

September 1991

GENERAL:

Based on this work plan, a costing sheet is to be developed and attached by the consultant. This work plan and associated costs will be made part of this cost plus fixed fee contract with a limiting upset figure. Unless otherwise stated in this work plan, the work shall conform to the concepts of Exhibit 1, Generic Work Plan - State Superfund Program - Phase II Investigations and Exhibit 3, Schedule 4 of the contract document.

A copy of this work plan and Exhibits 1 and 3 of the contract must be taken to the field by the consultant during the Phase II field activities. The representative must display, through his action, familiarity with the provisions of the work plan and exhibits. Failure to provide any of the above documents at the New York State Department of Environmental Conservation (NYSDEC) representatives request or for the consultant to show inadequate comprehension of their contents are sufficient grounds for NYSDEC to halt the Phase II field work.

INTRODUCTION:

Site History: The Amenia site is an inactive municipal dump, approximately 10 acres in size, located on the west side of Route 22 in the Town of Amenia, Dutchess County, New York. The southern portion of the site area has been purchased by Mr. John Segalla of Leedsville Road, Amenia, New York 12501. The northern portion is currently owned by Mr. Karl Saliter of Box 128, Jackson Hill Road, Sharon, Connecticut 06069. Available information on the history of the site relative to the period of operation, site owners during operation of the dump, and location of the fill areas, is somewhat incomplete.

It is not known when operation of the site as a dump began. However, the dump operated for many years receiving municipal wastes from the Towns of Amenia, New York and Sharon, Connecticut. The site was privately owned by the "Murphy brothers" for a period of time during operation of the disposal area. A local resident, Mr. Surico, operated the site for a number of years. At an unknown point in time, he purchased the northern section of the site area from the Murphys. Mr. Surico was forced to close the site in January 1969 by the Town of Amenia. At closure, an unknown number of 55 gallon drums were stored on the Surico property. It is not known what was stored in the drums, if anything. Some of the drums were removed at a later time.

Following closure in January 1969, the Town of Amenia opened an emergency disposal area on property owned by Walt and Eleanor Culver that is located to the north of the site in question. (This smaller disposal area, known as the Amenia - Route 22, north site, is not a part of this investigation). This emergency disposal area was operated for about a year and then closed. Following this, the southern section of the site area, by then owned by Metal Improvement Company, Inc., was leased and operated by the Town of Amenia and the Town of Sharon, Connecticut until closed. Mr.

Bly was uncertain exactly when the dump was permanently closed and covered over, but he indicated it was about the same time that the Harlem Valley Landfill (located approximately 1/4 mile southwest of the site) was started. A NYSDEC hazardous waste disposal site report indicates that the landfill was closed in 1975. At final closure, the main fill area received soil cover of unknown depth applied by a local contractor hired by the Town of Amenia. See Figure No. 1.

A NYSDEC Phase I Investigation report (Final - August 1986) has been completed for this site. A United States Environmental Protection Agency contractor, NUS Corporation, conducted sampling at the site on February 25, 1987. A draft report and some preliminary data have been received by NYSDEC.

Site Topography: The former Town of Amenia Dump, located west of State Route 22 and approximately 2 miles south of the Village of Amenia, covers a total area of about 10 acres. The landfill is situated adjacent to a wetland through which a permanent stream (unnamed tributary of Wassaic Creek) runs (see Figure 2). The surface of the landfill is vegetated with grass and slopes towards the west and north. The west edge of the landfill drops off sharply to the wetland with a varying elevation drop of 20-40 feet.

A smaller fill area (about one acre in size), known as Amenia - Route 22, North site, is located on the north edge of the marsh. This area (not part of this investigation) is overgrown with brush and relatively flat. Trash is visible on the ground surface. This area is not listed in the NYSDEC Registry. Both fill areas have separate access roads, and access to the sites is not restricted.

Two lakes are located approximately 1,000 ft. west of the site. Both lakes are upgradient (20 ft higher in elevation) of the site. Both lakes discharge to the permanent stream that runs through the marsh adjacent to the landfill.

Site Hydrogeology: The site is directly underlain by glacial outwash sand and gravel deposits. These sediments are confined to the valley floor and are of limited areal extent. Approximately 1 mile north of the site, these sediments are at least 70 ft in thickness and comprised of 28 feet of water bearing gravel overlain by 42 feet of clay with a gravel lens (Simmons et al. 1961, Well Du 99). However, there is no site-specific data to confirm the presence of this thick of a clay unit at this site. The unconsolidated deposits which blanket the adjacent hillsides are comprised of glacial till. The presumed direction of shallow groundwater flow in the vicinity of the site is to the east based on a significant rise in topography to the west.

The glacial sediments are underlain by marble bedrock of the Cambro-Ordovician Age Stockbridge Formation. There are several thrust faults within 1-2 miles of the site which are related to the Taconic Orogeny. The bedrock is present at or within 3 feet of ground surface at several locations throughout the valley, including the hills north and south of the site (Gerber 1982).

Both the glacial sediments and marble bedrock (designated by Gerber as Aquifer No. 74) have been developed by wells for domestic (rural area) and public (Village of Amenia) water supplies and are both considered as the aquifer of concern. The glacial sediment portion of the aquifer of concern includes the sand and gravel deposits which are bounded by the adjacent glacial till covered mountains (Gerber 1982). Based upon the available literature, hydraulic connection between these two general aquifers cannot be confirmed. However, because bedrock is reportedly within 3 feet of ground surface in the immediate vicinity of the site, the bedrock aquifer, as well as the glacial sediment aquifer, may be affected by conditions at the site.

The data in this section is based upon:

1. Gerber, R.G. 1982. Final Report, Water Resources Study for Dutchess County: Amenia Quad with Surficial and Bedrock Aquifer Delineations.
2. Simmons, E.T. et al. 1961. Ground-Water Resources of Dutchess County, New York: Well Logs.
3. New York State Department of Health. 1982. New York State Atlas of Community Water System Sources.

Site Contamination: It is suspected that some drums filled with industrial waste may be buried at the site. According to NYSDEC hazardous waste disposal site reports, evidence of drums south of the southwest corner of the site were observed as recently as December 1979. Notes in the Dutchess County Environmental Management Committee files regarding a site inspection conducted in December 1980 indicated that barrels were visible protruding from the ground. There were no drums observed on site during the Phase I site inspection conducted on January 16, 1985.

The USEPA - NUS Corporation sampling in February 1987 included three groundwater samples (off-site wells), four soil samples, two surface water and two sediment samples. The results of a soil sample (S-2) collected on the west side of the landfill, 6 feet from the end of the fence that surrounds the storage tank area, indicated a 170 ppm PCB-1248 concentration. The NYSDEC Region 3 Petroleum Bulk Storage Program has information on the Sharon Oil facility.

There are also reports of a pit in the rear of the property which was used to dispose of drummed or liquid (possibly solvent) wastes. A statement was made that material similar to that which went into the Sarney property site approximately five miles to the south (ID #314007 - Class 2) went into this site.

OBJECTIVE:

There has been some groundwater, soil, surface water and sediment sampling on or in the immediate vicinity of the site. The objectives of

the Phase II activities are to collect essential field information to (1) confirm the presence of hazardous waste at the site; (2) adequately assess if contamination has been released from the site; (3) determine whether a significant threat to the environment or public health exists; (4) to prepare final Hazardous Ranking Scores (HRS) if directed by NYSDEC; and (5) make recommendations for possible future actions at the site.

Work Tasks:

The project has been subdivided into specific tasks. Table I briefly summaries each task. Certain tasks will be completed only if specifically directed by NYSDEC. Classification of the site may be possible without performing certain tasks. Efforts required to complete this investigation are described herein:

TASK 1

Records Search/Data Compilation

For the purposes of report preparation and to become familiar with the site, the consultant is to review all existing reports, engineering plans, and data on the site. A review of files at agency offices is to include the NYSDEC - Central and New Paltz Offices and NYSDOH - Albany Office and Dutchess County Health Department Office. If the consultant encounters during the site investigation any individuals knowledgeable of site history, operation, and type of wastes disposed of, their names should be forwarded to the NYSDEC for possible interviews.

TASK 2

Site Reconnaissance/Air Monitoring:

A site visit was conducted on September 11, 1990 by NYSDEC and NYSDOH personnel. The old dump was completely covered, well graded, and vegetated. On the north end there is now an above grade fuel storage tank yard owned by Sharon Oil. On the front midsection of the old dump there is now a small heliport (pad). The slopes on the west and north end are very steep, with some exposed debris. No leachate or leachate staining was observed although the entire slope could not be walked due to heavy plant growth. A couple of apparently empty drums were noted on the west slope. No odors were detected. An unvegetated, slumped area was discovered on the southwest side of the old dump. No odors were detected. The wetland (regulated) to the west and north contained standing water draining to the north then east. Ducks and one blue heron were observed. See site sketch and photo log for further details.

A site visit will be conducted by the consultant's representatives to confirm stated conditions, determine ease of equipment access, and perform air monitoring. This should be no more than a one (1) day effort.

TASK 3

Geophysical Survey - The objectives of this task is to conduct an adequate survey over the dump to assist in defining the boundaries of the

dump and to locate possible clusters of buried metallic drums which may contain industrial hazardous waste. The data obtained from this task will be used to determine the need for and locations of soil gas probes and the need for and locations of test trench excavations. The area to be surveyed must include the entire dump surface including, as practical, the side slopes (but excluding the Sharon Oil fenced area), the small peninsula area to the north of Sharon Oil (to determine whether this is a fill area as well), and the lane at the south end of the site which leads to the reported drum disposal area. The total area to be grid surveyed is approximately six acres. The survey technique should be able to estimate the depth of any possible cluster of metallic objects which may be present with the estimated fill depth understood to be 30-40 feet. There is basically no surface metal in the area to be surveyed which might cause interference. The slumped, unvegetated area in the southwest portion of the dump must receive particular attention. The consultant must propose to NYSDEC a geophysical survey method which will be able to accomplish the stated objectives. All geophysical data must be reduced by the consultant, analyzed, and made available to the NYSDEC site manager with recommendations for the need for and locations of follow-up soil gas probes.

Soil Gas Survey: A soil gas survey will be performed by the consultant. The purpose of the survey is to help define the nature of any contaminants and select possible test trench locations. An area of particular interest is the unvegetated, slumped area on the southwest side of the dump. Five probes should be installed in this area with a 50 foot spacing. The locations of the remaining probes will be determined based on the results of the geophysical survey and other information collected. See Figure 3. A maximum of twenty survey points will be adequate.

Shield points should be placed at 4' - 6' depth and below the cover material. All samples will be analyzed for volatile organics (see attached list 1). A field GC analysis with multiple detectors (PID, FID, ECD/ELCD) is required. The consultant shall provide a map of the site indicating soil gas survey station locations and an isopleth map (concentration gradient) indicating total volatile organics and individual compounds, if practical. The soil gas sampling stations will be mapped to determine relative location to a site specific datum.

Test Trenches: This sub-task will first involve conducting an adequate magnetometer or EM-31 survey to locate possible buried drums. The areas(s) to be excavated will be determined based on data collected during the geophysical survey and the soil gas survey and from other information collected. The slumped, unvegetated area in the southwest corner of the site may be an area requiring excavation. The consultant is to provide recommendations to the NYSDEC site manager for possible test trench excavation locations.

For areas determined to have subsurface anomalies similar to drums, or areas selected from data collected during the soil gas survey, or areas selected from other information, three test trenches will be excavated to a maximum depth of twenty-five (25) feet and with a horizontal area as required in the field. For costing purposes this sub-task can be expected to take a maximum of two days which does not include mobilization/demobilization time.

For costing purposes, up to six (6) drums or waste masses will be sampled if encountered (2 samples per excavation) and containing apparent industrial waste. Each sample is to be analyzed for full TCL organics and metals, full EP Toxicity analysis, reactivity, corrosivity (pH), and ignitability. This should allow for a hazardous waste determination. There is to be no compositing of samples. Trenches must be backfilled and graded level after sampling. Continuous standard monitoring for organic vapors, lower explosive limit, and radiation levels is to occur.

As an alternative to sampling from a third trench excavation, two waste samples are to be collected from any exposed drums that may be encountered on the dump's banks which contain apparent industrial waste.

Environmental Sampling and Analysis

Air: Air monitoring (to include a site reconnaissance for confirmation of site conditions noted in work plan), consisting of a perimeter survey with a photoionization detection (PID), e.g., HNu instrument and a flame ionization detector (FID), e.g., OVA shall occur upon arrival at the site. A survey within the boundary of the site shall follow the perimeter survey. This air monitoring is separate from monitoring that is part of the health and safety plan. If a source of air contamination is identified, the air will be sampled using appropriate equipment to determine the nature and concentration of the contaminant.

Upwind air samples will also be analyzed at the same time. Wind direction must be continuously monitored and documented during any sampling and analysis of air samples. The intent of the air sampling is to determine whether or not there is an air release from the site and not to do a health assessment.

Surface Water: To determine possible off-site impact, five (5) surface water samples will be collected from locations identified on Figure 3. The samples will be analyzed for Target Compound List (TCL) metals, cyanide and organics using 1989 NYSDEC ASP. The PCB analysis method must have a detection limit at or near the Class C waterbody standard (0.001 ppb-aquatic).

Sediment: Five (5) sediment samples will be collected from the same locations as the surface water samples. They will be analyzed for TCL metals, cyanide and organics using 1989 NYSDEC ASP.

Leachate: Up to three (3) leachate samples will be collected from up to three (3) seeps if available under the direction of the NYSDEC representative or the consultant field representative. They will be analyzed for TCL metals, cyanide and organics using 1989 NYSDEC ASP.

Soil: The primary intent of this soil sampling is to confirm and determine the extent of on-site soil PCB contamination. Twenty (20) soil samples are to be collected from various area on the site as follows: two samples each at the locations of USEPA contractor NUS's sample locations designated NY66-S1, S2, S3, and S4. The samples should be spaced approximately five feet apart. Ten additional samples should be collected approximately every fifty feet along the base of the western slope of the dump beginning at the northern fence line of the Sharon Oil property.

These samples must be collected at the base of runoff drainage swales and focus on areas of stained soil or pronounced odors. The remaining two sample locations will be determined in the field based on the results of the initial soil sampling results to fill in data gaps as needed. All soil samples must be collected from a depth of 0-6 inches.

All twenty soil samples must be analyzed for TCL PCBs by a mobile laboratory on-site. The use of the mobile laboratory will allow for a short turn around time in obtaining sample results which will allow for adjustments to the sampling program, if necessary. In addition, ten (10) of these soil samples with obvious hydrocarbon contamination should be analyzed for TCL volatile organic compounds by the mobile laboratory. This combination of PCB and VOC analysis will allow for the screening of relatively dirty samples and possibly assist in determining the source of the PCB contamination. Appropriate quality assurance samples should be analyzed by the mobile laboratory as well.

Finally, two soil samples from sample locations which displayed the highest PCB contamination are to be collected (SL-1 and SL-2). One additional soil sample each must be collected from the bare, unvegetated spot in the southwest portion of the site (SL-3) and in the reported drum disposal area (SL-4). Obvious stained or discolored soils should be sampled. These four samples are to be sent to a fixed laboratory for full TCL organic (includes PCBs), metals, and cyanide analysis by 1989 NYSDEC ASP. EP Toxicity analysis is not required on these samples at this time.

All samples taken for chemical analyses shall be delivered to the laboratory within 24 hours of their collection. Express courier service shall be used to transport the samples, unless the laboratory is close enough to the site for the consultant to make direct delivery.

Table 3 summarizes the analysis to be performed at the Amenia (T) Dump site. Type of sample, number of samples and analysis methods are included.

Where dilution of any Phase II sample is to be done by the chemical analytical laboratory prior to analysis, NYSDEC is to be advised immediately. The concern is that a component of low concentration, but of significant environmental impact, could become so diluted that its presence in the final extract will not be detected.

During this contact, the NYSDEC chemist will discuss alternatives with the laboratory's chemist on how best to conduct the analysis. NYSDEC chemist is Mr. John Rankin, telephone (518) 457-3252.

Although a method or extra work may be agreed upon by both chemists, clearance for any extra cost must be obtained by the consultant from the NYSDEC contract manager. Such cost will be paid from the contingency amount in the contract, and clearance must be confirmed by NYSDEC in writing.

The consultant shall provide an estimate of the cost for sub-contracting the task of reviewing the raw data QA/QC documents by an independent laboratory not involved with the Phase II investigations under this contract.

Preliminary Report:

At the conclusion of Task 3, the consultant is to prepare a report presenting their findings to date. The consultant must properly present and compare environmental sampling data to relevant standards or guidelines. The presence of hazardous waste must be discussed as well. A recommendation to classify or delist the site or proceed with a groundwater monitoring program should be made.

TASK 4 (The consultant will proceed with Task 4 only if directed to do so by the NYSDEC)

Test Boring and Well Installations: Monitoring wells will be installed to provide data pertinent to both water chemistry and characterization of the stratigraphy and groundwater regime at the site. Finalized well locations will depend on (1) the utility search in order to avoid underground obstacles, (2) accessibility and (3) prior field survey results. This decision will be made jointly in the field by the consultant's field geologist and NYSDEC representatives.

A HNu (or OVA) a MSA (LEL, O₂, TOX), and a dosimeter must be used during all boring activity. A magnetometer must be used to screen for buried metallic objects at each boring location.

Well MW-1 will be installed at a presumed off gradient location, to the southwest of the landfill. This well should provide representative samples of the groundwater flowing into the area. An alternative location for an upgradient well could be on the opposite side of the swamp, approximately 200 yards to the west of the site.

Three monitoring wells will be required to monitor downgradient flow directions and water quality. These wells will be installed at the approximate locations shown in Figure 3. These locations should provide an opportunity for interception of any contaminant plume.

All monitoring wells will be installed so as to sample from the saturated zone of the overburden. The monitoring well screens must be placed at the top of the water table. If sufficient water is not present, then the bedrock aquifer will be monitored. For costing purposes, assume a maximum of 40 feet of boring per well. All monitoring wells will be constructed as specified in Figure 4 (or Figure 5 if bedrock well). Ten (10) foot PVC well screens (0.010" slot) should be utilized.

Stainless steel bolt-on centralizers (1 per well) with stainless steel bolts must be used at the base of each screen. This should aid in obtaining plumb alignment for the wells and that the sandpack is of uniform thickness. A minimum three inch 3" open borehole is required if the bedrock aquifer is monitored. Supportive casing used in advancing the borehole must be removed, once the wells have been constructed.

The following is the required procedure for forming the monitoring well seal, if it is to be located in the unsaturated zone and is not visible from the ground surface (approx. 5 ft.).

1. A pure bentonite/water slurry should be introduced first if the seal is to be located in the unsaturated zone. This slurry must be introduced with a side delivery tremie pipe.
2. One quarter inch diameter bentonite pellets should then be introduced in a volume at least equal to the slurry. Sufficient time should be allowed for the pellets to hydrate per manufacturer's directions. If the manufacturer's specification is unavailable, then adequate potable water must be introduced to allow for proper hydration.
3. After sufficient time has elapsed, a measurement must be made to determine that the seal is at least two feet in thickness.
4. The annular space can then be grouted to the surface.

Borings will be advanced through the overburden or bedrock by rotary (4 1/4" I.D. hollow stem augers are satisfactory in the overburden), or cable tool rigs. Split spoon sampling should be done at five (5) foot intervals in the unsaturated zone of the overburden and continuously in the saturated zone of the overburden. Three (3) - five foot core samples are required once bedrock is encountered. This sampling should be done in accordance with the NYSDEC-Division of Hazardous Waste Remediation Phase II Well Construction Guidelines. Soil samples will be classified in the field by a field geologist, engineer or adequately experienced technical staff. A grain size analyses or Atterberg limits tests will be performed at every significant change in subsurface lithology, as well as one such analysis in the screened interval. For costing purposes, it will be assumed that a total of fifteen (15) grain size analysis or Atterberg limits tests will be performed. All work will be done in accordance with the Generic Work Plan, Exhibit 1, and Guidelines for Exploratory Boring, Exhibit 3 of this contract (Schedule 4).

Permeability testing, (a slug test), will be done for each well. Groundwater elevation readings will be taken in each well before and immediately after development. Each well will be developed as soon as its recovery is completed, but no sooner than 24 hours. Each well will be developed to the point that the turbidity of the recovered well water is 50 Nephelometric Turbidity units (NTu) or less. A nephelometer will be brought to the field for purpose of making this measurement. A signed statement will be provided to the Department that the turbidity was less than 50 NTu for each well immediately after development if a Department representative is not present when the measurements are taken. If the above criteria is not met within two (2) hours, well development must cease, and the NYSDEC representative contacted to determine how to proceed. For costing purposes, allow four (4) hours for well development per well.

Survey: To allow for accurate water level measurements, each of the well elevations will be determined relative to a USGS datum. If a USGS datum is not within 200 feet of the site, the elevation measurements will be made relative to a site specific datum. Elevation measurements will be made to the top of casing to the nearest 0.01 foot and the ground surface adjacent to the well to the nearest 0.1 foot. Preliminary measurements may also be made when necessary to assist in placement of downgradient wells.

All surficial sampling points, significant site features, property lines and owner(s) must be shown on the final site map but are not required to be located by a licensed surveyor.

Groundwater Sampling: Groundwater from the four (4) wells identified in Table 2 will be analyzed for Target Compound List (TCL) metals (including cyanide) and organics, using the 1989 NYSDEC ASP. The PCB analysis method must have a detection limit at or near the Class GA groundwater standard (0.1 ppb-health). Dedicated tubes, hoses, and line will be provided for development and sampling of each well. Bailers will be decontaminated as required in the QA/QC plan.

TASK 5

Final Report Preparation

Report preparation will involve analysis of the data, as well as preparation of the text. Included in this task are the compilation and organization of the data, editing of boring logs, reduction of hydrologic data, preparation of graphical representations, analysis, calculations, and preparing a HRS score for the site. The report shall follow the format detailed in the Generic Phase II Work Plan. Four copies of the draft report shall be submitted. After review by NYSDEC, any corrections are to be made by the consultant and 14 copies of the final report are to be submitted. Draft and final reports must bear the stamp of a professional engineer in accordance with Article 49 of the contract.

ADDITIONAL TASKS LISTED IN TABLE 1

COST ESTIMATE

The estimated manhours required for the Phase II project are presented in Table 4 and the estimated project costs by tasks are presented in Table 5 (completed by NYSDEC consultant).

HEALTH AND SAFETY PLAN

The site-specific Health and Safety Plan will be submitted by the consultant as a separate document. At this time, we anticipate Level D health and safety gear will be required.

If, during the investigation, it is determined that the level of protection should be upgraded, the consultant shall be ready to employ the appropriate equipment and NYSDEC shall be immediately notified.

QUALITY ASSURANCE PLAN

The QA requirements for the Phase II investigation must be addressed. Sample control forms attached to the amendment (of the contract) as Exhibit 1 must be supplied to the analytical laboratory for completion and inclusion with the data package. The Quality Assurance Plan will be submitted as a separate document.

Table 1
Phase II Work Plan - Task Description
Old Amenia Dump Site

<u>Task</u>	<u>Tasks</u>	<u>Description of Task</u>
1	Conduct Records Search/Data Compilation	Update Phase I as necessary
2	Site Reconnaissance/Air Monitoring	Confirmation visit and document possible air release
3A	Geophysical Survey	Grid survey to detect possible buried metallic drums
3B	Soil Gas Survey	20 soil gas samples collected on site. Results to be identified on a map prepared by the consultant.
3C	Test Trenches	Three test trench excavation and waste sampling from drums if encountered. Continuous monitoring.
3D	Perform Sampling and Analysis	See text and tables 2 and 3.
	1989 NYSDEC ASP QA/QC documentation	To be reviewed by an independent subcontractor
3E	Task 1-3 Report	See text.
4A	Conduct Boring/Install Monitoring Wells	Complete four boring and install four monitoring wells if requested by NYSDEC
	Soil samples from borings	Soil samples collected at 5-ft. intervals, during drilling and at changes in subsurface lithologies. Perform grain size analysis, Atterberg limits and permeability tests as specified in the test.

Table 1 (cont'd)

4B	Survey	By licensed surveyor in accordance with Section C.10 of Exhibit 3, Schedule 4 of contract.
4C	Groundwater Sampling	See text and Tables 2 and 3
5	Report Preparation	Prepare final report containing pertinent previous report information and data, additional field data, final HRS and HRS documentation records if requested by NYSDEC, and site assessments with recommendations for any future action at site, and in accordance with Article 49.
6	Project Management	Project coordination, administration and reporting.

Table 2
Phase II Work Plan - Sampling Summaries
Old Amenia Dump Site

<u>Designation</u>	<u>Location Rationale</u>	<u>Aquifer/layer Screened</u>	<u>Approx. Boring Depth (ft.)</u>	<u>Length of Screen(ft)*</u>
<u>Groundwater</u> (Contingent Task)				
GW-1	Upgradient	Overburden	40 max.	10
GW-2	Downgradient	"	40 max.	10
GW-3	"	"	40 max.	10
GW-4	"	"	40 max.	10

* minimum 3" open borehole if bedrock aquifer is to be monitored exclusively.

Soil Gas (by Mobile Laboratory)

SG-1 thru SG-20 As a follow-up to geophysical survey results

Surface Water and Sediment

SW-1 thru SW-5 See Figure 3 and text
SD-1 thru SD-5 See Figure 3 and text

Leachate

L-1 thru L-3 Where available

Soil (by Mobile Laboratory)

SS-1 thru SS-20 As a follow-up to USEPA results. See Figure 3 and text.

Soil (by Fixed Laboratory)

SL-1 and SL-2 As required for confirmation purposes.
SL-3 Bare spot
SL-4 Reported drum disposal area

Waste

W-1 and W-6 As encountered

Air

Use of appropriate equipment to determine the presence of volatile organics and their potential release from the site.

NOTE: Locations, aquifer screened, approximate boring depth listed are based on existing data. These criteria may change based on the results of the geophysical surveys, soil gas survey and/or field conditions.

Table 3

NYSDEC - Chemical Analyses - Old Amenia Dump Site

Type of Sample	Type of Analyses ^{(1)*}				
	TCL ⁽²⁾ Metals	TCL ⁽³⁾ Volatiles	TCL ⁽⁴⁾ Semi- Volatiles	TCL ⁽⁵⁾ Pesticides/ PCBs	Matrix Spike/ Duplicate ⁽⁶⁾
Groundwater ⁽⁷⁾	5	5	5	5	1/1
Surface Water	5	5	5	5	1/1
Sediment	5	5	5	5	1/1
Leachate	3	3	3	3	1/1
Soil ⁽⁹⁾	---	10	---	20	---
Soil ⁽¹⁰⁾	4	4	4	4	1/1
Drums/Waste ⁽⁸⁾	6	6	6	6	---
Trip Blank	---	2	---	---	---
Field Blank	2	2	2	2	---

- (1) Complete identification per NYSDEC Generic Work Plan, Section 3(b)(ii)(B). Field pH, conductivity and temperature measurements will be conducted on all water samples.
- (2) TCL Metals - Preparation and analysis of the 15 Task 1 and 9 Task 2 inorganic compounds using the specified 1989 NYSDEC ASP methods. Includes cyanide analysis.
- (3) TCL Volatiles - Preparation and analysis using the 1989 NYSDEC ASP specified GC/MS method for TCL purgeable organics plus a library search for and the quantification of any additional non-TCL compounds (the 1989 NYSDEC ASP requires the library search only for the 10 non-TCL compounds of largest apparent concentration).
- (4) TCL Semi-Volatiles - Preparation and Analysis using the 1989 NYSDEC ASP specified GC/MS method for TCL Extractable Base/Neutral and Acid Organic compounds plus a library search for and the quantification of any additional non-TCL compounds (the 1989 NYSDEC ASP requires the library

search only for the 20 non-TCL compounds of largest apparent concentration).

- (5) TCL Pesticides/PCBs - Preparation and pre-extraction of the TCL organochloride pesticides and polychlorinated biphenyls using the 1989 NYSDEC ASP specified GC-ECD method. The surface water and groundwater samples PCB analysis method must have a detection limit at or close to the appropriate standard.
 - (6) 1987 NYSDEC ASP requires at least one spiked sample analysis and one duplicate sample analysis from each group of samples of a similar matrix type for each case of samples or for each 20 samples received, whichever is more frequent.
 - (7) The reason for one (1) additional groundwater sample is that a duplicate groundwater sample must be obtained from a monitoring well chosen at random (or some other medium if wells are not available). That duplicate sample must not be identified as a duplicate to the laboratory, but must be assigned an identifier similar to other groundwater samples. The Bureau requires the blind analysis of a duplicate sample for each site by the laboratory to confirm the integrity of all sampling and analytical activities.
 - (8) Samples will also be analyzed for full EP Toxicity, Corrosivity (pH) Reactivity and Ignitability to determine if they are a characteristic hazardous waste.
 - (9) Samples must be analyzed by a mobile on-site laboratory with appropriate QA/QC procedures followed.
 - (10) Are to be analyzed by a qualified analytical laboratory by 1989 NYSDEC ASP.
- Designates that no samples are to be analyzed.

Site Coordinates:

Latitude: 41° 49' 38.9"

Longitude: 73° 33' 47.1"

OLD AMENIA (T) LANDFILL #314006

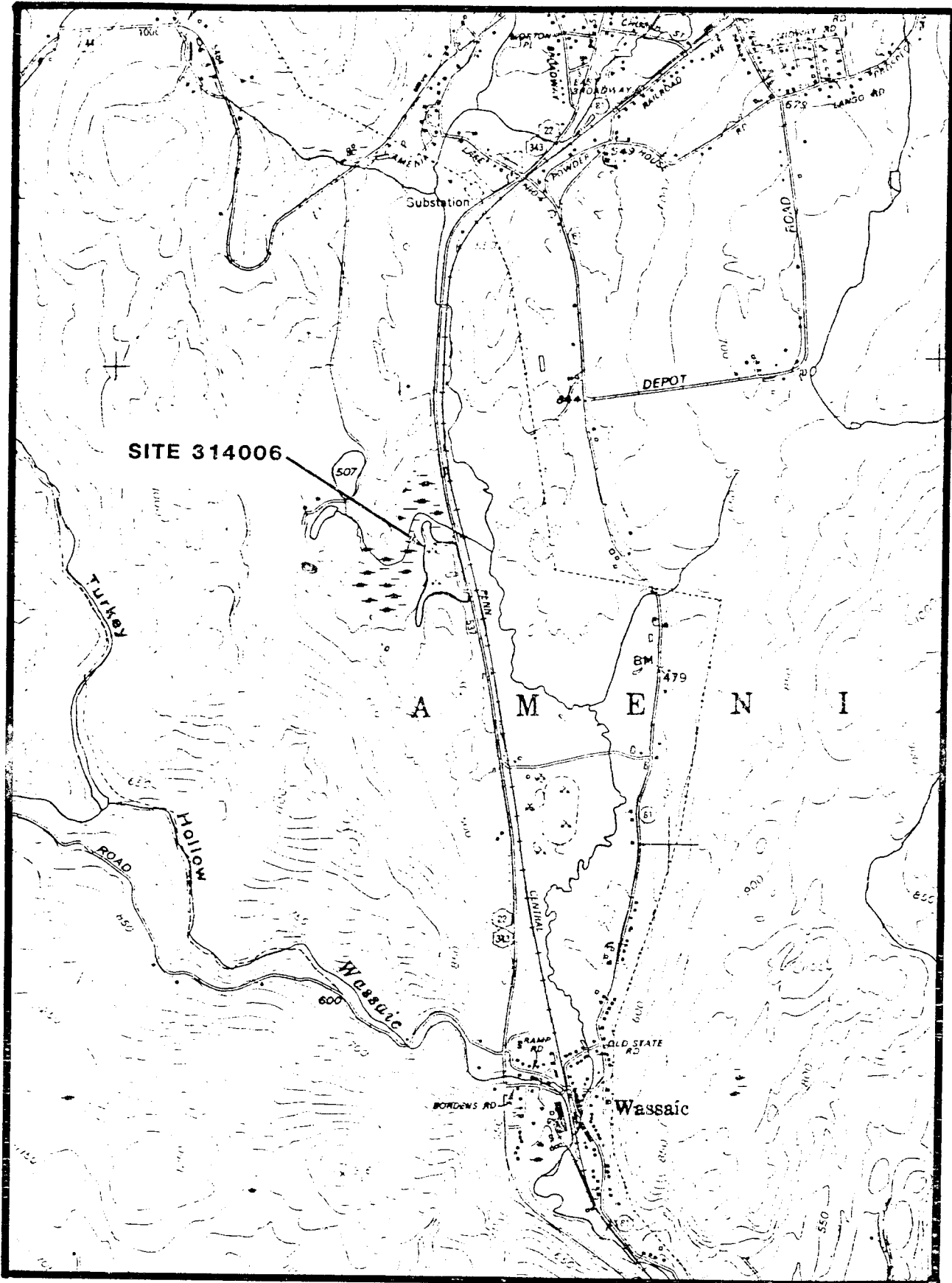
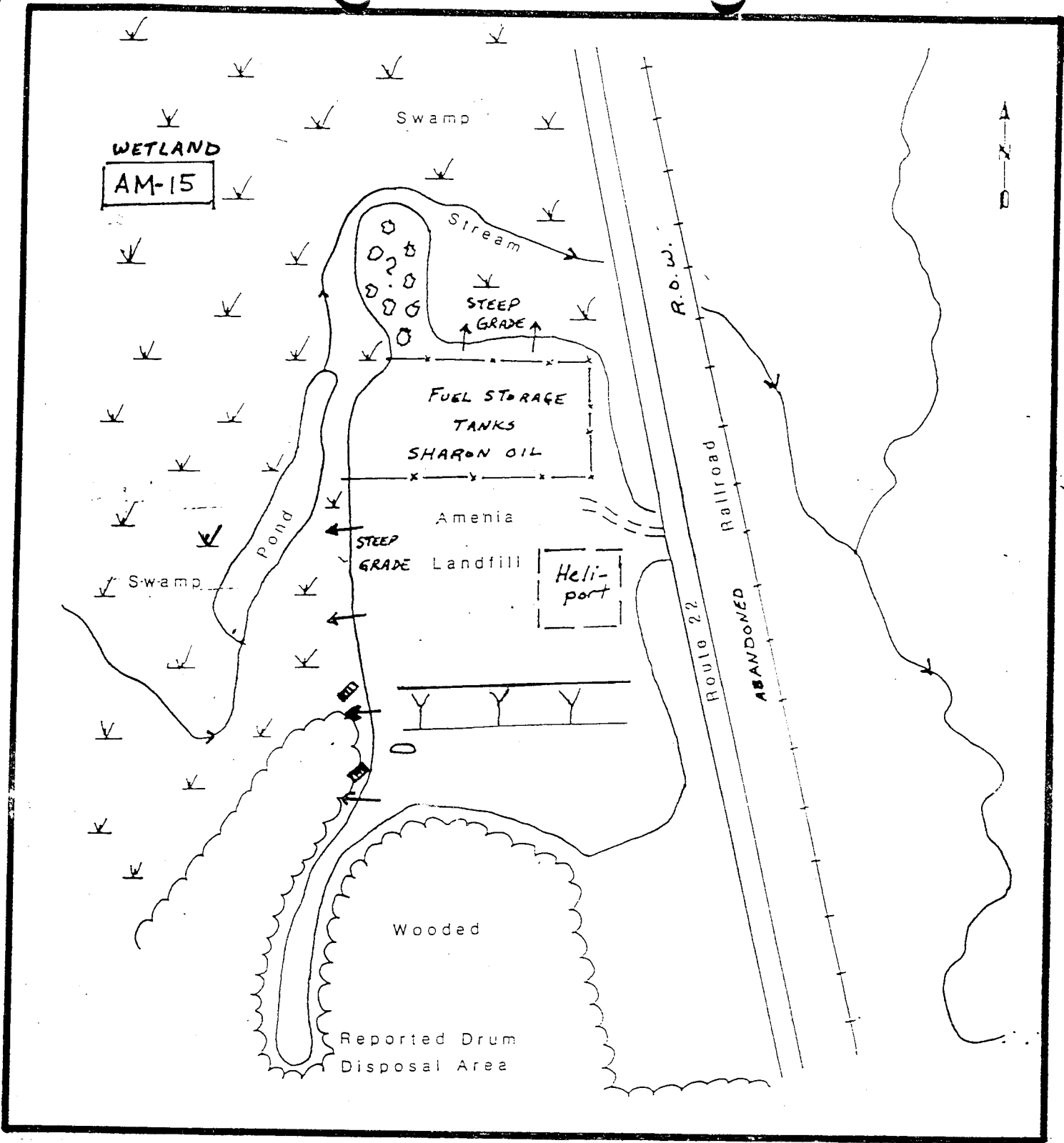


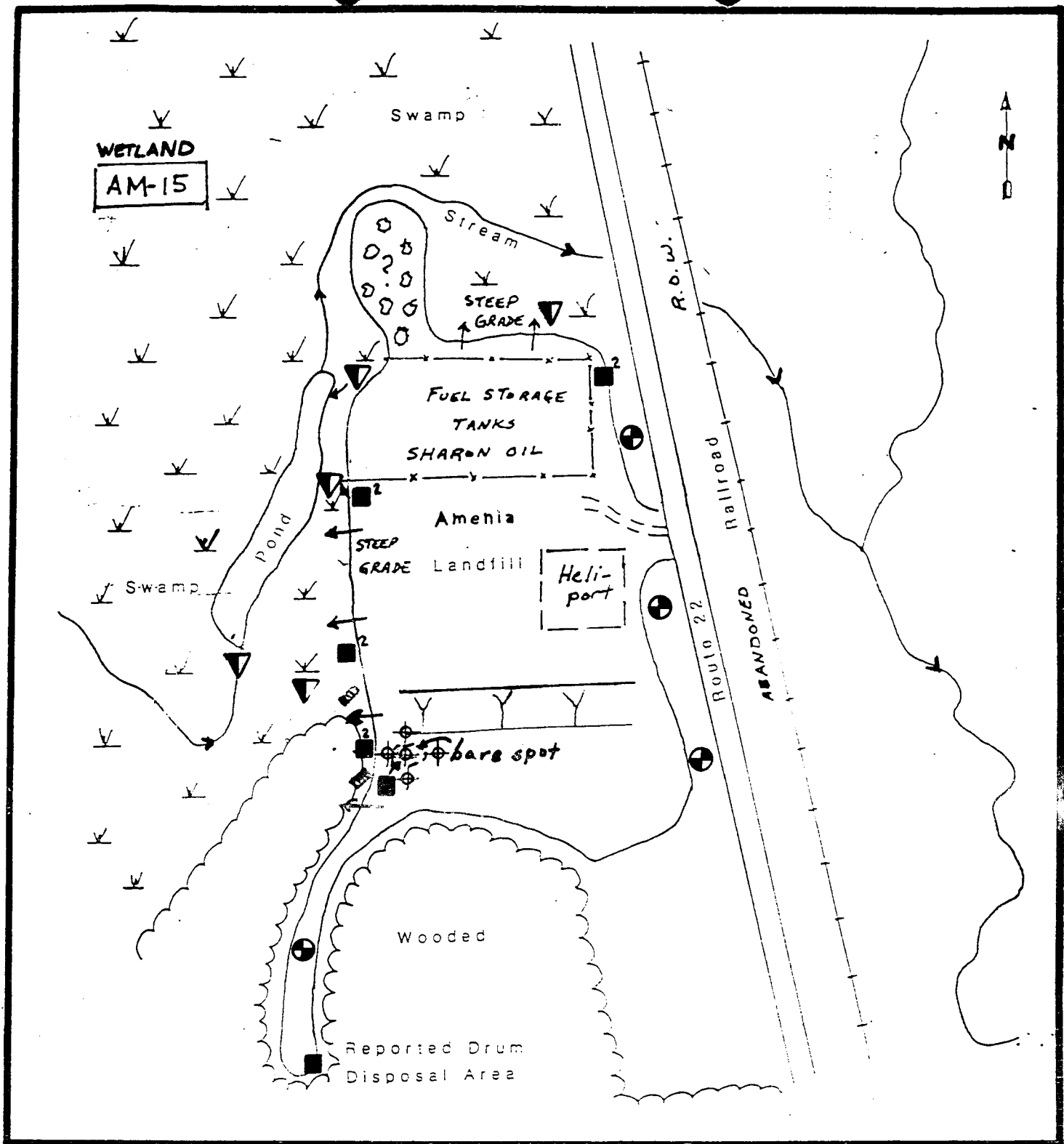
Figure 1... Locator map (Base map: NYSDOT, 1973.
7.5-Minute Series Topographic. Scale 1:24,000).

AMENIA QUAD



OLD AMENIA (T) LANDFILL # 314006

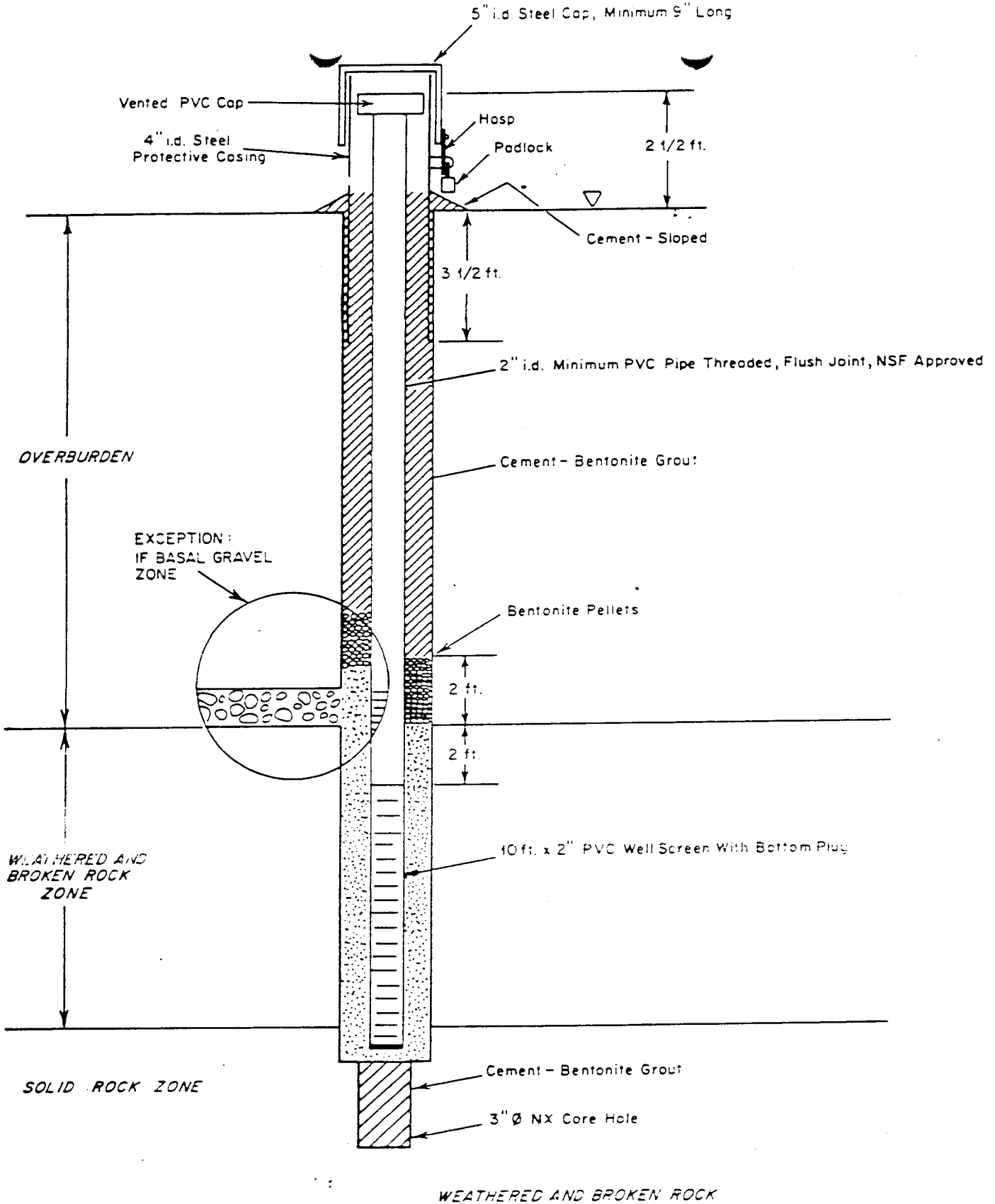
Figure 2 . Site sketch.
(Not to scale)



OLD AMENIA (T) LANDFILL # 314006 .

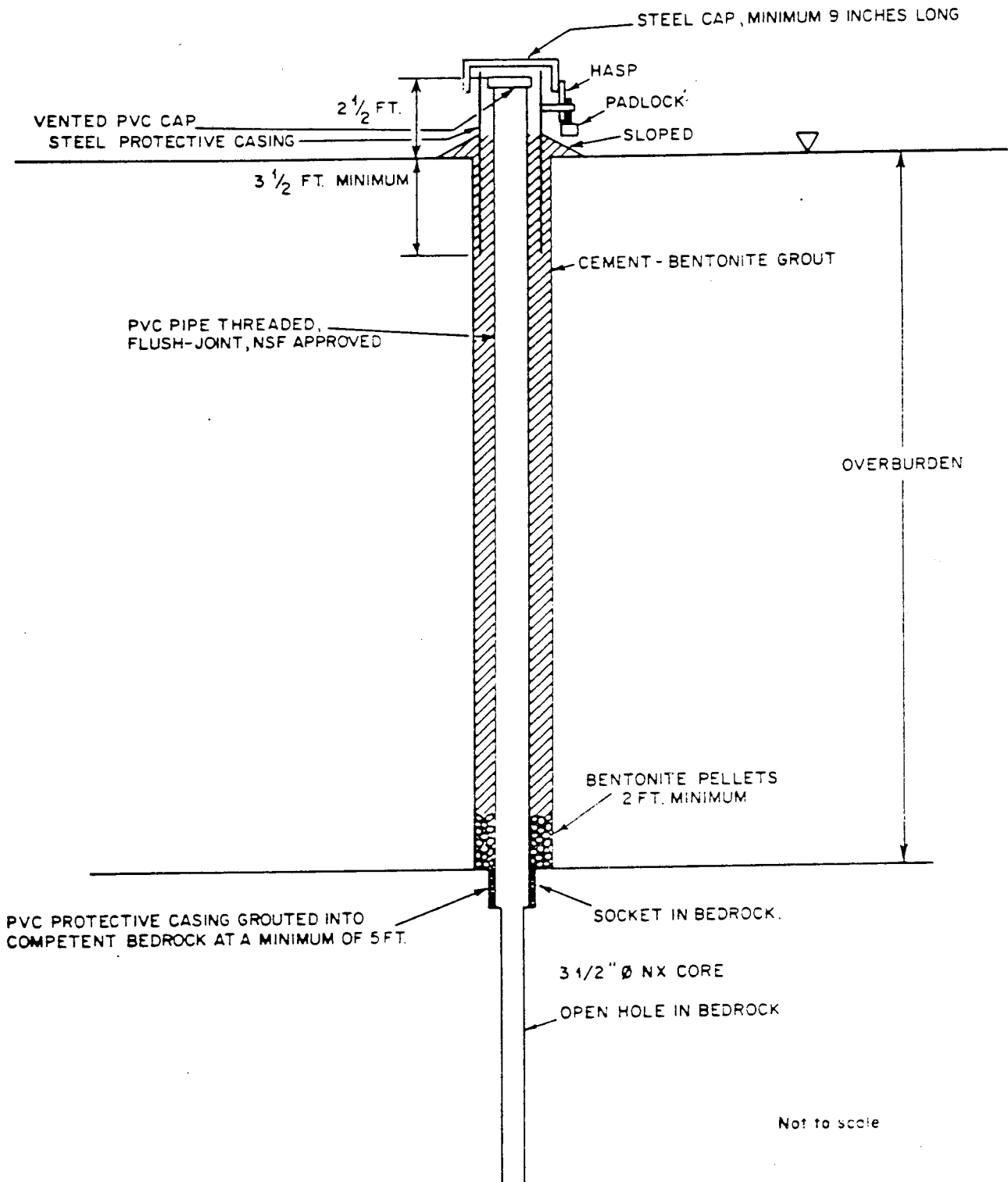
Figure 3 Site sketch.
(Not to scale)

- Soil sample location (2- two samples)
- Proposed Boring/Monitoring Well Location
- ▼ Surface Water/Sediment Sample Location
- ⊕ Proposed soil gas probe location

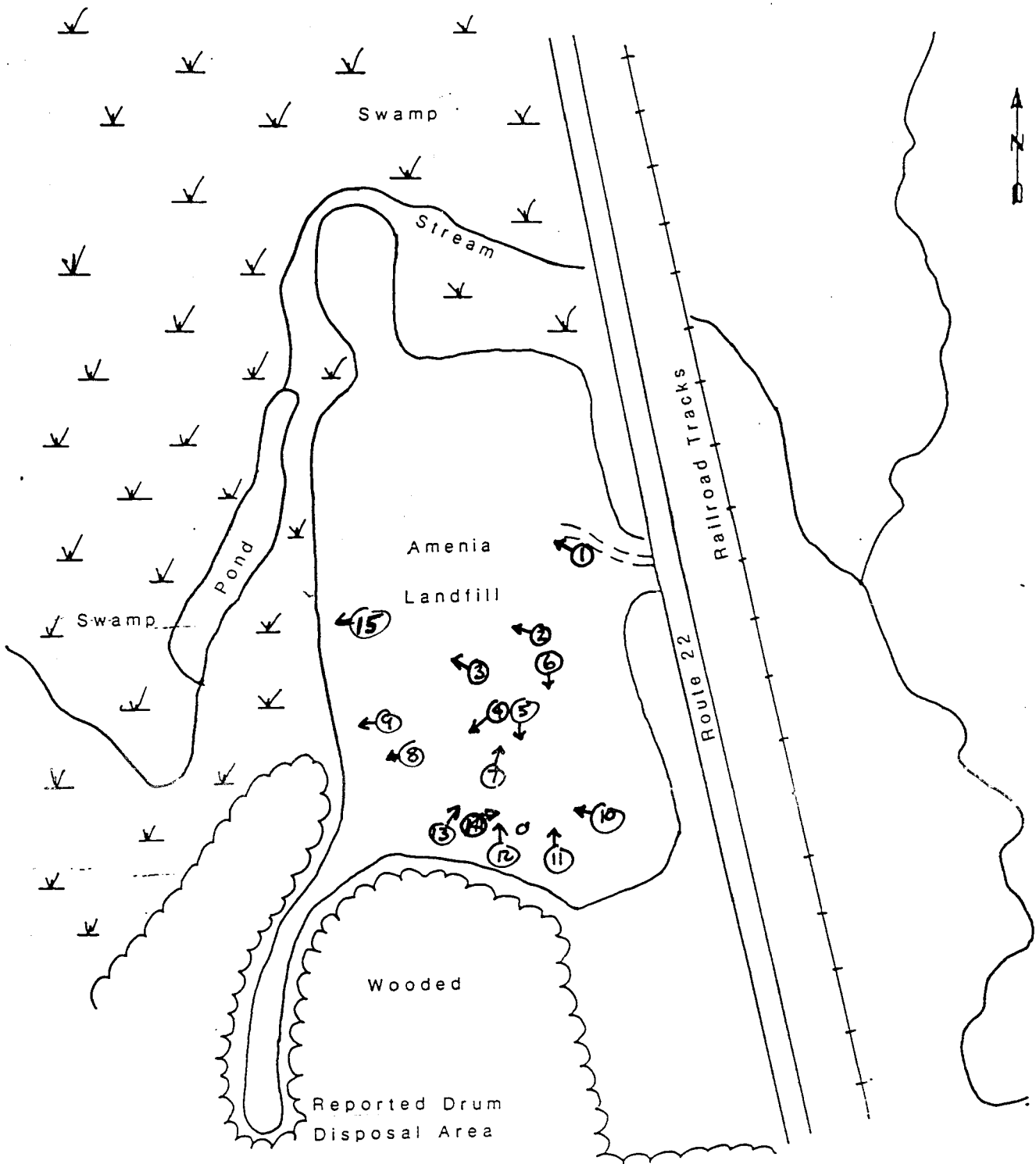


OVERBURDEN / BEDROCK INTERFACE WELL

FIGURE 4



BEDROCK WELL
 FIGURE - 5



314006

Figure 1-2. Site sketch. Amenia-Route 22, South site, [REDACTED]
(Not to scale).

9-11-90 SITE VISIT
PHOTO LOG