

**Item 44**

**Sampling and Analyses Plan for Fuel Spill sent to NYSDEC 2001**

**NMPC letter NMPE 0244 dated 1/23/01**

**NYSDEC letter dated 3/6/01**

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# Niagara Mohawk FILE COPY

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Vice President  
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January 23, 2001  
NMPE 0244

Mr. Brian Matthews  
New York State Department of  
Environmental Conservation  
615 Erie Boulevard West  
Syracuse, NY 13204-2400

**RE: *Niagara Mohawk Power Corporation  
Nine Mile Point Nuclear Station  
Spill No. 0004089***

Dear Mr. Matthews:

On July 5, 2000, Niagara Mohawk Power Corporation (NMPC) reported to the New York State Spill Hotline a prior petroleum spill/leak from a former underground storage tank at the Nine Mile Point Nuclear Station (NMPNS); Spill No. 0004089 was assigned to this event. Evidence of this past release was discovered during a Phase I/II Environmental Site Assessment being conducted by NMPC for the divestiture of the NMPNS. On July 11, 2000, Mr. Michael McPeck of NMPC Environmental Affairs Department discussed with you, in a phone conversation, the details surrounding this event and the action NMPC would be conducting. This action included the investigation of this area to better define the aerial extent of the contamination for the development of a remedial action plan.

Please find attached to this correspondence the report entitled Subsurface Assessment of the Unit 2 Former Vehicle Maintenance UST Area, prepared for the New York State Department of Environmental Conservation; Spill No. 0004089, dated January 2001. This report discusses the site conditions and the aerial extent of the contamination.

The recommended plan of action is to develop a ground water monitoring plan to monitor the natural degradation of the contaminants in the groundwater. The plan will include a schedule for sampling, the location of the sampling points and the analytical parameters used to evaluate the groundwater quality in the vicinity of the former underground storage tank. The plan will include data quality objectives, sampling and analytical protocols, data presentation, and interpretation methods.

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We appreciate your attention concerning this environmental matter and we will take the liberty of contacting you in the coming weeks to further discuss this issue. In the meantime, should you have any questions concerning this event/report, please feel free to contact Mr. Michael McPeck at (315) 428-5727 or Mr. Kent Stoffle at (315) 349-1364.

Sincerely,



Richard B. Abbott  
Vice President Nuclear Engineering

RBA/mlg  
Attachment

Distribution:

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**Subsurface Assessment of the Unit 2  
Former Vehicle Maintenance UST Area**

Niagara Mohawk Power Corporation  
Nine Mile Point Nuclear Station  
Town of Scriba, Oswego County, New York

*Prepared for:*

New York State Department of Environmental Conservation  
Spill Number 0004089

*Prepared by:*

**Geomatrix Consultants, Inc.**  
338 Harris Hill Road, Suite 201  
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January 2001

Project No. 6399

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**Geomatrix Consultants**

## EXECUTIVE SUMMARY

Geomatrix Consultants, Inc. (Geomatrix) was retained by Niagara Mohawk Power Corporation (Niagara Mohawk) to conduct an investigation of the Unit 2 Former Vehicle Maintenance Area at the location of a former underground storage tank (UST) at the Nine Mile Point Nuclear Station property (the Site) in the Town of Scriba, Oswego County, New York (NYSDEC Spill No. 0004089).

To assess the extent of the petroleum-impacted soil and groundwater identified during a Phase II Environmental Site Assessment (ESA), a series of soil boreholes and groundwater monitoring wells were installed within the former vehicle maintenance UST area of Unit 2 and were field screened for potential petroleum impacts. The installed wells were developed and sampled on September 5, 2000 in accordance with Geomatrix field operating procedures (FOPs). Subsurface soil and groundwater samples were submitted for laboratory analysis of the New York State Department of Environmental Conservation (NYSDEC) Spill Technology and Remediation Series Memorandum No. 1 (STARS) list of volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs). Groundwater samples were also analyzed for fate and transport parameters.

NYSDEC STARS VOCs and SVOCs were detected at concentrations above guidance values in subsurface soil samples analyzed from the borehole at MW-1. Elevated photoionization detector (PID) measurements and olfactory evidence of suspected petroleum impact extend approximately 60 feet across in the east-west direction and 75 feet in a north-south direction in the vicinity of the former UST location. Elevated VOC concentrations and evidence of suspected petroleum impact was identified north of the former vehicle maintenance building. NYSDEC Class GA groundwater standards (6NYCRR Part 703) and Ambient Water Quality Standards and Guidance Values (Division of Water, Technical and Operation Guidance Memorandum 1.1.1) (collectively referred to herein as groundwater criteria) were exceeded for several VOCs and SVOCs in samples analyzed from groundwater monitoring well MW-1. Only benzene groundwater criteria was exceeded in groundwater samples analyzed from MW-5.

Analytical results for the fate and transport parameters indicate subsurface conditions are suitable for biodegradation of the dissolved-phase petroleum aromatic hydrocarbons. Oxygen levels are sufficient to allow microbial breakdown of the petroleum constituents and limit the migration of these compounds from the source area as shown by the lack of petroleum constituents detected in groundwater north of the former UST area. The subsurface aerobic



conditions determined to exist throughout the study area, the lack of receptors of petroleum-impacted groundwater, and the absence of risk to human health and the environment indicate that monitored natural attenuation via degradation of petroleum constituents in groundwater is a suitable action for the former UST Area.



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**SUBSURFACE ASSESSMENT OF THE UNIT 2  
FORMER VEHICLE MAINTENANCE AREA**  
Nine Mile Point Nuclear Station  
Town of Scriba, Oswego County, New York

**1.0 INTRODUCTION**

Geomatrix Consultants, Inc. (Geomatrix) was retained by Niagara Mohawk Power Corporation (Niagara Mohawk) to conduct a subsurface investigation in the vicinity of the Unit 2 Former Vehicle Maintenance Area at the Nine Mile Point Nuclear Station property (the Site) in the Town of Scriba, Oswego County, New York (Figure 1). The investigation was conducted in response to findings of a Phase I/II Environmental Site Assessment (ESA), conducted in May, 2000 by Geomatrix. The purpose of the Phase I ESA was to identify potential environmental conditions associated with the construction, operation, and maintenance of the Site, or from earlier usage, that may have resulted in impairment of site media. The scope of the Phase II portion of the ESA was developed based on findings of the Phase I ESA.

The Phase II ESA field investigation included sampling and analysis of soil, sediment and groundwater. The investigation identified residual petroleum-impacted soil in the area of a former underground storage tank (UST), immediately east of the former vehicle maintenance building at Unit 2. Geomatrix was informed by station personnel that the UST was used for vehicle fueling during the construction of Unit 2 and was removed in the mid 1980s, prior to the promulgation of 6NYCRR Part 613. Niagara Mohawk subsequently reported the petroleum-impacted soil identified during the Phase II ESA to the New York State Department of Environmental Conservation (NYSDEC) and the NYSDEC assigned Spill Number 0004089 as a result of this finding.

This report describes an assessment of the petroleum-impacted subsurface soil and groundwater quality in the area of the former UST.

## 2.0 SITE DESCRIPTION

Niagara Mohawk operates a two-unit nuclear power generating station along the shore of Lake Ontario in Oswego County, New York (Figure 1). Unit 1 was constructed in the 1960s and was licensed in 1969. Unit 2 construction began in the late 1970s, was completed in the mid-1980s, and was licensed in 1987. The site property encompasses approximately 1,000 acres, 170 acres of which are utilized for power generation. The Unit 2 former vehicle maintenance UST area (Former UST Area) is located within the 170 acre area and is within the security fence at the northeast corner of Unit 2. The site is supplied with potable water from a municipal water source. Groundwater is not used for any purpose at the site.

### 2.1 SITE LOCATION AND PHYSICAL SETTING

The Site is located northeast of the City of Oswego in the Town of Scriba, Oswego County, New York (Figure 1). The Site is bordered on the north by Lake Ontario, on the west by residential properties and Lakeview Road, on the south by undeveloped land, and on the east by the James A. Fitzpatrick Nuclear Power Plant. Lake Road runs east-west through the Site, south of Units 1 and 2. The Site is part of the Erie-Ontario Lowlands, a subdivision of the Central Lowlands Physiographic Province. The terrain aspect of the site is typical of the physiographic province consisting of flat to low relief topography superimposed on an erosional bedrock surface of irregular, low relief. The Site is generally flat and slopes gently to the north toward Lake Ontario. The mean lake elevation is 246 feet mean sea level (msl). The ground surface elevation of the Site ranges from 246 feet msl at the shoreline to approximately 276 feet msl near the southern end of the developed portion of the Site.

### 2.2 GEOLOGIC/HYDROGEOLOGIC CONDITIONS

A veneer of glacial deposits (tills, glaciofluvial sediments and proglacial lake sediments) covers most of the area surrounding the Site. These deposits are generally less than 25 feet thick and overlie the Oswego Sandstone bedrock. Much of the overburden deposits were removed during the construction of the Unit 2 facility and replaced with a gravelly fill. In the vicinity of the Former UST Area, fill consisting of sand and gravel is present at a thickness ranging from 6-14 feet, depending on proximity to building structures and depth to bedrock.

Hydrogeologic conditions at the Site were interpreted from a series of borings, piezometers, and temporary monitoring wells installed as part of previous site investigations. Groundwater is typically encountered near the base of the overburden, above bedrock, predominantly in zones with increased gravel and sand content. Based on regional topography, groundwater

flow is to the north towards Lake Ontario with variations due to local topographic features. Overburden groundwater flow at the Former UST Area is generally to the north, toward Lake Ontario.

### 2.3 PREVIOUS INVESTIGATIONS

During the Phase II ESA field investigation, temporary monitoring well B-18 was installed east of the buildings and grounds shop in the area of the former gasoline/diesel UST. The boring log for temporary well B-18 is included in Appendix A of this report. The location of B-18 is shown on Figure 2 of this report.

During the Phase II ESA, a subsurface soil sample, collected at 10 to 12 feet below ground surface (bgs) at B-18, and a groundwater sample, collected from a screened interval of 7 to 12 feet bgs at B-18, were sent to Severn Trent Laboratories (STL) in Shelton, Connecticut for analysis of NYSDEC Spill Technology and Remediation Series Memorandum No. 1 (STARS) volatile organic compounds (VOCs) and STARS semi-volatile organic compounds (SVOCs). Analytical results of the soils from B-18 indicated impact of petroleum constituents related to gasoline or diesel fuel at concentrations exceeding STARS Guidance Values (soil criteria). Analytical results of the groundwater from B-18 indicated exceedance of 6NYCRR Part 703 Class GA Groundwater Standards (groundwater criteria) for several VOCs associated with gasoline and/or diesel fuel similar to the analytical results of the soils. Based on visual inspection of split spoon soil samples and elevated readings detected using a photoionization detector (PID), petroleum impacted soil was identified in subsurface soil ranging from approximately 8 to 11 feet below grade.

Analytical results of B-18 soil and groundwater samples indicated a need for further subsurface investigation of the area to identify the nature and extent of petroleum-impacted soil and groundwater.

### 3.0 FIELD ACTIVITIES

To assess the extent of the petroleum-impacted soil and groundwater, a series of soil borings and groundwater monitoring wells were installed within the Former UST Area. Soil borings and groundwater monitoring wells were installed between August 21 and August 25, 2000 in the area surrounding the former location of B-18 (installed during Phase II of the ESA), east of the former vehicle maintenance building (see Figure 2). The monitoring wells were developed on August 28, 2000 and sampled on September 5, 2000 in accordance with Geomatrix field operating procedures (FOPs). The following sections summarize the field activities performed during the Former UST Area investigation.

#### 3.1 GEOPHYSICAL SURVEY AND COORDINATE SYSTEM

On August 15, 2000 (prior to drilling activities), a geophysical survey was conducted over the suspected impacted area utilizing electromagnetic and ground penetrating radar (GPR) techniques to determine the location of underground utilities/buried metal anomalies. During the geophysical survey, a grid coordinate system was installed using the southeast corner of the existing maintenance building as the origin. This coordinate system was used to identify the locations of the underground utilities during the drilling activities and was incorporated into borehole and well sample location designations. Figure 3 presents the results of the geophysical survey. The linear anomalies presented on the figure represent mapped locations of underground utilities.

#### 3.2 SUBSURFACE SOIL INVESTIGATION

Starting at the location of the former borehole/temporary monitoring well B-18, a series of boreholes were advanced approximately 20 feet to the north, east, and south to determine the extent of the petroleum impacted soil. Boreholes were advanced and sampled continuously to the top of bedrock or to refusal using 2-inch diameter split spoons. Soils were visually inspected for suspected petroleum impact, screened for organic vapors using a PID and classified in accordance with the Unified Soils Classification System. The borehole logs for these borings are presented in Appendix A. If a suspected petroleum presence was identified in the borehole soil samples (visual staining, olfactory evidence or elevated PID analysis), additional boreholes were drilled approximately 20 feet further from the B-18 location barring underground utility and surface obstructions. If no evidence of petroleum presence was observed in the borehole, a soil sample was collected from the bottom of the borehole for analytical testing. The sample was stored in an ice-chilled cooler and couriered to Life Sciences Laboratories, Inc. (LSL) in East Syracuse, New York under chain-of-custody (COC)

for analysis of the NYSDEC STARS list of VOCs by Method 8021 and Semi-VOCs by Method 8270. A total of 12 boreholes were advanced during this investigation.

The intent of the boring program was to collect soil samples from locations beyond the anticipated area of impact in order to characterize the distribution of the impacted soil and groundwater in the area. Although petroleum impacts were identified in borehole BH-2, borings were not advanced in an easterly direction from this location due to the presence of underground utilities (see Figure 3) and the location of the site security fence. Since the general direction of groundwater flow is to the northwest, the movement of constituents in the groundwater would be expected to be in a similar direction. The presence of petroleum impacts east of BH-2, if any, would be localized and limited in extent.

In addition to samples collected during the boring program, subsurface soil samples were collected from the boreholes of three monitoring wells (MW-1, MW-2, and MW-5) and analyzed for the same parameters as the boring program samples. In addition, the soil sample collected from boring MW-5 was analyzed for VOCs by Method 8260 due to an inconsistent odor compared to other suspected petroleum impacted samples. Figure 2 shows the location of all of the boreholes and monitoring wells drilled during the investigation.

All soil cuttings generated during the borehole investigation were collected and containerized in Department of Transportation (DOT)-approved drums supplied by Niagara Mohawk and labeled with the date and contents for handling/disposal by Niagara Mohawk.

### **3.3 MONITORING WELL INSTALLATION**

After defining the area of impacted soil to the extent allowed by utility and/or surface obstructions during the borehole investigation, a series of groundwater monitoring wells were installed in the overburden and bedrock to determine the area of potential petroleum-impacts to groundwater. The locations of the monitoring wells are shown on Figure 2. The well borings were advanced using 4-1/4 inch I.D. hollow stem augers to auger refusal/top of bedrock. At monitoring well MW-6 location, air rotary techniques were utilized to advance the borehole into bedrock. A 2-inch diameter Schedule 40, PVC well screen (10-slot) and riser was set into each borehole and packed with #0 silica sand. A bentonite seal was placed above the sand to prevent surface water from entering the monitoring well sand pack. Cement/bentonite grout was placed in the annular space to ground surface above the soil. A protective surface casing was installed around the riser with concrete flush to the ground. Monitoring well construction

logs are presented in Appendix A. Groundwater monitoring well construction details are summarized in Table 1.

All soil cuttings generated during monitoring well installation were collected and containerized in DOT-approved drums supplied by Niagara Mohawk and labeled with the date and contents for handling/disposal by Niagara Mohawk.

### **3.4 MONITORING WELL DEVELOPMENT**

At the completion of monitoring well installation, but not within 24 hours, all monitoring wells were developed. During development the following water quality field parameters recorded: temperature, pH, oxidation/reduction potential, conductivity, turbidity, and dissolved oxygen. Well development logs are presented in Appendix B.

All water generated during monitoring well development was collected and containerized in DOT-approved drums supplied by Niagara Mohawk and labeled with the date and contents.

### **3.5 GROUNDWATER SAMPLING**

On September 5, 2000 the static water level was recorded at all monitoring wells. In addition, the presence of a free-phase petroleum product was assessed with an oil/water interface probe and clear bailer. All wells were then purged and sampled, with the exception of MW-4, which had insufficient groundwater recharge to collect a sample. Groundwater sampling logs are presented in Appendix B. All water samples were placed in appropriate laboratory supplied sample jars, stored in an ice-chilled cooler, and couriered to LSL under COC for analysis of STARS VOCs Method 8021 and Semi-VOCs Method 8270, and fate and transport parameters: nitrate, total iron, and alkalinity. The groundwater sample collected from well MW-5 was analyzed for VOCs by Method 8260.

All purge water generated during groundwater sampling was collected and containerized in DOT-approved drums supplied by Niagara Mohawk and labeled with the date and contents for handling/disposal by Niagara Mohawk.

## 4.0 INVESTIGATIONS RESULTS

The following sections summarize the subsurface conditions and analytical results of the samples collected during the field activities described in Section 3.0 of this report.

### 4.1 AREA-SPECIFIC SUBSURFACE CONDITIONS

The boring program in the vicinity of the Former UST Area identified granular soils consisting primarily of:

- sand and gravel fill, and
- silty sand.

The granular soils were present above glacial till or bedrock.

The stratigraphic relationship of these materials is presented in cross-section from south to north across the area on Figure 4. The sand and gravel fill was encountered in all borings from the ground surface to a maximum depth of approximately 20 feet where it exists directly above bedrock (MW-2). In the vicinity of MW-1, MW-5, BH-1 and B-18, a thin layer of pea gravel (approximately 0.5 feet thick) was present at the base of the fill directly above bedrock. At other locations, silty sand ranging in thickness from being absent in the area of the former UST to approximately 15 feet (MW-6) immediately north of the Unit 2 Off-Gas Stack. It appears that the sand and gravel fill may have been placed above the silty sand to level the site during construction. The silty sand generally overlies bedrock, but is underlain by a thin layer of till in the northern portion of the study area. Bedrock is a hard, fine-grained siltstone occurring at a depth ranging from approximately 8 to 16 feet bgs.

Groundwater occurs in the lower portion of the granular soils. The saturated thickness of the granular soil ranges from 2.5 feet in the vicinity of the former UST to 7.5 feet north of the Unit 2 Off-Gas Stack. The coarse, granular nature of the saturated soil indicates that the hydraulic conductivity of the soil is moderate. Hydraulic conductivity of the pea gravel below the sand and gravel fill material is high, and is a preferential pathway for groundwater flow. However, pockets of fine-grained material is present in the saturated soil resulting in a low hydraulic conductivity as demonstrated by the low well yield from monitoring well MW-4. The bedrock below the granular soil is water-bearing, but very low yielding (low hydraulic conductivity). Monitoring well MW-6 is screened in the bedrock and requires more than 24 hours for water levels to equilibrate after purging.

The depth to groundwater in each of the wells was measured on two separate occasions. Groundwater elevations are summarized on Table 2. As graphically shown on Figure 4, a downward hydraulic potential exists between the granular soils and bedrock. However, because of the highly contrasting hydraulic conductivity between the granular soil and bedrock (the granular soil being much greater), groundwater flow is primarily horizontal through the granular soil. Figure 5 presents an isopotential map showing the direction of horizontal groundwater flow in the granular soil. The isopotential map shows that groundwater generally moves in a northward direction toward Lake Ontario. Granular backfill material (crushed stone) surrounding subsurface utility piping at the base of the overburden may locally affect groundwater flow directions. The buried off-gas pipeline leading from Unit 2 to the Off-Gas Stack may influence groundwater elevations in the vicinity of MW-5.

## 4.2 ENVIRONMENTAL SAMPLING RESULTS

The analytical results of the subsurface soil and groundwater samples are discussed in the following sections. Laboratory analytical data for soil and groundwater samples are presented in Appendix C.

### 4.2.1 Soil

During borehole advancement, soils were screened with a PID for VOCs and notes regarding olfactory observations were recorded to select samples for laboratory analysis. The maximum recorded PID measurement and the corresponding sample depth and olfactory observations are summarized in Table 3, sample locations are shown in Figure 2. The soil samples with the maximum recorded PID measurements were chosen for laboratory analysis and indicated areas appropriate for groundwater monitoring well installation.

Table 4 summarizes the constituents detected in the subsurface soil samples. NYSDEC STARS soil criteria for fuel oils are provided for comparison. STARS VOCs and SVOCs were detected at concentrations above soil criteria in 1 out of 7 of the subsurface soil samples submitted for analysis. Soil samples collected at 9.5 to 10-foot bgs in boring MW-1 indicated elevated concentrations of several VOCs and SVOCs.

Figure 6 presents the spatial distribution of total VOCs and total SVOCs detected in the subsurface soil and includes maximum PID readings and olfactory evidences of suspected petroleum impact where analytical data are absent. As shown on the figure, the area of petroleum impacts in the subsurface soil extends approximately 60 feet in an east-west direction and 75 feet in a north-south direction in the vicinity of the former UST location.

Elevated PID readings and a petroleum odor were detected in soil at MW-5. Suspected petroleum impacts at this location appeared inconsistent with other suspected petroleum impacted soil encountered elsewhere on-site based on olfactory evidence. This area is shown separately on Figure 6. Additional soil borings could not be installed in the vicinity of MW-5 due to the adjacent underground off-gas pipeline, the insulation fabrication shop and the off gas stack (see Figure 3). In the northern portion of the Former UST Area, olfactory evidence and slightly elevated PID readings suggested the potential presence of minor petroleum impacts to soil. Laboratory analysis for VOCs and SVOCs did not detect the presence of petroleum constituents (i.e., MW-2) in this area.

#### 4.2.2 Groundwater

Groundwater samples were collected and analyzed from six monitoring wells (MW-4 did not yield sufficient water for sampling). A summary of field measured parameters, purge volumes, and observations is presented in Table 5.

Table 6 summarizes constituents detected in the groundwater samples and presents analytical results for parameters used to evaluate the fate of petroleum aromatic constituents detected in groundwater. Groundwater criteria were exceeded for several VOCs (xylenes, 1,2,4 trimethylbenzene, naphthalene, and several other compounds) and SVOCs (fluorene and phenanthrene) in samples analyzed from monitoring well MW-1. Benzene concentrations exceeded groundwater criteria in samples analyzed from monitoring well MW-5. Other target compounds identified by Method 8260 were not detected. The full extent of constituent impact in the groundwater could not be determined as a result of the adjacent underground off-gas pipeline, the insulation fabrication shop and the stack. VOCs and SVOCs were not detected in groundwater samples collected from other monitoring wells. Figure 7 shows the spatial distribution of VOCs and SVOCs detected in groundwater. A discussion of fate and transport parameters presented on Table 6 is provided below.

### 4.3 FATE AND TRANSPORT

The migration of dissolved phase petroleum aromatic hydrocarbons in groundwater occurs primarily through the movement of groundwater in granular porous media (advective transport). The dissolved constituents will migrate at a rate somewhat less than the rate of groundwater movement as the constituents are naturally attenuated to the water-bearing porous media through adsorption processes during transport. If one assumes a hydraulic conductivity of  $1 \times 10^{-3}$  cm/s, an effective porosity of the water-bearing zone of 0.3, and a calculated horizontal hydraulic gradient between MW-1 and MW-5 of 0.032 ft/ft, the approximate rate of

groundwater flow in the saturated granular soils is expected to be approximately 0.3 feet per day or approximately 110 feet per year. Since a suspected release from the former UST is presumed to be the source of the petroleum contamination in groundwater and the UST was removed in the mid-1980's allowing sufficient time for groundwater to transport chemical constituents away from the source area, it is apparent that other processes are occurring to limit the size of the area impacted by the petroleum compounds.

An assessment of water chemistry parameters can be used to assess the fate of petroleum aromatic hydrocarbons. In general, aerobic conditions are conducive to microbiological breakdown (biodegradation) of petroleum aromatic hydrocarbons. Dissolved oxygen concentrations above 1 to 2 ppm allow indigenous aerobic bacteria to degrade petroleum aromatic hydrocarbons. The more dissolved oxygen present in the groundwater, the more free-energy (oxygen is an electron acceptor) is available to the microbes to degrade the petroleum hydrocarbons. When dissolved oxygen concentrations become depleted as the microbes make use of the available dissolved oxygen to degrade petroleum hydrocarbons, other oxidation/reduction reactions become important in evaluating petroleum hydrocarbon degradation. These reactions include, but are not limited to: denitrification, iron reduction, and sulfate reduction.

Table 6 presents a summary of analytical data used to assess the fate of dissolved phase petroleum aromatic hydrocarbons at the Former UST Area. The dissolved oxygen concentrations in the granular soils range from 5.34 ppm at MW-1 to approximately 10 ppm at MW-6. As expected, the lowest dissolved oxygen concentrations were measured in samples collected from monitoring wells where petroleum aromatic hydrocarbons are detected. Also, oxidation/reduction potential (ORP) values, when positive, indicate oxidizing subsurface conditions. Consistent with dissolved oxygen concentrations, ORP concentrations are lowest in samples collected from monitoring wells where petroleum aromatic hydrocarbons are detected. Based on the lack of dissolved oxygen depletion, generally oxidizing subsurface conditions, and only localized areas of groundwater impact (i.e., area east of the former vehicle maintenance building and in the vicinity of monitoring well MW-5), biodegradation processes limit the potential for chemical constituent migration from the Former UST Area. This is readily apparent when the moderate groundwater flow velocities in the granular media are considered (i.e. approximately 110 ft/year).

## 5.0 CONCLUSION

The investigation concluded that subsurface conditions are suitable for biodegradation of dissolved-phase petroleum aromatic hydrocarbons. The dissolved oxygen levels and ORP values measured in groundwater samples collected from wells located within and outside areas of petroleum impact indicate aerobic subsurface conditions exist allowing microbial breakdown of the petroleum constituents dissolved in groundwater and sorbed to soil particles. As petroleum constituents migrate advectively from the Former UST Area, the oxidizing conditions in the subsurface will limit the migration of the compounds from the source area as they are naturally attenuated and degrade. This process is evident from the lack of petroleum constituents detected in groundwater north of the Former UST Area.

A plan of action for the Former UST Area is monitoring of groundwater quality through sampling and analysis of monitoring wells: MW-1, MW-2, MW-3, and MW-5. Monitored natural attenuation of petroleum constituents in the groundwater will be useful to establish a reduction in chemical concentrations over time. The aerobic conditions in the subsurface media that exist throughout the study area, the lack of receptors of petroleum-impacted groundwater, and the absence of risk to human health and the environment indicate that monitored natural attenuation via degradation of petroleum constituents in the groundwater is a suitable action for the Former UST Area.

**TABLE 1**  
**GROUNDWATER MONITORING WELL CONSTRUCTION SUMMARY**

Niagara Mohawk Power Corporation  
UST Investigation  
Nine Mile Point Nuclear Station

Well I.D.	Surface Elevation (fmsl)	Top of Riser (fmsl)	Total Depth of Boring (ft)	Depth of Well (ft)	Screened Interval		Depth to Bedrock (ft bgs)	Formation Screened
					Elevation (fmsl)	Depth (ft)		
MW-1	260.3	259.88	10.0	10.0	255.3-250.3	5.0-10.0	10.1	Sand with Silt and Gravel
MW-2	260.7	260.43	11.0	11.0	254.7-249.7	6.0-11.0	10.7	Sand with Gravel
MW-3	260.0	259.40	13.8	13.8	255.0-246.2	5.0-13.8	14.6	Silt and Sandy Silt
MW-4	260.0	259.24	13.0	13.0	255.0-247.0	5.0-13.0	13.9	Sand with Gravel
MW-5	260.2	259.63	13.5	13.5	255.2-246.7	5.0-13.5	13.5	Sand with Gravel
MW-6	259.4	259.01	24.0	24.0	240.4-235.4	19.0-24.0	15.0	Siltstone
MW-7	259.1	258.74	15.8	15.8	253.3-243.3	5.8-15.8	15.0	Silt

fmsl = feet mean sea level.

ft bgs = feet below ground surface.

1. Well locations shown on Figure 2.



TABLE 2

SUMMARY OF GROUNDWATER ELEVATIONS

Niagara Mohawk Power Corporation  
UST Investigation  
Nine Mile Point Nuclear Station

Well I.D.	Measuring Point Elevation	Groundwater Elevation	Groundwater Depth	Groundwater Elevation	Groundwater Depth
		08/25/00		09/05/00	
MW-1	259.88	252.13	7.75	251.94	7.94
MW-2	260.43	251.91	8.52	251.71	8.72
MW-3	259.40	249.60	9.80	249.38	10.02
MW-4	259.24	248.75	10.49	249.06	10.18
MW-5	259.63	251.63	8.00	248.84	10.79
MW-6	259.01	248.47	10.54	241.06	17.95
MW-7	258.74	250.24	8.50	249.37	9.37

1. Measuring point and groundwater elevation in feet mean sea level.
2. Groundwater depth in feet below ground surface.

**TABLE 3**  
**SUMMARY OF SOIL SAMPLE FIELD SCREENING**

Niagara Mohawk Power Corporation  
 UST Investigation  
 Nine Mile Point Nuclear Station

Well I.D.	Max PID Reading (ppm)	Depth (feet bgs)	Odor	Visual Comments
BH-1	300	8-10	moderate petroleum	pea gravel
BH-2	600	8-10	moderate petroleum	
BH-3	110	10-12	moderate petroleum	
BH-4	0	8-10	none	
BH-5	5	8-10	slight petroleum odor	
BH-6	10	8-10	slight petroleum odor	
BH-7	0	10-12	none	
BH-8	0	10-12	none	
BH-9	1.5*	8-10	none	
BH-10	3*	8-10	none	
BH-11	0	6-8	none	
BH-12	0	2-4	none	refusal at 4 feet bgs
B-18	52.8	36810	strong petroleum odor	see note 5
MW-7	0	10-12	none	
MW-5	120	12-14	strong petroleum/mineral oil	pea gravel, oily texture
MW-2	35	8-10	slight petroleum odor	
MW-1	300	8-10	strong petroleum odor	pea gravel, oily sheen

1. \* PID reading may be a result of moisture content or organic matter in soil.
  2. PID = Photo Ionization Detector.
  3. bgs = Below Ground Surface.
  4. ppm = parts per million.
  5. B-18 installed by Geomatrix in May, 2000 during the Phase II Environmental Site Assessment as a temporary monitoring well and has been abandoned.
- MW-3, MW-4, and MW-6 were not field screened as they are adjacent to borehole locations with logged results. See logs for BH-7, BH-8, and MW-7, respectively.

**TABLE 4**  
**SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS**

Niagara Mohawk Power Corporation  
UST Investigation  
Nine Mile Point Nuclear Station

Parameter	STARS Guidance Value <sup>(1)</sup> (ug/kg)	MW-1 9.5-10 ft bgs	MW-2 9-11 ft bgs	MW-5 12-13.5 ft bgs	BH-4 8-10 ft bgs	BH-7 10-12 ft bgs	BH-9 10-12 ft bgs	BH-10 6-10 ft bgs	B-18 10-12 ft bgs
<b>8021 STARS Volatiles (ug/kg)</b>									
n-Butylbenzene	100	2,600	ND	ND	ND	ND	ND	ND	2,800
sec-Butylbenzene	100	1,700	ND	ND	ND	ND	ND	ND	800
Ethylbenzene	100	2,700	ND	ND	ND	ND	ND	ND	610
Isopropylbenzene (Cumene)	100	930	ND	ND	ND	ND	ND	ND	180
4-Isopropyl Toluene (Cymene)	--	1,700	ND	ND	ND	ND	ND	ND	220
Naphthalene	200	6,000	ND	ND	ND	ND	ND	ND	ND
N-Propylbenzene	100	2,200	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	100	24,000	ND	ND	ND	ND	ND	7	4,400
1,3,5-Trimethylbenzene	100	9,300	ND	ND	ND	ND	ND	ND	1,900
o-Xylene	100	ND	ND	ND	ND	ND	ND	ND	440
m- and p-Xylene	100	ND	ND	ND	ND	ND	ND	ND	3,000
Xylenes (Total)	100	18,000	ND	ND	ND	ND	ND	ND	3,400
Total STARS Volatiles (ug/kg)	--	69,130	0	0	0	0	0	7	17,750
<b>NYSDEC STARS 8270 Base/Neutrals (ug/kg)</b>									
Acenaphthene	400	500	ND	ND	ND	ND	ND	ND	ND
Benzo(a) anthracene	220	ND	ND	ND	ND	ND	ND	ND	9J
Chrysene	--	ND	ND	ND	ND	ND	ND	ND	17J
Fluorene	1,000	670	ND	ND	ND	ND	ND	ND	270J
Fluoranthene	1,000	ND	ND	ND	ND	ND	ND	ND	34J
Naphthalene	200	ND	ND	ND	ND	ND	ND	ND	640
Phenanthrene	1,000	1,300	ND	ND	ND	ND	ND	ND	590
Pyrene	1,000	210	ND	ND	ND	ND	ND	ND	68J
Total STARS Base/Neutrals (ug/kg)	--	2,680	0	0	0	0	0	0	1,230

ft bgs = feet below ground surface

"--" indicates value does not exist

ND = Not Detected

1. STARS Guidance Values from NYSDEC Spill Technology and Remediation Series Memo #1, Petroleum-Contaminated Soil Guidance Policy, Aug.1992.

**TABLE 5**  
**SUMMARY OF GROUNDWATER SAMPLE FIELD MEASURED PARAMETERS**

Niagara Mohawk Power Corporation  
UST Investigation  
Nine Mile Point Nuclear Station

Well I.D.	Depth to Water (ft bgs)	Well Volume (gallons)	Total Volume Purged (gallons)	Temperature (deg. F)	pH (su)	Specific Conductance (uS/cm)	Turbidity (NTU)	Comments
MW-1	7.94	0.15	0.50	63.10	6.85	2,600	>1000	Grey, Strong Petroleum Odor
MW-2	8.72	0.28	1.60	63.50	8.10	1,370	550	Cloudy, Slight Petroleum Odor
MW-3	10.02	0.51	2.50	59.40	7.22	1,440	55.8	Clear, Slight Petroleum Odor
MW-4	10.18	0.38	0.30	NA	NA	NA	NA	Insufficient volume
MW-5	10.79	0.36	3.60	65.50	6.92	6,850	>1000	Cloudy, grey, oily sheen
MW-6	17.95	0.91	2.50	54.30	7.48	1,610	13	Clear, Colorless
MW-7	9.37	0.95	4.00	57.70	7.13	1,190	58.8	Clear, Colorless

ft bgs = feet below ground surface.

deg. F = degrees Fahrenheit.

su = standard pH units

(uS/cm) = microsiemens per centimeter at 25°C.

NTU = Nephelometric Turbidity Unit

NA = not available as the well purged dry and did not recover

1. Well locations shown on Figure 2.

TABLE 6

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Niagara Mohawk Power Corporation  
 UST Investigation  
 Nine Mile Point Nuclear Station

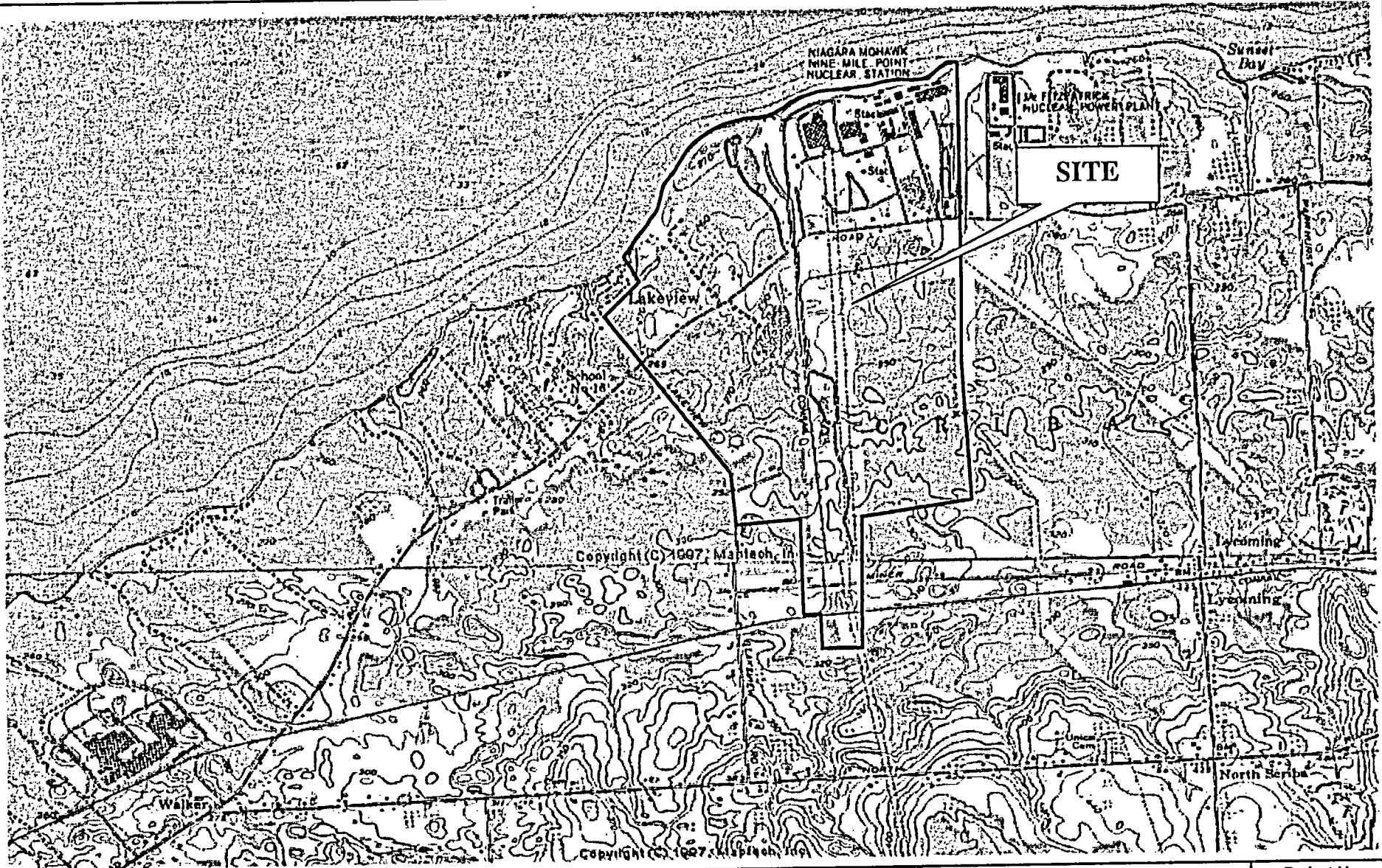
Parameter	Groundwater Criteria (ug/l)	MW-1	MW-2	MW-3	MW-5	MW-6	MW-7	B-18
<b>8021 STARS Volatiles (µg/L)</b>								
Benzene	1	61	ND	ND	39	ND	ND	480D
Ethyl benzene	5	150	ND	ND	ND	ND	ND	1500D
Toluene	5	ND	ND	ND	ND	ND	ND	29D
o-Xylene	5	ND	ND	ND	ND	ND	ND	790D
m- and p-Xylene	5	ND	ND	ND	ND	ND	ND	6500D
Xylenes (Total)	5	990	ND	ND	ND	ND	ND	7300D
n-Butylbenzene	5	29	ND	ND	ND	ND	ND	2000D
sec-Butylbenzene	5	10	ND	ND	ND	ND	ND	430D
Isopropylbenzene (Cumene)	5	20	ND	ND	ND	ND	ND	200D
4-Isopropyl toluene (Cymene)	--	13	ND	ND	ND	ND	ND	ND
MTBE	--	ND	ND	ND	5.9	ND	ND	65D
Naphthalene	--	270	ND	ND	ND	ND	ND	1500D
n-Propylbenzene	5	25	ND	ND	ND	ND	ND	560D
1,2,4-Trimethylbenzene	5	430	ND	ND	ND	ND	ND	4500D
1,3,5-Trimethylbenzene	5	140	ND	ND	ND	ND	ND	1500D
<b>NYSDEC STARS 8270 Base/Neutrals (mg/L)</b>								
Acenaphthene	--	ND	ND	ND	ND	ND	ND	150J
Chrysene	--	ND	ND	ND	ND	ND	ND	7J
Fluorene	--	110	ND	ND	ND	ND	ND	250J
Fluoranthene	--	ND	ND	ND	ND	ND	ND	20J
Napthalene	--	ND	ND	ND	ND	ND	ND	1000
Phenanthrene	--	180	ND	ND	ND	ND	ND	560
Pyrene	--	ND	ND	ND	ND	ND	ND	60J
<b>Wet Chemistry</b>								
Dissolved Oxygen (ppm)	--	5.34	6.02	6.51	5.36	10.8	8.45	NA
Oxidation/Reduction Potential (mV)	--	<-100	130	90	<-100	110	100	NA
Alkalinity (mg/L)	--	270	620	340	530	330	350	NA
Nitrate (as N) (mg/L)	--	ND	0.1	ND	ND	ND	ND	NA
Sulfate (mg/L)	--	19	52	87	11	170	160	NA
Total Iron	--	26	32	1.0	8.5	0.10	2.9	NA

"--" indicates value does not exist

ND = Not Detected

NA = Not Analyzed

1. Groundwater criteria for Class GA groundwater as provided in Division of Water Technical and Operational Series (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, October 22, 1993, reissued June 1998.
2. B-18 groundwater sample collected during Phase II ESA by Geomatrix Consultants on May 24, 2000.



**SITE LOCATION MAP**  
**NINE MILE POINT NUCLEAR STATION**  
 Scriba, New York

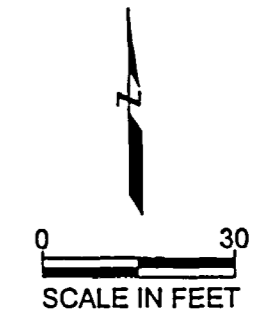
USGS Topographic Map  
 Oswego East and West of Texas (NY)  
 Quadrangles

Project No.  
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Figure  
 1

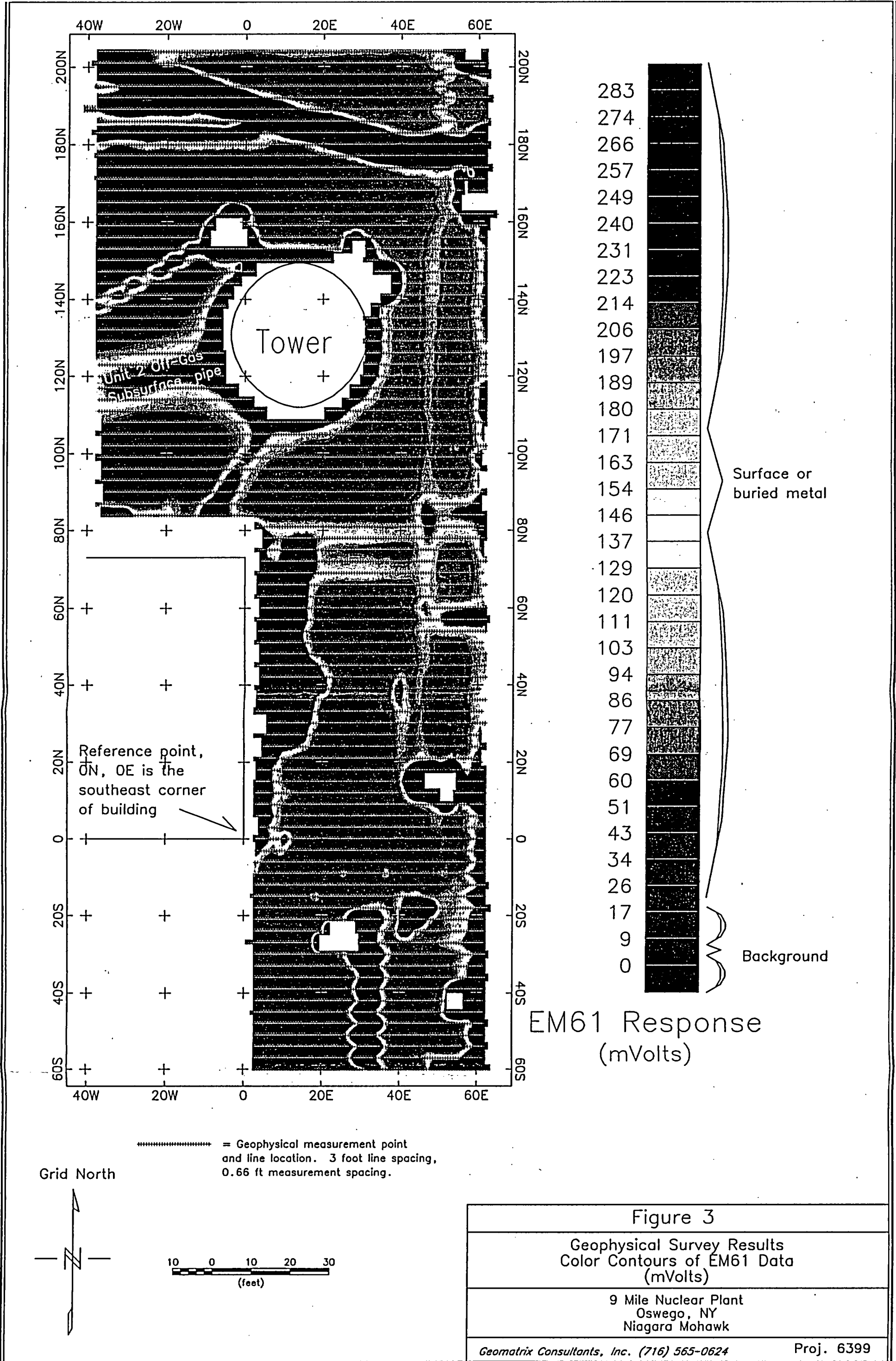


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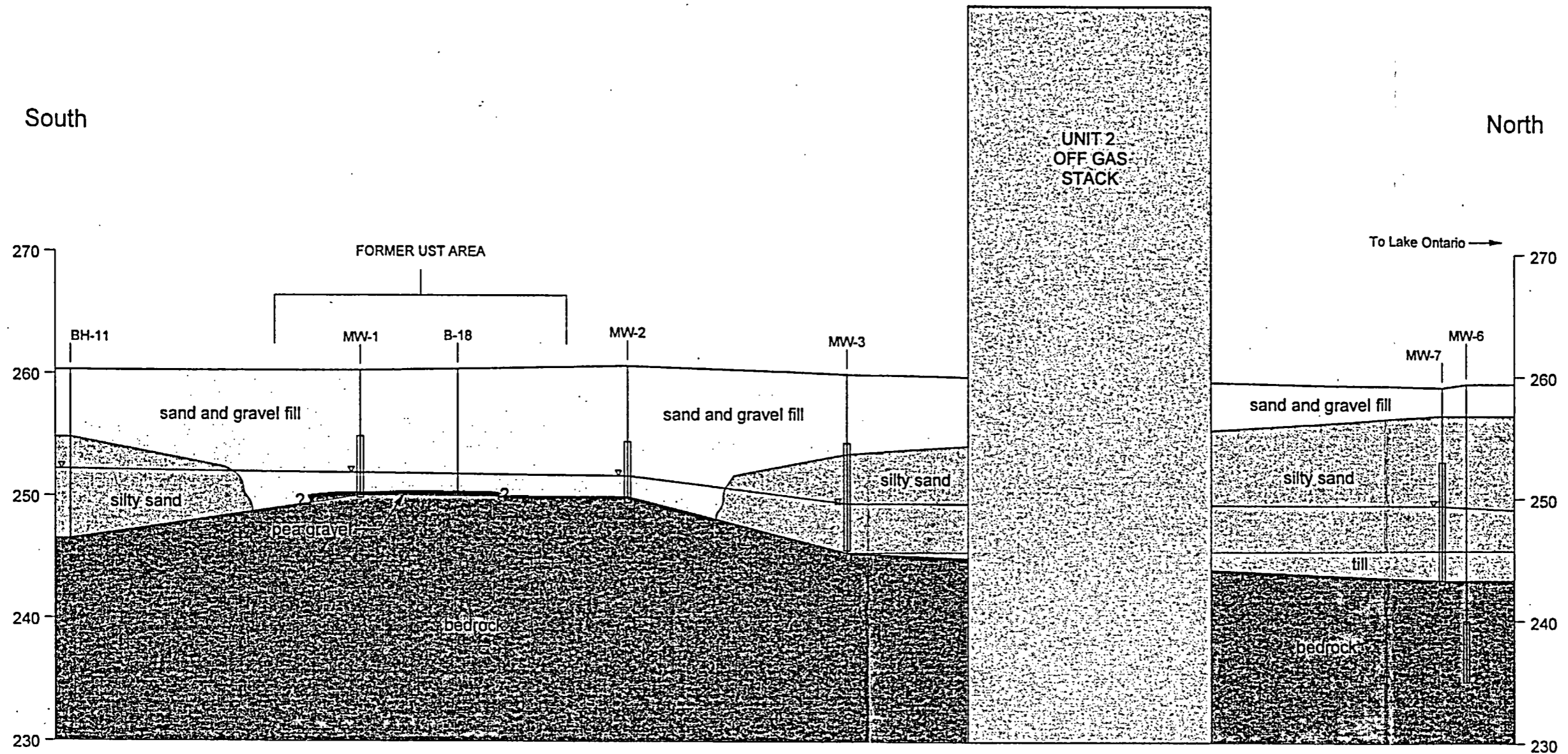
- EXPLANATION
- MW-1 ⊕ OVERBURDEN MONITORING WELL
  - MW-6 ⊕ BEDROCK MONITORING WELL
  - BH-8 ● BOREHOLE LOCATION
  - ⊕ BOREHOLE LOCATION FROM PHASE I/II ESA, MAY 2000
  - ≡≡≡ SITE SECURITY FENCE

SITE PLAN UNIT 2 - FORMER VEHICLE MAINTENANCE AREA UST INVESTIGATION Nine Mile Point Nuclear Station Scriba, New York		
	Project No. 6399	Figure 2

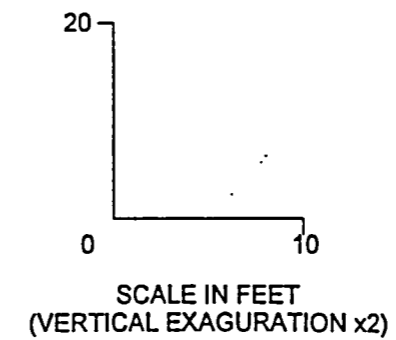



South

North

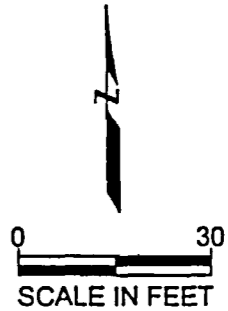
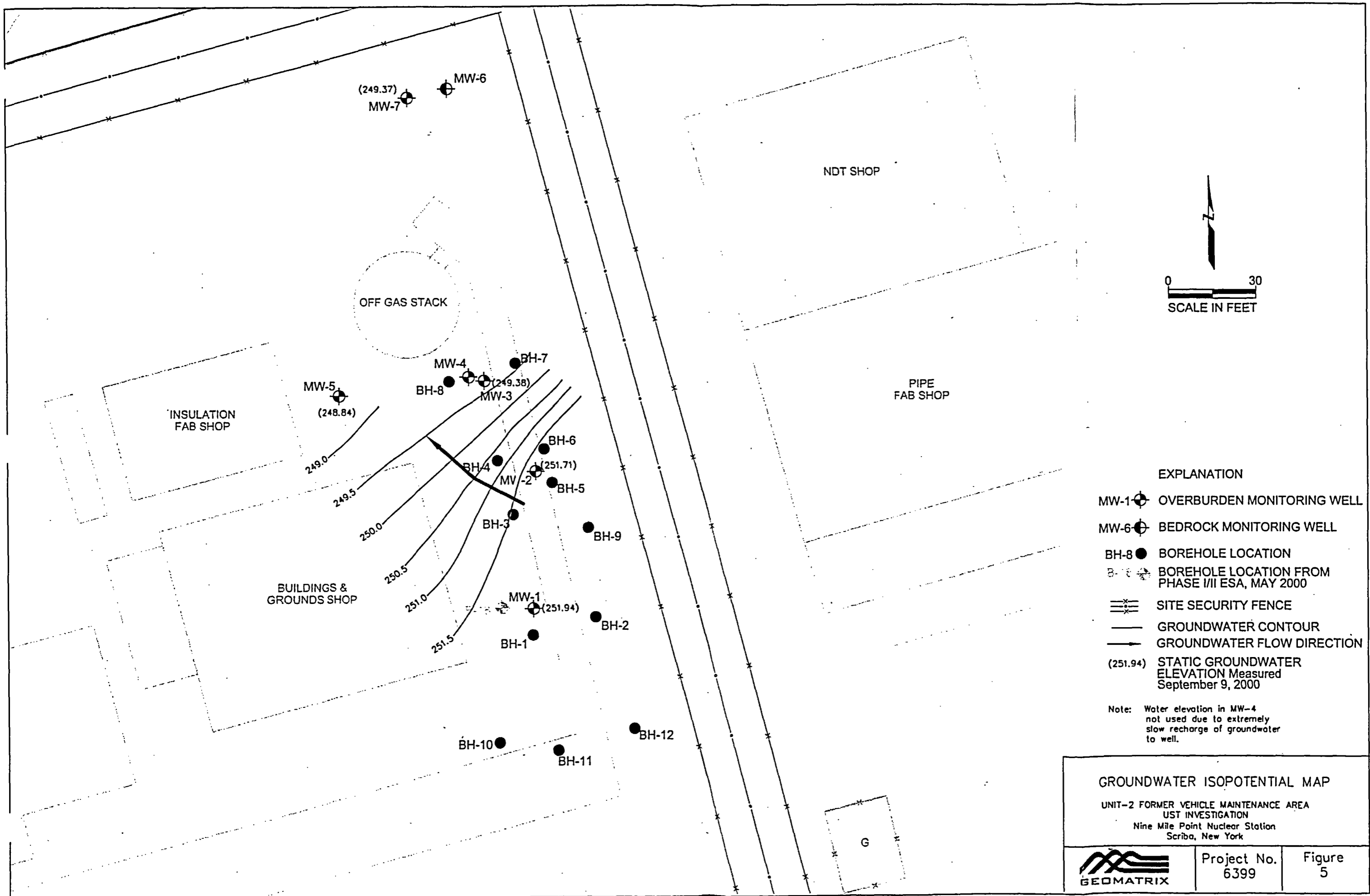


NOTE:  
 Boring B-18 was advanced during Phase I/II Environmental  
 Site Assessment conducted in May 2000



SCHEMATIC CROSS SECTION UNIT 2 - FORMER VEHICLE MAINTENANCE AREA UST INVESTIGATION Nine Mile Point Nuclear Station Lycoming, New York		
 <b>GEOMATRIX</b>	Project No. 6399	Figure <b>4</b>

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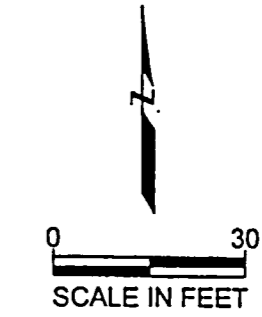
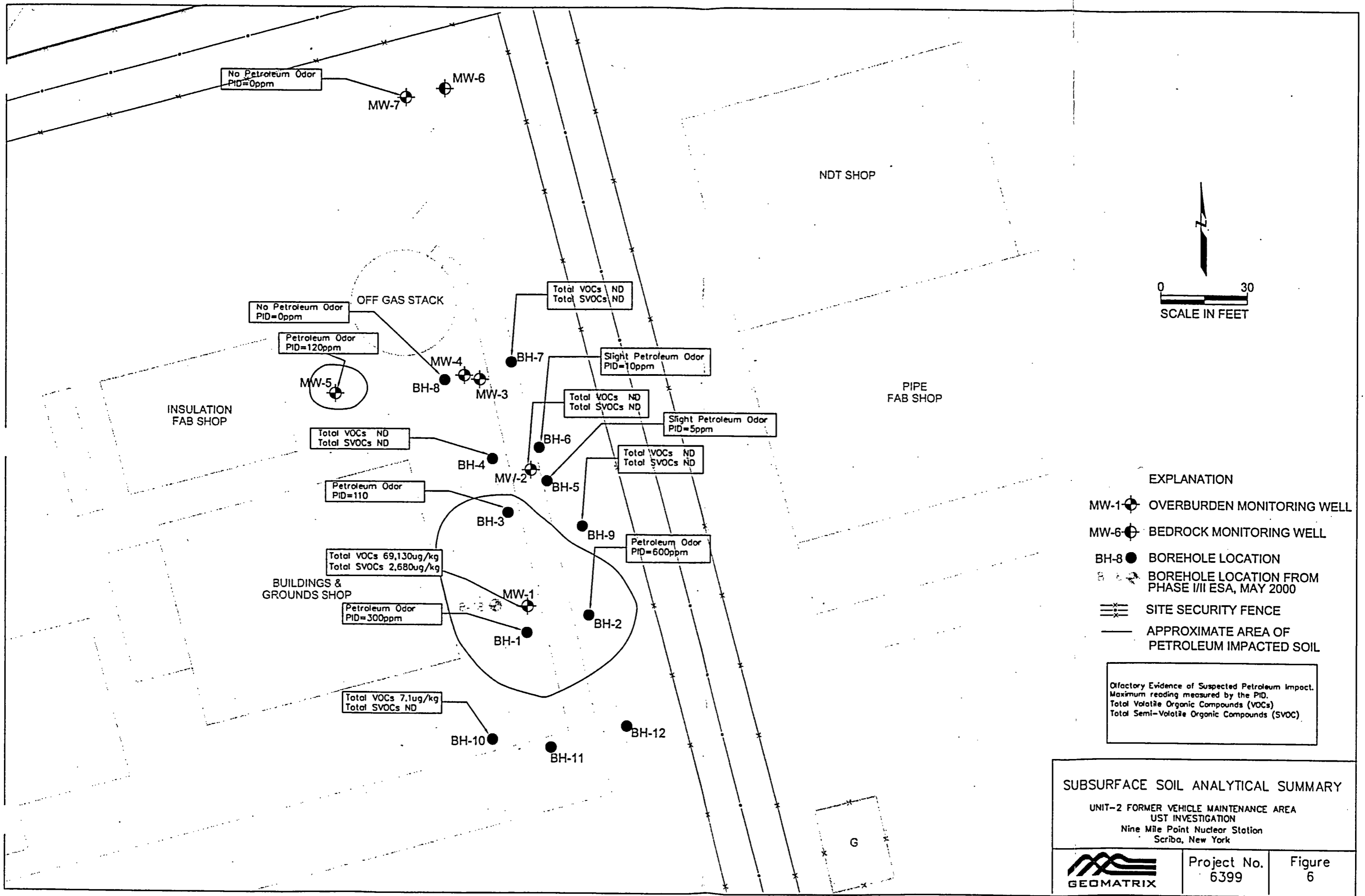


- EXPLANATION**
- MW-1 OVERBURDEN MONITORING WELL
  - MW-6 BEDROCK MONITORING WELL
  - BH-8 BOREHOLE LOCATION
  - BOREHOLE LOCATION FROM PHASE I/II ESA, MAY 2000
  - SITE SECURITY FENCE
  - GROUNDWATER CONTOUR
  - GROUNDWATER FLOW DIRECTION
  - (251.94) STATIC GROUNDWATER ELEVATION Measured September 9, 2000

Note: Water elevation in MW-4 not used due to extremely slow recharge of groundwater to well.

**GROUNDWATER ISOPOTENTIAL MAP**  
 UNIT-2 FORMER VEHICLE MAINTENANCE AREA  
 UST INVESTIGATION  
 Nine Mile Point Nuclear Station  
 Scriba, New York

	Project No.	Figure
	6399	5

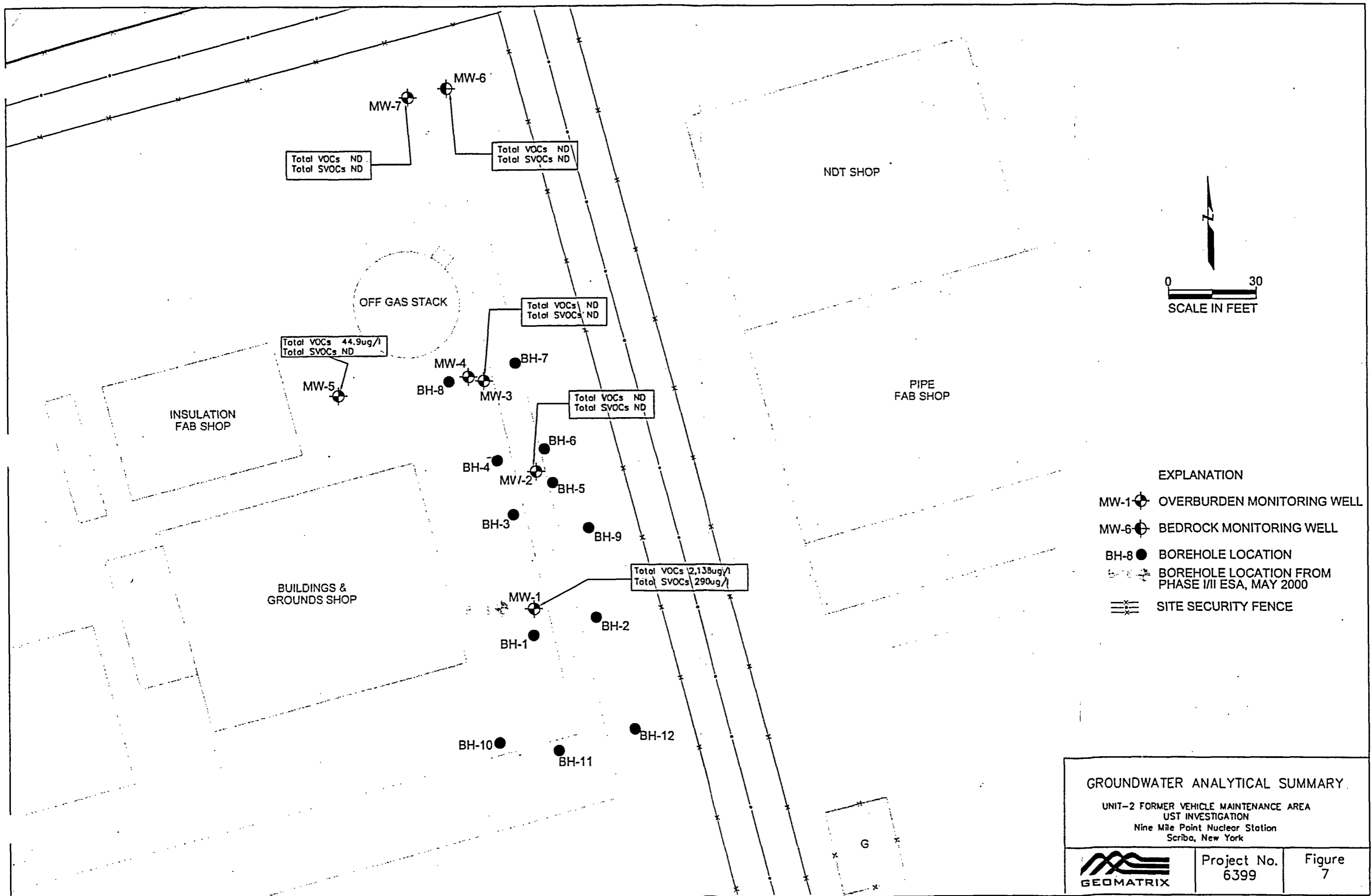


- EXPLANATION**
- MW-1 OVERBURDEN MONITORING WELL
  - MW-6 BEDROCK MONITORING WELL
  - BH-8 BOREHOLE LOCATION
  - BOREHOLE LOCATION FROM PHASE I/II ESA, MAY 2000
  - SITE SECURITY FENCE
  - APPROXIMATE AREA OF PETROLEUM IMPACTED SOIL

Odorous Evidence of Suspected Petroleum Impact.  
Maximum reading measured by the PID.  
Total Volatile Organic Compounds (VOCs)  
Total Semi-Volatile Organic Compounds (SVOC)

**SUBSURFACE SOIL ANALYTICAL SUMMARY**  
 UNIT-2 FORMER VEHICLE MAINTENANCE AREA  
 UST INVESTIGATION  
 Nine Mile Point Nuclear Station  
 Scriba, New York

	Project No. 6399	Figure 6
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## **APPENDIX A**

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# **Boring and Monitoring Well Logs**

PROJECT: Niagara Mohawk-Nine Mile Point UST Investigation		Log of Boring No. BH-1	
BORING LOCATION: Unit 2 Former Vehicle Maintenance Area		ELEVATION: -260 fmsl	DATUM: NA
DRILLING CONTRACTOR: Paratt-Wolff		DATE STARTED: 8/21/00	DATE FINISHED: 8/21/00
DRILLING METHOD: 2" Split Spoon		TOTAL DEPTH: 10.1 fbgs	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: CME 8000		DEPTH TO FIRST WATER: 8 feet	COMPL. NA
SAMPLING METHOD: 2" Split Spoon		LOGGED BY: JSV	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: C. Prucha	REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	DRILLING REMARKS
	Sample No.	Sample	Blows/foot			
					Surface Elevation: ~260 fmsl	
1	SS-1		66	0	WELL GRADED GRAVEL with SAND (GW): olive brown (2.5Y 4/4), dry, 50% gravel, 50% sand, fine to medium grained, fill	
2					WELL GRADED SAND with GRAVEL (SW): olive brown (2.5Y 4/4), dry, 75-80% sand, fine to medium grained, 20% gravel, 0-5% low plasticity fines, fill	
3	SS-2		75	0		
4					SILTY SAND with GRAVEL (SM): light olive brown (2.5Y 5/3), dry, 50% sand, fine to medium grained, 30% medium plasticity fines, 20% gravel, fill	
5	SS-3		11	0		
6						
7	SS-4		20	0	-more gravel	
8					-wet	
9	SS-5		11	300	POORLY GRADED GRAVEL (GP): wet, 100% fine gravel, rounded to subrounded, moderate petroleum odor, [PEA GRAVEL]	
10	SS-6		>100	15	SILT (ML): dark bluish grey (2 FOR GLEY 3/1), wet, 90-95% medium plasticity fines, 5-10% sand, fine to medium grained, [TILL] Refusal at 10.1 ft bgs	Borehole backfilled with bentonite chips
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

PROJECT: Niagara Mohawk-Nine Mile Point UST Investigation		<b>Log of Boring No. BH-2</b>	
BORING LOCATION: Unit 2 Former Vehicle Maintenance Area		ELEVATION: -260 fmsl	DATUM: NA
DRILLING CONTRACTOR: Paratt-Wolff		DATE STARTED: 8/21/00	DATE FINISHED: 8/21/00
DRILLING METHOD: 2" Split Spoon		TOTAL DEPTH: 9.7 fbgs	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: CME 8000		DEPTH TO FIRST WATER:   4 feet	COMPL. NA
SAMPLING METHOD: 2" Split Spoon		LOGGED BY: JSV	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: C. Prucha	REG. NO.

DEPTH (feet)	SAMPLES		OVM (ppm)	DESCRIPTION <small>NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.</small>	DRILLING REMARKS
	Sample No.	Blows/ foot			
Surface Elevation: -260 fmsl					
1	SS-1	30	0	WELL GRADED SAND with GRAVEL (SW): olive brown (2.5Y 4/4), dry, 50-70% sand, fine to medium grained, 30-50% gravel, fill	Borehole backfilled with bentonite chips
2					
3	SS-2	20	0		
4					
5	SS-3	11	0	SANDY SILT (ML): bluish grey (2 FOR GLEY 5/1), moist to wet, 50% fines, 40% fine sand, 10% gravel, medium plasticity, soft	
6					
7	SS-4	27	115	WELL GRADED SAND with GRAVEL (SW): olive brown (2.5Y 4/4), moist to wet, 50-70% sand, fine to medium grained, 30-50% gravel, fill	
8				SANDY SILT (ML): bluish grey (2 FOR GLEY 5/1), moist to wet, 50% fines, 40% fine sand, 10% gravel, medium plasticity, soft, slight petroleum odor	
9	SS-5	30	600	-same, greenish grey ( FOR GLEY 5/1)	
10				SILT with SAND (ML): moist, 70% fines, 25-30% fine sand, 0-5% fine gravel, high plasticity, firm, mottled	
11				Refusal at 9.7 ft bgs	
12					
13					
14					
15					
16					
17					
18					
19					
20					

PROJECT: Niagara Mohawk-Nine Mile Point UST Investigation		<b>Log of Boring No. BH-3</b>	
BORING LOCATION: Unit 2 Former Vehicle Maintenance Area		ELEVATION: -260 fmsl	DATUM: NA
DRILLING CONTRACTOR: Paratt-Wolff		DATE STARTED: 8/21/00	DATE FINISHED: 8/21/00
DRILLING METHOD: 2" Split Spoon		TOTAL DEPTH: 12.0 fbgs	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: CME 8000		DEPTH TO FIRST WATER: 6 feet	COMPL. NA
SAMPLING METHOD: 2" Split Spoon		LOGGED BY: JSV	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: C. Prucha	REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION NAME (USCS Symbol); color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	DRILLING REMARKS
	Sample No.	Sample	Blows/ foot			
Surface Elevation: -260 fmsl						
1	SS-1		34	0	WELL GRADED SAND with GRAVEL (SW): brown (7.5YR 4/4), dry, 60-75% sand, fine to medium grained, 25-40% gravel, 0-10% medium plasticity fines, fill	
2						
3	SS-2		23	0		
4						
5	SS-3		6	0	WELL GRADED SAND with GRAVEL (SW): dark yellowish brown (10YR 3/4), dry, 70-80% sand, fine to medium grained, 10-20% gravel, 0-10% low plasticity fines, fill	
6					-moist	
7	SS-4		6	0	SILT with SAND (ML): black, moist, 80% high plasticity fines, 15-20% fine sand, 0-5% fine gravel, slight petroleum odor -dark bluish grey (2 FOR GLEY 3/1), dry to moist	
8					-slight to moderate petroleum odor	
9	SS-5		8	90		
10					-moist to wet, firm	
11	SS-6		20	110		
12					POORLY GRADED GRAVEL with SAND (GP): black, wet, 50% fine gravel, 50% fine sand, moderate petroleum odor Refusal at 12 ft bgs	Borehole backfilled with bentonite chips
13						
14						
15						
16						
17						
18						
19						
20						

PROJECT: Niagara Mohawk-Nine Mile Point UST Investigation					Log of Boring No. BH-4		
BORING LOCATION: Unit 2 Former Vehicle Maintenance Area					ELEVATION: -260 fmsl		DATUM: NA
DRILLING CONTRACTOR: Paratt-Wolff					DATE STARTED: 8/21/00		DATE FINISHED: 8/21/00
DRILLING METHOD: 2" Split Spoon					TOTAL DEPTH: 10.6 fbgs		MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: CME 8000					DEPTH TO FIRST WATER: 9.5 feet		COMPL. NA
SAMPLING METHOD: 2" Split Spoon					LOGGED BY: JSV		
HAMMER WEIGHT: 140			DROP: 30"		RESPONSIBLE PROFESSIONAL: C. Prucha		REG. NO.
DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION		DRILLING REMARKS
	Sample No.	Sample	Blows/foot		NAME (USCS Symbol); color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.		
Surface Elevation: ~260 fmsl							
1	SS-1		34	0	WELL GRADED SAND with GRAVEL (SW): dark brown (7.5 YR 3/3), dry, 70-75% sand, fine to medium grained, 25% gravel, coarse to medium, 0-5% low plasticity fines, fill		
2					-less gravel (10-20%)		
3	SS-2		27	0			
4					-grades to brown (10YR 4/3)		
5	SS-3		31	0			
6					-moist (6.2-6.7)		
7	SS-4		68	0			
8							
9	SS-5		31	0	-firm		
10	SS-6		>100	0	WELL GRADED SAND (SW): brown (7.5 YR 4/3), moist to wet, 80-90% sand, fine to coarse grained, 5-10% low plasticity fines, 5-10% fine gravel		Borehole backfilled with bentonite chips
11					Refusal at 10.6 ft bgs		
12							
13							
14							
15							
16							
17							
18							
19							
20							



PROJECT: Niagara Mohawk-Nine Mile Point UST Investigation		Log of Boring No. BH-5	
BORING LOCATION: Unit 2 Former Vehicle Maintenance Area		ELEVATION: -260 fmsl	DATUM: NA
DRILLING CONTRACTOR: Paratt-Wolff		DATE STARTED: 8/21/00	DATE FINISHED: 8/21/00
DRILLING METHOD: 2" Split Spoon		TOTAL DEPTH: 10.0 fbgs	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: CME 8000		DEPTH TO FIRST WATER: 4 feet	COMPL. NA
SAMPLING METHOD: 2" Split Spoon		LOGGED BY: JSV	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: C. Prucha	REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	DRILLING REMARKS
	Sample No.	Sample	Blows/foot			
					Surface Elevation: -260 fmsl	
					ASPHALT	
1	SS-1		47	0	POORLY GRADED SAND with GRAVEL (SP): dark brown (7.5 YR 3/3), dry, 70-80% fine sand, 20-30% coarse to medium gravel, 0-5% low plasticity fines, fill	
2					-less gravel	
3	SS-2		56	0		
4						
5	SS-3		46	1	-slightly moist	
6						
7	SS-4		24	0		
8						
9	SS-5		17	5	SILTY SAND (SM): dark yellowish brown (10YR 4/4), wet/saturated, 70-80% sand, fine to coarse grained, 10-20% medium plasticity fines, 0-10% gravel, slight petroleum odor	
10					Boring abandoned at 10 ft bgs	Borehole backfilled with bentonite chips
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

PROJECT: Niagara Mohawk-Nine Mile Point UST Investigation		Log of Boring No. BH-6	
BORING LOCATION: Unit 2 Former Vehicle Maintenance Area		ELEVATION: -260 fmsl	DATUM: NA
DRILLING CONTRACTOR: Paratt-Wolff		DATE STARTED: 8/21/00	DATE FINISHED: 8/21/00
DRILLING METHOD: 2" Split Spoon		TOTAL DEPTH: 10.7 fbgs	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: CME 8000		DEPTH TO FIRST WATER: 8 feet	COMPL. NA
SAMPLING METHOD: 2" Split Spoon		LOGGED BY: JSV	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: C. Prucha	REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION NAME (USCS Symbol); color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	DRILLING REMARKS
	Sample No.	Sample	Blows/foot			
					Surface Elevation: -260 fmsl	
1	SS-1		60	0.3	ASPHALT WELL GRADED SAND with GRAVEL (SW): yellowish brown 10YR 5/8, dry, 80% sand, fine to medium grained, 10-20% coarse gravel, 0-10% medium plasticity fines, fill	
2						
3	SS-2		56	0		
4						
5	SS-3		26	0		
6					-more gravel (6.0-7.0)	
7	SS-4		28	0		
8						
9	SS-5		16	10	WELL GRADED SAND with GRAVEL (SW): dark yellowish brown 10YR 4/4, wet/saturated, 70-80% sand, fine to coarse grained, 10-20% medium plasticity fines, 0-10% gravel, slight petroleum odor	
10	SS-6		>100	10		Borehole backfilled with bentonite chips
11					Refusal at 10.7 ft bgs	
12						
13						
14						
15						
16						
17						
18						
19						
20						

PROJECT: Niagara Mohawk-Nine Mile Point UST Investigation		<b>Log of Boring No. BH-7</b>	
BORING LOCATION: Unit 2 Former Vehicle Maintenance Area		ELEVATION: -260 fmsl	DATUM: NA
DRILLING CONTRACTOR: Paratt-Wolff		DATE STARTED: 8/21/00	DATE FINISHED: 8/21/00
DRILLING METHOD: 2" Split Spoon		TOTAL DEPTH: 14.6 fbgs	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: CME 8000		DEPTH TO FIRST WATER: 6.2 feet	COMPL. NA
SAMPLING METHOD: 2" Split Spoon		LOGGED BY: JSV	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: C. Prucha	REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	DRILLING REMARKS
	Sample No.	Sample	Blows/foot			
					Surface Elevation: -260 fmsl	
					<b>ASPHALT</b>	
1	SS-1		59	0	WELL GRADED SAND with GRAVEL (SW): yellowish brown (10YR 5/8), dry, 80% sand, fine to medium grained, 10-20% fine to coarse gravel, 0-10% medium plasticity fines, fill	
2						
3	SS-2		68	0		
4					-grades to yellowish brown (10YR 4/6)	
5	SS-3		65	0		
6					-moist	
7	SS-4		20	0	SILT (ML): dark brown (10YR 3/3), moist, 90% fines, 0-10% sand, 0-10% gravel, high plasticity, trace rootlets, soft	
8						
9	SS-5		18	0		
10					-less gravel, wet/saturated	
11	SS-6		10	0		
12					SANDY SILT (ML): dark brown (10YR 3/3), wet/saturated, 60% fines, 30% sand, fine to coarse grained, 10% gravel, medium plasticity	
13	SS-7		17	0		
14	SS-8		>100	0		
15					Refusal at 14.6 ft bgs	Borehole backfilled with bentonite chips
16						
17						
18						
19						
20						

PROJECT: Niagara Mohawk-Nine Mile Point UST Investigation		Log of Boring No. BH-8	
BORING LOCATION: Unit 2 Former Vehicle Maintenance Area		ELEVATION: ~260 fmsl	DATUM: NA
DRILLING CONTRACTOR: Paratt-Wolff		DATE STARTED: 8/21/00	DATE FINISHED: 8/21/00
DRILLING METHOD: 2" Split Spoon		TOTAL DEPTH: 13.9 fbgs	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: CME 8000		DEPTH TO FIRST WATER: 11.3 feet	COMPL. NA
SAMPLING METHOD: 2" Split Spoon		LOGGED BY: JSV	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: C. Prucha	REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	DRILLING REMARKS
	Sample No.	Sample	Blows/foot			
Surface Elevation: ~260 fmsl						
1	SS-1		46	0	POORLY GRADED GRAVEL with SAND (GP): dry, 80% gravel, 20% fine sand, fill	
2					WELL GRADED SAND with GRAVEL (SW): dark brown (10YR 3/3), dry, 80% sand, fine to medium grained, 10-20% gravel, 0-10% medium plasticity fines, fill	
3	SS-2		20	0		
4						
5	SS-3		28	0		
6						
7	SS-4		30	0		
8						
9	SS-5		40	0		
10						
11	SS-6		63	0	SILTY SAND with GRAVEL (SM): dark yellowish brown (10YR 3/6), dry, 50-70% sand, fine to medium grained, 10-30% medium plasticity fines, 10-20% coarse to fine gravel, moist	
12					-dry, hard to firm	
13	SS-7		78	0		
14					CLAY (CL): dry, 90% medium plasticity fines, 10% gravel Refusal at 13.9 ft bgs	Borehole backfilled with bentonite chips
15						
16						
17						
18						
19						
20						

PROJECT: Niagara Mohawk-Nine Mile Point UST Investigation		<b>Log of Boring No. BH-9</b>	
BORING LOCATION: Unit 2 Former Vehicle Maintenance Area		ELEVATION: ~260 fmsl	DATUM: NA
DRILLING CONTRACTOR: Paratt-Wolff		DATE STARTED: 8/21/00	DATE FINISHED: 8/21/00
DRILLING METHOD: 2" Split Spoon		TOTAL DEPTH: 11.6 fbg	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: CME 8000		DEPTH TO FIRST WATER: 4.5 feet	COMPL. NA
SAMPLING METHOD: 2" Split Spoon		LOGGED BY: JSV	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: C. Prucha	REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION <small>NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.</small>	DRILLING REMARKS
	Sample No.	Sample	Blows/foot			
Surface Elevation: ~260 fmsl						
1	SS-1		35	0	WELL GRADED SAND with GRAVEL (SW): yellowish brown (10YR 5/4), dry, 70-80% sand, fine to medium grained, 10-20% coarse to fine gravel, 0-10% medium plasticity fines, fill	
2						
3	SS-2		34	0	SILTY SAND with GRAVEL (SM): 50-75% sand, fine to medium grained, 10-20% gravel, 10-20% medium plasticity fines, dry, fill	
4						
5	SS-3		30	0.5	SILT and FINE SAND (SP-SM): dark greyish brown (10YR 4/2), moist, 40-60% fines, 40-50% fine sand, 0-20% gravel, high plasticity, trace rootlets/organic matter, firm	
6						
7	SS-4		18	0		
8						
9	SS-5		40	1.5	SANDY SILT (ML): grey (10YR 5/1), moist, 60% fines, 30-40% fine sand, 0-10% coarse sand/fine gravel, high plasticity	
10					-moist to wet	
11	SS-6		49	0		
12					Refusal at 11.6 ft bgs	Borehole backfilled with bentonite chips
13						
14						
15						
16						
17						
18						
19						
20						

BORING BHMW0800.GPJ (9/00)

PROJECT: Niagara Mohawk-Nine Mile Point UST Investigation		Log of Boring No. BH-10	
BORING LOCATION: Unit 2 Former Vehicle Maintenance Area		ELEVATION: -260 fmsl	DATUM: NA
DRILLING CONTRACTOR: Paratt-Wolff		DATE STARTED: 8/22/00	DATE FINISHED: 8/22/00
DRILLING METHOD: 2" Split Spoon		TOTAL DEPTH: 10.3 fbgs	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: CME 8000		DEPTH TO FIRST WATER: 4.6 feet	COMPL. NA
SAMPLING METHOD: 2" Split Spoon		LOGGED BY: JSV	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: C. Prucha	REG. NO.

DEPTH (feet)	SAMPLES		OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	DRILLING REMARKS
	Sample No.	Sample Blows/foot			
				Surface Elevation: -260 fmsl	
1	SS-1	76	0	ASPHALT WELL GRADED SAND with GRAVEL (SW): yellowish brown (10YR 3/6), dry, 70-80% sand, fine to medium grained, 10-20% gravel, 0-10% medium plasticity fines, fill	
2					
3	SS-2	114	0	SILTY SAND with GRAVEL (SM): yellowish brown (10YR 3/6), dry, 50-70% sand, fine to medium grained, 10-20% gravel, 20-30% medium plasticity fines, fill -boulder	
4					
5	SS-3	23	0	SILT with GRAVEL (ML): dark brownish grey (2 FOR GLEY 3/1), moist, 80% fines, 10-20% gravel, 0-10% fine sand, high plasticity	
6					
7	SS-4	17	0	SILT (ML): dark brownish grey (2 FOR GLEY 3/1), moist to wet, 90% fines, 0-5% gravel, 0-5% fine sand, high plasticity	
8					
9	SS-5	16	3		
10	SS-6	>100	0	Refusal at 10.3 ft bgs	Borehole backfilled with bentonite chips
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

PROJECT: Niagara Mohawk-Nine Mile Point UST Investigation		Log of Boring No. BH-11	
BORING LOCATION: Unit 2 Former Vehicle Maintenance Area		ELEVATION: -260 fmsl	DATUM: NA
DRILLING CONTRACTOR: Paratt-Wolff		DATE STARTED: 8/22/00	DATE FINISHED: 8/22/00
DRILLING METHOD: 2" Split Spoon		TOTAL DEPTH: 8.3 fbgs	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: CME 8000		DEPTH TO FIRST WATER: 6.8 feet	COMPL. NA
SAMPLING METHOD: 2" Split Spoon		LOGGED BY: JSV	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: C. Prucha	REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	DRILLING REMARKS
	Sample No.	Sample	Blows/ foot			
					Surface Elevation: -260 fmsl	
1	SS-1		44	0	ASPHALT WELL GRADED SAND with GRAVEL (SW): dark yellowish brown (10YR 4/6), dry, 70-80% sand, fine to medium grained, 10-20% gravel, 0-10% medium plasticity fines, fill	
2						
3	SS-2		101	0	GRAVELLY SILT with SAND (ML): bluish grey (2 FOR GLEY 5/1), dry, 40-50% fines, 40% fine to coarse gravel, angular, 10-20% sand, fine grained, medium plasticity, fill	
4						
5	SS-3		85	0		
6					SILT and FINE SAND (SP-SM): dark bluish grey (2 FOR GLEY 4/1), dry, 40-50% fine sand, 40-50% medium plasticity fines, 0-10% fine gravel, firm	
7	SS-4		87	0	dark greenish grey (1 FOR GLEY 4/1), moist	
8	SS-5		>100	0	Refusal at 8.3 ft bgs	Borehole backfilled with bentonite chips
9						
10						
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PROJECT: Niagara Mohawk-Nine Mile Point UST Investigation		Log of Boring No. BH-12	
BORING LOCATION: Unit 2 Former Vehicle Maintenance Area		ELEVATION: ~260 fmsl	DATUM: NA
DRILLING CONTRACTOR: Paratt-Wolff		DATE STARTED: 8/22/00	DATE FINISHED: 8/22/00
DRILLING METHOD: 2" Split Spoon		TOTAL DEPTH: 4.0 fbgs	MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: CME 8000		DEPTH TO FIRST WATER: NA	COMPL. NA
SAMPLING METHOD: 2" Split Spoon		LOGGED BY: JSV	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: C. Prucha	REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION NAME (USCS Symbol); color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	DRILLING REMARKS
	Sample No.	Sample	Blows/foot			
					Surface Elevation: ~260 fmsl	
1	SS-1		33	0	WELL GRADED SAND with GRAVEL (SW): dark yellowish brown (10YR 3/6), dry, 70-80% sand, fine to medium grained, 10-20% gravel, 0-10% low plasticity fines, fill	
2						
3	SS-2		306	0	-boulder (3.0-?)	
4					Boring abandoned at 4 ft bgs	Borehole backfilled with bentonite chips
5						
6						
7						
8						
9						
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18						
19						
20						



PROJECT: Niagara Mohawk - Nine Mile Point (006399) Oswego, NY				<b>Log of Boring No. B-18</b>			
BORING LOCATION: Unit two area				ELEVATION: fmsl		DATUM: feet bgs	
DRILLING CONTRACTOR: Parratt-Wolff				DATE STARTED: 5/23/00		DATE FINISHED: 5/23/00	
DRILLING METHOD: Direct Push				TOTAL DEPTH: 11.0 fbgs		MEASURING POINT: ground surface	
DRILLING EQUIPMENT: Modified HSA/Direct Push Rig				DEPTH TO FIRST WATER: 7 fbgs		COMPL. -	
SAMPLING METHOD: 2-inch Split Spoon				LOGGED BY: BCH			
HAMMER WEIGHT: NA		DROP: NA		RESPONSIBLE PROFESSIONAL: Richard Frappa		REG. NO.	
DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION		DRILLING REMARKS
	Sample No.	Sample	Blows/foot		NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.		
					Surface Elevation: fmsl		
1	1			0	<b>WELL GRADED SAND WITH SILT AND GRAVEL (SP-SM):</b> dark red/brown, moist, 70% medium to coarse sand, 10% coarse gravel, 10% fine gravel, 10% low plasticity fines, hard, loose when disturbed  - wet - petroleum odor		Re-drilled at offset location with 4 1/4" HSA and installed 2" diameter temporary PVC well screen (5-feet) and riser for collection of grab groundwater sample.
2							
3	2			0			
4							
5	3			0			
6							
7	4			0			
8							
9	5			19.8			
10	6			52.8			
11					<b>WEATHERED BEDROCK (?):</b> strong petroleum odor Refusal at 11.0 fbgs		
12							
13							
14							
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16							
17							
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28							
29							
30							



PROJECT: Niagara Mohawk-Nine Mile Point UST Investigation		<b>Log of Well No. MW-1</b>	
BORING LOCATION: Unit 2 Former Vehicle Maintenance Area		TOP OF RISER ELEVATION: 259.88 fmsl	DATUM: NA
DRILLING CONTRACTOR: Paratt-Wolff		DATE STARTED: 8/25/00	DATE FINISHED: 8/25/00
DRILLING METHOD: HSA		TOTAL DEPTH: 10.0 fbg	SCREEN INTERVAL: 5-10 fbg
DRILLING EQUIPMENT: CME 8000		DEPTH TO FIRST WATER: --	COMPL. -- CASING: NA
SAMPLING METHOD: 2" Split Spoon		LOGGED BY: JSV	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: C. Prucha	REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION <small>NAME (USCS Symbol); color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.</small>	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/foot			
					Surface Elevation: 260.30 fmsl	<p>Flush Mount</p> <ul style="list-style-type: none"> <li>Concrete (0-1')</li> <li>Bentonite (1-3')</li> <li>2" diameter schedule 40 PVC riser (0-5')</li> <li>10" diameter borehole (HSA) (0-10')</li> <li>#0 Silica Sand (3-10')</li> <li>2" diameter schedule 40 PVC screen (5-10')</li> </ul>
1					Boring not logged. See Log of Boring BH-1 for description of stratigraphy.	
2						
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PROJECT: Niagara Mohawk-Nine Mile Point UST Investigation		<b>Log of Well No. MW-2</b>	
BORING LOCATION: Unit 2 Former Vehicle Maintenance Area		TOP OF RISER ELEVATION: 260.43 fmsl	DATUM: NA
DRILLING CONTRACTOR: Paratt-Wolff		DATE STARTED: 8/25/00	DATE FINISHED: 8/25/00
DRILLING METHOD: HSA		TOTAL DEPTH: 11.0 fbgs	SCREEN INTERVAL: 6-11 fbgs
DRILLING EQUIPMENT: CME 8000		DEPTH TO FIRST COMPL. WATER:   -   -	CASING: NA
SAMPLING METHOD: 2" Split Spoon		LOGGED BY: JSV	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: C. Prucha	REG. NO.

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure. cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/foot				
						Surface Elevation: 260.70 fmsl	Flush Mount
1						Boring not logged. See Log of Boring BH-6 for description of stratigraphy.	Concrete (0-1')
2							Bentonite (1-4')
3							2" diameter schedule 40 PVC riser (0-6')
4							
5							
6							
7							10" diameter borehole (HSA) (0-11')
8							#0 Silica Sand (4-11')
9							
10							2" diameter schedule 40 PVC screen (6-11')
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

PROJECT: Niagara Mohawk-Nine Mile Point UST Investigation		<b>Log of Well No. MW-3</b>	
BORING LOCATION: Unit 2 Former Vehicle Maintenance Area		TOP OF RISER ELEVATION: 259.4 fmsl	DATUM: NA
DRILLING CONTRACTOR: Paratt-Wolff		DATE STARTED: 8/22/00	DATE FINISHED: 8/22/00
DRILLING METHOD: HSA		TOTAL DEPTH: 13.8 fbgs	SCREEN INTERVAL: 5.0-13.8 fbgs
DRILLING EQUIPMENT: CME 8000		DEPTH TO   FIRST   COMPL. WATER:   --   --	CASING: NA
SAMPLING METHOD: 2 <sup>nd</sup> Split Spoon		LOGGED BY: JSV	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: C. Prucha	REG. NO.

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION NAME (USCS Symbol); color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot				
						Surface Elevation: 260.00 fmsl	Flush Mount
1						Boring not logged. See Log of Boring BH-7 for description of stratigraphy.	Concrete (0-2')
2							Bentonite (2-4')
3							2" diameter schedule 40 PVC riser (0-5')
4							10" diameter borehole (HSA) (0-13.8')
5							#0 Silica Sand (4.0-13.8')
6							2" diameter schedule 40 PVC screen (5.0-13.8')
7							
8							
9							
10							
11							
12							
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18							
19							
20							

PROJECT: Niagara Mohawk-Nine Mile Point UST Investigation		<b>Log of Well No. MW-4</b>	
BORING LOCATION: Unit 2 Former Vehicle Maintenance Area		TOP OF RISER ELEVATION: 259.24 fmsl	DATUM: NA
DRILLING CONTRACTOR: Paratt-Wolff		DATE STARTED: 8/24/00	DATE FINISHED: 8/24/00
DRILLING METHOD: HSA		TOTAL DEPTH: 13.0 fbs	SCREEN INTERVAL: 5-13 fbs
DRILLING EQUIPMENT: CME 8000		DEPTH TO WATER: --	FIRST COMPL. CASING: --
SAMPLING METHOD: 2" Split Spoon		LOGGED BY: JSV	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: C. Prucha	REG. NO.

DEPTH (feet)	SAMPLES				DESCRIPTION NAME (USCS Symbol); color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/foot	QVM (ppm)		
Surface Elevation: 260.00 fmsl						
1					Boring not logged. See Log of Boring BH-8 for description of stratigraphy.	<p>Flush Mount</p> <p>Concrete (0-1')</p> <p>Bentonite (1-3')</p> <p>2" diameter schedule 40 PVC riser (0-5')</p> <p>10" diameter borehole (HSA) (0-13')</p> <p>#0 Silica Sand (3-13')</p> <p>2" diameter schedule 40 PVC screen (5-13')</p>
2						
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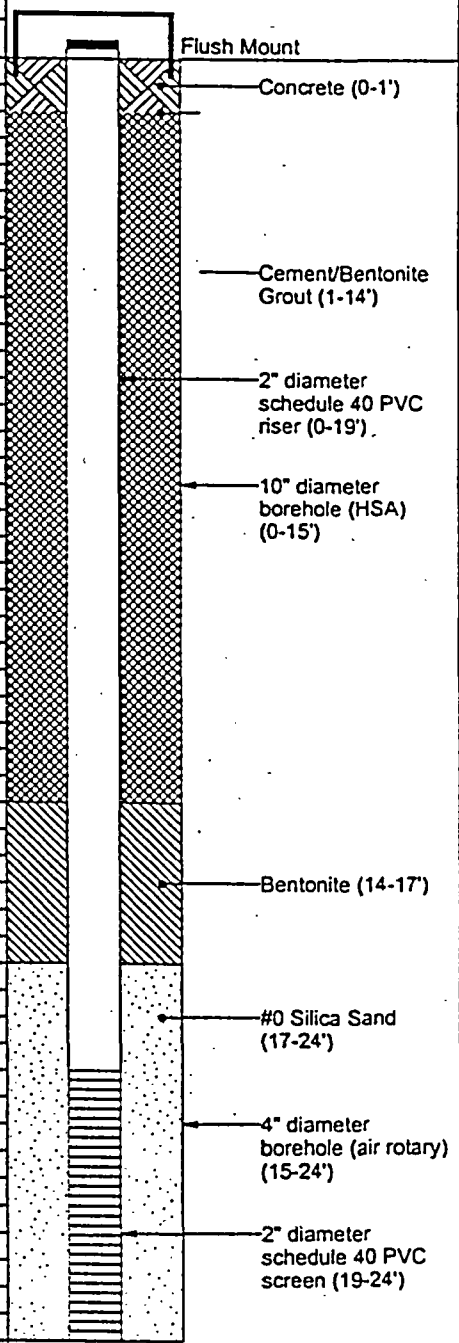
PROJECT: Niagara Mohawk-Nine Mile Point UST Investigation		Log of Well No. MW-5	
BORING LOCATION: Unit 2 Former Vehicle Maintenance Area		TOP OF RISER ELEVATION: 259.63 fmsl	DATUM: NA
DRILLING CONTRACTOR: Paratt-Wolff		DATE STARTED: 8/24/00	DATE FINISHED: 8/24/00
DRILLING METHOD: HSA		TOTAL DEPTH: 13.5 fbgs	SCREEN INTERVAL: 5.0-13.5 fbgs
DRILLING EQUIPMENT: CME 8000		DEPTH TO FIRST WATER: 8 ft	COMPL. --
SAMPLING METHOD: 2" Split Spoon		LOGGED BY: JSV	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: C. Prucha	REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/foot			
Surface Elevation: 260.20 fmsl						
1	SS-1		35	0	WELL GRADED SAND with GRAVEL (SW): dark brown (10YR 3/3), dry, 70-80% sand, fine to medium grained, 10-20% gravel, 0-10% medium plasticity fines, fill	
2						
3	SS-2		44	0		
4						
5	SS-3		29	0		
6						
7	SS-4		30	0		
8						
9	SS-5		20	0	POORLY GRADED GRAVEL with SAND (GP): dry to (slightly) moist, 50% fine (Pea) gravel, rounded, 50% fine sand	
10						
11	SS-6		7	0	-moist to wet	
12					-petroleum/mineral oil odor, oily texture	
13	SS-7		2	120		
14					Auger refusal at 13.5 ft bgs	
15						
16						
17						
18						
19						
20						

PROJECT: Niagara Mohawk-Nine Mile Point UST Investigation		<b>Log of Well No. MW-6</b>	
BORING LOCATION: Unit 2 Former Vehicle Maintenance Area		TOP OF RISER ELEVATION: 259.01 fmsl	DATUM: NA
DRILLING CONTRACTOR: Paratt-Wolff		DATE STARTED: 8/23/00	DATE FINISHED: 8/23/00
DRILLING METHOD: HSA		TOTAL DEPTH: 24.0 fbgs	SCREEN INTERVAL: 19-24 fbgs
DRILLING EQUIPMENT: CME 8000		DEPTH TO WATER: --	FIRST COMPL. CASING: -- NA
SAMPLING METHOD: 2" Split Spoon		LOGGED BY: JSV	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: C. Prucha	REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION NAME (USCS Symbol); color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/foot			
					Surface Elevation: 259.40 fmsl	
1					Boring not logged. See Log of Well MW-7 for description of stratigraphy.	Flush Mount
2						Concrete (0-1')
3						
4						Cement/Bentonite Grout (1-14')
5						
6						2" diameter schedule 40 PVC riser (0-19')
7						
8						10" diameter borehole (HSA) (0-15')
9						
10						
11						
12						
13						
14						
15						Bentonite (14-17')
16						
17					#0 Silica Sand (17-24')	
18						
19					4" diameter borehole (air rotary) (15-24')	
20						
21					2" diameter schedule 40 PVC screen (19-24')	
22						
23						
24						
25						

**BEDROCK: SILTSTONE**



WELL\_OVM BHMW0800.GPJ (9/00)

PROJECT: Niagara Mohawk-Nine Mile Point UST Investigation		Log of Well No. MW-7	
BORING LOCATION: Unit 2 Former Vehicle Maintenance Area		TOP OF RISER ELEVATION: 258.74 fmsl	DATUM: NA
DRILLING CONTRACTOR: Paratt-Wolff		DATE STARTED: 8/22/00	DATE FINISHED: 8/22/00
DRILLING METHOD: HSA		TOTAL DEPTH: 15.8 fbgs	SCREEN INTERVAL: 5.8-15.8 fbgs
DRILLING EQUIPMENT: CME 8000		DEPTH TO WATER: 2.3 ft	COMPL. -- CASING: NA
SAMPLING METHOD: 2" Split Spoon		LOGGED BY: JSV	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: C. Prucha	REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION NAME (USCS Symbol); color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/foot			
Surface Elevation: 259.10 fmsl						
1	SS-1		60	0	POORLY SORTED SAND with GRAVEL (SP): brownish yellow (10YR 6/6), dry, 70-80% fine sand, 10-20% gravel, 0-10% medium plasticity fines, fill	
2						
3	SS-2		14	0	SILT and FINE SAND (SP-SM): brownish yellow (10YR 6/6), moist, 40-50% fine sand, 40-50% fines, 0-10% gravel, medium plasticity -grades to very dark greyish black (2.5Y 3/2)	
4						
5	SS-3		16	0	SILTY SAND (SM): olive brown (2.5Y 4/4), moist, 70% fine sand, 30% medium plasticity fines, soft	
6					-some orange/rust colored silt, trace metal pieces	
7	SS-4		13	0		
8						
9	SS-5		3	0	SANDY SILT (ML): 60% fines, 40% fine sand, high plasticity	
10						
11	SS-6		25	0	SILT (ML): dark bluish grey (2 FOR GLEY 3/1), 90-100% fines, 0-5% fine sand, 0-5% fine gravel, high plasticity	
12						
13	SS-7		>100	0	SILT (ML): dry, 90% fines, 10% gravel, high plasticity, hard, [TILL]	
14						
15					WEATHERED BEDROCK: Silstone	
16					Auger refusal at 15.8 ft bgs	
17						
18						
19						
20						

**APPENDIX B**

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**Well Development and Well Sampling  
Logs**



# WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: 110 (25E10N) MW-1 Initial Depth to Water: 7.75  
 Sample ID: \_\_\_\_\_ Duplicate ID: \_\_\_\_\_ Depth to Water after Sampling: \_\_\_\_\_  
 Sample Depth: \_\_\_\_\_ Total Depth of Well: 8.88  
 Project and Task No.: 006399, 001.0 TASC B Well Diameter: 2"  
 Project Name: Niagara Mohawk - 9 Mile Point 1 Casing/Borehole Volume = 0.18 gal  
 Date: 8/28/00 (Circle one)  
 Sampled By: JSV 4 Casing/Borehole Volumes = 0.72 gal  
 Method of Purging: SS BAUER (Circle one)  
 Method of Sampling: \_\_\_\_\_ Total Casing/Borehole Volumes Removed: 2 (0.4 gal)

Time	Intake Depth	Rate (gpm)	Cum. Vol. (gal.)	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Remarks (color, turbidity, and sediment)
1410			0.2	18.1	7.06	2250	>1000 GREY, SILTY, STRONG KERO ODER
1414			0.4	18.0	7.03	2670	>1000 -
1417	WELL DRY AFTER		0.4 gal.	w/c = 8.60			
	TOTAL VOLUME PURGED =		0.4 gal.				

pH CALIBRATION (choose two)				Model or Unit No.: <u>OMEGA PHH-60 BMS</u> <u>SER. # 0700177</u>
Buffer Solution	<u>pH 4.0</u>	<u>pH 7.0</u>	pH 10.0	
Temperature °C	<u>20</u>	<u>20</u>	<u>20</u>	
Instrument Reading	<u>4.00</u>	<u>7.00</u>	<u>10.15</u>	
SPECIFIC ELECTRICAL CONDUCTANCE - CALIBRATION				Model or Unit No.: <u>SAME</u>
KCL Solution (µS/cm = µmhos/cm)	<u>0</u>	<u>1000</u>		
Temperature °C	<u>20</u>	<u>20</u>		
Instrument Reading	<u>0</u>	<u>1000</u>		

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



# WELL SAMPLING AND/OR DEVELOPMENT RECORD

54

Well ID: MW (400-3N) MW-2 Initial Depth to Water: 8.52

Sample ID: \_\_\_\_\_ Duplicate ID: \_\_\_\_\_ Depth to Water after Sampling: \_\_\_\_\_

Sample Depth: \_\_\_\_\_ Total Depth of Well: 10.53

Project and Task No.: 006399.001.0 TASK B Well Diameter: 2"

Project Name: NINGARA MONAWY - 9 MIKE POINT 1 Casing/Borehole Volume = 0.32 gal  
(Circle one)

Date: 8/28/02 4 Casing/Borehole Volumes = 1.3 gal  
(Circle one)

Sampled By: JJV Total Casing/Borehole Volumes Removed: 23 (7.5 gal)

Method of Purging: SS BAUER

Method of Sampling: \_\_\_\_\_

Time	Intake Depth	Rate (gpm)	Cum. Vol. (gal.)	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Remarks (color, turbidity, and sediment)
1312			0.3	20.1	8.76	700	TURBID BROWN, SILTY, NO O200
1315			0.6	18.3	10.24	650	>1000 " "
1318			1.0	18.1	9.73	650	>1000 " "
1320			1.3	18.1	9.46	670	>1000 " "
1325			1.6	18.3	9.26	720	>1000 " "
1327			2.0	18.3	9.21	750	>1000 " "
1329			2.3	18.3	9.08	780	>1000 " "
1331			2.6	18.1	8.94	820	>1000 " "
1336			3.0	18.1	8.69	870	>1000 " "
1339			3.5	18.1	8.72	880	>1000 " "
1343			6.5	18.1	8.31	940	>1000 " "
1345			7.5	18.1	8.19	970	>1000 " "

pH CALIBRATION (choose two)				Model or Unit No.: <u>OMEGA</u> <u>PHH-608MS</u> <u>SER. # 0700177</u>
Buffer Solution	<u>pH 4.0</u>	<u>pH 7.0</u>	pH 10.0	
Temperature °C	<u>20</u>	<u>20</u>	<u>20</u>	
Instrument Reading	<u>4.00</u>	<u>7.00</u>	<u>10.15</u>	

SPECIFIC ELECTRICAL CONDUCTANCE - CALIBRATION			Model or Unit No.: <u>SAMC</u>
KCL Solution (µS/cm = µmhos/cm)	<u>0</u>	<u>1000</u>	
Temperature °C	<u>20</u>	<u>20</u>	
Instrument Reading	<u>0</u>	<u>1000</u>	

Notes: TOTAL VOLUME PURGED = 7.5 gal



## WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: ~~MW-30E-9013~~ MW-3 Initial Depth to Water: 9.80  
 Sample ID: \_\_\_\_\_ Duplicate ID: \_\_\_\_\_ Depth to Water after Sampling: \_\_\_\_\_  
 Sample Depth: \_\_\_\_\_ Total Depth of Well: 13.26  
 Project and Task No.: 006399-001.0 TASK B Well Diameter: 2"  
 Project Name: NIAGARA MOHAWK - 9 MILE POINT 1 Casing/Borehole Volume = 0.55 gal  
 Date: 8/25/00 (Circle one)  
 Sampled By: JSV 4 Casing/Borehole Volumes = 2.2 gal  
 Method of Purging: 55 BAILEY (Circle one)  
 Method of Sampling: \_\_\_\_\_ Total Casing/Borehole Volumes Removed: 11 (6 gal)

Time	Intake Depth	Rate (gpm)	Cum. Vol. (gal.)	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Remarks (color, turbidity, and sediment) TURB	
0949			0.5	16.3	6.84	1310	275 SILTY, LIGHT BROWN NO ODOOR	
0953			1.0	16.3	7.15	1290	223 CLEARING	
0956			1.5	16.3	7.13	1290	260 LIGHT BROWN	
0958			2.0	16.3	7.21	1310	412 " "	
1002			2.5	16.3	7.20	1310	>1000 " "	
1004			3.0	16.3	7.24	1310	>1000 " "	
1038			3.5	16.3	7.39	1330	>1000 " "	
1041			4.0	16.3	7.29	1310	>1000 " "	
1043			4.5	16.3	7.37	1300	>1000 " "	
1045			5.0	16.3	7.28	1300	>1000 " "	
			TOTAL VOLUME PURGED = 6 gal					

pH CALIBRATION (choose two)				Model or Unit No.: OMEGA PH-60BMS SER.# 0700177
Buffer Solution	pH 4.0	pH 7.0	pH 10.0	
Temperature °C	20	20	20	
Instrument Reading	4.00	7.00	10.03	
SPECIFIC ELECTRICAL CONDUCTANCE - CALIBRATION				Model or Unit No.: SAME
KCL Solution (µS/cm = µmhos/cm)	0	1000		
Temperature °C	20	20		
Instrument Reading	0	1000		

Notes: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



# WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: HW(22E70N) - UW-4 Initial Depth to Water: 10.49  
 Sample ID: \_\_\_\_\_ Duplicate ID: \_\_\_\_\_ Depth to Water after Sampling: 8  
 Sample Depth: \_\_\_\_\_ Total Depth of Well: 12.58  
 Project and Task No.: 006399.001.0 TASK B Well Diameter: 2"  
 Project Name: Niagara Mohawk - 9 Mile Point 1 Casing Borehole Volume = 0.33 gal  
 Date: 8/25/00 (Circle one)  
 Sampled By: JCV 4 Casing Borehole Volumes = 1.3 gal  
 Method of Purging: SS BAILER (Circle one)  
 Method of Sampling: \_\_\_\_\_ Total Casing Borehole Volumes Removed: 2 (0.6 gal)

Time	Intake Depth	Rate (gpm)	Cum. Vol. (gal.)	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Remarks (color, turbidity, and sediment)
0853			0.3	20.2	7.28	1140	>1000 SILTY, BROWN, PITCHY WATER
0904	DRY AFTER 0.3 gal.			w/L = 12.70			
1139			0.6	18.3	6.79	1160	>1000 SAME.
1141	DRY AFTER 0.6 gal.						
1433		12.10					
	TOTAL VOLUME PURGED = 0.6 gal						

8/25/00

pH CALIBRATION (choose two)					Model or Unit No.: <u>OMEGA</u> <u>PHH-60BMS</u> <u>SER. # 0700177</u>
Buffer Solution	<u>pH 4.0</u>	<u>pH 7.0</u>	pH 10.0	<del>10.0</del>	
Temperature °C	<u>20</u>	<u>20</u>	<u>20</u>		
Instrument Reading	<u>4.00</u>	<u>7.00</u>	<u>10.15</u>		
SPECIFIC ELECTRICAL CONDUCTANCE - CALIBRATION					Model or Unit No.: <u>SAME</u>
KCL Solution (µS/cm = µmhos/cm)	<u>0</u>	<u>1000</u>			
Temperature °C	<u>20</u>	<u>20</u>			
Instrument Reading	<u>0</u>	<u>1000</u>			

Notes: pH 7.00 LOT# 1003236 exp. 02/02  
pH 4.00 LOT# 1003234 exp. 02/02  
pH 10.00 LOT# 1003238 exp. 08/01  
COND. 1000 µS/cm exp. 10/00



# WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: ~~MW(-206100N)~~ MW-5 Initial Depth to Water: 10.79

Sample ID: MW(-206100N) Duplicate ID: \_\_\_\_\_ Depth to Water after Sampling: \_\_\_\_\_

Sample Depth: \_\_\_\_\_ Total Depth of Well: 13.06

Project and Task No.: 6377 TASK B Well Diameter: 2"

Project Name: NIAGARA MOHAWK - 9 Mile Point 1 Casing Borehole Volume = 0.36 gal  
(Circle one)

Date: 07/05/00 4 Casing/Borehole Volumes = \_\_\_\_\_  
(Circle one)

Sampled By: JMH, JSV Total Casing/Borehole Volumes Removed: \_\_\_\_\_

Method of Purging: DOKATO PVC BAKER

Method of Sampling: DOKATO PVC BAKER

Time	Intake Depth	ORP Rate (gpm) mV	Cum. Vol. (gal.)	Temp. (°F)	pH (units)	Specific Electrical Conductance (µS/cm)	Remarks (color, turbidity, and sediment)	
							TURB	DO
1007		-15	0.3	<del>64.8</del> 64.8	6.91	3500	758	12.10 SILTY, GRE
1014		-30	0.6	63.7	6.86	5170	573	11.71
1018		-55	1.0	65.8	6.84	5330	288	11.90
1023		-70	1.3	62.0	7.02	2740	>1000	10.63
1025		-60	1.6	62.8	6.84	7680	>1000	11.12
1026		-50	2.0	61.5	6.80	6890	>1000	11.44
1028		-50	2.3	62.6	6.81	6860	>1000	11.93
1029		-50	2.6	65.3	6.88	6630	>1000	10.95
1035		-50	3.0	62.2	6.85	6970	>1000	10.7
1036		-55	3.3	62.8	6.76	7090	>1000	10.4
1038		-55	3.6	63.0	6.76	7310	>1000	10.5 cloudy, grey, oil
1420		<-100	SAMPLE	65.5	6.92	6850	>1000	5.36

### pH CALIBRATION (choose two)

Buffer Solution	pH 4.0	pH 7.0	pH 10.0
Temperature °C	13.0	13.0	13.0
Instrument Reading	4.14	7.00	10.00

Model or Unit No.: OMEGA PH-60B  
SERIAL # 0700177

### SPECIFIC ELECTRICAL CONDUCTANCE - CALIBRATION

KCL Solution (µS/cm = µmhos/cm)	0	100.0
Temperature °C	13.0	13.0
Instrument Reading	0	10.00

Model or Unit No.: SANC

Notes DO METER SER # 0397-4796 IN TO 10.537 @ 13.0°C  
TURBIDITY METER LAMORTE 2020 SER # 1742-3200 IN TO 100.000 @ 10.00 (RECAL 7/6)  
ORP TESTER CAL TO 250 mV READS 235 mV



## WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: MW45E19015 MW-6 Initial Depth to Water: 10.54

Sample ID: \_\_\_\_\_ Duplicate ID: \_\_\_\_\_ Depth to Water after Sampling: \_\_\_\_\_

Sample Depth: \_\_\_\_\_ Total Depth of Well: 23.64

Project and Task No.: 006399.001.0 TASK B Well Diameter: 2"

Project Name: NIAGARA MONITOR - 9 MILE POINT 1 Casing Borehole Volume = 2.1 gal  
(Circle one)

Date: 8/28/00 4 Casing Borehole Volumes = 8.4 gal  
(Circle one)

Sampled By: JSV Total Casing Borehole Volumes Removed: 4 (8 gal)

Method of Purging: SS BAILER

Method of Sampling: \_\_\_\_\_

Time	Intake Depth	Rate (gpm)	Cum. Vol. (gal.)	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Remarks (color, turbidity, and sediment)
1155			2.0	14.3	7.34	1470	TURB 71000 cloudy, grey, no odor
1200			4.0	13.3	7.45	1450	>1000 " "
1202	WELL DRY AFTER 4 gal.			w/L = 23.24			
1439			6.0	13.7	7.18	1570	565 " "
1444			8.0	14.1	7.37	1500	71000 " "
1445	WELL DRY AFTER 8.0 gal.						
	TOTAL VOLUME PURGED = 8.0 gal						

pH CALIBRATION (choose two)				Model or Unit No.: <u>OMEGA</u> <u>PH-60 BMS</u> <u>SER. # 070077</u>	
Buffer Solution	<u>pH 4.0</u>	<u>pH 7.0</u>	pH 10.0		
Temperature °C	<u>20</u>	<u>20</u>	<u>20</u>		
Instrument Reading	<u>4.00</u>	<u>7.00</u>	<u>10.15</u>		
SPECIFIC ELECTRICAL CONDUCTANCE - CALIBRATION				Model or Unit No.: <u>SAME</u>	
KCL Solution (µS/cm = µmhos/cm)	<u>0</u>	<u>1000</u>			
Temperature °C	<u>20</u>	<u>20</u>			
Instrument Reading	<u>0</u>	<u>1000</u>			

Notes: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



## WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: <u>MW (3061901) MW-7</u>	Initial Depth to Water: <u>8.50</u>
Sample ID: _____ Duplicate ID: _____	Depth to Water after Sampling: _____
Sample Depth: _____	Total Depth of Well: <u>15.36</u>
Project and Task No.: <u>006393.001.0 TASK B</u>	Well Diameter: <u>2"</u>
Project Name: <u>NIAARRA MCHAWK - 9 mile Point</u>	1 <u>Casing</u> Borehole Volume = <u>1.1 gal</u> (Circle one)
Date: <u>8/28/06</u>	4 <u>Casing</u> Borehole Volumes = <u>4.4 gal</u> (Circle one)
Sampled By: <u>JSV</u>	Total <u>Casing</u> Borehole Volumes Removed: <u>10 (11.0 gal)</u>
Method of Purging: <u>SS BAILER</u>	
Method of Sampling: _____	

Time	Intake Depth	Rate (gpm)	Cum. Vol. (gal.)	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Remarks (color, turbidity, and sediment)
1213			1.0	17.3	7.25	970	973 CLOUDY, GRAY, NO ODOR <small>TURB</small>
1217			2.0	16.3	7.28	950	635 " "
1222			3.0	16.3	7.31	960	185 CLEARING
1229			4.0	16.1	7.44	1010	167 " "
1231			5.0	16.1	7.48	1000	135 " "
1239			6.0	16.3	7.45	1030	971 CLOUDY, GRAY, NO ODOR
1242			7.0	16.1	7.45	1040	71000 " "
<del>1246</del> 1246	DRY	AFER	7.5 gal.	WL = 14.75			
1454				15.9	7.35	1120	71000 " "
1458				15.9	7.45	1100	>1000 " "
1502				15.9	7.40	1080	>1000 " "
TOTAL VOLUME PURGED = 11.0 gal							

<b>pH CALIBRATION (choose two)</b>				Model or Unit No.: <u>OMEGA</u> <u>PH11-60615</u> <u>SER # 0700177</u>		
Buffer Solution	<u>pH 4.0</u>	<u>pH 7.0</u>	pH 10.0			
Temperature °C	<u>20</u>	<u>20</u>	<u>20</u>			
Instrument Reading	<u>9.00</u>	<u>7.00</u>	<u>10.15</u>			
<b>SPECIFIC ELECTRICAL CONDUCTANCE - CALIBRATION</b>				Model or Unit No.: <u>SAME</u>		
KCL Solution (µS/cm = µmhos/cm)	<u>0</u>	<u>1000</u>				
Temperature °C	<u>20</u>	<u>20</u>				
Instrument Reading	<u>0</u>	<u>1000</u>				

Notes: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



# WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: MW(25610N) - MW-1 Initial Depth to Water: 7.94  
 Sample ID: MW(25610N) Duplicate ID: \_\_\_\_\_ Depth to Water after Sampling: \_\_\_\_\_  
 Sample Depth: \_\_\_\_\_ Total Depth of Well: 8.88  
 Project and Task No.: 6399 TASK B Well Diameter: 2"  
 Project Name: N. A. R. A. MOHAWK - 9 MILE POINT 1 Casing/Borehole Volume = 0.15  
 Date: 09/05/00 (Circle one)  
 Sampled By: JMH, JSV 4 Casing/Borehole Volumes = \_\_\_\_\_  
 Method of Purging: DEKATED PVC BAILER (Circle one)  
 Method of Sampling: DEKATED PVC BAILER Total Casing/Borehole Volumes Removed: \_\_\_\_\_

Time	Intake Depth	ORP Rate (gpm) ~V	Cum. Vol. (gal.)	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Remarks (color, turbidity, and sediment)
1125		-60	0.15	64.0	6.84	3140	TURB 00 6.20 JACK GREY, SALT STRIPS, 167RD 20
1128		-70	0.30	63.9	6.81	3010	>1000 5.98
1131		-70	0.45	64.0	6.85	2800	>1000 8.20 SALT
1133	WELL DRY AFTER ~0.5 gal. [-1L > 8.62]						
1510		<-100	SAMPLE	63.1		2600	>1000 5.34 6.67, STRIPS, SALT OVER

<b>pH CALIBRATION (choose two)</b>					Model or Unit No.: <u>OMEGA PHH-60BT</u> <u>SERIAL # 0700177</u>
Buffer Solution	pH 4.0	pH 7.0	pH 10.0		
Temperature °C	<u>13.0</u>	<u>13.0</u>	<u>13.0</u>		
Instrument Reading	<u>4.14</u>	<u>7.00</u>	<u>10.00</u>		
<b>SPECIFIC ELECTRICAL CONDUCTANCE - CALIBRATION</b>					Model or Unit No.: <u>SAMC</u>
KCL Solution (µS/cm = µmhos/cm)	<u>(N/A) 0</u>	<u>100.0</u>			
Temperature °C		<u>13.0</u>	<u>13.0</u>		
Instrument Reading		<u>0</u>	<u>10.00</u>		

Notes: DO Meter Ser # 0387-4796 CAL TO 10.53 @ 13.0°C  
TURBIDITY Meter LA MOTE 2020 SER # 1742-3200 CAL TO 10.00 @ 13.0°C (CAL # 76)  
ORP TESTER CAL TO 250mV READING 0.35mV



# WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: MW(40654U) - MW-2 Initial Depth to Water: 9.72  
 Sample ID: MW(40654U) Duplicate ID: \_\_\_\_\_ Depth to Water after Sampling: \_\_\_\_\_  
 Sample Depth: \_\_\_\_\_ Total Depth of Well: 10.53  
 Project and Task No.: 6379 TASK B Well Diameter: 2"  
 Project Name: N. ALARA MOHAWK - 9 MILE POINT 1 Casing/Borehole Volume = 0.28  
 Date: 09/05/00 (Circle one)  
 Sampled By: JMH, JSV 4 Casing/Borehole Volumes = \_\_\_\_\_  
 Method of Purging: DEDICATED PVC BAILEY (Circle one)  
 Method of Sampling: DEDICATED PVC BAILEY Total Casing/Borehole Volumes Removed: \_\_\_\_\_

Time	Intake Depth	ORP Rate (gpm) mV	Cum. Vol. (gal.)	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Remarks (color, turbidity, and sediment)	
							TURB	DO
1313		25	0.3	65.8	9.67	810	71000	6.85 <small>CLOUDY, GREY, SLIGHT PFCAL DO!</small>
1315		30	0.6	64.4	9.30	830	71000	6.89
1318		50	1.0	64.0	8.88	900	71000	6.44
1320		60	1.3	63.5	8.67	940	71000	6.44
1321		70	1.6	63.9	8.44	970	71000	6.22 <small>SAME</small>
1435		130	SAMPLE	61.5	8.10	1370	550	6.02

**pH CALIBRATION (choose two)**

Buffer Solution	pH 4.0	pH 7.0	pH 10.0	
Temperature °C	13.0	13.0	13.0	
Instrument Reading	4.14	7.00	10.00	

Model or Unit No.: OMEGA PHH-6081 SERIAL #0700177

**SPECIFIC ELECTRICAL CONDUCTANCE - CALIBRATION**

KCL Solution (µS/cm = µmhos/cm)	(AIR) 0	1000	
Temperature °C	13.0	13.0	
Instrument Reading	0	1000	

Model or Unit No.: SAMC

Notes: DO METER SER #0387-4996 CAL TO 10.937 @ 13.0 °C  
TURBIDITY METER (AMOTE 2020) SER # 17423200 CAL TO 100.00 µS/CM TO 10.00 (READ: 76)  
ORP TESTER CAL TO 250 mV READS 635 mV



# WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: ~~HW(30690N)~~ MW-3 Initial Depth to Water: ~~10.07~~ 10.07  
 Sample ID: HW(30690N) Duplicate ID: \_\_\_\_\_ Depth to Water after Sampling: \_\_\_\_\_  
 Sample Depth: \_\_\_\_\_ Total Depth of Well: 13.26  
 Project and Task No.: 6339 TASK B Well Diameter: 2"  
 Project Name: N. M. AREA MOHAWK - 9 MILE POINT 1 Casing/Borehole Volume = 0.51 gal  
 Date: 09/05/00 (Circle one)  
 Sampled By: JMH; JSV 4 Casing/Borehole Volumes = \_\_\_\_\_  
 Method of Purging: DEDICATED PVC BAKER (Circle one)  
 Method of Sampling: DEDICATED PVC BAKER Total Casing/Borehole Volumes Removed: \_\_\_\_\_

Time	Intake Depth	ORP Rate (spm) mV	Cum. Vol. (gal.)	Temp. (°C) F	pH (units)	Specific Electrical Conductance (µS/cm)	Remarks (color, turbidity, and sediment)		
							TURB	DO	
1103		20	0.5	60.8	7.01	1420	128	6.77	SLIGHTLY CLOUDY LIGHT OILY SMC.
1106		-10	1.0	60.6	7.01	6740 <sup>(?)</sup>	148	7.50	
1109		-5	1.5	59.9	7.07	1480	152	8.30	
1112		15	2.0	60.8	7.13	1440	182	7.88	
1115		15	2.5	60.8	7.12	1430	243	7.81	SLIGHTLY CLOUDY, OILY LIGHT PETROL OIL
1350	SAMPLE	90	SAMPLE	59.4	7.22	1440	55.8	6.51	CLEAR, OILY, SLIGHT PETROL OIL

pH CALIBRATION (choose two)				Model or Unit No.: OMEGA PHN-6081	
Buffer Solution	pH 4.0	pH 7.0	pH 10.0	SERIAL # 0700177	
Temperature °C	13.0	13.0	13.0		
Instrument Reading	4.14	7.00	10.00		
SPECIFIC ELECTRICAL CONDUCTANCE - CALIBRATION				Model or Unit No.: SAMC	
KCL Solution (µS/cm = µmhos/cm)	(AIR) 0	1000			
Temperature °C		13.0	13.0		
Instrument Reading		0	1000		

Notes: DO METER SER. # 0387-4996 CAL TO 10.537 @ 13.0°C  
 TURBIDITY METER (A NOTE 2020) SER. # 1742-3203 CAL TO 10.000 @ 13.0°C (READ: 7.6)  
 ORP TESTER CAL TO 250mV READS 232mV



# WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: MW (22E90N) - MW-4 Initial Depth to Water: 10.18  
 Sample ID: \_\_\_\_\_ Duplicate ID: \_\_\_\_\_ Depth to Water after Sampling: \_\_\_\_\_  
 Sample Depth: \_\_\_\_\_ Total Depth of Well: 12.58'  
 Project and Task No.: 6379 TASK B Well Diameter: 2"  
 Project Name: N. NIAGARA MOHAWK - 9 MILE POINT 1/ Casing Borehole Volume = 0.38 gal  
 Date: 09/05/00 (Circle one)  
 Sampled By: JMH, JSV 4 Casing/Borehole Volumes = \_\_\_\_\_  
 Method of Purging: DEDICATED PVC BAILEY (Circle one)  
 Method of Sampling: DEDICATED PVC BAILEY Total Casing/Borehole Volumes Removed: \_\_\_\_\_

Time	Intake Depth	ORP Rate (ppm) mV	Cum. Vol. (gal.)	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Remarks (color, turbidity, and sediment)	
							TURB	DO
1058		50	0.3	61.2	7.23	1410	71000	11.86
	WELL DRY AFTER ~0.3 gal.				W/L >	12.25		
1412	W/L > 12.30. INSUFFICIENT VOLUME FOR SAMPLE.							

**pH CALIBRATION (choose two)**

Buffer Solution	pH 4.0	pH 7.0	pH 10.0	
Temperature °C	13.0	13.0	13.0	
Instrument Reading	4.14	7.00	10.00	

Model or Unit No.: OMEGA PHH-608 SERIAL #0700177

**SPECIFIC ELECTRICAL CONDUCTANCE - CALIBRATION**

KCL Solution (µS/cm = µmhos/cm)	(N.F.) 0	1000	
Temperature °C	13.0	13.0	
Instrument Reading	0	1000	

Model or Unit No.: SAMC

Notes: DO METER SER #0787-4996 CAL TO 10.937 @ 13.0°C  
TURBIDITY METER LA MOTE 2020 SER # 1742-3200 CAL TO 10.000 @ 13.0°C (REV. 76)  
ORP TESTER CAL TO 250 mV READS 035 mV



# WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: MW(-20E100N) MW-5 Initial Depth to Water: 10.79  
 Sample ID: MW(-20E100N) Duplicate ID: \_\_\_\_\_ Depth to Water after Sampling: \_\_\_\_\_  
 Sample Depth: \_\_\_\_\_ Total Depth of Well: 13.06  
 Project and Task No.: 6377 TASK B Well Diameter: 2"  
 Project Name: NIMARA MCHAWZ-9 Mile Point 1 Casing Borehole Volume = 0.36 gal  
 Date: 07/05/00 (Circle one)  
 Sampled By: JMH, JSV 4 Casing/Borehole Volumes = \_\_\_\_\_  
 Method of Purging: DEDICATED PVC BAILER (Circle one)  
 Method of Sampling: DEDICATED PVC BAILER Total Casing/Borehole Volumes Removed: \_\_\_\_\_

Time	Intake Depth	ORP Rate (gpm) mV	Cum. Vol. (gal.)	Temp. (°F)	pH (units)	Specific Electrical Conductance (µS/cm)	Remarks (color, turbidity, and sediment)	
							TURB	DO
1007		-15	0.3	<del>64.8</del> 64.8	6.91	3500	758	12.10 SILTY, GRG
1014		-30	0.6	63.7	6.86	5170	573	11.71
1018		-55	1.0	65.8	6.84	5330	288	11.90
1023		-70	1.3	62.0	7.02	2740	>1000	10.63
1025		-60	1.6	62.8	6.84	5680	>1000	11.12
1026		-50	2.0	61.5	6.80	6890	>1000	11.44
1028		-50	2.3	62.6	6.81	6860	>1000	11.93
1029		-50	2.6	65.3	6.88	6630	>1000	10.95
1035		-50	3.0	62.2	6.85	6970	>1000	10.7
1036		-55	3.3	62.8	6.76	7090	>1000	10.4
1038		-55	3.6	63.0	6.76	7310	>1000	10.5 cloudy, GRG, oil
1420		<-100	SAMPLE	65.5	6.92	6850	>1000	5.36

pH CALIBRATION (choose two)				Model or Unit No.: <u>OMEGA PHH-60B</u> <u>SERIAL # 0700177</u>
Buffer Solution	pH 4.0	pH 7.0	pH 10.0	
Temperature °C	13.0	13.0	13.0	
Instrument Reading	4.14	7.00	10.00	

SPECIFIC ELECTRICAL CONDUCTANCE - CALIBRATION			Model or Unit No.: <u>SAMC</u>
KCL Solution (µS/cm = µmhos/cm)	(AIR) 0	1000	
Temperature °C	13.0	13.0	
Instrument Reading	0	1000	

Notes: DO Meter Ser # 0387-4996 cal to 10.537 @ 13.0°C  
Turbidity Meter (A Note 2020) Ser # 17423200 cal to 100 NTU @ 10.00 (RAW) 76  
ORP Tester cal to 250 mV reads 0.35 mV



# WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: MW(45E190N) MWI-6 Initial Depth to Water: 17.95  
 Sample ID: MW(45E190N) Duplicate ID: \_\_\_\_\_ Depth to Water after Sampling: \_\_\_\_\_  
 Sample Depth: \_\_\_\_\_ Total Depth of Well: 23.64  
 Project and Task No.: 6377 TASK B Well Diameter: 2"  
 Project Name: N. MARRA MOHAWK - 9 MILE POINT 1 Casing/Borehole Volume = 0.71 gal  
 Date: 07/05/03 (Circle one)  
 Sampled By: JMH, JSV 4 Casing/Borehole Volumes = \_\_\_\_\_  
 Method of Purging: DEDICATED PVC BAKER (Circle one)  
 Method of Sampling: DEDICATED PVC BAKER Total Casing/Borehole Volumes Removed: \_\_\_\_\_

Time	Intake Depth	ORP Probe (gpm) mV	Cum. Vol. (gal.)	Temp. (°F)	pH (units)	Specific Electrical Conductance (µS/cm)	Remarks (color, turbidity, and sediment)		
							TURB	OD	
1143		110	1.0	56.5	7.41	1730	236	9.36	clear, colorless, od
1146		115	2.0	56.1	7.26	1630	155	10.58	↓
1150	WELL DRY AFTER		=2.5 gal.	WIL 727.35					
1330		110	SAMPLE	54.3	7.48	1610	13	10.80	SAMPLE

pH CALIBRATION (choose two)				Model or Unit No.: <u>OMEGA PHH-6081</u> <u>SERIAL #0700177</u>
Buffer Solution	pH 4.0	pH 7.0	pH 10.0	
Temperature °C	13.0	13.0	13.0	
Instrument Reading	4.14	7.00	10.00	

SPECIFIC ELECTRICAL CONDUCTANCE - CALIBRATION			Model or Unit No.: <u>SAMC</u>
KCL Solution (µS/cm = µmhos/cm)	(N/A) 0	1000	
Temperature °C	13.0	13.0	
Instrument Reading	0	1000	

Notes: DO METER SER #0387-4996 CAL TO 10.537 @ 13.0°C  
TURBIDITY METER LA MOTE 2020 SER #17423200 CAL TO 100.00 µS/CM TO 10.00 (READS 76)  
ORP TESTER CAL TO 250 mV READS 035 mV



# WELL SAMPLING AND/OR DEVELOPMENT RECORD

Well ID: ~~MW(306190N)~~ MW-7 Initial Depth to Water: 9.37

Sample ID: MW(306190N) Duplicate ID: \_\_\_\_\_ Depth to Water after Sampling: \_\_\_\_\_

Sample Depth: \_\_\_\_\_ Total Depth of Well: 15.36

Project and Task No.: 6379 TASK B Well Diameter: 2"

Project Name: N. MARRA MOHAWK - 9 MILE POINT 1 Casing/Borehole Volume = 0.95  
(Circle one)

Date: 09/05/00 4 Casing/Borehole Volumes = \_\_\_\_\_  
(Circle one)

Sampled By: JMH, JSV Total Casing/Borehole Volumes Removed: \_\_\_\_\_

Method of Purging: DEDICATED PVC BAILER

Method of Sampling: DEDICATED PVC BAILER

Time	Intake Depth	ORP Rate (gpm) ~ V	Cum. Vol. (gal.)	Temp. (°C)	pH (units)	Specific Electrical Conductance (µS/cm)	Remarks (color, turbidity, and sediment)	
							TURB	OC
1158		115	1.0	59.5	7.12	1030	792	7.15 <small>USUAL (LOW) BLEND</small>
1200		115	2.0	59.0	7.13	1160	250	8.70
1205		120	3.0	59.0	7.12	1190	585	7.83
1207		115	4.0	57.7	7.14	1180	>1000	7.81 <small>CLOUDY, PREC</small>
1340		100	SAMPLE	57.7	7.13	1190	58.8	8.45 <small>USUAL CLEAR, COLORED</small>
1209	WELL DRY AFTER		≈ 4.5 gal. w/L					

pH CALIBRATION (choose two)				Model or Unit No.: <u>OMEGA PH4-60B1</u> <u>Serial # 0700177</u>
Buffer Solution	pH 4.0	pH 7.0	pH 10.0	
Temperature °C	<u>13.0</u>	<u>13.0</u>	<u>13.0</u>	
Instrument Reading	<u>4.14</u>	<u>7.00</u>	<u>10.00</u>	

SPECIFIC ELECTRICAL CONDUCTANCE - CALIBRATION			Model or Unit No.: <u>SAMC</u>
KCL Solution (µS/cm = µmhos/cm)	<u>(N/A) 0</u>	<u>1000</u>	
Temperature °C	<u>13.0</u>	<u>13.0</u>	
Instrument Reading	<u>0</u>	<u>1000</u>	

Notes: DO Meter Ser. # 0387-4796 CAL TO 10.537 @ 13.0 °C

TURBIDITY Meter (LAMOTE 2020) Ser. # 17423200 CAL TO 10.000 @ 10.000 (READS 76)

ORP TESTER CAL TO 250 mV READS 035 mV

## **APPENDIX C**

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### **Laboratory Analytical Data**



**TABLE C-1**

**SAMPLE IDENTIFICATION NAME AND CORRESPONDING BOREHOLE/MONITORING WELL LOCATION**

Niagara Mohawk Power Corporation  
UST Investigation  
Nine Mile Point Nuclear Station

<b>Borehole or Monitoring Well ID</b>	<b>Sample ID</b>
BH-1	BH(20E0N)
BH-10	BH(3E-30N)
BH-11	BH(19E-40N)
BH-12	BH(45E-40N)
BH-2	BH(41E0N)
BH-3	BH(25E40N)
BH-4	BH(25E60N)
BH-5	BH(40E48N)
BH-6	BH(40E61N)
BH-7	BH(40E90N)
BH-8	BH(20E90N)
BH-9	BH(50E30N)
MW-1	MW(25E10N)
MW-2	MW(40E54N)
MW-3	MW(30E90N)
MW-4	MW(22E90N)
MW-5	MW(-20E100N)
MW-6	MW(45E190N)
MW-7	MW(30E190N)



-- LABORATORY ANALYSIS REPORT --

GeoMatrix Consultants, Inc.  
338 Harris Hill Road, Suite 201  
Williamsville, NY 14221

Attn: Mr. Chris Prucha  
Phone: (716) 565-0624  
FAX: (716) 565-0625

Project No.: 6399.000.B  
Authorization:

LSL Project No.: 0007158  
Report Date: 8/29/00

Sample ID: BH40E90N

LSL Sample ID: 0007158-001  
Date Sampled: 8/21/2000

Source:  
Sample Matrix: SHW, dry weight

Parameter(s)	Results	Units	Analysis Date	Comment
<b>NYS-DEC STARS 8021 Volatiles</b>				
Benzene	<6	ug/kg Dry	8/28/2000	
n-Butylbenzene	<6	ug/kg Dry	8/28/2000	
sec-Butylbenzene	<6	ug/kg Dry	8/28/2000	
tert-Butylbenzene	<6	ug/kg Dry	8/28/2000	
Ethyl benzene	<6	ug/kg Dry	8/28/2000	
Isopropylbenzene (Cumene)	<6	ug/kg Dry	8/28/2000	
4-Isopropyl toluene (Cymene)	<6	ug/kg Dry	8/28/2000	
MTBE	<6	ug/kg Dry	8/28/2000	
Naphthalene	<6	ug/kg Dry	8/28/2000	
N-Propylbenzene	<6	ug/kg Dry	8/28/2000	
Toluene	<6	ug/kg Dry	8/28/2000	
1,2,4-Trimethylbenzene	<6	ug/kg Dry	8/28/2000	
1,3,5-Trimethylbenzene	<6	ug/kg Dry	8/28/2000	
Xylenes (Total)	<6	ug/kg Dry	8/28/2000	
Total Solids @ 103-105 C	85	%	8/28/2000	
<b>NYS-DEC STARS 8270 Base/Neutrals</b>				
Acenaphthene	<200	ug/kg Dry	8/26/2000	
Anthracene	<200	ug/kg Dry	8/26/2000	
Benzo(a)anthracene	<200	ug/kg Dry	8/26/2000	
Benzo(b)fluoranthene	<200	ug/kg Dry	8/26/2000	
Benzo(k)fluoranthene	<200	ug/kg Dry	8/26/2000	
Benzo(ghi)perylene	<200	ug/kg Dry	8/26/2000	
Benzo(a)pyrene	<200	ug/kg Dry	8/26/2000	
Chrysene	<200	ug/kg Dry	8/26/2000	
Dibenz(a,h)anthracene	<200	ug/kg Dry	8/26/2000	
Fluoranthene	<200	ug/kg Dry	8/26/2000	
Fluorene	<200	ug/kg Dry	8/26/2000	
Indeno(1,2,3-c,d)pyrene	<200	ug/kg Dry	8/26/2000	
Phenanthrene	<200	ug/kg Dry	8/26/2000	
Pyrene	<200	ug/kg Dry	8/26/2000	
Total Solids @ 103-105 C	85	%	8/28/2000	

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338 Harris Hill Road, Suite 201  
Williamsville, NY 14221

Attn: Mr. Chris Prucha  
Phone: (716) 565-0624  
FAX: (716) 565-0625

Project No.: 6399.000.B  
Authorization:

LSL Project No.: 0007158  
Report Date: 8/29/00

Sample ID: BH50E30N

LSL Sample ID: 0007158-002  
Date Sampled: 8/21/2000

Source:  
Sample Matrix: SHW, dry weight

Parameter(s)	Results	Units	Analysis Date	Comment
<b>NYS-DEC STARS 8021 Volatiles</b>				
Benzene	<6	ug/kg Dry	8/28/2000	
n-Butylbenzene	<6	ug/kg Dry	8/28/2000	
sec-Butylbenzene	<6	ug/kg Dry	8/28/2000	
tert-Butylbenzene	<6	ug/kg Dry	8/28/2000	
Ethyl benzene	<6	ug/kg Dry	8/28/2000	
Isopropylbenzene (Cumene)	<6	ug/kg Dry	8/28/2000	
4-Isopropyl toluene (Cymene)	<6	ug/kg Dry	8/28/2000	
MTBE	<6	ug/kg Dry	8/28/2000	
Naphthalene	<6	ug/kg Dry	8/28/2000	
N-Propylbenzene	<6	ug/kg Dry	8/28/2000	
Toluene	<6	ug/kg Dry	8/28/2000	
1,2,4-Trimethylbenzene	<6	ug/kg Dry	8/28/2000	
1,3,5-Trimethylbenzene	<6	ug/kg Dry	8/28/2000	
Xylenes (Total)	<6	ug/kg Dry	8/28/2000	
Total Solids @ 103-105 C	88	%	8/28/2000	
<b>NYS-DEC STARS 8270 Base/Neutrals</b>				
Acenaphthene	<200	ug/kg Dry	8/26/2000	
Anthracene	<200	ug/kg Dry	8/26/2000	
Benzo(a)anthracene	<200	ug/kg Dry	8/26/2000	
Benzo(b)fluoranthene	<200	ug/kg Dry	8/26/2000	
Benzo(k)fluoranthene	<200	ug/kg Dry	8/26/2000	
Benzo(ghi)perylene	<200	ug/kg Dry	8/26/2000	
Benzo(a)pyrene	<200	ug/kg Dry	8/26/2000	
Chrysene	<200	ug/kg Dry	8/26/2000	
Dibenz(a,h)anthracene	<200	ug/kg Dry	8/26/2000	
Fluoranthene	<200	ug/kg Dry	8/26/2000	
Fluorene	<200	ug/kg Dry	8/26/2000	
Indeno(1,2,3-c,d)pyrene	<200	ug/kg Dry	8/26/2000	
Phenanthrene	<200	ug/kg Dry	8/26/2000	
Pyrene	<200	ug/kg Dry	8/26/2000	
Total Solids @ 103-105 C	88	%	8/28/2000	

-- LABORATORY ANALYSIS REPORT --

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Phone: (716) 565-0624  
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Project No.: 6399.000.B  
Authorization:

LSL Project No.: 0007158  
Report Date: 8/29/00

Sample ID: BH25E60N

Source:  
Sample Matrix: SHW, dry weight

LSL Sample ID: 0007158-003  
Date Sampled: 8/21/2000

Parameter(s)	Results	Units	Analysis Date	Comment
<b>NYS-DEC STARS 8021 Volatiles</b>				
Benzene	<6	ug/kg Dry	8/28/2000	
n-Butylbenzene	<6	ug/kg Dry	8/28/2000	
sec-Butylbenzene	<6	ug/kg Dry	8/28/2000	
tert-Butylbenzene	<6	ug/kg Dry	8/28/2000	
Ethyl benzene	<6	ug/kg Dry	8/28/2000	
Isopropylbenzene (Cumene)	<6	ug/kg Dry	8/28/2000	
4-Isopropyl toluene (Cymene)	<6	ug/kg Dry	8/28/2000	
MTBE	<6	ug/kg Dry	8/28/2000	
Naphthalene	<6	ug/kg Dry	8/28/2000	
N-Propylbenzene	<6	ug/kg Dry	8/28/2000	
Toluene	<6	ug/kg Dry	8/28/2000	
1,2,4-Trimethylbenzene	<6	ug/kg Dry	8/28/2000	
1,3,5-Trimethylbenzene	<6	ug/kg Dry	8/28/2000	
Xylenes (Total)	<6	ug/kg Dry	8/28/2000	
Total Solids @ 103-105 C	89	%	8/28/2000	
<b>NYS-DEC STARS 8270 Base/Neutrals</b>				
Acenaphthene	<200	ug/kg Dry	8/26/2000	
Anthracene	<200	ug/kg Dry	8/26/2000	
Benzo(a)anthracene	<200	ug/kg Dry	8/26/2000	
Benzo(b)fluoranthene	<200	ug/kg Dry	8/26/2000	
Benzo(k)fluoranthene	<200	ug/kg Dry	8/26/2000	
Benzo(ghi)perylene	<200	ug/kg Dry	8/26/2000	
Benzo(a)pyrene	<200	ug/kg Dry	8/26/2000	
Chrysene	<200	ug/kg Dry	8/26/2000	
Dibenz(a,h)anthracene	<200	ug/kg Dry	8/26/2000	
Fluoranthene	<200	ug/kg Dry	8/26/2000	
Fluorene	<200	ug/kg Dry	8/26/2000	
Indeno(1,2,3-c,d)pyrene	<200	ug/kg Dry	8/26/2000	
Phenanthrene	<200	ug/kg Dry	8/26/2000	
Pyrene	<200	ug/kg Dry	8/26/2000	
Total Solids @ 103-105 C	89	%	8/28/2000	

**-- LABORATORY ANALYSIS REPORT --**

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338 Harris Hill Road, Suite 201  
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Project No.: 6399.000.B  
Authorization:

LSL Project No.: 0007158  
Report Date: 8/29/00

**Sample ID: BH3E-30N**


Source:  
Sample Matrix: SHW, dry weight

LSL Sample ID: 0007158-004  
Date Sampled: 8/22/2000

<i>Parameter(s)</i>	<i>Results</i>	<i>Units</i>	<i>Analysis Date</i>	<i>Comment</i>
<b>NYS-DEC STARS 8021 Volatiles</b>				
Benzene	<6	ug/kg Dry	8/28/2000	
n-Butylbenzene	<6	ug/kg Dry	8/28/2000	
sec-Butylbenzene	<6	ug/kg Dry	8/28/2000	
tert-Butylbenzene	<6	ug/kg Dry	8/28/2000	
Ethyl benzene	<6	ug/kg Dry	8/28/2000	
Isopropylbenzene (Cumene)	<6	ug/kg Dry	8/28/2000	
4-Isopropyl toluene (Cymene)	<6	ug/kg Dry	8/28/2000	
MTBE	<6	ug/kg Dry	8/28/2000	
Naphthalene	<6	ug/kg Dry	8/28/2000	
N-Propylbenzene	<6	ug/kg Dry	8/28/2000	
Toluene	<6	ug/kg Dry	8/28/2000	
1,2,4-Trimethylbenzene	7.1	ug/kg Dry	8/28/2000	
1,3,5-Trimethylbenzene	<6	ug/kg Dry	8/28/2000	
Xylenes (Total)	<6	ug/kg Dry	8/28/2000	
Total Solids @ 103-105 C	84	%	8/28/2000	
<b>NYS-DEC STARS 8270 Base/Neutrals</b>				
Acenaphthene	<200	ug/kg Dry	8/26/2000	
Anthracene	<200	ug/kg Dry	8/26/2000	
Benzo(a)anthracene	<200	ug/kg Dry	8/26/2000	
Benzo(b)fluoranthene	<200	ug/kg Dry	8/26/2000	
Benzo(k)fluoranthene	<200	ug/kg Dry	8/26/2000	
Benzo(ghi)perylene	<200	ug/kg Dry	8/26/2000	
Benzo(a)pyrene	<200	ug/kg Dry	8/26/2000	
Chrysene	<200	ug/kg Dry	8/26/2000	
Dibenz(a,h)anthracene	<200	ug/kg Dry	8/26/2000	
Fluoranthene	<200	ug/kg Dry	8/26/2000	
Fluorene	<200	ug/kg Dry	8/26/2000	
Indeno(1,2,3-c,d)pyrene	<200	ug/kg Dry	8/26/2000	
Phenanthrene	<200	ug/kg Dry	8/26/2000	
Pyrene	<200	ug/kg Dry	8/26/2000	
Total Solids @ 103-105 C	84	%	8/28/2000	

7158

Project No.: 6399			ANALYSES										REMARKS					
Samplers (Signatures): <i>Joseph VanderLinde</i>			Date	Time	Sample Number	EPA Method 8010	EPA Method 8020	EPA Method 8020 (BTEX only)	EPA Method 8240	EPA Method 8270	TPH as gasoline	TPH as diesel	8021/8270*	Cooled	Soil (S), Water (W), or Vapor (V)	Acidified	Number of containers	Additional Comments
	8/21/07	1545	BH40E90N										1	✓S			1	* 8021 STARS and 8270 STARS per CP 8-23-00 w/ standard TAT
	↓	1715	BH50E90N										1	✓S			1	
	↓	1730	BH75E60N										1	✓S			1	
	8/22/07	0930	BH3E30N										1	✓S			1	
Total No. of containers: 4																		

Relinquished by (signature): <i>Joseph VanderLinde</i>		Relinquished by (signature):		Relinquished by (signature):		Relinquished by (signature):		Relinquished by (signature):		Relinquished by (signature):		Relinquished by (signature):		Relinquished by (signature):		Relinquished by (signature):		Relinquished by (signature):	
Printed Name: JOSEPH VANDERLINDE		Printed Name:		Printed Name:		Printed Name:		Printed Name:		Printed Name:		Printed Name:		Printed Name:		Printed Name:		Printed Name:	
Company: VANDERLINDE		Company:		Company:		Company:		Company:		Company:		Company:		Company:		Company:		Company:	
Date: 8/22/07		Date:		Date:		Date:		Date:		Date:		Date:		Date:		Date:		Date:	
Time: 1830		Time:		Time:		Time:		Time:		Time:		Time:		Time:		Time:		Time:	
Received by (signature):		Received by (signature):		Received by (signature):		Received by (signature):		Received by (signature):		Received by (signature):		Received by (signature):		Received by (signature):		Received by (signature):		Received by (signature):	
Printed Name:		Printed Name:		Printed Name:		Printed Name:		Printed Name:		Printed Name:		Printed Name:		Printed Name:		Printed Name:		Printed Name:	
Company:		Company:		Company:		Company:		Company:		Company:		Company:		Company:		Company:		Company:	
Date: 8/22/07		Date:		Date:		Date:		Date:		Date:		Date:		Date:		Date:		Date:	
Time: 1830		Time:		Time:		Time:		Time:		Time:		Time:		Time:		Time:		Time:	
Received by (signature):		Received by (signature):		Received by (signature):		Received by (signature):		Received by (signature):		Received by (signature):		Received by (signature):		Received by (signature):		Received by (signature):		Received by (signature):	
Printed Name:		Printed Name:		Printed Name:		Printed Name:		Printed Name:		Printed Name:		Printed Name:		Printed Name:		Printed Name:		Printed Name:	
Company:		Company:		Company:		Company:		Company:		Company:		Company:		Company:		Company:		Company:	
Method of Shipment: FEDERAL EXPRESS										Laboratory Comments and Log No.:									
																			



# Laboratory Analysis Report

For

GeoMatrix Consultants, Inc.

Project Number: 006399.00TaskB

LSL Project Number: 0007307

gale g sutton QAD                      9-8-00  
Reviewed By                                      Date

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**-- LABORATORY ANALYSIS REPORT --**

GeoMatrix Consultants, Inc.  
338 Harris Hill Road, Suite 201  
Williamsville, NY 14221

Attn: Mr. Chris Prucha  
Phone: (716) 565-0624  
FAX: (716) 565-0625

Project No.: 006399.00TaskB  
Authorization:

LSL Project No.: 0007307  
Report Date: 9/8/00

**Sample ID: MW-20E100N**

Source:  
Sample Matrix: SHW, dry weight

LSL Sample ID: 0007307-001  
Date Sampled: 8/24/2000

<i>Parameter(s)</i>	<i>Results</i>	<i>Units</i>	<i>Analysis Date</i>	<i>Comment</i>
EPA 8260B TCL & 8021 STARS Volatiles				
Acetone	<60	ug/kg Dry	9/6/2000	
Benzene	<30	ug/kg Dry	9/6/2000	
Bromodichloromethane	<30	ug/kg Dry	9/6/2000	
Bromoform	<30	ug/kg Dry	9/6/2000	
Bromomethane	<30	ug/kg Dry	9/6/2000	
2-Butanone (MEK)	<60	ug/kg Dry	9/6/2000	
Carbon disulfide	<30	ug/kg Dry	9/6/2000	
Carbon tetrachloride	<30	ug/kg Dry	9/6/2000	
Chlorobenzene	<30	ug/kg Dry	9/6/2000	
Chloroethane	<30	ug/kg Dry	9/6/2000	
Chloroform	<30	ug/kg Dry	9/6/2000	
Chloromethane	<30	ug/kg Dry	9/6/2000	
Dibromochloromethane	<30	ug/kg Dry	9/6/2000	
1,1-Dichloroethane	<30	ug/kg Dry	9/6/2000	
1,2-Dichloroethane	<30	ug/kg Dry	9/6/2000	
1,1-Dichloroethene	<30	ug/kg Dry	9/6/2000	
1,2-Dichloroethene, Total	<30	ug/kg Dry	9/6/2000	
1,2-Dichloropropane	<30	ug/kg Dry	9/6/2000	
cis-1,3-Dichloropropene	<30	ug/kg Dry	9/6/2000	
trans-1,3-Dichloropropene	<30	ug/kg Dry	9/6/2000	
Ethyl benzene	<30	ug/kg Dry	9/6/2000	
2-Hexanone	<60	ug/kg Dry	9/6/2000	
Methylene chloride	<60	ug/kg Dry	9/6/2000	
4-Methyl-2-pentanone (MIBK)	<60	ug/kg Dry	9/6/2000	
Styrene	<30	ug/kg Dry	9/6/2000	
1,1,2,2-Tetrachloroethane	<30	ug/kg Dry	9/6/2000	
Tetrachloroethene	<30	ug/kg Dry	9/6/2000	
Toluene	<30	ug/kg Dry	9/6/2000	
1,1,1-Trichloroethane	<30	ug/kg Dry	9/6/2000	
1,1,2-Trichloroethane	<30	ug/kg Dry	9/6/2000	
Trichloroethene	<30	ug/kg Dry	9/6/2000	

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338 Harris Hill Road, Suite 201  
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Attn: Mr. Chris Prucha  
Phone: (716) 565-0624  
FAX: (716) 565-0625

Project No.: 006399.00TaskB  
Authorization:

LSL Project No.: 0007307  
Report Date: 9/8/00

Vinyl chloride	<30	ug/kg Dry	9/6/2000
Xylenes (Total)	<30	ug/kg Dry	9/6/2000
n-Butylbenzene	<30	ug/kg Dry	9/6/2000
sec-Butylbenzene	<30	ug/kg Dry	9/6/2000
tert-Butylbenzene	<30	ug/kg Dry	9/6/2000
Isopropylbenzene (Cumene)	<30	ug/kg Dry	9/6/2000
4-Isopropyl toluene (Cymene)	<30	ug/kg Dry	9/6/2000
MTBE	<30	ug/kg Dry	9/6/2000
Naphthalene	<30	ug/kg Dry	9/6/2000
N-Propylbenzene	<30	ug/kg Dry	9/6/2000
1,2,4-Trimethylbenzene	<30	ug/kg Dry	9/6/2000
1,3,5-Trimethylbenzene	<30	ug/kg Dry	9/6/2000 (71)

(71) Elevated detection limits due to the presence of a petroleum hydrocarbon pattern in the sample.

NYS-DEC STARS 8270 Base/Neutrals

Acenaphthene	<200	ug/kg Dry	8/30/2000
Anthracene	<200	ug/kg Dry	8/30/2000
Benzo(a)anthracene	<200	ug/kg Dry	8/30/2000
Benzo(b)fluoranthene	<200	ug/kg Dry	8/30/2000
Benzo(k)fluoranthene	<200	ug/kg Dry	8/30/2000
Benzo(ghi)perylene	<200	ug/kg Dry	8/30/2000
Benzo(a)pyrene	<200	ug/kg Dry	8/30/2000
Chrysene	<200	ug/kg Dry	8/30/2000
Dibenz(a,h)anthracene	<200	ug/kg Dry	8/30/2000
Fluoranthene	<200	ug/kg Dry	8/30/2000
Fluorene	<200	ug/kg Dry	8/30/2000
Indeno(1,2,3-c,d)pyrene	<200	ug/kg Dry	8/30/2000
Phenanthrene	<200	ug/kg Dry	8/30/2000
Pyrene	<200	ug/kg Dry	8/30/2000
Total Solids @ 103-105 C	93	%	8/28/2000

Sample ID: MW40E54N

Source:

Sample Matrix: SHW, dry weight

LSL Sample ID: 0007307-002

Date Sampled: 8/25/2000

Parameter(s)

Results

Units

Analysis Date

Comment

NYS-DEC STARS 8021 Volatiles

Benzene	<30	ug/kg Dry	9/6/2000
n-Butylbenzene	<30	ug/kg Dry	9/6/2000

Life Science Laboratories, Inc.

Page 3 of 5

5854 Butternut Drive, East Syracuse, New York 13057 Telephone: (315) 445-1105 Telefax: (315) 445-1301

NYS DOH ELAP No. 10248

-- LABORATORY ANALYSIS REPORT --

GeoMatrix Consultants, Inc.  
338 Harris Hill Road, Suite 201  
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Attn: Mr. Chris Prucha  
Phone: (716) 565-0624  
FAX: (716) 565-0625

Project No.: 006399.00TaskB

LSL Project No.: 0007307

Authorization:

Report Date: 9/8/00

sec-Butylbenzene	<30	ug/kg Dry	9/6/2000
tert-Butylbenzene	<30	ug/kg Dry	9/6/2000
Ethyl benzene	<30	ug/kg Dry	9/6/2000
Isopropylbenzene (Cumene)	<30	ug/kg Dry	9/6/2000
4-Isopropyl toluene (Cymene)	<30	ug/kg Dry	9/6/2000
MTBE	<30	ug/kg Dry	9/6/2000
Naphthalene	<30	ug/kg Dry	9/6/2000
N-Propylbenzene	<30	ug/kg Dry	9/6/2000
Toluene	<30	ug/kg Dry	9/6/2000
1,2,4-Trimethylbenzene	<30	ug/kg Dry	9/6/2000
1,3,5-Trimethylbenzene	<30	ug/kg Dry	9/6/2000
Xylenes (Total)	<30	ug/kg Dry	9/6/2000 (71)
<i>(71) Elevated detection limits due to the presence of a petroleum hydrocarbon pattern in the sample.</i>			
Total Solids @ 103-105 C	88	%	8/28/2000

NYS-DEC STARS 8270 Base/Neutrals

Acenaphthene	<200	ug/kg Dry	8/30/2000
Anthracene	<200	ug/kg Dry	8/30/2000
Benzo(a)anthracene	<200	ug/kg Dry	8/30/2000
Benzo(b)fluoranthene	<200	ug/kg Dry	8/30/2000
Benzo(k)fluoranthene	<200	ug/kg Dry	8/30/2000
Benzo(ghi)perylene	<200	ug/kg Dry	8/30/2000
Benzo(a)pyrene	<200	ug/kg Dry	8/30/2000
Chrysene	<200	ug/kg Dry	8/30/2000
Dibenz(a,h)anthracene	<200	ug/kg Dry	8/30/2000
Fluoranthene	<200	ug/kg Dry	8/30/2000
Fluorene	<200	ug/kg Dry	8/30/2000
Indeno(1,2,3-c,d)pyrene	<200	ug/kg Dry	8/30/2000
Phenanthrene	<200	ug/kg Dry	8/30/2000
Pyrene	<200	ug/kg Dry	8/30/2000
Total Solids @ 103-105 C	88	%	8/28/2000

Sample ID: MW25E10N

Source:

LSL Sample ID: 0007307-003

Sample Matrix: SHW,dry weight

Date Sampled: 8/25/2000

Parameter(s)	Results	Units	Analysis Date	Comment
NYS-DEC STARS 8021 Volatiles				
Benzene	<300	ug/kg Dry	9/6/2000	

Life Science Laboratories, Inc.

Page 4 of 5

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NYS DOH ELAP No. 10248

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GeoMatrix Consultants, Inc.  
338 Harris Hill Road, Suite 201  
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Attn: Mr. Chris Prucha  
Phone: (716) 565-0624  
FAX: (716) 565-0625

Project No.: 006399.00TaskB

LSL Project No.: 0007307

Authorization:

Report Date: 9/8/00

n-Butylbenzene	2600	ug/kg Dry	9/6/2000
sec-Butylbenzene	1700	ug/kg Dry	9/6/2000
tert-Butylbenzene	<300	ug/kg Dry	9/6/2000
Ethyl benzene	2700	ug/kg Dry	9/6/2000
Isopropylbenzene (Cumene)	930	ug/kg Dry	9/6/2000
4-Isopropyl toluene (Cymene)	1700	ug/kg Dry	9/6/2000
MTBE	<300	ug/kg Dry	9/6/2000
Naphthalene	6000	ug/kg Dry	9/6/2000
N-Propylbenzene	2200	ug/kg Dry	9/6/2000
Toluene	<300	ug/kg Dry	9/6/2000
1,2,4-Trimethylbenzene	24000	ug/kg Dry	9/6/2000
1,3,5-Trimethylbenzene	9300	ug/kg Dry	9/6/2000
Xylenes (Total)	18000	ug/kg Dry	9/6/2000
Total Solids @ 103-105 C	89	%	8/28/2000
NYS-DEC STARS 8270 Base/Neutrals			
Acenaphthene	500	ug/kg Dry	8/30/2000
Anthracene	<200	ug/kg Dry	8/30/2000
Benzo(a)anthracene	<200	ug/kg Dry	8/30/2000
Benzo(b)fluoranthene	<200	ug/kg Dry	8/30/2000
Benzo(k)fluoranthene	<200	ug/kg Dry	8/30/2000
Benzo(ghi)perylene	<200	ug/kg Dry	8/30/2000
Benzo(a)pyrene	<200	ug/kg Dry	8/30/2000
Chrysene	<200	ug/kg Dry	8/30/2000
Dibenz(a,h)anthracene	<200	ug/kg Dry	8/30/2000
Fluoranthene	<200	ug/kg Dry	8/30/2000
Fluorene	670	ug/kg Dry	8/30/2000
Indeno(1,2,3-c,d)pyrene	<200	ug/kg Dry	8/30/2000
Phenanthrene	1300	ug/kg Dry	8/30/2000
Pyrene	210	ug/kg Dry	8/30/2000
Total Solids @ 103-105 C	89	%	8/28/2000

7307

**CHAIN-OF-CUSTODY RECORD**

Project No: 026399000 B2 Date: 8/23/02 Page 1 of 1

Project No: 026399000 TASK B		ANALYSES										REMARKS				
Date	Time	Sample Number	EPA Method 8010	EPA Method 8020	EPA Method 8020 (BTEX only)	EPA Method 8240	EPA Method 8270	TPH as gasoline	TPH as diesel	SVOCs VCL/ SVOC	2270 + STARS 2270 compounds + 8270	Cooled	Soil (S), Water (W), or Vapor (V)	Acidified	Number of containers	Additional Comments
8/24/02	1200	MW-20E100N									1	X	S		1	SAMPLE MW-20E100N TO BE ANALYZED FOR 8260 + STARS VOCs NOT INCLUDED IN 8260 + 8270 STARS SVOCs
9/15/02	0915	MW4DE54N								1		X	S			
9/15/02	1100	MW25E10N								1		X	S		1	

Turnaround time: Results to: GCOMATRIX Total No. of containers: 3

Relinquished by (signature):		Relinquished by (signature):		Relinquished by (signature):		Method of Shipment:	
Date:	Time:	Date:	Time:	Date:	Time:	Date:	Time:
8/23/02	1435					8/23/02	16:02
Signature: <i>[Signature]</i> Printed Name: JOSEPH VANDER LINDEN Company: GCOMATRIX		Signature: <i>[Signature]</i> Printed Name: J. S. [Signature] Company: [Signature]		Signature: <i>[Signature]</i> Printed Name: [Signature] Company: [Signature]		CURTICE / LAG Laboratory Comments and Log No.:	
Signature: <i>[Signature]</i> Printed Name: April Powell Company: Life Science		Signature: <i>[Signature]</i> Printed Name: [Signature] Company: [Signature]		Signature: <i>[Signature]</i> Printed Name: [Signature] Company: [Signature]		Date: 8/23/02 Time: 5:6°C Date: 8/23/02 Time: 16:02 Date: 8/23/02 Time: 16:02 Date: 8/23/02 Time: 16:02 Date: 8/23/02 Time: 16:02	





-- LABORATORY ANALYSIS REPORT --

GeoMatrix Consultants, Inc.  
338 Harris Hill Road, Suite 201  
Williamsville, NY 14221

Attn: Mr. Chris Prucha  
Phone: (716) 565-0624  
FAX: (716) 565-0625

Project No.: 6399 Task B  
Authorization:

LSL Project No.: 0007632  
Report Date: 9/20/00

Sample ID: MW(-20E100N)

Source:  
Sample Matrix: NPW

LSL Sample ID: 0007632-001  
Date Sampled: 9/5/2000

<i>Parameter(s)</i>	<i>Results</i>	<i>Units</i>	<i>Analysis Date</i>	<i>Comment</i>
EPA 200.7 Metals				
Iron	8.5	mg/l	9/8/2000	
EPA 8260B TCL & 8021 STARS Volatiles				
Acetone	<10	ug/l	9/12/2000	
Benzene	39	ug/l	9/12/2000	
Bromodichloromethane	<5	ug/l	9/12/2000	
Bromoform	<5	ug/l	9/12/2000	
Bromomethane	<5	ug/l	9/12/2000	
2-Butanone (MEK)	<10	ug/l	9/12/2000	
Carbon disulfide	<5	ug/l	9/12/2000	
Carbon tetrachloride	<5	ug/l	9/12/2000	
Chlorobenzene	<5	ug/l	9/12/2000	
Chloroethane	<5	ug/l	9/12/2000	
Chloroform	<5	ug/l	9/12/2000	
Chloromethane	<5	ug/l	9/12/2000	
Dibromochloromethane	<5	ug/l	9/12/2000	
1,1-Dichloroethane	<5	ug/l	9/12/2000	
1,2-Dichloroethane	<5	ug/l	9/12/2000	
1,1-Dichloroethene	<5	ug/l	9/12/2000	
1,2-Dichloroethene, Total	<5	ug/l	9/12/2000	
1,2-Dichloropropane	<5	ug/l	9/12/2000	
cis-1,3-Dichloropropene	<5	ug/l	9/12/2000	
trans-1,3-Dichloropropene	<5	ug/l	9/12/2000	
Ethyl benzene	<5	ug/l	9/12/2000	
2-Hexanone	<10	ug/l	9/12/2000	
Methylene chloride	<10	ug/l	9/12/2000	
4-Methyl-2-pentanone (MIBK)	<10	ug/l	9/12/2000	
Styrene	<5	ug/l	9/12/2000	
1,1,2,2-Tetrachloroethane	<5	ug/l	9/12/2000	
Tetrachloroethene	<5	ug/l	9/12/2000	
Toluene	<5	ug/l	9/12/2000	
1,1,1-Trichloroethane	<5	ug/l	9/12/2000	

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338 Harris Hill Road, Suite 201  
Williamsville, NY 14221

Attn: Mr. Chris Prucha  
Phone: (716) 565-0624  
FAX: (716) 565-0625

Project No.: 6399 Task B

LSL Project No.: 0007632

Authorization:

Report Date: 9/20/00

1,1,2-Trichloroethane	<5	ug/l	9/12/2000
Trichloroethene	<5	ug/l	9/12/2000
Vinyl chloride	<5	ug/l	9/12/2000
Xylenes (Total)	<5	ug/l	9/12/2000
n-Butylbenzene	<5	ug/l	9/12/2000
sec-Butylbenzene	<5	ug/l	9/12/2000
tert-Butylbenzene	<5	ug/l	9/12/2000
Isopropylbenzene (Cumene)	<5	ug/l	9/12/2000
4-Isopropyl toluene (Cymene)	<5	ug/l	9/12/2000
MTBE	5.9	ug/l	9/12/2000
Naphthalene	<5	ug/l	9/12/2000
N-Propylbenzene	<5	ug/l	9/12/2000
1,2,4-Trimethylbenzene	<5	ug/l	9/12/2000
1,3,5-Trimethylbenzene	<5	ug/l	9/12/2000
EPA Method 300.0 A			
Nitrate as N	<0.1	mg/l	9/6/2000
Sulfate	11	mg/l	9/6/2000
NYS-DEC STARS 8270 Base/Neutrals*			
Acenaphthene	<100	ug/l	9/11/2000
Anthracene	<100	ug/l	9/11/2000
Benzo(a)anthracene	<100	ug/l	9/11/2000
Benzo(b)fluoranthene	<100	ug/l	9/11/2000
Benzo(k)fluoranthene	<100	ug/l	9/11/2000
Benzo(ghi)perylene	<100	ug/l	9/11/2000
Benzo(a)pyrene	<100	ug/l	9/11/2000
Chrysene	<100	ug/l	9/11/2000
Dibenz(a,h)anthracene	<100	ug/l	9/11/2000
Fluoranthene	<100	ug/l	9/11/2000
Fluorene	<100	ug/l	9/11/2000
Indeno(1,2,3-c,d)pyrene	<100	ug/l	9/11/2000
Phenanthrene	<100	ug/l	9/11/2000
Pyrene	<100	ug/l	9/11/2000 (6)
(6) Elevated detection limit due to matrix interference.			
*Unknown Hydrocarbons are present at undetermined concentrations.			
SM 18 2320B, Alkalinity as CaCO3			
Alkalinity	530	mg/l	9/15/00

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Phone: (716) 565-0624  
FAX: (716) 565-0625

Project No.: 6399 Task B  
Authorization:

LSL Project No.: 0007632  
Report Date: 9/20/00

Sample ID: MW(30E90N)

Source:  
Sample Matrix: NPW

LSL Sample ID: 0007632-002  
Date Sampled: 9/5/2000

<i>Parameter(s)</i>	<i>Results</i>	<i>Units</i>	<i>Analysis Date</i>	<i>Comment</i>
EPA 200.7 Metals				
Iron	1.0	mg/l	9/8/2000	
EPA 8260B TCL & 8021 STARS Volatiles				
Acetone	<20	ug/l	9/7/2000	
Benzene	<5	ug/l	9/7/2000	
Bromodichloromethane	<5	ug/l	9/7/2000	
Bromoform	<5	ug/l	9/7/2000	
Bromomethane	<5	ug/l	9/7/2000	
2-Butanone (MEK)	<20	ug/l	9/7/2000	
Carbon disulfide	<5	ug/l	9/7/2000	
Carbon tetrachloride	<5	ug/l	9/7/2000	
Chlorobenzene	<5	ug/l	9/7/2000	
Chloroethane	<5	ug/l	9/7/2000	
Chloroform	<5	ug/l	9/7/2000	
Chloromethane	<5	ug/l	9/7/2000	
Dibromochloromethane	<5	ug/l	9/7/2000	
1,1-Dichloroethane	<5	ug/l	9/7/2000	
1,2-Dichloroethane	<5	ug/l	9/7/2000	
1,1-Dichloroethene	<5	ug/l	9/7/2000	
1,2-Dichloroethene, Total	<5	ug/l	9/7/2000	
1,2-Dichloropropane	<5	ug/l	9/7/2000	
cis-1,3-Dichloropropene	<5	ug/l	9/7/2000	
trans-1,3-Dichloropropene	<5	ug/l	9/7/2000	
Ethyl benzene	<5	ug/l	9/7/2000	
2-Hexanone	<20	ug/l	9/7/2000	
Methylene chloride	<10	ug/l	9/7/2000	
4-Methyl-2-pentanone (MIBK)	<20	ug/l	9/7/2000	
Styrene	<5	ug/l	9/7/2000	
1,1,2,2-Tetrachloroethane	<5	ug/l	9/7/2000	
Tetrachloroethene	<5	ug/l	9/7/2000	
Toluene	<5	ug/l	9/7/2000	
1,1,1-Trichloroethane	<5	ug/l	9/7/2000	

-- LABORATORY ANALYSIS REPORT --

GeoMatrix Consultants, Inc.  
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Project No.: 6399 Task B  
Authorization:

LSL Project No.: 0007632  
Report Date: 9/20/00

1,1,2-Trichloroethane	<5	ug/l	9/7/2000
Trichloroethene	<5	ug/l	9/7/2000
Vinyl chloride	<5	ug/l	9/7/2000
Xylenes (Total)	<5	ug/l	9/7/2000
n-Butylbenzene	<5	ug/l	9/7/2000
sec-Butylbenzene	<5	ug/l	9/7/2000
tert-Butylbenzene	<5	ug/l	9/7/2000
Isopropylbenzene (Cumene)	<5	ug/l	9/7/2000
4-Isopropyl toluene (Cymene)	<5	ug/l	9/7/2000
MTBE	<5	ug/l	9/7/2000
Naphthalene	<5	ug/l	9/7/2000
N-Propylbenzene	<5	ug/l	9/7/2000
1,2,4-Trimethylbenzene	<5	ug/l	9/7/2000
1,3,5-Trimethylbenzene	<5	ug/l	9/7/2000
EPA Method 300.0 A			
Nitrate as N	<0.1	mg/l	9/6/2000
Sulfate	87	mg/l	9/6/2000
NYS-DEC STARS 8270 Base/Neutrals			
Acenaphthene	<5	ug/l	9/11/2000
Anthracene	<5	ug/l	9/11/2000
Benzo(a)anthracene	<5	ug/l	9/11/2000
Benzo(b)fluoranthene	<5	ug/l	9/11/2000
Benzo(k)fluoranthene	<5	ug/l	9/11/2000
Benzo(ghi)perylene	<5	ug/l	9/11/2000
Benzo(a)pyrene	<5	ug/l	9/11/2000
Chrysene	<5	ug/l	9/11/2000
Dibenz(a,h)anthracene	<5	ug/l	9/11/2000
Fluoranthene	<5	ug/l	9/11/2000
Fluorene	<5	ug/l	9/11/2000
Indeno(1,2,3-c,d)pyrene	<5	ug/l	9/11/2000
Phenanthrene	<5	ug/l	9/11/2000
Pyrene	<5	ug/l	9/11/2000
SM 18 2320B, Alkalinity as CaCO3			
Alkalinity	340	mg/l	9/15/00

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Project No.: 6399 Task B  
Authorization:

LSL Project No.: 0007632  
Report Date: 9/20/00

Sample ID: MW(45E190N)

Source:  
Sample Matrix: NPW

LSL Sample ID: 0007632-003  
Date Sampled: 9/5/2000

<i>Parameter(s)</i>	<i>Results</i>	<i>Units</i>	<i>Analysis Date</i>	<i>Comment</i>
EPA 200.7 Metals				
Iron	0.10	mg/l	9/8/2000	
EPA 8260B TCL & 8021 STARS Volatiles				
Acetone	<20	ug/l	9/8/2000	
Benzene	<5	ug/l	9/8/2000	
Bromodichloromethane	<5	ug/l	9/8/2000	
Bromoform	<5	ug/l	9/8/2000	
Bromomethane	<5	ug/l	9/8/2000	
2-Butanone (MEK)	<20	ug/l	9/8/2000	
Carbon disulfide	<5	ug/l	9/8/2000	
Carbon tetrachloride	<5	ug/l	9/8/2000	
Chlorobenzene	<5	ug/l	9/8/2000	
Chloroethane	<5	ug/l	9/8/2000	
Chloroform	<5	ug/l	9/8/2000	
Chloromethane	<5	ug/l	9/8/2000	
Dibromochloromethane	<5	ug/l	9/8/2000	
1,1-Dichloroethane	<5	ug/l	9/8/2000	
1,2-Dichloroethane	<5	ug/l	9/8/2000	
1,1-Dichloroethene	<5	ug/l	9/8/2000	
1,2-Dichloroethene, Total	<5	ug/l	9/8/2000	
1,2-Dichloropropane	<5	ug/l	9/8/2000	
cis-1,3-Dichloropropene	<5	ug/l	9/8/2000	
trans-1,3-Dichloropropene	<5	ug/l	9/8/2000	
Ethyl benzene	<5	ug/l	9/8/2000	
2-Hexanone	<20	ug/l	9/8/2000	
Methylene chloride	<10	ug/l	9/8/2000	
4-Methyl-2-pentanone (MIBK)	<20	ug/l	9/8/2000	
Styrene	<5	ug/l	9/8/2000	
1,1,2,2-Tetrachloroethane	<5	ug/l	9/8/2000	
Tetrachloroethene	<5	ug/l	9/8/2000	
Toluene	<5	ug/l	9/8/2000	
1,1,1-Trichloroethane	<5	ug/l	9/8/2000	

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Project No.: 6399-Task B	LSL Project No.: 0007632		
Authorization:	Report Date: 9/20/00		
1,1,2-Trichloroethane	<5	ug/l	9/8/2000
Trichloroethene	<5	ug/l	9/8/2000
Vinyl chloride	<5	ug/l	9/8/2000
Xylenes (Total)	<5	ug/l	9/8/2000
n-Butylbenzene	<5	ug/l	9/8/2000
sec-Butylbenzene	<5	ug/l	9/8/2000
tert-Butylbenzene	<5	ug/l	9/8/2000
Isopropylbenzene (Cumene)	<5	ug/l	9/8/2000
4-Isopropyl toluene (Cymene)	<5	ug/l	9/8/2000
MTBE	<5	ug/l	9/8/2000
Naphthalene	<5	ug/l	9/8/2000
N-Propylbenzene	<5	ug/l	9/8/2000
1,2,4-Trimethylbenzene	<5	ug/l	9/8/2000
1,3,5-Trimethylbenzene	<5	ug/l	9/8/2000
EPA Method 300.0 A			
Nitrate as N	<0.1	mg/l	9/6/2000
Sulfate	170	mg/l	9/19/2000
NYS-DEC STARS 8270 Base/Neutrals			
Acenaphthene	<5	ug/l	9/11/2000
Anthracene	<5	ug/l	9/11/2000
Benzo(a)anthracene	<5	ug/l	9/11/2000
Benzo(b)fluoranthene	<5	ug/l	9/11/2000
Benzo(k)fluoranthene	<5	ug/l	9/11/2000
Benzo(ghi)perylene	<5	ug/l	9/11/2000
Benzo(a)pyrene	<5	ug/l	9/11/2000
Chrysene	<5	ug/l	9/11/2000
Dibenz(a,h)anthracene	<5	ug/l	9/11/2000
Fluoranthene	<5	ug/l	9/11/2000
Fluorene	<5	ug/l	9/11/2000
Indeno(1,2,3-c,d)pyrene	<5	ug/l	9/11/2000
Phenanthrene	<5	ug/l	9/11/2000
Pyrene	<5	ug/l	9/11/2000
SM 18 2320B, Alkalinity as CaCO3			
Alkalinity	330	mg/l	9/15/00

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Project No.: 6399 Task B  
Authorization:

LSL Project No.: 0007632  
Report Date: 9/20/00

Sample ID: MW(30E190N)

Source:  
Sample Matrix: NPW

LSL Sample ID: 0007632-004  
Date Sampled: 9/5/2000

Parameter(s)	Results	Units	Analysis Date	Comment
EPA 200.7 Metals				
Iron	2.9	mg/l	9/8/2000	
EPA 8260B TCL & 8021 STARS Volatiles				
Acetone	<20	ug/l	9/8/2000	
Benzene	<5	ug/l	9/8/2000	
Bromodichloromethane	<5	ug/l	9/8/2000	
Bromoform	<5	ug/l	9/8/2000	
Bromomethane	<5	ug/l	9/8/2000	
2-Butanone (MEK)	<20	ug/l	9/8/2000	
Carbon disulfide	<5	ug/l	9/8/2000	
Carbon tetrachloride	<5	ug/l	9/8/2000	
Chlorobenzene	<5	ug/l	9/8/2000	
Chloroethane	<5	ug/l	9/8/2000	
Chloroform	<5	ug/l	9/8/2000	
Chloromethane	<5	ug/l	9/8/2000	
Dibromochloromethane	<5	ug/l	9/8/2000	
1,1-Dichloroethane	<5	ug/l	9/8/2000	
1,2-Dichloroethane	<5	ug/l	9/8/2000	
1,1-Dichloroethene	<5	ug/l	9/8/2000	
1,2-Dichloroethene, Total	<5	ug/l	9/8/2000	
1,2-Dichloropropane	<5	ug/l	9/8/2000	
cis-1,3-Dichloropropene	<5	ug/l	9/8/2000	
trans-1,3-Dichloropropene	<5	ug/l	9/8/2000	
Ethyl benzene	<5	ug/l	9/8/2000	
2-Hexanone	<20	ug/l	9/8/2000	
Methylene chloride	<10	ug/l	9/8/2000	
4-Methyl-2-pentanone (MIBK)	<20	ug/l	9/8/2000	
Styrene	<5	ug/l	9/8/2000	
1,1,2,2-Tetrachloroethane	<5	ug/l	9/8/2000	
Tetrachloroethene	<5	ug/l	9/8/2000	
Toluene	<5	ug/l	9/8/2000	
1,1,1-Trichloroethane	<5	ug/l	9/8/2000	

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Project No.: 6399-Task B

LSL Project No.: 0007632

Authorization:

Report Date: 9/20/00

1,1,2-Trichloroethane	<5	ug/l	9/8/2000
Trichloroethene	<5	ug/l	9/8/2000
Vinyl chloride	<5	ug/l	9/8/2000
Xylenes (Total)	<5	ug/l	9/8/2000
n-Butylbenzene	<5	ug/l	9/8/2000
sec-Butylbenzene	<5	ug/l	9/8/2000
tert-Butylbenzene	<5	ug/l	9/8/2000
Isopropylbenzene (Cumene)	<5	ug/l	9/8/2000
4-Isopropyl toluene (Cymene)	<5	ug/l	9/8/2000
MTBE	<5	ug/l	9/8/2000
Naphthalene	<5	ug/l	9/8/2000
N-Propylbenzene	<5	ug/l	9/8/2000
1,2,4-Trimethylbenzene	<5	ug/l	9/8/2000
1,3,5-Trimethylbenzene	<5	ug/l	9/8/2000
EPA Method 300.0 A			
Nitrate as N	<0.1	mg/l	9/6/2000
Sulfate	160	mg/l	9/19/2000
NYS-DEC STARS 8270 Base/Neutrals			
Acenaphthene	<5	ug/l	9/11/2000
Anthracene	<5	ug/l	9/11/2000
Benzo(a)anthracene	<5	ug/l	9/11/2000
Benzo(b)fluoranthene	<5	ug/l	9/11/2000
Benzo(k)fluoranthene	<5	ug/l	9/11/2000
Benzo(ghi)perylene	<5	ug/l	9/11/2000
Benzo(a)pyrene	<5	ug/l	9/11/2000
Chrysene	<5	ug/l	9/11/2000
Dibenz(a,h)anthracene	<5	ug/l	9/11/2000
Fluoranthene	<5	ug/l	9/11/2000
Fluorene	<5	ug/l	9/11/2000
Indeno(1,2,3-c,d)pyrene	<5	ug/l	9/11/2000
Phenanthrene	<5	ug/l	9/11/2000
Pyrene	<5	ug/l	9/11/2000
SM 18 2320B, Alkalinity as CaCO3			
Alkalinity	350	mg/l	9/15/00

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Project No.: 6399 Task B  
Authorization:

LSL Project No.: 0007632  
Report Date: 9/20/00

Sample ID: MW(40E54N)

Source:  
Sample Matrix: NPW

LSL Sample ID: 0007632-005  
Date Sampled: 9/5/2000

<i>Parameter(s)</i>	<i>Results</i>	<i>Units</i>	<i>Analysis Date</i>	<i>Comment</i>
EPA 200.7 Metals				
Iron	32	mg/l	9/8/2000	
EPA 8260B TCL & 8021 STARS Volatiles				
Acetone	<20	ug/l	9/8/2000	
Beazene	<5	ug/l	9/8/2000	
Bromodichloromethane	<5	ug/l	9/8/2000	
Bromoform	<5	ug/l	9/8/2000	
Bromomethane	<5	ug/l	9/8/2000	
2-Butanone (MEK)	<20	ug/l	9/8/2000	
Carbon disulfide	<5	ug/l	9/8/2000	
Carbon tetrachloride	<5	ug/l	9/8/2000	
Chlorobenzene	<5	ug/l	9/8/2000	
Chloroethane	<5	ug/l	9/8/2000	
Chloroform	<5	ug/l	9/8/2000	
Chloromethane	<5	ug/l	9/8/2000	
Dibromochloromethane	<5	ug/l	9/8/2000	
1,1-Dichloroethane	<5	ug/l	9/8/2000	
1,2-Dichloroethane	<5	ug/l	9/8/2000	
1,1-Dichloroethene	<5	ug/l	9/8/2000	
1,2-Dichloroethene, Total	<5	ug/l	9/8/2000	
1,2-Dichloropropane	<5	ug/l	9/8/2000	
cis-1,3-Dichloropropene	<5	ug/l	9/8/2000	
trans-1,3-Dichloropropene	<5	ug/l	9/8/2000	
Ethyl benzene	<5	ug/l	9/8/2000	
2-Hexanone	<20	ug/l	9/8/2000	
Methylene chloride	<10	ug/l	9/8/2000	
4-Methyl-2-pentanone (MIBK)	<20	ug/l	9/8/2000	
Styrene	<5	ug/l	9/8/2000	
1,1,2,2-Tetrachloroethane	<5	ug/l	9/8/2000	
Tetrachloroethene	<5	ug/l	9/8/2000	
Toluene	<5	ug/l	9/8/2000	
1,1,1-Trichloroethane	<5	ug/l	9/8/2000	

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Project No.: 6399 Task B  
Authorization:

LSL Project No.: 0007632  
Report Date: 9/20/00

1,1,2-Trichloroethane	<5	ug/l	9/8/2000
Trichloroethene	<5	ug/l	9/8/2000
Vinyl chloride	<5	ug/l	9/8/2000
Xylenes (Total)	<5	ug/l	9/8/2000
n-Butylbenzene	<5	ug/l	9/8/2000
sec-Butylbenzene	<5	ug/l	9/8/2000
tert-Butylbenzene	<5	ug/l	9/8/2000
Isopropylbenzene (Cumene)	<5	ug/l	9/8/2000
4-Isopropyl toluene (Cymene)	<5	ug/l	9/8/2000
MTBE	<5	ug/l	9/8/2000
Naphthalene	<5	ug/l	9/8/2000
N-Propylbenzene	<5	ug/l	9/8/2000
1,2,4-Trimethylbenzene	<5	ug/l	9/8/2000
1,3,5-Trimethylbenzene	<5	ug/l	9/8/2000
EPA Method 300.0 A			
Nitrate as N	0.1	mg/l	9/6/2000
Sulfate	52	mg/l	9/6/2000
NYS-DEC STARS 8270 Base/Neutrals			
Acenaphthene	<5	ug/l	9/11/2000
Anthracene	<5	ug/l	9/11/2000
Benzo(a)anthracene	<5	ug/l	9/11/2000
Benzo(b)fluoranthene	<5	ug/l	9/11/2000
Benzo(k)fluoranthene	<5	ug/l	9/11/2000
Benzo(ghi)perylene	<5	ug/l	9/11/2000
Benzo(a)pyrene	<5	ug/l	9/11/2000
Chrysene	<5	ug/l	9/11/2000
Dibenz(a,h)anthracene	<5	ug/l	9/11/2000
Fluoranthene	<5	ug/l	9/11/2000
Fluorene	<5	ug/l	9/11/2000
Indeno(1,2,3-c,d)pyrene	<5	ug/l	9/11/2000
Phenanthrene	<5	ug/l	9/11/2000
Pyrene	<5	ug/l	9/11/2000
SM 18 2320B, Alkalinity, as CaCO3			
Alkalinity	620	mg/l	9/15/00

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Project No.: 6399 Task B  
Authorization:

LSL Project No.: 0007632  
Report Date: 9/20/00

Sample ID: MW(25E10N)

Source:  
Sample Matrix: NPW

LSL Sample ID: 0007632-006  
Date Sampled: 9/5/2000

<i>Parameter(s)</i>	<i>Results</i>	<i>Units</i>	<i>Analysis Date</i>	<i>Comment</i>
EPA 200.7 Metals				
Iron	26	mg/l	9/8/2000	
EPA 8260B TCL & 8021 STARS Volatiles				
Acetone	<100	ug/l	9/8/2000	
Benzene	61	ug/l	9/8/2000	
Bromodichloromethane	<5	ug/l	9/8/2000	
Bromoform	<5	ug/l	9/8/2000	
Bromomethane	<5	ug/l	9/8/2000	
2-Butanone (MEK)	<100	ug/l	9/8/2000	
Carbon disulfide	<5	ug/l	9/8/2000	
Carbon tetrachloride	<5	ug/l	9/8/2000	
Chlorobenzene	<5	ug/l	9/8/2000	
Chloroethane	<5	ug/l	9/8/2000	
Chloroform	<5	ug/l	9/8/2000	
Chloromethane	<5	ug/l	9/8/2000	
Dibromochloromethane	<5	ug/l	9/8/2000	
1,1-Dichloroethane	<5	ug/l	9/8/2000	
1,2-Dichloroethane	<5	ug/l	9/8/2000	
1,1-Dichloroethene	<5	ug/l	9/8/2000	
1,2-Dichloroethene, Total	<5	ug/l	9/8/2000	
1,2-Dichloropropane	<5	ug/l	9/8/2000	
cis-1,3-Dichloropropene	<5	ug/l	9/8/2000	
trans-1,3-Dichloropropene	<5	ug/l	9/8/2000	
Ethyl benzene	150	ug/l	9/8/2000	
2-Hexanone	<100	ug/l	9/8/2000	
Methylene chloride	<10	ug/l	9/8/2000	
4-Methyl-2-pentanone (MIBK)	<100	ug/l	9/8/2000	
Styrene	<5	ug/l	9/8/2000	
1,1,2,2-Tetrachloroethane	<5	ug/l	9/8/2000	
Tetrachloroethene	<5	ug/l	9/8/2000	
Toluene	<5	ug/l	9/8/2000	
1,1,1-Trichloroethane	<5	ug/l	9/8/2000	

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Project No.: 6399.Task B  
Authorization:

LSL Project No.: 0007632  
Report Date: 9/20/00

1,1,2-Trichloroethane	<5	ug/l	9/8/2000
Trichloroethene	<5	ug/l	9/8/2000
Vinyl chloride	<5	ug/l	9/8/2000
Xylenes (Total)	990	ug/l	9/8/2000
n-Butylbenzene	29	ug/l	9/8/2000
sec-Butylbenzene	10	ug/l	9/8/2000
tert-Butylbenzene	<5	ug/l	9/8/2000
Isopropylbenzene (Cumene)	20	ug/l	9/8/2000
4-Isopropyl toluene (Cymene)	13	ug/l	9/8/2000
MTBE	<5	ug/l	9/8/2000
Naphthalene	270	ug/l	9/8/2000
N-Propylbenzene	25	ug/l	9/8/2000
1,2,4-Trimethylbenzene	430	ug/l	9/8/2000
1,3,5-Trimethylbenzene	140	ug/l	9/8/2000
EPA Method 300.0 A			
Nitrate as N	<0.1	mg/l	9/6/2000
Sulfate	19	mg/l	9/6/2000
NYS-DEC STARS 8270 Base/Neutrals*			
Acenaphthene	<100	ug/l	9/11/2000
Anthracene	<100	ug/l	9/11/2000
Benzo(a)anthracene	<100	ug/l	9/11/2000
Benzo(b)fluoranthene	<100	ug/l	9/11/2000
Benzo(k)fluoranthene	<100	ug/l	9/11/2000
Benzo(ghi)perylene	<100	ug/l	9/11/2000
Benzo(a)pyrene	<100	ug/l	9/11/2000
Chrysene	<100	ug/l	9/11/2000
Dibenz(a,h)anthracene	<100	ug/l	9/11/2000
Fluoranthene	<100	ug/l	9/11/2000
Fluorene	110	ug/l	9/11/2000
Indeno(1,2,3-c,d)pyrene	<100	ug/l	9/11/2000
Phenanthrene	180	ug/l	9/11/2000
Pyrene	<100	ug/l	9/11/2000 (6)
(6) Elevated detection limit due to matrix interference.			
*Unknown Hydrocarbons are present at undetermined concentrations.			
SM 18 2320B, Alkalinity as CaCO3			
Alkalinity	270	mg/l	9/15/00

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Project No.: 6399-Task B  
Authorization:

LSL Project No.: 0007632  
Report Date: 9/20/00

**Sample ID: Trip Blank**

Source:  
Sample Matrix: TB

LSL Sample ID: 0007632-007  
Date Sampled: 9/5/2000

<i>Parameter(s)</i>	<i>Results</i>	<i>Units</i>	<i>Analysis Date</i>	<i>Comment</i>
EPA 8260B TCL & 8021 STARS Volatiles				
Acetone	<10	ug/l	9/12/2000	
Benzene	<5	ug/l	9/12/2000	
Bromodichloromethane	<5	ug/l	9/12/2000	
Bromoform	<5	ug/l	9/12/2000	
Bromomethane	<5	ug/l	9/12/2000	
2-Butanone (MEK)	<10	ug/l	9/12/2000	
Carbon disulfide	<5	ug/l	9/12/2000	
Carbon tetrachloride	<5	ug/l	9/12/2000	
Chlorobenzene	<5	ug/l	9/12/2000	
Chloroethane	<5	ug/l	9/12/2000	
Chloroform	<5	ug/l	9/12/2000	
Chloromethane	<5	ug/l	9/12/2000	
Dibromochloromethane	<5	ug/l	9/12/2000	
1,1-Dichloroethane	<5	ug/l	9/12/2000	
1,2-Dichloroethane	<5	ug/l	9/12/2000	
1,1-Dichloroethene	<5	ug/l	9/12/2000	
1,2-Dichloroethene, Total	<5	ug/l	9/12/2000	
1,2-Dichloropropane	<5	ug/l	9/12/2000	
cis-1,3-Dichloropropene	<5	ug/l	9/12/2000	
trans-1,3-Dichloropropene	<5	ug/l	9/12/2000	
Ethyl benzene	<5	ug/l	9/12/2000	
2-Hexanone	<10	ug/l	9/12/2000	
Methylene chloride	<10	ug/l	9/12/2000	
4-Methyl-2-pentanone (MIBK)	<10	ug/l	9/12/2000	
Styrene	<5	ug/l	9/12/2000	
1,1,2,2-Tetrachloroethane	<5	ug/l	9/12/2000	
Tetrachloroethene	<5	ug/l	9/12/2000	
Toluene	<5	ug/l	9/12/2000	
1,1,1-Trichloroethane	<5	ug/l	9/12/2000	
1,1,2-Trichloroethane	<5	ug/l	9/12/2000	
Trichloroethene	<5	ug/l	9/12/2000	

-- LABORATORY ANALYSIS REPORT --

GeoMatrix Consultants, Inc.  
338 Harris Hill Road, Suite 201  
Williamsville, NY 14221

Attn: Mr. Chris Prucha  
Phone: (716) 565-0624  
FAX: (716) 565-0625

Project No.: 6399-Task B  
Authorization:

LSL Project No.: 0007632  
Report Date: 9/20/00

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Vinyl chloride	<5	ug/l	9/12/2000
Xylenes (Total)	<5	ug/l	9/12/2000
n-Butylbenzene	<5	ug/l	9/12/2000
sec-Butylbenzene	<5	ug/l	9/12/2000
tert-Butylbenzene	<5	ug/l	9/12/2000
Isopropylbenzene (Cumene)	<5	ug/l	9/12/2000
4-Isopropyl toluene (Cymene)	<5	ug/l	9/12/2000
MTBE	<5	ug/l	9/12/2000
Naphthalene	<5	ug/l	9/12/2000
N-Propylbenzene	<5	ug/l	9/12/2000
1,2,4-Trimethylbenzene	<5	ug/l	9/12/2000
1,3,5-Trimethylbenzene	<5	ug/l	9/12/2000

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7632

# CHAIN-OF-CUSTODY RECORD

Date: 9-5-00

Page 1 of 1

Project No.: 6399 TASK B		ANALYSES										REMARKS											
Samplers (Signatures): <i>[Signature]</i>		Date	Time	Sample Number	EPA Method 8010	EPA Method 8020	EPA Method 8020 (BTEX only)	EPA Method 8240	EPA Method 8270	TPH as gasoline	TPH as diesel	VOCs $\Delta$	SVCs $\Delta$	Nitrates, 504 $\Delta$	Methals $\Delta$	Alkalinity	Cooled	Soil (S), Water (W), or Vapor (V)	Acidified	Number of containers	Additional Comments		
1		9-5-00	1420	MW (20E 100N)								2	1	1	1	1	X	W				* FAL metal analysis per JV 9-7-00 FC only per JV 9-7-00 * VOCs HCl preservative	
2		9-5-00	1350	MW (20E 90N)								2	1	1	1	1	X	W				* Metals HNO <sub>3</sub> preservative	
3		9-5-00	1330	MW (45E 190N)								2	1	1	1	1	X	W				* Nitrate H <sub>2</sub> SO <sub>4</sub> preservative	
4		9-5-00	1340	MW (30E 190N)								2	1	1	1	1	X	W				* All other samples are unpreserved	
5		9-5-00	1435	MW (40E 54N)								2	1	1	1	1	X	W				* per GeoMatrix 9-6-00 9-11-00	
6		9-5-00	1510	UN (25E 10N)								2	1	1	1	1	X	W				** NO <sub>3</sub> /504 unpreserved per GeoMatrix 9-6-00	
7				TRIP PLANK								2					X	W				* Both vials received w/ bubbles	
		Turnaround time:										Results to: CHES PRUCHA				Total No. of containers: 38							
Relinquished by (signature): <i>[Signature]</i>		Date: 9/5/00		Relinquished by (signature):		Date:		Relinquished by (signature):		Date:		Relinquished by (signature):		Date:		Relinquished by (signature):		Date:		Method of Shipment: FED-EX		Laboratory Comments and Log No: $\Delta$ VOCs are 8260 + 8261 8262 SVOCs are 8270 8271 per SP	
Printed Name: JENNIFER HELEN		Time: 6:00pm		Printed Name:		Time:		Printed Name:		Time:		Printed Name:		Time:		Printed Name:		Time:		9-06-00 11:54 RCVD			
Company: GEOMATRIX CONSULTANTS				Company:				Company:				Company:				Received by (signature): <i>[Signature]</i>		Date:					
Printed Name:				Printed Name:				Printed Name:				Printed Name:				Printed Name: J.T. Bernhart		Time:					
Company:				Company:				Company:				Company:				Company: LSL		Time:					



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New York State Department of Environmental Conservation

Spill Prevention and Response, Region 7

615 Erie Boulevard West, Syracuse, New York 13204-2400

Phone: (315) 426-7519 • FAX: (315) 426-2653

Website: www.dec.state.ny.us



John P. Cahill  
Commissioner

March 6, 2001

Mr. Richard B. Abbott  
Nine Mile Point Nuclear Station  
P.O. Box 63  
Lycoming, New York 13093-0063

RE: Subsurface Assessment of the Unit 2  
Former Vehicle Maintenance UST Area  
Nine Mile Point Nuclear Station  
Spill No. 00-04089

Dear Mr. Abbott:

The Department has reviewed the referenced report prepared by Geomatrix Consultants, Inc. and finds the work proposal satisfactory. Upon completion of the first round of sampling, please submit a report outlining the results.

If you have any questions or wish to discuss this matter further, please call this office at (315) 426-7519.

Sincerely,

Brian F. Matthews  
Environmental Engineering  
Technician I

cc: C. Mannes (NYSDEC)  
M. McPeck (NIMO)

