 and MW-BR-03, the current groundwater elevations from the bedrock monitoring wells do not provide sufficient information to address Site-wide groundwater flow conditions. The inconsistent bedrock well construction techniques need to be further evaluated to ensure that the collected data is representative and usable.

### **Seasonal fluctuations**

Groundwater levels fluctuate seasonally in the overburden and bedrock hydrogeologic units. Generally, the overburden monitoring wells with the greatest fluctuations are in the grassy areas on the eastern portion of the Site. These wells include MW-1, MW-27, and MW-29. The likely reason that water level fluctuations are more pronounced in these wells is that they are in areas of the Site that likely have greater infiltration and evapotranspiration rates than wells located beneath the asphalt. Historical data indicate that overburden groundwater elevations at the Site are generally highest during the spring and summer months and lowest during the fall and winter months.

Water level trends in the bedrock were evaluated from the data collected from six previous bedrock wells (MW-7, MW-8, MW-9, MW-10, MW-11, and MW-12) installed between September 1983 and July 1984. The six wells were located in the southeast portion of the Site near the former filter cake dump pit and holding lagoon. With the exception of MW-8, one year or less of water level data is available. In addition, the water levels recorded in MW-8 during the Chester investigation represented post-sampling levels and not static conditions. As a result, water level trend data in the bedrock has been difficult to evaluate.

This data is supplemented by water levels from bedrock wells MW-BR-01 through MW-BR-06 installed during June 2001. However, data to date do not provide sufficient information to evaluate seasonal trends across the Site. Further, the inconsistent water levels that have been recorded from these wells indicate that the bedrock wells may be unreliable.

Based on the data collected during the Chester investigation, the water levels in the bedrock show similar seasonal fluctuation trends as in the overburden, although the fluctuations are less pronounced. The groundwater elevations in the bedrock on the southeast side of the Site were highest during the summer months, declined through the fall, were lowest during the winter, and began to increase again during the spring. The wells typically fluctuated approximately 1- to 2-feet between monitoring events.

### **1.7. Conceptual hydrogeologic system**

A conceptual model of the hydrogeologic system near the Site has been developed based on information obtained during various investigations. The unconsolidated deposits are comprised of a layer of fill material and overburden glaciolacustrine deposits having a thickness of approximately 20 to 45 feet. The groundwater table occurs in this hydrogeologic unit at depths between 1 and 7 feet bgs. Locally, horizontal groundwater flow in the overburden is to the south and east, as shown on Figure 6. There also appears to be a less significant yet present vertical component of groundwater flow due to downward hydraulic gradients. Due to the presence of

sporadic sand lenses within the overburden silts and clays, the horizontal component is likely the most significant flow component.

As groundwater flow in the overburden approaches the escarpment south of the facility, the horizontal component of overburden groundwater flow is likely lost to evapotranspiration along the escarpment face. The vertical component of overburden groundwater may flow to the underlying bedrock, although the three bedrock interface wells have remained dry since installation.

Data from the former bedrock monitoring wells installed by Chester Environmental indicate that bedrock groundwater levels were below the bedrock surface. However, the June 2001 bedrock wells show water levels above the bedrock surface. Well MW-BR-04 is an artesian well located adjacent to the Cayuga-Seneca Canal. The groundwater elevation (approximately 25 feet above ground surface or 424.7 feet msl) in this well is similar to the elevation of Van Cleef Lake.

Recharge to the bedrock immediately beneath the Site is likely from Lake Van Cleef and possibly from sand lenses in the till unit. At certain times of the year the Cayuga-Seneca Canal appears to recharge the bedrock groundwater. At other times (particularly when the surface water elevation of the canal is lowered during winter months) the bedrock groundwater likely discharges to the Cayuga-Seneca Canal. The bedrock groundwater is likely continually recharged by the lake and discharged to the river, except during periods when the lake level is intentionally dropped for maintenance and repairs along the dam and locks. This anthropogenic alteration of groundwater flow patterns may cause a localized bedrock groundwater flow path around the dam from west to east under the southern portion of the Site.



**Attachment 5**  
**Former Phillips Display Components Facility**  
**Seneca Falls, New York**  
**Site History and Chain of Title Report**

**1. Previous Site owners and operators**

An *EDR-Historical Chain of Title Report* (EDR 2000) was obtained from EDR in July 2000 to identify the current and previous owners. The *Historical Chain of Title Report* is presented as part of this attachment. Former Site owners in chronological order starting with the earliest listed owner, are presented below.

- Sylvania Electric Products Incorporated (Massachusetts Corporation)
- Sylvania Electric Products Incorporated (Delaware Corporation)
- On December 23, 1970 Sylvania changed its name to GT & E Sylvania Incorporated
- On January 9, 1980 GT & E Sylvania Incorporated became GTE Products Corporation
- North American Philips Consumer Electric Corporation
- North American Philips Corporation
- Seneca County Industrial Development Agency (SCIDA)

GTE Operations Support Incorporated (GTEOSI) is successor in interest to GTE Products Corporation for this matter.

**Site Operations**

A sequential list identifying reported Site operators from the 1940s until present is shown below.

- Sylvania Electric Products Incorporated
- GTE Products Corporation
- Former Philips Lighting
- Philips ECG
- Seneca County Industrial Development Agency
- Landsman Development Corporation (LDC)
- LDC Seneca Corporation
- LDC Seneca Associates
- HP Neun Company (currently leases the Site from SCIDA)
  - Tenants:
  - John Sipos, Attorney
  - Raymond Kelley Associates
  - Tri State Hospital Supply
  - Spectrum Industries
- Prospect Hill Apartments (southwest corner of the former Site)

**1.1. Background information**

The five original facility buildings were constructed in 1914 by the Rumsey Pump Corporation, which had foundry and machining operations. In the 1940s, Sylvania purchased

the plant, expanded the facilities, and began the manufacture of black and white television picture tubes. During the 1960s, Sylvania began to manufacture color television picture tubes. Philips Display Components acquired the property in the early 1980s and continued production until the mid-1980s. The facility was subsequently sold to the Seneca County Industrial Development Agency (SECOR 1996). In 1989, H.P. Neun Company, Inc. began leasing the Site and currently subleases building space to several tenants. The facility is used for commercial purposes including offices and warehousing.

Manufacturing at the facility during Sylvania's ownership included interior coating of tubes with a variety of phosphors, manufacture of metal components and fittings, and assembly of television tubes. Processes included cleaning, finishing, coating, and tube salvage operations (Chester 1995b). The original manufacturing by Sylvania was conducted in Buildings 1 through 5. Over time, the facility was expanded to include Buildings 6 through 13. By 1972, Sylvania was conducting most of its manufacturing in Buildings 8, 10, 10A, 11 and 13 (Chester 1995b).

Between 1948 and 1972, the facility discharged process waters to Van Cleef Lake and the Seneca River/Barge Canal through several outfalls along the escarpment located south of the facility. Prior to 1972, the sumps and pits at the Site conveyed the process wastewater through sewer lines to the outfalls. The outfalls were not monitored during this period. By 1981, many of the sumps, pits, and drains in the original sewer system were filled with concrete and abandoned (Chester 1995a).

In 1971 and 1972, Sylvania segregated the sewer lines handling non-process wastewater (storm and floor drains) from those handling process wastewater requiring treatment. In conjunction with these changes an industrial wastewater treatment plant (IWWTP) was constructed. The IWWTP treated hydrofluoric acid, chrome, lead-bearing caustic, and acid wastewater. In addition to the IWWTP, a sewer line was installed on the south side of the facility to intercept the wastewater outfalls and divert the wastewater to the IWWTP. Plant wastewater was subsequently conveyed to a settling lagoon prior to discharge to the Seneca River/Barge Canal under a New York State Pollution Discharge Elimination System (SPDES) Permit NY-0001228 (Chester 1995a). By 1992, the lagoons and IWWTP were decommissioned (Keystone 1992b). The SPDES permit was canceled in February 1990. Currently the sewer system conveys storm water runoff from roof drains and exterior catch basins and discharges the storm water to the Seneca River/Barge Canal.

### **1.2. Historical orders, decrees, permits, or approvals**

Historical documents and Environmental Data Resources (EDR) Radius Map with GeoCheck Report (EDR 2000b) were reviewed to obtain a Site-related list of orders, decrees, permits, violations, or approvals regarding the Environmental Conservation Law (ECL) or equivalent federal environmental status. Also, a variety of investigations were conducted between 1986 and 2001. These investigations included the collection of soil and ground water from Site locations that were thought to be potential residual environmental sources. A list of RCRA milestones is included in Table 1-1 below.

**Table 1-1 RCRA Documents and Reporting Milestones**

7	1980	Philips informed EPA that facility involves "hazardous waste" per Section 1004 (5) RCRA, 42 U.S.C 6903(5) and 40 CFR 261.3 (required by 11/19/1980?)	<i>Cited in: USEPA Complaint Docket No. II RCRA-</i>
7	1984	Philips submitted a Part B application (7/23/1984).	<i>Cited in: USEPA Complaint Docket No. II RCRA-</i>
2	1985	EPA Notice of Deficiency (NOD) to Philips (2/15/1985) set new date for submission of Part B as 4/9/1985.	<i>Cited in: USEPA Complaint Docket No. II RCRA-</i>
2	1985	Philips requests additional extension for submittal of Part B	<i>Cited in: USEPA Complaint Docket No. II RCRA-</i>
3	1985	EPA Addendum to NOD to Philips (3/27/1985) extended Part B submission to 5/9/1985	<i>Cited in: USEPA Complaint Docket No. II RCRA-</i>
5	1985	EPA grants extension for submittal of Part B until 6/7/1985.	<i>Cited in: USEPA Complaint Docket No. II RCRA-</i>
6	1985	Philips response to NOD and addendum to NOD (6/6/1985)	<i>Cited in: USEPA Complaint Docket No. II RCRA-</i>
7	1985	NYSDEC request to Philips for "financial assurance" in lieu of TSDF permit	<i>Letter 7/09/1985</i>
9	1985	Incinerator taken out of service	<i>Cited in: Fact Sheet of Closure Plan Public Notice (9/22/1987)</i>
9	1985	Incinerator Feed Storage Tanks taken out of service	<i>Cited in: Fact Sheet of Closure Plan Public Notice (9/22/1987)</i>
11	1985	EPA finds Philips response to NOD and addendum to NOD incomplete and deficient, and, therefore, in violation (11/15/1985) - \$9,500 penalty proposed.	<i>USEPA Complaint Docket No. II RCRA-85-0209</i>
10	1985	NYSDEC/Philips Consent Order - MWs - violations of recordkeeping and reporting procedures; MW network incapable of identifying impact of releases.	<i>NYSDEC to Philips Oct 30, 1985</i>
11	1985	USEPA Complaint Docket No. II RCRA-85-0209	<i>USEPA Complaint</i>
11	1985	NYSDEC second request to Philips for financial assurance in lieu of TSDF permit	<i>Letter 11/21/1985</i>
11	1985	Philips "financial assurance" bond Rider to provided to NYSDEC	<i>Letter 11/27/1985</i>
7	1986	Work Plan - Philips ECG, Inc. Closure Plan (Two Hazardous Waste Surface Impoundments and Incinerator) (7/1986)	<i>Chester (July 1986)</i>
5	1987	Work Plan - Philips ECG, Inc. Closure Plan (Two Hazardous Waste Surface Impoundments and Incinerator) revision (5/22/1987)	<i>Chester (May 1987 rev.)</i>
9	1987	NYSDEC Direction to provide newspaper public notice, by 9/30/1988, of application for closure of two impoundments and an incinerator by Philips.	<i>NYSDEC to Philips Sep 22, 1987</i>
9	1987	NYSDEC SEQR (Unlisted Status) Negative Declaration - Determination of Non-Significance (9/22/87) for Philips EPA I.D. No. NYD002246015.	<i>Cited in: Fact Sheet of Closure Plan Public Notice (9/22/1987)</i>
10	1987	Philips field effort to determine if "a release potentially harmful to human health and the environment" has taken place per 40 CFR part 264 App. IX.	<i>Cited in: Report on Soil Sampling for (RCRA) Clo Documentation</i>
1	1989	Report - Report on Soil Sampling for (RCRA) Closure Documentation - HWMUs	<i>Chester (January 1989)</i>
?	1989	Surface Impoundments removed.	<i>Cited in: Report on Soil Sampling for (RCRA) Clo Documentation</i>
?	1989	Incinerator and feed tanks removed.	<i>Cited in: Report on Soil Sampling for (RCRA) Clo Documentation</i>
2	1990	NYSPEDES Permit (NY-0001228) (Note: Not RCRA a "permit by rule") to discharge was cancelled by new owner (2/1/1990).	<i>Cited in: WWTP Decommissioning Report (Keyst 1991)</i>
8	1991	Sediment sampling in Lake and Canal requested by NYSDEC	<i>Philips Meeting Notes (8/20/91) Galloway (GTE) A. Russo (NAPC)</i>
5	1992	Report - Waste Water Treatment Plant (WWTP) Decommissioning Report	<i>Keystone (May 1992b)</i>
6	1992	NYSDEC response to 5/13/1992 meeting issues - Inaccessible SWMUs, TPH Analysis, Action Levels	<i>NYSDEC to Philips (June 8, 1992)</i>
6	1992	Work Plan - Sampling Visit (SV) Work Plan Vol. 1 Management Plan	<i>Keystone (June 1992a)</i>
6	1992	Work Plan - Sewer Evaluation Work Plan	<i>Keystone (June 1992c)</i>
7	1992	Work Plan - Supplemental Sampling Visit Work Plan USTs and Old Sewers	<i>Keystone (July 1992d)</i>
9	1992	Work Plan - Addendum to Closure Plan	<i>Keystone (September 1992e)</i>
9	1992	Work Plan - Status of seven work plans	<i>NYSDC to Philips Sep 25, 1992</i>
3	1993	Report RCRA Post-Closure Groundwater Monitoring Report	<i>Chester (March 1993)</i>
5	1993	Action Levels	<i>NYSDC to Philips May 25, 1993</i>
7	1993	Report - Phase II Ground Water Screening (GWS) Survey	<i>Chester (July 1993)</i>
3	1994	Report - Interim Sampling Visit Investigation (ISVI) Report	<i>Chester (March 1994a)</i>
3	1994	Report - Sampling Visit Investigation (SVI) Report	<i>Chester (March 1994b)</i>
12	1994	Report - MW-1 RFI Report	<i>Chester (December 1994c)</i>
2	1995	Report - Sewer Evaluation (SE) Report	<i>Chester (February 1995a)</i>
3	1995	Report - Supplemental Sampling Visit Investigation (SSVI) Report	<i>Chester (March 1995b)</i>
6	1995	Report - Potential Remedial Alternatives for Remediation of Impacted Soil and Groundwater	<i>Groundwater Technologies (June 1995)</i>
7	1995	Groundwater Sampling Plan w/ Appendix B - Report of Subsoil Results	<i>Groundwater Technologies (July 1995)</i>
7	1996	Work Plan - RFI Work plan	<i>SECOR (July 1996)</i>
10	1999	Work Plan - Addendum to RFI Work plan	<i>O'Brien &amp; Gere (1999)</i>
6	2000	Work Plan - Response for Comments on Addendum to RFI Work plan	<i>Cited in: Fact Sheet of Closure Plan Public Notice (9/22/1987)</i>

A RCRA Part B application, dated July 23, 1984 was submitted to NYSDEC by Phillips. The application was not formally processed by NYSDEC because Phillips withdrew the application during the Interim Status period, before a draft RCRA permit was issued by the State. The application was withdrawn in 1986 when Phillips chose to close the Interim Status hazardous waste management units (lagoons, incinerator, incinerator feed tanks, and container storage areas). The decision to withdraw the permit triggered RCRA Closure of the listed units, Post-Closure monitoring on the surface impoundments, and Corrective Action at Solid Waste Management Units (SWMUs). A RCRA Post-Closure permit was never issued, and after three years of groundwater monitoring at the former impoundments, post-closure activities were discontinued. The Corrective Action activities began with the RCRA Facility Assessment (RFA) and a series of sampling visits in the early 1990s, and continuing into a RCRA Facility Investigation (RFI), which is being reported on here. A list of milestones, documents related to previous RCRA investigations, groundwater monitoring, and closures (Including title, author, and date) performed at the Site is presented in Table 1-1 on the previous page.

### **1.3. Previous investigations and RCRA closure assessments**

Various investigations and remedial activities were conducted over the last twenty years to identify and address areas of environmental concern. The investigations were performed in conjunction with RCRA Interim Status requirements and subsequent RCRA closure of the surface impoundments on the east side of the Site. The impoundment (Waste Water Effluent Settling Lagoon), which discharged to SPDES Outfall 001 in the Seneca River, was closed in conformance with RCRA regulations in 1987 (Chester 1994b). In addition to the closures under RCRA, eleven underground storage tanks (USTs) previously used to store methanol or petroleum fuels have been closed (Keystone 1992, Chester 1994b). The RFI Work Plan (SECOR 1996), which was submitted to NYSDEC states: "All regulated units at the facility have been closed in accordance with the Facility Closure Plan. Closure has been approved by the New York State Department of Environmental Conservation (NYSDEC)." These past activities are summarized in Table 1-1.

In 1993 and 1994, Chester Environmental collected samples of shallow sediments/soils adjacent to seven historic outfalls to the Seneca River and Van Cleef Lake. Figure 2 shows the locations of historic outfalls. Samples were analyzed for VOCs, cadmium, chromium, lead, zinc, fluoride and pH. VOCs were not detected. Several inorganic compounds, however, were detected at levels above the NYSDEC TAGMs.

A walkover of Site grounds and portions of the facility's interior was conducted on April 30, 1999 by OBG to observe current conditions and identify the locations of monitoring wells and former Outfall areas 1, 2, and 3. During the walkover, the sump in Building 3, which was not previously identified on a map of the Site sumps and collection pits, was observed. The remainder of the sumps were reportedly backfilled with cement during closure activities prior to transfer of the property (Chester 1995a). The previous locations of floor drains and their closed status were evident from the cemented areas in the building floor.

### **1.1.6 Site solid waste management units (SWMUs)**

The Philips Closure Plan (Chester 1986) lists the hazardous waste management units (HWMUs) as two surface impoundments, an incinerator, two incinerator-feed tanks and four container storage areas. The impoundments and incinerator-related units have been closed according to the Closure Plan (Chester 1986) and the *Report on Soil Sampling for Closure Documentation – Hazardous Waste Management Units* (Chester 1989). The container storage areas were retained as less than 90 day RCRA storage units, operational until March 10, 2005 pursuant to the 6 NYCRR Subpart 373 and Part 373.1.1(d)(1)(iii).

According to the RCRA Facility Assessment Sampling Visit Investigation Report (Chester 1994b), five initial SWMUs were investigated. The areas investigated were the Interim Drum Storage Area, the Satellite Storage area, the former underground fuel oil tank, the polychlorinated biphenyl (PCB) capacitor storage area, and a former open burning area. In addition, selected sumps, pits and floor drains were investigated. Investigations of areas beneath floor slabs were not performed, since the former plant buildings were declared to be an inaccessible SWMU (Chester 1994b). The current RFI investigation expands on the former investigation of these units.

## **HISTORICAL CHAIN OF TITLE REPORT**

**O'BRIEN & GERE ENGINEERS, INC.  
50 JOHNSTON STREET  
SENECA FALLS, NEW YORK**

**Submitted to:**

**ENVIRONMENTAL DATA RESOURCES, INC.  
C/O  
O'BRIEN & GERE ENGINEERS, INC.  
5000 Brittonfield  
Syracuse, New York 13221  
315-437-6100**

**Attention: John Hunt**

**Project No. N00-1753**

**January 8, 2002**

**Nationwide Environmental Title Research hereby submits the following ASTM historical chain-of-title to the land described below, subject to the leases/miscellaneous shown in Section 2. Title to the estate or interest covered by this report appears to be vested in:**

**SENECA COUNTY INDUSTRIAL DEVELOPMENT AGENCY**

**The following is the current property legal description:**

**All that certain piece or parcel of land being further bound and described in attached vesting deed, lying and situate in the City of Seneca Falls, County of Seneca, State of New York.**

### 1. HISTORICAL CHAIN OF TITLE

1. Sylvania Electric Products, Inc., a Massachusetts corporation acquired title to the property prior to 1940.

2. DEED:

RECORDED: 03-02-1959  
GRANTOR: Sylvania Electric Products, Inc., a Massachusetts corporation  
GRANTEE: Sylvania Electric Products, Inc., a Delaware corporation  
INSTRUMENT: Bk 287, Pg 193

3. DEED:

RECORDED: 06-27-1981  
GRANTOR: GTE Products Corporation, formerly known as GTE Sylvania Incorporated, formerly known as Sylvania Electric Products, Inc., a Delaware corporation, also formerly known as Sylvania Electric Products, Inc., a Massachusetts corporation  
GRANTEE: North American Philips Consumer Electronics Corporation, a Delaware corporation  
INSTRUMENT: Bk 388, Pg 1038

4. DEED:

RECORDED: 12-13-1989  
GRANTOR: North American Philips Corporation, successor in interest to North American Philips Consumer Electronics Corporation, a Delaware corporation  
GRANTEE: Seneca County Industrial Development Agency  
INSTRUMENT: Bk 462, Pg 272

**2. LEASES AND MISCELLANEOUS**

1. LEASE:

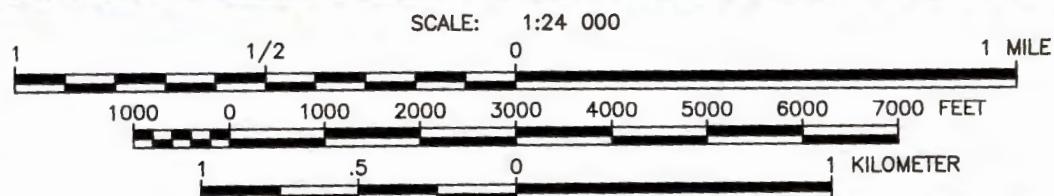
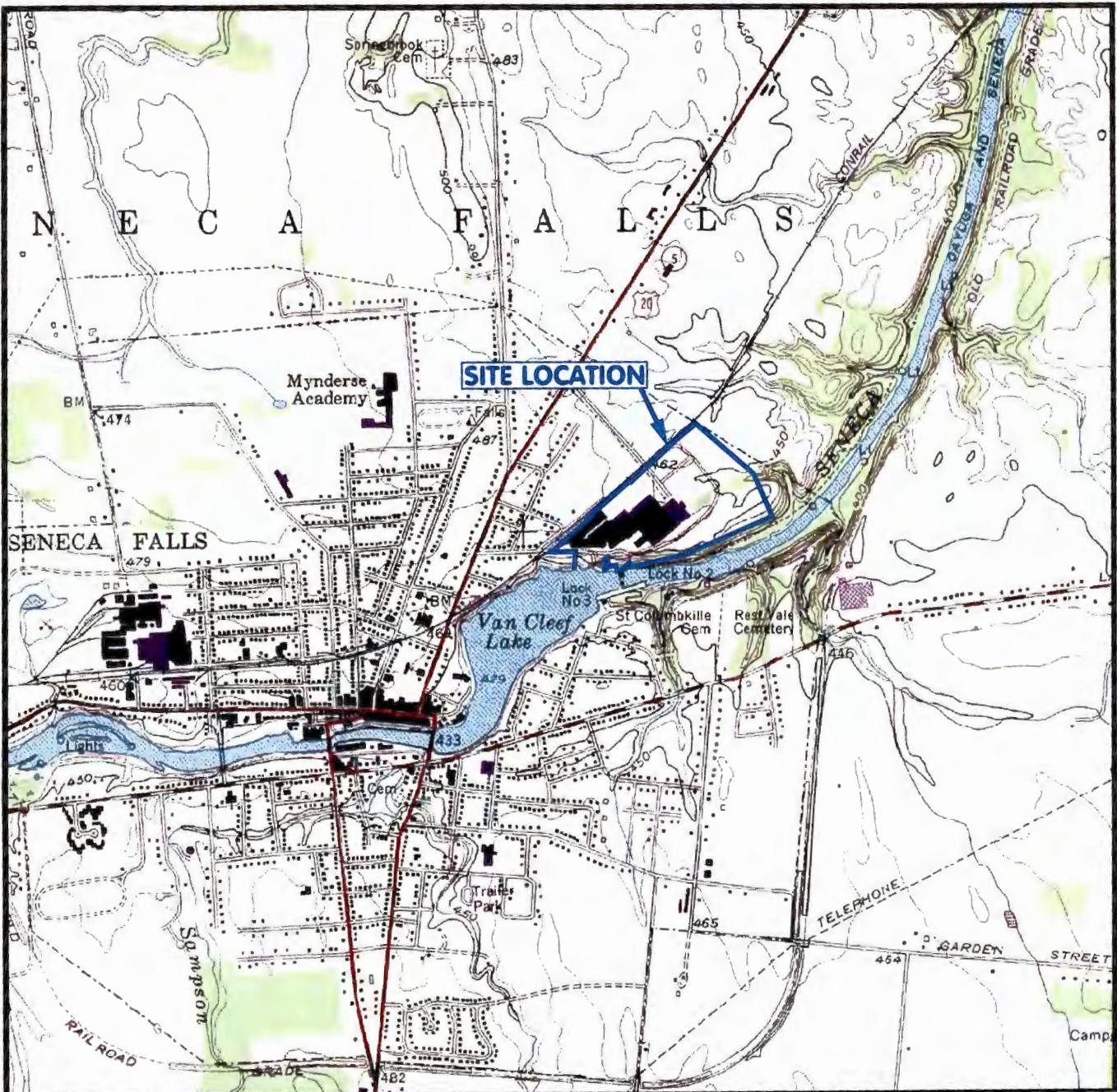
RECORDED: 02-22-1990  
LESSOR: Seneca County Industrial Development Agency, a New  
York public benefit corporation  
LESSEE: LDC Seneca Associates, a general partnership  
INSTRUMENT: Bk 464, Pg 331

2. No environmental liens were found of record.

### 3. LIMITATION

This report was prepared for the use of Environmental Data Resources, Inc., and O'Brien & Gere Engineers, Inc., exclusively. This report is neither a guarantee of title, a commitment to insure, or a policy of title insurance. Nationwide Environmental Title Research does not guarantee nor include any warranty of any kind whether expressed or implied, about the validity of all information included in this report since this information is retrieved as it is recorded from the various agencies that make it available. The total liability is limited to the fee paid for this report.





NORTH

MAP REFERENCE:

PORTION OF U.S.G.S. QUADRANGLE MAP  
7 1/2 MINUTE SERIES (TOPOGRAPHIC)  
SENECA FALLS, NEW YORK 1953  
PHOTOREVISED 1978



GTE OPERATIONS SUPPORT INCORPORATED  
FORMER PHILIPS DISPLAY COMPONENTS SITE  
SENECA FALLS, NEW YORK

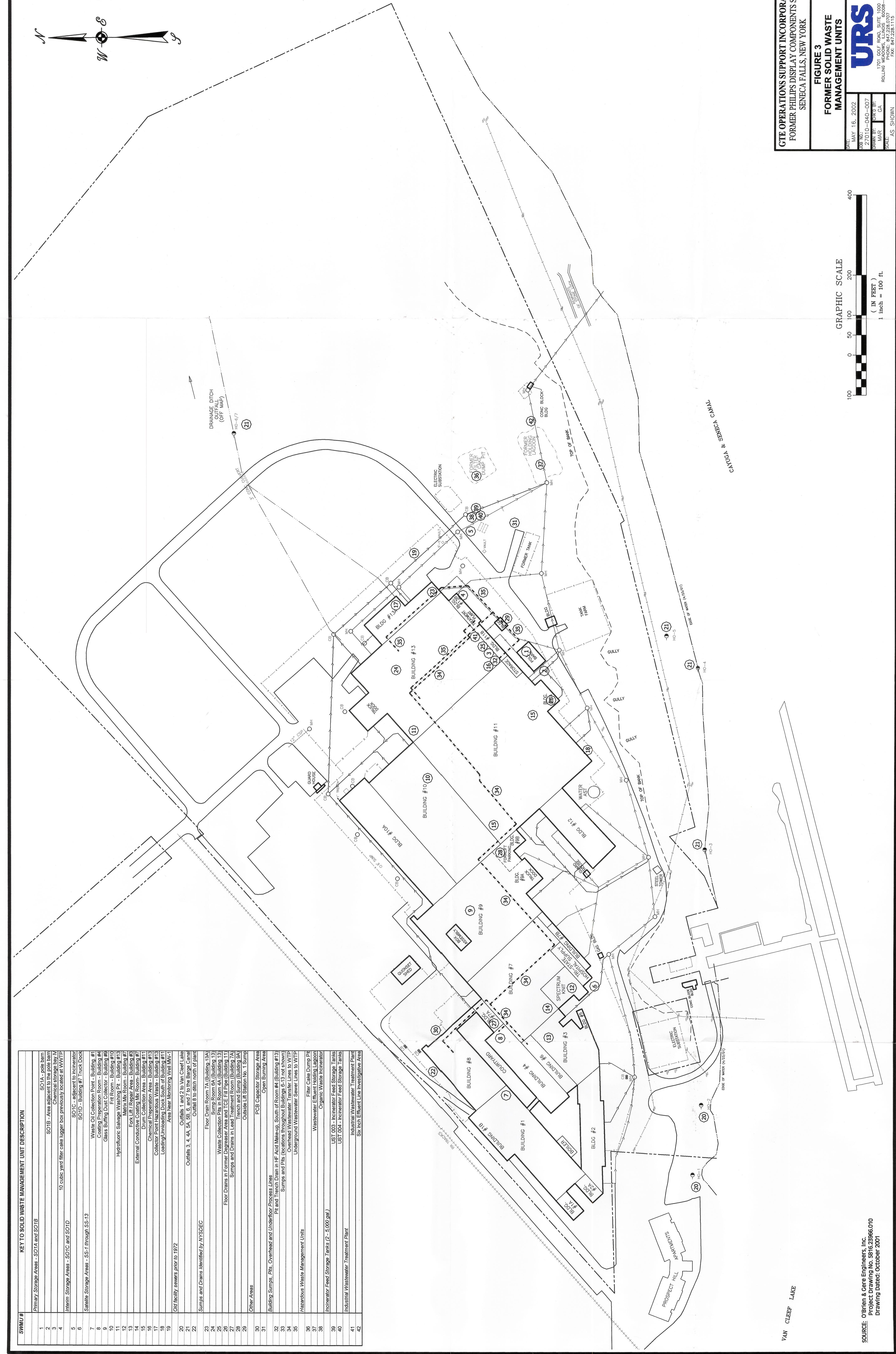
FIGURE 1  
SITE LOCATION MAP

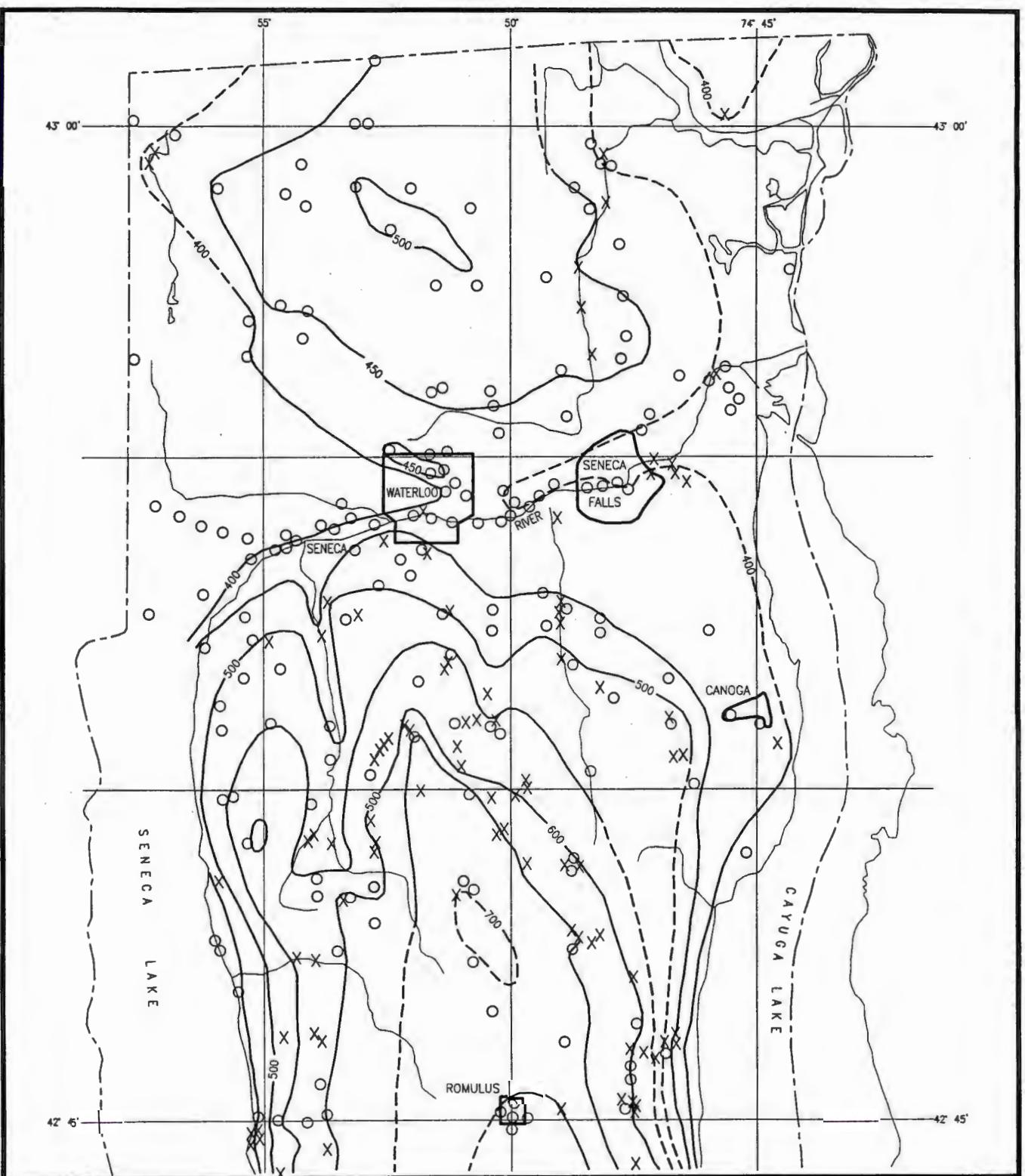
DATE:	MAY 7, 2002	
JOB NO.:	27010-040-007	
DRAWN BY:	CHK'D BY:	
MAR	SB	

SCALE:  
AS SHOWN

**URS**

1701 GOLF ROAD, SUITE 1000  
ROLLING MEADOWS, ILLINOIS 60008  
PHONE: 847.228.0707  
FAX: 847.228.1115





NORTH

SOURCE: O'Brien & Gere Engineers, Inc.  
Project Drawing No. 2-1  
Drawing Dated: November 2001

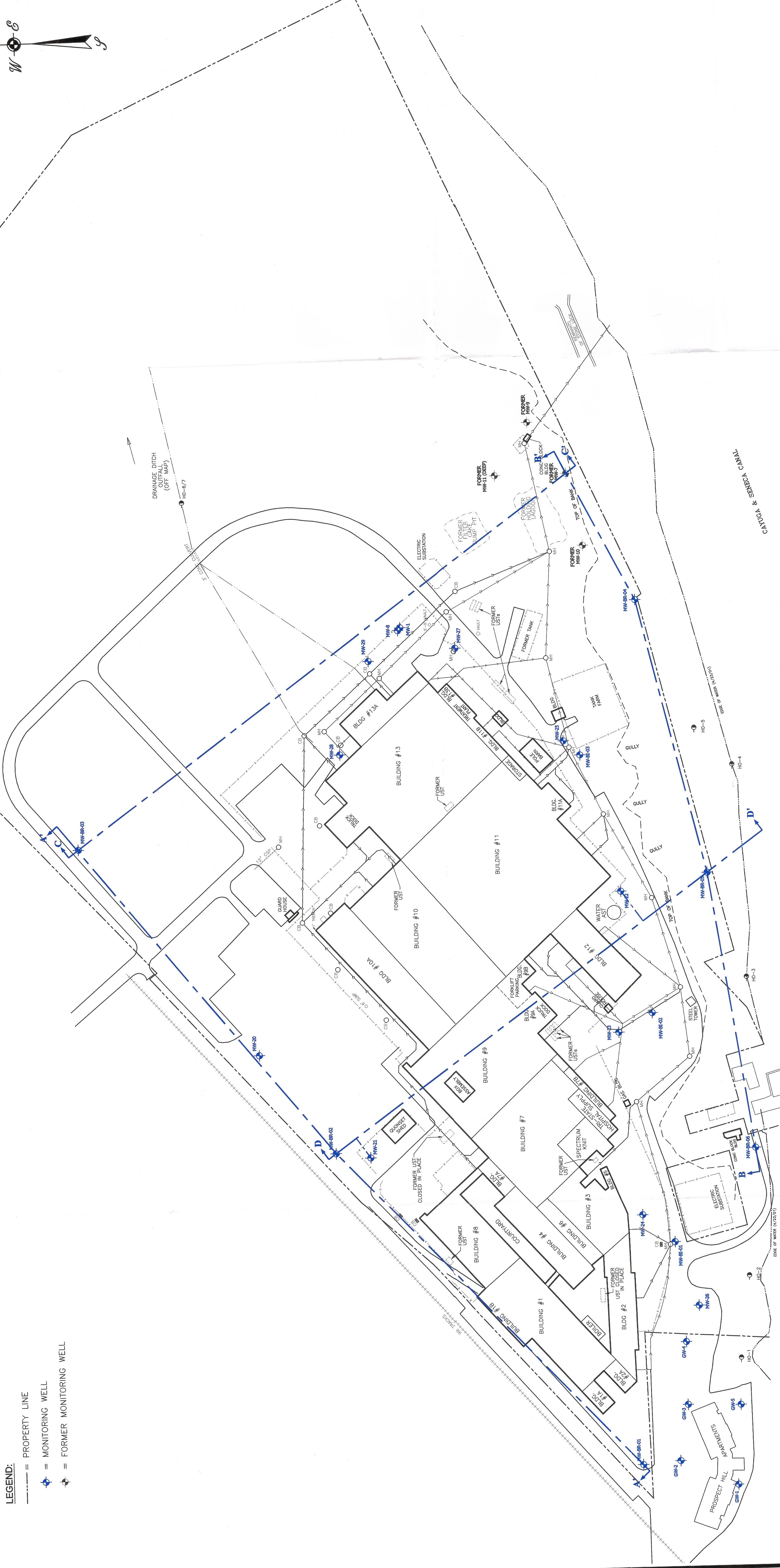
GTE OPERATIONS SUPPORT INCORPORATED  
FORMER PHILIPS DISPLAY COMPONENTS SITE  
SENECA FALLS, NEW YORK

**FIGURE 4**  
**BEDROCK ELEVATION CONTOURS**  
**NEAR SENECA FALLS**

DATE: MAY 16, 2002  
JOB NO.: 27010-040-007  
DRAWN BY: CHK'D BY:  
.MAR SB  
SCALE: AS SHOWN

**URS**

1701 GOLF ROAD, SUITE 1000  
ROLLING MEADOWS, ILLINOIS 60088  
PHONE: 847.228.0707  
FAX: 847.228.1115



FORMER PHILIPS DISPLAY COMPONENTS SITE  
SENECA FALLS, NEW YORK

**FIGURE 5**  
**GEOLOGIC CROSS SECTION**  
**REFERENCE MAP**

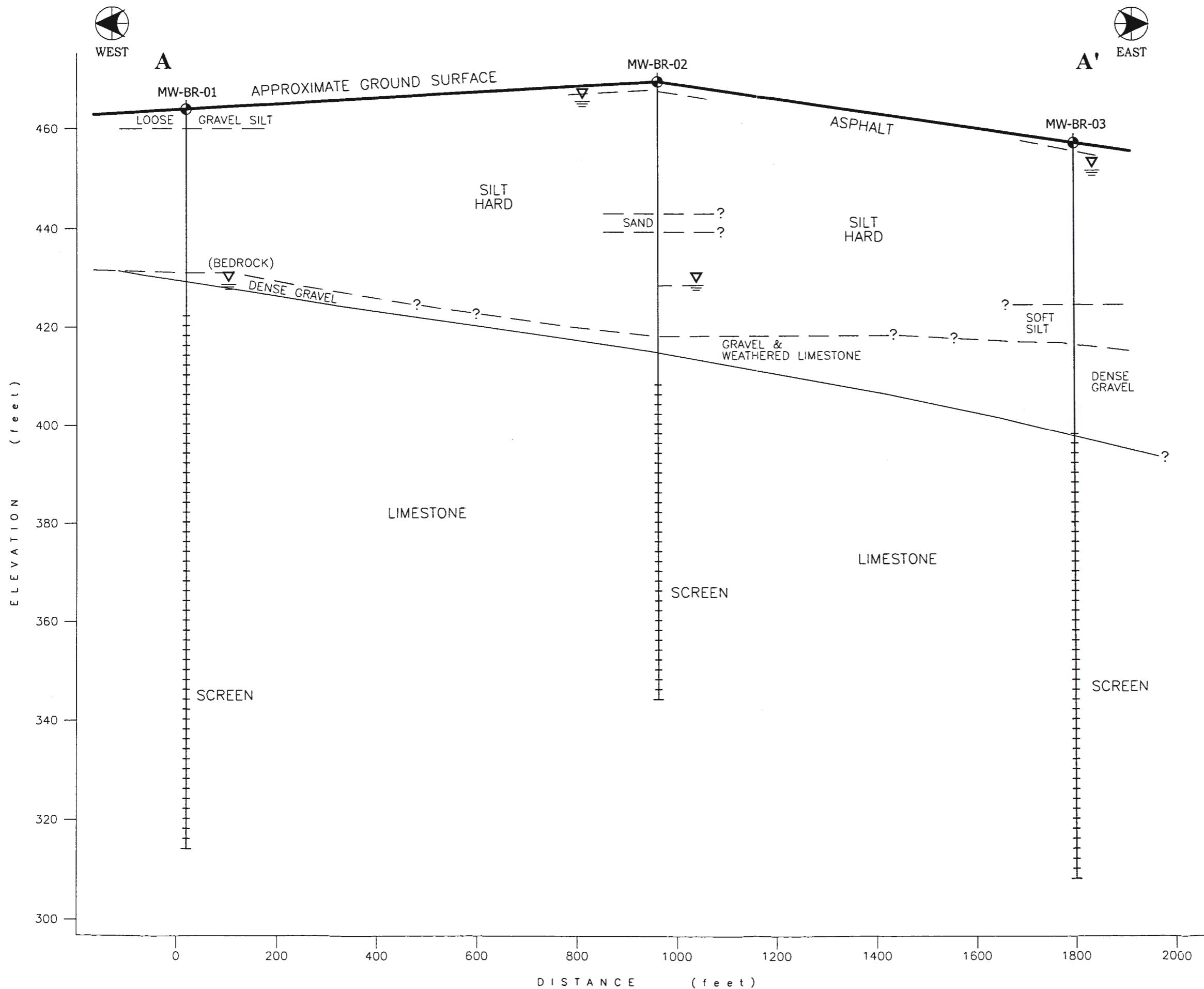
DATE:	MAY 16, 2002	
JOB NO.:	27010-040-007	
DRAWN BY:	CHK'D BY:	1701 GOLF ROAD, SUITE 1000 ROLLING MEADOWS, ILLINOIS 60008-4222 PHONE: 847.2228.0707 FAX: 847.2228.1115
MAR	SB	
SCALE:		AS SHOWN

GRAPHIC SCALE ( IN FEET )

1 inch = 100 ft.

Scale markings: 0, 50, 100, 200.

SOURCE: O'Brien & Gere Engineers, Inc.  
Project Drawing No. 5816.23966.010  
Printed 06/26/2004

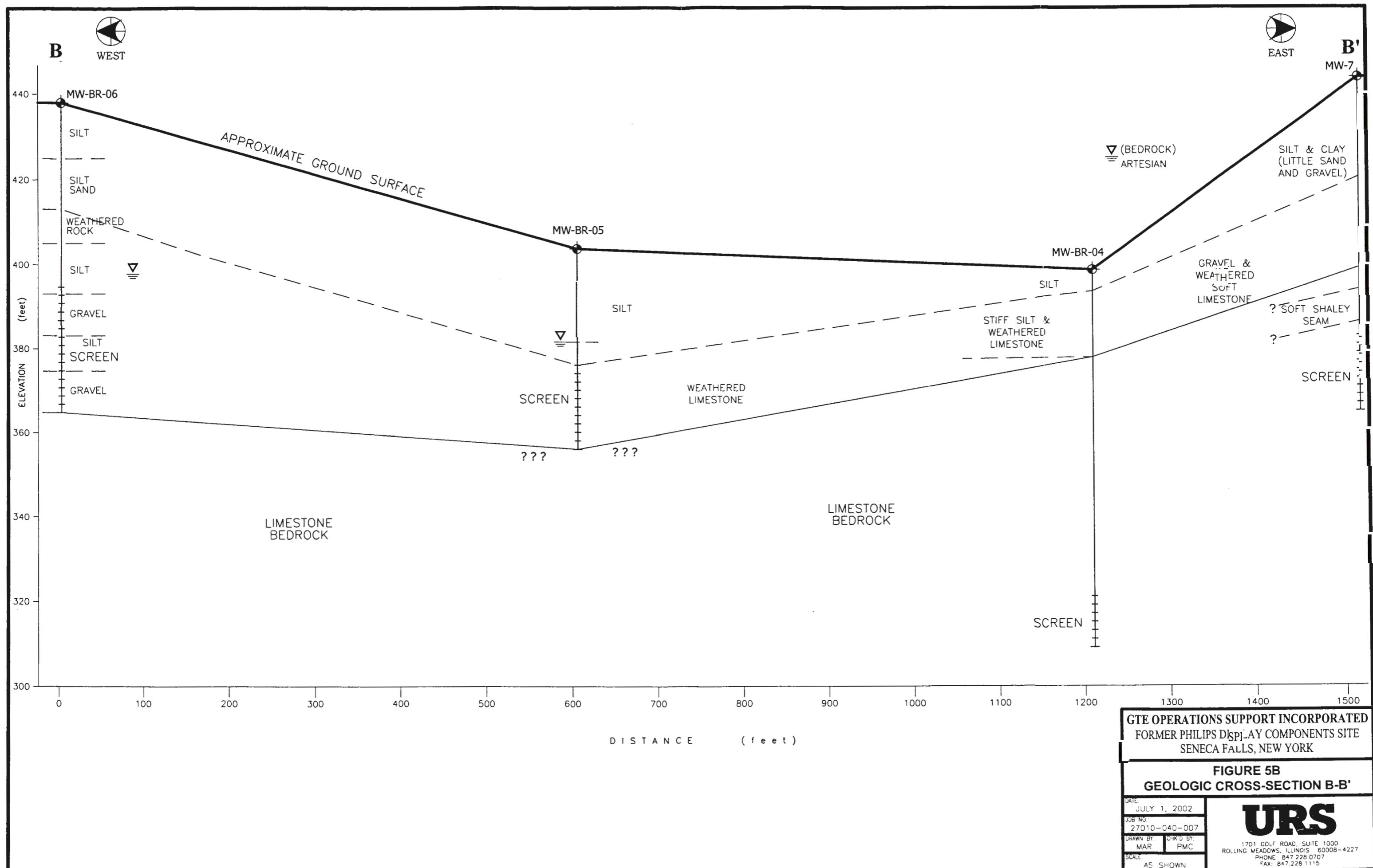


GTE OPERATIONS SUPPORT INCORPORATED  
FORMER PHILIPS DISPLAY COMPONENTS SITE  
SENECA FALLS, NEW YORK

FIGURE 5A  
GEOLOGIC CROSS-SECTION A-A'

DATE:	JULY 1, 2002		
JOB NO.:	27010-040-007		
DRAWN BY:	MAR	CHKD BY:	PMC
SCALE:	AS SHOWN		

**URS**  
1701 GOLF ROAD, SUITE 1000  
ROLLING MEADOWS, ILLINOIS 60008-4227  
PHONE: 847.228.0707  
FAX: 847.228.1115



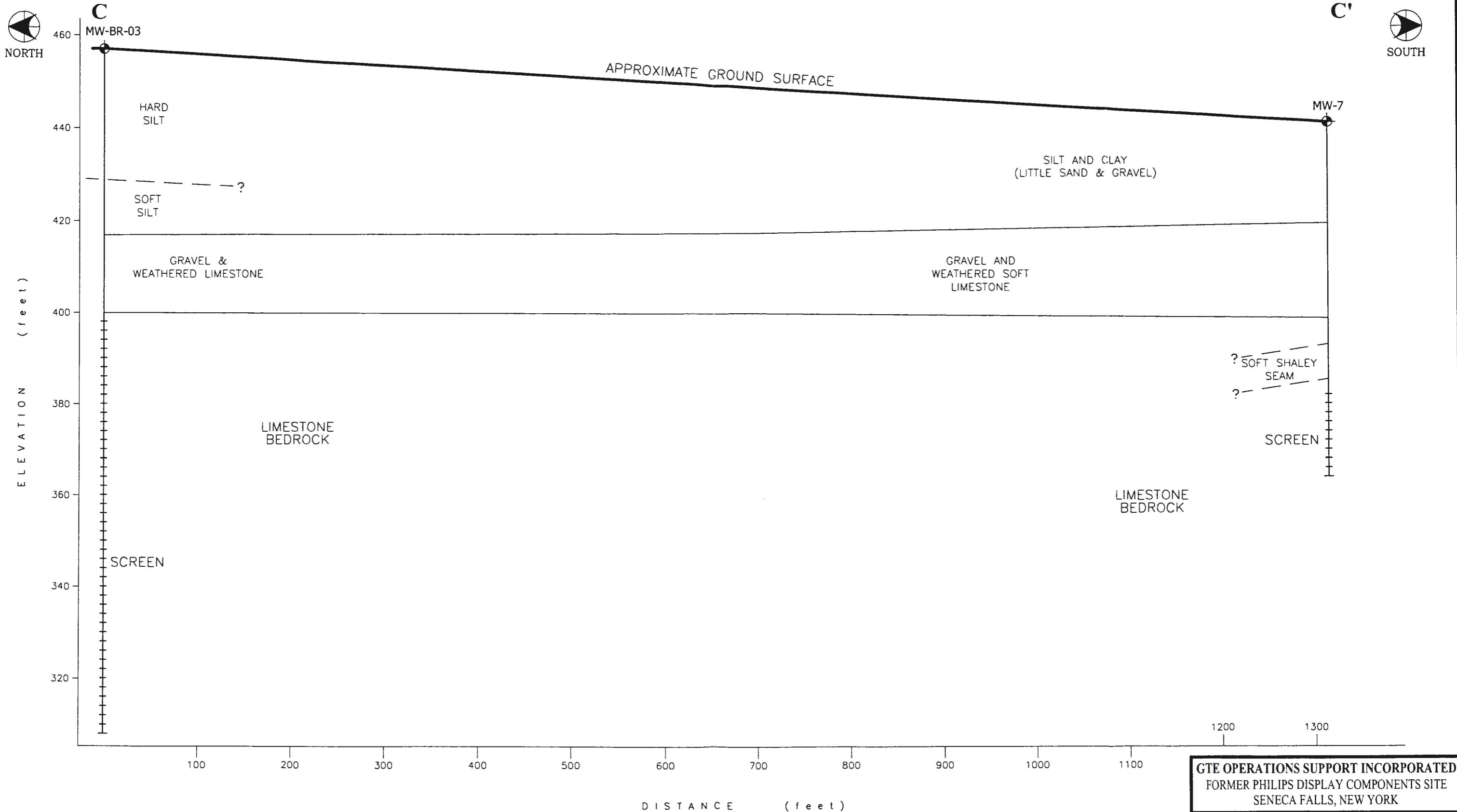
GTE OPERATIONS SUPPORT INCORPORATED  
FORMER PHILIPS DISPLAY COMPONENTS SITE  
SENECA FALLS, NEW YORK

FIGURE 5B  
GEOLOGIC CROSS-SECTION B-B'

DATE:	JULY 1, 2002
JOB NO.:	127010-040-007
DRAWN BY:	CHKD BY:
MAR	PMC

1701 GOLF ROAD, SUITE 1000  
ROLLING MEADOWS, ILLINOIS 60008-4227  
PHONE: 847.228.0707  
FAX: 847.228.1115

**URS**



GTE OPERATIONS SUPPORT INCORPORATED  
FORMER PHILIPS DISPLAY COMPONENTS SITE  
SENECA FALLS, NEW YORK

FIGURE 5C  
GEOLOGIC CROSS-SECTION C-C'

DATE: JULY 1, 2002  
JOB NO: 27010-040-007  
DRAWN BY: MAR CHK'D BY: PMC  
SCALE: AS SHOWN

**URS**

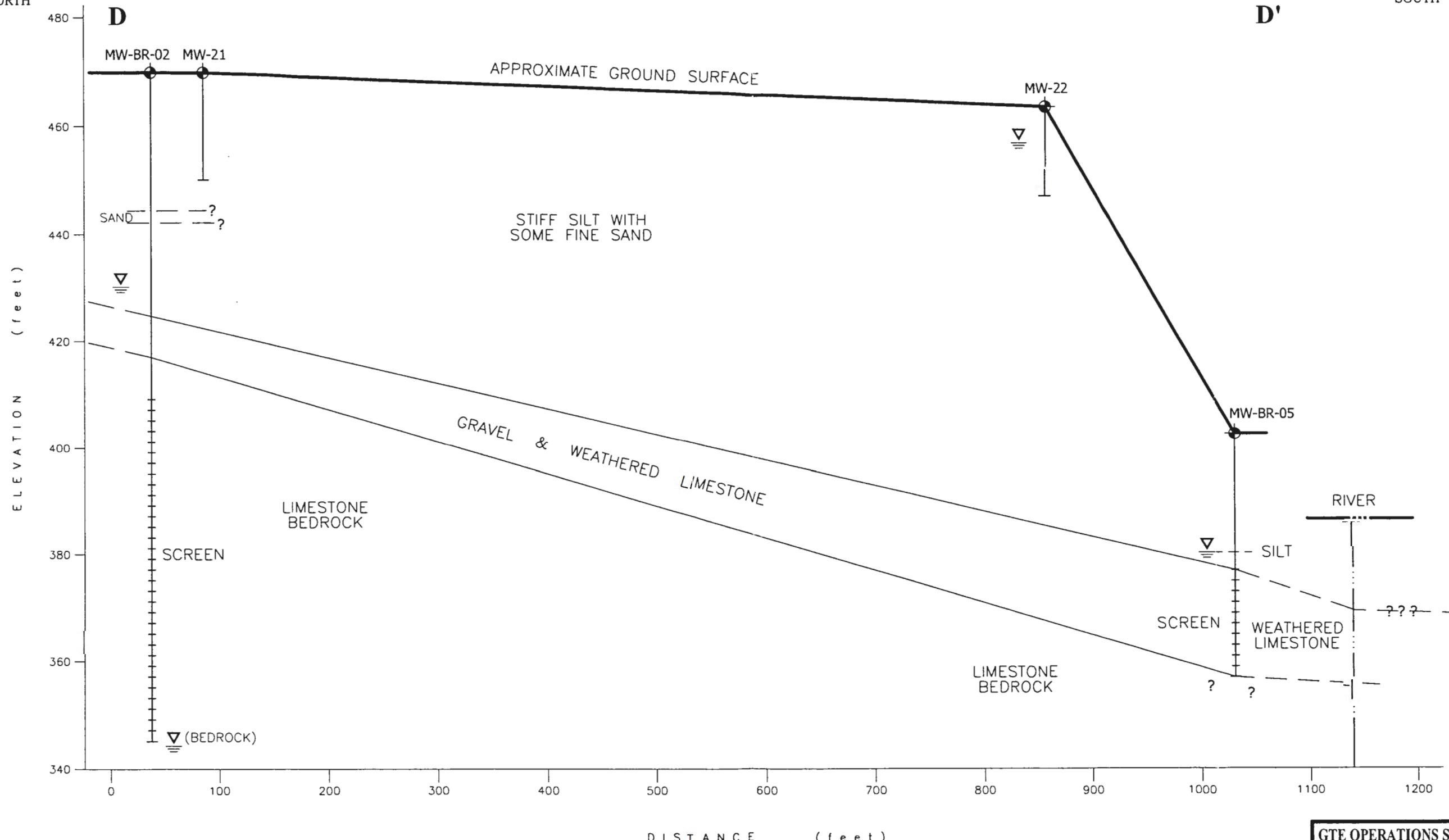
1701 GOLF ROAD, SUITE 1000  
ROLLING MEADOWS, ILLINOIS 60008-4227  
PHONE 847.228.0707  
FAX 847.228.1115



NORTH



## SOUTH



**GTE OPERATIONS SUPPORT INCORPORATED  
FORMER PHILIPS DISPLAY COMPONENTS SITE  
SENECA FALLS, NEW YORK**

FIGURE 5D  
GEOLOGIC CROSS-SECTION D-D'

JULY 1, 2002  
B NO.: 27010-040-007  
AWN BY: MAR CHK'D BY: PMC  
AEE AS SHOWN

# URS





**LEGEND:**

— = PROPERTY LINE  
NS = MONITORING WELL 29 WAS NOT SAMPLED IN MARCH 2001

ACTION LEVELS PROVIDED BY NYSDC IN "AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES AND GROUNDWATER EFFLUENT LIMITATIONS," MEMORANDUM DATED JUNE 1998.

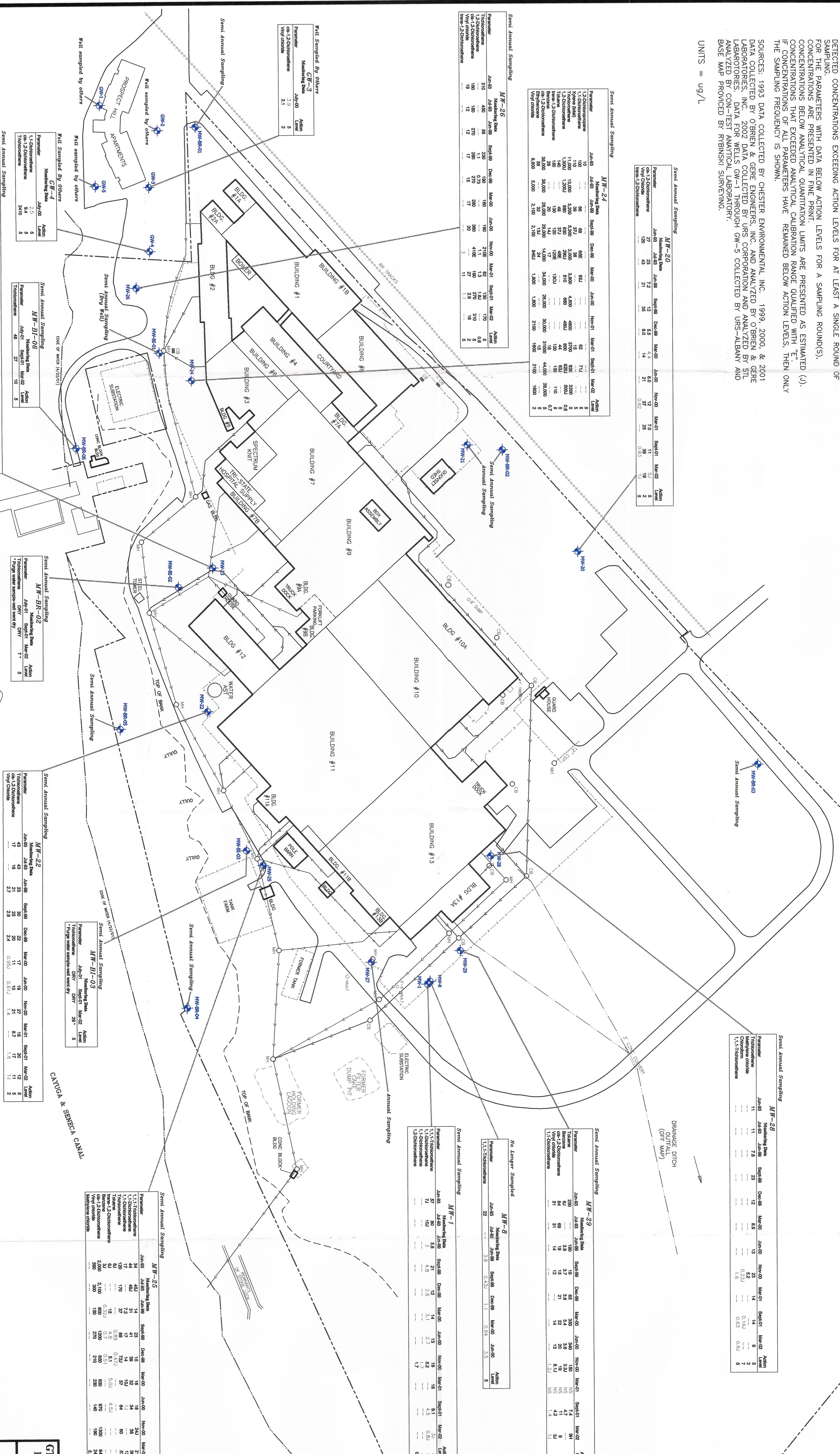
DATA ARE REPRESENTED FOR ALL ROUNDS OF SAMPLING FOR EACH PARAMETER THAT HAD DETECTED CONCENTRATIONS EXCEEDING ACTION LEVELS FOR AT LEAST A SINGLE ROUND OF SAMPLING.

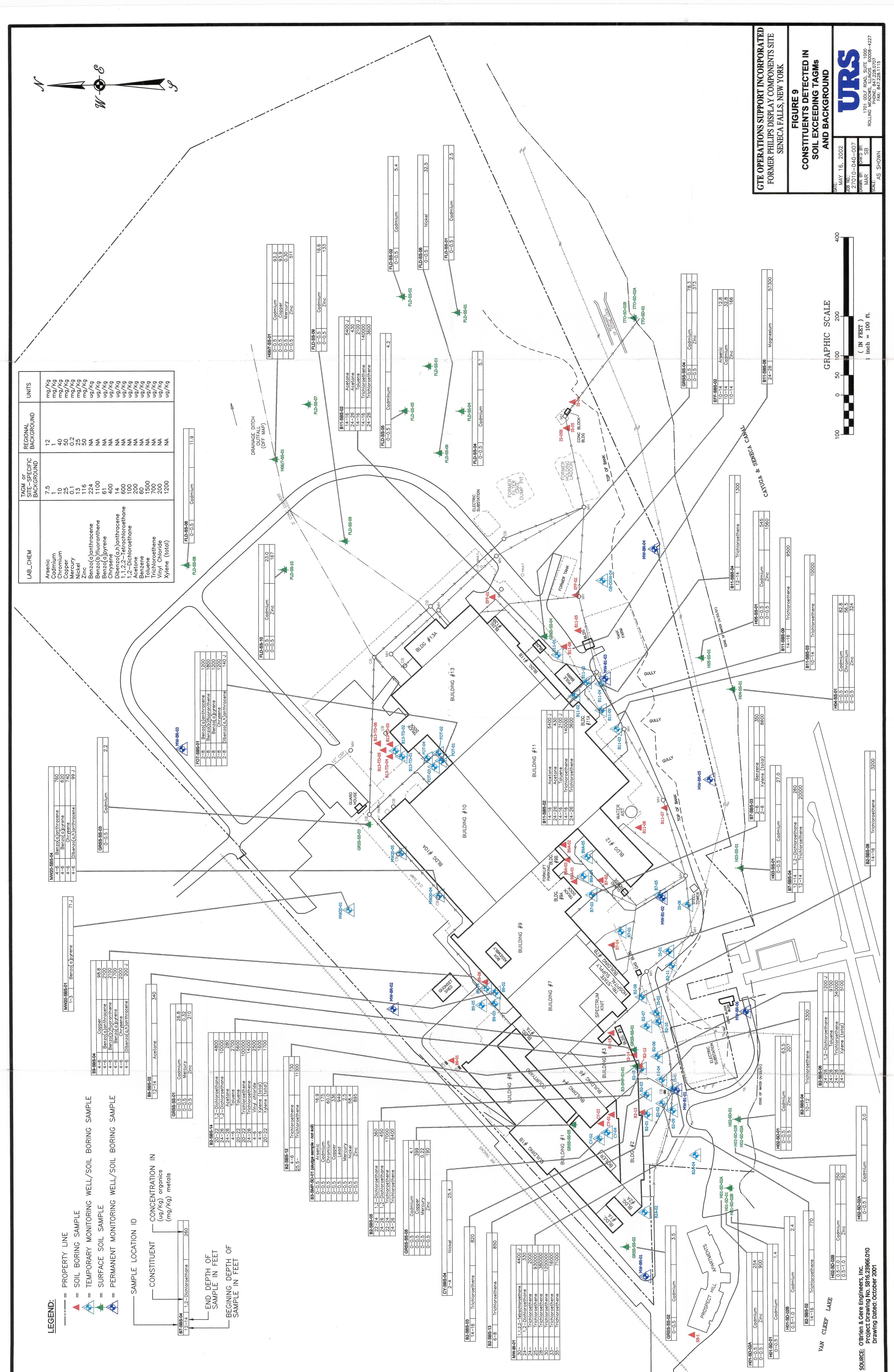
FOR THE PARAMETERS WITH DATA BELOW ACTION LEVELS FOR A SAMPLING ROUND(S), CONCENTRATIONS ARE PRESENTED AS ESTIMATED (1). IF CONCENTRATIONS OF ALL PARAMETERS HAVE REMAINED BELOW ACTION LEVELS, THEN ONLY THE SAMPLING FREQUENCY IS SHOWN.

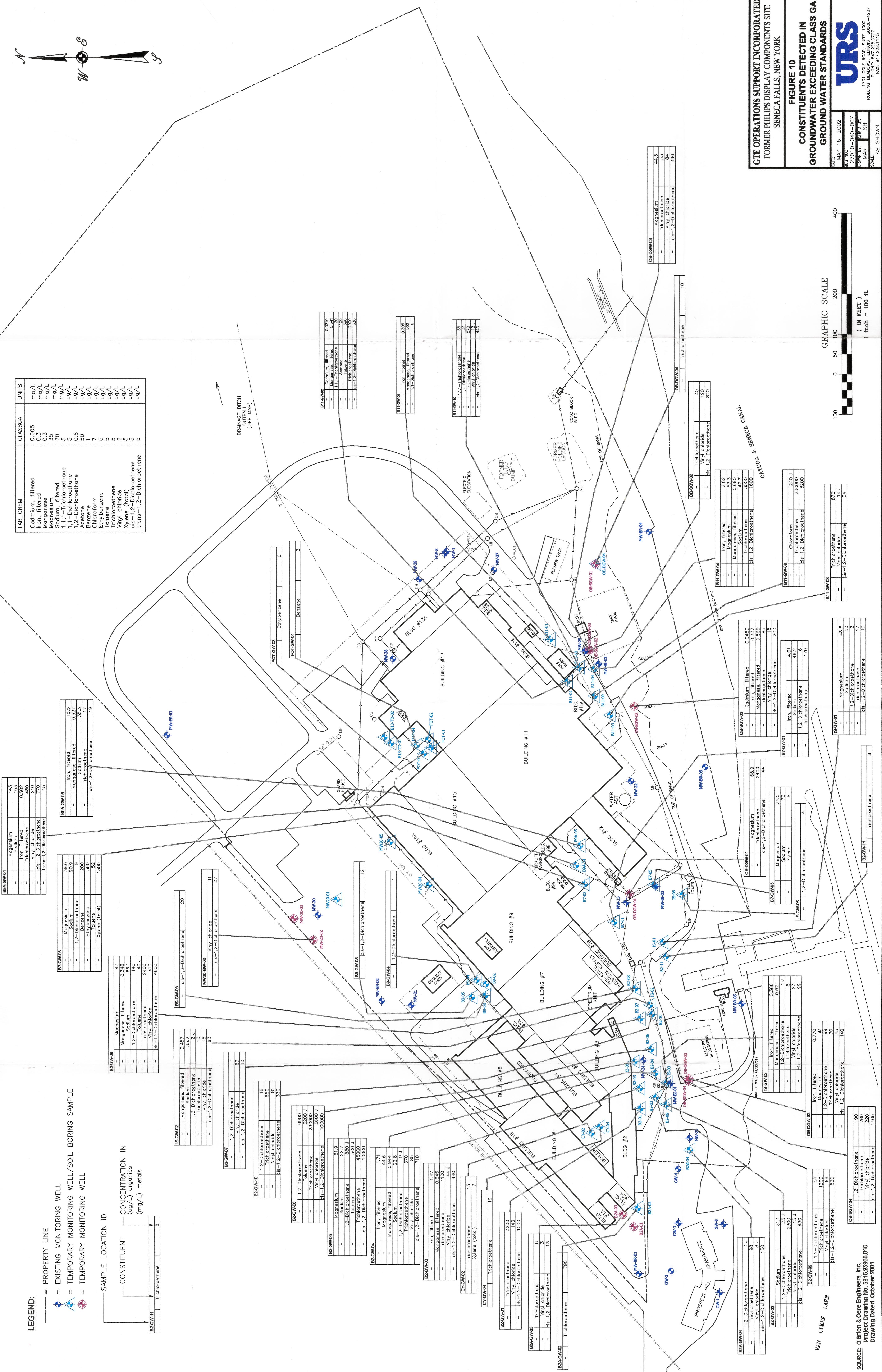
SOURCES: 1993 DATA COLLECTED BY CHESTER ENVIRONMENTAL INC., 1999, 2000, & 2001 DATA COLLECTED BY O'BRIEN & GERE ENGINEERS, INC. AND ANALYZED BY O'BRIEN & GERE LABORATORIES, INC. 2002 DATA COLLECTED BY URS CORPORATION AND ANALYZED BY SIL LABORATORIES, INC. DATA FOR WELLS GW-1 THROUGH GW-5 COLLECTED BY URS-ALBANY AND ANALYZED BY CONTEST ANALYTICAL LABORATORY.

BASE MAP PROVIDED BY RYBINSKI SURVEYING.

UNITS = ug/l







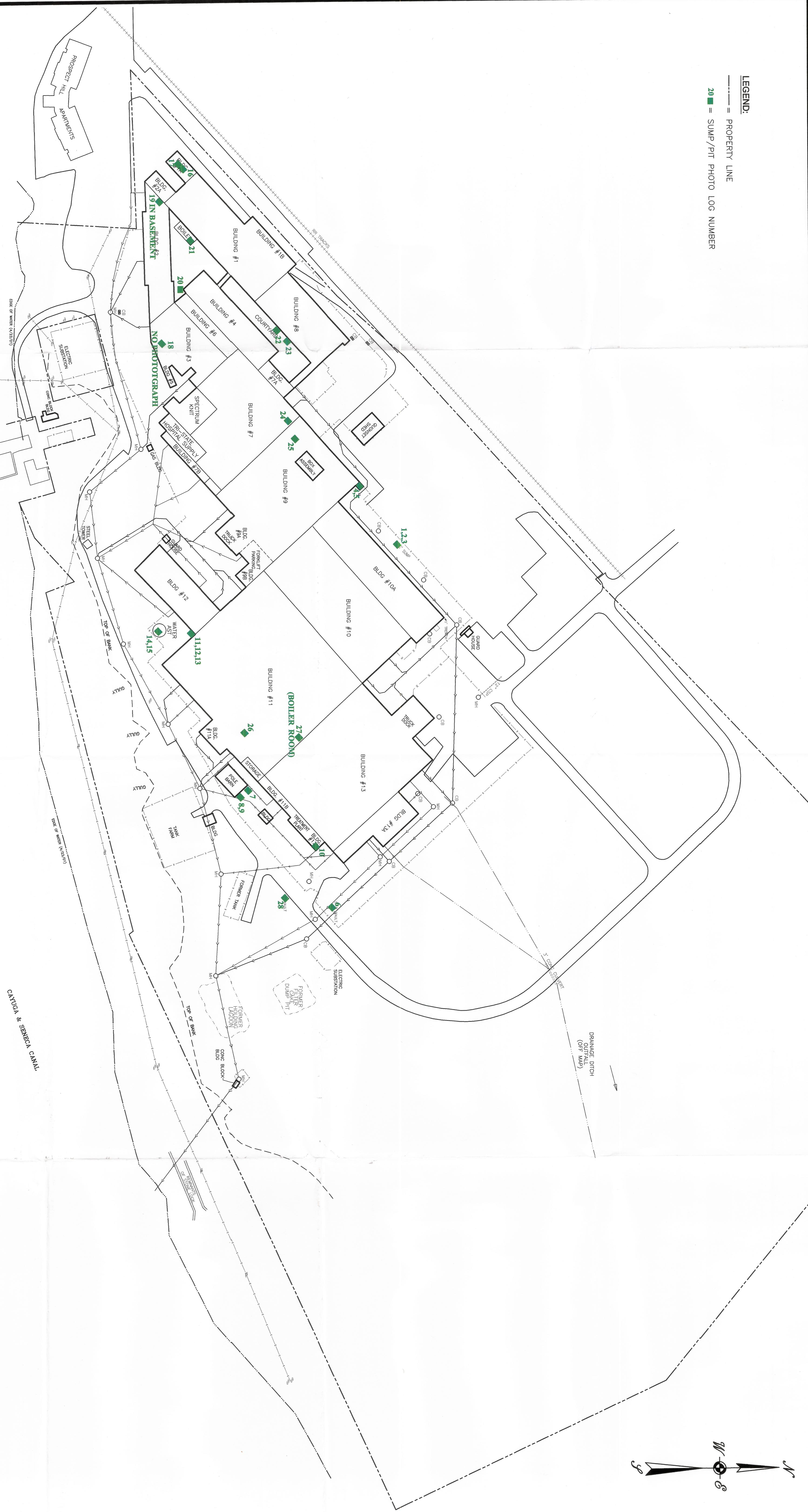
---

**LEGEND:**

**20** ■ = SUMP/PIT PHOTO LOG NUMBER

CLEEF LAKE

SOURCE: O'Brien & Gere Engineers, Inc.  
Project Drawing No. 5816.23966.010  
Drawing Dated: October 2001



**GTE OPERATIONS SUPPORT INCORPORATED  
FORMER PHILIPS DISPLAY COMPONENTS SITE**

## FIGURE 11 SUMP AND PIT SURVEY RESULTS

SOURCE: O'Brien & Gere Engineers, Inc.  
Project Drawing No. 5816.23966.010  
Drawing Dated: October 2001



O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING B11-SBS-10					
Client: GTEOSI Proj. Loc: Seneca Falls, New York				Sampler: 2-foot acetate Hammer: 140 lbs - direct push				Page 1 of 1					
File No.: 5816/23966								Start Date: 10/28/00 End Date: 10/28/00					
Boring Company: Parratt-Wolff, Inc.						Screen Riser	<input checked="" type="checkbox"/>	Grout Sand Pack Bentonite					
OBG Geologist: Pam Cox						Stratum Change General Description	USCS	Field Testing					
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		PID (ppm)	Black Light				
0	1	0-2	-	7/24	-	Blacktop Brown SILT and GRAVEL (FILL)							
2	2	2-4	-	6/24	-	Brown SILT, some clay, little sand (moist, stiff)	ML	0.5					
4	3	4-6	-	5/24	-	Yellowish red / brown SILT, some clay little coarse sand (moist, very soft)	ML	1.8					
6	4	6-8	-	0/24	-	NO RECOVERY			0				
8	5	8-10	-	7/24	-	Similar (wet) @ 7' Yellowish red / brown SILT, some clay, little sand (dry, hard)	ML	1.9					
9	6	10-12	-	21/24	-	Yellowish red / brown SILT, some clay, little sand, trace gravel (moist, stiff)	ML	66.6					
10	7	12-14	-	21/24	-	Similar (moist, stiff)	ML	115					
11	8	14-16	-	24/24	-	Similar (very stiff)	ML	130					
12	9	16-18	-	24/24	-	Dark brown / gray SILT, some clay (moist, medium stiff)	ML	116					
13	10	18-20	-	24/24	-	Similar (wet) @19' Similar (moist, stiff)	ML	23.0 2.3					
14	11	20-22	-	7/24	-	Similar	ML	0.6					
15	12	22-24	-	24/24	-	Similar	ML	0.2					
16	13	24-26	-	13/23	-	Similar	ML	0.6 0.3					
Laboratory samples collected @ 14-16' and 24-26' bgs						Boring was terminated at 26' bgs. Temporary well set at 14-24' bgs.							

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING				
								B11-SBS-9				
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966 Boring Company: Parratt-Wolff, Inc.						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/28/00 End Date: 10/28/00				
OBG Geologist: Pam Cox						Screen Riser		Grout Sand Pack Bentonite				
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	Field Testing		
0	1	0-2	-	8/24	-	Blacktop Brown SILT, some gravel (FILL)		-	7.5			
2	2	2-4	-	11/24	-	@ 3' Brown SILT, some gravel, little clay (moist, medium stiff)			ML	0.3		
4	3	4-6	-	13/24	-	Similar			ML	0.2		
6	4	6-8	-	22/24	-	Yellowish red SILT, some clay, little coarse sand, trace gravel (moist, stiff)			ML	39		
8	5	8-10	-	21/24	-	Similar @ 9.5' - 4" layer of gravel			ML	266		
9	6	10-12	-	6/24	-	Sieve stuck - 6" recovery. Yellowish red SILT, some clay, little coarse sand, trace gravel (moist, stiff)			ML	510		
10	7	12-14*	-	17/24	-	Similar @ 13.5' - 6" SILT lense, some clay and sand (moist, very soft)			ML	2318		
11	8	14-16	-	20/24	-	Yellowish red SILT, some clay, little coarse sand, trace gravel (moist, stiff)			ML	2977		
12	9	16-18	-	10/24	-	Dark brown / gray SILT, some clay little coarse sand (moist, medium stiff)			ML	931		
13	10	18-20	-	21/24	-	Similar (wet, soft)			ML	92.8		
14	11	20-22	-	16/24	-	Similar			ML	1.5		
15	12	22-24*	-	15/24	-	Dark brown / gray SILT and CLAY, trace gravel			CL	0.7		
16	13	24-26*	-	6/24	-	Similar			CL	82.5		
* field GC Laboratory soil sample collected @ 14-16' bgs						Boring was terminated at 26' bgs. Temporary well set at 16-26' bgs.						

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING B11-SBS-8			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966 Boring Company: Parratt-Wolff, Inc.						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/27/00 End Date: 10/27/00			
OBG Geologist: Pam Cox						Screen Riser		Grout Sand Pack Bentonite			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description  Boring pushed to 16 feet bgs.		Stratum Change General Description	USCS	Field Testing	
0	1	0-2								PID (ppm)	Black Light
2	2	2-4									
4	3	4-6									
6	4	6-8									
8	5	8-10									
9	6	10-12									
10	7	12-14									
11	8	14-16									
12	9	16-18	-	15/24	-	Yellowish red SILT, some clay, little gravel, trace sand (moist, medium stiff)		ML	1.5		
						grades to Dark brown (similar)		--	0.6		
13	10	18-20	-	17/24	-	Dark brown f-c SAND, some gravel, trace silt (wet, loose)		SW	0.2		
						Dark brown SILT, some clay, little c. sand, trace gravel (dry, hard)		ML	0.1		
14	11	20-22	-	16/24	-	Similar (moist, medium stiff)		ML	0.2		
						Boring was terminated at 26' bgs. Temporary well set at 16-26' bgs.					
Laboratory soil sample collected @ 24-26' bgs											

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING B11-SBS-7					
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966 Boring Company: Parratt-Wolff, Inc.						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/23/00 End Date: 10/23/00					
OBG Geologist: Pam Cox						Screen Riser		Grout Sand Pack Bentonite					
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	Field Testing			
0	1	0-2	-	14/24	-	Gravel (6") Brown f-c SAND and GRAVEL, some silt (FILL)		FILL          NO RECOVERY	ML	PID (ppm) 0.2			
2	2	2-4	-	0/24	-	FILL				Black Light			
4	3	4-6	-	12/24	-	@ 5' Yellowish red SILT, some clay, little sand (moist, medium stiff)				0.1			
6	4	6-8	-	5/24	-	Olive gray / brown SILT, some clay, little sand (moist, soft)				0.2			
8	5	8-10	-	0/24	-	NO RECOVERY				-			
9	6	10-12	-	18/24	-	Yellowish red SILT, some clay, little sand (moist, stiff)				0.2			
10	7	12-14	-	18/24	-	Similar				0.1			
11	8	14-16	-	22/24	-	Similar				0.3			
Soil sample collected @ 12 - 14' bgs. Duplicate (Dup #7)						Boring was terminated at 16' bgs. Temporary well set at 6-16' bgs.							

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING B11-SBS-6							
Client: GTEOSI Proj. Loc: Seneca Falls, New York				Sampler: 2-foot acetate Hammer: 140 lbs - direct push				Page 1 of 1 Start Date: 10/18/00 End Date: 10/18/00							
File No.: 5816/23966															
Boring Company: Parratt-Wolff, Inc.								Screen Riser = Grout Sand Pack Bentonite							
OBG Geologist: Pam Cox								Field Testing							
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	PID (ppm)	Black Light				
0	1	0-2	-	6/24	-	Blacktop Brown f-c SAND and GRAVEL, some silt (FILL)		ML	ML	0					
						Similar (FILL) bottom 2" Olive gray SILT, some clay									
2	2	2-4	-	9/24	-										
4	3	4-6	-	14/24	-	grades to Yellowish red SILT, some clay, little gravel (moist, medium stiff)									
6	4	6-8	-	13/24	-	Similar (moist, stiff)									
8	5	8-10	-	12/24	-	4" Olive gray SILT and CLAY, little sand (wet, very soft) grades to yellowish red SILT, some clay little gravel (moist, very stiff)		CL	ML	0					
9	6	10-12	-	13/24	-	Similar (moist, medium stiff)									
10	7	12-14	-	16/24	-	Yellowish red SILT, some clay, little sand									
11	8	14-16	-	17/24	-	4" alternating lenses of silts and clays									
Soil sample collected @ 14 - 16' bgs.						Boring was terminated at 16' bgs. Temporary well set at 6-16' bgs.									

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING B11-SBS-5			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/18/00 End Date: 10/18/00			
Boring Company: Parratt-Wolff, Inc.								Screen Riser = Grout Sand Pack Bentonite			
OBG Geologist: Pam Cox								Field Testing PID (ppm) Black Light			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS		
0	1	0-2	-	12/24	-	Grass 2" ORGANICS GRAVEL, some silt (FILL)		-		0.4	
2	2	2-4	-	18/24	-	grades to Yellowish red SILT, some clay, trace gravel (moist, soft)		ML		0	
4	3	4-6	-	16/24	-	Similar (moist, very stiff)		ML		0	
6	4	6-8	-	13/24	-	Similar (moist, stiff)		ML		0	
8	5	8-10	-	6/24	-	Similar (moist, stiff)		ML		0	
9	6	10-12	-	24/24	-	Similar (moist, very stiff) - piece of brick		ML		0	
10	7	12-14	-	24/24	-	Similar (moist, stiff)		ML		0	
11	8	14-16	-	22/24	-	bottom 6" grades to SILT and CLAY, little gravel, trace sand (wet, soft)		CL		0	
Soil sample collected @ 14 - 16' bgs.						Boring was terminated at 16' bgs. Temporary well set at 6-16' bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING B11-SBS-4					
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966 Boring Company: Parratt-Wolff, Inc.						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/18/00 End Date: 10/18/00					
OBG Geologist: Pam Cox						Screen Riser		Grout Sand Pack Bentonite					
								Field Testing					
								PID (ppm) Black Light					
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS				
0	1	0-2	-	13/24	-	Grass 2" ORGANICS Dark brown SILT, some gravel, little sand and clay (moist)		Similar	ML	1.2			
						grades to Dark brown SILT, some clay, little gravel, trace sand (moist)				0			
2	2	2-4	-	16/24	-					0.4			
4	3	4-6*	-	18/24	-	Similar							
6	4	6-8	-	8/24	-	Yellowish red SILT, some clay, little gravel (moist, soft)				0			
8	5	8-10	-	9/24	-	Dark brown / gray SILT, some clay and gravel, little sand (wet, soft)				0			
9	6	10-12	-	0/24	-	NO RECOVERY				-			
10	7	12-14	-	6/24	-	Yellowish red SILT, some clay, little sand and gravel (wet, very soft)				8.6			
11	8	14-16	-	0/24	-	NO RECOVERY				-			
12	9	16-18	-	0/24	-	NO RECOVERY				-			
						Push to 12' for additional sampling.							
Laboratory sample collected @ 12 - 14' bgs. * Field GC						Boring was terminated at 18' bgs due to recovery difficulties - soft.							

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG	REPORT OF BORING B11-SBS-3			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966						Sampler: 2-foot acetate Hammer: 140 lbs - direct push	Page 1 of 1 Start Date: 10/18/00 End Date: 10/18/00			
Boring Company: Parratt-Wolff, Inc.						Screen Riser	<input checked="" type="checkbox"/>	Grout Sand Pack Bentonite		
OBG Geologist: Pam Cox						Stratum Change General Description	USCS	Field Testing		
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		PID (ppm)	Black Light	
0	1	0-2	-	7/24	-	Blacktop (4") Brownish yellow SILT, some sand and clay (FILL)		0		
						FILL		-		
2	2	2-4	-	3/24	-					
4	3	4-6	-	5/24	-	Yellowish red SILT, some clay, little gravel (wet, soft)	ML	1.4		
6	4	6-8	-	0/24	-	NO RECOVERY		-		
8	5	8-10	-	21/24	-	Similar (wet, very stiff)	ML	15.5		
9	6	10-12	-	19/24	-	Similar (moist, very stiff)	ML	252		
10	7	12-14	-	23/24	-	top 8" Yellowish red CLAY and SILT, little sand (wet, soft), grades to Yellowish red SILT, some clay, little gravel (moist, stiff)	CL	22.1 247		
11	8	14-16	-	13/24	-	Similar (wet, medium stiff)	ML	35		
Soil sample collected @ 10 - 14' bgs.						Boring was terminated at 16' bgs. Temporary well set at 6-16' bgs.				

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING B11-SBS-2					
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/18/00 End Date: 10/18/00					
Boring Company: Parratt-Wolff, Inc. OBG Geologist: Pam Cox						Screen Riser		Grout Sand Pack Bentonite					
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	Field Testing			
0	1	0-2	-	0/24	-	Blacktop NO RECOVERY - GRAVEL (FILL)		NO RECOVERY	--	PID (ppm)			
2	2	2-4	-	0/24	-	NO RECOVERY				-			
4	3	4-6	-	9/24	-	FILL				2.5			
6	4	6-8	-	11/24	-	Wet @ 6' bgs. Yellowish red SILT, some clay, little gravel (moist, medium stiff)				ML			
										1.1			
8	5	8-10*	-	17/24	-	Similar with trace sand				ML			
										2.9			
9	6	10-12	-	15/24	-	Sieve stuck - clay swelling				-			
										790			
10	7	12-14	-	20/24	-	@ 12' soft Similar				-			
										445			
11	8	14-16*	-	19/24	-	bottom 9" - Gray CLAY, some silt (moist, soft)				CL			
										888			
Soil sample collected @ 14 - 16' bgs. * Field GC						Boring was terminated at 16' bgs. Temporary well set at 6-16' bgs.							

TEST BORING LOG						REPORT OF BORING			
						B11-SBS-2			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966						Sampler: 2-foot acetate Hammer: 140 lbs - direct push	Page 1 of 1		
Boring Company: Parratt-Wolff, Inc.						Start Date: 10/27/00 End Date: 10/27/00			
OBG Geologist: Pam Cox						Screen Riser	=	Grout Sand Pack Bentonite	
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing
0	1	0-2	-	-	-	(SECOND ATTEMPT)  Boring pushed to 14 feet bgs.		USCS	Field Testing
2	2	2-4	-	-	-				
4	3	4-6	-	-	-				
6	4	6-8	-	-	-				
8	5	8-10	-	-	-				
9	6	10-12	-	-	-				
10	7	12-14	-	-	-				
11	8	14-16	-	0/24	-	NO RECOVERY	ML	311	Field Testing
12	9	16-18	-	8/24	-	Yellowish red SILT, some clay, little sand			
13	10	18-20	-	0/24	-	NO RECOVERY	ML	4996	Field Testing
14	11	20-22	-	19/24	-	Similar @ 21' - 6" layer of SAND			
15	12	22-24	-	23/24	-	Olive gray SILT, some clay, little gravel (moist, medium stiff) @ 23' Olive gray SILT, some clay, trace f-c sand (moist, medium stiff)	ML	2787 35	Field Testing
16	13	24-26	-	17/24	-	Similar			
VOC soil sample collected @ 23-24' bgs and 24-26' bgs.						Boring was terminated at 26' bgs. Boring collapsed to 14' - grouted			

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING B11-SBS-1			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966 Boring Company: Parratt-Wolff, Inc.						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/18/00 End Date: 10/18/00			
OBG Geologist: Pam Cox						Screen Riser		= Grout Sand Pack Bentonite			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	Field Testing	
0	1	0-2	-	11/24	-	Grass 4" Brown SILT, roots (TOPSOIL) Dark brown/reddish brown SILT, some clay, little gravel (moist, medium stiff)			ML	0	
2	2	2-4	-	5/24	-	Similar			ML	0.6	
4	3	4-6	-	15/24	-	6" Dark brown SILT, some sand, little clay (wet, loose) grades to Dark brown SILT, some clay, little sand (wet, soft)			ML	0.1	
6	4	6-8	-	7/24	-	Similar			ML	0.6	
8	5	8-10	-	13/24	-	Yellowish red SILT, some clay, little gravel (moist, stiff)			ML	0.1	
9	6	10-12	-	24/24	-	Similar (moist, stiff)			ML	0	
10	7	12-14	-	24/24	-	Similar (moist, stiff)			ML	0	
11	8	14-16	-	11/24	-	Similar (moist, medium stiff)			ML	0	
Laboratory sample collected @ 4 - 6' bgs.						Boring was terminated at 16' bgs. Temporary well set at 3-13' bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING B13-SBS-1			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/16/00 End Date: 10/16/00			
Boring Company: Parratt-Wolff, Inc.						Screen Riser	=	Grout Sand Pack Bentonite			
OBG Geologist: Pam Cox								Field Testing			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	PID (ppm)	Black Light
0	1	0-2	-	11/24	-	GRAVEL (FILL), dry			-	1.5	NA
2	2	2-4	-	NA	-	NO RECOVERY			-	-	NA
4	3	4-6	-	20/24	-	Yellowish red / brown SILT, some clay little gravel (moist, very stiff)		ML	1.5	NA	
6	4	6-8	-	9/24	-	Similar		ML	0.3	NA	
Laboratory soil sample collected @ 4-6' bgs.						Boring was terminated at 8 feet bgs. Temporary well set at 3-8' bgs.					

O'BRIEN & GERE ENGINEERS, INC.					TEST BORING LOG		REPORT OF BORING B13-SBS-2			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966					Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1			
Boring Company: Parratt-Wolff, Inc.					Start Date: 10/16/00 End Date: 10/16/00					
OBG Geologist: Pam Cox					Screen Riser	=	Grout Sand Pack Bentonite			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing	
0	1	0-2	-	8/24	-	0-6" - GRAVEL (FILL), dry grades to Reddish yellow coarse SAND and GRAVEL (moist)	layer of black CLAY, some sand (moist) Yellowish red / brown SILT, some clay, little gravel (moist, very stiff)	CL/ML	0	NA
2	2	2-4	-	11/24	-	0			NA	
4	3	4-6	-	20/24	-	Similar			0.2	NA
Laboratory soil sample collected @ 4-6' bgs.					Boring was terminated at 6' bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING B13-SBS-3			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/16/00 End Date: 10/16/00			
Boring Company: Parratt-Wolff, Inc.						Screen Riser		Grout Sand Pack Bentonite			
OBG Geologist: Pam Cox								Field Testing			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	PID (ppm)	Black Light
0	1	0-2	-	13/24	-	Gray GRAVEL (FILL), dry becomes wet at 1.5' bgs.		-	0	NA	
2	2	2-4	-	7/24	-	Similar Yellowish red SILT, some clay, little gravel (moist, stiff)		ML	0	NA	
4	3	4-6	-	4/24	-	Similar		ML	0	NA	
Laboratory soil sample collected @ 2-6' bgs.						Boring was terminated at 6 feet bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING B13-SBS-4			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/16/00 End Date: 10/16/00			
Boring Company: Parratt-Wolff, Inc. OBG Geologist: Pam Cox						Screen Riser	= <input type="checkbox"/>	Grout Sand Pack Bentonite			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing		
0	1	0-2	-	13/24	-		GRAVEL (FILL), dry		PID (ppm)	Black Light	NA
2	2	2-4	-	7/24	-	(FILL)			0	NA	
4	3	4-6	-	5/24	-	Yellowish red SILT, little clay and gravel (moist, very stiff)		ML	0	NA	
*A second boring was advanced for soil sampling purposes.											
Laboratory sample collected @ 4-6' bgs.						Boring was terminated at 6 feet bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING			
								B13-SBS-5			
Client: GTEOSI			Sampler: 2-foot acetate			Page 1 of 1					
Proj. Loc: Seneca Falls, New York			Hammer: 140 lbs - direct push			Start Date: 10/16/00					
File No.: 5816/23966			Boring Company: Parratt-Wolff, Inc.			End Date: 10/16/00					
OBG Geologist: Pam Cox						Screen Riser	=		Grout Sand Pack Bentonite		
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing		
									PID (ppm)	Black Light	
0	1	0-2	-	15/24	-	0-13" - GRAVEL (FILL), dry grades to Reddish yellow / yellowish brown GRAVEL, some f-c sand, little silt, moist (fill) Similar, becomes wet		--	1.2	NA	
2	2	2-4	-	4/24	-			--	1.8	NA	
4	3	4-6	-	6/24	-	Yellowish brown / yellowish red SILT, some clay, little gravel (moist, very stiff)	ML	0.5	NA		
Laboratory sample collected @ 2-6' bgs.						Boring was terminated at 6 feet bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG	REPORT OF BORING			
							B13-SBS-6			
Client: GTEOSI Proj. Loc: Seneca Falls, New York						Sampler: 2-foot acetate Hammer: 140 lbs - direct push	Page 1 of 1			
File No.: 5816/23966							Start Date: 10/16/00 End Date: 10/16/00			
Boring Company: Parratt-Wolff, Inc.							Screen Riser	=	Grout Sand Pack Bentonite	
OBG Geologist: Pam Cox										
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing	
0	1	0-2	-	11/24	-	0-6" - GRAVEL (FILL), dry grades to yellowish red GRAVEL, some silt, little sand (moist)		-	1.5	NA
2	2	2-4	-	20/24	-	Similar Yellowish red SILT, some clay and gravel, trace sand (wet)		-	0.5	NA
4	3	4-6	-	16/24	-	Similar		ML	1	NA
						• Sample was not collected @ 0-2' due to proximity to blacktop and slag.				
Laboratory sample collected @ 4-6' bgs.						Boring was terminated at 6 feet bgs.				

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING			
								B2-SBS-15			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/27/00 End Date: 10/27/00			
Boring Company: Parratt-Wolff, Inc.						Screen Riser		= Grout Sand Pack Bentonite			
OBG Geologist: Pam Cox								Field Testing			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	PID (ppm)	Black Light
0	1	0-2	-	12/24	-	Blacktop Gravel (FILL) Black SILTS and SAND (loose) - FILL			-	104 88.9	
2	2	2-4	-	17/24	-	FILL			-	155	
4	3	4-6	-	10/24	-	Olive gray SILT, some clay, trace sand (moist, soft)		ML	138		
6	4	6-8	-	13/24	-	@ 7' grades to brown SILT, some clay, trace sand (moist, soft)		ML	197		
8	5	8-10	-	24/24	-	Dark brown SILT, some clay, trace gravel (wet, very soft) - ODOR		ML	52.1 3		
9	6	10-12	-	16/24	-	Yellowish red SILT, some clay, little gravel and sand (moist, soft)		ML	3.8		
10	7	12-14	-	24/24	-	Yellowish red SILT, some clay, little sand (moist, stiff)		ML	10.7 4.7		
11	8	14-16	-	5/24	-	Similar		ML	36.6		
12	9	16-18	-	1/24	-	Similar (rock in sleeve)		ML	15.4		
13	10	18-20	-	8/24	-	Yellowish red SILT, some clay, little gravel and sand (moist, soft)		ML	12.3		
14	11	20-22	-	16/24	-	@21' dark brown SILT, some gravel and clay, little sand		ML	1.3		
15	12	22-24	-	12/24	-	Similar (medium stiff)		ML	1.3		
16	13	24-26	-	12/24	-	Similar (soft)		ML	1.3		
Lab sample collected at 0-2' & 6-8' bgs						Boring was terminated at 26' bgs. Temporary well set at 16-26' bgs.					

TEST BORING LOG						REPORT OF BORING			
						B2-SBS-14			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966						Sampler: 2-foot acetate Hammer: 140 lbs - direct push	Page 1 of 1		
Boring Company: Parratt-Wolff, Inc.						Start Date: 10/26/00 End Date: 10/26/00			
OBG Geologist: Pam Cox						Screen Riser	=	Grout Sand Pack Bentonite	
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing
0	1	0-2	-	0/24	-	Grass NO RECOVERY		-	PID (ppm) Black Light
2	2	2-4	-	13/24	-	Dark brown / yellowish red SILT, some clay, little sand (moist, soft)	ML	2.7 134	
4	3	4-6*	-	11/24	-	grades to dark brown with spots of product (medium stiff)	-	273	
6	4	6-8	-	20/24	-	Yellowish red SILT with brown mottles, little clay and gravel (dry, hard)	ML	3.8	
8	5	8-10	-	19/24	-	Medium brown SILT, some clay, little c. sand (moist, stiff)	ML	19.1	
9	6	10-12	-	23/24	-	grades to yellowish red	ML	77.4	
10	7	12-14	-	18/24	-	Yellowish red SILT, some clay, little gravel (moist, stiff)	ML	122	
11	8	14-16	-	24/24	-	Similar	ML	440	
12	9	16-18	-	10/24	-	Similar	ML	1003.0	
13	10	18-20	-	10/24	-	Dark brown SILT, some clay, little sand (dry, hard)	ML	3009	
14	11	0-22°C2	-	24/24	-	Similar (moist) - ODOR @ 21.5' - some fine sand (stiff)	ML	9999	
15	12	22-24	-	24/24	-	Dark brown SILT, some clay, little gravel (medium stiff)	ML	1770	
16	13	24-26	-	24/24	-	Dark brown SILT, some clay, little c. sand (moist, soft)	ML	277	
Lab sample collected at 24 - 26' bgs * GC sample collected						Boring was terminated at 26' bgs. Temporary well set at 16-26' bgs.			

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING			
								B2-SBS-13			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966 Boring Company: Parratt-Wolff, Inc.						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/26/00 End Date: 10/26/00			
OBG Geologist: Pam Cox						Screen Riser		Grout Sand Pack Bentonite			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing		
									PID (ppm)	Black Light	
0	1	0-2	-	8/24	-	Grass Brown SAND and GRAVEL (FILL)		--	24.8		
2	2	2-4	-	8/24	-	@3' yellowish red SILT, some clay little sand (moist, soft)		ML	11.9		
4	3	4-6	-	9/24	-	Similar (moist, stiff)		ML	20.6		
6	4	6-8	-	14/24	-	Similar with little gravel (moist, medium stiff)		ML	45.6		
8	5	8-10	-	16/24	-	Similar (wet, soft)		ML	18.4		
9	6	10-12	-	14/24	-	Similar (wet)		ML	4.6		
10	7	12-14	-	23/24	-	grades to dark brown (moist, soft)		ML	0.2		
11	8	14-16	-	24/24	-	becomes wet		ML	0.2		
12	9	16-18	-	16/24	-	Similar		ML	0.1		
13	10	18-20	-	11/24	-	Dark brown SILT, some clay, little sand (moist, soft)		ML	0.1		
14	11	20-22	-	12/24	-	Similar @ 21' - 6" layer of yellowish red SILT		ML	1.5		
15	12	22-24	-	24/24	-	Dark brown SILT, some clay, little gravel (medium stiff)		ML	0.6		
16	13	24-26	-	24/24	-	Similar (wet, soft)		ML	0.2		
Laboratory sample collected at 6 - 8' bgs						Boring was terminated at 26' bgs. Temporary well set at 16-26' bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING			
								B2-SBS-12			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/26/00 End Date: 10/26/00			
Boring Company: Parratt-Wolff, Inc.						Screen Riser =		Grout Sand Pack Bentonite			
OBG Geologist: Pam Cox											
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	Field Testing	
0	1	0-2	-	8/24	-	Grass Brown SAND and GRAVEL (FILL)		-		PID (ppm)	
										Black Light	
2	2	2-4	-	8/24	-	Dark brown SILT, gray mottles, some clay, trace sand (moist, stiff)		ML		47.1	
4	3	4-6	-	9/24	-	Dark brown SILT and GRAVEL (wet) fuel oil odor		ML		5.5	
6	4	6-8	-	7/24	-	Dark brown SILT, some clay, little gravel (moist, soft)		ML		111	
8	5	8-10	-	19/24	-	Yellowish red SILT, some clay, little c. sand (dry, hard)		ML		6.2	
9	6	10-12	-	21/24	-	Similar (moist, very stiff)		ML		18.1	
10	7	12-14	-	0/24	-	NO RECOVERY		-		26	
11	8	4-16*C3	-	23/24	-	Similar with brown mottles (moist, stiff)		ML		345	
12	9	16-18	-	21/24	-	Similar		ML		131	
13	10	18-20	-	22/24	-	Similar		ML		152	
14	11	20-22	-	24/24	-	Similar (hard)		ML		257	
15	12	22-24	-	23/24	-	@ 23' dark brown SILT, some clay little sand (moist, medium stiff)		ML		258	
16	13	24-26*	-	17/24	-	Similar @ 25.5' bgs fine SAND, some silt		ML		252 1143	
Lab sample collected at 4 - 6' bgs *GC sample collected						Boring was terminated at 26' bgs. Temporary well set at 16-26' bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING B2-SBS-11			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/26/00 End Date: 10/26/00			
Boring Company: Parratt-Wolff, Inc.								Screen Riser	=	Grout Sand Pack Bentonite	
OBG Geologist: Pam Cox								Field Testing PID (ppm) Black Light			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS		
0						Direct push to 10' bgs					
2											
4											
6											
8											
9	6	10-12	-	22/24	-	Yellowsih red / brown SILT, some clay little c. sand, trace gravel (moist, soft)			ML	0.4	
10	7	12-14	-	17/24	-				ML	0.7	
11	8	14-16	-	12/24	-				ML	0.5	
12	9	16-18	-	8/24	-				ML	0.4	
13	10	18-20	-	15/24	-				ML	0	
14	11	20-22	-	18/24	-				ML	0	
15	12	22-24	-	24/24	-				ML	0	
16	13	24-26	-	12/24	-				ML	0	
Laboratory sample collected at 14 - 16' bgs						Boring was terminated at 26' bgs. Temporary well set at 16-26' bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING B2-SBS-10				
Client: GTEOSI Proj. Loc: Seneca Falls, New York						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/25/00 End Date: 10/25/00				
File No.: 5816/23966												
Boring Company: Parratt-Wolff, Inc.												
OBG Geologist: Pam Cox												
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	Field Testing		
0	1	0-2	-	5/24	-	Blacktop GRAVEL (FILL)		Similar	--	PID (ppm)		
										Black Light		
2	2	2-4	-	8/24	-	Brown SILT, some clay, trace sand (moist, medium stiff)			ML	5.2		
4	3	4-6	-	10/24	-	Yellowish red / brown SILT, some clay trace sand (hard)			ML	3		
6	4	6-8	-	17/24	-	grades to little sand (dry, hard)			ML	1		
8	5	8-10	-	22/24	-	Similar (medium stiff)			ML	1.6		
9	6	10-12	-	21/24	-	Similar			ML	1.4		
10	7	12-14	-	17/24	-	Similar			ML	1.3		
11	8	14-16	-	23/24	-	Similar (stiff) @ 15' and 16' bgs GRAVEL seams			ML	6.3		
12	9	16-18	-	9/24	-	Yellowish red SILT, some clay, trace sand and gravel (moist, stiff)			ML	3.8		
13	10	18-20	-	12/24	-	grades to dark brown (medium stiff)			ML	2		
14	11	20-22	-	17/24	-	Similar			ML	6.3		
15	12	22-24	-	23/24	-	Similar			ML	0.4		
16	13	24-26	-	6/24	-	Similar (soft)			ML	0.5		
Laboratory sample collected at 14 - 16' bgs						Boring was terminated at 26' bgs. Temporary well set at 16-26' bgs.						

TEST BORING LOG						REPORT OF BORING			
						B2-SBS-9			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966 Boring Company: Parratt-Wolff, Inc.						Sampler: 2-foot acetate Hammer: 140 lbs - direct push	Page 1 of 1	Start Date: 10/25/00 End Date: 10/25/00	
OBG Geologist: Pam Cox						Screen Riser	=	Grout Sand Pack Bentonite	
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing
0	1	0-2	-	5/24	-	Blacktop GRAVEL (FILL)		-	PID (ppm) Black Light
2	2	2-4	-	10/24	-	GRAVEL, some brown f - c sand and silt (FILL)		-	
4	3	4-6	-	16/24	-	Yellowish red SILT, some clay, little sand (stiff)	ML	9.4	
6	4	6-8	-	19/24	-	Similar, little gravel	ML	6.8	
8	5	8-10	-	10/24	-	Similar (medium stiff)	ML	13.1	
9	6	10-12	-	18/24	-	Similar (stiff)	ML	18.2	
10	7	12-14	-	23/24	-	Similar (dry, hard)	ML	1.6	
11	8	14-16	-	6/24	-	Yellowish red SILT, some clay, little sand, trace gravel	ML	2.5	
12	9	16-18	-	22/24	-	Similar (moist, medium stiff)	ML	8.9	
13	10	18-20	-	24/24	-	grades to brown @ 19' (similar)	ML	1.5	
14	11	20-22	-	24/24	-	Similar	ML	0.4	
15	12	22-24	-	9/24	-	Similar (medium stiff)	ML	0.3	
16	13	24-26	-	12/24	-	Similar	ML	0.2	
Laboratory sample collected at 10-12' bgs.						Boring was terminated at 26' bgs. Temporary well set at 12-22' bgs.			

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING B2-SBS-8			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966 Boring Company: Parratt-Wolff, Inc.						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1			
						Start Date: 10/25/00 End Date: 10/25/00					
						Screen Riser	=	Grout Sand Pack Bentonite			
OBG Geologist: Pam Cox											
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	Field Testing		
0	1	0-2	-	7/24	-	Blacktop Gravel (dry) (FILL)			USCS		PID (ppm)
2	2	2-4	-	6/24	-	Yellowish red SILT, some clay, trace sand (moist, hard)		ML	1.2		Black Light
4	3	4-6	-	7/24	-	Similar with light brown mottles		ML	5.7		
6	4	6-8	-	23/24	-	Yellowish red SILT, some clay, trace sand (moist, hard)		ML	11.1		
8	5	8-10	-	2/24	-	Yellowish red SILT, some clay, little gravel, trace sand (moist, soft)		ML	9.5		
9	6	10-12	-	24/24	-	Similar (moist, stiff)		ML	24.6		
10	7	12-14	-	8/24	-	Similar (moist, medium stiff)		ML	32.5		
11	8	14-16	-	6/24	-	Similar		ML	52.1		
12	9	16-18	-	20/24	-	Yellowish red SILT, some clay, little sand (moist, soft)		ML	19.5		
13	10	18-20	-	8/24	-	Similar @ 9.5' seam of gravel		ML	10.8		
14	11	20-22	-	6/24	-	Dark brown SILT, some clay, little sand (moist, medium stiff)		ML	0.7		
15	12	22-24	-	18/24	-	Similar		ML	0.1		
Laboratory sample collected at 14-16' bgs.						Boring was terminated at 24' bgs. Temporary well set at 14-24' bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG	REPORT OF BORING B2-SBS-7			
Client: GTEOSI Proj. Loc: Seneca Falls, New York						Sampler: 2-foot acetate Hammer: 140 lbs - direct push	Page 1 of 1			
File No.: 5816/23966							Start Date: 10/25/00			
Boring Company: Parratt-Wolff, Inc.							End Date: 10/25/00			
OBG Geologist: Pam Cox							Screen Riser	=	Grout Sand Pack Bentonite	
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing	
0	1	0-2	-	14/24	-	6" Gray GRAVEL (dry) Black SAND, some silt (FILL)		-	PID (ppm)	Black Light
2	2	2-4	-	15/24	-	Dark brown SILT, some clay, trace sand (moist) grades to brown (medium stiff)	ML	0		
4	3	4-6	-	23/24	-	Yellowish red / brown SILT, some clay trace sand (soft)	ML	0		
6	4	6-8	-	24/24	-	Similar, trace gravel (dry, stiff)	ML	0.1		
8	5	8-10	-	14/24	-	grades to some gravel (seams)	ML	0.1		
9	6	10-12	-	19/24	-	Similar	ML	1.5		
10	7	12-14	-	18/24	-	Similar	ML	15.7		
11	8	14-16	-	14/24	-	@15' grades to brown SILT, some clay little sand (moist, medium stiff)	ML	2.4		
12	9	16-18	-	9/24	-	Similar (soft)	ML	0.9		
13	10	18-20	-	20/24	-	Brown SILT, some clay, little sand (moist, soft)	ML	1.4		
14	11	20-22	-	13/24	-	grades to little gravel and trace sand (moist, soft)	ML	0		
15	12	22-24	-	12/24	-	Similar (medium stiff)	ML	0.2		
16	13	24-26	-	11/24	-	@ 25' seam of gravel	ML	2.2		
Laboratory sample collected at 12-14' bgs.						Boring was terminated at 26' bgs. Temporary well set at 16-26' bgs.				

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG	REPORT OF BORING B2-SBS-6		
Client: GTEOSI Proj. Loc: Seneca Falls, New York						Sampler: 2-foot acetate Hammer: 140 lbs - direct push	Page 1 of 1		
File No.: 5816/23966							Start Date: 10/24/00 End Date: 10/24/00		
Boring Company: Parratt-Wolff, Inc.						Screen Riser	= <input type="checkbox"/>	Grout Sand Pack Bentonite	
OBG Geologist: Pam Cox								Field Testing	
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing
0	1	0-2	-	17/24	-	Gravel (FILL)		--	-
2	2	2-4	-	11/24	-	6" red SAND, some silt (moist, loose) Black SAND, some silt, trace clay		ML	16.7 8.2
4	3	4-6	-	14/24	-	Yellowish red / brown SILT, some clay little c. sand (moist, soft)		ML	0.7
6	4	6-8	-	22/24	-	Similar (dry, hard)		ML	2.3
8	5	8-10	-	19/24	-	Similar, little gravel (dry, hard)		ML	3.1
9	6	10-12	-	22/24	-	Similar, trace gravel (dry, hard)		ML	3.7
10	7	12-14	-	23/24	-	Yellowish red SILT, some clay, little sand (dry, hard)		ML	8.9
11	8	14-16	-	23/24	-	Similar		ML	55.6
12	9	16-18	-	24/24	-	Similar, some gravel, trace silt (moist, medium stiff)		ML	46.8
13	10	18-20	-	24/24	-	Similar		ML	90.6
14	11	20-22	-	15/24	-	Similar		ML	126
15	12	22-24	-	14/24	-	Similar		ML	1987
16	13	24-26	-	16/24	-	Brown SILT, some clay, little gravel (moist, soft)		ML	9999
Laboratory sample collected at 24-26' bgs.						Boring was terminated at 26' bgs. Temporary well set at 16-26' bgs.			

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG	REPORT OF BORING B2-SBS-5		
Client: GTEOSI Proj. Loc: Seneca Falls, New York						Sampler: 2-foot acetate	Page 1 of	1	
File No.: 5816/23966						Hammer: 140 lbs - direct push	Start Date:	10/24/00	
Boring Company: Parratt-Wolff, Inc.							End Date:	10/24/00	
OBG Geologist: Pam Cox							Screen Riser	=	Grout Sand Pack Bentonite
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing
0	1	-	-	15/24	-	Grass Roots, gravel, glass (topsoil and FILL) 8" wood 2" blacktop			853
2	2	2-4	-	9/24	-	6" GRAVEL (FILL) wet Olive gray SILT and CLAY, trace sand (moist, soft)	CL		27.5
4	3	4-6	-	11/24	-	Similar gravel, trace sand (dry, hard)	CL		20.3
6	4	6-8°C26	-	24/24	-	Brown SILT, some sand (wet, very loose); sewer odor	ML		36.1
8	5	8-10	-	24/24	-	Reddish brown SILT, some clay, little sand (moist, stiff)	ML		57.5
9	6	10-12	-	18/24	-	grades to reddish brown / yellowish red SILT, some clay, little sand, trace gravel (dry, hard)	ML		21.8
10	7	12-14	-	21/24	-	Similar (moist, stiff)	ML		15.5
11	8	14-16	-	23/24	-	Similar	ML		60.6
12	9	16-18	-	12/24	-	Similar	ML		74.4
13	10	18-20	-	23/24	-	Brown CLAY and SILT, little sand (moist, soft)	CL		38.0 130.0
14	11	20-22	-	13/24	-	Similar (moist, soft)	CL		217
15	12	22-24	-	21/24	-	Brown SILT, some clay (moist, stiff)	ML		642 1348
16	13	24-26	-	9/24	-	Similar with little gravel (moist, very stiff)	ML		488
* GC sample collected Laboratory sample collected at 22-24' and 24-26' bgs.						Boring was terminated at 26' bgs. Temporary well set at 16-26' bgs.			

TEST BORING LOG						REPORT OF BORING			
						B2-SBS-4			
Client: GTEOSI Proj. Loc: Seneca Falls, New York						Sampler: 2-foot acetate	Page 1 of	1	
File No.: 5816/23966						Hammer: 140 lbs - direct push	Start Date:	10/20/00	
Boring Company: Parratt-Wolff, Inc.						End Date:	10/20/00		
OBG Geologist: Joe Giovinazzo						Screen Riser	=	Grout Sand Pack Bentonite	
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing
0	1	0-2	-	13/24	-	Gray SILT, some f - c sand, trace gravel (dry)	ML	9.7	
2	2	2-4	-	14/24	-	Black SILT, little f - c sand, trace gravel (moist), @ 3' - 1" Gray coarse SAND lense		18.8	
4	3	4-6	-	14/24	-	Black SILT, little f - c sand, trace gravel and coal fragments (moist)		4.1	
6	4	6-8	-	24/24	-	Olive gray CLAY, tan and gray mottling, little silt, trace f - c sand and gravel (moist, soft)		37.4	
8	5	8-10	-	24/24	-	Yellowish red SILT, trace clay, f-c sand and gravel (moist, medium dense)		138	
9	6	10-12	-	14/24	-	Similar		245	
10	7	12-14	-	21/24	-	Yellowish red SILT, little f-c sand, trace gravel (moist, medium dense)		208	
11	8	14-16	-	17/24	-	Similar		15.3	
Laboratory sample collected @ 10 - 12' bgs.						Boring was terminated at 16' bgs. Temporary well set at 6-16' bgs.			

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG	REPORT OF BORING		
							B2-SBS-3		
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966 Boring Company: Parratt-Wolff, Inc.						Sampler: 2-foot acetate Hammer: 140 lbs - direct push	Page 1 of 1		
OBG Geologist: Joe Giovinazzo							Start Date: 10/20/00 End Date: 10/20/00		
						Screen Riser	<input type="checkbox"/>	Grout Sand Pack Bentonite	
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing
0	1	0-2	-	3/24	-	Olive gray SILT, some f - c sand, trace fine gravel (moist, soft)		ML	8.2
						NO RECOVERY		--	--
2	2	2-4	-	0/24	-	Olive gray SILT, some f - c sand, (moist, soft)		ML	4.1
						Olive gray SILT with gray mottling, trace f - c sand (moist, medium dense)		ML	10.2
6	4	6-8	-	24/24	-	Yellowish red SILT, trace f-c sand and gravel (moist, soft)		ML	61.2
						Similar (moist, medium dense)		ML	15.2
9	6	10-12	-	6/24	-	Similar		ML	61
10	7	12-14	-	4/24	-	Yellowish red SILT, trace gravel (moist, medium dense)		ML	104
11	8	14-16	-	18/24	-	Yellowish red SILT, trace gravel and clay (moist, medium dense)		ML	19.2
						Boring was terminated at 18' bgs. Temporary well set at 8-18' bgs.			
Laboratory sample collected @ 14 - 16' bgs.									

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING B2-SBS-2					
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966				Sampler: 2-foot acetate Hammer: 140 lbs - direct push				Page 1 of 1 Start Date: 10/19/00 End Date: 10/19/00					
Boring Company: Parratt-Wolff, Inc.													
OBG Geologist: Pam Cox													
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	Field Testing			
PID (ppm)	Black Light												
0	1	0-2	-	12/24	-	Gravel (FILL) Gravel, some sand, glass (FILL)  NO RECOVERY  Yellowish red / brown SILT, some clay, little gravel, trace sand (moist, stiff)  Similar (moist, medium stiff)  Similar  Similar (very stiff)  Similar  Similar  Similar  @ 19' grades to dark brown SILT, some clay, little gravel, trace sand (moist, soft)		ML	ML	ML	ML	ML	ML
Laboratory sample collected @ 14 - 16' bgs.						Boring was terminated at 20' bgs. Temporary well set at 6-16' bgs.							

TEST BORING LOG						REPORT OF BORING			
						B2-SBS-1			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966 Boring Company: Parratt-Wolff, Inc.						Sampler: 2-foot acetate Hammer: 140 lbs - direct push	Page 1 of 1	Start Date: 10/19/00 End Date: 10/19/00	
OBG Geologist: Pam Cox						Screen Riser	=	Grout Sand Pack Bentonite	
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing
0	1	0-2	-	4/24	-	Gravel (FILL) Brown / olive gray SILT, some sand little gravel and clay (ORGANICS) (wet, very soft)		-	PID (ppm) 5.7
2	2	2-4	-	12/24	-	Similar		-	Black Light 525
4	3	4-6	-	12/24	-	Yellowish red SILT, some clay, little gravel, trace sand (dry, hard)	ML	729	
6	4	6-8	-	8/24	-	Similar (moist, medium stiff)	ML	66.9	
8	5	8-10	-	16/24	-	Similar	ML	27.4	
9	6	10-12	-	20/24	-	Stuck in spoon 10" SILT and GRAVEL, some sand little clay (wet, loose)	ML	9.5	
10	7	12-14	-	22/24	-	Yellowish red SILT, some clay, little gravel, trace sand (moist, medium stiff)	ML	23.5 4.8	
11	8	14-16	-	17/24	-	Similar	ML	11.1	
						Collected additional spoons at 2-6' bgs to obtain sufficient samples.			
Laboratory sample collected @ 2 - 6' bgs.						Boring was terminated at 16' bgs. Temporary well set at 2-12' bgs.			

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING B2a-SBS-4			
Client: GTEOSI Proj. Loc: Seneca Falls, New York						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/25/00 End Date: 10/25/00			
File No.: 5816/23966											
Boring Company: Parratt-Wolff, Inc.								Screen Riser = Grout Sand Pack Bentonite			
OBG Geologist: Pam Cox											
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	Field Testing	
0	1	0-2	-	12/24	-	Blacktop GRAVEL, some silt (FILL)			-	PID (ppm) 1.1	
2	2	2-4	-	7/24	-	Yellowish red SILT, some clay, little sand, trace gravel (moist, soft)		ML		Black Light 1.6	
4	3	4-6	-	8/24	-	Similar		ML		0.8	
6	4	6-8	-	13/24	-	top 8" similar (soft, wet) Similar (very stiff)		ML		0.8	
8	5	8-10	-	19/24	-	Yellowish red SILT, some clay, little sand (moist, stiff)		ML		1.6	
9	6	10-12	-	16/24	-	@ 10' - 6" Brown SAND lense Yellowish red SILT, some clay, little sand (moist, stiff)		ML		1.5	
10	7	12-14	-	16/24	-	Similar		ML		0.6	
11	8	14-16	-	12/24	-	@ 15' Dark brown SILT, some clay, little sand, trace gravel (moist, soft)		ML		0.9	
12	9	16-18	-	16/24	-	Similar		ML		0.1	
13	10	18-20	-	16/24	-	Similar		ML		0.1	
14	11	20-22	-	7/24	-	Brown CLAY and SILT, trace sand (moist, soft)		CL		0.2	
15	12	22-24	-	22/24	-	Brown CLAY, some silt, trace sand (moist, very soft)		CL		0	
16	13	24-26	-	16/24	-	Similar		CL		0	
Lab sample collected at 8 - 12' bgs Lab sample held 24-26' bgs						Boring was terminated at 26' bgs. Temporary well set at 16-26' bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG	REPORT OF BORING		
							B2a-SBS-3		
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966						Sampler: 2-foot acetate Hammer: 140 lbs - direct push	Page 1 of 1		
Boring Company: Parratt-Wolff, Inc.							Start Date: 10/24/00		
OBG Geologist: Pam Cox							End Date: 10/24/00		
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	Field Testing	
								PID (ppm)	Black Light
0	1	0-2	-	12/24	-	Grass GRAVEL (FILL)	-	0.1	
2	2	2-4	-	7/24	-	Brown SILT, some clay, little sand (moist, soft)	ML	0.6	
4	3	4-6	-	8/24	-	Similar, trace sand	ML	0.2	
6	4	6-8	-	9/24	-	Olive gray SILT, some clay, little sand, trace gravel (moist, very soft)	ML	0.2	
8	5	8-10	-	7/24	-	Similar (medium stiff)	ML	0.3	
9	6	10-12	-	9/24	-	Brown SILT, some clay, little gravel, trace sand (moist, soft)	ML	0.4	
10	7	12-14	-	8/24	-	Similar (dry)	ML	0.4	
11	8	14-16	-	23/24	-	Similar (very stiff)	ML	0.4	
12	9	16-18	-	22/24	-	Yellowish red SILT, some clay, little sand (moist, soft)	ML	0.3	
13	10	18-20	-	9/24	-	Brown SILT, some clay, little sand (moist, soft)	ML	0.3	
14	11	20-22	-	15/24	-	Brown SILT and CLAY, little sand (moist, soft)	CL	0.2	
15	12	22-24	-	19/24	-	Similar (medium stiff)	CL	0.1	
16	13	24-26	-	13/24	-	@ 25' Brown SAND, some silt and clay @ 25.5' Brown SILT and CLAY (moist)	CL	0.1	
Lab sample collected at 6 - 8' bgs						Boring was terminated at 26' bgs. Temporary well set at 14-24' bgs.			



O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING B9-SBS-5			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/23/00 End Date: 10/23/00			
Boring Company: Parratt-Wolff, Inc. OBG Geologist: Pam Cox						Screen Riser		Grout Sand Pack Bentonite			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing		
0	1	0-2	-	14/24	-	Grass, roots, gravel (FILL)	-		PID (ppm)	Black Light	
2	2	2-4	-	10/24	-	Brown SILT, some c. sand, little clay (dry, very stiff)	ML		0.2		
4	3	4-6	-	11/24	-	top 6" gravel (FILL) Brown SILT, some clay, little gravel (moist, soft)	ML		0.3		
6	4	6-8	-	9/24	-	Brown SILT, some clay, trace sand (moist, very soft)	ML		0		
8	5	8-10	-	6/24	-	Yellowish red SILT, some clay, little gravel, trace sand (moist, hard)	ML		0		
10	6	10-12	-	11/24	-	Similar (very stiff)	ML		0.1		
12	7	12-14	-	14/24	-	Yellowish red SILT, some clay, little gravel, trace sand (moist, medium stiff)	ML		0.6		
13	8	14-16	-	13/24	-	Olive gray SILT, some clay, little sand (moist, soft)	ML		0.4		
Laboratory analytical sample collected from 12-16' bgs						Boring was terminated at 16' bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING B9-SBS-4			
Client: GTEOSI Proj. Loc: Seneca Falls, New York						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/23/00 End Date: 10/23/00			
File No.: 5816/23966											
Boring Company: Parratt-Wolff, Inc.											
OBG Geologist: Pam Cox											
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	Field Testing	
0	1	0-2	-	6/24	-	Grass, roots, (TOPSOIL)		--	--	PID (ppm)	
										Black Light	
2	2	2-4	-	0/24	-	NO RECOVERY		--	--		
4	3	4-6	-	9/24	-	@ 4' odor - SILT (wet) Yellowish red SILT, some gravel, little clay, trace sand (dry, hard)		ML	85		
6	4	6-8	-	16/24	-	Yellowish red SILT, some clay, little gravel (wet, hard)		ML	33.1		
8	5	8-10	-	11/24	-	Similar (moist, medium stiff)		ML	16.1		
10	6	10-12	-	14/24	-	Similar		ML	0.7		
12	7	12-14	-	18/24	-	Similar, trace gravel		ML	0.7		
13	8	14-16	-	22/24	-	Gray CLAY, some silt (moist, soft)		CL	0.7		
Laboratory analytical sample collected from 4-6' bgs						Boring was terminated at 16' bgs. Move forward and collect more soil.					

TEST BORING LOG						REPORT OF BORING			
						B9-SBS-3			
Client: GTEOSI			Sampler: 2-foot acetate						Page 1 of 1
Proj. Loc: Seneca Falls, New York			Hammer: 140 lbs - direct push						Start Date: 10/23/00
File No.: 5816/23966									End Date: 10/23/00
Boring Company: Parratt-Wolff, Inc.						Screen Riser	<input checked="" type="checkbox"/>	Grout Sand Pack Bentonite	
OBG Geologist: Pam Cox						Stratum Change General Description	USCS	Field Testing	
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		PID (ppm)	Black Light
0	1	0-2	-	21/24	-	Grass, roots, (TOPSOIL) Brown SILT, some clay and f-c sand, little gravel		0.4	
2	2	2-4	-	2/24	-	Similar (wet, soft)	ML	0.3	
4	3	4-6	-	6/24	-	Similar	ML	0.4	
6	4	6-8	-	20/24	-	Yellowish red SILT, some clay, little gravel and sand (moist, hard) @ 6.5' rock	ML	0.3	
8	5	8-10	-	23/24	-	Yellowish red SILT, some clay, little gravel and sand (moist, stiff)	ML	0	
10	6	10-12	-	17/24	-	Similar	ML	0	
12	7	12-14	-	14/24	-	Similar	ML	0.4	
13	8	14-16	-	16/24	-	Similar (wet)	ML	0.2	
Laboratory analytical sample collected from 12-14' bgs						Boring was terminated at 16' bgs. Temporary well set at 6 - 16' bgs.			

TEST BORING LOG						REPORT OF BORING			
O'BRIEN & GERE ENGINEERS, INC.						B9-SBS-2			
Client: GTEOSI			Sampler: 2-foot acetate						Page 1 of 1
Proj. Loc: Seneca Falls, New York			Hammer: 140 lbs - direct push						Start Date: 10/23/00
File No.: 5816/23966									End Date: 10/23/00
Boring Company: Parratt-Wolff, Inc.						Screen Riser	=		Grout Sand Pack Bentonite
OBG Geologist: Pam Cox									
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing
0	1	0-2	-	20/24	-	Grass, roots, (TOPSOIL) Gravel, little silt and sand (FILL)		-	PID (ppm) 0
2	2	2-4	-	20/24	-	Yellowish red SILT, some sand @ 2.5' bgs layer of black SILT		ML	Black Light 0
4	3	4-6	-	23/24	-	Yellowish red SILT, some clay, little gravel and sand (moist, stiff)		ML	0
6	4	6-8	-	15/24	-	Yellowish red SILT, some clay, little gravel, trace sand (moist/wet, stiff)		ML	0
8	5	8-10	-	11/24	-	Similar		ML	0
10	6	10-12	-	20/24	-	Yellowish red SILT, some clay, little sand, trace gravel (moist, stiff)		ML	0
12	7	12-14	-	19/24	-	Similar (moist, stiff)		ML	0
13	8	14-16	-	24/24	-	Similar		ML	0
Laboratory analytical sample collected from 12-14' bgs						Boring was terminated at 16' bgs. Temporary well set at 6 - 16' bgs.			

TEST BORING LOG							REPORT OF BORING						
							B9-SBS-1						
Client: GTEOSI				Sampler: 2-foot acetate			Page 1 of 1						
Proj. Loc: Seneca Falls, New York				Hammer: 140 lbs - direct push			Start Date: 10/17/00						
File No.: 5816/23966				End Date: 10/17/00			Screen Riser						
Boring Company: Parratt-Wolff, Inc.							Grout Sand Pack Bentonite						
OBG Geologist: Pam Cox													
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing				
0	1	0-2	-	6/24	-	Grass, topsoil, top 6" wet Yellowish red SILT, some clay, little gravel, trace sand (moist, medium stiff)		ML	0				
2	2	2-4	-	15/24	-	Similar (brick)		ML	0				
4	3	4-6	-	8/24	-	NO RECOVERY		--	-				
6	4	6-8	-	13/24	-	Similar (stiff)		ML	0				
8	5	8-10	-	21/24	-	Similar (wet, stiff)		ML	0				
10	6	10-12	-	23/24	-	Similar		ML	0				
12	7	12-14	-	16/24	-	Similar		ML	0				
13	8	14-16	-	8/24	-	Yellowish red SILT, some clay, little sand (soft, wet)		ML	0				
Laboratory analytical sample collected from 2-4' bgs							Boring was terminated at 16' bgs. Temporary well set at 6 - 16' bgs.						

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING B7-SBS-5			
Client: GTEOSI Proj. Loc: Seneca Falls, New York						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/19/00 End Date: 10/19/00			
File No.: 5816/23966								Screen Riser = Grout Sand Pack Bentonite			
Boring Company: Parratt-Wolff, Inc.											
OBG Geologist: Pam Cox											
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	Field Testing	
0	1	0-2	-	0/24	-	Blacktop (4") NO RECOVERY			--	-	
2	2	2-4	-	6/24	-	Yellowish red SILT, some clay, little gravel, trace sand (moist, soft)		ML	0.7		
4	3	4-6	-	7/24	-	Similar		ML	0.7		
6	4	6-8	-	5/24	-	Similar		ML	1.3		
8	5	8-10	-	24/24	-	Similar		ML	0.4		
10	6	10-12	-	10/24	-	Similar		ML	0.9		
12	7	12-14	-	14/24	-	Similar		ML	1.5		
14	8	14-16	-	12/24	-	grades to brown SILT and CLAY (moist, soft)		CL	0.4		
16	9	16-18	-	12/24	-	Similar		CL	0.4		
18	10	18-20	-	16/24	-	Similar (wet, very soft)		CL	0.4		
Laboratory analytical sample collected from 12-14' bgs						Boring was terminated at 14' bgs. Temporary well set at 4-14' bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING				
								B7-SBS-4				
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/19/00 End Date: 10/19/00				
Boring Company: Parratt-Wolff, Inc. OBG Geologist: Pam Cox								Screen Riser	<input checked="" type="checkbox"/>	Grout Sand Pack Bentonite		
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	Field Testing		
0	1	0-2	-	3/24	-	Blacktop (4") Gravel (FILL)  FILL (slag)  Yellowish red SILT, some clay, little gravel, trace sand (moist, soft)  Similar  Similar (very stiff)  Similar (moist, medium stiff)  Similar (moist, stiff)		ML	-	0.6	PID (ppm) Black Light	
2	2	2-4	-	6/24	-				-			
4	3	4-6	-	24/24	-				ML			
6	4	6-8	-	9/24	-				ML			
8	5	8-10	-	6/24	-				ML			
10	6	10-12	-	21/24	-				ML	44.6	51.7	
12	7	12-14	-	17/24	-				ML	66.1	76.4	
Laboratory analytical sample collected from 12-14' bgs						Boring was terminated at 14' bgs. Temporary well set at 4-14' bgs.						

TEST BORING LOG						REPORT OF BORING			
						B7-SBS-3			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966						Sampler: 2-foot acetate Hammer: 140 lbs - direct push	Page 1 of 1		
Boring Company: Parratt-Wolff, Inc.						Start Date: 10/19/00 End Date: 10/19/00			
OBG Geologist: Pam Cox						Screen Riser	=	Grout Sand Pack Bentonite	
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing
0	1	0-2	-	2/24	-	Blacktop (4") Gravel (FILL)	--		PID (ppm) 1.7
2	2	2-4	-	9/24	-	4" Gravel Yellowish red SILT, some clay, little gravel, trace sand (moist, stiff)	ML	1660	
4	3	4-6	-	13/24	-	Similar	ML	1855	
6	4	6-8	-	24/24	-	Similar	ML	3.1	
8	5	8-10	-	13/24	-	Stuck in spoon - some soft layers	ML	2.8	
10	6	10-12	-	16/24	-	(moist, stiff)	ML	2.8	
Laboratory analytical sample collected from 2-6' bgs						Boring was terminated at 12' bgs. Temporary well set at 1-11' bgs. Background PID = 1.7 (propane)			

TEST BORING LOG						REPORT OF BORING			
O'BRIEN & GERE ENGINEERS, INC.						B7-SBS-2			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966 Boring Company: Parratt-Wolff, Inc.				Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/19/00 End Date: 10/19/00			
OBG Geologist: Pam Cox				Screen Riser	=	Grout Sand Pack Bentonite			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing
0	1	0-2	-	6/24	-	Blacktop (4") Gravel (FILL)		-	0
2	2	2-4	-	0/24	-	NO RECOVERY		--	-
4	3	4-6	-	10/24	-	4" Gravel (FILL) Yellowish red SILT, some clay, little gravel (moist, stiff)	ML	0	
6	4	6-8	-	22/24	-	Similar	ML	0	
8	5	8-10	-	24/24	-	Stuck in spoon - (moist, medium stiff) some soft layers	ML	1.7	
10	6	10-12	-	19/24	-	Yellowish red SILT, some clay, little gravel, trace sand (wet, medium stiff)	ML	0	
Laboratory analytical sample collected from 8-10' bgs						Boring was terminated at 12' bgs.			

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING B7-SBS-1(b)			
Client: GTEOSI Proj. Loc: Seneca Falls, New York						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/19/00 End Date: 10/19/00			
File No.: 5816/23966											
Boring Company: Parratt-Wolff, Inc.								Screen Riser = Grout Sand Pack Bentonite			
OBG Geologist: Pam Cox								Stratum Change General Description USCS Field Testing PID (ppm) Black Light			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description  Direct push to 8' bgs					
0	1	0-2	-	-	-						
2	2	2-4	-	-	-						
4	3	4-6	-	-	-						
6	4	6-8	-	-	-						
8	5	8-10	-	20/24	-	Yellowish red SILT and SAND, some clay, little gravel (moist, medium stiff)		ML		5.4	
10	6	10-12	-	16/24	-			ML		23.1	
						Similar		ML		4.5	
12	7	12-14	-	20/24	-						

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING			
								B7-SBS-1			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/19/00 End Date: 10/19/00			
Boring Company: Parratt-Wolff, Inc. OBG Geologist: Pam Cox						Screen Riser		= <input type="checkbox"/>		Grout Sand Pack Bentonite	
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing		
									PID (ppm)	Black Light	
0	1	0-2	-	6/24	-	Blacktop (4") Gravel (FILL)	-		0		
2	2	2-4	-	11/24	-	Similar @3' Yellowish red SILT, some clay; little gravel (moist, stiff)	ML		0		
4	3	4-6	-	14/24	-	Similar (wet, stiff)	ML		0		
6	4	6-8	-	21/24	-	Similar	ML		2.7		
8	5	8-10	-	9/24	-	f-c SAND and GRAVEL, some silt (wet, loose). Sewer @ 9' bgs	ML		3.2		
						Boring was terminated at 26' bgs. Temporary well set at 16-26' bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING CY-SBS-4				
Client: GTEOSI Proj. Loc: Seneca Falls, New York						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/20/00 End Date: 10/20/00				
File No.: 5816/23966								Screen Riser = Grout Sand Pack Bentonite				
Boring Company: Parratt-Wolff, Inc.												
OBG Geologist: Joe Giovinazzo												
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	Field Testing		
0	1	0-4	-	36/48	-	Grass Yellowish red SILT, little f - c sand trace clay (moist, loose)			ML	0.2		
									ML	0.8		
		2-4	-	-	-	Yellowish red SILT, little clay, trace fine sand (moist, loose)			ML	0.2		
4	2	4-8	-	6/48	-	Yellowish red SILT, few clay and f-c sand (moist, loose)			ML	0.2		
									ML	0.2		
8	3	8-10	-	13/24	-	Yellowish red SILT, little clay, trace f-c sand and fine gravel (moist, loose)			ML	0.2		
9	4	10-12	-	15/24	-	Yellowish red SILT, few clay, trace f-c sand and gravel (moist, loose)			ML	0.2		

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG	REPORT OF BORING CY-SBS-3				
Client: GTEOSI Proj. Loc: Seneca Falls, New York				Sampler: 2-foot acetate Hammer: 140 lbs - direct push			Page 1 of 1				
File No.: 5816/23966							Start Date: 10/20/00 End Date: 10/20/00				
Boring Company: Parratt-Wolff, Inc.				Screen Riser	=		Grout Sand Pack Bentonite				
OBG Geologist: Joe Giovinazzo											
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing	PID (ppm)	Black Light
0	1	0-4	-	25/48	-	Grass Yellowish red SILT, few f - c sand, trace fine and coarse gravel, organics, coal, (moist, loose)		ML	-0		
4	2	4-8	-	10/48	-	Yellowish red SILT, little clay, few f - c sand (moist, loose)		ML	0.6		
8	3	8-10	-	9/24	-	Similar		ML	1.3		
9	4	10-12	-	13/24	-	Yellowish red SILT, little clay, trace f-c sand (moist, soft)		ML	0.5		
Lab sample collected at 8 - 10' bgs						Boring was terminated at 12' bgs. Temporary well set at 2-12' bgs.					

TEST BORING LOG						REPORT OF BORING			
						CY-SBS-2			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966 Boring Company: Parratt-Wolff, Inc.						Sampler: 2-foot acetate Hammer: 140 lbs - direct push	Page 1 of 1		
OBG Geologist: Joe Giovinazzo						Start Date: 10/20/00 End Date: 10/20/00			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Screen Riser	=	Grout Sand Pack Bentonite
0	1	0-4	-	12/48	-	Grass Brown SILT with yellowish red mottling little fine sand (moist)	ML	0	
							CL	0	
		2-4				Brown CLAY, little silt, trace gravel (moist, soft)	ML	0.3	
4	2	4-8	-	24/48	-	Yellowish red SILT, little clay, few fine and coarse gravel, trace f-c sand (moist, loose)	ML	0.4	
							ML	1.4	
8	3	8-10	-	20/24	-	Yellowish red SILT, some clay, trace f - c sand and fine gravel (moist, loose)			
9	4	10-12	-	6/24	-	Yellowish red SILT, little clay, few f-c sand (moist, loose)			
Lab sample collected at 0 - 4' bgs						Boring was terminated at 12' bgs. Temporary well set at 2-12' bgs.			

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING CY-SBS-1			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/20/00 End Date: 10/20/00			
Boring Company: Parratt-Wolff, Inc. OBG Geologist: Joe Giovinazzo						Screen Riser		Grout Sand Pack Bentonite			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	Field Testing	
0	1	0-4	-	36/48	-	Grass Yellowish red SILT, little clay, few f - c sand (moist, stiff)		ML	853	PID (ppm)	Black Light
4	2	4-6	-	39/48	-	Yellowish red SILT, some clay, trace medium sand (moist, loose)		ML	460		
		6-8	-	-	-	Yellowish red CLAY, trace sand and fine and coarse gravel (moist, loose)		CL	12		
8	3	8-10	-	6/24	-	Yellowish red SILT, little clay, few f - c sand and fine gravel (moist, soft)		ML	2.3		
9	4	10-12	-	6/24	-	Brown SILT, little clay, trace fine sand (moist, soft)					
Lab sample collected at 0 - 4' bgs						Boring was terminated at 12' bgs. Temporary well set at 2-12' bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING			
								B9a-SBS-5			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966 Boring Company: Parratt-Wolff, Inc.						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/17/00 End Date: 10/17/00			
OBG Geologist: Pam Cox						Screen Riser		Grout Sand Pack Bentonite			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	Field Testing		
								USCS	PID (ppm)	Black Light	
0	1	0-2	-	12/24	-	GRAVEL (FILL)		-	0.3		
2	2	2-4	-	13/24	-	Yellowish red SILT, some clay, little sand (moist, very stiff)		ML	0.3		
4	3	4-6	-	16/24	-	Similar (moist, stiff)		ML	0.4		
6	4	6-8	-	24/24	-	Similar (medium stiff)		ML	2.4		
8	5	8-10	-	22/24	-	Similar (stiff)		ML	5		
10	6	10-12	-	13/24	-	Similar		ML	5		
Laboratory analytical sample collected from 8-10' bgs						Boring was terminated at 12' bgs. Temporary well set at 2 - 12' bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG	REPORT OF BORING			
						B9a-SBS-4				
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966						Sampler: 2-foot acetate Hammer: 140 lbs - direct push	Page 1 of 1			
Boring Company: Parratt-Wolff, Inc.						Start Date: 10/17/00 End Date: 10/17/00				
OBG Geologist: Pam Cox						Screen Riser	=	Grout Sand Pack Bentonite		
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing	
0	1	0-2	-	7/24	-	GRAVEL (FILL)		-		
2	2	2-4	-	6/24	-	@ 3.5' Yellowish red SILT, some clay, little sand (moist, very stiff)		ML	0.4	
4	3	4-6	-	13/24	-	Similar		ML	6.6	
6	4	6-8	-	17/24	-	Similar (medium stiff)		ML	9.5	
8	5	8-10	-	21/24	-	Similar (very stiff)		ML	5.7	
10	6	10-12	-	14/24	-	Similar (wet, medium stiff)		ML	0.5	
Laboratory analytical sample collected from 6-8' bgs						Boring was terminated at 12' bgs. Temporary well set at 2 - 12' bgs.				

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING B9a-SBS-3			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/17/00 End Date: 10/17/00			
Boring Company: Parratt-Wolff, Inc. OBG Geologist: Pam Cox						Screen Riser	=	Grout Sand Pack Bentonite			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	Field Testing	
						GRAVEL (FILL)				PID (ppm)	Black Light
0	1	0-2	-	4/24	-	Yellowish red SILT, some clay, little gravel, trace sand (moist, soft)			-	0.4	
2	2	2-4	-	6/24	-	Similar		ML		0.3	
4	3	4-6	-	7/24	-	Similar		ML		0.9	
6	4	6-8	-	21/24	-	Similar		ML		1.8	
8	5	8-10	-	24/24	-	becomes stiff		ML		3	
10	6	10-12	-	6/24	-	Similar (medium stiff)		ML		3.5	
Laboratory analytical sample collected from 10-12' bgs						Boring was terminated at 12' bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING			
								B9a-SBS-2			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1			
Boring Company: Parratt-Wolff, Inc.						Start Date: 10/17/00 End Date: 10/17/00					
OBG Geologist: Pam Cox						Screen Riser	=	Grout Sand Pack Bentonite			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	Field Testing	
0	1	0-2	-	9/24	-	GRAVEL (FILL)		-		PID (ppm)	Black Light
2	2	2-4	-	13/24	-	Dark brown SILT, some clay (moist)		ML		0	
4	3	4-6	-	17/24	-	4" GRAVEL (wet) Dark brown / gray SILT and CLAY @5' yellowish red SILT, some clay, little gravel (moist, medium stiff)		CL		0.2	
6	4	6-8	-	20/24	-	Similar (hard)		ML		1.2	
8	5	8-10	-	8/24	-	Similar (very stiff)		ML		0.8	
10	6	10-12	-	13/24	-	Similar (medium stiff)		ML		0.5	
Laboratory analytical sample collected from 6-8' bgs.						Boring was terminated at 12' bgs. Temporary well set at 2 - 12' bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG	REPORT OF BORING			
						B9a-SBS-1				
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966						Sampler: 2-foot acetate Hammer: 140 lbs - direct push	Page 1 of 1			
Boring Company: Parratt-Wolff, Inc.						Start Date: 10/17/00 End Date: 10/17/00				
OBG Geologist: Pam Cox						Screen Riser	=	Grout Sand Pack Bentonite		
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	Field Testing		
0	1	0-2	-	7/24	-	GRAVEL (FILL)  Yellowish red SILT, some clay, little gravel, trace sand (moist, soft)  Similar, gravel lenses (medium stiff)  Yellowish red SILT, some clay, little gravel, trace sand (moist, soft)  becomes stiff  Brown SILT and CLAY, little gravel, trace sand (moist, soft)	USCS  ML  ML  ML  ML  CL	-  ML  ML  ML  ML  CL	0  0  5  5  5  7	Black Light
Laboratory analytical sample collected from 10-12' bgs.						Boring was terminated at 12' bgs.				

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING EFF-SBS-2			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966 Boring Company: Parratt-Wolff, Inc.						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/17/00 End Date: 10/17/00			
OBG Geologist: Pam Cox						Screen Riser		Grout Sand Pack Bentonite			
								Field Testing			
								PID (ppm)		Black Light	
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS		
0	1	0-2	-	0/24	-	Blacktop NO RECOVERY			-	NA	
2	2	2-4	-	5/24	-	Reddish brown SILT, some clay, little gravel, trace sand (moist, medium stiff)		ML	0	NA	
4	3	4-6	-	7/24	-	Similar		ML	0	NA	
6	4	6-8	-	10/24	-	Similar (stiff)		ML	0	NA	
8	5	8-10	-	8/24	-	Similar (stiff)		ML	0	NA	
10	6	10-12	-	8/24	-	Similar (medium stiff)		ML	0	NA	
11	7	12-14	-	20/24	-	bottom 6" fine SAND and SILT, little clay (moist)		ML	0	NA	
Laboratory sample 10-14' bgs.						Boring was terminated at 14' bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING EFF-SBS-1			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/17/00 End Date: 10/17/00			
Boring Company: Parratt-Wolff, Inc.						Screen Riser		Grout Sand Pack Bentonite			
OBG Geologist: Pam Cox						Stratum Change General Description		Field Testing			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		USCS	PID (ppm)	Black Light	
0	1	0-2	-	8/24	-	Blacktop Olive gray f-c SAND and GRAVEL, some silt, trace clay (FILL), dry		--	0.5	NA	
2	2	2-4	-	9.5/24	-	@3' Olive gray/ brown SILT and CLAY (organics) - (moist, medium stiff)		CL	11.5	NA	
4	3	4-6	-	23/24	-	Yellowish red SILT, some clay, little gravel, trace sand (hard)		ML	2.5	NA	
6	4	6-8	-	20/24	-	Similar with yellow brown mottles (dry, hard)		ML	6.7	NA	
8	5	8-10	-	24/24	-	Similar with yellow brown mottles (dry, hard)		ML	1.3	NA	
10	6	10-12	-	23/24	-	Similar		ML	1	NA	

TEST BORING LOG						REPORT OF BORING			
						IS-SBS-5b			
						Page 1 of 1			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966						Sampler: 2-foot acetate	Start Date: 10/26/00		
Boring Company: Parratt-Wolff, Inc.						Hammer: 140 lbs - direct push	End Date: 10/26/00		
OBG Geologist: Pam Cox						Screen Riser	=	Grout Sand Pack Bentonite	
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing
0	1	0-2	-	-	-	Boring pushed to 16 feet bgs.		USCS	Field Testing
2	2	2-4	-	-	-				
4	3	4-6	-	-	-				
6	4	6-8	-	-	-				
8	5	8-10	-	-	-				
9	6	10-12	-	-	-				
10	7	12-14	-	-	-				
11	8	14-16	-	-	-				
12	9	16-18	-	15/24	-	Brown / gray CLAY, some silt (moist, very soft)	CL	0.3	
13	10	18-20	-	24/24	-	Similar		0.3	
						becomes wet	CL	0.3	
14	11	20-22	-	24/24	-				
						Yellowish red SILT, some clay, little sand and gravel (moist, stiff)	ML	0.4	
15	12	22-24	-	10/24	-				
						Olive gray SILT, some clay, little sand and gravel (moist, loose)	ML	0.4	
16	13	24-26	-	11/24	-				
Laboratory sample was collected at 24-26' bgs						Boring was terminated at 26' bgs. Temporary well set at 16-26' bgs.			

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING IS-SBS-6			
Client: GTEOSI Proj. Loc: Seneca Falls, New York						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of	1		
File No.: 5816/23966						Start Date: 10/23/00 End Date: 10/23/00					
Boring Company: Parratt-Wolff, Inc.						Screen Riser	=	Grout Sand Pack Bentonite			
OBG Geologist: Pam Cox						Stratum Change General Description	USCS	Field Testing			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		PID (ppm)	Black Light		
0	1	0-2	-	14/24	-	Blacktop (4") Brown f - c SAND and GRAVEL, some silt (FILL)		-	-		
2	2	2-4	-	11/24	-	@ 3' Yellowish red SILT, some clay, little gravel, trace sand (very stiff)	ML	-			
4	3	4-6	-	11/24	-	Similar (moist, stiff) bottom 4" blacktop		-	0		
6	4	6-8	-	5/24	-	@ 6' blacktop - gravel - (FILL) bottom 2" Brown SILT, some clay, little sand, trace gravel (soft)	ML	0			
8	5	8-10	-	5/24	-	Similar	ML	0			
9	6	10-12	-	9/24	-	Brown SILT, little sand and clay (moist, soft)		ML	0		
10	7	12-14	-	14/24	-	Similar	ML	0			
Laboratory sample was collected at 12-14' bgs.						Boring was terminated at 14' bgs. Temporary well set at 4 - 14' bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING IS-SBS-5					
Client: GTEOSI Proj. Loc: Seneca Falls, New York				Sampler: 2-foot acetate Hammer: 140 lbs - direct push				Page 1 of 1 Start Date: 10/23/00 End Date: 10/23/00					
File No.: 5816/23966													
Boring Company: Parratt-Wolff, Inc.													
OBG Geologist: Pam Cox													
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	Field Testing			
0	1	0-2	-	20/24	-	Moss, roots, silt (TOPSOIL)		-	-	PID (ppm)	Black Light		
2	2	2-4	-	24/24	-	6" Yellowish red SILT, little f - c sand and clay (moist, stiff) grades to brown SILT, some clay little sand and gravel (moist, very stiff)		ML	0				
4	3	4-6	-	21/24	-	Similar		ML	0				
6	4	6-8	-	24/24	-	Similar		ML	0				
8	5	8-10	-	24/24	-	Similar (dry, stiff)		ML	0				
9	6	10-12	-	19/24	-	becomes moist, medium stiff @ 11' Olive gray CLAY, some silt, little f - c sand and gravel (moist, soft)		CL	0				
10	7	12-14	-	24/24	-	Gray CLAY, some silt		CL	0				
11	8	14-16	-	24/24	-	Similar		CL	0				
Laboratory sample was collected at 8-10' bgs.						Boring was terminated at 16' bgs. Temporary well set at 2 - 12' bgs.							

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG	REPORT OF BORING IS-SBS-4		
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966						Sampler: 2-foot acetate Hammer: 140 lbs - direct push	Page 1 of 1		
Boring Company: Parratt-Wolff, Inc.							Start Date: 10/23/00 End Date: 10/23/00		
OBG Geologist: Pam Cox							Screen Riser	<input checked="" type="checkbox"/>	Grout Sand Pack Bentonite
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing
0	1	0-2	-	0/24	-	Grass NO RECOVERY		-	PID (ppm) Black Light
2	2	2-4	-	14/24	-	Yellowish red SILT, some gravel, little clay, trace sand (moist, stiff)	ML	0	
4	3	4-6	-	7/24	-	grades to yellowish red SILT, some clay little gravel, trace sand (moist, soft)	ML	0	
6	4	6-8	-	6/24	-	Similar	ML	0	
8	5	8-10	-	16/24	-	Yellowish red SILT, some gravel, little clay (very stiff)	ML	0	
9	6	10-12	-	24/24	-	Similar @ 12' SILT lense, trace clay (wet, very loose)	ML	0	
10	7	12-14	-	15/24	-	Similar	ML	0	
11	8	14-16	-	14/24	-	Brown f - c SAND and GRAVEL, little silt (loose)	ML	0	
Laboratory sample was collected at 14-16' bgs.						Boring was terminated at 16' bgs. Temporary well set at 6 - 16' bgs.			

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING IS-SBS-3			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966 Boring Company: Parratt-Wolff, Inc.				Sampler: 2-foot acetate Hammer: 140 lbs - direct push				Page 1 of 1 Start Date: 10/19/00 End Date: 10/19/00			
OBG Geologist: Pam Cox						Screen Riser	=	Grout Sand Pack Bentonite			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing		
									PID (ppm)	Black Light	
0	1	0-2	-	3/24	-	Gravel (FILL)		-	0.5		
2	2	2-4	-	6/24	-	Olive gray SILT, some clay, little gravel and sand (moist, soft)		ML	0.8		
4	3	4-6	-	8/24	-	becomes wet - ODOR		ML	34.8		
6	4	6-8	-	0/24	-	NO RECOVERY		-	-		
8	5	8-10	-	5/24	-	f-c GRAVEL (wet) - ODOR		-	15.7		
9	6	10-12	-	19/24	-	Yellowish red SILT, some clay, little gravel, trace sand (moist, very stiff)		ML	8.2		
Laboratory sample was collected at 4-6' bgs.						Boring was terminated at 12' bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING IS-SBS-2					
Client: GTEOSI Proj. Loc: Seneca Falls, New York				Sampler: 2-foot acetate Hammer: 140 lbs - direct push				Page 1 of 1 Start Date: 10/19/00 End Date: 10/19/00					
File No.: 5816/23966				Boring Company: Parratt-Wolff, Inc.				Screen Riser = Grout Sand Pack Bentonite					
OBG Geologist: Pam Cox								Field Testing PID (ppm) Black Light					
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS				
0	1	0-2	-	6/24	-			—	—	1.2			
								—	—	—			
								—	—	—			
2	2	2-4	-	0/24	-			—	—	—			
								—	—	—			
4	3	4-6	-	11/24	-			CL	2.3				
								CL	2.3				
6	4	6-8	-	20/24	-			ML	1.2				
								ML	1.2				
8	5	8-10	-	12/24	-			ML	0.5				
								ML	0.5				
9	6	10-12	-	21/24	-			ML	0.8				
								ML	0.8				
Laboratory sample was collected at 10-12' bgs.						Boring was terminated at 12' bgs.							

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING IS-SBS-1					
Client: GTEOSI Proj. Loc: Seneca Falls, New York				Sampler: 2-foot acetate Hammer: 140 lbs - direct push				Page 1 of 1 Start Date: 10/19/00 End Date: 10/19/00					
File No.: 5816/23966													
Boring Company: Parratt-Wolff, Inc.													
OBG Geologist: Pam Cox													
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing				
									PID (ppm)	Black Light			
0	1	0-2	-	5/24	-	Brown f-c SAND and GRAVEL little silt (FILL)		-	0				
2	2	2-4	-	0/24	-	NO RECOVERY		-	-				
4	3	4-6	-	11/24	-	Yellowish red SILT, some clay, little gravel, trace sand (moist, stiff) @ 5.5' asphalt in spoon	ML	0.2					
6	4	6-8	-	0/24	-	NO RECOVERY		-	-				
8	5	8-10	-	8/24	-	Yellowish red SILT, some clay and gravel, trace sand (moist, soft)	ML	0.4					
9	6	10-12	-	16/24	-	Similar (moist, medium stiff)	ML	0.4					
Laboratory sample was collected at 10-12' bgs.						Boring was terminated at 12' bgs.							

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING FOT-SBS-1					
Client: GTEOSI Proj. Loc: Seneca Falls, New York				Sampler: 2-foot acetate Hammer: 140 lbs - direct push				Page 1 of 1 Start Date: 10/16/00 End Date: 10/16/00					
File No.: 5816/23966													
Boring Company: Parratt-Wolff, Inc.													
OBG Geologist: Pam Cox													
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	Field Testing			
0	1	0-2	-	3/24	-	GRAVEL (FILL), dry		-	NA	PID (ppm) Black Light			
2	2	2-4	-	2/24	-	Yellowish red / brown SILT, some clay little sand, moist		ML	18.5	NA			
4	3	4-6	-	1.5/24	-	becomes wet @ 4'		ML	39	NA			
6	4	6-8	-	3/24	-	Similar		ML	38	NA			
Laboratory soil sample collected @ 2-8' bgs.						Boring was terminated at 8 feet bgs. Temporary well set from 3-8' bgs.							

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING FOT-SBS-2			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966				Sampler: 2-foot acetate Hammer: 140 lbs - direct push				Page 1 of 1 Start Date: 10/16/00 End Date: 10/16/00			
Boring Company: Parratt-Wolff, Inc.						Screen Riser	=	Grout Sand Pack Bentonite			
OBG Geologist: Pam Cox						Stratum Change General Description	USCS	Field Testing PID (ppm)			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Black Light			
0	1	0-2	-	12/24	-	0-3" - GRAVEL (FILL), dry Yellowish red / brown SILT, some clay little sand, moist		-	0.3	NA	
2	2	2-4	-	4/24	-	similar		ML	2.1	NA	
4	3	4-6	-	24/24	-	similar		ML	75.1	NA	
6	4	6-8		16/24		similar		ML	30.8	NA	
8	5	8-10		18/24		grades to little clay, moist		ML	1.5	NA	
10	6	10-12		24/24		similar, (moist - medium stiff)		ML	0.8	NA	
Laboratory soil sample collected @ 4-6' bgs.						Boring was terminated at 12 feet bgs. Temporary well set at 2-10' bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING			
								FOT-SBS-3			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966 Boring Company: Parratt-Wolff, Inc.						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/16/00 End Date: 10/16/00			
OBG Geologist: Pam Cox						Screen Riser		Grout Sand Pack Bentonite			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	Field Testing	
0	1	0-2	-	3/24	-	0-2" - GRAVEL (FILL), dry Yellowish red / brown SILT, some clay				2.8	NA
2	2	2-4	-	NA	-	NO RECOVERY				NA	NA
4	3	4-6	-	6/24	-	becomes wet at 4' Yellowish red / brown SILT, some clay little sand, (wet, very soft)		ML		35	NA
6	4	6-8		18/24		similar, moist		ML		2.4	NA
Laboratory soil sample collected @ 4-6' bgs.						Boring was terminated at 8' bgs. Temporary well set from 3-8' bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING FOT-SBS-4			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966				Sampler: 2-foot acetate Hammer: 140 lbs - direct push				Page 1 of 1 Start Date: 10/16/00 End Date: 10/16/00			
Boring Company: Parratt-Wolff, Inc.						Screen Riser	=	Grout Sand Pack Bentonite			
OBG Geologist: Pam Cox						Stratum Change General Description	USCS	Field Testing			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		PID (ppm)	Black Light		
0	1	0-2	-	10/24	-	0-6" - GRAVEL (FILL), dry Yellowish red / brown SILT, some clay little sand, (moist - very stiff)	ML	1.9	NA		
2	2	2-4	-	17/24	-	similar (moist - medium stiff)		72.5	NA		
4	3	4-6	-	24/24	-	similar (moist - medium stiff)		195	NA		
6	4	6-8	-	18/24	-	similar with trace sand, moist		100	NA		
Laboratory soil sample collected @ 4-6' bgs.						Boring was terminated at 8 feet bgs. Temporary well set from 3-8' bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING OB-DGW-4			
Client: GTEOSI Proj. Loc: Seneca Falls, New York						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/28/00 End Date: 10/28/00			
File No.: 5816/23966											
Boring Company: Parratt-Wolff, Inc.								Screen Riser = Grout Sand Pack Bentonite			
OBG Geologist: Pam Cox								Field Testing PID (ppm) Black Light			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS		
0	1	0-2	-	-	-	Boring pushed to 14 feet bgs.					
2	2	2-4	-	-	-						
4	3	4-6	-	-	-						
6	4	6-8	-	-	-						
8	5	8-10	-	-	-						
9	6	10-12	-	-	-						
10	7	12-14	-	-	-						
11	8	14-16	-	9/24	-	Yellowish red SILT, some clay, little coarse sand (moist, stiff)			ML	0.3	
12	9	16-18	-	12/24	-	grade to Dark brown SILT, some clay, little sand (moist, soft) 1" layers of gravel @ 17' and 17.5'			ML	0.2	
13	10	18-20	-	24/24	-	Dark brown SILT, some clay, little sand (moist, medium stiff)			ML	0.2	
14	11	20-22	-	24/24	-	Similar (moist, soft)			ML	0.1	
15	12	22-24	-	10/24	-	Similar (moist, soft)			ML	0.1	
16	13	24-26	-	16/24	-	Brown/gray CLAY, some silt (moist, very stiff)			CL	0.1	
Laboratory sample collected at 24 - 26'.						Boring was terminated at 26' bgs. Temporary well set at 16-26' bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING OB-SGW and OB-DGW			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966 Boring Company: Parratt-Wolff, Inc.				Sampler: 2-foot acetate Hammer: 140 lbs - direct push			Page 1 of 1 Start Date: 10/27/00 End Date: 10/27/00				
OBG Geologist: Pam Cox						Screen Riser	<input checked="" type="checkbox"/>	Grout Sand Pack Bentonite			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	Field Testing		
0	1		-	-	-	Boring pushed  No soil samples collected  See ground water sampling logs for further details		USCS	PID (ppm)	Black Light	
2	2		-	-	-						
4	3		-	-	-						
6	4		-	-	-						
8	5		-	-	-						
9	6		-	-	-						
10	7		-	-	-						
11	8		-	-	-						
12	9		-	-	-						
13	10		-	-	-						
14	11		-	-	-						
15	12		-	-	-						
16	13		-	-	-						

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING MW20-SBS-5					
Client: GTEOSI Proj. Loc: Seneca Falls, New York				Sampler: 2-foot acetate Hammer: 140 lbs - direct push				Page 1 of 1 Start Date: 10/20/00 End Date: 10/20/00					
File No.: 5816/23966													
Boring Company: Parratt-Wolff, Inc.								Screen Riser = <input type="checkbox"/> Grout Sand Pack Bentonite					
OBG Geologist: Joe Giovinazzo													
Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	Field Testing			
0	1	0-2	-	11/24	-	Grass		Similar	ML	PID (ppm) 0.1			
						Yellowish red SILT, little clay and f-c sand, trace gravel (moist)							
2	2	2-4	-	10/24	-				ML	Black Light 0.3			
4	3	4-6	-	0/24	-	NO RECOVERY			--	--			
6	4	6-8	-	6/24	-	Similar			ML	0.2			
8	5	8-10	-	22/24	-	Yellowish red CLAY, little silt, trace gravel (moist, soft)			CL	0.5			
9	6	10-12	-	13/24	-	Yellowish red SILT, little clay, trace sand and gravel (moist, loose)			ML	0.3			
10	7	12-14	-	19/24	-	Similar			ML	0.1			
11	8	14-16	-	17/24	-	Yellowish red SILT, trace clay, sand and gravel (moist, medium dense)			ML	0.4			
12	9	16-18	-	9/24	-	Yellowish red SILT, little clay, trace sand and fine gravel (wet, loose)			ML	0.6			
13	10	18-20	-	13/24	-	Olive gray SILT, some clay, trace f-c sand and fine gravel (moist, loose)			ML	0.3			
						Boring was terminated at 20' bgs. Temporary well set at 10-20' bgs.							

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING MW20-SBS-4			
Client: GTEOSI Proj. Loc: Seneca Falls, New York						Sampler: 2-foot acetate		Page 1 of 1			
File No.: 5816/23966						Hammer: 140 lbs - direct push		Start Date: 10/20/00 End Date: 10/20/00			
Boring Company: Parratt-Wolff, Inc.						Screen Riser	<input checked="" type="checkbox"/>	Grout Sand Pack Bentonite			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Description	USCS	Field Testing		
0	1	0-2	-	19/24	-	Grass	Similar	ML	PID (ppm)	Black Light	
						Yellowish red SILT, little clay, trace f-c sand (moist, loose)		ML	0.2		
								ML	0.4		
2	2	2-4	-	16/24	-			ML	0.6		
								CL	0.3		
4	3	4-6	-	11/24	-	Yellowish red SILT, some clay, trace sand (moist, loose)		ML	0.3		
								ML	0.3		
6	4	6-8	-	16/24	-	Yellowish red CLAY, trace silt (moist, soft)		ML	0.2		
								ML	0.3		
8	5	8-10	-	11/24	-	Yellowish red SILT, little clay, trace sand and fine gravel (moist)		ML	0.2		
								ML	0.3		
9	6	10-12	-	16/24	-	Similar		ML	0.3		
								ML	0.2		
10	7	12-14	-	19/24	-	Similar		ML	0.2		
								ML	0.2		
11	8	14-16	-	12/24	-	Similar		CL	0.2		
								ML	0.2		
12	9	16-18	-	12/24	-	Yellowish red CLAY, trace silt, sand and fine gravel (moist, soft)		CL	0.2		
								ML	0.3		
13	10	18-20	-	23/24	-	Red SILT, some clay, trace fine gravel and f-c sand (moist)					
						Boring was terminated at 20' bgs. Temporary well set at 9-19' bgs.					

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING			
								MW20-SBS-3			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966 Boring Company: Parratt-Wolff, Inc.						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/16/00 End Date: 10/16/00			
OBG Geologist: Pam Cox						Screen Riser		Grout Sand Pack Bentonite			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change	Field Testing		
0	1							General Description	USCS	PID (ppm)	Black Light
						Boring pushed to 20 feet bgs.					
2	2										
4	3										
6	4										
8	5										
9	6										
10	7										
11	8										
12	9										
13	10										
								No soil samples collected			
								Boring was terminated at 20' bgs. Temporary well set at 10-20' bgs.			

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING			
								MW20-SBS-2			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966 Boring Company: Parratt-Wolff, Inc.						Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1			
OBG Geologist: Pam Cox						Screen Riser	=	Start Date: 10/16/00 End Date: 10/16/00	Grout	Sand Pack	Bentonite
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	Field Testing	
0	1					Boring pushed to 20 feet bgs.		PID (ppm)	Black Light		
2	2								USCS		
4	3								USCS		
6	4								USCS		
8	5								USCS		
9	6								USCS		
10	7								USCS		
11	8								USCS		
12	9								USCS		
13	10								USCS		
						No soil samples collected			USCS		
						Boring was terminated at 20' bgs. Temporary well set at 10-20' bgs.			USCS		

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING			
								MW20-SBS-1			
Client: GTEOSI Proj. Loc: Seneca Falls, New York File No.: 5816/23966 Boring Company: Parratt-Wolff, Inc.				Sampler: 2-foot acetate Hammer: 140 lbs - direct push		Page 1 of 1 Start Date: 10/16/00 End Date: 10/16/00					
OBG Geologist: Pam Cox						Screen Riser		Grout Sand Pack Bentonite			
Depth Below Grade	No.	Depth (feet)	Blow /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Description	USCS	Field Testing	
0	1	0-2	-	14/24	-	Blacktop Gray f-c SAND and GRAVEL, some silt (dry) - FILL		-		PID (ppm) 1.3	
2	2	2-4	-	6/24	-	Brown SILT, little clay, trace sand (moist, medium stiff)		ML		Black Light 1.1	
4	3	4-6	-	24/24	-	Brown / yellowish red SILT, some clay, little sand (moist, medium stiff)		ML		0.5	
6	4	6-8	-	12/24	-	Similar		ML		0.4	
8	5	8-10	-	24/24	-	Similar		ML		0.1	
9	6	10-12	-	8/24	-	Brown / yellowish red SILT, some clay, little sand and gravel (moist, medium stiff)		ML		0	
10	7	12-14	-	24/24	-	Similar		ML		0	
11	8	14-16	-	20/24	-	Similar		ML		0	
12	9	16-18	-	13/24	-	Brown / yellowish red SILT and CLAY, little sand (moist, very soft)		CL		0	
Lab sample collected at 1-3' bgs						Boring was terminated at 18' bgs. Temporary well set at 8-18' bgs.					

O'BRIEN & GERE ENGINEERS, INC.					TEST BORING LOG		REPORT OF BORING MW-BI-3				
Client: GTEOSI Proj. Loc: Seneca Falls, NY e No.: 23966.008.888					Sampler: 4-inch core barrel Hammer: Sonic Fall: NA		Page 1 of 2 Location: Start Date: 1/16/01 End Date: 1/16/01				
Boring Company: Prosonic Incorporated Foreman: Denzell OBG Geologist: David J. Carnevale							Screen Riser	=	\	Grout Sand Pack Bentonite	
Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing	PID (ppm)	UV
0		5	NA	5/5	NA	Olive black (5Y 2/1), moist, clayey SILT some fine to medium subrounded gravel to 3 ft, to moderate brown (5YR 4/4), with gray mottles, damp, SILT, some fine to medium subrounded gravel, little clay fine sand lenses between ~4 and 4.2 ft	/	/	/		ND
5		15	NA	10/7.5	NA	Moderate brown (5YR 4/4), damp, SILT, some very fine to medium subrounded gravel, little very fine sand to 8 ft, to brownish gray (5YR 4/1), moist, SILT, some very fine to medium subrounded gravel, little very fine sand to 15 ft	/	/	/	4.5 @ 5 ft	ND
10							/	/	/	55.1 @ 10 ft	
15		25	NA	10/10	NA	Moderate yellowish brown (10YR 5/4), saturated, fine to medium SAND, little silt, trace medium subrounded gravel to ~17.5 ft, to brownish gray (5YR 4/1), moist, clayey SILT, some fine to medium subrounded gravel to 25 ft	/	/	/	2.8 @ 15 ft	ND
20							/	/	/	23.1 @ 17 ft	



TEST BORING LOG						REPORT OF BORING				
						MW-BI-2				
O'BRIEN & GERE ENGINEERS, INC.						Page 1 of 2				
Client: GTEOSI						Location:				
Proj. Loc: Seneca Falls, NY						Start Date: 1/16/01				
Site No.: 23966.008.888						End Date: 1/16/01				
Boring Company: Prosonic Incorporated						Screen	=	\	Grout	
Foreman: Denzell						Riser	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sand Pack	
OBG Geologist: David J. Carnevale									Bentonite	
Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	UV
0	5	NA	5/4	NA		Asphalt from 0 to 0.3 ft, to light brown (SYR 6/4), moist, SILT, some clay and fine to medium subrounded gravel				ND
5	15	NA	10/10	NA		As above to ~13 ft, to brownish gray (SYR 4/1), CLAY and SILT, some fine to coarse gravel and cobbles, saturated at 12 ft			0.1 @ 5 ft	ND
10									0.1 @ 10 ft	
15	25	NA	10/10	NA		Brownish gray (SYR 4/1), saturated, silty CLAY, some fine to coarse gravel, few cobbles			0.0 @ 15 ft	ND
20									0.1 @ 20 ft	

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING MW-BI-2			
Client: GTEOSI						Sampler: 4-inch core barrel		Page 2 of 2 Location:			
Proj. Loc: Seneca Falls, NY						Hammer: Sonic		Start Date: 1/16/01 End Date: 1/16/01			
Site No.: 23966.008.888						Fall: NA		Screen Riser			
Boring Company: Prosonic Incorporated Foreman: Denzell OBG Geologist: David J. Carnevale						= \		Grout Sand Pack Bentonite			
Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	UV	
25		30	NA	5/5	NA	Brownish gray (5YR 4/1), saturated, clayey SILT, some fine to coarse sub-rounded gravel, few cobbles			0.1 @ 25 ft	ND	
30		35	NA	5/5	NA	As above to ~33 ft, to brownish gray (5YR 4/1), saturated CLAY to 35 ft			0.0 @ 30 ft	ND	
35		40	NA	5/3	NA	CLAY as above to ~37 ft, to weathered limestone bedrock to ~38.5 ft, competent bedrock to 40 ft			0.0 @ 35 ft	ND	
40							BEDROCK				
Monitoring well constructed of 5 ft of 2-inch diameter, 0.010-inch slot, schedule 40 PVC well screen flush-threaded to riser PVC casing to grade											

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG	REPORT OF BORING MW-BI-1			
Client: GTEOSI						Sampler: 4-inch core barrel	Page 1 of 2 Location:			
Proj. Loc: Seneca Falls, NY						Hammer: Sonic	Start Date: 1/17/01 End Date: 1/17/01			
Site No.: 23966.008.888						Fall: NA				
Boring Company: Prosonic Incorporated Foreman: Denzell OBG Geologist: David J. Carnevale						Screen Riser	=	\	Grout Sand Pack Bentonite	
Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	UV
0	5	NA	5/5	NA		Asphalt to 0.5 ft, to gravel subbase to 1 ft, to light brown (SYR 5/6) with brownish gray (SYR 4/1) mottles, moist silty CLAY, trace fine to medium rounded gravel.				ND
5	15	NA	10/6.5	NA		Moderate brown (SYR 4/4), moist, SILT some fine to coarse subrounded gravel trace clay			2.1 @ 5 ft	ND
0	25	NA	10/9	NA						
15	25	NA	10/9	NA		Brownish gray (SYR 4/1), moist, clayey SILT, some fine to medium subrounded gravel, fine sand seam 24 to 24.3 ft			118 @ 14 ft	ND
20										16 @ 20 ft

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG			REPORT OF BORING				
									MW-BI-1				
Client: GTEOSI						Sampler: 4-inch core barrel			Page 2 of 2				
Proj. Loc: Seneca Falls, NY						Hammer: Sonic			Location:				
Line No.: 23966.008.888						Fall: NA			Start Date: 1/17/01				
Boring Company: Prosonic Incorporated									End Date: 1/17/01				
Foreman: Denzell													
OBG Geologist: David J. Carnevale													
Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description			Stratum Change General Descript	Equip. Installed		Field Testing	
												PID (ppm)	
												UV	
25	30	NA	5/5	NA	Pale reddish brown (10R 5/4), saturated CLAY, trace fine to medium rounded gravel to 29.5 ft, to light olive brown (5Y 5/6), clayey SILT to 30 ft						65.2 @ 24 ft >9999 @ 25 ft		YES
30	35	NA	5/5	NA	Brownish gray (5YR 4/1), saturated, CLAY to 33 ft, to olive gray weathered limestone bedrock to 34 ft, to competent limestone bedrock to 35 ft						>9999 @ 28 ft 5452 @ 30 ft		ND
35								BEDROCK			1055 @ 33 ft 62 @ 35 ft		
Monitoring well constructed of 5 ft of 2-inch diameter, 0.010-inch slot, schedule 40 PVC well screen flush-threaded to riser PVC casing to grade													

TEST BORING LOG						REPORT OF BORING			
						MW-BR-1			
O'BRIEN & GERE ENGINEERS, INC.									
Client: GTEOSI						Sampler: 2-inch SPT	Page 1 of 2		
j. Loc: Seneca Falls, NY						Hammer: 140-lb.	Location:		
File No.: 5816/23966						Fall: 30-inches	Start Date: 6/21/01		
Boring Company: Parratt Wolff							End Date: 6/27/01		
Foreman: Layne Pech									
OBG Geologist: Eddy Teasdale									
Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	USCS	Field Testing PID (ppm)
0	1	2	--	24/6	--	0-12" Blacktop @ 12" grades to moderate yellowish brown (10YR 5/4) GRAVEL and SILT (fill) (wet, loose)	--		0.0
			5.3						
2	2	4	5-7	24/24	19	@ 3' grades to a moderate yellowish brown (10YR 5/4) SILT (wet, medium dense).	ML		0.0
			12-13						
4	3	6	4-4	24/12	11	Moderate yellowish brown (10YR 5/4) SILT, trace gravel (fill) (wet, medium dense).	ML		0.0
			7-13						
6	4	8	11-18	24/4	36	Same as above (dense)	ML		0.0
			18-18						
8	5	10	4-7	24/24	16	Same as above (medium dense)	ML		0.0
			9-12						
10	6	12	7-11	24/24	25	Same as above, with fine sand (medium dense)	ML		0.0
			14-14						
12	7	14	10-10	24/24	22	Same as above	ML		0.0
			12-12						
14	8	16	3-4	24/24	10	Same as above	ML		0.0
			6-10						
16	9	18	7-7	24/24	18	Same as above	ML		0.0
			11-14						
18	10	20	3-5	24/6	13	Same as above	ML		0.0
			8-11						
20	11	22	6-11	24/12	29	Moderate yellowish brown (10YR 5/4) SILT, trace gravel (subrounded limestone) (wet, medium dense)	ML		0.0
			18-17						
22	12	24	12-16	24/0	34	No recovery	--		NA
			18-19						
24	13	26	9-9	24/24	22	Moderate yellowish brown (10YR 5/4) SILT, trace rounded gravel (wet, medium dense)	ML		0.0
			13-17						
26	14	28	9-12	24/24	34	Moderate yellowish brown (10YR 5/4) SILT, trace rounded gravel (wet, dense).	ML		0.0
			22-19						

TEST BORING LOG						REPORT OF BORING			
						MW-BR-1			
O'BRIEN & GERE ENGINEERS, INC.						Page 2 of 2			
Client: GTEOSI						Location:			
Proj. Loc: Seneca Falls, NY						Start Date: 6/21/01			
File No.: 5816/23966						End Date: 6/27/01			
Boring Company: Parratt Wolff						Screen Riser	=	\	Grout Sand Pack Bentonite
Foreman: Layne Pech									
OBG Geologist: Eddy Teasdale									
Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	USCS	Field Testing PID (ppm) UV
28	15	30	6-10	24/24	22	Same as above (medium dense)	ML	0.0	
			12-15						
30	16	32	6-6	24/24	16	Same as above	ML	0.0	
			10-10						
32	17	34	8-11	24/24	24	@ 33' grades to moderate yellowish brown (10YR5/4) CLAY (moist, very stiff).	CL	0.0	
			13-8						
34	18	36	50/3	24/3	--	Dark gray (N3) Limestone (moist, very dense)	34' bgs Bedrock	--	--
36	19	38	50/0	24/0	--				
						Competent Limestone Bedrock auger to 39' and set 4" casing (5' socket for casing).			
						Roller Bit to 155' bgs. BT @ 155'			
						Screen: 45-155'			
						No. 2 Sand: 39 - 155'			
						Bentonite Chips: 17 - 39'			
						Grout: 0.5 - 17'			
						Flush Mounted 4" aluminum cover			
Interpretations presented on the logs are based on an interpretation of O'Brien & Gere Engineers, Inc. field logs and Parratt Wolff Inc. drilling logs.									

TEST BORING LOG						REPORT OF BORING			
						MW-BR-2			
O'BRIEN & GERE ENGINEERS, INC.						Page 1 of 3			
Client: GTEOSI						Location:			
j. Loc: Seneca Falls, NY						Start Date: 6/11/01			
File No.: 5816/23966						End Date: 6/18/01			
Boring Company: Parratt Wolff						Screen Riser	=	\	Grout Sand Pack Bentonite
Foreman: Layne Pech									
OBG Geologist: Chawn O'Dell									
Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	USCS	Field Testing PID (ppm) UV
0	--	1	--	--	--	Blacktop and crushed stone to 1'	--		
			--						
1	1	3	3-4	24/16	9	Pale brown (5YR5/2), SILT, little fine sand and gravel (angular), trace clay (moist, loose)	ML	0.1	
			5-6						
3	2	5	6-13	24/18	27	Same as above (moist, medium dense)	ML	0.1	
			14-15						
6	3	8	10-16	24/3	36	Moderate yellowish brown (10YR5/4), SILT, some fine sand, little clay and fine gravel (angular) (moist, dense)	ML	0.2	
			20-22						
8	4	10	19-26	24/4	55	Same as above (very dense)	ML	0.2	
			29-26						
10	5	12	9-10	24/24	25	Pale brown (5YR5/2) SILT, some fine - medium gravel (subangular to angular) little clay and fine sand (moist, medium dense).	ML	0.3	
			15-16						
12	6	14	10-32	24/24	54	Same as above (very dense)	ML	0.2	
			22-22						
14	7	16	13-9	24/22	16	Grayish red (10YR4/2) SILT, some fine sand, little fine to medium gravel (subangular to angular), trace clay (moist, medium dense)	ML	0.0	
			7-18						
16	8	18	7-14	24/23	25	Same as above	ML	0.1	
			11-11						
18	9	18-20	11-6	24/4	12	Grayish red (10YR4/2) SILT, some fine sand, little fine to coarse gravel (subangular to angular) and clay (wet, medium dense).	ML	0.1	
			6-10						
20	10	20-22	2-3	24/24	9	Grayish red (10YR4/2) SILT, some fine sand, little fine gravel (subangular) and clay, trace medium to coarse sand (wet, loose)	ML	0.1	
			6-6						
22	11	22-24	4-6	24/22	13	Same as above (medium dense)	ML	0.1	
			7-8						

TEST BORING LOG						REPORT OF BORING				
O'BRIEN & GERE ENGINEERS, INC.						MW-BR-2				
Client: GTEOSI						Sampler: 2-inch SPT				
j. Loc: Seneca Falls, NY						Hammer: 140 lb				
File No.: 5816/23966						Fall: 30-inches				
Boring Company: Parratt Wolff Foreman: Layne Pech OBG Geologist: Chawn O'Dell						Screen Riser	=	<input checked="" type="checkbox"/>	Grout Sand Pack Bentonite	
Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	USCS	Field Testing PID (ppm)	UV
24	12	24-26	11-12	24/23	18	Pale brown (5YR5/2) SILT, some fine to medium sand, little fine gravel (subangular) and clay (wet, medium dense)		ML	0.1	
			6-7							
26	13	26-28	4-8	24/18	28	Pale brown (5YR5/2) fine SAND, some silt, little medium to coarse sand, little fine gravel (subangular), trace clay (wet, medium dense)		SM	0.3	
			20-12							
28	14	28-30	4-6	24/24	14	Pale brown (5YR5/2) SILT, some fine sand, little fine to medium gravel (subangular), and little clay (wet, medium dense).		ML	0.1	
			8-9							
30	15	30-32	2-5	24/24	12	Pale brown (5YR5/2) SILT, some fine sand, little clay and fine to medium gravel (subangular), trace medium to coarse sand (wet, medium dense)		ML	0.0	
			7-9							
32	16	32-34	5-9	24/24	23	Same as above		ML	0.1	
			14-17							
34	17	34-36	3-5	24/4	12	Same as above		ML	0.0	
			7-12							
36	18	36-38	2-11	24/18	24	Same as above.		ML	0.0	
			13-14							
38	19	38-40	2-2	24/24	5	Pale brown (5YR5/2) SILT, some fine sand, little clay and fine to medium gravel (subangular) (wet, loose)		ML	0.0	
			3-4							
40	20	40-42	5-9	24/24	18	Same as above (medium dense)		ML	0.0	
			9-9							
42	21	42-44	4-6	24/24	14	Same as above		ML	0.0	
			8-11							
44	22	44-46	7-14	24/18	60	Same as above (very dense)		ML	0.0	
			46-17							
46	23	46-48	23-50	24/24	97	LIMESTONE (very dense).		--	0.0	
			47-53							

TEST BORING LOG							REPORT OF BORING			
O'BRIEN & GERE ENGINEERS, INC.							MW-BR-2			
Client: GTEOSI							Sampler: 2-inch SPT	Page 3 of 3		
j. Loc: Seneca Falls, NY							Hammer: 140 lb	Location:		
File No.: 5816/23966							Fall: 30-inches	Start Date: 6/21/01		
Boring Company: Parratt Wolff							Screen Riser	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Grout Sand Pack Bentonite
Foreman: Layne Pech										
OBG Geologist: Eddy Teasdale										
Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	USCS	Field Testing PID (ppm)	UV
48	24	48-50	19-21	24/12	41	Brownish gray (5YR4/1) SILT (till) and GRAVEL angular limestone (wet, dense).		GM	0.0	
			20-17							
50	25	50-51.4	16-22	17/12	72	Same as above (very dense) @ 51' grades to weathered limestone		GM	0.0	
			50/0.4							
52	26	52-52.7	50/.7	0.7/0.7	--	Medium dark gray (N4) SILT, trace clay (wet)		ML	0.0	
				--						
						Auger refusal @ 54'	Bedrock 53'			
60						Drill to 58' bgs with a 5 7/8 air hammer				
						Set 4 in flush thread casing to 58 ft				
65						5' Core samples to 98' bgs.				
70										
/5										
80										
85										
90										
95										
100		--	--	--	--	Dark gray (N3) LIMESTONE (wet).		--		
105		--	--	--	--	Same as above (dry)		--		
110		--	--	--	--	Same as above - wet Used forced water injection. Sample recovery very hard. Limestone (based on drilling rate). Switched to rollerbit.		--		
						BT @ 126'				
						Screen: 61-126'				
						No. 2 Sand: 58 - 126'				
						Bentonite Chips: 43 - 58'				
						Grout: 0.5 - 43'				
Interpretations presented on the logs are based on an interpretation of O'Brien & Gere Engineers, Inc. field logs and Parratt Wolff Inc. drilling logs.										

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING MW-BR-3			
Client: GTEOSI						Sampler: 2-inch SPT		Page 1 of 4			
J. Loc: Seneca Falls, NY						Hammer: 140 lb		Location:			
File No.: 5816/23966						Fall: 30-inches		Start Date: 6/14/01 End Date: 6/25/01			
Boring Company: Parratt Wolff Foreman: Layne Pech OBG Geologist: Eddy Teasdale						Screen Riser	=	\	Grout Sand Pack Bentonite		
Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Descript	Field Testing PID (ppm)		UV
0	1	2	--	24/12	--	0-6" blacktop. @ 6" grades to moderate brown (5YR3/4) SILT (moist)		--	0.0		
			7-8								
2	2	4	5-9	24/12	20	Moderate yellowish brown (10YR5/4) SILT, trace clay and fine sand (moist, medium dense)		ML	0.0		
			11-13								
4	3	6	11-9	24/9	21	Moderate yellowish brown (10YR5/4) SILT, some clay, trace fine sand (moist, medium dense)		ML	0.0		
			12-14								
6	4	8	14-19	24/8	38	Moderate yellowish brown (10YR5/4) SILT, some clay (moist, dense)		ML	0.0		
			19-24								
8	5	10	3-5	24/14	13	Moderate yellowish brown (10YR5/4) SILT, little clay, trace subangular gravel (moist, medium dense)		ML	0.0		
			8-11								
10	6	12	5-7	24/18	17	Same as above		ML	0.0		
			10-10								
12	7	14	10-11	24/19	25	Moderate yellowish brown (10YR5/4) SILT, little clay, trace angular gravel (moist, medium dense)		ML	0.0		
			14-15								
14	8	16	2-4	24/18	10	Moderate yellowish brown (10YR5/4) SILT, some clay, trace angular gravel (moist, medium dense)		ML	0.0		
			6-6								
16	9	18	3-3	24/24	22	Same as above		ML	0.0		
			13-16								
18	10	20	2-5	24/5	12	Same as above		ML	0.0		
			7-9								
20	11	22	3-5	24/24	13	Moderate brown (5YR4/4) CLAY, some silt, trace gravel (moist, stiff)		CL	0.0		
			8-10								
22	12	24	12-13	24/24	26	Same as above (very stiff)		CL	0.0		
			13-13								
24	13	26	3-3	24/19	6	Moderate brown (5YR3/4) SILT, little clay, trace gravel (moist, loose)		ML	0.0		
			3-5								

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING MW-BR-3			
Client: GTEOSI						Sampler: 2-inch SPT		Page 2 of 4			
Loc: Seneca Falls, NY						Hammer: 140 lb		Location:			
File No.: 5816/23966						Fall: 30-inches		Start Date: 6/14/01			
Boring Company: Parratt Wolff Foreman: Layne Pech OBG Geologist: Eddy Teasdale						Screen Riser	=	\	Grout Sand Pack Bentonite		
Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Descript	USCS	Field Testing PID (ppm)	
26	14	28	4-6	24/24	13	Same as above (medium dense)		ML	0.0	UV	
			7-8								
28	15	30	1-2	23/8	4	Moderate brown (5YR4/4) SILT, some clay, trace gravel (wet, loose)		ML	0.0	UV	
			2-4								
30	16	32	1-1	24/24	3	Same as above (very loose)		ML	0.0	UV	
			2-3								
32	17	34	3-4	24/24	9	Same as above (loose)		ML	0.0	UV	
			5-6								
34	18	36	1-2	24/24	4	Same as above		ML	0.0	UV	
			2-4								
36	19	38	3-4	24/24	10	Same as above		ML	0.0	UV	
			6-6								
38	20	40	1-2	24/24	5	Same as above		ML	0.0	UV	
			3-4								
40	21	42	1-19	24/12	43	Moderate yellowish brown (10YR5/4) SILT, trace gravel and clay (wet) dense @ 41.2' grades to grayish brown GRAVEL @ 41.9' grades to moderate yellowish brown (10YR5/4) SILT, trace gravel (subangular) (wet, dense)		ML	0.0	UV	
			24-6								
42	22	44	13-46	24/12	--	Dark yellowish brown (10YR4/2) GRAVEL (weathered limestone) (wet, very dense)		GP	0.0	UV	
			50/.1								
44	23	46	8-54	24/6	--	Dark gray (N3) GRAVEL (subangular weathered limestone) (wet, very dense).		GP	0.0	UV	
			--								
46	24	48	50-50/.2	24/8	--	Same as above		GP	0.0	UV	
			--								

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING				
								MW-BR-3				
Client: GTEOSI						Sampler: 2-inch SPT		Page 3 of 4				
j. Loc: Seneca Falls, NY						Hammer: 140 lb		Location:				
File No.: 5816/23966						Fall: 30-inches		Start Date: 6/14/01				
Boring Company: Parratt Wolff						End Date: 6/25/01		Screen Riser				
Foreman: Layne Pech								Grout Sand Pack Bentonite				
OBG Geologist: Eddy Teasdale												
Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Descript	Field Testing PID (ppm)		UV	
48	25	50	12-22	24/12	34	Dark gray (N3) GRAVEL, some silt, little fine sand (wet, dense)		GP	0.0			
			12-13									
50	26	52	10-33	24/24	68	Dark yellowish brown (10YR4/2) SILT and GRAVEL (angular weathered limestone) (wet, very dense)		GM	0.0			
			35-50									
52	27	54	24-50/.2	24/8	--	Same as above (saprolite layer)		GM	0.0			
			--									
54	28	56	50/.1	24	--	Auger refusal at 53'. Broke 2" spoon Rock fragments. Use air-hammer (5 7/8) to 60' (7" socket)		--	0.0			
			--									
60		--	--	--	--	Dark gray (N3) LIMESTONE (wet)		--	0.0			
65						Dark gray (N3) LIMESTONE (dry)			0.0			
70						Same as above			0.0			
75						Same as above		--	0.0			
80						Same as above			0.0			
85						Same as above			0.0			
90						Same as above		--	0.0			
95						Same as above			0.0			
100						Same as above			0.0			
105						Same as above		--	0.0			
110						Same as above			0.0			
115						Same as above @ 115' very dry (BT at 120' bgs) allow time to recharge			0.0			

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING			
								MW-BR-3			
Client: GTEOSI			Sampler: 2-inch SPT			Page 4 of 4					
Proj. Loc: Seneca Falls, NY			Hammer: 140 lb			Location:					
File No.: 5816/23966			Fall: 30-inches			Start Date: 6/14/01					
Boring Company: Parratt Wolff			End Date: 6/25/01								
Foreman: Layne Pech						Screen = \ Grout					
OBG Geologist: Eddy Teasdale						Riser   Sand Pack					
						Bentonite					
Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	USCS	Field Testing PID (ppm)	UV	
125						Dark gray (N3) LIMESTONE (dry, hard)		--	0.0		
130						Same as above		--	0.0		
135						Same as above		--	0.0		
140						Same as above		--	0.0		
145						Same as above		--	0.0		
150						Same as above		--	0.0		
						BT at 150' bgs.					
						Screen: 60 - 150'					
						No. 2 Sand: 58 - 150'					
						Bentonite Chips: 43 - 58'					
						Grout: 0.5 - 43'					
						Flush Mounted 4" aluminum cover					
Interpretations presented on the logs are based on an interpretation of O'Brien & Gere Engineers, Inc. field logs and Parratt Wolff Inc. drilling logs.											

TEST BORING LOG						REPORT OF BORING			
						MW-BR-4			
O'BRIEN & GERE ENGINEERS, INC.						Page 1 of 2			
Client: GTEOSI						Location:			
j. Loc: Seneca Falls, NY						Start Date: 6/7/01			
File No.: 5816/23966						End Date: 6/8/01			
Boring Company: Parratt Wolff Foreman: Layne Pech OBG Geologist: Dave Carnevale						Screen Riser	=	\	Grout Sand Pack Bentonite
Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	USCS	Field Testing PID (ppm) UV
0	1	2	1-2	24/12	4	Moderate yellowish brown (10YR5/4) SILT, some fine sand (moist, very loose)		ML	0.0
			2-1						
2	2	4	2-4	24/12	11	Pale yellowish brown (10YR6/2) SILT, little fine sand, trace clay (moist, medium dense)		ML	0.0
			7-7						
4	3	6	3-6	24/24	15	Olive gray (5YR4/1) highly weathered LIMESTONE (moist, medium dense)		--	0.0
			9-19						
6	4	8	13-9	24/24	19	@ 7' grades to dark reddish brown (10YR3/4) SILT (moist, medium dense)		ML	0.0
			10-11			@ 7.5' grades to olive weathered LIMESTONE			
8	5	10	4-7	24/24	19	Olive gray (5YR4/1) SILT (moist, medium dense).		ML	0.0
			12-32						
10	6	11.4	7-40	17/17	--	Light olive gray (5YR6/1) highly weathered LIMESTONE (dry)		--	0.0
			50/.4						
12	7	12.8	15	10/10	--	Same as above.		--	0.0
			50/.3						
14	8	16	6-9	24/18	35	Olive gray (5YR4/1) highly weathered LIMESTONE (moist, dense)		--	0.0
			26-20						
16	9	17.5	20-53	18/12	103	@ 17' grades to medium dark gray weathered LIMESTONE (wet, very dense)		--	0.0
			50 - x						
18	10	19.8	28-38	22/22	60	@ 19' grades to dusky yellow (5YR6/4) fine SAND (wet).		--	0.0
			22-50/.3			@ 19.2' grades to dark gray (N3) weathered LIMESTONE (very dense)		--	0.0
20	11	218	10-15	20/22	51	Dark gray (N3) LIMESTONE (wet, very dense)		--	0.0
			36-50/.3						
22	12	22.4	50/0.4	--	--	Same as above with some silt layers		--	0.0
24	13	25.8	20-28	22/22	36	Same as above with some silt layers (dense)		--	0.0
			8-50/0.3						
26	14	26.2	50/0.2	3/3	--	No Recovery		--	
26.2						Set a 4-inch flush thread casing to 26' Begin Air Hammer			

Interpretations presented on the logs are based on an interpretation of O'Brien & Gere Engineers, Inc. field logs and Parratt Wolff Inc. drilling logs.

TEST BORING LOG						REPORT OF BORING				
						MW-BR-5				
O'BRIEN & GERE ENGINEERS, INC.						Page 1 of 2				
Client: GTEOSI						Location:				
J. Loc: Seneca Falls, NY						Start Date: 6/6/01				
File No.: 5816/23966						End Date: 6/8/01				
Boring Company: Parratt Wolff						Screen Riser	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Grout	
Foreman: Layne Pech							<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sand Pack	
OBG Geologist: Dave Carnevale						Bentonite				
Depth Below Grade		Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change	Field Testing		
							General Descript	USCS	PID (ppm) UV	
0	1	2	WOH	24/18	5	Moderate yellowish brown (10YR5/4) SILT, little clay (moist, loose)		ML	0.0	
			3-2							
2	2	4	4-3	24/6	7	Same as above		ML	0.0	
			4-4							
4	3	6	4-5	24/0	9	No recovery		--	--	
			4-4							
6	4	8	4-5	24/5	9	Dark yellowish brown SILT, little fine sand, trace clay (moist, loose)		ML	0.0	
			4-5							
8	5	10	9-5	24/0	7	No recovery		--	--	
			2-2							
10	6	12	2-2	24/24	5	Olive gray (5YR4/1) SILT (moist, loose)		--	0.2	
			3-16			@ 11.8' grades to dark green/gray (5YR4/1) weathered rock	weathered bedrock			
12	7	12.3	50/0.3	--	--	Olive gray (5YR4/1) highly weathered LIMESTONE (wet)		--	1.4	
14	8	15.2	8-58	15/15	--	Same as above		--	2.5	
			50/0.2							
16	9	16.8	13-	10/10	--	Same as above		--	0.5	
			50/0.3							
18	10	19.3	14-37	15.6	--	Same as above		--	3.2	
			50/0.3							
20	11	21.6	22-11	19/19	--	Olive gray (5YR4/1) LIMESTONE, some fine sand (wet)		--	0.0	
			36-50/0.1							
22	12	24	13-20	24/24	40	Olive gray (5YR4/1) weathered LIMESTONE (wet, dense)		--	0.8	
			20-20							
24	13	26	3-11	24/24	30	Dark gray (N3) weathered LIMESTONE (medium dense)		--	0.2	
			19-40							
26	14	28	25-11	24/24	14	Grayish black (N3) weathered LIMESTONE and SHALE (medium dense)		--	0.0	
			3-24							
28	15	28.8	50/0.3	10/10	--	Set surface casing to 28' 4-inch flush thread casing				



TEST BORING LOG						REPORT OF BORING				
						MW-BR-6				
O'BRIEN & GERE ENGINEERS, INC.						Page 1 of 3				
Client: GTEOSI						Location:				
j. Loc: Seneca Falls, NY						Start Date: 6/19/01				
File No.: 5816/23966						End Date: 6/20/01				
Boring Company: Parratt Wolff						Screen Riser	=	\	Grout	
Foreman: Layne Pech									Sand Pack	
OBG Geologist: Eddy Teasdale									Bentonite	
Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	USCS	Field Testing PID (ppm)	UV
0	1	2	--	24/12	78	0-6" blacktop, grades to moderate yellowish brown (10YR5/4) CLAY, some silt, trace gravel (dry, hard)		CL	0.0	NEG
			31-44							
2	2	4	40-33	24/6	68	Moderate yellowish brown (10YR5/4) SILT, some clay and gravel (fill) (dry, hard)		ML	0.0	NEG
			35-31							
4	3	6	6-7	24/12	19	Moderate yellowish brown (10YR5/4) SILT, some fine sand (wet, medium dense).		ML	0.0	NEG
			12-13							
6	4	8	15-17	24/12	36	@ 7.6' grades to moderate yellowish brown (10YR5/4) SILT, little clay trace gravel (fill) (moist, dense)		ML	0.0	NEG
			19-26							
8	5	10	4-6	24/12	19	Moderate yellowish brown (10YR5/4) SILT, trace fine sand and clay (moist, medium dense).		ML	0.0	NEG
			13-14							
10	6	12	4-5	24/24	13	Moderate yellowish brown (10YR5/4) SILT, little clay, trace sand (moist, medium dense)		ML	0.0	NEG
			8-1							
12	7	14	9-11	24/7	60	Moderate yellowish brown (10YR5/4) fine SAND, some silt (wet, very dense) @ 13.6' GRAVEL (angular limestone)		SM	0.0	NEG
14	8	16	18-16	24/24	19	Moderate yellowish brown (10YR5/4) SILT (moist, hard). @ 15.9' dark gray (N3) LIMESTONE (dry, medium dense)		ML	0.0	NEG
			3-16							
16	9	18	6-4	24/6	8	Moderate yellowish brown (10YR5/4) SILT, trace gravel (moist, loose)		ML	0.3	NEG
			4-5							
18	10	20	4-4	24/12	23	Moderate yellowish brown (10YR5/4) SILT (wet, hard). @ 19.3' grades to grayish brown (5YR3/2) SILT (dry, medium dense).		ML	0.0	NEG
			19-41							
20	11	22	12-36	24/7	26	Same as above		ML	0.0	NEG
			50/.4							
22	12	24	19-50/.3	24/12	--	Dark yellowish brown (10YR4/2) SILT, trace gravel (perched water at 22 - 22.6).	Perched water	ML	0.0	NEG
			--							
24	13	26	50/.4	24/4	-	Dark yellowish brown (10YR4/2) weathered LIMESTONE	Weathered rock	--	0.0	NEG
			--							

O'BRIEN & GERE ENGINEERS, INC.						TEST BORING LOG		REPORT OF BORING			
								MW-BR-6			
Client: GTEOSI						Sampler: 2-inch SPT		Page 2 of 3			
J. Loc: Seneca Falls, NY						Hammer: 140 lb		Location:			
File No.: 5816/23966						Fall: 30-inches		Start Date: 6/19/01			
Boring Company: Parratt Wolff						End Date: 6/20/01					
Foreman: Layne Pech											
OBG Geologist: Eddy Teasdale											
Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description		Stratum Change General Descript			Field Testing PID (ppm) UV
26	14	28	35-50/.4	24/12	--	Dark gray (N3) SILT and GRAVEL (angular, weathered rock) (dry, very dense). Same as above (medium dense). Same as above. Grayish brown (5YR3/2) SILT (moist, medium dense). Moderate yellowish brown (10YR5/4) SILT and GRAVEL (wet, dense) @ 35.4' grades to dark yellowish brown (10YR4/2) (dry, dense)		Perched	USCS		GM 0.0 NEG
			--						GM		0.0 NEG
									GM		0.0 NEG
28	15	30	19-18	24/12	30				GM		0.0 NEG
			12-11						GM		0.0 NEG
30	16	32	8-8	24/-	13				ML		0.0 NEG
			5-3						ML		0.0 NEG
32	17	34	6-8	24/18	13				GM		0.0 NEG
			5-11						GM		0.0 NEG
34	18	36	10-16	24/24	36				GM		0.0 NEG
			20-20						GM		0.0 NEG
36	19	38	28-33	24/12	60	Dark yellowish brown (5YR4/4) SILT, trace gravel (dry, very dense). Moderate yellowish brown (10YR5/4) SILT and GRAVEL (wet, very loose)		water	ML		0.0 NEG
			27-2						GM		0.0 NEG
38	20	40	4-2	24/24	3				GM		0.0 NEG
			--						GM		0.0 NEG
40	21	42	1-1	24/2	2				GM		0.0 NEG
			1-1						GM		0.0 NEG
42	22	44	1-3	24/12	6				GM		0.0 NEG
			3-9						GM		0.0 NEG
44	23	46	4-4	24/10	13				GM		0.0 NEG
			9-23						ML		0.0 NEG
46	24	48	33-24	24/12	35	Same as above. @ 47.6' grades to dusky yellowish brown (10YR2/2) SILT (wet, dense). Sulfur odor. Dark gray (N3) GRAVEL (subangular) (wet, loose). @ 49.6' grades to dusky brown (5YR2/2) SILT (loose)			GM		0.0 NEG
			11-11						GM		0.0 NEG
48	25	50	5-4	24/24	8				GM		0.0 NEG
			4-5						GM		0.0 NEG
50	26	52	4-4	24/24	14				GM		0.0 NEG
			10-12						GM		0.0 NEG
									GM		0.0 NEG
									GM		0.0 NEG
									GM		0.0 NEG
									GM		0.0 NEG

TEST BORING LOG						REPORT OF BORING				
						MW-BR-6				
O'BRIEN & GERE ENGINEERS, INC.						Page 3 of 3				
Client: GTEOSI						Location:				
Loc: Seneca Falls, NY						Start Date: 6/19/01				
File No.: 5816/23966						End Date: 6/20/01				
Boring Company: Parratt Wolff						Screen	=	\	Grout	
Foreman: Layne Pech						Riser			Sand Pack	
OBG Geologist: Eddy Teasdale									Bentonite	
Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	USCS	Field Testing PID (ppm)	UV
52	27	54	20-18	24/	28	Dark gray (N3) GRAVEL and SILT (wet, medium dense).		GM	0.0	NEG
			10-18					ML	0.0	NEG
54	28	56	6-6	24/24	17	Dark gray (N3) SILT, trace fine sand (wet, medium dense).		ML	0.0	NEG
			11-17					ML	0.0	NEG
56	29	58	20-44	24/18	--	Dark gray (N3) SILT, little gravel (wet, dense).		ML	0.0	NEG
			50/.3					GM	0.0	NEG
58	30	60	11-36	24/18	--	Same as above		ML	0.0	NEG
			50/.4					GM	0.0	NEG
60	31	62	22-58/.5	24/x	--	Dark gray (N3) SILT and GRAVEL (dense).		GM	0.0	NEG
			--					GM	0.0	NEG
62	32	64	23-22	24/x	43	Same as above. @ 63.4' grades to dark gray (N3) GRAVEL (angular) (angular), little silt (dense)		GM	0.0	NEG
			21-40					--	0.0	NEG
64	33	66	50/0.3	24/3	--	Dark gray (N3) LIMESTONE (sub-angular) trace silt (wet)		--	0.0	NEG
			--					--	0.0	NEG
66	34	68	x-33	24/24	56	Same as above (very dense)		--	0.0	NEG
			23-18					--	0.0	NEG
68	35	70	10-22	24/	52	Same as above, some silt		--	0.0	NEG
			30-30					--	0.0	NEG
70	36	72	16-40	24/18	90	Same as above		--	0.0	NEG
			50/0.3					--	0.0	NEG
72	37	74	50/0.2	24/2	--	Same as above, angular rock fragments. Note: 6 1/4 augers hit refusal. Drilling rate and footage decreased.		--	0.0	NEG
			--			BT at 74' bgs				
						Screen: 44 - 74'				
						No. 2 Sand: 40 - 74'				
						Bentonite Chips: 25 - 40'				
						Grout: 0.5 - 25'				
						Flush Mounted 4" aluminum cover				

Interpretations presented on the logs are based on an interpretation of O'Brien & Gere Engineers, Inc. field logs and Parratt Wolff Inc. drilling logs.



Date 10/17/00Site Name FORMER PHILIPS DISPLAY COMPONENTSWeather CLOUDY ~55°F WIND 5 MPH - WLocation SENECA FALLSWell # MW20-GW-1Project No. 23966Evacuation Method NONEPersonnel CAG/KRHSampling Method TEFLON BAILER

## Well Information:

Depth of Well \* 16.76 ft.

Water Volume /ft. for:

Depth to Water 12.16 ft.

2" Diameter Well = 0.163 X LWC

Length of Water Column ~1.6 ft.

4" Diameter Well = 0.653 X LWC

Volume of Water in Well \_\_\_\_\_ gal.(s)

6" Diameter Well = 1.469 X LWC

3X Volume of Water in Well \_\_\_\_\_ gal.(s)

Volume removed before sampling \_\_\_\_\_ gal.(s)  
Did well go dry? \_\_\_\_\_

\* Measurements taken from

 Well Casing Protective Casing (Other, Specify) Ground Surface

## Instrument Calibration:

## pH Buffer Readings

## Conductivity Standard Readings

4.0 Standard \_\_\_\_\_

84 S Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

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\_\_\_\_\_

\_\_\_\_\_

## Water Sample:

Time Collected 10:15

## Physical Appearance at Start

## Physical Appearance at Sampling

Color CLEAR

Color \_\_\_\_\_

Odor None

Odor \_\_\_\_\_

Turbidity (> 100 NTU) <100 (31)

Turbidity (&gt; 100 NTU) \_\_\_\_\_

Sheen/Free Product None

Sheen/Free Product \_\_\_\_\_

## Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>1/0 Ml VIAL</u>	<u>VIAL</u>	<u>3</u>	<u>N/A</u>	<u>HCL</u>	

Notes: \* WELL + WATER DEPTHS ARE MEASURED FROM GROUND SURFACE. LENGTH OF PVC PIPE ABOVE GROUND IS 2.7 FT.

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/17/00Site Name ARMER-ATLANTIS DISPLAY COMPONENTSWeather Cloudy ~55°F Wind SSW - WLocation SENECA FALLSWell # MW20-6W-2Project No. 23966Evacuation Method NONEPersonnel CAB/KRHSampling Method TEFLON BAILER

## Well Information:

Depth of Well \* 13.84 ft

Water Volume /ft. for:

Depth to Water \* 3.99 ft

2" Diameter Well = 0.163 X LWC

Length of Water Column 9.87 ft

4" Diameter Well = 0.653 X LWC

Volume of Water in Well \_\_\_\_\_ gal.(s)

6" Diameter Well = 1.469 X LWC

3X Volume of Water in Well \_\_\_\_\_ gal.(s)

Volume removed before sampling \_\_\_\_\_ gal.(s)  
Did well go dry?

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify)  Ground Surface

## Instrument Calibration:

pH Buffer Readings

Conductivity Standard Readings

4.0 Standard \_\_\_\_\_

84 S Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected 10:40

Physical Appearance at Start

Physical Appearance at Sampling

Color clear

Color \_\_\_\_\_

Odor none

Odor \_\_\_\_\_

Turbidity (> 100 NTU) <100 (73)

Turbidity (&gt; 100 NTU) \_\_\_\_\_

Sheen/Free Product none

Sheen/Free Product \_\_\_\_\_

## Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>40mL</u>	<u>VIAL</u>	<u>3</u>	<u>N/A</u>	<u>HCl</u>	

Notes: \* WELL &amp; WATER DEPTHS WERE FROM GROUND SURFACE. LENGTH OF PVC PIPE ABOVE GS WAS 1.42 FT.

Date 10/17/00Site Name FORMER PHILLIPS DISPLAY COMPONENTSWeather Cloudy ~55°F WIND 15MPH -WLocation SENECA FALLSWell # MW20-GW-3Project No. 23966Evacuation Method NO/NRPersonnel OAG/KRHSampling Method TEFLON BARRIER

## Well Information:

Depth of Well \* 15.19 ft.

Water Volume /ft. for:

Depth to Water \* 10.03 ft.

2" Diameter Well = 0.163 X LWC

Length of Water Column 5.16 ft.

4" Diameter Well = 0.653 X LWC

Volume of Water in Well \_\_\_\_\_ gal(s)

6" Diameter Well = 1.469 X LWC

3X Volume of Water in Well \_\_\_\_\_ gal(s)

Volume removed before sampling \_\_\_\_\_ gal(s)  
Did well go dry? \_\_\_\_\_

\* Measurements taken from \_\_\_\_\_

Well Casing

Protective Casing

(Other, Specify)  Ground Surface

## Instrument Calibration:

pH Buffer Readings

Conductivity Standard Readings

4.0 Standard \_\_\_\_\_

84 S Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected 11:30

## Physical Appearance at Start

## Physical Appearance at Sampling

Color Cloudy-Brown

Color \_\_\_\_\_

Odor none

Odor \_\_\_\_\_

Turbidity (> 100 NTU) 198

Turbidity (&gt; 100 NTU) \_\_\_\_\_

Sheen/Free Product none

Sheen/Free Product \_\_\_\_\_

## Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>10 mL</u>	<u>TEFLON</u>	<u>3</u>	<u>N/A</u>	<u>HCL</u>	

Notes: \* WELL &amp; WATER DEPTHS ARE MEASURED FROM GROUND SURFACE. LENGTH OF PVC PIPE ABOVE GS WAS 1.86 ft.

Date 10/17/00Site Name ARMER PHILIPS ASSEMBLY COMPONENTSWeather CLOUDY NSW WIND 5 MPH .0Location SENECA FALLSWell # FOT-GW-1Project No. 23964Evacuation Method NONEPersonnel CAG/RHSampling Method TEFLON BAIRLE

## Well Information:

Depth of Well \* 7.61 ft.

Water Volume /ft. for:

Depth to Water \* 2.14 ft.

2" Diameter Well = 0.163 X LWC

Length of Water Column 5.47 ft.

4" Diameter Well = 0.653 X LWC

Volume of Water in Well \_\_\_\_\_ gal(s)

6" Diameter Well = 1.469 X LWC

3X Volume of Water in Well \_\_\_\_\_ gal(s)

Volume removed before sampling \_\_\_\_\_ gal(s)  
Did well go dry?

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify)  Ground Surface

## Instrument Calibration:

pH Buffer Readings

Conductivity Standard Readings

4.0 Standard \_\_\_\_\_

84 S Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
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\_\_\_\_\_  
\_\_\_\_\_

## Water Sample:

Time Collected \_\_\_\_\_

## Physical Appearance at Start

## Physical Appearance at Sampling

Color

CLEAR

Color

Odor

DEESEL SMELL

Odor

Turbidity (&gt; 100 NTU)

<100 (79)

Turbidity (&gt; 100 NTU)

Sheen/Free Product

NONIC

Sheen/Free Product

## Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
1/10ML	KIAL	3	n/a	HCL	

## Notes:

\* WELL + WATER DEPTH WERE MEASURED FROM GROUND SURFACE. LENGTH OF PVC PIPE ABOVE GS WAS 1.68 FT.

Date 10/17/00Site Name FRANK PHILIPS DISPLAY EXHIBITSWeather CLOUDY N 55°F WIND 15 MPH - WLocation SENECA FALLSWell # FOT-6W-2Project No. 29964Evacuation Method NONEPersonnel CAG/KRHSampling Method TEFLON BAGGER

## Well Information:

Depth of Well \* 10.81 ft.

Water Volume /ft. for:

Depth to Water \* 6.82 ft.

2" Diameter Well = 0.163 X LWC

Length of Water Column 3.99 ft.

4" Diameter Well = 0.653 X LWC

Volume of Water in Well \_\_\_\_\_ gal(s)

6" Diameter Well = 1.469 X LWC

3X Volume of Water in Well \_\_\_\_\_ gal(s)

Volume removed before sampling \_\_\_\_\_ gal(s)  
Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify) bottom surface

## Instrument Calibration:

## pH Buffer Readings

## Conductivity Standard Readings

4.0 Standard \_\_\_\_\_

84 S Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

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initial \_\_\_\_\_

## Water Sample:

Time Collected \_\_\_\_\_

## Physical Appearance at Start

## Physical Appearance at Sampling

Color

CLEAR

Color

\_\_\_\_\_

Odor

none

Odor

\_\_\_\_\_

Turbidity (&gt; 100 NTU)

<100 (40)

Turbidity (&gt; 100 NTU)

\_\_\_\_\_

Sheen/Free Product

none

Sheen/Free Product

\_\_\_\_\_

## Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>40 ml</u>	<u>TEFLON</u>	<u>3</u>	<u>N/A</u>	<u>HCL</u>	

## Notes:

\* WELL + WATER DEPTHS ARE MEASURED FROM GROUND SURFACE. LENGTH OF PVC PIPE ABOVE GS WAS 2.15 FT.

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/17/00Site Name EMERG. PHILIPS DISPLAY CONVENTIONWeather Cloudy 55°F Wind SSW 0-10 mphLocation SEAWICK FALLSWell # FOT-GW-3Project No. 23966Evacuation Method NonePersonnel CAB/ARHSampling Method TEFLON BAGGER

## Well Information:

Depth of Well \* 7.19 ft.

Water Volume /ft. for:

Depth to Water \* 0.29 ft.

2" Diameter Well = 0.163 X LWC

Length of Water Column 6.9 ft.

4" Diameter Well = 0.653 X LWC

Volume of Water in Well  gal(s)

6" Diameter Well = 1.469 X LWC

3X Volume of Water in Well  gal(s)Volume removed before sampling  gal(s)  
Did well go dry? \* Measurements taken from  Well Casing  Protective Casing(Other, Specify)  glass surface

## Instrument Calibration:

## pH Buffer Readings

## Conductivity Standard Readings

4.0 Standard 84 S Standard 7.0 Standard 1413 S Standard 10.0 Standard 

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cminitial initial initial initial 

## Water Sample:

Time Collected 

## Physical Appearance at Start

## Physical Appearance at Sampling

Color Cloudy/CloudyColor Odor DIESEL SMELLOdor Turbidity (> 100 NTU) 314Turbidity (> 100 NTU) Sheen/Free Product SHENSheen/Free Product 

## Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40mL	VIAL	3	n/a	HCl	

Notes: \* WELL + WATER DEPTHS WILL MEASURED FROM GROUND SURFACE. LENGTH OF PVC PIPE ABOVE GS AND 0.75 FT.

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/17/00Site Name KEMER PHILLIPS DISPLAY CONTRACTORSWeather CLOUDY ~55°F WIND 15MPH - WLocation SENECA FALLSWell # FOT-6W-4Project No. 23966Evacuation Method NONEPersonnel CAB/KRHSampling Method TEFLON BAILER

## Well Information:

Depth of Well \* 6.64 ft

Water Volume /ft. for:

Depth to Water 2.112 ft2" Diameter Well =  $0.163 \times \text{LWC}$ Length of Water Column 2.52 ft4" Diameter Well =  $0.653 \times \text{LWC}$ 

Volume of Water in Well \_\_\_\_\_ gal.(s)

6" Diameter Well =  $1.469 \times \text{LWC}$ 

3X Volume of Water in Well \_\_\_\_\_ gal.(s)

Volume removed before sampling \_\_\_\_\_ gal.(s)  
Did well go dry? \_\_\_\_\_

Measurements taken from

Well Casing

Protective Casing

(Other, Specify)

clean surface

## Instrument Calibration:

## pH Buffer Readings

## Conductivity Standard Readings

4.0 Standard \_\_\_\_\_

84 S Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected \_\_\_\_\_

## Physical Appearance at Start

Color

clear

## Physical Appearance at Sampling

Odor

none

Color

\_\_\_\_\_

Turbidity (&gt; 100 NTU)

<100 (27)

Turbidity (&gt; 100 NTU)

\_\_\_\_\_

Sheen/Free Product

none

Sheen/Free Product

\_\_\_\_\_

## Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>10ml</u>	<u>VIAL</u>	<u>3</u>	<u>N/A</u>	<u>HCl</u>	

Notes:  
\* WELL + WATER DEPTH were measured from clean surface. LENGTH OF PVC PIPE ABOVE GS AND 1.31 ft.

Date 10/17/00Site Name FOUR PHASES ASSESSMENTWeather clear w/ 55°F wind 15 mph w/Location SENECA FALLSWell # B2A-GW-1Project No. 23966Evacuation Method nonePersonnel OTB/ARHSampling Method TELESCOPIC BAILER

## Well Information:

Depth of Well \* 19.44 ft.

Water Volume /ft. for:

Depth to Water \* 7.71 ft.

2" Diameter Well = 0.163 X LWC

Length of Water Column 11.73 ft.

4" Diameter Well = 0.653 X LWC

Volume of Water in Well \_\_\_\_\_ gal(s)

6" Diameter Well = 1.469 X LWC

3X Volume of Water in Well \_\_\_\_\_ gal(s)

Volume removed before sampling \_\_\_\_\_ gal(s)  
Did well go dry? \_\_\_\_\_

Measurements taken from

Well Casing

Protective Casing

(Other, Specify)  Ground Surface

## Instrument Calibration:

pH Buffer Readings

Conductivity Standard Readings

4.0 Standard \_\_\_\_\_

84 S Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected \_\_\_\_\_

Physical Appearance at Start

Physical Appearance at Sampling

Color

clear

Color

\_\_\_\_\_

Odor

none

Odor

\_\_\_\_\_

Turbidity (&gt; 100 NTU)

<100 (75)

Turbidity (&gt; 100 NTU)

\_\_\_\_\_

Sheen/Free Product

none

Sheen/Free Product

\_\_\_\_\_

## Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>40ML</u>	<u>VIAL</u>	<u>3</u>	<u>n/a</u>	<u>HCL</u>	

Notes:  
\* WELL + WATER DEPTHS WERE MEASURED FROM GROUND SURFACE. LEVEL OF PVC PIPE ABOVE GROUND WAS 2.45 FT.

Date 10/17/00Site Name FRANK PHILIPS ROSEAUWeather Cloudy ~55°F very humidLocation SENECA FALLSWell # B2A-6W-QProject No. 23966Evacuation Method NONEPersonnel CAB/KRHSampling Method TELESCOPIC BAILER

## Well Information:

Depth of Well \* 17.35 ft.

Water Volume /ft. for:

Depth to Water \* 11.50 ft.2" Diameter Well =  $0.163 \times \text{LWC}$ Length of Water Column 5.85 ft.4" Diameter Well =  $0.653 \times \text{LWC}$ 

Volume of Water in Well \_\_\_\_\_ gal.(s)

6" Diameter Well =  $1.469 \times \text{LWC}$ 

3X Volume of Water in Well \_\_\_\_\_ gal.(s)

Volume removed before sampling \_\_\_\_\_ gal.(s)  
Did well go dry?

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify) at ground surface

## Instrument Calibration:

pH Buffer Readings

Conductivity Standard Readings

4.0 Standard \_\_\_\_\_

84 S Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected \_\_\_\_\_

Physical Appearance at Start

Color

Cloudy/Brassy

Physical Appearance at Sampling

Odor

none

Color

\_\_\_\_\_

Turbidity (&gt; 100 NTU)

333

Turbidity (&gt; 100 NTU)

\_\_\_\_\_

Sheen/Free Product

none

Sheen/Free Product

\_\_\_\_\_

## Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>40ml</u>	<u>TEFLON</u>	<u>3</u>	<u>N/A</u>	<u>HCl</u>	

Notes: \* WELL &amp; WATER DEPTHS WERE MEASURED FROM GROUND SURFACE. LENGTH OF PVC PIPE ABOVE GS WAS 2.03 FT.

Date 10/19/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel CAG/KRH

Weather PL ~ 50°F wind w <5 mph  
 Well # B3-TD-GW-1  
 Evacuation Method None  
 Sampling Method TERRO BAILER

## Well Information:

Depth of Well \* 5.45 ft.  
 Depth to Water \* 1.06 ft.  
 Length of Water Column 4.39 ft.  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

Measurements taken from

Well Casing

Protective Casing

(Other, Specify)  Glare Surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

initial \_\_\_\_\_  
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initial \_\_\_\_\_  
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 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## Water Sample:

Time Collected 8:30

## Physical Appearance at Start

Color CLOUDY  
 Odor none  
 Turbidity (> 100 NTU) 415  
 Sheen/Free Product none

## Physical Appearance at Sampling

Color CLOUDY  
 Odor none  
 Turbidity (> 100 NTU) 415  
 Sheen/Free Product none

## Samples collected:

Vol's

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>16 ml</u>	<u>VIAL</u>	<u>3</u>	<u>—</u>	<u>HCL</u>	

Notes:

Date 10/19/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel CAG/KPH

Weather PL ~50°F  
 Well # Bi3-TD-GW-2  
 Evacuation Method none  
 Sampling Method Teflon RACER

## Well Information:

Depth of Well 5.55 ft.  
 Depth to Water 1.45 ft.  
 Length of Water Column 4.10 ft.  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from \_\_\_\_\_

Well Casing

Protective Casing

Ground Surface (Other, Specify)

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected 8:40

## Physical Appearance at Start

Color brownish/cloudy  
 Odor none  
 Turbidity (> 100 NTU) 427  
 Sheen/Free Product none

## Physical Appearance at Sampling

Color brownish/cloudy  
 Odor none  
 Turbidity (> 100 NTU) 427  
 Sheen/Free Product none

## Samples collected:

3 vols

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>40 ml</u>	<u>TEFLON</u>	<u>3</u>	<u>—</u>	<u>HCl</u>	

Notes:

Date 10/19/02

Site Name \_\_\_\_\_

Weather AC ~50°F

Location \_\_\_\_\_

Well # B11-BL2-3

Project No. \_\_\_\_\_

Evacuation Method NonePersonnel CAG/KRLHSampling Method TEFLON DUCKER

## Well Information:

Depth of Well \* 15.45 ft.

Water Volume /ft. for:

Depth to Water \* 1.96 ft.

2" Diameter Well = 0.163 X LWC

Length of Water Column \_\_\_\_\_ ft.

4" Diameter Well = 0.653 X LWC

Volume of Water in Well \_\_\_\_\_ gal.(s)

6" Diameter Well = 1.469 X LWC

3X Volume of Water in Well \_\_\_\_\_ gal.(s)

Volume removed before sampling \_\_\_\_\_ gal.(s)  
Did well go dry? \_\_\_\_\_

\* Measurements taken from

 Well Casing Protective Casing (Other, Specify) clear silt

## Instrument Calibration:

## pH Buffer Readings

## Conductivity Standard Readings

4.0 Standard \_\_\_\_\_

84 S Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected 9:20

## Physical Appearance at Start

Color clear

## Physical Appearance at Sampling

Color clearOdor noneOdor noneTurbidity (> 100 NTU) <100 (89)Turbidity (> 100 NTU) <100 (89)Sheen/Free Product noneSheen/Free Product none

## Samples collected:

NO3, TOTAL METALS, TOTAL FLUORIDE, FILTERED METALS

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VIAL	3	—	HCL	
500 mL	P. BOTTLE	1	YES	ACIDIC	
500 mL	P. BOTTLE	1	—	NITRIC ACID	
500 mL	P. BOTTLE	1	—	—	

Notes:

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/19/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Act No. \_\_\_\_\_  
 Personnel CAG/KRH

Weather PL ~50°F  
 Well # BL-6W-4  
 Evacuation Method NO  
 Sampling Method TELEON DASCOR

## Well Information:

Depth of Well \* 15.4 ft  
 Depth to Water \* 4.6 ft  
 Length of Water Column 10.8 ft  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify)

Ground surface

## Instrument Calibration:

## pH Buffer Readings

## Conductivity Standard Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## Water Sample:

Time Collected 10/00

## Physical Appearance at Start

## Physical Appearance at Sampling

Color clear  
 Odor none  
 Turbidity (> 100 NTU) 100 (69)  
 Sheen/Free Product none

Color cloudy/brownish  
 Odor none  
 Turbidity (> 100 NTU) none  
 Sheen/Free Product none

## Samples collected:

VOLs, TOTAL MEGAS, TOTAL FLUORINE, FERRIC METALS

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VIAL	3	—	HCL	
500 mL	P. BOTTLE	1	YES	NITRIC ACID	
500 mL	P. BOTTLE	1	—	NITRIC ACID	
500 mL	P. BOTTLE	1	—	—	

Notes:

Date 10/19/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel CAG/RRH

Weather PL ~55°F  
 Well # B11-GW-1  
 Evacuation Method None  
 Sampling Method TEFLON BAGS

## Well Information:

Depth of Well \* 12.38 ft.  
 Depth to Water \* 1.54 ft.  
 Length of Water Column \_\_\_\_\_ ft.  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

Water Volume /ft. for:  
 2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from \_\_\_\_\_

Well Casing

Protective Casing

(Other, Specify)  Brown Silica

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected 11:00

## Physical Appearance at Start

Color Brownish  
 Odor none  
 Turbidity (> 100 NTU) 483  
 Sheen/Free Product none

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

## Samples collected:

100mL, TOT. METALS, TOT. FLUORIDE, FILTERED METALS

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
100mL	UFAC	3	—	HCL	
500mL	P. BOTTLE	1	YES	NITRIL ACID	
500mL	P. BOTTLE	1	—	NITRIL ACID	
500mL	P. BOTTLE	1	—	—	

Notes:

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/19/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Sect No. \_\_\_\_\_  
 Personnel CAG/KRH

Weather PC ~55°F  
 Well # B11-GW-2  
 Evacuation Method NO  
 Sampling Method TEFLON BAGS

## Well Information:

Depth of Well \* 15.34 ft.  
 Depth to Water \* 2.95 ft.  
 Length of Water Column 12.39 ft.  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from \_\_\_\_\_ Well Casing

\_\_\_\_\_ Protective Casing

(Other, Specify) X GLASS SURFACE

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## Water Sample:

Time Collected 11:25

## Physical Appearance at Start

Color CLEAR/Cloudy  
 Odor none  
 Turbidity (> 100 NTU) 100 (67)  
 Sheen/Free Product none

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

## Samples collected:

100s, TOTAL, INFRAS, TOTAL FLUORIDE, FILTERED, HEATERS

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VIAL	3	—	HCl	
500 mL	P. BOTTLE	1	YES	HNO3	
500 mL	P. BOTTLE	1	—	HNO3	
500 mL	P. BOTTLE	1	—	—	

Notes:

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/19/03

Site Name \_\_\_\_\_

Location \_\_\_\_\_

Project No. \_\_\_\_\_

Personnel CAG/KRHWeather PL ~60°FWell # B11-GW-5Evacuation Method NoneSampling Method TEFLON BACKER

## Well Information:

Depth of Well \* 15.33 ft.Depth to Water \* 15.18 ft.Length of Water Column 0.15 ft.

Volume of Water in Well \_\_\_\_\_ gal(s)

3X Volume of Water in Well \_\_\_\_\_ gal(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC

4" Diameter Well = 0.653 X LWC

6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
Did well go dry? \_\_\_\_\_

\* Measurements taken from

 Well Casing Protective Casing (Other, Specify) chlorine test kit

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected \_\_\_\_\_

## Physical Appearance at Start

Color \_\_\_\_\_

Odor \_\_\_\_\_

Turbidity (&gt; 100 NTU) \_\_\_\_\_

Sheen/Free Product \_\_\_\_\_

## Physical Appearance at Sampling

Color \_\_\_\_\_

Odor \_\_\_\_\_

Turbidity (&gt; 100 NTU) \_\_\_\_\_

Sheen/Free Product \_\_\_\_\_

## Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

## Notes:

INSUFF. WATER

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/19/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel CAB/KRH

Weather PL ~60°F  
 Well # OGGW-1  
 Evacuation Method NONE  
 Sampling Method TEFLON BARRIER

## Well Information:

Depth of Well \* 14.35 ft.  
 Depth to Water \* 3.25 ft.  
 Length of Water Column 11.10 ft.  
 Volume of Water in Well \_\_\_\_\_ gal.(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal.(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal.(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify)

Ground Surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Water Sample:

Time Collected 12:05

## Physical Appearance at Start

Color

slightly cloudy/blurry

Odor

none

Turbidity (> 100 NTU)

low (98)

Sheen/Free Product

none

## Physical Appearance at Sampling

Color

\_\_\_\_\_

Odor

\_\_\_\_\_

Turbidity (> 100 NTU)

\_\_\_\_\_

Sheen/Free Product

\_\_\_\_\_

## Samples collected:

VOCs, TOTAL METALS, TOTAL FLUORIDE, FILTERED METALS

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	TEFLON	3	—	HCl	
500 mL	PL D.O.T.	1	YES	HNO3	
500 mL	PL D.O.T.	1	—	HNO3	
500 mL	PL D.O.T.	1	—	—	

Notes:

Date 10/19/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Sect No. \_\_\_\_\_  
 Personnel CAG/KRH

Weather SUNNY PC ~60°F  
 Well # OB-AGW-3  
 Evacuation Method NONE  
 Sampling Method TEFLON BAGGER

## Well Information:

Depth of Well 24.16 ft.  
 Depth to Water 2.67 ft.  
 Length of Water Column 21.49 ft.  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling. \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify)

Clouds Surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected 14:00

## Physical Appearance at Start

Color CLEAR  
 Odor NONE  
 Turbidity (> 100 NTU) <100 (22)  
 Sheen/Free Product NONE

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

## Samples collected:

WTS, TOTAL METALS, TOTAL FLUORIDE, FILTERED METALS

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	STAL	3	—	HCl	
500 mL	PL BOTT.	1	YES	HNO <sub>3</sub>	
500 mL	PL BOTT.	1	—	HNO <sub>3</sub>	
500 mL	PL BOTT.	1	—		

Notes:

Date 10/19/00  
 Site Name \_\_\_\_\_  
 Section \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel CAG/KRH

Weather Sunny, PC ~60°F  
 Well # OB-SGW-2  
 Evacuation Method None  
 Sampling Method TEFLON BAGS

## Well Information:

Depth of Well \* 13.71 ft.  
 Depth to Water \* 7.76 ft.  
 Length of Water Column 5.95 ft.  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling . \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify)  GROUND SURFACE

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

Gallons Removed

Temperature Readings

pH Readings

Conductivity Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected 13:50

## Physical Appearance at Start

Color

CLEAR/Blown

Odor

None

Turbidity (> 100 NTU)

<100 (48)

Sheen/Free Product

None

## Physical Appearance at Sampling

Color

\_\_\_\_\_

Odor

\_\_\_\_\_

Turbidity (> 100 NTU)

\_\_\_\_\_

Sheen/Free Product

\_\_\_\_\_

## Samples collected:

VOLS

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	UFAC	3	—	HCl	
500 mL	PL BOTT		445	HNO3	
500 mL	PL AFT				
500 mL	PL BOTT				

## Notes:

INSUFF WATER FOR PL + MATERIALS 10/19/2000 - INSUFF. MATER

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/20/00

Site Name \_\_\_\_\_

Location \_\_\_\_\_

Project No. \_\_\_\_\_

Personnel CAG/KRHWeather SUNNY ~ 55°FWell # B9A-GW-4Evacuation Method NONESampling Method TEFLON BAILER

## Well Information:

Depth of Well \* 11.15 ft.Depth to Water \* 6.25 ft.Length of Water Column 4.90 ft.

Volume of Water in Well \_\_\_\_\_ gal.(s)

3X Volume of Water in Well \_\_\_\_\_ gal.(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC

4" Diameter Well = 0.653 X LWC

6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal.(s)  
Did well go dry? \_\_\_\_\_

\* Measurements taken from

 Well Casing Protective Casing (Other, Specify) Ground Surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected 8:30

## Physical Appearance at Start

Color

Brown

Odor

None

Turbidity (&gt; 100 NTU)

748

Sheen/Free Product

None

## Physical Appearance at Sampling

Color

\_\_\_\_\_

Odor

\_\_\_\_\_

Turbidity (&gt; 100 NTU)

\_\_\_\_\_

Sheen/Free Product

\_\_\_\_\_

## Samples collected:

VOCs, TOTAL METALS, TOTAL FLUORIDE, FILTERED METALS

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VEAL	3	—	HCL	
500 mL	PL. BOTT.	1	YES	HNO3	
300 mL	PL. BOTT.	1	—	HNO3	
500 mL	PL. BOTT	1	—	—	

Notes:

Date 10/20/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel CAB/XRH

Weather SUNNY ~50°F  
 Well # B9A-6W-5  
 Evacuation Method NONE  
 Sampling Method TERIN BAUER

## Well Information:

Depth of Well \* 10.67 ft.  
 Depth to Water \* 2.40 ft.  
 Length of Water Column 8.27 ft.  
 Volume of Water in Well \_\_\_\_\_ gal.(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal.(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal.(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from \_\_\_\_\_

Well Casing

Protective Casing

(Other, Specify)  Ground water

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## Water Sample:

Time Collected 9:30

## Physical Appearance at Start

## Physical Appearance at Sampling

Color clear  
 Odor none

Color \_\_\_\_\_  
 Odor \_\_\_\_\_

Turbidity (> 100 NTU)

523

Turbidity (> 100 NTU) \_\_\_\_\_

Sheen/Free Product

none

Sheen/Free Product \_\_\_\_\_

## Samples collected:

1/2 L, TOTAL METALS, TOTAL FLUORIDE, FILTERED METALS

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 ml	TOTAL	3	—	HCL	
500 ml	P.BOT	1	1/2	HNO3	
500 ml	P.BOT	1	—	HNO3	
500 ml	P.BOT	1	—	—	

Notes:

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/20/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel \_\_\_\_\_

Weather SUNNY ~ 55°F  
 Well # OB-SGW-3  
 Evacuation Method None  
 Sampling Method TEFLON BAILEY

## Well Information:

Depth of Well 13.70 ft.  
 Depth to Water 5.12 ft.  
 Length of Water Column 8.58 ft.  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify)

 Column Surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected 10:10'

## Physical Appearance at Start

Color

MILKY BROWN/BLANDISH

Color

Odor

none

Odor

Turbidity (&gt; 100 NTU)

228

Turbidity (&gt; 100 NTU)

Sheen/Free Product

none

Sheen/Free Product

## Samples collected:

100 mL, TOTAL Manganese, TOTAL FLUORIDE, SULFIDES METALS

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
100 mL	VIAL	3	—	HCl	
500 mL	P.BOT	1	YES	HNO <sub>3</sub>	
500 mL	P.BOT	1	—	H <sub>2</sub> PO <sub>4</sub>	
500 mL	P.BOT	1	—	—	

Notes:

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/20/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel CAG/KELT

Weather SUNNY + 65°F  
 Well # OB-SGW-4  
 Evacuation Method NONE  
 Sampling Method TEFLON BAGGED

## Well Information:

Depth of Well \* 14.41 ft.  
 Depth to Water \* 12.84 ft.  
 Length of Water Column 2.55 ft.  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) above surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## Water Sample:

Time Collected 14:00

## Physical Appearance at Start

Color cloudy  
 Odor none  
 Turbidity (> 100 NTU) 330  
 Sheen/Free Product none

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

## Samples collected:

VCS

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>40ml</u>	<u>VIAL</u>	<u>3</u>	<u>—</u>	<u>HCL</u>	

## Notes:

INSUFF. WATER FOR METALS + FLUORIDE

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/20/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Object No. \_\_\_\_\_  
 Personnel CAB/ART

Weather SUNNY ~70°F  
 Well # B7-GW-4  
 Evacuation Method NOONE  
 Sampling Method TEFLON BAGS

## Well Information:

Depth of Well \* 13.86 ft.  
 Depth to Water \* 13.26 ft.  
 Length of Water Column 0.10 ft.  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify)

down screen

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected \_\_\_\_\_

## Physical Appearance at Start

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

## Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

Notes:

INSUFF. WATER TO TAKE SAMPLES

Date 10/20/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel CAG/KRH

Weather SUNNY ~70°F  
 Well # B7-601-1  
 Evacuation Method WORK  
 Sampling Method TEFLON BAILER

## Well Information:

Depth of Well \* 13.46 ft.  
 Depth to Water \* 0.95 ft.  
 Length of Water Column 12.51 ft.  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify)  Ground Surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## Water Sample:

Time Collected 10:20

## Physical Appearance at Start

Color Cloudy/brownish  
 Odor none  
 Turbidity (> 100 NTU) 729  
 Sheen/Free Product none

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

Samples collected: VOCs, TOTAL FLUORIDES, TOTAL METALS, FILTERED METALS

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40mL	VIAL	3	—	HCl	
500mL	P-BOTT	1	YES	HNO3	
500mL	P-BOTT	1	—	HNO3	
500mL	P-BOTT	1	—	—	

Notes: Field Dip #2 3 VOCs 40mL 1 500mL FM  
 1 500mL TM 1 500mL TP

Date 10/20/00

Site Name \_\_\_\_\_

Weather SUNNY - 60°F

Location \_\_\_\_\_

Well # OB- Dow - B1

Project No. \_\_\_\_\_

Evacuation Method NonePersonnel OG/KRHSampling Method TEFLON BAGS

## Well Information:

Depth of Well \* 24.67 ft

Water Volume /ft. for:

Depth to Water \* 13.52 ft

2" Diameter Well = 0.163 X LWC

Length of Water Column 11.15 ft

4" Diameter Well = 0.653 X LWC

Volume of Water in Well \_\_\_\_\_ gal(s)

6" Diameter Well = 1.469 X LWC

3X Volume of Water in Well \_\_\_\_\_ gal(s)

Volume removed before sampling \_\_\_\_\_ gal(s)  
Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify) below surface

## Instrument Calibration:

## pH Buffer Readings

## Conductivity Standard Readings

4.0 Standard \_\_\_\_\_

84 S Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected 10:45

## Physical Appearance at Start

## Physical Appearance at Sampling

Color clear

Color \_\_\_\_\_

Odor none

Odor \_\_\_\_\_

Turbidity (> 100 NTU) <100 (27)

Turbidity (&gt; 100 NTU) \_\_\_\_\_

Sheen/Free Product none

Sheen/Free Product \_\_\_\_\_

## Samples collected:

VOCs, TOTAL METALS, TOTAL FLUORIDE, FILTERED METALS

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VIAL	3	-	HCl	
500 mL	PL. BOTT	1	YES	HNO <sub>3</sub>	
500 mL	PL. BOTT	1	-	HNO <sub>3</sub>	
500 mL	PL. BOTT	1	-	-	

Notes:

\* MS/MSD 300 > 100  
1 fmSTILL WAGG 10/20/00 SAMPLER TF  
TMMS/MSD TFSAMPLE TAKEN  
10/23/00

Date 10/20/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel CAG/KRH

Weather SUNNY ~65°F  
 Well # OB-OGW-2  
 Evacuation Method none  
 Sampling Method TEFLON BAGGED

## Well Information:

Depth of Well \* 24.60 ft.  
 Depth to Water \* 11.60 ft.  
 Length of Water Column 13.00 ft.  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

Water Volume /ft. for:  
 2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify)  Cloud Surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected 11:15

## Physical Appearance at Start

Color clear  
 Odor none  
 Turbidity (> 100 NTU) 160 (26)  
 Sheen/Free Product none

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

## Samples collected:

VOL, TOTAL METALS, TOTAL FLUORIDE, FILTRATED METALS

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40mL	GLASS	3	—	HCL	
500mL	PL BOTT	1	YES	HNO3	
500mL	PL BOTT	1	—	HNO3	
500mL	PL BOTT	1	—	—	11/23/00

Notes:

FIELD DUP 1 500mL - FM 1 500mL TM  
 3 40mL - VOL

STILL NEED: TF FOR SAMPLE + FIELD DUP.  
 SAMPLES TAKEN 10/23/00

Date 10/23/00Site Name 10/23/00 samples collected also

Location \_\_\_\_\_

Section No. \_\_\_\_\_

Personnel CAG/KRHWeather SUNNY ~ 65°FWell # B7-GW-5Evacuation Method NoneSampling Method Teflon Barrel

## Well Information:

Depth of Well \* 19.59 ft.Depth to Water \* 16.02 ft.Length of Water Column 3.57 ft.

Volume of Water in Well \_\_\_\_\_ gal(s)

3X Volume of Water in Well \_\_\_\_\_ gal(s)

## Water Volume /ft. for:

2" Diameter Well =  $0.163 \times \text{LWC}$ 4" Diameter Well =  $0.653 \times \text{LWC}$ 6" Diameter Well =  $1.469 \times \text{LWC}$ Volume removed before sampling \_\_\_\_\_ gal(s)  
Did well go dry? \_\_\_\_\_\* Measurements taken from  Well Casing  Protective Casing  (Other, Specify) closed surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected 10/23

## Physical Appearance at Start

Color CLEAR/BLWNOdor noneTurbidity (> 100 NTU) (12) <100Sheen/Free Product none

## Physical Appearance at Sampling

Color \_\_\_\_\_

Odor \_\_\_\_\_

Turbidity (&gt; 100 NTU) \_\_\_\_\_

Sheen/Free Product \_\_\_\_\_

## Samples collected:

VOCs, Tot. Metals, Tot Fluoride, Filtered Metals

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	PL. PL	3	—	HCl	
50 mL	PL. PL	1	YES	H2O2	
500 mL	PL. PL	1	—	H2O2	
500 mL	PL. PL	1	—		

## Notes:

WELL WENT DRY NO METALS + preservative samples taken 10/23/00 for metals + preservative (DUPLICATE #1)

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/27/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel CAG/KRH

Weather SUNNY ~55°F  
 Well # B7-GW-3  
 Evacuation Method None  
 Sampling Method TAKE FLUID BOTTLED

## Well Information:

Depth of Well \* 11.22 ft.  
 Depth to Water \* 3.41 ft.  
 Length of Water Column 7.81 ft.  
 Volume of Water in Well \_\_\_\_\_ gal.(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal.(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal.(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify)  Clouds surface

## Instrument Calibration:

pH Buffer Readings  
 4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

Conductivity Standard Readings  
 84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

Gallons  
Removed

Temperature  
Readings

pH  
Readings

Conductivity  
Readings uS/cm

initial \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

initial \_\_\_\_\_  
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 \_\_\_\_\_  
 \_\_\_\_\_

initial \_\_\_\_\_  
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 \_\_\_\_\_

initial \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## Water Sample:

Time Collected 10:40

## Physical Appearance at Start

Color Color/Blownish  
 Odor none  
 Turbidity (> 100 NTU) 1100 (27)  
 Sheen/Free Product none

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

## Samples collected:

VOCs, TOTAL METALS, TOTAL FLUORIDE, FILTERED METALS

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40mL	VIAL	3	-	HCl	
500mL	PL BOTT	1	YES	HNO3	
500mL	PL BOTT	1	-	H2O2	
500mL	PL BOTT	1	-	-	

Notes:

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/23/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel CAB/KR/H

Weather SUNNY ~40°F  
 Well # MWD-6W-5  
 Evacuation Method NONE  
 Sampling Method TEFLON BACKER

## Well Information:

Depth of Well \* 19.36 ft.  
 Depth to Water \* 9.62 ft.  
 Length of Water Column 9.74 ft.  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify)  GROUND SURFACE

## Instrument Calibration:

pH Buffer Readings  
 4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

Conductivity Standard Readings  
 84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

**Gallons  
Removed**

**Temperature  
Readings**

**pH  
Readings**

**Conductivity  
Readings US/cm**

initial \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

initial \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
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 \_\_\_\_\_  
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initial \_\_\_\_\_  
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 \_\_\_\_\_  
 \_\_\_\_\_

initial \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Water Sample:  
Time Collected

8:20

## Physical Appearance at Start

Color SLIGHTLY CLEAR  
 Odor NO ODOR  
 Turbidity (> 100 NTU) (75) <160  
 Sheen/Free Product NONIC

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

Samples collected: VOLs

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>40 mL</u>	<u>VIAL</u>	<u>3</u>	<u>—</u>	<u>HCl</u>	

Notes:

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/20/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel CAG/KRH

Weather SUNNY ~40°F  
 Well # MW20-GW-4  
 Evacuation Method NOONE  
 Sampling Method TEFLON BAILED

## Well Information:

Depth of Well \* 18.08 ft.  
 Depth to Water \* 3.46 ft.  
 Length of Water Column 14.62 ft.  
 Volume of Water in Well \_\_\_\_\_ gal.(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal.(s)

Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal.(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from

 Well Casing Protective Casing

(Other, Specify)

 Ground surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected 8:15

## Physical Appearance at Start

Color

CLOUDY

Odor

none

Turbidity (&gt; 100 NTU)

112

Sheen/Free Product

NO NTU

## Physical Appearance at Sampling

Color

\_\_\_\_\_

Odor

\_\_\_\_\_

Turbidity (&gt; 100 NTU)

\_\_\_\_\_

Sheen/Free Product

\_\_\_\_\_

Samples collected: VOCs

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>10 mL</u>	<u>VIAL</u>	<u>3</u>	<u>—</u>	<u>HCl</u>	

Notes:

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/21/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel CAg/KLH

Weather CLOUDY ~60%  
 Well # IS-GW-1  
 Evacuation Method None  
 Sampling Method TEFLON BAUCER

## Well Information:

Depth of Well 10.70 ft.  
 Depth to Water 5.21 ft.  
 Length of Water Column 5.49 ft.  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from \_\_\_\_\_ Well Casing

Protective Casing

(Other, Specify) None selected

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

initial \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Water Sample: 10/21 10/25  
 Time Collected 10:20 : 8:30

## Physical Appearance at Start

Color CLEAR  
 Odor None  
 Turbidity (> 100 NTU) <100 (22)  
 Sheen/Free Product None

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

## Samples collected:

VOCs, TOTAL METALS, TOTAL FLUORIDE, FILTERED METALS

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	TEFLON	3	-	HCl	
500 mL	PL BOTT	1	YES	HNO3	
500 mL	PL BOTT	1	-	HNO3	
500 mL	PL BOTT	1	-	HNO3	

## Notes:

TOTAL METAL COLLECTED 10/25/00 (INSUFF. AMT COLLECTED ON 10/21/00)

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/24/00

Site Name \_\_\_\_\_

Location \_\_\_\_\_

Project No. \_\_\_\_\_

Personnel OAG/KRHWeather CLOUDY ~60°FWell # TS-GW-1Evacuation Method NONESampling Method TEFLON BAILEY

## Well Information:

Depth of Well \* 14.78 ft.Depth to Water \* 0.24 ft.Length of Water Column 0 ft.

Volume of Water in Well \_\_\_\_\_ gal.(s)

3X Volume of Water in Well \_\_\_\_\_ gal.(s)

Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC

4" Diameter Well = 0.653 X LWC

6" Diameter Well = 1.469 X LWC

\* Measurements taken from

Well Casing

Protective Casing

gal.(s)

Volume removed before sampling \_\_\_\_\_  
Did well go dry? \_\_\_\_\_(Other, Specify) Clouds

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected \_\_\_\_\_

Physical Appearance at Start

Physical Appearance at Sampling

Color \_\_\_\_\_

Color \_\_\_\_\_

Odor \_\_\_\_\_

Odor \_\_\_\_\_

Turbidity (&gt; 100 NTU) \_\_\_\_\_

Turbidity (&gt; 100 NTU) \_\_\_\_\_

Sheen/Free Product \_\_\_\_\_

Sheen/Free Product \_\_\_\_\_

## Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

## Notes:

NO WATER IN WELL

Date 10/21/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Act No. \_\_\_\_\_  
 Personnel CAG/KRH

Weather CLOUDY ~60°F  
 Well # IS-GW-5  
 Evacuation Method NO EVAC  
 Sampling Method TRFLON BAGS

## Well Information:

Depth of Well \* 10.99 ft.  
 Depth to Water \* 10.69 ft.  
 Length of Water Column 0.30 ft.  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify)

 GROUND SURFACE

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_

## Water Sample:

Time Collected \_\_\_\_\_

## Physical Appearance at Start

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

## Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

## Notes:

*NOT ENOUGH WATER TO SAMPLE*

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/24/00

Site Name \_\_\_\_\_

Location \_\_\_\_\_

Project No. \_\_\_\_\_

Personnel OAG/KRHWeather CLOUDY ~60°FWell # IS-GW-6Evacuation Method NONESampling Method TEFLON BOTTLE

## Well Information:

Depth of Well 14.75 ft.

Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC

Depth to Water 12.25 ft.

4" Diameter Well = 0.653 X LWC

Length of Water Column 2.50 ft.

6" Diameter Well = 1.469 X LWC

Volume of Water in Well \_\_\_\_\_ gal(s)

3X Volume of Water in Well \_\_\_\_\_ gal(s)

Volume removed before sampling \_\_\_\_\_ gal(s)  
Did well go dry? \_\_\_\_\_

Measurements taken from

 Well Casing Protective Casing(Other, Specify)  CLAY WATERS

## Instrument Calibration:

 pH Buffer Readings Conductivity Standard Readings

4.0 Standard \_\_\_\_\_

84 S Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Water parameters:

 Gallons Removed Temperature Readings pH Readings Conductivity Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected 10/24 8:45

## Physical Appearance at Start

Color clear

## Physical Appearance at Sampling

Color \_\_\_\_\_

Odor none

Odor \_\_\_\_\_

Turbidity (&gt; 100 NTU) \_\_\_\_\_

Turbidity (&gt; 100 NTU) \_\_\_\_\_

Sheen/Free Product none

Sheen/Free Product \_\_\_\_\_

## Samples collected:

100 mLContainer Size 100 mLContainer Type VIAL# Collected 2Field Filtered —Preservative HCl

Container pH \_\_\_\_\_

## Notes:

10/24/00 NOT ENOUGH WATER FOR SAMPLES TRY AGAIN tomorrowSAMPLES COLLECTED 10/25/00

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/21/90

Site Name \_\_\_\_\_

Location \_\_\_\_\_

Project No. \_\_\_\_\_

Personnel CAG/JRH

Weather

CLOUDY ~60°F

Well #

B11-GW-7

Evacuation Method

none

Sampling Method

TEFLON BAFFLES

## Well Information:

Depth of Well \* 7.67 ft.Depth to Water \* NDL ft.

Length of Water Column \_\_\_\_\_ ft.

Volume of Water in Well \_\_\_\_\_ gal(s)

3X Volume of Water in Well \_\_\_\_\_ gal(s)

Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC

4" Diameter Well = 0.653 X LWC

6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify) at ground surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings US/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected \_\_\_\_\_

## Physical Appearance at Start

Color \_\_\_\_\_

## Physical Appearance at Sampling

Odor \_\_\_\_\_

Color \_\_\_\_\_

Turbidity (&gt; 100 NTU) \_\_\_\_\_

Odor \_\_\_\_\_

Sheen/Free Product \_\_\_\_\_

Turbidity (&gt; 100 NTU) \_\_\_\_\_

## Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

Notes:

INSUFF. WATER TO TAKE SAMPLE (DRY)

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/24/00

Site Name \_\_\_\_\_

Weather CLOUDY ~60°F

Location \_\_\_\_\_

Well # B3 SMP-WTR-1

Project No. \_\_\_\_\_

Evacuation Method NO EVACPersonnel CAG/KR4Sampling Method TEFLON BAGS

## Well Information:

Depth of Well \* 4.56 ft.

Water Volume /ft. for:

Depth to Water \* 4.30 ft.

2" Diameter Well = 0.163 X LWC

Length of Water Column 0.26 ft.

4" Diameter Well = 0.653 X LWC

Volume of Water in Well \_\_\_\_\_ gal.(s)

6" Diameter Well = 1.469 X LWC

3X Volume of Water in Well \_\_\_\_\_ gal.(s)

Volume removed before sampling \_\_\_\_\_ gal.(s)  
Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify) NO BLDG REAR

## Instrument Calibration:

pH Buffer Readings

Conductivity Standard Readings

4.0 Standard \_\_\_\_\_

84 S Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Water Sample:

Time Collected 11:00

Physical Appearance at Start

Physical Appearance at Sampling

Color

CLEAR

Color

Odor

NONR

Odor

Turbidity (&gt; 100 NTU)

100

Turbidity (&gt; 100 NTU)

Sheen/Free Product

NONR

Sheen/Free Product

## Samples collected:

VOCs, TOTAL METALS, TOTAL FLUORIDE, FILTERED METALS

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VIAL	3	—	HCl	
500 mL	PL. BOTT	1	YES	HNO3	
620 mL	"	1	—	HNO3	
500 mL	"	1	—	—	

## Notes:

2 soil samples 1 1/2 oz JAR VOCs  
 1 8oz JAR TOTAL METALS + TOTAL FLUORIDE

Date 10/24/00

Site Name \_\_\_\_\_

Location \_\_\_\_\_

Project No. \_\_\_\_\_

Personnel CAG/KRHWeather Cloudy ~60°FWell # C4-GW-2Evacuation Method NoneSampling Method Teflon RAILER

## Well Information:

Depth of Well 10.58 ft.

Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC

Depth to Water 3.60 ft.

4" Diameter Well = 0.653 X LWC

Length of Water Column 6.98 ft.

6" Diameter Well = 1.469 X LWC

Volume of Water in Well \_\_\_\_\_ gal.(s)

3X Volume of Water in Well \_\_\_\_\_ gal.(s)

Volume removed before sampling \_\_\_\_\_ gal.(s)  
Did well go dry? \_\_\_\_\_\* Measurements taken from  Well Casing  Protective Casing(Other, Specify)  Ground Surface

## Instrument Calibration:

## pH Buffer Readings

## Conductivity Standard Readings

4.0 Standard \_\_\_\_\_

84 S Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

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\_\_\_\_\_

## Water Sample:

Time Collected 9:40

## Physical Appearance at Start

Color

Brownish (crtbc. milk)

## Physical Appearance at Sampling

Color

Odor

none

\_\_\_\_\_

Turbidity (&gt; 100 NTU)

935

Turbidity (&gt; 100 NTU)

Sheen/Free Product

none

Sheen/Free Product

## Samples collected:

VOLs

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>40 ml</u>	<u>VIAL</u>	<u>3</u>	<u>-</u>	<u>HCL</u>	

Notes:

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/24/00

Site Name \_\_\_\_\_

Location \_\_\_\_\_

Project No. \_\_\_\_\_

Personnel CAG/KRHWeather Cloudy ~60°FWell # C4-GW-4Evacuation Method NONESampling Method TEFLON BOTTLED

## Well Information:

Depth of Well 11.67 ft

Water Volume /ft for:

2" Diameter Well = 0.163 X LWC

Depth to Water 5.13 ft

4" Diameter Well = 0.653 X LWC

Length of Water Column 6.54 ft

6" Diameter Well = 1.469 X LWC

Volume of Water in Well \_\_\_\_\_ gal(s)

3X Volume of Water in Well \_\_\_\_\_ gal(s)

Volume removed before sampling \_\_\_\_\_ gal(s)  
Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify)  Ground Surface

## Instrument Calibration:

## pH Buffer Readings

## Conductivity Standard Readings

4.0 Standard \_\_\_\_\_

84 S Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_  
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initial \_\_\_\_\_  
initial \_\_\_\_\_  
initial \_\_\_\_\_  
initial \_\_\_\_\_  
initial \_\_\_\_\_

## Water Sample:

Time Collected 9:30

## Physical Appearance at Start

## Physical Appearance at Sampling

Color Cloudy

Color \_\_\_\_\_

Odor none

Odor \_\_\_\_\_

Turbidity (&gt; 100 NTU)

Turbidity (&gt; 100 NTU) \_\_\_\_\_

Sheen/Free Product none

Sheen/Free Product \_\_\_\_\_

## Samples collected:

VOCs

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>40 mL</u>	<u>VIAL</u>	<u>3</u>	<u>—</u>	<u>HCl</u>	

Notes:

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/25/00

Site Name \_\_\_\_\_

Location \_\_\_\_\_

Project No. \_\_\_\_\_

Personnel AG/KRHWeather overcast ~60°FWell # B2-GW-3Evacuation Method noneSampling Method TEFLON BACK

## Well Information:

Depth of Well 15.44 ft.Depth to Water 1.97 ft.Length of Water Column 12.47 ft.

Volume of Water in Well \_\_\_\_\_ gal(s)

3X Volume of Water in Well \_\_\_\_\_ gal(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC

4" Diameter Well = 0.653 X LWC

6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify) clean surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected 11:05

## Physical Appearance at Start

Color

cloudy/brown

Color

Odor

slight fuel odor

Odor

Turbidity (&gt; 100 NTU)

<100 (86)

Turbidity (&gt; 100 NTU)

Sheen/Free Product

none

Sheen/Free Product

## Samples collected:

VOC, FILTERED METALS, TOTAL METALS, TOTAL FLUORIDE

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VIAL	3	—	HCL	
500 mL	PL BOTT	1	YES	HNO3	
500 mL	"	1	—	HNO3	
500 mL	"	1	—		

Notes:



Date 10/25/02  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel \_\_\_\_\_

Weather overcast ~55°F  
 Well # B2-GW-1  
 Evacuation Method NONE  
 Sampling Method TEFLON BAGS

## Well Information:

Depth of Well \* 11.47 ft.  
 Depth to Water \* 2.10 ft.  
 Length of Water Column 9.37 ft.  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling . \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify)

Glareo SUGA

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected 10:25

## Physical Appearance at Start

Color clear/brown  
 Odor musty smell  
 Turbidity (> 100 NTU) 286  
 Sheen/Free Product no sheen

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

## Samples collected:

VOCs, FILTERED METALS, TOTAL METALS, TOTAL FLUORIDE

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VIAL	3	-	HCL	
500 mL	PL BOTT	1	YES	HNO3	
500 mL	PL BOTT	1	-	HNO3	
500 mL	PL BOTT	1	-	HNO3	

Notes:



## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/25/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel CAG/KRH

Weather OVERCAST FOR ~55°F  
 Well # IS-GW-3  
 Evacuation Method none  
 Sampling Method TEFLON BAGS

## Well Information:

Depth of Well 11.00 ft.  
 Depth to Water 4.97 ft.  
 Length of Water Column 6.03 ft.  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify)

below surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

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Water Sample:  
 Time Collected 9:40

## Physical Appearance at Start

Color Brown  
 Odor none  
 Turbidity (> 100 NTU) 209  
 Sheen/Free Product none

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

## Samples collected:

VICs, FILTERED METALS, TOTAL METALS, TOTAL FLUORIDE

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40 mL	VIAL	3	—	HCL	
500 mL	PL. BOTT	1	YES	HNO3	
500 mL	1	1	—	HNO3	
500 mL	1	1	—	—	

Notes:

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/25/00

Site Name \_\_\_\_\_

Location \_\_\_\_\_

Project No. \_\_\_\_\_

Personnel CAG/KCH

Weather \_\_\_\_\_

Well # B9-6W-5Evacuation Method NoneSampling Method TEFLON BAILER

## Well Information:

Depth of Well 8.19 ft.

Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC

Depth to Water 7.02 ft.

4" Diameter Well = 0.653 X LWC

Length of Water Column 1.17 ft.

6" Diameter Well = 1.469 X LWC

Volume of Water in Well gal(s)3X Volume of Water in Well gal(s)Volume removed before sampling gal(s)  
Did well go dry? \_\_\_\_\_\* Measurements taken from  Well Casing  Protective Casing(Other, Specify) At Ground Surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

\_\_\_\_\_

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## Water Sample:

Time Collected 16:35

## Physical Appearance at Start

Color Cloudy/ Brownish

## Physical Appearance at Sampling

Odor none

Color \_\_\_\_\_

Turbidity (> 100 NTU) 3-70

Odor \_\_\_\_\_

Sheen/Free Product None

Turbidity (&gt; 100 NTU) \_\_\_\_\_

Sheen/Free Product \_\_\_\_\_

## Samples collected:

VOLs

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>40ml</u>	<u>VIAL</u>	<u>2</u>	<u>-</u>	<u>HCl</u>	

Notes: Only enough water for 2 vials.

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/25/00  
 Site Name Location  
 Project No.   
 Personnel CAG/KRH

Weather Partly Sunny ~70°K  
 Well # B9-GW-4  
 Evacuation Method None  
 Sampling Method TURBON GAUCER

## Well Information:

Depth of Well 10.74 ft.  
 Depth to Water 3.07 ft.  
 Length of Water Column 7.67 ft.  
 Volume of Water in Well  gal.(s)  
 3X Volume of Water in Well  gal.(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling  gal.(s)  
 Did well go dry?

\* Measurements taken from:  Well Casing  Protective Casing

(Other, Specify)  Ground Surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard   
 7.0 Standard   
 10.0 Standard

## Conductivity Standard Readings

84 S Standard   
 1413 S Standard

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

initial

initial

initial

initial

Water Sample:  
 Time Collected 16:40

## Physical Appearance at Start

Color Brown  
 Odor FUEL SMELL  
 Turbidity (> 100 NTU) 100  
 Sheen/Free Product scattered

## Physical Appearance at Sampling

Color   
 Odor   
 Turbidity (> 100 NTU)   
 Sheen/Free Product

## Samples collected:

10L

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>40ML</u>	<u>VIAL</u>	<u>3</u>	<u>-</u>	<u>HCl</u>	

Notes:

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/25/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Job No. \_\_\_\_\_  
 Personnel CAG/DRH

Weather Partly sunny ~70°  
 Well # B9-Well-3  
 Evacuation Method None  
 Sampling Method TEFLON BARRIER

## Well Information:

Depth of Well \* 4.99 ft.  
 Depth to Water \* 3.93 ft.  
 Length of Water Column 1.06 ft.  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from  Well Casing  Protective Casing

(Other, Specify)  Ground Surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

initial \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Water Sample:  
 Time Collected 16:30

## Physical Appearance at Start

Color Blurry  
 Odor none  
 Turbidity (> 100 NTU) Very  
 Sheen/Free Product none

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

Samples collected: VCS

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>40mL</u>	<u>TFAC</u>	<u>82</u>	<u>—</u>	<u>HCl</u>	

Notes:

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/25/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel CG/KRH

Weather Partly Sunat ~70°  
 Well # B9-GW-2  
 Evacuation Method None  
 Sampling Method TEFLON BAFFLE

## Well Information:

Depth of Well \* 14.80 ft.  
 Depth to Water \* 5.10 ft.  
 Length of Water Column 9.70 ft.  
 Volume of Water in Well \_\_\_\_\_ gal.(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal.(s)

Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling . \_\_\_\_\_ gal.(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from  Well Casing  Protective Casing

(Other, Specify) Clear

## Instrument Calibration:

pH Buffer Readings  
 4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

Conductivity Standard Readings  
 84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

**Gallons  
Removed**

**Temperature  
Readings**

**pH  
Readings**

**Conductivity  
Readings uS/cm**

initial \_\_\_\_\_

Water Sample:  
 Time Collected 16:05

## Physical Appearance at Start

Color Cloudy  
 Odor None  
 Turbidity (> 100 NTU) 305  
 Sheen/Free Product None

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

## Samples collected:

1000

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>40mL</u>	<u>TEFLON</u>	<u>3</u>	<u>—</u>	<u>HCl</u>	

Notes:

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/25/00  
 Site Name \_\_\_\_\_  
 Cation \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel CAG/KRH

Weather Partly Cloudy 65° F  
 Well # OB-3GW-5  
 Evacuation Method none  
 Sampling Method TEFLON BAILER

## Well Information:

Depth of Well 9.49 ft.  
 Depth to Water 8.4 ft.  
 Length of Water Column \_\_\_\_\_ ft.  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

Water Volume /ft. for:

2" Diameter Well =  $0.163 \times \text{LWC}$ 4" Diameter Well =  $0.653 \times \text{LWC}$ 6" Diameter Well =  $1.469 \times \text{LWC}$ 

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

Measurements taken from

Well Casing

Protective Casing

(Other, Specify)

Ground Surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

initial \_\_\_\_\_

Water Sample:  
 Time Collected 12:00

## Physical Appearance at Start

Color \_\_\_\_\_

Odor \_\_\_\_\_

Turbidity (&gt; 100 NTU) \_\_\_\_\_

Sheen/Free Product \_\_\_\_\_

## Physical Appearance at Sampling

Color \_\_\_\_\_

Odor \_\_\_\_\_

Turbidity (&gt; 100 NTU) \_\_\_\_\_

Sheen/Free Product \_\_\_\_\_

## Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

## Notes:

well dry

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/25/00

Site Name \_\_\_\_\_

Weather CHARTCAST ~60°F

Location \_\_\_\_\_

Well # B2-G0-4

Elect No. \_\_\_\_\_

Evacuation Method EVACPersonnel CAG/KRJLSampling Method THROUGH BASELINE

## Well Information:

Depth of Well \* 25.49 ft.

Water Volume /ft. for:

Depth to Water \* 24.42 ft.

2" Diameter Well = 0.163 X LWC

Length of Water Column 1.07 ft.

4" Diameter Well = 0.653 X LWC

Volume of Water in Well \_\_\_\_\_ gal.(s)

6" Diameter Well = 1.469 X LWC

3X Volume of Water in Well \_\_\_\_\_ gal.(s)

Volume removed before sampling \_\_\_\_\_ gal.(s)  
Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify) Closed Surface

## Instrument Calibration:

pH Buffer Readings

Conductivity Standard Readings

4.0 Standard \_\_\_\_\_

84 S Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected 11:30

Physical Appearance at Start

Color

Cloudy, Hazeish

Physical Appearance at Sampling

Odor

SLIGHT ODOOR

Color

Turbidity (&gt; 100 NTU)

\_\_\_\_\_

Sheen/Free Product

None

\_\_\_\_\_

Turbidity (&gt; 100 NTU)

Sheen/Free Product

Samples collected:

VOLs

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>40 mL</u>	<u>VIAL</u>	<u>2</u>	<u>—</u>	<u>H2O</u>	

Notes:

INSUFF. WATER TO TAKE THE REST OF SAMPLES.



## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/25/00  
 Site Name \_\_\_\_\_  
 Ion \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel OAG/KRH

Weather Partly cloudy - 65° F  
 Well # B28-GW-5  
 Evacuation Method None  
 Sampling Method TAPERED BARRIER

## Well Information:

Depth of Well 25.60 ft  
 Depth to Water 15.20 ft  
 Length of Water Column 10.40 ft  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify) Ground Surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## Water Sample:

Time Collected 12:10

## Physical Appearance at Start

Color CLEAR / clarity  
 Odor none  
 Turbidity (> 100 NTU) <100 (66)  
 Sheen/Free Product none

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

## Samples collected:

VOCs, ELECTRO METALS, TOTAL METALS, TOTAL FLUORIDE

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40mL	VIAL	3	-	HCL	
500mL	PLAST	1	YES	HNO3	
500mL	PLAST	1	-	HNO3	
500mL	PLAST	1	-	-	

Notes:

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/26/00  
 Site Name \_\_\_\_\_  
 tion \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel CAG/KRH

Weather SUNNY ~70°  
 Well # 62-5W-11  
 Evacuation Method NO  
 Sampling Method TEFLON BAG

## Well Information:

Depth of Well 24.95 ft.  
 Depth to Water 23.38 ft.  
 Length of Water Column 1.57 ft.  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

Water Volume /ft. for:  
 2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify) Ground Surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
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initial \_\_\_\_\_  
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initial \_\_\_\_\_  
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initial \_\_\_\_\_  
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 \_\_\_\_\_

Water Sample:  
 Time Collected 11:25

## Physical Appearance at Start

Color Cloudy  
 Odor None  
 Turbidity (> 100 NTU) Slightly  
 Sheen/Free Product None

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

## Samples collected:

VOCs

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
40mL	VIAL	3	-	HCl	

Notes: EXTRA WELL

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/26/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel OAG/KRH

Weather SUNNY ~70F  
 Well # B2A-GW-4  
 Evacuation Method NONE  
 Sampling Method TEFLON BAIRR

## Well Information:

Depth of Well 20.63 ft.  
 Depth to Water 6.47 ft.  
 Length of Water Column 14.16 ft.  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

Measurements taken from

Well Casing

Protective Casing

(Other, Specify)

 Ground surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

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## Water Sample:

Time Collected 10:15

## Physical Appearance at Start

Color Brown  
 Odor NONE  
 Turbidity (> 100 NTU) VERY  
 Sheen/Free Product NONE

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

## Samples collected:

VOCs

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>40ml</u>	<u>VIAL</u>	<u>3</u>	<u>-</u>	<u>HCl</u>	

## Notes:

EXTRA well

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/26/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel CAG/KRH

Weather SUNNY ~70°F  
 Well # B2-GW-9  
 Evacuation Method none  
 Sampling Method TRICOR BAGS

## Well Information:

Depth of Well 22.33 ft  
 Depth to Water 5.87 ft  
 Length of Water Column 16.46 ft  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify) X GROUND SURFACE

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

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## Water Sample:

Time Collected 11:00

## Physical Appearance at Start

Color CLEAR  
 Odor none  
 Turbidity (> 100 NTU) <100 (51)  
 Sheen/Free Product none

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

## Samples collected:

VOCS

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>40mL</u>	<u>VIAL</u>	<u>3</u>	<u>—</u>	<u>HCl</u>	

## Notes:

extra well

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/26/00  
 Site Name \_\_\_\_\_  
 Ion \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel AG/SLH

Weather SUNNY ~70°F  
 Well # B2-GW-10  
 Evacuation Method NOX  
 Sampling Method TEFLON BAFFLE

## Well Information:

Depth of Well 25.13 ft  
 Depth to Water 16.47 ft  
 Length of Water Column 8.66 ft  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

Measurements taken from  Well Casing  Protective Casing  (Other, Specify) Ground surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

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## Water Sample:

Time Collected 11:15

## Physical Appearance at Start

Color Cloudy yellowish  
 Odor none  
 Turbidity (> 100 NTU) 25  
 Sheen/Free Product none

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

## Samples collected:

VOLS

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>10ml</u>	<u>VIAL</u>	<u>3</u>	<u>-</u>	<u>HCL</u>	

## Notes:

EXTRA well

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/26/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel CAB/KRH

Weather SUNNY ~60°F  
 Well # B2A-6W-3  
 Evacuation Method NONE  
 Sampling Method TIFLOM BAILER

## Well Information:

Depth of Well \* 21.01 ft.  
 Depth to Water \* 12.02 ft.  
 Length of Water Column 8.99 ft.  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify) Brown & Rata

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

Gallons Removed

Temperature Readings

pH Readings

Conductivity Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected 8:26

## Physical Appearance at Start

Color Brown  
 Odor NONE  
 Turbidity (> 100 NTU) 1002  
 Sheen/Free Product NONE

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

## Samples collected:

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>40 mL</u>	<u>VIAL</u>	<u>3</u>	<u>-</u>	<u>HCl</u>	

Notes:

extra well

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/26/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel CAG/KRH

Weather SUNNY ~60°F  
 Well # B2-GW-7  
 Evacuation Method NONE  
 Sampling Method TEFLON BARRIER

## Well Information:

Depth of Well 25.50 ft.  
 Depth to Water 23.36 ft.  
 Length of Water Column 2.14 ft.  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

Measurements taken from

Well Casing

Protective Casing

(Other, Specify)

open well

## Instrument Calibration:

pH Buffer Readings  
 4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

Conductivity Standard Readings  
 84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

Gallons Removed

Temperature Readings

pH Readings

Conductivity Readings uS/cm

initial \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

initial \_\_\_\_\_  
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initial \_\_\_\_\_  
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initial \_\_\_\_\_  
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 \_\_\_\_\_

Water Sample:  
 Time Collected 8:55

## Physical Appearance at Start

Color CLEAR/BRWNSH  
 Odor None  
 Turbidity (> 100 NTU) 57  
 Sheen/Free Product None

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

## Samples collected:

VOCs

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>40mL</u>	<u>VIAL</u>	<u>3</u>	<u>-</u>	<u>HCl</u>	

Notes:

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/26/00

Site Name \_\_\_\_\_

Weather SUNNY ~65°F

tion \_\_\_\_\_

Well # B2-GW-8

Project No. \_\_\_\_\_

Evacuation Method NonePersonnel CAB/KR4Sampling Method TRICON BAICER

## Well Information:

Depth of Well 19.59 ft

Water Volume /ft. for:

Depth to Water 5.82 ft

2" Diameter Well = 0.163 X LWC

Length of Water Column 13.77 ft

4" Diameter Well = 0.653 X LWC

Volume of Water in Well \_\_\_\_\_ gal(s)

6" Diameter Well = 1.469 X LWC

3X Volume of Water in Well \_\_\_\_\_ gal(s)

Volume removed before sampling \_\_\_\_\_ gal(s)  
Did well go dry? \_\_\_\_\_

• Measurements taken from

Well Casing

Protective Casing

(Other, Specify)

 Clear SRFS

## Instrument Calibration:

## pH Buffer Readings

## Conductivity Standard Readings

4.0 Standard \_\_\_\_\_

84 S Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_

## Water Sample:

Time Collected 9:25

## Physical Appearance at Start

Color

CLEAR / Blunt

## Physical Appearance at Sampling

Odor

None

Color

Turbidity (&gt; 100 NTU)

<100 (C2)

Turbidity (&gt; 100 NTU)

Sheen/Free Product

None

Odor

## Samples collected:

VOCs, FILTERED METALS, TOTAL METALS, TOTAL FLUORIDE

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
10	TEAL	3	—	HCL	
500 mL	PC BOT	1	YES	HNO3	
500 mL	"	1	—	HNO3	
500 mL	"	1	—		

Notes:

MS/MSD 1 Ftd 1 LF  
TM 3 VOL

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/27/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel CG/KRH

Weather Partly sunny ~65°  
 Well # B17 GW-8  
 Evacuation Method NOONE  
 Sampling Method TEFLON BAUCER

## Well Information:

Depth of Well 21.60 ft.  
 Depth to Water 14.69 ft.  
 Length of Water Column 9.91 ft.  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

Measurements taken from

Well Casing

Protective Casing

(Other, Specify)  Open Surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings US/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

Water Sample:  
Time Collected

10-28-00

## Physical Appearance at Start

Color Brown  
 Odor none  
 Turbidity (> 100 NTU) 1121  
 Sheen/Free Product none

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

## Samples collected:

VOCs

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>10 ml</u>	<u>VIAL</u>	<u>3</u>	<u>-</u>	<u>HCl</u>	

## Notes:

EXTRA WELL, SAMPLED SAME DAY WELL INSTALLED

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/27/00Site Name tionWeather Partly sunny ~65°KProject No. Well # IS-GW-5BPersonnel AG/KRHEvacuation Method NoneSampling Method Teflon Bag

## Well Information:

Depth of Well \* 25.18 ft.

Water Volume /ft. for:

Depth to Water \* DRY ft.

2" Diameter Well = 0.163 X LWC

Length of Water Column  ft.

4" Diameter Well = 0.653 X LWC

Volume of Water in Well  gal(s)

6" Diameter Well = 1.469 X LWC

3X Volume of Water in Well  gal(s)Volume removed before sampling  gal(s)  
Did well go dry? 

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify) closed surface

## Instrument Calibration:

## pH Buffer Readings

## Conductivity Standard Readings

4.0 Standard 84 S Standard 7.0 Standard 1413 S Standard 10.0 Standard 

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cminitial initial initial initial 

## Water Sample:

Time Collected 10:00

## Physical Appearance at Start

## Physical Appearance at Sampling

Color Color Odor Odor Turbidity (> 100 NTU) Turbidity (> 100 NTU) Sheen/Free Product Sheen/Free Product Samples collected: VOCS

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u></u>	<u></u>	<u></u>	<u></u>	<u></u>	<u></u>
<u></u>	<u></u>	<u></u>	<u></u>	<u></u>	<u></u>
<u></u>	<u></u>	<u></u>	<u></u>	<u></u>	<u></u>
<u></u>	<u></u>	<u></u>	<u></u>	<u></u>	<u></u>

Notes:

extra well (dry)

Date 10/27/00  
 Site Name \_\_\_\_\_  
 tion \_\_\_\_\_  
 ct No. \_\_\_\_\_  
 Personnel OAB/KRH

Weather Partly sunny ~65°F  
 Well # BL-GW-15  
 Evacuation Method NONE  
 Sampling Method TEFLON BAILEY

## Well Information:

Depth of Well 23.73 ft.  
 Depth to Water 12.68 ft.  
 Length of Water Column \_\_\_\_\_ ft.  
 Volume of Water in Well \_\_\_\_\_ gal.(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal.(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal.(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify)  Ground surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

Gallons  
RemovedTemperature  
ReadingspH  
ReadingsConductivity  
Readings uS/cm

initial \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Water Sample:  
Time Collected

9:40

## Physical Appearance at Start

Color Cloudy  
 Odor None  
 Turbidity (> 100 NTU) 125  
 Sheen/Free Product None

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

## Samples collected:

VOLs

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>40mL</u>	<u>VIAL</u>	<u>3</u>	<u>—</u>	<u>HCL</u>	

## Notes:

EXTRA well

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/27/00  
 Site Name \_\_\_\_\_  
 Location \_\_\_\_\_  
 Project No. \_\_\_\_\_  
 Personnel CBG/KR14

Weather Partly sunny ~65°F  
 Well # BX-GW-14  
 Evacuation Method None  
 Sampling Method Topcon BAILER

## Well Information:

Depth of Well 24.53 ft.  
 Depth to Water 1.94 ft.  
 Length of Water Column 22.57 ft.  
 Volume of Water in Well \_\_\_\_\_ gal(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal(s)

Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from

 Well Casing Protective Casing(Other, Specify) Ground Surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

initial \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Water Sample:  
 Time Collected 9:25

## Physical Appearance at Start

Color SLIGHTLY CLAY  
 Odor none  
 Turbidity (> 100 NTU) <100 (68)  
 Sheen/Free Product none

## Physical Appearance at Sampling

Color \_\_\_\_\_  
 Odor \_\_\_\_\_  
 Turbidity (> 100 NTU) \_\_\_\_\_  
 Sheen/Free Product \_\_\_\_\_

## Samples collected:

VOCs

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>40mL</u>	<u>VIAL</u>	<u>3</u>	<u>—</u>	<u>HCl</u>	<u>—</u>

Notes:  
EXTRT WELL

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/27/00

Site Name \_\_\_\_\_

Cation \_\_\_\_\_

Act No. \_\_\_\_\_

Personnel AG/KRHWeather Partly sunny ~60°  
Well # B2-6W-12  
Evacuation Method none  
Sampling Method TEFLON BAILER

## Well Information:

Depth of Well \* 25.17 ftDepth to Water \* 19.72 ftLength of Water Column 5.45 ft

Volume of Water in Well \_\_\_\_\_ gal(s)

3X Volume of Water in Well \_\_\_\_\_ gal(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC

4" Diameter Well = 0.653 X LWC

6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal(s)  
Did well go dry? \_\_\_\_\_

Measurements taken from

Well Casing

Protective Casing

(Other, Specify)

 Ground Surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

## Water Sample:

Time Collected 9:05

## Physical Appearance at Start

Color

clear

Odor

none

Turbidity (&gt; 100 NTU)

22

Sheen/Free Product

none

## Physical Appearance at Sampling

Color

\_\_\_\_\_

Odor

\_\_\_\_\_

Turbidity (&gt; 100 NTU)

\_\_\_\_\_

Sheen/Free Product

\_\_\_\_\_

Samples collected: VOCsContainer Size 40mL

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Notes:  
EXTRA WELL

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/27/00  
 Site Name tion  
 Project No.   
 Personnel OAG/KRL

Weather OVERCAST ~60°F  
 Well # B2-GW-13  
 Evacuation Method NONE  
 Sampling Method TEFLON BAILER

## Well Information:

Depth of Well 24.24 ft  
 Depth to Water 17.96 ft  
 Length of Water Column 6.28 ft  
 Volume of Water in Well  gal(s)  
 3X Volume of Water in Well  gal(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling  gal(s)  
 Did well go dry?

Measurements taken from

Well Casing

Protective Casing

(Other, Specify) Ground Surface

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard   
 7.0 Standard   
 10.0 Standard

## Conductivity Standard Readings

84 S Standard   
 1413 S Standard

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

initial

initial

initial

initial

Water Sample:  
 Time Collected 8:55

## Physical Appearance at Start

Color CLOUDY  
 Odor NONE  
 Turbidity (> 100 NTU) 0.63  
 Sheen/Free Product NONE

## Physical Appearance at Sampling

Color   
 Odor   
 Turbidity (> 100 NTU)   
 Sheen/Free Product

## Samples collected:

3

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u>10ml</u>	<u>VIAL</u>	<u>3</u>	<u>-</u>	<u>HCL</u>	

Notes: EXTRA WELL



## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/30/2000  
 Site Name Seneca Falls  
 Location Building 11  
 Project No. 23964  
 Personnel CA6/TLU

Weather Clear, breezy ~ 45°F  
 Well # B11-GW-10  
 Evacuation Method NOT APPLICABLE  
 Sampling Method TEFLON BAILEY

## Well Information:

Depth of Well \* 20.07 ft.  
 Depth to Water \* 3.17 ft.  
 Length of Water Column 16.90 ft.  
 Volume of Water in Well \_\_\_\_\_ gal.(s)  
 3X Volume of Water in Well \_\_\_\_\_ gal.(s)

Water Volume /ft. for:  
 2" Diameter Well = 0.163 X LWC  
 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal.(s)  
 Did well go dry? \_\_\_\_\_

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify)  
GROUND SURFACE

## Instrument Calibration:

pH Buffer Readings  
 4.0 Standard \_\_\_\_\_  
 7.0 Standard \_\_\_\_\_  
 10.0 Standard \_\_\_\_\_

Conductivity Standard Readings  
 84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

**Gallons  
Removed**

**Temperature  
Readings**

**pH  
Readings**

**Conductivity  
Readings uS/cm**

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

initial \_\_\_\_\_

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## Water Sample:

Time Collected 15:00

Physical Appearance at Start

Physical Appearance at Sampling

Color

Color

Odor

Odor

Turbidity (> 100 NTU)

Turbidity (> 100 NTU)

Sheen/Free Product

Sheen/Free Product

Samples collected: 3 VOCs, 2 screening

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

Notes:





## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/31/2000  
 Site Name GTE SENECA FALLS  
 Location SENECA FALLS, NY  
 Project No. 23966  
 Personnel TLC/CAG

Weather CLEAR LIGHT BREEZE ~50°F  
 Well # MW-20  
 Evacuation Method PERISTALTIC PUMP  
 Sampling Method BAILER

## Well Information:

Depth of Well \* 13.29 ft.  
 Depth to Water \* 1.66 ft.  
 Length of Water Column 11.63 ft.  
 Volume of Water in Well 7.6 gal.(s)  
 3X Volume of Water in Well 22.8 gal.(s)

Water Volume /ft. for:  
 2" Diameter Well =  $0.163 \times \text{LWC}$   
 X 4" Diameter Well =  $0.653 \times \text{LWC}$   
 6" Diameter Well =  $1.469 \times \text{LWC}$

Volume removed before sampling 22.8 gal.(s)  
 Did well go dry? NO

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify) \_\_\_\_\_

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard 4.0  
 7.0 Standard 7.0  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

## TURBIDITY

initial	—	initial	15.5 °C	initial	7.14	initial	1075	initial	200
	7.5		14.6 °C		6.81		1068		5.8
	15		13.6 °C		6.86		1023		5.7
	22.5		13.4 °C		6.95		1016		16.5
	SAMPLE		16.9 °C		6.81		866		2

## Water Sample:

Time Collected \_\_\_\_\_

## Physical Appearance at Start

## Physical Appearance at Sampling

Color CLEAR

Color \_\_\_\_\_

Odor NONE

Odor \_\_\_\_\_

Turbidity (> 100 NTU) 2

Turbidity (> 100 NTU) \_\_\_\_\_

Sheen/Free Product NONE

Sheen/Free Product \_\_\_\_\_

Samples collected: 3 VOCs, Ammonia, NITRATE/NITRITE NITROGEN TOTAL PHOSPHATE

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

Notes: WELL pumped on 10/31/2000, WELL sampled on 11/1/2000, WELL LEVEL on 11/1/2000 is 2.42 ft.

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/31/2000  
 Site Name GTE SENECA FALLS  
 Location SENECA FALLS, NY  
 Project No. 23966  
 Personnel TLC/CAG

Weather CLEAR, LIGHT BREEZE ~50°F  
 Well # MW - 21  
 Evacuation Method Peristaltic Pump  
 Sampling Method BAILER

## Well Information:

Depth of Well \* 21.39 ft.  
 Depth to Water \* 2.99 ft.  
 Length of Water Column 18.4 ft.  
 Volume of Water in Well 12 gal(s)  
 3X Volume of Water in Well 36 gal(s)

Water Volume /ft. for:  
 2" Diameter Well =  $0.163 \times \text{LWC}$   
 X 4" Diameter Well =  $0.653 \times \text{LWC}$   
 6" Diameter Well =  $1.469 \times \text{LWC}$

Volume removed before sampling 32 gal(s)  
 Did well go dry? yes

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify)

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard 4.0  
 7.0 Standard 7.0  
 10.0 Standard

## Conductivity Standard Readings

84 S Standard   
 1413 S Standard

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

## TURBIDITY

initial	<u>—</u>	initial	<u>14.9 °C</u>	initial	<u>7.61</u>	initial	<u>717</u>	<u>104</u>
	<u>12</u>		<u>15.1 °C</u>		<u>8.43</u>		<u>430</u>	<u>3.6</u>
	<u>24</u>		<u>15.3 °C</u>		<u>7.21</u>		<u>730</u>	<u>64</u>
	<u>SAMPLE</u>		<u>15.3 °C</u>		<u>5.95</u>		<u>582</u>	<u>2.8</u>
	<u></u>		<u></u>		<u></u>		<u></u>	<u></u>
	<u></u>		<u></u>		<u></u>		<u></u>	<u></u>
	<u></u>		<u></u>		<u></u>		<u></u>	<u></u>

## Water Sample:

Time Collected 11/25

## Physical Appearance at Start

## Physical Appearance at Sampling

Color CLEAR  
 Odor NONE  
 Turbidity (> 100 NTU) 2.8  
 Sheen/Free Product NONE

Color   
 Odor   
 Turbidity (> 100 NTU)   
 Sheen/Free Product

Samples collected: 3 VOCs, Ammonia NITRATE / NITRITE NITROGEN TOTAL Phosphorous

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
<u></u>	<u></u>	<u></u>	<u></u>	<u></u>	<u></u>
<u></u>	<u></u>	<u></u>	<u></u>	<u></u>	<u></u>
<u></u>	<u></u>	<u></u>	<u></u>	<u></u>	<u></u>
<u></u>	<u></u>	<u></u>	<u></u>	<u></u>	<u></u>

Notes: WELLS Pumped on 10/31/2000 WELL Sampled on 11/1/2000 WATER LEVEL ON 11/1/2000 IS 8.31 ft.

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/31/2000  
 Site Name GTE SENECA FALLS  
 Location SENECA FALLS, NY  
 Project No. 03966  
 Personnel TLC/CAB

Weather CLEAR, LIGHT BREEZE ~50°F  
 Well # MW-22  
 Evacuation Method PERISTALTIC Pump  
 Sampling Method BAILER

## Well Information:

Depth of Well \* 14.40 ft.  
 Depth to Water \* 7.06 ft.  
 Length of Water Column 7.84 ft.  
 Volume of Water in Well 5.12 gal(s)  
 3X Volume of Water in Well 15.36 gal(s)

Water Volume /ft. for:  
 2" Diameter Well = 0.163 X LWC  
 X 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 14.5 gal(s)  
 Did well go dry? YES

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify) \_\_\_\_\_

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard 4.0  
 7.0 Standard 7.0  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

## TURBIDITY

initial	<u>—</u>	initial	<u>16.9 °C</u>	initial	<u>7.41</u>	initial	<u>710</u>	<u>116</u>
	<u>5</u>		<u>16.8 °C</u>		<u>7.39</u>		<u>705</u>	<u>5.1</u>
	<u>10</u>		<u>17.0 °C</u>		<u>7.35</u>		<u>706</u>	<u>1.7</u>
	<u>SAMPLE</u>		<u>16.5 °C</u>		<u>6.17</u>		<u>684</u>	<u>5.6</u>
	_____		_____		_____		_____	_____
	_____		_____		_____		_____	_____
	_____		_____		_____		_____	_____

## Water Sample:

Time Collected 10:25

## Physical Appearance at Start

## Physical Appearance at Sampling

Color CLEAR

Color \_\_\_\_\_

Odor CHEMICAL odor

Odor \_\_\_\_\_

Turbidity (> 100 NTU)

Turbidity (> 100 NTU)

5.6

Sheen/Free Product

Sheen/Free Product

NONE

Samples collected: 3 VOCs, Ammonium, NITRATE/NITRITE NITROGEN TOTAL PHOSPHOROUS

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Notes: WELL pumped on 10/31/2000, WELL sampled on 11/1/2000, WATER LEVEL on 11/1/2000 is 7.09 ft



## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/31/2000  
 Site Name GTE SENECA FALLS  
 Location SENECA FALLS, NY  
 Project No. 23966  
 Personnel TLC/CAG

Weather CLEAR, LIGHT BREEZE ~50°F  
 Well # MW-24  
 Evacuation Method PERISTALTIC PUMP  
 Sampling Method BAILEY

## Well Information:

Depth of Well \* 24.68 ft.  
 Depth to Water \* 3.88 ft.  
 Length of Water Column 20.8 ft.  
 Volume of Water in Well 13.58 gal(s)  
 3X Volume of Water in Well 40 gal(s)

Water Volume /ft. for:  
 2" Diameter Well = 0.163 X LWC  
 X 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 21 gal(s)  
 Did well go dry? YES

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify) \_\_\_\_\_

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard 4.0  
 7.0 Standard 7.0  
 10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_  
 1413 S Standard \_\_\_\_\_

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

## Turbidity

initial	—	initial	15.0 °C	initial	12.32	initial	1223	i20
	13		16.3 °C		7.12		1144	3.8
SAMPLE			13.9 °C		10.37		1100	2.2

## Water Sample:

Time Collected 9:10

## Physical Appearance at Start

## Physical Appearance at Sampling

Color CLEAR

Color \_\_\_\_\_

Odor NONE

Odor \_\_\_\_\_

Turbidity (> 100 NTU) 0.2

Turbidity (> 100 NTU) \_\_\_\_\_

Sheen/Free Product NONE

Sheen/Free Product \_\_\_\_\_

Samples collected: 3 VOCs AMMONIA NITRATE/NITRITE NITROGEN TOTAL PHOSPHOROUS MS/MSD BLIND Dup

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

Notes: NEW CEMENT PUT AROUND CASING ON 10/30/2000, WELL PUMPED ON 10/31/2000,  
 WELL SAMPLED ON 11/1/2000, WATER LEVEL ON 11/1/00 IS 4.20 ft

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/31/2000  
 Site Name GTE SENECA FALLS  
 Location SENECA F  
 Project No. J39166  
 Personnel TLC/CAG

Weather CLEAR, LIGHT BREEZE ~50°F  
 Well # MW - 25  
 Evacuation Method PERISTALTIC Pump  
 Sampling Method BAILEY

## Well Information:

Depth of Well \* 17.81 ft.  
 Depth to Water \* 4.70 ft.  
 Length of Water Column 13.11 ft.  
 Volume of Water in Well 8.56 gal(s)  
 3X Volume of Water in Well 25.7 gal(s)

Water Volume /ft. for:  
 2" Diameter Well =  $0.163 \times \text{LWC}$   
 X 4" Diameter Well =  $0.653 \times \text{LWC}$   
 6" Diameter Well =  $1.469 \times \text{LWC}$

Volume removed before sampling 24 gal(s)  
 Did well go dry? YES

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify)

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard 4.0  
 7.0 Standard 7.0  
 10.0 Standard  

## Conductivity Standard Readings

84 S Standard    
 1413 S Standard  

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

initial	<u>—</u>	initial	<u>15.8 °C</u>	initial	<u>8.71</u>	initial	<u>869</u>	<u>27</u>
	<u>8.5</u>		<u>14.9 °C</u>		<u>7.32</u>		<u>844</u>	<u>6.9</u>
	<u>17</u>		<u>15.0 °C</u>		<u>7.15</u>		<u>849</u>	<u>11.5</u>
	<u>SAMPLE</u>		<u>16.9 °C</u>		<u>6.2</u>		<u>748</u>	<u>3</u>

## Water Sample:

Time Collected 10:50

## Physical Appearance at Start

## Physical Appearance at Sampling

Color CLEAR  
 Odor NONE  
 Turbidity (> 100 NTU) 3  
 Sheen/Free Product NONE

Color    
 Odor    
 Turbidity (> 100 NTU)    
 Sheen/Free Product  

Samples collected: 3 vols AMMONIA NITRATE/NITRITE NITROGEN TOTAL PHOSPHORUS

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pH

Notes: WELL PUMPED ON 10/31/2000, WELL SAMPLED ON 11/1/2000, WATER LEVEL ON 11/1/2000 IS 8.27 ft.



## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/31/2000  
 Site Name ETE SENECA FALLS  
 Location SENECA FALLS NY  
 Project No. 23946  
 Personnel TLC / CAG

Weather CLEAR, LIGHT BREEZE ~45°F  
 Well # MW-27  
 Evacuation Method PERISTALTIC Pump  
 Sampling Method BAILER

## Well Information:

Depth of Well \* 17.71 ft.  
 Depth to Water \* 7.96 ft.  
 Length of Water Column 9.75 ft.  
 Volume of Water in Well 6.4 gal(s)  
 3X Volume of Water in Well 19.2 gal(s)

Water Volume /ft. for:  
 2" Diameter Well = 0.163 X LWC  
 X 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 14.2 gal(s)  
 Did well go dry? NO

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify)

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard 4.0  
 7.0 Standard 7.0  
 10.0 Standard

## Conductivity Standard Readings

84 S Standard   
 1413 S Standard

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

## TURBIDITY

initial	<u>—</u>	initial	<u>12.3 °C</u>	initial	<u>7.55</u>	initial	<u>850</u>	<u>11</u>
	<u>6</u>		<u>13.1 °C</u>		<u>7.54</u>		<u>846</u>	<u>2.2</u>
	<u>12</u>		<u>13.3 °C</u>		<u>7.57</u>		<u>848</u>	<u>2.37</u>
	<u>18</u>		<u>12.6 °C</u>		<u>7.3</u>		<u>895</u>	<u>2.7</u>
	<u>Sample</u>		<u>13.7 °C</u>		<u>7.6</u>		<u>697</u>	<u>2.5</u>

## Water Sample:

Time Collected 13:10

## Physical Appearance at Start

## Physical Appearance at Sampling

Color CLEAR  
 Odor NONE  
 Turbidity (> 100 NTU) 0.5  
 Sheen/Free Product NONE

Color   
 Odor   
 Turbidity (> 100 NTU)   
 Sheen/Free Product

Samples collected: 3 VOCs AMMONIA NITRATE/NITRITE NITROGEN TOTAL PHOSPHOROUS

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pt

Notes: WELL PUMPED ON 10/31/2000, WELL SAMPLED ON 11/1/00, WELL LEVEL ON 11/1/00 IS 8.21 ft.

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/31/2000  
 Site Name GTE SENECA FALLS  
 Location SENECA FALLS, NY  
 Project No. 2396  
 Personnel TLC, CAG

Weather Clear, light breeze ~50°F  
 Well # MW - 2.8  
 Evacuation Method Peristaltic Pump  
 Sampling Method BAILER

## Well Information:

Depth of Well \* 17.96 ft  
 Depth to Water \* 8.29 ft  
 Length of Water Column 9.67 ft  
 Volume of Water in Well 6.3 gal.(s)  
 3X Volume of Water in Well 18.9 gal.(s)

Water Volume /ft. for:  
 2" Diameter Well = 0.163 X LWC  
 X 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 19 gal.(s)  
 Did well go dry? NO

\* Measurements taken from

Well Casing

Protective Casing

(Other, Specify)

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard 4.0  
 7.0 Standard 7.0  
 10.0 Standard

## Conductivity Standard Readings

84 S Standard   
 1413 S Standard

## Water parameters:

Gallons Removed	Temperature Readings	pH Readings	Conductivity Readings uS/cm	Turbidity
initial	<u>12.8 °C</u>	<u>7.43</u>	<u>810</u>	<u>90</u>
6	<u>12.1 °C</u>	<u>7.30</u>	<u>726</u>	<u>5.6</u>
12	<u>12.8 °C</u>	<u>7.33</u>	<u>750</u>	<u>16.5</u>
18	<u>12.5 °C</u>	<u>7.15</u>	<u>836</u>	<u>13.5</u>
Sample	<u>13.7 °C</u>	<u>6.45</u>	<u>584</u>	<u>2.9</u>

## Water Sample:

Time Collected 14<sup>25</sup>

## Physical Appearance at Start

Color CLEAR  
 Odor NONE  
 Turbidity (> 100 NTU) 2.9  
 Sheen/Free Product NONE

## Physical Appearance at Sampling

Color   
 Odor   
 Turbidity (> 100 NTU)   
 Sheen/Free Product

Samples collected: 3 VOCs, Ammonia, Nitrate/Nitrite NITROGEN ? Total Phosphorous

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container pl

Notes: WELL PUMPED ON 10/31/00, WELL SAMPLED ON 11/1/00, WATER LEVEL ON 11/1/00 WAS 8.44 FT.

## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sampling Log

Date 10/31/2000  
 Site Name GTE SENELA FALLS  
 Location SENELA FALLS, NY  
 Project No. 23966  
 Personnel TLC/CAG

Weather CLEAR, LIGHT BREEZE ~45°F  
 Well # MW-29  
 Evacuation Method PERISTALTIC PUMP  
 Sampling Method BAILER

## Well Information:

Depth of Well \* 30.09 ft.  
 Depth to Water \* 9.04 ft.  
 Length of Water Column 11.05 ft.  
 Volume of Water in Well 7.2 gal(s)  
 3X Volume of Water in Well 21.6 gal(s)

## Water Volume /ft. for:

2" Diameter Well = 0.163 X LWC  
 X 4" Diameter Well = 0.653 X LWC  
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling  
 Did well go dry?

19 gal(s)  
 YES

(Other, Specify)

\* Measurements taken from

Well Casing

Protective Casing

## Instrument Calibration:

pH Buffer Readings  
 4.0 Standard 4.0  
 7.0 Standard 7.0  
 10.0 Standard

Conductivity Standard Readings  
 84 S Standard   
 1413 S Standard

## Water parameters:

Gallons Removed	Temperature Readings	pH Readings	Conductivity Readings uS/cm	TURBIDITY
initial	initial <u>11.6 °C</u>	initial <u>7.05</u>	initial <u>974</u>	<u>392</u>
7	<u>10.7 °C</u>	<u>7.05</u>	<u>1005</u>	<u>10.9</u>
14	<u>10.3 °C</u>	<u>6.95</u>	<u>983</u>	<u>46</u>
sample	<u>12.6 °C</u>	<u>8.45</u>	<u>795</u>	<u>4.3</u>

## Water Sample:

Time Collected 14<sup>45</sup>

## Physical Appearance at Start

## Physical Appearance at Sampling

Color CLEAR  
 Odor None  
 Turbidity (> 100 NTU) 4.3  
 Sheen/Free Product None

Color   
 Odor   
 Turbidity (> 100 NTU)   
 Sheen/Free Product

Samples collected: 3 vcs, Ammonia Nitrate/Nitrite Nitrogen Total Phosphorous

Container Size	Container Type	# Collected	Field Filtered	Preservative	Container p

Notes: WELL PUMPED ON 10/31/2000, WELL SAMPLED ON 11/1/2000. WATER LEVEL ON 11/1/2000 IS 10.44 ft.











## O'Brien &amp; Gere Engineers, Inc.

## Standard Ground Water Sample Form

Date 7/17/01Site Name GTE-OSILocation Former Phillips Display - Seneca FallsProject No. 5816/23966Personnel EWTWeather SUNNY - 70Well # MW BR-5

Evacuation Method \_\_\_\_\_

Sampling Method \_\_\_\_\_

## Well Information:

Depth of Well 47.0 ft.Depth to Water 19.31 ft.Length of Water Column 27.69 ft.Volume of Water in Well 4.51 gal(s)3X Volume of Water in Well 13.5 gal(s)

Water Volume /ft. for:

x 2" Diameter Well = 0.163 X LWC4" Diameter Well = 0.653 X LWC6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_

Did well go dry? \_\_\_\_\_

gal(s)

\* Measurements taken from

 Well Casing Protective Casing

(Other, Specify) \_\_\_\_\_

## Instrument Calibration:

## pH Buffer Readings

4.0 Standard \_\_\_\_\_

7.0 Standard \_\_\_\_\_

10.0 Standard \_\_\_\_\_

## Conductivity Standard Readings

84 S Standard \_\_\_\_\_

1413 S Standard \_\_\_\_\_

## Water parameters:

## Gallons Removed

## Temperature Readings

## pH Readings

## Conductivity Readings uS/cm

TURB

initial	<u>0.25</u>	initial	<u>63.2</u>	initial	<u>5.35</u>	initial	<u>3300</u>	<u>58.4</u>
	<u>5.00</u>		<u>63.3</u>		<u>5.30</u>		<u>2500</u>	<u>38.0</u>
	<u>10.00</u>		<u>62.1</u>		<u>5.32</u>		<u>2410</u>	
	<u>15.00</u>							<u>22.1</u>
	<u>20.00</u>		<u>62.5</u>		<u>5.32</u>		<u>2470</u>	<u>28.00</u>

## Water Sample:

213

Time Collected

## Physical Appearance at Start

## Physical Appearance at Sampling

Color

CLEAR

Color

CLEAR

Odor

NO odor

Odor

NO odor

Turbidity (&gt; 100 NTU)

<100

Turbidity (&gt; 100 NTU)

<100

Sheen/Free Product

NO SHEEN

Sheen/Free Product

NO SHEEN

## Samples collected:

Container Size	Container Type	# Collected	Field	Filtered	Preservative	Container pH
40-ml VOA	VOA Vial				1:1 HCL	<2

Notes:

O'Brien & Gere Engineers, Inc.

### Standard Ground Water Sampling Log

Date	7/17/01
Site Name	GTE-OSI
Location	Former Phillips Display - S
Project No.	5816/23966
Personnel	EWT

Weather Cloudy ~60  
Well # MN-22-6  
Evacuation Method D. Baber  
Sampling Method D. Baber

### Well Information:

Depth of Well *	74.0	ft.
Depth to Water *	32.70	ft.
Length of Water Column	41.3	ft.
Volume of Water in Well	6.73	gal.(s)
3X Volume of Water in Well	20.19	gal.(s)

Water Volume /ft. for:

x 2" Diameter Well = 0.163 X LWC  
         4" Diameter Well = 0.653 X LWC  
         6" Diameter Well = 1.469 X LWC

Volume removed before sampling \_\_\_\_\_ gal.(s)  
Did well go dry?

\* Measurements taken from

Well Casing

### Protective Casing

— 10 —

### Instrument Calibration:

**pH Buffer Readings**

4.0 Standard	
7.0 Standard	6.99
10.0 Standard	

Conductivity Standard Readings  
84 S Standard 82  
1413 S Standard 1410

### Water parameters:

Gallons Removed	Temperature Readings	pH Readings	Conductivity Readings uS/cm
initial	0.25	initial 62	initial 976
	6	61	1012
	12	52	1062
	18	52	1012
20			

**Water Sample:**

Time Collected

### Physical Appearance at Start

Color	Cloudy
Odor	No odor
Turbidity (> 100 NTU)	700
Sheen/Free Product	No sheen

### Physical Appearance at Sampling

Color	Color
Odor	NO Odor
Turbidity (> 100 NTU)	>1000
Sheen/Free Product	NO SHEEN.

**Samples collected:**

**Notes:**