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Immediate Investigation Work Assignment Guterl Steel Plant - Excised Area City of Lockport, Niagara County

August 1997

Prepared for:

NEW YORK STATE DEPARATMENT OF ENVIRONMENTAL CONSERVATION

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1.0 INTRODUCTION

Under the New York State Department of Environmental Conservation (NYSDEC) Superfund Standby contract, (Contract No. D002625) Ecology and Environment Engineering, P.C., (E & E) conducted an Immediate Investigation Work Assignment (IIWA) (Work Assignment No. D002625-32) at the Excised Area of the former Guterl Steel Plant property (Guterl Excised Area). This report details the IIWA activities performed and data collected under this project.

The IIWA involved a joint field effort between E & E and NYSDEC. E & E provided health and safety monitoring and oversite of drilling and surveying subcontractors while NYSDEC provided geologic expertise and sample collection.

2.0 SITE HISTORY

In the early 1900's, the Simonds Manufacturing Company built a large steel mill in the city of Lockport, New York for the manufacture of cutting tools. Located on the west side of Ohio Street, south of Simonds Street, the facility covered 109 acres and contained several large milling buildings. See Plate 1.

Later evolving into a specialty steel manufacturer, Simonds milled uranium and thorium ingots from approximately 1948 to 1956 for the Manhattan Engineering District of the Atomic Energy Commission (AEC). All residue radioactive materials were reportedly returned to the AEC.

In 1978, Simonds sold the entire, 109 acre, Lockport plant facility to the Guterl Specialty Steel Corporation.

In 1984 Guterl declared bankruptcy and conveyed all but an excised nine acres to the Niagara County Industrial Development Agency (NCIDA). This excised area is the portion of the former 109 acre Simonds mill complex on which the uranium and thorium milling took place. The excised portion contains several large steel mill buildings and is the study area of this IIWA project, see Figure 2-1 and Plate 1 (Back Pocket). This excised area is currently held by the Guterl Steel Bankruptcy Trustee at the Western Bankruptcy Court in Pittsburgh, Pennsylvania.

Later in 1984, the NCIDA leased the remaining, 100 acre, portion of the former Guterl property including a 8.6 acre landfill to the Allegheny Ludlum Company. Allegheny Ludlum currently operates the leased mill property for the recycling of stainless steel.

The landfill has been the focus of environmental investigations and is on the NYSDEC Registry of Inactive Hazardous Waste Sites and is called the Guterl Specialty Steel Site (site no. 932032), see Plate 1.

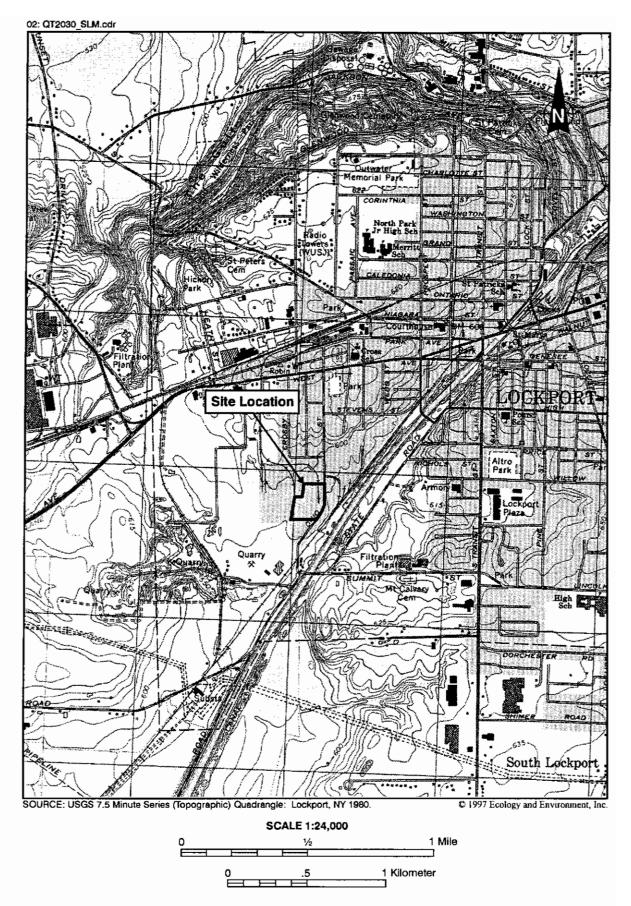


Figure 2-1 SITE LOCATION MAP, GUTERL STEEL PLANT SITE (EXCISED AREA) CITY OF LOCKPORT, NEW YORK

3.0 OBJECTIVES

The objectives of E & E's work under the IIWA project were to:

- Drill and install groundwater monitoring wells on the site;
- Drill soil borings for the collection of subsurface soil samples;
- Develop newly installed monitoring wells to allow for collection of representative groundwater samples and elevation measurements;
- Perform ambient/air monitoring during drilling activities to insure the safety of the field team and the surrounding community as well as to help characterize the site;
- Survey and prepare a to-scale map of the Guterl Excised Area including all drilling and sample locations. The aerial coverage of the map was to overlap portions of three adjacent sites to allow for more regional hydrologic mapping. These three sites included the Diamond Shamrock site, the Guterl Specialty Steel Landfill Site, and the Niagara County Refuse Disposal District (NCRDD) land fill; and
- Prepare a brief IIWA report which details all data obtained during the IIWA including the survey map.

Completion of the field work as discussed in Section 4 and the preparation of this IIWA report have resulted in all objectives of this project having been met.

4.0 FIELD INVESTIGATION

The field investigation tasks discussed below were all completed over a six work-day period from May 12 to 19, 1997. All work was performed as a joint effort between NYSDEC, E & E and subcontractors to E & E. During the field work, E & E provided one person who performed the duties of air monitoring/site safety, subcontractor oversite, and well development. NYSDEC provided one person who performed the duties of general field team leader, field geologist, well developer, and sampler. Maxim Technologies, Inc. provided equipment and personnel necessary to drill soil borings and drill and install monitoring wells. Lu Engineers provided personnel and expertise to perform a site survey and prepare a survey map of the site and surroundings. All samples were collected by NYSDEC and sent to a laboratory contracted to NYSDEC for analyses.

Field tasks performed during the IIWA include:

- Drilling, construction, and development of monitoring wells;
- Drilling of soil borings;
- Ambient air/radiation monitoring and site safety;
- Sampling; and
- Surveying.

Each of these field tasks are discussed below.

4.1 MONITORING WELL DRILLING, CONSTRUCTION, AND DEVELOPMENT

On May 8, 1997 E & E, NYSDEC, and Maxim Technologies met on site to observe and discuss the seven proposed drilling locations. All locations were staked and checked for clear access of a drilling rig. A hydrant on the adjacent Allegheny-Ludlum facility was utilized as a source of drilling water. This hydrant provides water from the City of Lockport municipal water supply. Public utility companies were also invited to the site meeting to clear the drilling locations for buried utilities. Some of the utilities responded by telephone and

others attended the meeting. All utilities were found to be either not present at the site or at safe distances from the drilling locations.

4.1.1 Monitoring Well Drilling

Five groundwater monitoring wells (MW-1 through MW-5) were drilled at the Guterl Excised Area, see Plate 1. All five wells were drilled through the thin overburden using 6¼ inch hollow stem augers until auger refusal was reached. Concurrent with the auger drilling, the overburden was continuously sampled using two feet long by 2 inch outer diameter (OD) split spoon samplers. At bedrock refusal, a 5½ inch diameter tri-cone roller bit was used to drill a two feet deep socket into the bedrock. Into this rock socket, four inch inner diameter (ID) steel casing was grouted from the base of the rock socket to the ground surface to isolate the overburden from the bedrock. After allowing sufficient time (at least 24 hours) for the grout to harden, the wells were advanced using an HQ size (3½ inch) rock core bit to total depth. During well drilling, all split spoon samples and rock cores were examined and logged by the NYSDEC geologist and ambient and head-space air was monitored by the E & E site safety officer. Using an Organic Vapor Analyzer (OVA) and a pancake Geiger-Mueller (GM) detector and a 1-inch sodium-iodidedetector.

Overburden thicknesses encountered during well drilling ranged from 4.0 to 4.5 feet. The overburden was made up of an upper fill layer over native soil. The fill was composed of gray to black ash, slag, gravel, brick, and disturbed soil. The underlying native material was made up of clay and silty clay with dolostone rock chips found at the base. More detailed descriptions of the overburden and bedrock encountered during well drilling are provided in the well logs, see Appendix A.

4.1.2 Monitoring Well Construction

The total depth of each well was determined by the NYSDEC field geologist based on the number and characteristics of rock fractures encountered during drilling and observed in the cores retrieved. Also considered was the water level in the well and its response to the removal of the water lost during coring. Upon reaching total depth, each well was constructed in the following manner. A 5-feet long, 2 inch ID, schedule 40 polyvinyl chloride (PVC), 0.01" slotted well screen was lowered to the bottom of the well. Onto the bottom of this screen was attached a flush-threaded PVC end plug. On top of the screen was attached 2 inch ID, schedule 40, flush joint PVC riser pipe. This riser pipe extended to approximately two feet above the ground surface and was capped with a vented, slip-on, PVC cap. A filter pack of Morie brand # 0 size silica sand was poured around the outside of- and approximately two feet above the top of the slotted well screen. A two feet thick seal of bentonite chips was poured onto the top of the sand pack and the remainder of the well annulus was grouted to grade with a cement/5% bentonite slurry.

Well completion included affixing a lockable metal cap onto the 4-inch steel outer casing. The locking caps on each well were locked using a Master brand pad lock, all keyed to key No. 2925. A two feet square concrete drainage pad was poured around the protective well casings to a thickness of approximately 3.5 inches and allowed to dry. A 3/8-inch diameter drain hole was drilled into each protective steel casing approximately two inches above the drainage pad to prevent water from accumulating between the PVC and steel casings. The protective steel casings were painted a bright orange and labelled using adhesive letters and numbers and a permanent marker. Table 4-1 contains a summary of well construction for the five wells installed at the Guterl Excised Area under the IIWA.

4.1.3 Monitoring Well Development

After allowing at least 24 hours after grouting of the PVC casing, the wells were developed. The purpose of well development is to reestablish hydrogeologic conditions in and around the newly installed well to as near natural, predrilling, conditions as possible. Development of newly installed wells is necessary to insure adequate water flow into the well and to provide representative groundwater samples and elevation data.

Development was performed by E & E and NYSDEC by removing water from the wells using pre-decontaminated, non-dedicated, PVC bailers provided by NYSDEC and new polypropylene rope. Prior to the initiation of development, initial measurements of water level and total well depth were recorded and used to calculate the static water volume in the well. During development, water quality parameters of temperature, pH, specific conduc-

tance, and turbidity were measured and recorded at regular intervals to monitor the change in water quality. Wells were developed until stabilization of all parameters was reached.

Development measurements were recorded in the geotechnical logbook by NYSDEC and final water quality measurements are summarized in Table 4.2.

4.2 DRILLING OF SOIL BORINGS

Two soil borings were drilled under the IIWA to provide information on the physical and chemical composition of the overburden as well as its total thickness. Each soil boring was drilled using 3¼ inch ID hollow stem augers and sampled continuously using 2 inch OD split spoon samplers. Each two-feet interval of soil retrieved by the split spoon was monitored by the E & E safety officer for contamination by both visual inspection and presence of volatile organic compounds (VOCs) using an OVA and radiation levels were monitored using a Pancake Geiger-Mueller (GM) detector and a 1-inch sodium iodide detector. Soil samples were then examined further, described, and logged by the NYSDEC geologist, see appendix A. Some soil samples were containerized and submitted for laboratory analyses by the NYSDEC representative, see section 4.5. The borings were advanced until auger refusal and, after sampling was completed, were back filled with the soil cuttings or grout. The locations of the soil borings and other well and sample points are illustrated on Plate 1.

4.3 DECONTAMINATION

All drilling equipment was decontaminated prior to drilling, after drilling each soil boring or well, and at the completion of the field investigation. Per the NYSDEC approved scope of work, decontamination spoils were not contained based on site conditions encountered, ie. the absence of significant volatile or visual contamination. Decontamination was performed at the location at which they were derived, using wooden pallets to raise the equipment off of the ground surface. Special attention was given to augers, drill rods, bits, and split spoons.

Decontamination procedures of drilling equipment entailed the following:

High-pressure steam cleaning.

Split spoons were decontaminated between each use using the procedure above or by the following procedure:

- Initially cleaning of all foreign matter;
- Scrubbing with brushes in a laboratory grade alconox detergent and potable water solution;
- Rinsing with distilled water; and
- Allowing to air dry.

The probe of the water level indicator was rinsed with deionized water prior to insertion into a monitoring well.

4.4 RADIATION MONITORING, AIR MONITORING, AND GENERAL SITE SAFETY

E & E performed radiation monitoring, air monitoring, and general site safety oversite during the soil boring and well installation tasks.

4.4.1 Radiation Monitoring

Radiation monitoring was performed at the Guterl Excised Area due to the site history and the presence of significant quantities of radioactive materials in identified areas near several drilling locations. The purpose of the monitoring was to minimize worker exposure to radioactive materials and prevent the spread of radioactive contamination to off-site receptors. The following equipment was used to perform the radiation surveys and sample screening discussed below:

- 2-inch sodium iodide (NaI) gamma scintillation detector (Bicron);
- 1-inch NaI gamma scintillation detector (Bicron);
- Pancake Geiger-Mueller (GM) detector (Bicron); and
- Micro-R-meter (Ludlum).

All of the equipment had current calibration stickers. Operational checks were performed on all the radiation equipment daily. Off-site background radiation levels were

measured at approximately 1.5 miles from the site prior to work start-up. This off-site background location is located at a diner on the north side of Robinson Road, west of - but near where Route 93 makes a 90 degree turn. On-site background radiation levels, which were slightly less than off-site levels, were measured prior to work start-up and daily thereafter in the southeast corner of the site near well MW-2, far from any identified radioactively-contaminated areas.

A radiation survey was performed at all drilling locations and a walkover survey was performed on all approach paths to those locations using a 2-inch NaI detector held near the ground surface. A micro-R-meter was also used to record general area exposure rate measurements approximately 1-meter from the ground surface.

Background radiation levels were observed with both instruments at all drilling locations. Wide areas of contamination were not observed during the walkover survey. However, four small, well-defined areas of elevated radiation levels (hot spots) measuring 2 to 10 times background levels were identified along the approach paths, see Plate 1. In addition, slightly elevated radiation levels (up to 2 times background) were observed near the identified radioactively-contaminated buildings.

All subsurface soil/rock cores were screened with the pancake GM detector and 1-inch NaI detector. Background radiation levels were observed in all cases.

Personnel and vehicle contamination monitoring was performed to a limited extent because drilling was conducted in background radiation areas and no contaminated site material was collected or contacted. Personnel monitoring was performed after the walkover surveys and, in one case, personnel and vehicle contamination monitoring was performed when drilling was being conducted near one of the hot spots. No contamination was detected on personnel or equipment.

4.4.2 Air Monitoring

Air monitoring was performed during all drilling activities by the E & E site safety officer. The purpose of the air monitoring was to insure the safety of all members of the field team as well as to fulfill community monitoring requirements required by NYSDEC in the scope of work.

Based on the history of the site, airborne dust and volatile organic compounds were monitored. An MIE brand personal dust monitor (PDM), model PDM-3 was used for the dust monitoring. The PDM measures real-time concentrations of airborne dust in units of 0.01 to 100 milligrams per cubic meter (mg/m³). Because of damp conditions of the surface and subsurface soils at the work sites, concentrations of airborne dust never exceeded background or upwind levels.

Because of the potential at this site to encounter volatile organic compounds such as fuels, solvents and oils in the soil and groundwater, a Foxboro brand, model 128, organic vapor analyzer (OVA) was used to monitor the VOCs in the air. Ambient air in the breathing zone was monitored up-and downwind of each drilling location. Such readings never exceeded background levels during the IIWA drilling activities. Drill cuttings, boreholes, and samples of the soil and rock were also screened with the OVA. Readings above background were encountered at select drilling locations and are recorded in the drilling logs, see Appendix A.

As required in E & E SOP for drilling safety, an oxygen/explosimeter was used during all drilling activities to monitor the percent oxygen and percent explosive gases in the immediate work area. Action levels of < 19.5% or > 25% oxygen and > 10% lower explosive limit (LEL) were never reached during the IIWA drilling activity.

Based on the readings obtained by the PDM, OVA, and O₂/explosimeter, all field work performed under the IIWA was performed in "level D" personal protection, ie. no respiratory protection was needed.

4.4.3 General Site Safety

E & E performed on-site safety monitoring during all field activities under the IIWA. In addition to the radiation and air monitoring discussed above, the E & E safety officer conducted an initial site safety meeting which detailed, among other things, the chemical and physical hazards of the site, the work plan, safe work practices to be followed, the location of the site safety plan, first aid kit, fire extinguisher, and the route to the nearest hospital. E & E performed a daily operational check of the drill rig kill switch.

4.5 SAMPLE COLLECTION

Several samples were collected by NYSDEC under the IIWA. These included the following:

- Seven subsurface soils from soil and monitoring well borings;
- Five surface soils from select locations of potential concern;
- Five groundwater samples, one each from the newly installed monitoring wells;
- Two surface water samples, one from a pump house, the other from a reservoir;
- One sediment sample from the pump house;
- One drill water sample from the drill rig tank; and
- One sample of water from an under ground gasoline tank.

These samples were collected by NYSDEC from May 12 to June 5, 1997 and were analyzed for a variety of parameters by a NYSDEC contracted laboratory.

Analytical results for the IIWA samples are not provided in this report per the NYSDEC approved scope of work. The locations of all of the field samples collected are depicted on Plate 1 and table 4-3 provides a summary of all the samples collected as part of the IIWA project.

4.6 SITE SURVEY AND MAPPING

E & E contracted Lu Engineers to perform site survey and mapping services at the Guterl Excised Area. The objective of the survey and mapping task was to provide a to-scale base map of the Guterl Excised Area including the locations of roads buildings and all sampling and drilling points. Additionally, three adjacent sites that have been previously surveyed, were tied into the Guterl Excised Area map to allow for more regional mapping of the groundwater elevations. Computer disks of the Guterl Specialty Steel landfill Site, the Diamond Shamrock Site, and the NCRDD landfill were provided to Lu Engineers and were

integrated into the Guterl Excised Area map. The locations of 11 wells and the elevations of 15 wells from these adjacent sites were surveyed to insure accuracy between maps. Plate 1 (back pocket) is the finished survey map prepared by Lu Engineers.

				Table 4-1				
			Monitoring V	Monitoring Well Construction Summary Guterl Excised Area	on Summary rea			
Well Number	Date Completed	Total Depth Drilled	Elevations TOIC/ Ground	Depth of 4" Steel Casing	Screened Interval	Sand Pack Interval	Depth to Bedrock	Comments
MW-1	2-15-97	15.0	599.14 597.20	6.5	9.7 - 14.7	7.5 - 15.0	4.5	
MW-2	5-16-97	14.5	598.56 596.70	6.5	9.2 - 14.2	7.5 - 14.5	4.5	Fuel/oily Smell and smear on rock core
MW-3	5-14-97	14.4	598.82 597.00	6.0	9.1 - 14.1	7.2 - 14.4	4.5	Fill to 3.8' BGS
MW-4	5-16-97	14.4	598.67 596.50	0.9	9.1 - 14.1	6.9 - 14.4	4.0	Well pumped at a low rate (~2 GPM)
MW-5	5-15-97	15.5	598.24 596.10	6.3	10.2 - 15.2	8.2 - 15.5	4.3	Fuel/oily smell and sheen from rock core

All elevations are expressed in units of feet above mean sea level, All depths are expressed in units of feet below ground surface.

MW = Monitoring Well

TOIC = Top of Inner Casing

Completion date represents the date the well was constructed. Notes:

Depth to bedrock represents the depth of auger refusal.

BGS = Below ground surface.

GPM = Gallons per minute.

			Tabl	Table 4-2			
			Well Develop Guterl Ex	Well Development Record Guterl Excised Area			
Well	Volume	Number of		Final Water Qua	Final Water Quality Parameters		Notes
	(gallons)	Volumes Removed	Temp. (°F)	Hď	Conductivity µS/cm)	Turbidity (NTUs)	
MW-1	09	8.6	47.5	7.25	2100	155	
MW-2	99	11.1	55.4	7.76	791	8.69	Oily droplets and fuel odor
MW-3	70	9.7	47.2	7.27	721	345	Slight oily sheen and odor in initial water
MW-4	75	9.4	52.1	7.59	1627	184	
MW-5	125	14.9	47.8	8.07	808	99.3	Slight oily smell and sheen on water

All wells, but MW-3, were developed on May 19, 1997. MW-3 was developed on May 16, 1997. All wells were developed using decontaminated PVC bailers and new polypropylene rope.

MW = Monitoring Well

°F = Degrees Fahrenheit

μM/cm = micro mhos per centimeter

NTUs = nephelometric turbidity units Notes:

Table 4-3 Radiation Anomaly Measurements

Guterl Excised Area

Anomaly Number	Location of Anomaly	G ₂ Probe Reading	G _{2 Probe} Site Background	PGM Probe Reading	PGM Probe Site Background
RA-I	In front of the fourth door from the north, along the east side of building No.3	16,000	4,000 - 4,600	120	40 - 80
RA-2	Between buildings 2 and 3 approximately 100 feet south of RA-1, near a sign that reads "No. 11"	42,000	"	220	9
RA-3	Along north/south road on east side of Buildings 1 and 2, in line with the ninth vertical support from the north of the overhead crane.	30.000	n	NA	И
RA-4	Along same road as RA-3 but further south where the road curves to the east	7,000+	u	NA	"

Notes:

 $G_2 = 2$ -inch sodium iodide (NaI) gamma scintillation detector

NA = Not applicable - measurement not recorded.

PGM = Pancake Geiger-Mueller detector

RA = Radiation Anomaly

All readings are expressed in units of counts per minute (cpm).

		Comments	Fill material	Fill material composite	Fill material	Fill material	Fill material	Silver metallic zone	Fill material with oil sheen	Near fill port of underground storage tank	Near former aboveground storage tank	Oil stained ash	Grease on concrete pad	Fill below transformers	Pump house; sample mostly oil & grease	Reservoir	From tank on drill rig
	iry 2	Analytical Parameters	VOA, BNA, PCB/Pest, Metals, TCLP	VOA, BNA, PCB/Pest, Metals, TCLP	VOA, BNA, PCB/Pest, Metals	BNA, PCB/Pest, Metals, TCLP	VOA, BNA, PCB/Pest, Metals, TCLP Metals	TCLP Metals	BNA, PCB/Pest, Metals	BNA, PCB/Pest, Metals	BNA, PCB/Pest, Metals	BNA, PCB/Pest, Metals	BNA, PCB/Pest, Metals	BNA, PCB/Pest, Metals	VOA, BNA, PCB/Pest, Metals, TCLP, Ignitability	VOA, BNA, PCB/Pest, Metals	VOA, BNA, PCB/Pest, Metals
Table 4-4	IIWA Sample Summary Guterl Excised Area May 1997.	Interval Sampled*	2.0-4.0	0.4.0	0.2-0.8	0-1.5	0-2.0	2.0	6.0-8.0	0-0.2	0-0.2	0-0.2	0-0.2	0-0.2			
	IIWA S Gute	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Sediment	Surface Water	Drill Water
		Time Sampled	1045	1425	1325	1700	0060	0060	1130	1430	1410	1205	1212	1221	1630	1530	1715
		Date Sampled	5/13/97	5/13/97	5/12/97	5/13/97	5/14/97	5/14/97	5/14/97	5/12/97	5/12/97	5/12/97	5/12/97	5/12/97	5/15/97	2/15/97	2/12/97
		Sample Location	SB-1/MW-1	SB-2/MW-2	SB-3/MW-3	SB-4/MW-4	SB-6	SB-6	SB-7	SS-1	SS-2	£-SS	SS-4	SS-5	SED-1	SW-2	
		Sample Identification	B93901	B93902	B93903	B93904	B93906	B93907	B93908	B93920	B93921	B93922	B93923	B93924	B93925	B93940	B93941

4-13

		Comments			Sheen on water, oil globules observed		Sheen on water, oil globules observed	Pump house	Underground gasoline tank	
	ury a	Analytical Parameters	VOA, BNA, PCB/Pest, Metals, Total Hardness, Alkalinity, Chloride, Sulfate	VOA, BNA, PCB/Pest, Metals, Total Hardness, Alkalinity, Chloride, Sulfate	VOA, BNA, PCB/Pest, Metals, Total Hardness, Alkalinity, Chloride, Sulfate	VOA, BNA, PCB/Pest, Metals, Total Hardness, Alkalinity, Chloride, Sulfate	VOA, BNA, PCB/Pest, Metals, Total Hardness, Alkalimity, Chloride, Sulfate	VOA, BNA, PCB/Pest, Metals	VOA	
Table 4-4	IIWA Sample Summary Guterl Excised Area May 1997.	Interval Sampled*				i			•	
	IIWA S Guter	Matrix	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Surface Water	Tank Water	
		Time Sampled	1700	1000	1120	1430	1535	1215	1140	ď
		Date Sampled	6/4/97	16/2/9	16/5/9	16/2/97	16/2/9	6/5/97	6/5/97	round surfac
		Sample Location	MW-4	MW-3	MW-5	MW-1	MW-2	SW-3		Intervals in feet below ground surface.
		Sample Identification	B93942	B93943	B93944	B93945	B93946	B93947	B93948	* Intervals in

4-14

Note: All samples were collected by NYSDEC and analyzed by a NYSDEC contracted laboratory.

APPENDIX A

SOIL BORING AND WELL LOGS





International Specialists in the Environment

GEOTECHNICAL LOGBOOK

PROJECT NUMBER:	<i>N</i> /A				
CLIENT/SITE NAME:	Guterl	Exc	1sed	Area	
DRILLING COMPANY	max	j m			
DATE OF FIELD ACTIV	ITIES: MAY	12-	June	<u>. 5, 1</u> 99	7
HOLES LOGGED IN BO	OOK:				

Depth(Feet)	Sample Number		rs on i	Soil Components Rock Profile CL SL \$ GR	Penetration Times	Run Number	Care Recovery	ROD	Fracture Sketch	HNWOVA (ppm)	Comments
1	1	6 5	11	Fall					 	0	Beckgrand
3	2	17 6	29 5	Rotus	3.7′		-	_		0	- Beckgrand readings for radiation
5 —	-5	50/	2					_	. 6.8 ′ 	-0-	
a —	6.8		-			1	94.2	07.	8.5		-
9 —						2	1001	38%		_	-
12						3	ora	47%	// .8' . 	-	-

		Lock Number		Stick-upft
50	CREENED WELL	Inner Casing Material	OPEN-HOLE WELL	Inner Casing Material
Stick-uptt		Inner Casing Inside Diameter inches		Inner Casing Inside Diameterinches
Fop of Grout		GROUND SURFACE Quantity of Material Used: Bentonite Pellets		Outer Casing Diameterinches
Fop of Seal atft		Cernentinches Diameter		Borehole Diameter 378
op of Sand Packft		Cement/ Bentonite		Bedrock <u>4. 2</u> ft
op of Screen at 9.7 ft		Grout		Bottom of Rock Socket/ Outer Casing 6.5 tt
lottom of		Screen Type		Bottom of Inner Casingft
creen at 14.7 ft	- 3	A PVC Stainless Steel		Corehole Diameter
tottom of tole at 15.0 ft toltom of Sandpack at 15.0		Pack Type/Size: Sand Gravel Natural		Bottom of Coreholeft
		Pack Type/Size:	Ц	Bottom of

Depth-ft.	NARRATIVE LITHOLOGIC DESCRIPTION	_	loistu	
		Ory	Moist	Wet
1	Very few ground block ash? and slong and buch from	\cup	•	
_ 2		1		
3	nedum to come black ask with slog and rock frogrants verlying a course, orange ask with grand sized	_	0	
L.—	orelying a course, orange and half grand signed frogrants. The material overles I made of white, come manual white set that we highly come that The works of nature, gray brown selly clay, mother, more, some yesteral frottens, some nost matery monet, planting to leaves			
5	gray train selly clay, mother, moret, some yestered frottens,	0	0	0
6			0	
7	Dark group oldestone, blooky few abole partiage several		0	
R	Dark group delectore, blooky few abole partings, several colorte felled vago and few colorte felled fractions. Shight water wear along some of the fractions with clay present.		0	
-	Donk and deletter I locky but the ten	0	0	
10	Dork gray delectore, blocky, few shot getting few calast fisher of filler was to 10.1' depth. Highly broken your to 12.5' depth. Must beals appear to be makened.	0	Ο	
11	have un staining on frottere at 9.0' depth.	0	0	
12	and the second second		Ο.	_
13	Dank gray delector blocky to means, colecti austele in lase vigl at 12.0' god 13.0', home forshferous yours. Most breaks offen to be mechanism.	0	0	0
14		0	0	0
15		0	0	0

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Project Name Suterl Excised area		Water Level (TC	DIC)
Site Location Lankent, ny	Date	Time	Level(Feet)
Date Started/Finished 5-13-97/5-16-97			
Orilling Company Mayum			
Driller's Name Ed Cole	Well Location S	ketch	1
Geologist's Name <u>Alem May</u>			4
Geologist's Signature Henn H May			
Rig Type (s)			
Drilling Method (s) Rottony W HSA.			
Auger Size (s) HQ Auger Size (s) 51/4" TO Auger/Split Spoon Refusal			
Minner and many 7.3			

E

Depth(Feet)	Sample Number		rs on npler	Soil Components Rock Profile CL SL S GR	Penetration Times	Run Number	Core Recovery	RQD	Fracture Sketch	HNWOVA (ppm)	Comments
1 —	1	8	3			_				-0-	-
3 —	2	14	18			_	_	-	- -	0	_ Poor _ recovery (0.31)
5						_	_				
6.5 -					-		_		 		_ 10-15 ppm
9						1 -	46%	20		0	_ 10-15 ppm - methore; - 0 ppm on
//.5-								_	 - 		_ core
13						2_	43%	259		-0-	-
145-											_

SCREENED WELL	Lock Number Inner Casing Material	OPEN-HOLE WELL	Stick-upft Inner Casing Material
Stick-upft	Inner Casing Inside Diameter inches GROUND SURFACE		Inner Casing Inside Diameterinches
Top of Grout ht	Quantity of Material Used: Bentonite Pellets		Outer Casing Diameter
Top of Seal at 5,5 t	Cementinches Diameter		Borehole 378 K
Top of Sand Pack 7.5 ft	Cement/ Bentonite		Bedrock <u>7.5</u> ft Bottom of Rock Socket/
Top of Screen at 9.2 ft	Grout Screen Slot Size 10	. The state of the	Outer Casing 6 • 5 tt
Bottom of Screen at 14.2 ft	Screen Type		Casingft Corehole Diameter
Hole atft	Pack Type/Size: Sand Gravel Natural		Bottom of Careholeft
NOTE: See pages 136 and 137 for well construction	on diagrams		

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Depth-ft.	NARRATIVE LITHOLOGIC DESCRIPTION		loistu Conte	-
		Š	Moist	Wet
1	I" brown gray sole with rock frequents overlying block ask with coal frequents, may five to coarge, dry bone rust colored frequents.	1	00	
3	Vary for slock ask with coal frequents, dry. Bottom of sample contains pelle sized preced some - mat likely the bakport. Evert depth of notice indeterminant.		000	0
5		0	000	0
6. 5	Dark gray delater, leady few shale partings though- out, several large edute feller verys (7.1', 7.5', 8.4'). Large very	0	0	Ō
8	from 8.3 - 8.4' with dolomet crystile Fasciliferous you from 9.0' - 9.6' depth. Vord at this depth (9.6') with reduced return water flow, line Isla arrows to at 11.0' depth. Some shifts	0	0.00	0
10	Slight only about on latter 0.5' of come.	0	000	0
12-5	Dark gray deloston, blocky to magnine few shall portings thoughout. The entire you is fossilikeous. Oil	ŀ	0	
14 14.5	The state of the s		0	

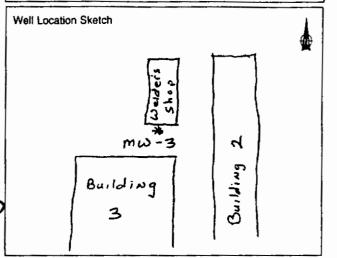
Project Name Genter Excised and
Site Location MW-3 (5B-3)
Lackport, ny
Date Started/Finished 5/12/97 - 5/14/97
Date State of This reco
Drilling Company Maxim
Driller's Name Ed Cole
Officer 5 Harris
Geologist's Name Glew M. Max
Geologist's Signatura 4/10 - 24 May

Tockport, Try
Date Started/Finished <u>5/12/97 - 5/14/97</u>
Drilling Company Maxim
Driller's Name Ed Cole
Geologist's Name Glew M. May
Geologist's Signature Henry M. May
Rig Type (s)
Drilling Method (s) Rotary W/ HSR
Bit Size (s) HQ Auger Size (s) 5/4 "ID
Auger/Split Spoon Refusal Lond + 3.9'

Total Depth of Borehole Is 6,3'(1)

Total Depth of Corehole Is_

Water Level (TOIC)									
Date	Time	Level(Feet)							
5/16/97	1453	4.68 (15.78)							
5/19/97	0915	6.74 (15.73)							
5/19/97	0922	4.51 (EIE meter)							
5/19/97	0915	4.50 (DEC meter)							



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Depth(Feet)	Sample Number	Blows Same		Soil Components Rock Profile CL SL S GR	Penetration Times	Run Number	Core Recovery	RQD	Fracture Sketch	HNu/OVA (ppm)	Comments
1	,	3	10			_	_			0-	very soft last
3	2	1	/ 22			_	-	-	 	-0-	- Poor recary
6	6.4				6.4'			2/24			-
8						- / .	- , , ,	-0.5/5			Recovery 4.7'
10	11.4				11. 4'		- H	2.3	<u> </u>		-
13	14,4				14.4 *	2 -	2.9	3.0 = 58%			-

	SCREENED WELL	Lock Number		Stick-upft
ŕ	SCHEENED WELL	Inner Casing Material	OPEN-HOLE WELL	Inner Casing Material
Stick-upft	F	Inner Casing Inside Diameter Inches		Inner Casing Inside Diameterinches
		GROUND SURFACE		
Top of Grout	1' '	Quantity of Material Used:	7' '	Outer Casing ,
0.0 ft		Bentonite Pellets		Diameterinches
Too of		Cement		Borehole - 7/ #
Top of Seal at <u>4 · 8</u> ft		Boreholeinches	14. 14. 1944	Borehole 378 K
Top of Sand Pack 7. 2		Cement/		Bedrock 3.9 ft
TOP OF Sand Fack FF -	" 🛭 🗑	Bentonite		
Fop of Screen at <u>9./</u> ft		Grout		Bottom of Rock Socket/ Outer Casing 6.0 tt
Screen at 757 It		Screen Slot Size 10		Bottom of Inner
Bottom of .				Casing 6.0 t
Screen at 14.1 ft		Screen Type		
(0.3° and cop)		☐ Stainless Steel		Corehole 3 1/8"
Bottom of		Pack Type/Size:		
lole atf	t	Sand		Bottom of
Bottom of Sandpack at	1.4_	Natural		Corehole 14.4 ft
OTE: See pages 136 and	137 for well construction	on diagrams		

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Depth-ft.	NARRATIVE LITHOLOGIC DESCRIPTION	1	loistui Contei	-
		ک ک	Moist	Wet
1	0'-3" is a brown subsort with slog, grovel and rest fragments overlying ash, slog and call fragments some rust color.	0	•	0
		0	•	0
2	Show Top of nock at 3.9".	0	0	9
	shoe. Top of rock out 3.9".	0	0	•
T:		0	0	0
3		0	0	0
6 —	Deck and the total of the total	0	0	0
7	B.8' 365. Some signs of water use at 7,3' 865. Below 8.8' de rock	0	0	0
8	contains shall portings and coloute felled rough. The sach is wary in nature in the bottom 0.8's. Void at latting run contains	0	\circ	0
9	8.6' 865 with groy clay on the surface of the competent radialore	0	\circ	\circ
10	8.6' 865 with gray along on the surface of the competent rad alone it. I'm all sung at the colorer and a thin wenteral felled fratione at, 10.4' depth.	0	\circ	0
11 —			0	0
12	Medium to don't grow dolatere, monthly massive, fractures at 12.2' and 12.5' and would stored. Hungan very containing	0	0	0
13	a the colate filled verted pooline. Shale parting at the			
14	bottom.	1	0	
15		0	0	0

Project Name Butue Exceed area		Water Level (TO	IC)
Site Location Lockport, ny	Date	Time	Level(Fact)
ate Started/Finished 5-13-97/5-16-97			
illing Company Maxim			
lier's Name Ed Cole	Well Location S	iketch	
ologist's Name Blen May			4
ologist's Signature Honn Hay			
Type (s)			
ing Method (s) Rotary W/ HSA			
Size (s) <u>HQ</u> Auger Size (s) <u>5"4" IO</u>			
er/Split Spoon Refusal 3,5			
al Depth of Borehole Is			
tal Depth of Corehole is 14.4			

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Depth(Feet)	Sample Number	Blow	rs on npler	Soil Components Rock Profile CL SL S GR	Penetration Times	Run Number	Core Recovery	RQD	Fracture Sketch	HNWOVA (ppm)	Comments
1	,	3	6			_	_		 -	0_	
3	2	8	8	~		_	_	-		0-	-
5		/-	7,			 ·	-	_			- -
7 6.4											
9						1 -	2002	14%		0	
11 11.4							-		 •		-
13						2-	2002	47%		0	_
14 14.4											

	SCREENED WELL	Lock Number	OPEN-HOLE WELL	Stick-upft Inner Casing Material
Stick-upft		Inner Casing Inside Diameterinches GROUND SURFACE		Inner Casing Inside Diameterinches
Top of Grout		Quantity of Material Used: Bentonite Pellets		Outer Casinginches
Top of Seal at <u>4.9</u> tt		Cementinches Diameter	in the second se	Borehole 378 %
Top of Sand Pack 6.9	'	Cement/ Bentonite		Bedrock 3.5 ft Bottom of Rock Socket/
Top of Screen at <u>9.1</u> ft		Screen Slot Size 10		Outer Casing 6.0 tt
Bottom of Screen at		Screen Type		Bottom of Inner Casingft
octobii at <u>FFF</u> IL		Stainless Steel	The same of the sa	Corehole Diameter
Sottom of 14. X 4 foliate at 15. Sottom of Sandpack at 15.		Pack Type/Size: Sand Gravel Natural		Bottom of Coreholeft

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Depth-ft.	NARRATIVE LITHOLOGIC DESCRIPTION		oistu Conte	
		ě	Moist	Ϋ́
	I" brown soil and rock fromente overlying Hundred crusted atome overlying nedum to course grand block ask	0	•	
1	with cool and slog, some runt colotton. Botton 6" is a notice from setty cloy with mothing and orange these and petter sund rock bagants. Some non stanning	0	0	\subset
		0	-0	
з —	Nature. Yellow brown selty clay, slightly most, vertice describer cracke, mattlet, to part to pelle sized angular rock brognests, collecie.	•	-0	\overline{C}
4	angular rock brognests, cofebere.	0	0	(
5			0	\overline{C}
6.4	Duck and deleter black and shell and Trans	0	0	
/	Durk gray delastre, laney, preson shale parting	0	0	
	at 1.4' depth and only about 1.5" winde, some rouge contour colute expetals. Very uniform and competent throughout		0	(
	Signs I until use in rulle you and along a fractive	0	0	\subset
10	at 8.7 depth.	0	0	
11 14 ₂ Y		0	0	\subset
	Donk any dolater mostly llacky minor shale portuga throughout. Vary uniform and tompetant throughout Francollecte felled ruga. a vertical	0	0	C
13	fractive at 12.7'	0	0	C
14.4		1	Ō	

P	DRILLING LOG FOR	SB-5	
IΨ	DHILLING LOG I OH		

Project Name Guter 1 Excised Area
Site Location SB-5 near the
gosoline storage took
Date Started/Finished 5-12-97/5-12-97
Drilling Company Maxim
Driller's Name Ed Cole
Geologist's Name Glenn May
Geologist's Signature Honn May
Rig Type (s)
Drilling Method (s) Rotary w/ HSA
Bit Size (s) HQ Auger Size (s) 51/4" IQ
Auger/Split Spoon Refusal 3.75
Total Depth of Borehole is 5.35
Total Depth of Corehole is

Water Level (TOIC)							
Date	Time	Level(Feet)					
							

Well Location Sketch

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De	pth(Feel)	Sample Number		rson npler	Soil Components Rock Profile CL SL S GR	Penetration Times	Run Number	Core Recovery	RQD	Fracture Sketch	HNWOVA (ppm)	Comments
1		,		20			_	_	_		-0-	Top of rock at 0.33'
3		2	18 18 25	9			_	-	-		-0	- Poor Recovery
5				73'			_	_	-			- 71000 pp
7										- -		OVA in the boulde
9	_						/ -	100%	20	<u> </u>	0-	-
11									2	 		_ - -
13							2 -	256 20	76 32	 	-0-	- 10 ppm methore of
15							3 -	- 8	&		F 0 ⁻	_ d soil

SCRE	ENED WELL	Lock Number	OPEN-HOLE WELL	Stick-upft
		Material		Inner Casing Material
Stick-upft		nner Casing Inside Diameter inches		Inner Casing Inside Diameterinches
	1 1	GROUND SURFACE		
Top of Grout		Quantity of Material Used:		Childr Casino
0.0		Bentonite Pellets		Outer Casing Dlameterinches
on of		Cerment		Borehole +, //
op of Seal at <u>4.9</u> ft		Borehole inches		Borehole 378 %
1		Diameter		
op of Sand Pack 6.9 ft		Cement/	42.0	Bedrock 3.5 ft
op or Sand Pack 1257 II		Sentonite		
	1 🛛 .	Srout		Bottom of Rock Socket/
op of creen at 9.1 ft				Outer Casing 6.0_ft
	s	Screen Slot Size	1	Bottom of Inner
ottom of		· · · · · · · ·		Casingft
creen at 14.1 t		Screen Type		
		☐ Stainless Steel		Corehole Diameter
ottom of				
ottom of ole at 14. X 4 tt		ack Type/Size: Sand		Bottom of
	[Gravel		Coreholeft
ottom of Sandpack at 19.4	Ē	Natural		
OTE: See pages 136 and 137 for				

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Depth-ft.	NARRATIVE LITHOLOGIC DESCRIPTION		oistu Conte	
		Ę	Moist	Wet
	I" from soil and noch fromments overlying Hundred crushed store overlying medium to course grained black ask	0	•	0
<u> </u>	with col and slag, some rust colotter. Botton 6" is a notice from setty clay with mottling and mange liels and pelle sized rook bagants. Some un stanny	0	9	0
			-0	
	Native. Yellow brown setty clay, shightly most, vertical descention cracks, mattled, gravel to pelle sized angular rack brognests, colebers.	O	-0	0
5	angular rock brognests, colebers.	0	0	0
		_	0	_
6.4	Duch gray delastone, blooky, mun shale parting	0	0	0
	throughout. Rulle you at legionery of run. Human vage at 1.4 depth and only about 1.5" under some source contains colute engetale. Very uniform and competent throughout	0	0	0
9	colute engetala. Very uniform and competent throughout	0	0	
10	the remainder of the home Only a few colerts felled and signe of water wer in rulle you and along a fractive	ı	0	
11	at 8.71 depth.	l	0	
1124	Dub and determined to be again about	1	0	
13	Dock appy dolatore, mostly blacky, minor shale portuge throughout. Vary uniform and lompotent throughout Four collecti fellel vings. a vertical	0	0	0
14	fraction at 12.7'	0	0	0
14.4 15		0	0	0

DRILLING LOG FOR 58-6	
4 6 . 4	
Project Name Gertal Exceed area	1
Site Location Look part, my	1.
Site Location Took and The Location	
, , ,	
	1

1	
Date Started/Finished 5-14-97 / 5-14-97	1
	<u> </u>
Drilling Company Moxim	

Driller's Name Ed Cala

Geologist's Name <u>Slenn May</u>
Geologist's Signature <u>Hon May</u>

Drilling Method (s) None - only spore

Auger/Split Spoon Refusal 4.3 (spoonselve)

NIA

Bit Size (s) N/A Auger Size (s) N/A

Rig Type (s) _____CME

Total Depth of Corehole is____

	Water Level (TOIC)							
Date	Time	Level(Feet)						
								

Well Location Sketch

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Depth(Feet)	Sample Number	Blows on Sampler	Soil Components Rock Profile CL SL S GR	Penetration Times	Run Number	Core Recovery	RQD	Fracture Sketch	HNu/OVA (ppm)	Comments
1	/	44					_		0-	
3	2	7 7 14 18			_	_	-		0	
5	3	50/.3			_	<u> </u>			0	<u>-</u> -
7					-	- -		- -		-
9 —					-					_ _
11 —						<u>-</u>		- -		- -
13						- 	-			- -
5						_ ' .	1			_

		SCREENED WELL	Inner Casing Material	OPEN-HOLE WELL	Stick-up Inner Casing Material			
Stick-	upft		Inner Casing Inside Diameterinches GROUND SURFACE		Inner Casing Inside Diameter			
	f Grout		Quantity of Material Used: Bentonite Pellets		Outer Casing Diameter	_inches		
Top of Seal a	t .tft		Cementinches		Borehole Diameter	ft		
Top of	Sand Pack	t d	Diameter Cement/ Bentonite		Bedrock	ft		
Top of Screen	natft		Grout		Bottom of Rock Soc Outer Casing			
Botton			Screen Type		Bottom of Inner Casing	ft		
	n at ft		☐ PVC		Corehole Diameter			
Bottom Hole at	n of t f		Pack Type/Size:		_			
	of Sandpack at		GravelNatural		Bottom of Corehole	h		
Bottom	n of Sandpack at		Gravel		Bottom of Corehole		loistu	re
Bottom	n of Sandpack at	137 for well constructi	Gravel	DESCRIPTION	Bottom of Corehole	l M	Conte	nt
Bottom NOTE:	See pages 136 and	NA	on diagrams ARRATIVE LITHOLOGIC	un gravel sized	Corehole	Dry	Conte tsioW	Wet
Bottom NOTE:	See pages 136 and	NA	On diagrams ARRATIVE LITHOLOGIC	un gravel sized	Corehole	A via	Conte	Wet
NOTE: Depth-ft.	See pages 136 and	NA	on diagrams ARRATIVE LITHOLOGIC	un gravel sized	Corehole	A via	Conte tsioW	Wet
Bottom NOTE: Depth-ft.	See pages 136 and	NA httpsol ymatux	on diagrams ARRATIVE LITHOLOGIC Control of the second of	we grand sized with me staining. Fe	Corehole	№ № № №	Conte	Wet
NOTE: Depth-ft.	See pages 136 and	NA	on diagrams ARRATIVE LITHOLOGIC	we grand sized with me staining. Fe	Corehole	№ № № №	Conte	Wet
NOTE: Depth-ft.	See pages 136 and	NA httpsol ymatux	on diagrams ARRATIVE LITHOLOGIC Control of the second of	we grand sized with me staining. Fe	Corehole	№ № 0000	Conte	Wet
NOTE: Depth-ft.	See pages 136 and	NA httpsol ymatux	on diagrams ARRATIVE LITHOLOGIC Control of the second of	we grand sized with me staining. Fe	Corehole	№ № 0000	Conte	Wet
NOTE: Depth-ft.	See pages 136 and	NA httpsol ymatux	on diagrams ARRATIVE LITHOLOGIC Control of the second of	we grand sized with me staining. Fe	Corehole	№ № 0000	Conte	Wet
NOTE: Depth-ft.	See pages 136 and	NA httpsol ymatux	on diagrams ARRATIVE LITHOLOGIC Control of the second of	we grand sized with me staining. Fe	Corehole	№ № 0000	Conte	Wet
NOTE: Depth-ft.	See pages 136 and	NA httpsol ymatux	on diagrams ARRATIVE LITHOLOGIC Control of the second of	we grand sized with me staining. Fe	Corehole	№ № 0000	Conte	Wet
Bottom NOTE: Depth-ft.	See pages 136 and	NA httpsol ymatux	on diagrams ARRATIVE LITHOLOGIC Control of the second of	we grand sized with me staining. Fe	Corehole	Val 000000000000000000000000000000000000	Conte	Wet

oject Name Butal Exceed and		Water Level (TO	IC)
e Location Lolegant, ny	Date	Time	Level(Feet)
e Started/Finished <u>5/14/97/5/14/97</u>			
ling Company Maxim			
er's Name Ed Cole	Well Location S	ketch	1
ologist's Name Blenn May			•
ologist's Signature Hean M May			
Туре (s)			
ng Method (s) HSA			
ize (s) NA Auger Size (s) 6% * 0D			
er/Split Spoon Refusal			
al Depth of Borehole is			

Depth(Feet)	Samp le Number	Blows on Sampler	Soil Components Rock Profile CL SL S GR	Penetration Times	Run Number	Core Recovery	RQD	Fractu re Sketch	HNu/OVA (ppm)	Comments
1	,	1 5 50/.5					-	 -	-0-	Dullars argued to 4' depth. Cutting are a fire grand ton material. Possible fire brush.
3	2	\times			_		_	_		fre busk.
5	3	43 36			_		-		-0-	
7 — 8 —	4				_					at 6.3'
9 —	5					_	_			
11 —					-	_	-			
13								_		
15			-							

SCREENED WELL Inner Casing Material			Lock Number	Stick-upft
Inner Casing Inside Diameter inches Inner Casing Inner C	S	CREENED WELL		 •
Top of Grout Common Pellets Cement Borehole Diameter inches	Stick-upft		Diameter inches	Inner Casing Inside
Boreholeinches Diameterft			Quantity of Material Used: Bentonite	
Top of Sand Packft Cement/ Bentonite			Boreholeinches	
Top of Screen atft Screen Slot Size	Top of Sand Packtt		Cement/	Bedrockft
Bottom of Screen Type			Grout	
Screen atft	Bottom of		·	
Hole at It Sand Bottom of Gravel Corepole #	Screen atft		□ PVC	
30ttom of Sandpack atft			☐ Sand	
	Bottom of Sandpack at	_	Natural	Coreholeft

Depth-ft.	NARRATIVE LITHOLOGIC DESCRIPTION		loistui Contei	_
			Moist	Wet
,	Fell, medium's come grained ask und stay and cool, visible in storing, some metallic areas clay at bettom fighty staw and metalled. Could be notice: at top I second apon is on area of story metallic deportion—ampled to TCLP	(4)	0	0
	area of stony notable deportion - songled for TCLP	0	0	0
	Naturat 2.7' BGS. Gray stowned clay upper 36.55', some	0	0	0
1	selt, some metal in vertical descrition crocks,	0	•	
	mottling. Brodes in a boun- gray setty day with	\circ	②	0
		\circ	\circ	
7	coleans. Some deleter rock from to.	\circ	\circ	0
		\circ	\circ	
8	Bample from 4'-6' is a reddish group setty clay, mostled, un stained, filled described cracks, plate,	\bigcirc	\circ	
9	marke	\circ	\circ	
10		\circ	\circ	
11		0	\circ	0
12			\circ	ł
13				
14	•		0	- 1
15		0	O	

Depth(feet) Sample Number	Blows on Sampler CL SL S GF	HOCK FIGURE	Penetration Times	Run (Number Re	Core Covery RQD	Fracture Sketch	HNu/OVA (ppm)	Comments
16 ————————————————————————————————————								- -
20 21	2 4 2 4 1 2 1 1 11 8 1 8 11 = Referred 2 0.2'						0	Recovery
37 — 38 — 39 — 40 — 41 — 42 — 43 — 44 — 45 — 45			•					

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Moisture NARRATIVE LITHOLOGIC DESCRIPTION Content Depth(feet). 000000 17 $\circ \circ \circ$ 000 000 **Z**2 $\circ \circ \circ$ Sample 000 \circ $\bigcirc \bigcirc \bigcirc$ **Ż**6 $\circ \circ \circ$ **ź**8 $\circ \circ \circ$ $\circ \circ \circ$ 30 000 31 000 32 000 33 000 000 35 000 000 37 000 000 39 000 $\circ \circ \circ$ 42 $\circ \circ \circ$ $\circ \circ \circ$ 000

MONITORING WELL TABLE:

Cisc adding Cincomer

		FVC RISER ELEVATION	GROUND ELEVATION
GUTERL EXCISED AREA			
	99.6	99.1	9
-2	99.0	98.5	\circ
-3	599.22	98	6
-4	99.1	98.6	6
MW-5	98.7	598.24	596.1
DIAMOND SHAMROCK SITE			
-94	97.7	97.3	97
94	96.7	96.5	96
94	97.4	96.9	97
94	97.4	96.	97
94	94.4	94.1	94
MW6-94	595.59	595.21	595.6
94	95.2	94.	95
THE EXTRACTION WELL	95.3		i
NCRDO SITE			
Se	97.2	96.8	95.
10s	593.83	593.55	93.
6Z-10d	96.2	96.0	593.8
GUTERL SPECIALTY STEEL LANDFILL SITE			
		4	98
MW-02	!	α	02
)4 	500 40	605.29	603.7
0011) - - -	7	<u></u>

NOTE: MONITORING WELLS WERE ELEVATED ON THE NORTH SIDE OF CASINGS AND RISERS.

SURFACE WATER AND SEDIMENT

SOIL BORING

DRUM

MONITORING WELL(NEW)

SOIL SAMPLE

EXISTING WELL

TEST PIT

LEGEND:

-APPROXIMATE CANAL BANK

RADIATION ANOMOLY DETECTION

POINT

JCL CONTROL

RADIATION ANOMALY

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ecology and environment, inc.

	PESIGNED BY	CHECKED BY	
7		J. RICHERT	
) <u> </u>	URAWA BY	APPROVED BY	
) \	W. HERRMANN		

DESCRIPTION

PLATE 1 GUTERAL EXCISED AREA

SITE MAP

DRAWING NO.	QT2030 -
	,2D
C.A.D. FILE NO.	QT2S002D

DATE ISSUED 8/1/97

SCALE 1" = 200

REV.

