REMEDIAL INVESTIGATION
WORK PLAN AND IMPLEMENTATION SCHEDULE
GE Moreau Site
Index No. 11-CERCLA-30201

Prepared By

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Latham, New York

March 28, 1984

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INTRODUCTION

This work plan addresses a remedial investigation to define the nature and extent of off-site contaminant migration at the GE Moreau site in compliance with Item II, U.S. EPA Administrative Order 11-CERCLA-30201. It describes the methodologies to be used to characterize waste at the site, the geology, to determine the aquifer characteristics, and to determine the velocity and direction of ground-water movement and nature and extent of contaminant migration.

WASTE CHARACTERIZATION

Detailed characterization of the waste site and the wastes emplaced at the site is invaluable in designing a hydrogeologic remedial investigation. It provides the background regarding the entrainment of contamination into the aquifer system, the duration of the contamination event, and the nature of the contaminants. Most of this information has already been compiled and has been submitted to the EPA in the form of an engineering report prepared by O'Brien and Gere, Syracuse, New York. A review of this information has been performed to aid in the design of the ground-water quality monitoring system and monitoring program discussed herein as part of the remedial investigation.

Special attention has been given to the following data:

- o the type of wastes disposed
- o the volume of wastes disposed
- o the disposal practices followed
- o the periods when disposal took place

- o mobility of the wastes
- o persistence of the wastes
- o waste removal procedures implemented
- o residual waste at the site

All of the information will be utilized in determining the extent of contamination and the rate of contaminant migration.

HYDROGEOLOGIC SETTING

The hydrogeologic setting of the site will be determined from a literature review, geophysical surveys, and test-hole drilling. Also, some existing wells will be utilized to the extent possible to provide supplementary information.

Literature Review

Much is already known about the hydrogeology from existing consultants reports and from publications. The literature review will include the following:

1. Previous consultants reports, i.e., Migration of PCB's from Landfills and Dredge Spoil Sites in the Hudson River Valley, Weston (1978); PCB's Removal from the Caputo Site on December 18 & 20, 1978 Town of Moreau, Saratoga County, New York, Hardick Associates (1978); Conceptual Engineering Study of Five Disposal Sites Known to have Received PCB Wastes, Wehran (1980); Caputo Site Engineering Report, Caputo Site Engineering Report Addendum, Caputo Site Remedial Program Final Plan-Subsurface Investigation, O'Brien and Gere (1981, 1982a, and 1982b); and Investigation of Ground Water Contamination in the Vicinity of the GE Moreau (Caputo) Site, C.A. Rich (1983).

2. U.S.G.S. and NYS Geological Survey reports, topographic maps, aerial photos, and files.

3. Other publicly available reports or records related to studies at the site.

The information available from these documents will be evaluated particularly from the standpoint of what additional information is indicated as being necessary. Test drilling and geophysical surveys will be performed to provide such information.

Geophysical Survey

A geophysical reconnaissance utilizing terrain conductivity (EM-34), and other geophysical methods will, if necessary, be undertaken to supplement test-hole drilling. Tentative locations for the survey are shown in Figure 1. The focus of the survey will be to locate the bottom of the sand aquifer represented by a relatively impermeable clay layer. The survey will involve measuring terrain conductivity at relatively widely-spaced intervals. The measurements will be integrated with test-hole data to develop a configuration of the aquifer base.

Test-Hole Drilling

Test-hole drilling and subsequent monitoring well installation will comprise the most extensive portion of the remedial investigation. The test-hole drilling will be conducted in phases to allow data which is collected to be evaluated before additional drilling is initiated. Each phase of test-hole drilling will be integrated with other field activities to meet the following objectives:

- define the extent of ground-water contamination by evaluating ground-water chemical composition in samples drawn systematically from monitoring wells;

- locate zones of preferential ground-water flow which may favor certain contaminant pathways;

- determine the types, properties, and thicknesses of aquifer materials by obtaining formation samples;

- plot stratigraphy by correlating data from different test holes;

- determine aquifer hydraulic characteristics by in-situ testing;

- determine the water-table elevation in the sand aquifer, the seasonal fluctuations of that water table, the hydraulic gradient, and the direction of ground-water flow through periodic water-level measurments; and,

- confirm results of any geophysical surveys.

In the first phase of drilling, a minimum of 17 borings will be advanced, 13 of which are shown on Figure 2. The drilling of each soil boring will be under the direction and supervision of an experienced geologist. The geologist will also log each soil boring following the Modified Burmister System and Unified Soil Classification System. Soil samples will be collected by split-spoon following ASTM Methods for standard 5-foot intervals. Continuous split-spoon samples will initially be taken in several test borings to more completely identify the stratigraphy of the unconsolidated deposits. The samples will be taken through the layer of principle concern, specifically the zone of interbedded sand, silt, and clay. All collected samples will be placed in jars, labeled, and retained for subsequent evaluation and laboratory gradation analyses.

Soil samples will be tested with a portable organic vapor analyzer to determine the presence or absence of volatile halogenated organics. The protocol for this determination is included as attachment 1 to the plan. These test results will be used during monitoring well installation to determine screen placement. Selected soil samples will be sent to the laboratory for analysis of TCE.

Gradation analyses following ASTM standard method will also be performed on selected samples to check visual classifications, to aid in the selection of monitoring well screens, and to estimate hydraulic conductivity and porosity.

AQUIFER CHARACTERISTICS

The hydraulic characteristics of the aquifer will be determined during and subsequent to the installation of monitoring wells. Ground-water flow velocities and hydraulic gradients will be determined on the basis of water levels measured periodically in the monitoring wells.

The uppermost aquifer is an unconfined sand and gravel aquifer. Downward movement of ground water is confined by a relatively thick glacio-lacustrine silt clay layer. Beneath the clay and underlying till either shale, or most likely, carbonate bedrock occurs.

Investigations conducted to date, and cited earlier, indicate that the contamination occurs in the upper aquifer, suggesting that contaminant migration is also confined by the relatively thick clay layer; therefore, the major investigatory effort is directed to this aquifer.

Characterization of this sand aquifer will involve a review of existing data, construction of monitoring wells, aquifer testing, and ground-water modeling. A relatively large amount of data has already been gathered by General Electric, NYS, and the Town of Moreau. The review of data will result in 1) an inventory of existing wells, both private and public, their locations, construction details, use, and influence on ground-water movement due to pumpage, 2) a compilation of historical aquifer test data and results, and 3) data on stream flows, spring discharges, and precipitation.

Monitoring Well Installtion

The design and installation of monitoring wells will be performed in conjunction with the test-hole drilling. Information from the test-hole drilling will aid in the selection of specific stratigraphic units to be monitored. These units will, in turn, determine the position and length of the well screen for each monitoring well. The vertical position of each horizon to be monitored will determine the number of monitoring wells to be installed at each of the 17 phase I soil boring locations. Two or more completed monitoring wells at each soil boring location will constitute a well cluster. Each well in a cluster will be a separate unit spaced a minimum of five feet from adjacent monitoring wells.

The well clusters will be designed to provide a vertical profile of hydraulic heads and water quality. Wells installed at the top of the aquifer will be screened to monitor the entire range of water-table fluctuation. Monitoring wells installed in the unconsolidated aquifer will be placed in 4-inch borings advanced by either hollow-stem auger or flush-joint casing. The monitoring wells will be constructed of schedule 40, 2-inch diameter PVC riser pipe and slotted or wire-wrapped well screen.

Potential interference on the chemical quality of ground-water samples will be mitigated by adherence to the following procedures:

- only rigid PVC will be used in well construction to eliminate the effects of plasticizers;

- all PVC components will be washed with a strong detergent solution and rinsed thoroughly with cool water;

- all PVC joint connections will be mechanical;

- prior to sampling, four well volumes will be pumped from each well to remove stagnant water;

- to minimize contact time between the formation water and PVC, samples will be collected with a teflon point-source bailer immediately after the required four volumes have been removed.

Each well screen will be surrounded by a clean silica sand pack with a 5-foot bentonite seal placed above the top of the sand pack. The remainder of the borehole around the riser pipe will be backfilled with a bentonite slurry. The upper 5 feet of the borehole will be sealed with cement to prevent surface contamination from entering the well and to secure a protective steel casing and locking cap placed over the PVC riser pipe. Upon completion each of the 2-inch piezometers will be flushed clean and developed in accordance with Section 5C of the Manual of Ground-Water Quality Sampling Procedures, Scalf, et al, Robert S. Kerr, Environmental Research Laboratory, USEPA, to provide free exchange with the adjacent aquifer.

The location and measuring point elevation of each well will be surveyed so that all geohydrologic data obtained may be accurately plotted in units of feet above mean sea level.

Hydraulic Conductivity Testing

The hydraulic characteristics of the aquifer will be determined through aquifer testing utilizing slug or bail tests at selected wells. The selection of wells to be used for these tests will be made in consultation with EPA.

The tests will be short duration tests designed to determine hydraulic conductivity in the immediate vicinity of the test well. These tests will be performed in a sufficient number of wells to test all portions of the unconsolidated aquifer. The specific wells to be tested will be determined in the field based on the logs of the split-spoon samples.

Vertical hydraulic conductivity values will be determined during test-hole drilling. Falling head tests will be conducted through open-ended casing seated at depths equivalent to final screen setting.

The hydraulic conductivity values will be combined with measurements of hydraulic gradient and estimates of effective porosity to determine the average linear velocity of ground water using a modified form of the Darcy equation.

EXTENT OF GROUND-WATER CONTAMINATION

Well Placement

A systematic approach of well placement will be followed to determine the vertical and areal extent of ground-water contamination. Refer to Figure 2 for the placement of the various series of well installations.

During the first phase of drilling, a line of five well clusters will be located approximately 4500 feet downgradient of the site. The line will parallel the edge of the scarp which occurs in this area. The clusters will be used to obtain water samples to monitor ground-water immediately upgradient of a number of surface-water reservoirs. If contamination is detected, water-quality data from the clusters will also aid in delineating the extent of contamination.

A second series of four monitoring well clusters will be located downgradient of the facility in a line parallel to the direction of ground-water flow as determined by prior investigations. The clusters will extend from the facility to the well clusters which are located along the scarp. Water-quality information from these wells will provide estimates of the distance contamination may have traveled.

A third series of four well clusters will be located on a line approximately perpendicular to the direction of ground-water flow. These wells will aid in delineating the width of the contaminated zone. Due to the tentative nature of the well locations, this series is not shown on Figure 2. This line of wells will be located downgradient of the facility at a distance which is estimated to represent the center of contamination. The distance in question will be estimated from examination of formation samples collected during installation of the second series of wells.

A fourth series of four wells will be installed between 1000 feet and 1500 feet downgradient of the facility. These wells will monitor ground-water quality between the disposal facility and the residential areas on Bluebird Road and Terry and Cheryl Drives.

It is expected that this distribution of monitoring wells will provide a preliminary estimate of the extent of the contaminated area. This same well configuration will also be used to monitor future expansion or contraction of the contaminated area. The vertical thickness of the contaminated zone will also be determined since well clusters, rather than individual wells will be installed at most locations. As explained earlier, the depths of each well in a cluster will be determined in the field on the basis of formation sample examination.

A second phase of drilling may, nevertheless, be necessary to precisely define the areal limits of contamination. Wells installed during the second, and any subsequent, phase of drilling will be located only after data collected in all earlier phases has been evaluated by both EPA and the respondent. This evaluation will improve choices made regarding future well placement and screen location. Consequently, definition of the contaminated zone will proceed more quickly and rapidly than would occur if a haphazard or otherwise random well location program were followed.

Water-Quality Sampling

Water-quality sampling will be conducted at each monitoring well location. Sampling methods will follow established protocols included as attachment 2 to the plan. Initial evaluation of the analytical results will allow the extent and degree of contamination to be defined on a preliminary basis both areally and vertically. Analyses of the results will determine the scope of any additional work that may be needed.

Repeat sampling will be conducted after each additional phase of drilling has been completed to improve definition of the contaminated zone. Periodic sampling will be continued to monitor changes in the contaminated zone.

INFLUENCE OF PUMPING WELLS

A survey of wells pumping in the area will be conducted. Wells whose pumping rates may present a significant impact on ground-water levels and movement will be identified and monitored through wells installed during the first phase of drilling, if possible. Areas of concentrated domestic pumping will also be identified and monitored. Monitoring will involve the use of continuous water-level recorders to evaluate possible changes in water level which could alter contaminant migration. If well clusters installed during the first phase do not meet the location requirements for accurate monitoring of the pumping wells, additional wells to meet these needs will be installed during the second phase of drilling.

GROUND-WATER MODELING

As practical, ground-water modeling will be used to analyze the flow and contaminant transport behavior of the water-table aquifer. Ground-water gradients and velocities will be determined.

Throughout the study, models of varying complexity may be used - i.e., conceptual models, analytical models, and, if necessary, numerical models requiring computer solutions.

SOILS - EXTENT OF CONTAMINATION

A reconnaissance will be conducted to identify potential sites of soil contaminated by PCBs. The reconnaissance will focus on the area within a 1000-foot radius of the site plus access roads to the facility which are located outside this area, and other areas suggested by the data.

The reconnaissance will involve visual observation of field conditions and a survey with a portable analyzer to detect potential "hot spots". The portable analyzer will be used to detect volatile organics which are presumed to occur in association with the PCBs. The reconnaissance will be preceded by an examination of historical aerial photos of the facility and surrounding environments. Any visible evidence of surface contamination such as past disposal areas will be noted and field-checked during the reconnaissance.

Any areas identified in the field as potential "hot spots" will undergo soil sampling. If the reconnaissance fails to detect any "hot spots", sampling will be conducted at three randomly chosen locations. Each location will be sampled once following protocols provided as attachment 3 to the plan.

SURFACE WATER - EXTENT OF CONTAMINATION

As discussed previously, five monitoring well clusters will be installed approximately 4000 feet downgradient of the facility. These clusters will monitor ground water flowing from the site towards surface water reservoirs located farther downgradient. Furthermore, water-quality samples for volatile organic analyses will be collected every two weeks from each reservoir as proposed in the plan for Immediate Corrective Action, submitted to EPA on March 14, 1984.

In addition, a survey of the immediate area will be conducted and other surface water bodies near the site will be identified. Single grab samples for volatile organic analysis will be collected from any other sampling points identified in the survey. If the results of the sampling are positive, follow-up sampling will be conducted to confirm the measurements and to monitor any changes.

Except for the actual sample collection, methodologies for surface water sampling parallel those developed for private residence sampling. Protocols to be followed in surface water sampling are provided as attachment 4 to the plan.

AIR MONITORING

The NYS Department of Environmental Conservation has established two air quality monitoring stations in the vicinity of the GE Moreau site. The locations of these stations are shown on the attached map. The stations were activated in August, 1983, and were shut down in mid-November, 1983, when

when site work commences again in the Spring of 1984.

These stations monitor PCBs, trichloroethylene, benzene, methylene chloride and total suspended particulate. The detection limit for PCBs is 20 ng/m^3, for TCE is 5 ug/m^3, and for benzene is 10 ug/m^3. To date, all results were below detection limits with one exception: On November 2, 1983, the 24-hour average benzene concentration was found to be 18 ug/m^3 at the station near Terry Drive. It is thought highly unlikely that the GE Moreau site was the source of the benzene.

Remedial action at the site, including trenching and construction of a slurry wall, will take place concurrently with the off-site remedial investigation. Since the on-site activity will generate higher ambient concentrations of volatile organic compounds than the off-site activity, it would be impossible to measure separately ambient levels caused by off-site conditions alone. Therefore, no additional air monitoring stations will be established.

HEALTH AND SAFETY PLAN

A worker health and safety plan will be in effect during test hole drilling and well installation. This plan will provide guidance to ensure worker protection from exposure to hazardous chemicals should such be encountered. Specific aspects of the health and safety plan include general safety protocol, required safety equipment and clothing, decontamination procedures, emergency response, and communications. A safety officer will be appointed by the project manager.

The remedial investigation will be conducted in downgradient areas away from the actual disposal facility. Consequently, it is anticipated that no significant contaminant levels will be encountered. Earlier investigations in the downgradient areas were performed under standard industrial safety guidlines. Since this investigation will be conducted in downgradient areas removed from the disposal facility, the same level of safety requirements will be instituted during the proposed remedial investigation.

However, since small potential dermal and respiratory hazards may exist in isolated areas, the required level of protection will be upgraded to include additional protective clothing and respiratory protection if ambient organic vapor concentrations exceed 10 ppm. The additional protective clothing will include water and chemical resistant coveralls, gloves, boots and safety glasses.

Specific aspects of the plan are outlined below:

1. General Safety Requirements

   a. The immediate work area will be conspicuously marked.
   b. No food or drink may be consumed within the immediate work area.
   c. Smoking will not be permitted within the immediate work area.

2. Required Safety Equipment and Clothing

   All persons involved in drilling or soil sample collection/handling will be required to wear certain safety equipment as follows:

   a. Drilling

      1. hard hats
      2. coveralls
      3. safety shoes/boots

   b. Soil Sampling/Drilling Supervision

      1. hard hats
      2. coveralls
      3. disposable gloves

Respirators which have been properly fit-tested will also be available for all personnel. A portable organic vapor analyzer will also be used at the site to determine the presence of volatile organics.

3. Decontamination Procedures

a. Gloves will be disposed of or decontaminated after sample contact.

b. Coveralls will be stored with the drill rig and not removed from the immediate work area except for disposal or cleaning.

c. All auger flights, drill casing, drill rods and associated equipment used in the drilling of each soil boring will be steam-cleaned to remove all visible foreign matter prior to being used in the drilling of the next boring.

4. Emergency Information

The following information will be posted to be readily available to all on-site personnel.

a. Location of nearest telephone or car radio.
b. Local/plant fire department telephone number.
c. Local/plant rescue department telephone number.
d. Subcontractor offices (drillers, etc.) telephone number.
e. Chemtrek telephone number.
f. Project manager telephone number.

5. Emergency Rescue Equipment

The following equipment will be stored at the immediate work area:

a. First aid kit.
b. Oxygen kit.
c. Burn kit.
d. Rope.
e. Blanket.

PROTOCOL FOR

VOLATILE ORGANIC SCREENING OF SPLIT-SPOON SAMPLES

1. Prepare a standard quantity of the split-spoon sample and place it in a clean, tall, narrow, glass jar.

2. Seal the jar with metal foil and a screw cap. Label the cap with the sample identification number.

3. Warm the sample jar to a temperature of 40°C for 30 minutes by placing it in a small portable heater.

4. Remove the screw cap, pierce the metal foil, and sample the headspace with the probe of an HNU portable organic vapor analyzer, or similar instrument.

5. Record the sample number and the results of the analysis in the field notebook.

6. Recap the jar and store it securely for subsequent study, if necessary.

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PROTOCOL FOR

GROUND-WATER SAMPLING

All wells will be exercised or thoroughly flushed of standing water in order that they contain fresh water from the aquifer before sampling begins. Because bailing can be very time-consuming when a large number of wells are involved, the wells will be exercised with a non-contaminating submersible pump. In all cases, the actual sample will be withdrawn using a teflon point-source bailer. The procedures are explained in detail below:

1. Identify the well and record the location on the Ground-Water Sampling Field Log.

2. Cut a slit in one side of a plastic sheet and slip it over and around the well creating a clean surface onto which the sampling equipment can be positioned. This clean working area should be a minimum of 10 feet by 10 feet. Do not kick, transfer, drop, or in any way let soils or other materials fall onto this sheet unless it comes from inside the well. Do not place meters, tools, equipment, etc., on the sheet unless they are clean and dry.

3. Put on a new pair of disposable gloves.

4. Clean the well cap with a clean rag and remove the well cap and plug, placing both on the plastic sheet.

5. Clean the first ten feet of a steel 100-foot tape. Rinse first with fresh water. Follow this with a methanol rinse, a hexane rinse, a

second methanol rinse, and finally a rinse with distilled water. The water and solvent rinses can be applied with squeeze bottles. Measure the depth to the water table with the steel tape. Record this information on the Ground-Water Sampling Field Log (attached).

6. Compute the volume of water in the well using the formulae and information provided on the Ground-Water Sampling Field Log. Record this volume on the field log.

7. Prepare the submersible pump for operation.

8. Lower the pump intake to the upper portion of the water column as far above the well screen as possible. (Shallow water-table wells are constructed so that the pump can only be set opposite the screened interval).

9. Start the pump and remove approximately one half quart of this water from the surface of the well water into a new glass quart bottle. Observe the appearance of this water. Return this quart bottle to its proper transport container. Note: This sample will not undergo laboratory analysis, and is collected to observe the physical appearance of the ground water only.

10. Record the physical appearance of the ground water on the Ground-Water Sampling Field Log.

11. Initiate pumping from the well into a graduated pail until four times the volume of water in the well has been removed or until the well is pumped dry. The pump should be lowered in the well until the final intake position is a few feet below the water level established in the well after drawdown reaches equilibrium.

12. If water being withdrawn becomes turbid during the exercising process or during sampling, terminate pumping or sampling until the well is redeveloped at a later time.

13. Remove the pump from the well, place it on the plastic sheet, and prepare to collect the sample with a dedicated teflon point-source bailer.

14. Remove the sampling bottles from their transport containers and prepare the bottles for receiving samples. Inspect all labels to insure proper sample identification. Sample bottles should be kept cool with their caps on until they are ready to receive samples. Arrange the sampling containers to allow for convenient filling.

15. Initiate sampling by lowering the bailer slowly into the well to a depth opposite the midpoint of the screened interval. Remove the bailer in a smooth continuous manner to prevent the check valves from reopening and adulterating the sample. Minimize agitation of the water in the well. Fill each sample container following the instructions listed on Attachment A - Sample Containerization Procedures. Return each sample bottle to its proper transport container.

16. If the sample bottles cannot be filled quickly, keep them cool with their caps on until they are filled. Each sample bottle for purgeable priority pollutant analysis should be filled from one bailer, then securely capped. NOTE: Samples must not be allowed to freeze.

17. Record the physical appearance of the ground water observed during sampling on the Ground-Water Sampling Field Log.

18. Replace the well plug and lock the well protection assembly before leaving the well location.

19. After sampling is completed, clean the pump by pumping deionized water through it. Rinse the outside of the pump and discharge tubing with clean water. Follow this with a methanol rinse, a hexane rinse, a second methanol rinse, and finally, a rinse with distilled water. The water and solvent rinses can be applied with

squeeze bottles and a clean towel.

20. Place gloves, rags, and plastic sheet into a plastic bag for disposal. Place the bailer in a plastic bag for delivery to a location where it can be properly cleaned.

ATTACHMENT A

SAMPLE CONTAINERIZATION PROCEDURES

Lab Analysis	Container Description	Number of Containers	Collection Instructions
Purgeable Priority	40 ml Vial	3	1. The sample vial consists of 3 parts: a glass bottle, a teflon-faced septum, and a screw cap. 2. Remove the cap and septum, handling the septum by the edges only. 3. Carefully fill the vial to overflowing, a slight crown of water remaining on top. 4. Slide the septum, teflon side (slippery side) down, onto the vial. 5. Replace the cap and tighten. 6. Invert the sample and lightly tap the cap on a solid surface. The absence of trapped air indicates a successful seal. If bubbles are present, open the bottle, add a few additional drops of sample and reseal the bottle as above. Continue until no trapped air is present. 7. Keep the samples refrigerated or on ice.

GROUNDWATER SAMPLING FIELD LOG

Sample Location ______________________________ Well No. ____________

Sampled By: ____________________________ Date ________ Time ____________

Weather ____

A. Water Table

Well depth (from top of standpipe) (D)___. Well elevation (top of standpipe)________

Depth to watertable (from top of standpipe) (W)___. Watertable elevation___________

Length of water column (LWC)________ (feet). [(LWC) = (D) - (W)]

Volume of water in well - 2" diameter wells = 0.163 x (LWC) = ____________ gallons

B. Physical Appearance At Start

Color ________________ odor ______________ turbidity ____________

Was an oil film or layer apparent? ______________

C. Preparation of Well for Sampling

Amount of water removed before sampling ____________ gallons

Did well go dry? ________________

D. Physical Appearance During Sampling

Color ________________ odor ______________ turbidity ____________

Was an oil film or layer apparent? ______________

E. Well Sampling

	Analysis	Bottle No.	Special Sampling Instructions
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

Soil Sampling Protocol

1. Divide the surface area of the potential "hot spot" into an imaginary grid. The grid spacing should be based on the number of samples required from the area, which when combined will give a statistically representative sample.

2. Obtain small, equal portions of surface or near-surface soil from each grid intersection.

3. Collect samples from the upper three inches of soil using a clean garden-variety trowl or laboratory scoop.

4. Composite the sample in a wide-mouth glass container with a foil-lined screw-type metal lid.

5. At the completion of sampling, cap and label the container. Record the appropriate sample information in the field-log book, and complete a chain-of-custody record.

6. When all samples have been collected, deliver them to the laboratory for analysis.

Surface Water Sampling Protocol

1. Assemble the pond sampler using a clean glass sampling beaker.

2. Dip the beaker into the water away from the immediate area of the sampling point and rinse it thoroughly.

3. To collect the sample, gently lower the beaker into the water and let it fill slowly to minimize agitation and aeration.

4. Remove the beaker and gently transfer the sample into two clean, pre-numbered 40-ml glass vials.

5. Fill the vials so that there is no head space after the cap is screwed down. The teflon septum should only be handled with clean disposable gloves.

6. Record the sample number on the sample log, field notebook, and on a 2 x 2 inch piece of paper with water-proof ink.

7. Place the bottles and a piece of paper in a "ziplock" bag and then in an iced chest.

8. After all samples are collected, fill out a laboratory chain-of-custody form and a laboratory instruction form. Lock the forms in the chest for delivery to a qualified laboratory, following chain-of-custody protocol.

9. Dismantle the sampler; store the clamp and handle in a plastic bag after wiping them with a clean towel.

Schedule of Implementation

Task	Week(s)
Hydrogeologic Setting	
Literature Review	1 - 2
Test Hole Drilling Ø 1	2 - 8 (2 rigs)
Geophysical Survey (optional)	5 - 8
Aquifer Characteristics	
Well Installation Ø 1	Included in test hole drilling
K-testing	6 - 9
Extent of GW Contamination	
Water Quality Sampling and Sample Analysis	10 - 13
Influence of Pumping Wells	
Records Review	3 - 4
Field Study	On-going from well installation to project completion, if necessary.
Soil Sampling	5 - 8
Surface Water Sampling	Every other week per plan for Immediate Corrective Action
Data Compilation and Evaluation	10 - 15
Report to EPA	17

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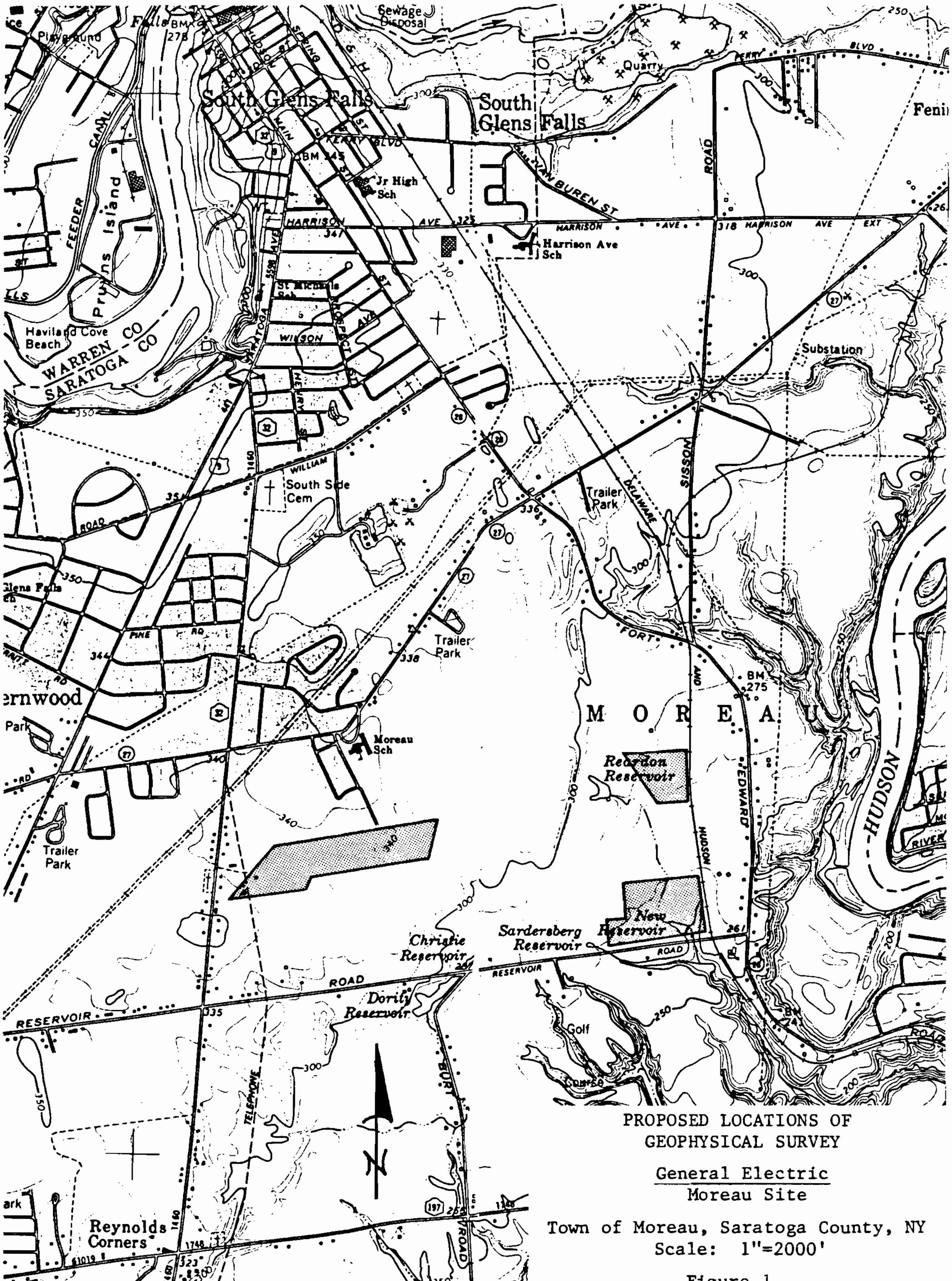

PROPOSED LOCATIONS OF
GEOPHYSICAL SURVEY

General Electric
Moreau Site

Town of Moreau, Saratoga County, NY
Scale: 1"=2000'

Figure 1

DUNN GEOSCIENCE CORPORATION