5.

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES

PHASE II INVESTIGATION

Lancaster Reclamation Site No. 915069
Town of Lancaster Erie County

New York State
Department of
Environmental Conservation
50 Wolf Road, Albany, New York 12233
Thomas C. Jorling, *Commissioner*

Division of Hazardous Waste Remediation
Michael J. O'Toole, P.E., *Director*

By:

ENGINEERING-SCIENCE

ENGINEERING INVESTIGATIONS AT INACTIVE HAZARDOUS WASTE SITES IN THE STATE OF NEW YORK
PHASE II INVESTIGATIONS

LANCASTER RECLAMATION
NEW YORK STATE SITE NUMBER 915069
TOWN OF LANCASTER
ERIE COUNTY, NEW YORK STATE

Prepared For

DIVISION OF HAZARDOUS WASTE REMEDIATION
NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
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064133

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EXECUTIVE SUMMARY

SITE BACKGROUND

The Lancaster Reclamation site is located nine miles east of Buffalo, New York at 403 Pavement Road, in the Town of Lancaster, Erie County, New York. A Conrail right-of-way borders the site on the south. Pavement Road forms the west boundary and Walden Avenue is located a short distance north of the property. The site is shown on the U.S.G.S. Clarence, N.Y. 7 1/2 minute quadrangle map (Figure I-1).

The site is owned and operated by the Lancaster Reclamation Company, who formerly used the site for disposal of industrial waste. Among the waste materials known to have been disposed at the site are:

- a bentonite sludge in a 90 percent water mixture;
- a foundry sand slurry containing fine sand, bentonite, metal oxides, coke ash and carbon;
- a slurry containing cement, asbestos and glass fibers;
- dust from a shot blast collector system;
- wall paper production waste containing print waste, prepaste alkali and prepaste polymer, and;
- oil sludges from a bus garage catch basin.

The wastes were dewatered by evaporation and placed into disposal cells excavated into the on-site soils. Waste disposal at the site took place between 1976 and late 1983. Waste disposal at the site ended when New York State Department of Environmental Conservation (NYSDEC) requested additional groundwater monitoring data as a condition for renewal of Lancaster Reclamation's operating permit.

PHASE II INVESTIGATION

The Phase II field investigation began with electrical resistivity and magnetic surveys to define the site geologic conditions and to attempt to identify the presence of potential conductive contaminant plumes. Seven overburden groundwater monitoring wells were subsequently installed. Surface water, groundwater, and sediment sampling and analysis, and air monitoring were conducted to determine the presence of hazardous substances at the Lancaster Reclamation site.

SITE ASSESSMENT

The geologic stratigraphy of the site can be summarized as up to 8 feet of fill over 56 to 73 feet of unconsolidated glacial deposits over limestone bedrock. The glacial deposits consist of outwash sands, lacustrine clay, ice contact sand and gravel, and glacial till. The groundwater hydrology is complicated by the variability of the glacial deposits and previous excavations at the site. There are two water-bearing zones in the overburden of the Lancaster Reclamation site; an upper perched water table and a deeper overburden aquifer. The overburden aquifer occurs in the glacial till and glacial outwash units. Of the two water-bearing zones, the deep overburden aquifer is considered the aquifer of concern due to its comparatively greater yield, lateral extent and its potential use as a drinking water source. Seven monitoring wells were installed, and are screened in the unconsolidated glacial deposits. Wells GW-1B, 2B, 3B and 4B are screened near the top of bedrock (deep) and wells GW-1A, 3A and 5A are screened near the water table surface (shallow). Well GW-1A is the only well screened in the perched water table.

Water level elevations indicate that groundwater occurs at depths of 20 to 30 feet, and flow is to the west-southwest in the overburden aquifer. Under this condition, well GW-1B can be considered the upgradient location, and wells GW-2B, 3A, 3B, 4B and 5A as the downgradient locations. The disposal cells are located between the upgradient and downgradient wells.

Seven groundwater samples were collected from four deep wells and three shallow wells at the Lancaster Reclamation site and were analyzed for Hazardous Substance List (HSL) organic (volatile and semivolatile) compounds, metals and total halogenated organic compounds (TOX).

Eighteen HSL organic compounds were detected in the groundwater samples. Two compounds, bis(2-ethylhexyl)phthalate and di-n-octylphthalate, were present downgradient in the shallow and one deep well at concentrations in excess of three times the upgradient concentrations, indicating releases potentially attributable to this site. The concentrations of benzene and benzo(a)pyrene exceeded the applicable Class GA groundwater standards in one or more wells.

The first set of groundwater results indicated low concentrations of most HSL organic compounds, with the exception of well GW-5A, which had relatively high concentrations of seven volatile organic compounds (VOCs). Well GW-5A was subsequently resampled and analyzed for volatile organic compounds. Based on the latter results, only two VOCs were detected. Both compounds were present in laboratory blank samples and may be attributed to laboratory contamination. Based on the resampling results for GW-5A, the source and origin of the volatile organic compounds detected could not be determined, and their presence was not confirmed. The contrasting results may indicate movement of a plume has passed GW-5A during the time between sampling events.

Fourteen HSL metals were detected in the deep groundwater samples. The concentrations of eight metals in downgradient deep wells were in excess of three times the upgradient concentrations, indicating releases attributable to the site. The concentrations of three metals in one or more deep wells exceeded the applicable Class GA standards or guidance values.

Nineteen HSL metals were detected in the shallow wells. The concentration of zinc in downgradient shallow well GW-3A was in excess of three times the upgradient concentration, indicating a release attributable to the site. The concentrations of five HSL metals in one or more shallow wells exceeded applicable Class GA standards or guidance values.

The types and concentrations of metals present in the shallow and deep groundwater are consistent with the past use of the site. The types and concentrations of organic compounds present can, for the most part, be attributed to the former use of the site. In particular the presence of low concentrations of phenol and phenolic compounds may be attributed to the foundry sand disposed on-site. Phenolic binders may have been components of the foundry sand waste.

Four surface water and sediment samples were collected and analyzed for HSL organic compounds, metals and TOX. These samples were collected from the on-site pond or disposal cells. There was no suitable upgradient surface water location at the site, and no upgradient surface water samples were collected. The surface water results indicate the presence of six organic and eighteen inorganic hazardous substances. Since the surface water bodies sampled are confined to the site, it is unlikely that the site is impacting off-site surface water bodies.

Four sediment samples were collected from the same locations as the surface water samples, therefore upgradient comparisons are not available. However, the inorganic results can be compared to published, naturally-occurring ranges for soils in New York State and the conterminous United States. The samples were analyzed for HSL organic (volatile, semivolatile, pesticide/PCBs) compounds and metals. Twenty-one organic compounds and twenty metals were detected in the sediment samples. Antimony was detected in all sediment samples at concentrations in excess of the referenced naturally-occurring range for New York State soils. In one sample the concentration of cadmium was above the referenced naturally-occurring range for conterminous U.S. soils.

Air quality monitoring was conducted as a health and safety measure during the on-site field work. The concentrations of volatile organic compounds in the breathing zone did not exceed background levels during the field work.

HAZARD RANKING SYSTEM SCORE

In an attempt to establish the relative risk associated with this site, the Hazard Ranking System (HRS) was applied. As currently used by the NYSDEC, the HRS is employed to aid the evaluation of inactive hazardous waste sites in New York State. This system takes into account the types of wastes at the site, receptors, and transport routes to calculate a numerical score for the site. As stated in 40 CFR, Subpart H, Section 300.81, the HRS was developed for evaluating the relative potential of uncontrolled hazardous waste disposal facilities to cause human health or safety problems, or ecological or environmental damage. It is assumed by the EPA that a uniform application of the ranking system in each state will permit EPA to identify those releases of hazardous substances that pose the greatest hazard to humans or the environment.

Under the HRS, three numerical scores are computed to express the relative risk or danger from the site, taking into account the population at risk, the potential for contamination of drinking water supplies, for direct human contact, for destruction of sensitive ecological systems and other appropriate factors. The three scores are:

- S_M - reflects the potential for harm to humans or the environment by migration of a hazardous substance away from the facility by routes involving groundwater, surface water and air. It is a composite of separate scores for each of the three routes (S_{GW} = groundwater route score, S_{SW} = surface water route score, and S_A = air route score).
- S_{FE} - reflects the potential for harm from substances that can explode or cause fires.
- S_{DC} - reflects the potential for harm from direct contact with hazardous substances at the facility (i.e., no migration need be involved).

Based on the results of this and previous studies, the HRS scores for the Lancaster Reclamation site have been calculated as follows:

S_M = 16.51
S_{FE} = 0.0
S_{DC} = 25.00

S_{GW} = 28.57
S_{SW} = 0.0
S_A = 0.0

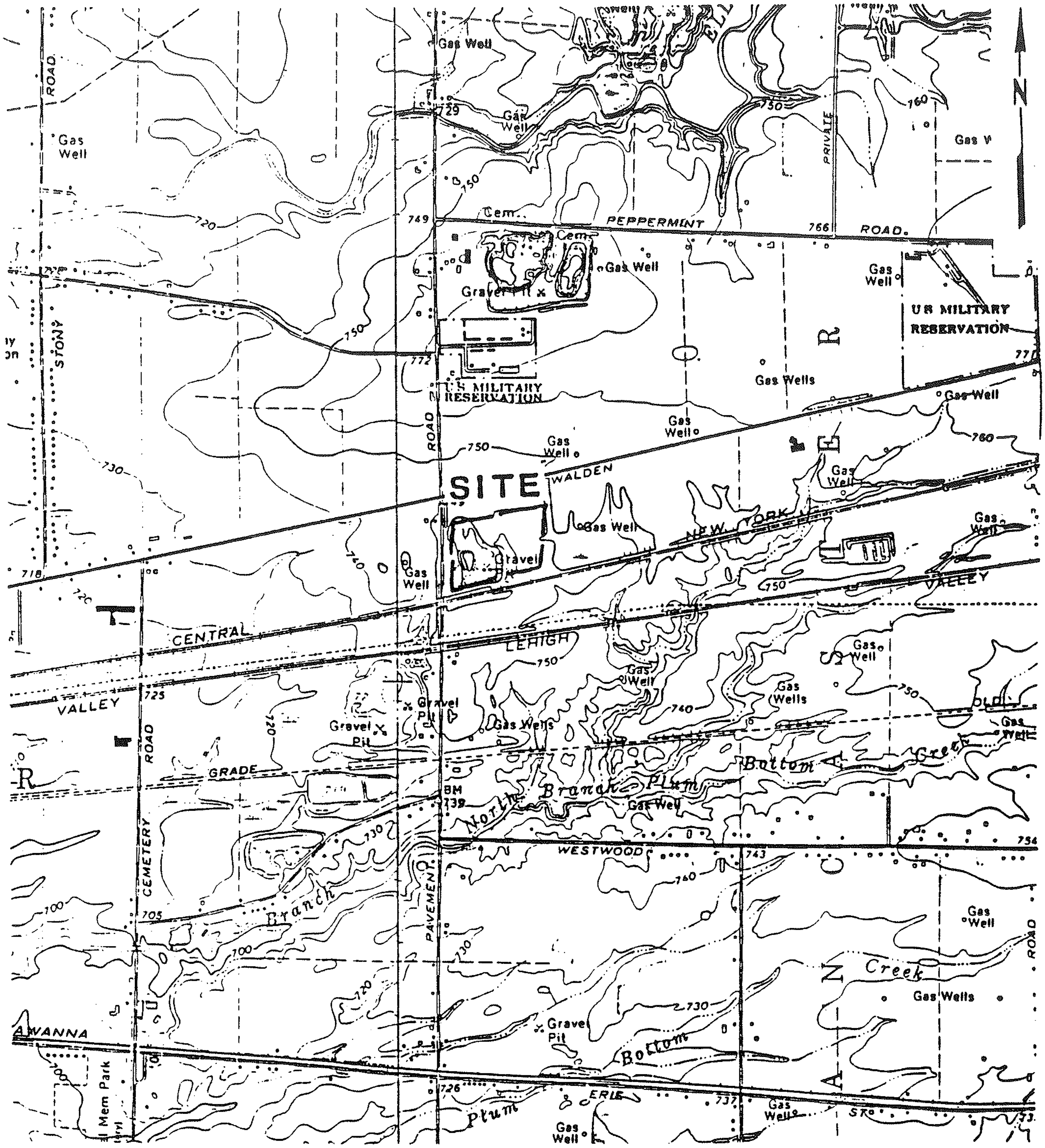
RECOMMENDATIONS

The groundwater results from this Phase II investigation indicate the Lancaster Reclamation site is impacting groundwater quality in the unconsolidated deposits. From an environmental protection standpoint, this situation should be addressed. Capping or covering the disposal cells may retard further releases of contaminants.

The impact of the contaminated groundwater on residential well users has been considered in this investigation, and is not anticipated to be significant. Only 27 homes that utilize groundwater have been identified within a 3-mile radius of the site; all of these appear to be hydraulically upgradient of the site. Both on-site and regional groundwater flow appear to be toward the west, while the identified private wells are all to the northeast, east, and southeast. The impact to these users could be determined with a higher degree of certainty by sampling the residential wells and nearby gravel pit and analyzing these samples for HSL volatiles and metals.

Aroclor 1254, a polychlorinated biphenyl compound, was detected in a sediment sample from one of the cells. Since this cell reportedly received no wastes, further sampling of sediments from this cell may be warranted to confirm that result.

If the recommended additional sampling results do not indicate a contamination problem, no action other than adequately covering the disposal cells would appear to be necessary at the Lancaster Reclamation site.



LATITUDE: 42°55'18"
LONGITUDE: 78°37'30"

SCALE
0 1000 2000 3000 4000 FEET

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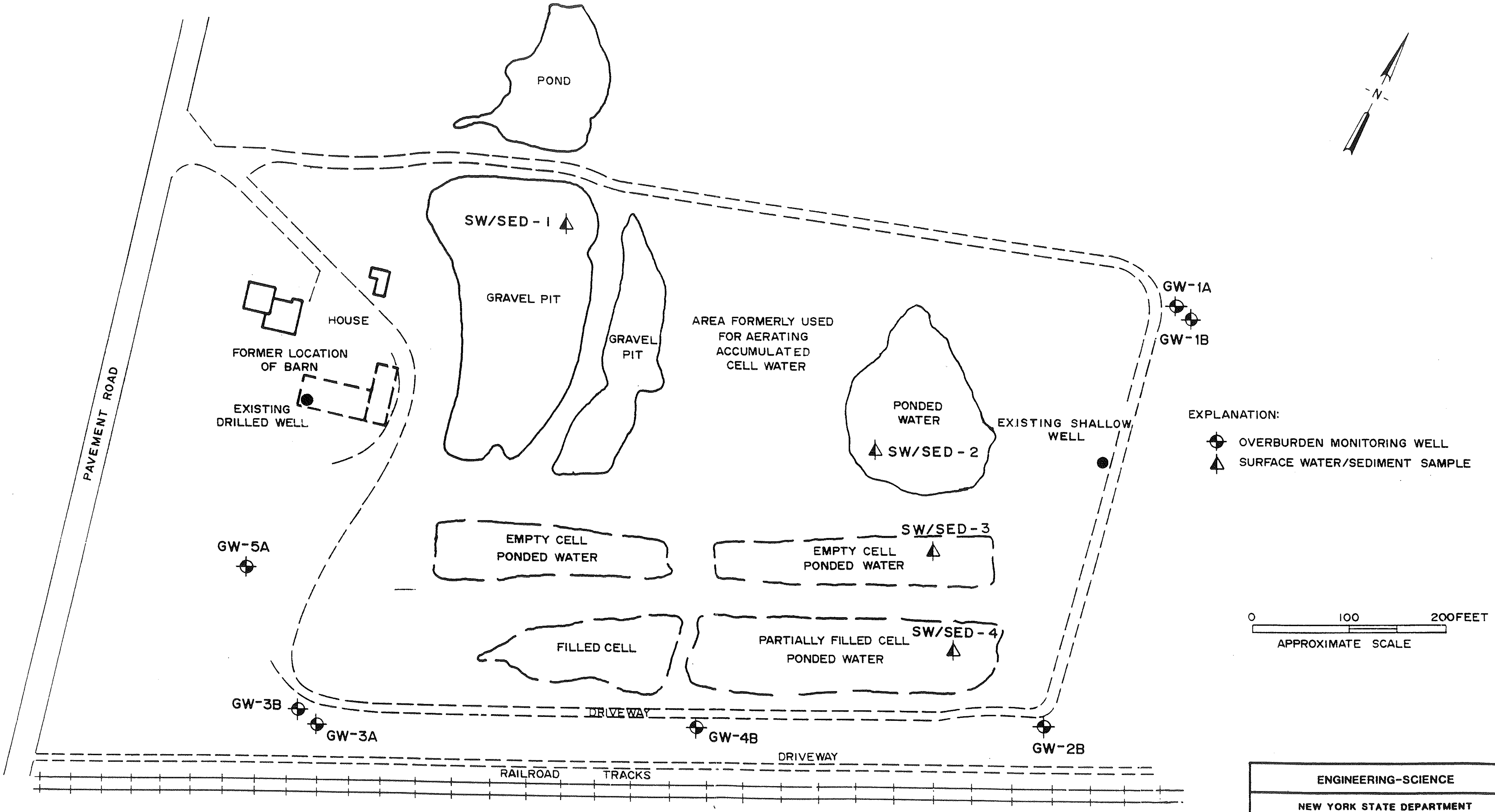
PHASE II REPORT

SITE LOCATION MAP

LANCASTER RECLAMATION

FIGURE I-1

REFERENCE: U.S.G.S. 7.5' Topographic Map
Clarence, NY (1965) Quadrangle



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SITE PLAN
LANCASTER RECLAMATION

FIGURE I-2

SECTION II

PURPOSE

The objective of a Phase II investigation is to determine if hazardous wastes have been disposed of in the site, if contaminants exist in the various mediums (air, groundwater, surface water or soils), and whether or not threats to human health or the environment exist. Information gathered relative to the above will allow the Department to reclassify the site or if warranted delist it.

During the period of operation from 1976 to 1985, the Lancaster Reclamation site received various industrial sludges and solid wastes. Leaching potential tests of the types of wastes disposed on-site have previously shown measurable levels of heavy metals and organic compounds. Previous analytical testing of groundwater samples from the site indicated the presence of phenol in the shallow overburden aquifer. This Phase II investigation was designed to supplement data previously collected at the site and determine whether the potential exists for groundwater or surface water contamination.

SECTION III

SCOPE OF WORK

INTRODUCTION

Field work for the Phase II investigation at the Lancaster Reclamation site began in June, 1987 and was completed in October, 1988. Field work was performed in accordance with a NYSDEC-approved project Quality Assurance/Quality Control Plan and site-specific Health and Safety Plan. The Phase II Work Plan dated April 28, 1986 was approved by NYSDEC prior to commencing the field investigations. The Work Plan was later revised with NYSDEC approval, based on the preliminary findings of the field investigations.

The original Work Plan included eight monitoring wells. Based on the findings of the geophysical surveys and the initial borings, the locations were revised, the number of wells was reduced to seven, and the screened zones were altered.

PHASE II SITE INVESTIGATION

The scope of the investigation is summarized in Table III-1 and is described below. All field work was performed or supervised by qualified ES staff, using procedures described in Appendices A and B.

Geophysical Survey

A geophysical survey utilizing Electrical Resistivity (ER) methods was performed at the Lancaster Reclamation site on June 22-25, 1987. The ER survey was conducted at various locations within and around the perimeter of the site. The results were used to determine the general geologic stratigraphy, and to confirm placement of the monitoring wells within potentially conductive subsurface plumes. The field procedures and the results are presented in Appendix B.

Monitoring Well Installations

Seven overburden monitoring wells were installed around the perimeter of the site between September 21 and October 6, 1987 by Rochester Drilling Co., Inc. (Figure III-1). Wells were installed upgradient and downgradient of the disposal cells (Table III-2). The upgradient well pair monitors the perched water table (GW-1A) and the lower portion of the overburden, near the top of bedrock (GW-1B). Downgradient wells GW-2B, GW-3B and GW-4B monitor the top of bedrock zone along the southern site boundary. Downgradient wells GW-3A and GW-5A monitor the top of the water table.

The wells were drilled and constructed in accordance with NYSDEC guidelines. Generally, soil samples were collected at intervals of five feet in the deepest well boring at each location. Selected soil samples were analyzed for grain-size characteristics, Atterberg Limits and permeability by R&R International, Inc.

The monitoring wells were constructed with two-inch inside diameter threaded, flush-joint PVC pipe and slotted screen. For most of the deeper well installations where flowing sand conditions were encountered, the native soil materials were used in lieu of a quartz sandpack. A bentonite slurry or pellet seal was used to isolate the screened section from above. Water levels in the wells were measured on at least two dates following installation and well development. Well development generally consisted of removing water by the air-lift method utilizing compressed air. The monitoring wells were capped with a locking steel protective casing.

Field procedures for the monitoring well installations are presented in Appendix A. Boring logs, well schematics and geotechnical analyses results are included in Appendix C.

Surface Water and Sediment Sampling and Analysis

Four surface water and sediment samples were collected on September 9-10, 1987. All surface water and sediment samples were analyzed for Hazardous Substance List (HSL) organics, (volatiles, semivolatiles), metals, and cyanide. The surface water samples were also analyzed for total organic halogens (TOX). All analyses were performed by Nanco Labs, Inc. In addition, a trip blank and field (wash) blank were analyzed for HSL volatiles. The sediment locations were resampled by ES on October 13, 1988 and analyzed for HSL pesticide/PCBs by York Laboratories. Analyses and reporting were performed utilizing the applicable NYSDEC Superfund and Contract Laboratory Protocols dated June, 1986 and its latest amendments (NYSDEC CLP).

As no natural surface water body intersects the site, samples were collected from on-site ponds and disposal cells. Samples SW/SED-1 were collected from a basin previously excavated for sand and gravel (Figure III-1). Samples SW/SED-2 were collected in an area formerly used for spray-aerating accumulated disposal cell water. SW/SED-3 and SW/SED-4 were located in empty and partially-filled disposal cells, respectively. Surface water samples were collected with glass beakers; sediment samples were collected with stainless steel spoons. The field procedures utilized are presented in Appendix A, and the analytical results are discussed in Section IV and listed in Appendix D.

Groundwater Sampling and Analysis

Groundwater samples were collected from each of the seven Phase II overburden monitoring wells on October 29 and 30, 1987. These samples were analyzed for HSL organics (volatiles, semivolatiles), metals, cyanide and TOX by Nanco Labs, Inc. In addition, a trip blank, wash blank (GW-4A) and an atmospheric blank (GW-5B) were analyzed for HSL volatiles. On June 1, 1988, well GW-5A was resampled and analyzed for HSL volatiles. Analyses and reporting were performed utilizing applicable NYSDEC CLP methods.

The upgradient wells sampled were screened in a perched water table and a deeper overburden aquifer (GW-1A and GW-1B, respectively). Wells located downgradient of the disposal cells were screened in the deep overburden aquifer. Of these wells, GW-3A and GW-5A were screened at the top of the aquifer, and wells GW-2B, 3B and 4B were screened in the lower portion of the aquifer. Samples were collected with teflon bailers and dedicated line. Field procedures for the groundwater sampling are presented in Appendix A. Analytical results are discussed in Section IV and listed in Appendix D.

Air Survey

A Photovac Total Ionizables Present (TIP-II) was used to screen for volatile organic compounds present in the air. This monitoring was performed as a health and safety measure during on-site field work. Air in the breathing zone (4 to 5 feet above ground) was monitored during drilling and sampling activities. Soil samples were also screened, as was the headspace over each monitoring well, as a preliminary means of determining the presence of volatile organic compounds.

TABLE III-1

SUMMARY OF PHASE II TASKS

LANCASTER RECLAMATION SITE

Task	Description of Task
Prepare and Update Work Plan	Reviewed the information in the Phase I report and supplemental data, conducted a site visit, examined available aerial photography and prepared the Phase II work plan. Following completion of the geophysical survey, the work plan was revised as needed.
Conduct Records Search/Data Compilation	Reviewed Phase I information and augmented the Phase I investigation information by contacting or visiting central and local offices of NYSDEC, NYSDOH, County DOH, NYSDOT, etc.
Site Reconnaissance	Checked locations and conditions of existing wells, examined terrain for accessibility by drill rigs, examined suitability for geophysical surveys, and determined appropriate locations of sampling points.
Conduct Geophysical Studies	Conducted an ER survey to determine general geologic stratigraphy and identify potentially conductive subsurface plumes.
Install Monitoring Wells	Installed seven PVC overburden monitoring wells. One upgradient well is screened in the perched water table; one upgradient and five downgradient wells are screened in the deeper overburden aquifer. Depths range from 10.0 to 74.6 feet below ground surface.

TABLE III-1 CONTINUED

Task	Description of Task
Soil Samples From Borings	Soil samples were collected at 5-foot intervals or at changes in subsurface lithology as indicated during drilling. Eleven grain-size analyses, one Atterberg Limits, and two permeability tests were performed.
Perform Sampling and Analysis	
Sediment Samples From Surface Waters	Four sediment samples were collected and analyzed for HSL metals, cyanide, and organics.
Groundwater Samples	Seven groundwater samples were collected and analyzed for HSL metals, cyanide, organics, and TOX.
Surface Water Samples	Four surface water samples were collected and analyzed for HSL metals, cyanide, organics, and TOX.
Conduct Site Assessment	A preliminary site contamination assessment was conducted to complete the final HRS score and HRS documentation records.
Report Preparation	Prepared draft and final reports containing significant Phase I information, additional Phase II field data, final HRS score, HRS documentation records, and site assessments.
Project Management	Project coordination, administration and reporting.

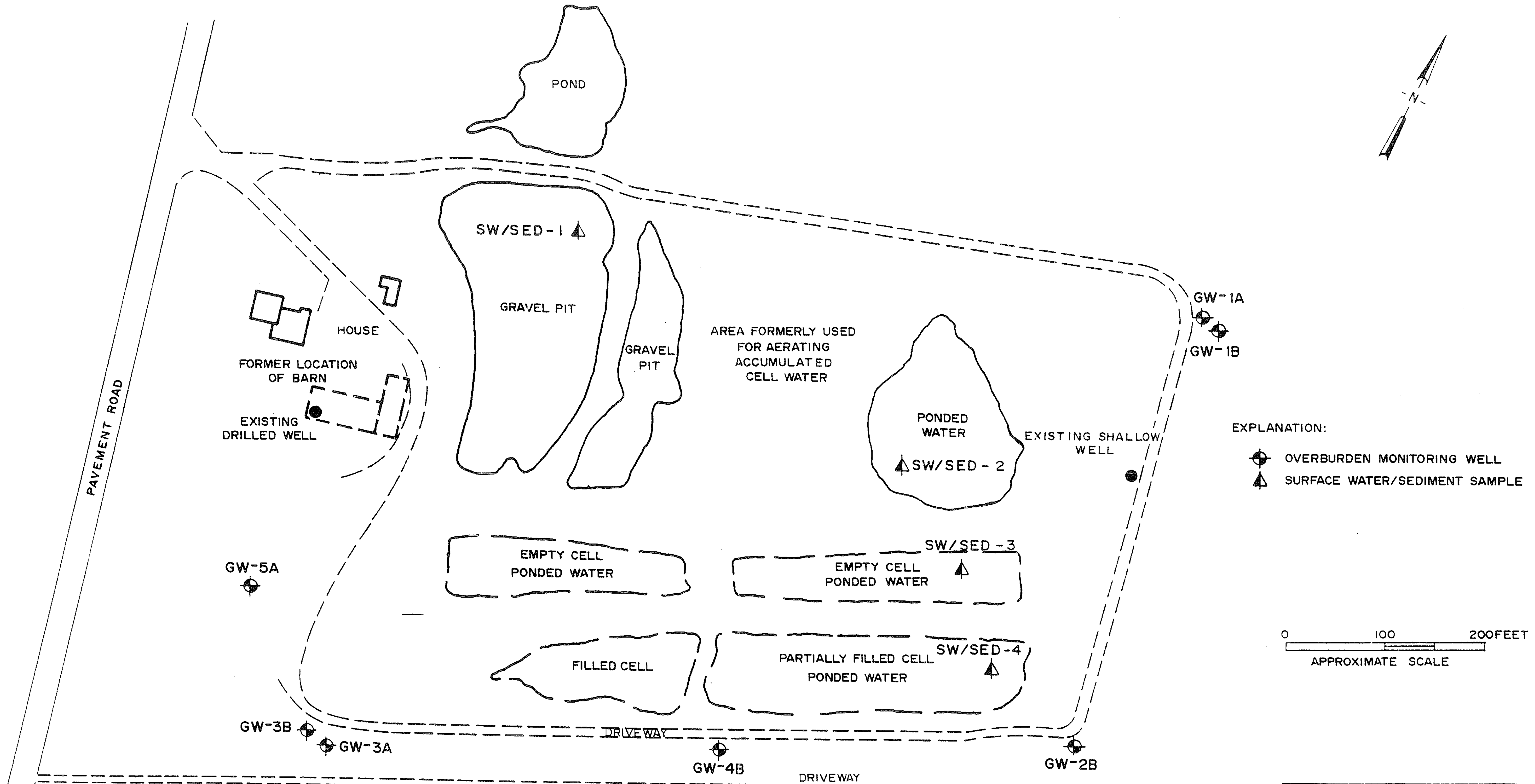
TABLE III-2

MONITORING WELL LOCATIONS AND SPECIFICATIONS

LANCASTER RECLAMATION SITE

Well Number	Unit Screened	Upgradient/ Downgradient	Depth (ft.)	Screened Interval (ft.)
1A	Perched Water Table	Upgradient	10.0	5.0 - 10.0
1B	On Top of Bedrock	Upgradient	76.6*	64.6 - 74.6
2B	On Top of Bedrock	Downgradient	74.0*	62.0 - 72.0
3A	Water Table	Downgradient	33.0	23.0 - 33.0
3B	On Top of Bedrock	Downgradient	61.5*	49.5 - 59.5
4B	On Top of Bedrock	Downgradient	64.1*	52.0 - 62.0
5A	Water Table	Downgradient	33.0	23.0 - 33.0

* Well has a two-foot sump below the bottom of the screen.



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PHASE II REPORT

SAMPLING LOCATION PLAN
LANCASTER RECLAMATION

FIGURE III-1

SECTION IV

SITE ASSESSMENT

SITE HISTORY

The Lancaster Reclamation site is approximately 12.9 acres in size and is located at 403 Pavement Road, Town of Lancaster, Erie County, New York (Erie County, 1988). Prior to 1976, the property was owned by Rose Pietruszewski. The property was originally farmland, and was subsequently used for sand and gravel excavation, apparently under an agreement between the site owner and a nearby gravel pit operator.

In 1976, the owners of the Lancaster Reclamation Company acquired the property (Lancaster Reclamation Company, 1987). Prior to the aquisition, the owners of Lancaster Reclamation Company arranged for the appropriate approvals and permits required for the planned future use of the site as a waste disposal facility. To this end, a Certificate of Zoning Compliance from the Town of Lancaster was applied for in a letter dated October 27, 1975. At the time, the site was to be used primarily for disposing of waste materials from Dresser Industries, Inc. of Depew, New York (Town of Lancaster).

On May 11, 1976, the NYSDEC approved plans and specifications for the proposed disposal operations at the facility (NYSDEC, 1979a). On May 28, 1976, the owners of the Lancaster Reclamation Company acquired the 12.9 acre parcel and subsequently began disposal of waste materials (Town of Lancaster, 1988). These materials were predominantly a bentonite clay sludge in a 90 percent water mixture.

Much of the initial correspondence and paperwork for the site (permit applications, etc.) reference Ferry Concrete Construction Company, Inc. as the site owner and operator. Between 1978 and 1979, the owners of the site began doing business as Lancaster Reclamation Company (Lancaster Reclamation Company, 1987).

In January 1978, NYSDEC allowed disposal of a foundry sand slurry consisting of fine sand, bentonite clay, metal oxides, coke ash and carbon at the Lancaster Reclamation Company site (NYSDEC, 1978a). The waste was generated by the Chevrolet Motor Division of General Motors (Tonawanda, New York). Ken Staub Jr. Trucking company was the waste hauler (NYSDEC, 1978b). This slurry was dewatered by evaporation prior to landfilling in cells.

Over the next several years, Lancaster Reclamation Company requested and received various approvals to expand or modify the waste types and disposal operations at the site. These changes were made with the approval of the NYSDEC and Town of Lancaster.

In January 1979, the NYSDEC agreed to allow Lancaster Reclamation Company to landfill in cells on-site, a slurry produced by Fabritron (Alden, New York), which contained cement, asbestos fibers, and glass fibers (NYSDEC, 1979b). However, as a result of objections raised by the Town of Lancaster, the disposal of asbestos wastes on-site was curtailed in June 1979 (Wendel Engineers, 1979). There is no conclusive information as to the exact quantity and location on-site where this waste was deposited.

In October 1979, the NYSDEC issued an initial operating permit (#2021) for a restricted use landfill on the provision that a monitoring well be installed at the site (NYSDEC, 1979c). By February 1980, the installation of a well in the eastern section of the site had been completed (Wendel Engineers, 1980). This new well, in addition to an existing water supply well, were periodically monitored and analytical results were submitted to the NYSDEC.

In October 1980, the NYSDEC granted a modification to Permit #2021 (#2290) to allow the landfilling of residual dust from shot blast collector systems in cells at the Lancaster Reclamation Company site (NYSDEC, 1980). The Town of Lancaster also granted a zoning compliance certificate to allow the disposal of shot blast dust at the Lancaster facility (Town of Lancaster, 1980). The shot blast dust was generated by Dresser Industries, and Ferry Concrete Construction Company, Inc. was the waste hauler.

In June 1981, the NYSDEC modified the landfill operation permit #2021 to allow the disposal of wallpaper production waste in cells at the site (NYSDEC, 1981a). The Town of Lancaster also approved disposal of the waste in a certificate of zoning compliance dated July 13, 1981. The wallpaper waste consisted of surface print waste, prepaste alkali and prepaste polymer. Reed Holdings, Inc. (Buffalo, New York) generated the wastes and contracted Lancaster Reclamation Company to transport the wastes to the Lancaster Reclamation Company site (NYSDEC, 1981).

In 1982 and 1983, Lancaster Reclamation Company received permission from the NYSDEC to dispose in cells on-site, oily sludges removed from bus garage catch basins (NYSDEC, 1982).

In June 1984, Lancaster Reclamation Company proposed abandoning the east monitoring well due to possible contamination of the well water by surface waters. Two new monitoring wells were proposed to monitor groundwater quality and establish groundwater flow patterns on the site (Wendel Engineers, 1984). In August 1984, Buffalo Drilling Company submitted a proposal to Lancaster Reclamation Company for a groundwater monitoring system (Buffalo Drilling Company, 1984). In November 1984, the NYSDEC requested additional groundwater data as a condition for renewal of the Lancaster Reclamation Company permit (NYSDEC, 1984). As a result, the permit was not renewed and the Lancaster Reclamation Company site has not received waste since late 1983 (Lancaster Reclamation Company, 1987). At the time of this writing, the site is owned by Lancaster Reclamation Company and is currently inactive.

REGIONAL SETTING

Regional Geology

The Lancaster Reclamation Company site is located in the central portion of Erie County, within the Erie-Ontario Lowland which has topography typical of an abandoned lakebed (USDA, 1986). The elevations of the Erie-Ontario lowland generally range from 700 to 1,000 feet above mean sea level. The landforms are subdued, and generally consist of proglacial lakebed deposits, beach ridges, and glacial till plains. The regional ground surface topography dips gently to the northwest, towards Lakes Erie and Ontario.

The regional geologic setting in the vicinity of the site consists of Upper Silurian and Middle Devonian shale and limestone bedrock overlain by glaciolacustrine (lacustrine) deposits (USGS, 1968). The site is located near the contact of the Hamilton group shales and limestones and the Onondaga Limestone. The Hamilton group is above and to the south of the Onondaga Limestone. Regionally, the bedrock dips approximately 50 feet per mile to the southwest (USDA, 1986). These rocks were deposited in warm, shallow seas approximately 300 million years ago.

During the period from 300,000 to 10,000 years ago, several glacial ice advances covered the region. Associated with the glacial advances and retreats were proglacial lakes which occupied the northern portion of the county for extended periods of time. This resulted in water-sorted sand and silt deposits as the glacial ice meltwaters filled the proglacial lakes, and quiet-water silt and clay deposits called lacustrine bottom sediments. Both types of these proglacial lake deposits can be found in the vicinity of the Lancaster Reclamation site.

Regional Hydrology

The Lancaster Reclamation site is located within the Lake Erie-Niagara River drainage basin. There are no surface water bodies on-site which directly connect to natural, off-site surface water bodies. The nearest surface water body is the North Branch of Plum Bottom Creek, about one-third of a mile south of the site. The creek is classified as a Class D stream (6NYCRR Volume E), designated as suitable for secondary contact recreation. The North Branch of Plum Bottom Creek flows west into Cayuga Creek. Cayuga Creek flows west where it joins with Buffalo Creek to form the Buffalo River. The Buffalo River flows west to Lake Erie.

SITE GEOGRAPHY

Topography

The original ground surface at the Lancaster Reclamation site was probably flat; however, previous excavation of sand and gravel in the northeastern quadrant of the site resulted in a large pit in that area (Figure IV-1). Four disposal cells were constructed in excavated areas in the southern portion of the site. The southwestern cell has been filled with waste materials. The southeastern cell is partially filled and, along with two remaining open cells, contains ponded water. The northeast quadrant of the site remains fairly level and was previously used for aerating accumulated pond water.

North of the site is a vacant field and Walden Road. East of the site is a private airport. South of the site are active Conrail railroad tracks. These tracks are 10 to 15 feet below the ground surface of the site. West of the site is Pavement Road. On the site is the residence of one of the site owners. There is a deep well in the barn of this residence that is no longer used. In the recent past, a fire destroyed much of the barn structure.

Soils

Most of the surface soils on the south and west sides of the site have been excavated; the surface soils on the north and east sides are mapped as Claverack loamy fine-sand and Palmyra gravelly loam (USDA, 1986). Claverack soils are deep, moderately well-drained, and were formed in sandy lacustrine sediments overlying clayey lacustrine deposits. The permeability is rapid in the upper sandy layer (4 x 10^{-2} cm/sec) and slow to very slow in the clayey substratum (1 x 10^{-4} cm/sec). The Palmyra gravelly loam is a deep, well-drained soil formed in outwash deposits. The substratum is very gravelly with high permeability (1 x 10^{-2} cm/sec). The substratum is often an excellent source of sand and gravel (USDA, 1986).

SITE HYDROGEOLOGY

Site Geology

This discussion of the Lancaster Reclamation site geology is based on the Phase II site investigation which included seven monitoring well installations (Figure IV-1), and an electrical resistivity survey (Appendix B). Boring logs and well schematics are presented in Appendix C of this report. Other sources of information include a site investigation conducted by Buffalo Drilling Company in 1984 and a Quaternary Geology Map by the New York State Museum and Science Service (NYSMSS, 1977).

The site geology can be generally characterized as 50 to 75 feet of glacial sediments and fill overlying limestone bedrock. A generalized stratigraphic column of the site subsurface geology is presented in Figure IV-2. A summary of the stratigraphic units encountered in each Phase II well boring is presented in Table IV-1.

The bedrock at the site is the Middle Devonian Onondaga Limestone. The upper five feet appeared massive with low primary and secondary permeability in the one boring where bedrock was sampled (GW-1B). The depth to bedrock ranged between 61.5 to 75 feet in the Phase II borings. The bedrock surface dips rather abruptly from GW-4B (elevation 339.0) downward toward GW-2B and GW-1B (elevation 323.3 and 323.4 respectively).

Four to nine feet of glacial till was encountered overlying the bedrock in the borings conducted to refusal (GW-1B, 2B, 3B 4B). The till was saturated, dense, gray to dark gray, fine sand, silt and 5 to 25 percent gravel (Table IV-2). The till unit was thickest along the southern boundary of the site at GW-4B.

Overlying the glacial till is an ice-contact drift deposit. This material consists of silt, sand and gravel, and becomes coarser and thicker toward the east. The ice contact drift was found to be saturated throughout its thickness in most borings. The unit had a strong thixotropic reaction, a tendency to liquify or flow when disturbed. In the eastern part of the site, the ice-contact drift is under hydrostatic pressure due to the confining lacustrine sediment which overlies it.

The lacustrine sediments are silts and clays, often laminated or varved, deposited in the shallow proglacial lakes which once covered the area. The lacustrine sediments were encountered on the east side of the site, in well borings GW-1B, GW-2B and GW-4B. The upper part of the unit contains 25 to 30 percent clay; in the lower portion of the unit, the clay content is 50 to 60 percent (Table IV-2). The lacustrine sediments are 30 to 33 feet thick on the east side of the site, but are replaced on the west side of the site by a glacial outwash deposit. The cross-section A-A' (located on Figure IV-1 and presented on Figure IV-3) shows the positions of the lacustrine sediments and the glacial outwash deposit.

The outwash deposit is brown, fine- to medium-sand and silt. This unit is 49 feet thick at the western end of the site (GW-3B), and only 8.6 feet thick in the northeastern corner (GW-1B). The outwash sand probably was the material mined at the site prior to waste disposal. This may account for the variability in thickness as encountered in the well borings.

At each Phase II monitoring well location, a layer of fill was encountered, ranging in thickness from .5 to 8 feet. This is probably due to the fact that the well locations were placed along roadways around the perimeter of the site. The fill may have been placed to provide stability to the roadways. In general, the fill appeared to consist of sand, gravel and slag, and was thickest along the southern site boundary, adjacent to the railroad.

In summary, the stratigraphy as encountered in the Phase II well locations can be generally characterized from bottom to top as limestone bedrock, glacial till, ice-contact sand and silt, lacustrine silt and clay, outwash sand and silt, and fill at the surface. On the extreme west side of the site, the lacustrine unit was not encountered. The Phase II findings were consistent with the findings of the Buffalo Drilling Company investigation conducted in 1984. The findings of the Phase II borings generally confirmed the interpretations of the Phase II ER soundings. The depth to bedrock was interpreted to be 56 to 58 feet based on the ER soundings, whereas the actual depth to bedrock found in the Phase II borings was 61.5 to 74 feet. The thickness of the fill was interpreted to be up to 6 feet thick, based on the ER soundings. The fill thickness in the Phase II borings was up to 8 feet.

Groundwater Hydrology

Seven groundwater monitoring wells were installed during the Phase II site investigation. Figure IV-1 presents the locations of the monitoring wells, Table IV-3 presents the monitoring well data and Table IV-4 presents water level data. Boring logs and well schematics are presented in Appendix C.

The groundwater hydrology is complicated by the variability of the glacial deposits and previous excavations at the site. There are two water-bearing zones in the overburden of the Lancaster Reclamation site; an upper perched water table and a deeper overburden aquifer. The overburden aquifer occurs in the glacial till and glacial outwash units. Of the two water-bearing zones, the deep overburden aquifer is considered the aquifer of concern due to its comparatively greater yield, greater lateral extent and its potential use as a drinking water source.

Water level elevations from February, 1988 indicate that groundwater flow is to the west-southwest in the overburden aquifer (Table IV-4 and Figure IV-4). Under this condition, well GW-1B can be considered the upgradient location, and wells GW-2B, 3A, 3B, 4B and 5A as the downgradient locations. The disposal cells are located between the upgradient and downgradient wells. The water level elevations from October, 1987 indicate a southwesterly groundwater flow, although the gradient is flatter, with little variation in elevations between wells (Table IV-4).

In the eastern half of the site (wells GW-1B, 2B and 4B), the overburden aquifer is confined by the lacustrine unit. During the drilling of wells on the east side, the lacustrine unit was penetrated and the overburden aquifer was encountered. At this point, water and sand entered the augers and rose to a static level within the lacustrine unit under hydraulic pressure. In the western half of the site (wells GW-3B, 3A, and 5A), the overburden aquifer is unconfined, as the lacustrine unit was not encountered in these borings.

The perched water table was encountered only at the northeastern corner of the site, at GW-1A. The perched water table may discharge as surface water in the disposal cells or other excavations on-site. At the periphery of the lacustrine unit, the perched water may drain downward into the overburden aquifer. The perched water table is shallow and showed significant changes in water level elevation, probably in response to precipitation events. The well screened in the perched aquifer (GW-1A) was quickly bailed dry and was slow to recharge during well development.

The permeabilities of the units on-site vary due to differences in lithologies and densities. The fill, outwash and ice contact deposits should have moderate to high permeabilities (estimated at 10^{-5} to 10^{+1} cm/sec) due to the low density and large particle size of the units (Freeze and Cherry, 1979). The glacial till, being poorly sorted and having a higher density, should have a moderate to low permeability (estimated at 10^{-7} to 10^{-3} cm/sec) (Freeze and Cherry, 1979). Shelby tube samples of the lacustrine sediments were collected from two well borings. Due to the relatively high percentage of clay in this unit, the measured permeabilities were very low: 2.21×10^{-8} cm/sec at GW-1A (12- to 14-foot depth) and 1.97×10^{-8} at GW-2B (17- to19-foot depth). These results are presented in Appendix C.

The groundwater hydrology of the bedrock beneath the site was not investigated as part of this Phase II project. Based on the site geology, it is likely that the upper portion of the bedrock is hydraulically connected to the aquifer of concern, particularly if the bedrock is fractured.

Surface Water Hydrology

The regional surface water hydrology has been previously discussed in this section. There are no natural surface water bodies which intersect the site boundaries. On-site surface water occurs as man-made ponds and disposal cells. The ponds are remnants from the sand and gravel excavation operations previously conducted at the site. The disposal cells contain wastes landfilled during the period of waste disposal operations. Neither the ponds nor disposal cells directly connect to an off-site surface water body. Overland flow is unlikely based on a significant freeboard of 5 to 10 feet between the top of the disposal cells and the water level in them. Therefore, off-site migration of surface water is not considered a threat to the nearest downslope surface water body, the North Branch Plum Bottom Creek.

SITE CONTAMINATION ASSESSMENT

Potential contamination of the environment within the site boundary was evaluated by a review of the character and quantity of wastes suspected at the site, chemical analysis of the groundwater, surface water, and sediment, subsurface geophysical surveys and a survey of the air quality with a Photovac Tip II photoionization meter. In addition to the results of this Phase II investigation, previous sampling and analysis results from two existing on-site wells and previous results from various waste characterization tests were also considered in the site contamination assessment.

Waste Characterization

The 13-acre Lancaster Reclamation site has been used as an industrial waste landfill since 1976. The waste types and quantities of waste disposed at the site are presented in Table IV-5. Also shown are hazardous constituents of concern. Detailed constituent analyses for most of these wastes are provided in Appendix D of this report.

Beginning in 1976, Lancaster Reclamation Company landfilled on-site bentonite clay slurry and foundry sand in cells located in the southern portion of the site (see Figure IV-1). The bentonite slurry contained 90 percent water; 96,000 cubic yards of slurry were placed in the cells and dewatered by evaporation prior to burial. Foundry sand was also used to thicken the slurry. Analytical data on filtrate (i.e., water fraction) of the slurry indicated detectable concentrations of zinc, chlorides and total organic carbon (TOC) (Frontier Chemical Waste Process, Inc., 1976). The concentration of zinc exceeded the limits for discharge to groundwaters in New York State. A leachate test also found detectable concentrations of phenol (1.87 - 2.05 ppm) in the foundry sand that was landfilled with the clay slurry (NYSDEC, 1979a). Both the bentonite slurry and the foundry sand wastes were generated by Dresser Industries (Wendel Engineers, 1979).

Beginning in 1978, approximately 1.7 million gallons of foundry sand slurry were placed in on-site cells (Ferry, 1985). The slurry consisted of sand fines produced from foundry wastewater treatment at the Chevrolet Division of General Motors in Tonawanda, New York. The slurry contained 65 percent water. Dewatering was accomplished by injecting air into the waste to promote evaporation, or decanting the liquid and applying it on the land by spray irrigation (Wendel Engineers, 1979).

Beginning in January 1979, an asbestos-containing waste slurry consisting of 20 percent portland cement, 5 percent asbestos, 10 percent glass fibers and 65 percent water was disposed in the cells. The slurry was dewatered using the same techniques described for the bentonite and foundry sand slurries.

In March, 1981, Lancaster Reclamation Company received approval to accept shot blast dust generated from steel casting operations at Dresser Industries (NYSDEC, 1981b). Prior to disposal, the shot blast dust was mixed with foundry sand. The estimated quantity of this shot blast dust is included in the estimate for the foundry sand presented in Table IV-5.

Starting in June 1981, Lancaster Reclamation, Inc. received 120,000 gallons of wallpaper production wastes from Reed Holdings, Inc. (Ferry, 1985). The wastes included surface print waste, prepaste polymer and prepaste alkali. A description of the composition of each waste type is presented in Appendix D (ARO Corporation, 1981). EP Toxicity tests were also conducted on each waste and results of the tests show that the concentrations of the contaminants analyzed were below the test limits (ARO Corporation, 1981). However, other organic compounds which may be present in these wastes (e.g., solvents) were not analyzed.

In 1982 and 1983, Lancaster Reclamation Company disposed in cells on-site, 9,000 cubic yards of oil sludge from bus garage catch basins (Ferry, 1985). These sludges were received from the Sweet Home Central School and Ormsby Vocational School bus garages. The oil and grease content of the Sweet Home Central School sludge was 3.07 percent (ARO Corporation, 1982). To prevent oil from leaching from the waste, the NYSDEC requested that Lancaster Reclamation Company mix the oily sludge with diatomaceous earth (NYSDEC, 1982).

From January 1980 to March 1984, Lancaster Reclamation conducted semi-annual analyses of surface water and groundwater. Surface waters from the southeast cell and an aerated basin in the northeast portion of the site were sampled. During these sampling efforts, groundwater samples were collected from a monitoring well in the eastern portion of the site and a deep water supply well located in an on-site barn. Construction details of these wells are apparently not available. Samples were sent to ARO Corporation Environmental Laboratory to be analyzed for conductivity, pH, phenols, TOC and iron.

The concentrations of phenols in the west well were below the water quality standards for Class GA groundwater, with the exception of one sampling event conducted in February 1981 (0.003 mg/l). However, the west well occurs in the deep bedrock aquifer, and may not be hydraulically connected to the disposal cell waters which were shown to contain higher concentrations of phenols.

The concentrations of phenol in the east well were higher than those detected in the west well. Phenol concentrations exceeded the Class GA groundwater standard for all but one of the sampling events over the same period of time. The east well occurs in a shallow aquifer which is more likely to be hydraulically connected to the disposal cell waters.

The presence of several priority pollutants (i.e., selenium, lead, and PCBs) in the test leachates of on-site wastes suggests a potential for surface water and groundwater contamination by these constituents. The Phase II investigation was designed to determine whether these and other Hazardous Substance List (HSL) compounds may be present in the site surface and groundwaters.

The following subsections provide a summary of the results of the Phase II investigation sampling and analysis tasks. Whenever possible, samples were collected upstream or upgradient of the site to establish ambient or background conditions. These levels were compared to those found on-site, downstream or downgradient of the site. Concentrations downstream or downgradient of the site in excess of three times the upgradient concentration may indicate a release from a contaminant source located on-site. The value of three times is generally recognized by the USEPA and NYSDEC as constituting a "significantly higher" concentration for purposes of scoring an HRS observed release for a particular pathway. Therefore, reference is made to the number and types of analytes considered to be observed releases under each pathway, as discussed in the following subsections.

The analytical results have also been compared to applicable New York State standards or guidance values. Standards and guidance values are provided for the applicable surface water and groundwater classifications. Standards that have been promulgated for surface water appear in 6NYCRR Parts 701 and 702, and for groundwater in Part 703. These regulations also provide authority for the use of guidance values when a standard does not exist for a given water classification. In most cases, the standards and guidance values cited are for sources of drinking water. Sediment results have been compared to published naturally-occurring ranges in New York State or conterminous United States soils.

The analytical data were reviewed and validated for data usability Included in the evaluation was a review of the results of "blank" sample analyses. In cases where blank (method, trip, or field) contamination was detected, the individual constituent concentrations were judged as follows: 1) If the sample value was less tan 10 times the highest blank value, the sample value was rejected (flagged "R"); 2) If the sample value was between 10 and 20 times the highest blank value, the sample was considered an estimate (flagged "X"); 3) If the sample value was greater than 20 times the highest blank value, it was accepted (unflagged). These criteria were used as guidance limits to help determine whether blank contamination was potentially responsible for the presence of these constituents in the field samples.

Groundwater Contamination Assessment

Groundwater samples were collected from seven overburden monitoring wells on October 29 and 30, 1987 as part of the Phase II investigation. These samples were analyzed for Hazardous Substance List (HSL) volatile and semivolatile organic compounds (Table IV-6), HSL metals and cyanide (Table IV-7) and total halogenated organic compounds (TOX). One well (GW-5A) was resampled on June 1, 1988 and analyzed for volatile organic conmpounds. The shallow and deep wells are discussed separately in the following paragraphs.

Shallow Water Table Wells

Thirteen HSL organic compounds were detected in the shallow water table wells. Three compounds, acetone, methylene chloride and benzo(a)pyrene were also detected in laboratory blank samples. The presence of those compounds in the well samples is attributed to laboratory contamination. An upgradient well for the shallow water table does not exist for water quality comparison purposes, as GW-1A and GW-3A, GW-5A are in differing hydraulic settings.

Well GW-5A contained relatively high concentrations of seven volatile organic compounds (VOCs). Due to these high concentrations, and the lack of an identified source of these compounds on-site, well GW-5A was subsequently resampled and analyzed for VOCs. The resampling results did not detect any VOCs other than acetone and methylene chloride, which were also present in laboratory blank samples and are attributed to laboratory contamination. However, a release cannot be established, as there was no upgradient well. Five other organic compounds were present in GW-5A; all are semivolatile compounds. The concentrations of three phenolic compounds exceeded the applicable Class GA standards.

Nineteen HSL metals were detected in the shallow water table wells (Table IV-7). The concentrations of metals were generally highest in the upgradient well GW-1A. However, a release cannot be established, as there is no upgradient well. The concentration of zinc in downgradient well GW-3A was in excess of three times the upgradient concentration, indicating a release potentially attributable to the site. In one or more shallow wells, the concentrations of antimony, iron, lead, magnesium and manganese exceeded the applicable Class GA groundwater standards and guidance values.

Deep Wells

Eight HSL organic compounds were detected in the deep wells (Table IV-6). Acetone, methylene chloride and benzo(a)pyrene were also detected in blank samples, and the presence of these compounds is attributed to laboratory contamination. The concentration of di-n-octylphthalate in downgradient well GW-2B exceeded the upgradient concentration in GW-1B by more than a factor of three, indicating a release potentially attributable to the site. The concentration of benzene in GW-4B exceeded the Class GA standard for that compound. The result for benzene in GW-4 is considered an estimated value since the result was below the contract-required (CLP) detection limit. However, the identification of benzene in the sample means the standard was exceeded since the standard is less than or equal to 0.2 ug/l.

Fourteen HSL metals were detected in the deep wells (Table IV-7). The downgradient concentrations of aluminum, arsenic, iron, lead, magnesium, manganese, potassium and zinc exceeded the upgradient concentrations by a factor of three or more, indicating releases potentially attributable to the site. Class GA guidance values or standards for iron, lead, and magnesium were exceeded in one or more wells.

The types and concentrations of organic compounds and metals present in the groundwater are generally consistent with the former use of the site. Some of the organic compounds, particularly the phenolic compounds, may originate from the foundry sand wastes disposed in the cells. Previous waste analyses had shown detectable concentrations of phenols (Appendix D). The metals potentially being released from the site are generally consistent with those expected in the waste types present on-site, and those detected in previous waste analyses.

The groundwater results indicate that the site is impacting groundwater quality in the unconsolidated glacial deposits. This condition should be addressed and corrected if necessary. Capping or covering the disposal cells may inhibit further releases of contaminants to the groundwater.

The impact of the contaminated groundwater on residential well users is considered in Section V of this report. Due to the relatively small number of residences having private wells (an estimated 27), and the location of most of these wells upgradient of the site (to the southeast along Westwood Road - see Figure I-1), the impact on residential groundwater users is not anticipated to be significant. In addition, the presence of the gravel pit located downgradient of the Lancaster Reclamation site may intercept the groundwater flow path through pumping and associated operations (see gravel pit located 1,500 feet southwest of site on Figure I-1).

Rather than undertake expensive and time-consuming groundwater remediation at the Lancaster Reclamation site, it may be more effective to perform an extensive survey of all groundwater users in the site vicinity. Information to be collected would include the location of wells, depth of wells and the aquifer from which water is drawn. Those wells which appear to be most at risk should be sampled and analyzed for HSL organic compounds and metals. Those results should indicate whether downgradient groundwater users are being impacted by the site, and what action is necessary to alleviate the problem, if one exists.

Surface Water Contamination Assessment

Four surface water samples were collected on September 9 and 10, 1987, and analyzed for HSL organic compounds (Table IV-8), HSL metals (Table IV-9) and TOX. These surface water samples were collected from on-site ponds or disposal cells; there was no true upgradient location on-site to determine the background level of organic and inorganic constituents. Since no upgradient or background data were collected, the results of the on-site surface water sampling have been compared to the most stringent NYS surface water standards and guidance values as a conservative measure of the water quality found on-site. Since the on-site surface waters have no NYS classification, these standards have no regulatory application.

Six HSL organic compounds were detected in the surface water samples. The results for three of these compounds were rejected due to their presence in the laboratory blank samples.

No Class A standards or guidance values were exceeded. Eighteen inorganic compounds were detected in the surface water samples. NYS Class A surface water standards or guidance values for cadmium, iron, antimony and aluminum were exceeded in Sample SW-2. In sample SW-3, the standards for iron and aluminum were exceeded, as was the guidance value for antimony. In sample SW-1, the standards for iron and aluminum were exceeded. However, these surface water results do not indicate a significant contamination condition exists, since the on-site surface waters have no known use and are not connected to off-site surface water bodies.

The surface water results are noteworthy because of the similarity to the groundwater results. With the exception of cadmium, those metals which exceeded Class A surface water standards and guidance values were also being released to the groundwater, or have exceeded Class GA standards or guidance values.

Sediment Contamination Assessment

Four sediment samples were collected at the same locations as the surface water samples on September 9, 1987. These samples were analyzed for HSL volatile and semivolatile organic compounds (Table IV-10) and HSL metals (Table IV-11). Four additional sediment samples were collected from the same locations on October 13, 1988 and were analyzed for HSL pesticides and PCBs.

Sixteen organic compounds were detected in the sediment samples. Three of these were also detected in laboratory blank samples, and are attributed to laboratory contamination. Samples SED-1 and SED-3 had the highest number of organic compounds detected, and generally had the highest reported concentrations as well. Sample SED-1 contained three phenolic compounds: phenol, 2-chlorophenol and 4-chloro-3-methylphenol. It is noteworthy that this sample was collected from an area not considered to be associated with the disposal cells. The origin of these compounds is therefore uncertain. Sample SED-3 had detectable concentrations of several volatile organic compounds and Aroclor 1254, a polychlorinated biphenyl (PCB) compound. This sample was collected from a disposal cell which has reportedly not received wastes. Antimony was detected in all samples at levels exceeding the published range for New York State soils in all samples. Cadmium was detected at a level exceeding the published range for U.S. soils in SED-2.

TABLE IV-1

STRATIGRAPHY SUMMARY

PHASE II WELL BORINGS - LANCASTER RECLAMATION

(Depth in Feet Below Ground Surface)

Stratigrapahic Unit (Elevation*)	GW-1A (398.7)	GW-1B (398.4)	GW-2B (397.3)	GW-3A (402.0)	GW-3B (401.9)	GW-4B (403.1)	GW-5A (401.2)
Fill	0 - 1.6	0 - 1.6	0 - 2.0	0 - 0.5	0 - 0.5	0 - 8.0	0 - 5.5
Outwash Sand	1.6 - 10.2	1.6 - 10.2	2.0 - 3.0	0.5 - 38.0	0.5 - 49.5		5.5 - 33.0
Lacustrine Silty Clay	10.2 - 14.4	10.2 - 40.3	3.0 - 36.0			8.0 - 41.0	
Ice Contact Silty Sand and Gravel		40.3 - 70.5	36.0 - 70.0		49.5 - 55.0	41.0 - 55.0	
Till		70.5 - 75.0	70.0 - 74.0		55.0 - 61.5	55.0 - 64.1	
Bedrock		75.0 - 80.0					

* Elevation of ground surface in feet, referenced to an assumed datum.

TABLE IV-2

GRAIN SIZE RESULTS

LANCASTER RECLAMATION SITE

Boring Number	Depth (ft.)	Sand (%)	Silt (%)	Clay (%)	Unified Soil Classification[a]	Stratigraphic Unit
1-B	5.0	88.4	11.6*		SM-SP	Outwash Sand
1-B	51.0	70.7	29.3*		SM	Ice Contact Drift
2-B	6.0	42.0	30.8	27.2	CL-ML	Lacustrine Clay
2-B	45.0	54.1	45.9*		SM	Ice Contact Drift
3-B	14.0	64.5	35.5*		SM	Outwash Sand
3-B	55.0	58.8	41.2*		SM	ice Contact Drift/ Till
4-B	15.0	2.1	40.3	57.6	CL	Lacustrine Clay
4-B	30.0	5.6	40.2	54.2	CL	Lacustrine Clay
4-B	50.0	89.8	10.2*		SM-SP	Ice Contact Drift
5-A	15.0	65.4	34.6*		SM	Outwash Sand

* Percentage of silt and clay combined.

[a] SP	Poorly graded sands, gravelly sands, little or no fines.
SM	Silty sands, sand-silt mixtures.
SC	Clayey sands, sand-clay mixtures.
ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, or clayey silts, with slight plasticity.
CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.

TABLE IV-3

MONITORING WELL DATA

LANCASTER RECLAMATION SITE

Well I.D.	Ground Surface Elevation (Feet*)	Top of Bedrock Depth/Elevation (Feet/Feet*)	Top of Well Screen Depth/Elevation (Feet/Feet*)	Bottom of Well Screen Depth/Elevation (Feet/Feet*)
1A	398.7	NA	5/393.7	10/388.7
1B	398.4	75/323.4	64.6/333.8	74.6/323.8
2B	397.3	74/323.3	62/335.3	72/325.3
3A	402.0	NA	23/379.0	33/369.0
3B	401.9	61.5/340.4	49.5/352.4	59.5/342.4
4B	403.1	64.1/339.0	52/351.7	62/342.1
5A	401.2	NA	23/378.2	33/368.2

* Elevation in feet referenced to an assumed datum.

TABLE IV-4

WATER LEVEL DATA

LANCASTER RECLAMATION SITE

					Water Level Data			
					Date 10/30/87		Date 2/18/88	
Well I.D.	Ground Surface Elevation (Feet*)	Top of PVC Well Pipe Elevation (Feet*)	Well Screen Interval Elevation (Feet*)	Stratigraphic Unit Screened	Depth to Water Level (Feet**)	Water Level Elevation (Feet*)	Depth to Water Level (Feet**)	Water Level Elevation (Feet*)
1A	398.7	400.7	393.7 - 388.7	Outwash Sand	4.2	396.5	2.1	398.6
1B	398.4	400.5	333.8 - 323.8	Till and Ice Contact	22.9	377.6	21.9	378.6
2B	397.3	399.3	335.3 - 325.3	Till and Ice Contact	22.1	377.2	20.9	378.4
3A	402.0	404.5	379.0 - 369.0	Outwash Sand	28.0	376.5	27.3	377.2
3B	401.9	404.4	352.4 - 342.4	Till and Ice Contact	28.1	376.3	27.3	377.1
4B	403.1	405.8	351.1 - 341.1	Till and Ice Contact	29.0	376.8	28.0	377.8
5A	401.2	403.2	378.2 - 368.2	Outwash Sand	27.0	376.2	26.3	376.9

* Referenced to an assumed datum.

** Water level depth from top of PVC well pipe.

TABLE IV-5

SUMMARY OF WASTES DISPOSED AT THE LANCASTER RECLAMATION COMPANY SITE

Date Permit Approved	Generator	Waste Type	Quantity Disposed (1)	Constituents Of Concern
5/11/76	Dresser Transportation Equipment Division	Bentonite Clay Slurry 165,000	76,000 cu. yd. Prior to Thickening After Thickening	Leachate: Zinc
1/24/78	Chevrolet Division General Motors	Foundry Sand Slurry	1.7 Million Gallons	Pit: Oil Pit Leachate: Selenium, Cadmium Mixture: Oil, PCB Mixture Leachate: Cadmium, Lead
1/4/79	Fabritron	Cement, Asbestos, and Glass Fiber Slurry	7,000 Gallons	Asbestos
5/11/76	Dresser Transportation Equipment Division	Foundry Sand	2,200 cu. yd.	Leachate: Phenols
6/16/81	Reed Holdings	Surface Print Waste, Prepaste Polymer, Prepaste Alkali	120,000 Gallons	---
10/29/80	Dresser Transportation Equipment Division	Shot Blast of Steel Castings	Mixed with Foundry Sand	Leachate: Phenols
5/27/82	Sweet Home Central School Bus Garage	Dirt and Sludge From Catch Basin	See Below	Sludge: Oil
7/7/83	Ormsby Vocational School Bus Garage	Dirt and Sludge From Catch Basin	9,000 cu. yd., Includes Sweet Home	Heavy Metals and Oil and Grease

(1) Based on telephone interview with J. Ferry of Lancaster Reclamation, Inc., 4/25/85.

TABLE IV-6
LANCASTER RECLAMATION
GROUNDWATER RESULTS
HSL ORGANIC COMPOUNDS (ug/L)
SAMPLES COLLECTED OCTOBER 1987

	NYS Standard/ Guidance	Shallow Wells				Deep Wells			
Compound (a)	Value (b)	GW-1A (c)	GW-3A	GW-5A	GW-5A (d)	GW-1B (c)	GW-2B	GW-3B	GW-4B
Methylene Chloride	50 G	R	R	985.5 B	R	53.9 BX	R	R	52.4 BX
Acetone		R	R	2500.0 B	R	R	R	R	R
Carbon Disulfide	50 G	---	---	---	---	---	---	---	---
1,1-Dichloroethene	0.07 G	---	---	5059.7	---	---	---	---	---
Chloroform	100	---	---	---	---	---	---	---	---
2-Butanone		---	---	---	---	---	---	---	---
Trichloroethene	10	---	---	5019.0	---	---	---	---	---
Benzene	ND(e)	---	---	5250.8	---	---	---	---	1.7 J
2-Hexanone	50 G	---	---	---	---	---	---	---	6.0 J
Toluene	50 G	---	---	5206.5	---	---	---	---	---
Chlorobenzene	20 G	---	---	5273.7	---	---	---	---	---
Phenol	1(f)	---	---	17.0	@	---	---	---	---
2-Chlorophenol	1(f)	---	---	30.4	@	---	---	---	---
4-Chloro-3-Methylphenol	1(f)	---	---	14.4	@	---	---	---	---
Di-n-Butylphthalate	770	---	7.7 J	1.9 J	@	---	2.4 J	4.0 J	15.4
bis(2-Ethylhexyl)Phthalate	4200	7.3 J	25.9	107.9	@	163.9	89.5	---	---
Di-n-Octyl Phthalate	50	---	---	---	@	---	30.7	---	---
Benzo(a)Pyrene	ND(e)	R	---	---	@	---	R	---	---

FOOTNOTES:

(a) Only HSL organic compounds that were detected are presented.

(b) From: "Ambient Water Quality Standards and Guidance Values" for Class GA groundwater drinking supply waters, 6 NYCRR Part 703, NYSDEC, 9/1/78, as amended through 4/1/87. The value presented is the stard except where noted by "G", in which case it is the guidance value. All units are ug/L.

(c) Upgradient location.

(d) This sample was collected on 6/1/88 and analyzed for volatile organic compounds only.

(e) ND = not detectable; i.e., the standard is the lower limit of dectectability as defined by the NYSDEC.

(f) The standard of 1 ug/L applies to the sum of the phenol values.

DATA QUALIFIERS:

B: This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

J: Indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero.

@: Not analyzed.

---: Indicates compound was analyzed for but not detected. Refer to Appendix D for detection limit.

X: Data validation recommends this value be considered an estimate.

R: Data validation recommends this value be rejected.

TABLE IV-7
LANCASTER RECLAMATION
GROUNDWATER RESULTS
HSL INORGANICS (ug/L)
SAMPLES COLLECTED OCTOBER 1987

ANALYTE (a)	NYS Standard/ Guidance Values(b)	Shallow Wells			Deep Wells			
		GW-1A(c)	GW-3A	GW-5A	GW-1B(c)	GW-2B	GW-3B	GW-4B
Aluminum		41000.0	21420.0	13660.0	1150.0	930.0	7610.0	4960.0
Antimony	3 G	---	---	113.0	---	---	---	---
Arsenic	25	10.6	19.2	[9.4]	---	---	---	19.3
Barium	1000	415.0	257.0	[159.0]	[120.0]	[80.0]	[214.0]	327.0
Cadmium	10	5.0	---	---	---	---	---	---
Calcium		359200.0	325800.0	200600.0	65900.0	42100.0	117800.0	56300.0
Chromium		189.0	64.0	73.0	18.0	---	---	18.0
Cobalt		39.0	67.0	[43.0]	---	---	---	---
Copper	1000	121.0	211.0	122.0	---	---	---	---
Iron	300	101900.0	101300.0	54300.0	2435.0	1853.0	15861.0	9738.0
Lead	25	362.0	195.0	61.6	[3.6]	[4.4]	[39.2]	19.3
Magnesium	35000 G	154500.0	137500.0	96800.0	13900.0	7400.0	53800.0	21400.0
Manganese	300	3671.0	2933.0	1915.0	---	---	---	233.0
Nickel	13.4 Z	104.0	76.0	52.0	---	---	---	[31.0]
Potassium		11100.0	9300.0	8200.0	8300.0	35100.0	4500.0	12700.0
Silver		---	12.0	---	---	---	---	---
Sodium		35100.0	11300.0	27000.0	56600.0	85700.0	16600.0	45400.0
Vanadium		108.0	[48.0]	---	---	---	---	25.0
Zinc	5000	474.0	1526.0	684.0	39.0	33.0	163.0	47.0
TOX (d)		32	---	6	---	---	34	9

FOOTNOTES:

(a) - Only HSL analytes that were detected are presented. If the result is a value greater than or equal to the instrument detection limit but less than the contract-required detection limit, the value is reported in brackets (i.e., [10]).

(b) - From: "Ambient Water Quality Standards and Guidance Values" for class GA groundwater drinking supply waters, 6NYCRR Part 703, NYSDEC, 9/1/78, amended 4/1/87. The value presented is the standard except where noted by "G", in which case it is the guidance value. For nickel (flagged "Z") the value presented is the ambient water quality criterion for human health, from: "Quality Criteria for Water 1986", USEPA, 5/1/87. All units are ug/L.

(c) - Upgradient well location

(d) - TOX = Total Organic Halogens

DATA QUALIFIERS:

--- - Indicates analyte was analyzed for, but not detected. Refer to Appendix D for detection limit.

TABLE IV-8
LANCASTER RECLAMATION
SURFACE WATER RESULTS
HSL ORGANIC COMPOUNDS (ug/L)
SAMPLES COLLECTED SEPTEMBER 1987

COMPOUNDS (a)	NYS Standard/ Guidance Value (b)	Sample Location			
		SW-1	SW-2	SW-3	SW-4
Methylene Chloride	50 G	R	R	R	R
Acetone		R	R	R	R
Di-n-Butylphthalate	770	---	16.2	8.4 J	11.0
bis(2-Ethylhexyl)Phthalate	4200	---	---	47.6 BX	290.0 B
Di-n-Octyl Phthalate	50	---	---	6.0 J	---
Benzo(a)Pyrene	ND (c)	R	R	R	R

FOOTNOTES:

(a) - Only HSL organic compounds that were detected are presented.
(b) - From : "Ambient Water Quality Standards and Guidance Values" for Class A drinking supply waters, 6NYCRR Parts 701 and 702, NYSDEC, 7/24/85, as amended through 4/1/87. The value presented is the standard except where noted by "G", in which case it is the guidance value. All units are ug/L.
(c) - ND = not detectable; i.e., the standard is the lower limit of detectability as defined by the NYSDEC.

DATA QUALIFIERS:

J - Indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).
--- - Indicates compound was analyzed for but not detected. Refer to Appendix D for detection limit.
X - Data validation recommends this value be considered an estimate.
R - Data validation recommends this value be rejected.

TABLE IV-9
LANCASTER RECLAMATION
SURFACE WATER RESULTS
HSL INORGANICS (ug/l)
SAMPLES COLLECTED SEPTEMBER 1987

Analyte (a)	NYS Standard/ Guidance Value(b)	Sample Location SW-1	SW-2	SW-3	SW-4
Aluminum	100	[186]	762	1404	---
Antimony	3 G	---	86	62	---
Barium	1000	---	[30]	[55]	---
Beryllium	3 G	---	[1]	---	---
Cadmium	10	---	12	---	---
Calcium		27870	43650	35802	26163
Chromium	50	---	26	13	---
Copper	200	---	35	[11]	---
Cyanide	100	---	14.9	---	---
Iron	300	345	801	1923	151
Magesium	35000	18231	7503	27404	6638
Manganese	300	16	29	51	49
Nickel		---	[28]	[23]	---
Potassium		[842]	[2062]	[4025]	[2173]
Silver	50	15	40	33	14
Sodium		9739	[1446]	18018	13315
Vanadium	14	---	[13]	[5]	---
Zinc	300	26	58	86	55
TOX (c)		1.3	16	9.1	14

FOOTNOTES:

(a) - Only HSL analytes that were detected are presented. If the result is a value greater than or equal to the instrument detection limit but less than the contract-required detection limit, the value is reported in brackets (i.e. [10]).

(b) - From "Ambient Water Quality Standards and Guidance Values" for Class A surface drinking waters, 6NYCRR Part 701 and 702, NYSDEC, 7/24/85, amended 4/1/87. The value presented is the standard, except where noted by "G" in which case it is the guidance value. All units are ug/L.

(c) - TOX = Total Organic Halogens

--- - Indicates analyte was analyzed for but not detected. Refer to Appendix D for the detection limit.

TABLE IV-10
LANCASTER RECLAMATION
SEDIMENT RESULTS
HSL ORGANIC COMPOUNDS (ug/Kg)
SAMPLES COLLECTED SEPTEMBER 1987

	Sample Location			
COMPOUND(a)	SED-1	SED-2	SED-3	SED-4
Methylene Chloride	10.0	2.3 J	1.6 J	R
Acetone	460.0 B	R	R	R
Carbon Disulfide	34.0	---	---	9.6
1,1-Dichloroethene	---	---	4.0 J	---
2-Butanone	---	---	37.0	---
Benzene	11.0 J	1.6 J	42.0	---
Toluene	---	---	89.0	---
Chlorobenzene	---	---	51.0	---
Phenol	770.0	---	---	---
2-Chlorophenol	760.0	---	---	---
4-Chloro-3-Methylphenol	460.0	---	---	---
Pyrene	330.0	---	---	---
bis(2-Ethylhexyl)Phthalate	---	---	---	250.0 J
Benzo(a)Pyrene	---	---	---	R
Trichloroethane	---	---	35.0	---
Aroclor 1254 (b)	---	---	59.0 J	---

FOOTNOTES:

(a) - Only HSL organic compounds that were detected are presented.
(b) - Samples for pesticide/PCB analysis were collected on 10/13/88.

DATA QUALIFIERS:

J - Indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J)
--- - Indicates compound was analyzed for but not detected. Refer to Appendix D for detection limit.
X - Data validation recommends this value be considered an estimate.
R - Data validation recommends this value be rejected.

TABLE IV-11
LANCASTER RECLAMATION
SEDIMENT RESULTS
HSL METALS (mg/Kg)
SAMPLES COLLECTED SEPTEMBER 1987

METAL(a)	NATURALLY OCCURRING RANGES IN NYS SOILS (ppm) (b)	Sample Location			
		SED-1	SED-2	SED-3	SED-4
Aluminum		2917.9	5028.1	7782.1	7346.9
Antimony	<1-10	91.6	74.7	92.4	37.7
Arsenic	0.1-100	14.7	7.6	15.3	---
Barium	10-500	[22.7]	55.6	60.3	[52.6]
Beryllium	<1-15	[0.3]	[0.3]	[0.5]	[0.3]
Cadmium	0.01-7 (c)	2.7	9.4	4.2	4.6
Calcium		62179.7	67846.1	69306.6	63542.0
Chromium	1-2000	21.6	18.3	25.0	22.3
Cobalt	<3-70	13.5	15.8	17.9	14.3
Copper	1-700	13.0	14.4	20.0	13.1
Iron		6979.2	9634.4	16075.0	14417.7
Lead	<10-700	50.0	82.8	52.1	14.2
Magnesium		23573.0	34162.8	23548.2	52252.9
Manganese	<2-7000	278.6	282.2	462.4	1139.3
Nickel	<5-700	20.8	16.9	33.2	20.6
Potassium		[448.4]	[1008.1]	[1265.8]	1814.6
Silver		32.2	46.9	33.4	42.6
Sodium		---	[640.3]	---	280.3
Vanadium	20-500	[13.2]	14.7	22.6	14.9
Zinc	<5-3500	41.9	183.3	69.5	92.0

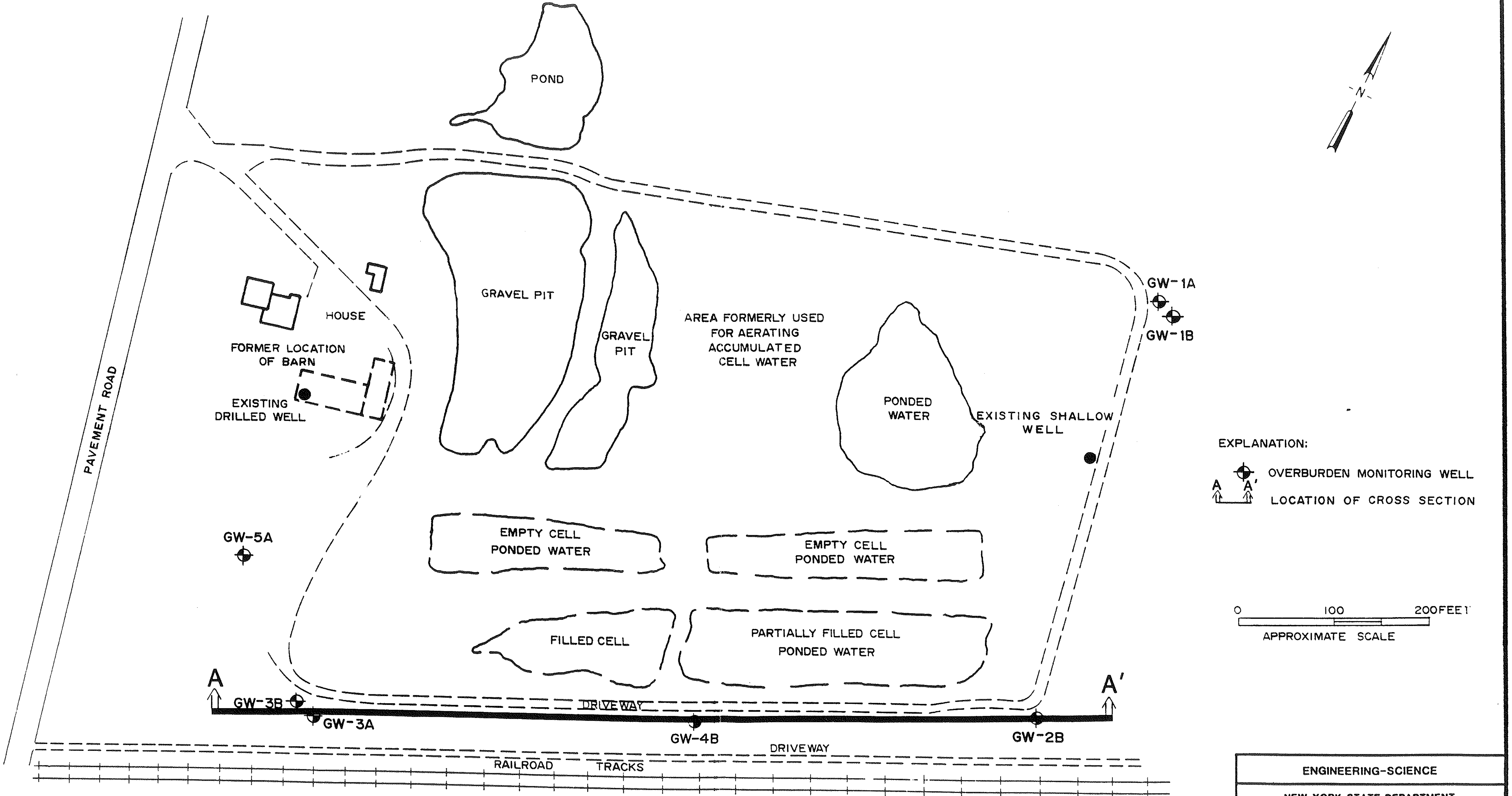
FOOTNOTES:

(a) - Only HSL metals detected are reported. If the result is a value greater than or equal to the instrument detection limit but less than the contract-required detection limit, the value is reported in brackets (i.e.[10]).

(b) - USGS Professional Paper 1270 (1984) New York State soils

(c) - Booz, Allen & Hamilton, Inc. (1983) U.S. Soils

--- - Indicates element was analyzed for but not detected. Refer to Appendix D for detection limit.



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PHASE II REPORT**

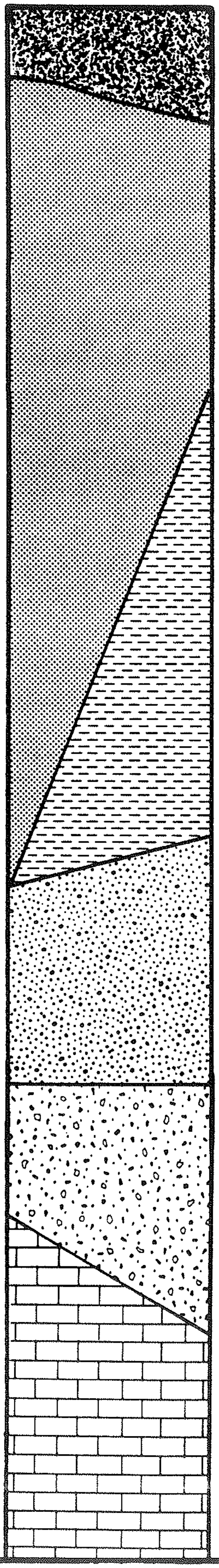
LOCATION OF MONITORING WELLS &
GEOLOGIC CROSS SECTION A-A'
LANCASTER RECLAMATION

FIGURE IV-1

WESTERN HALF OF SITE

(GW- 3A, 3B, 5A)

UNIT	THICKNESS (FEET)
FILL SAND AND GRAVEL	0.5- 5.5
GLACIAL OUTWASH SILTY-SAND, FINE TO MEDIUM SAND (SM)	49
ICE CONTACT DRIFT SILTY-SAND AND GRAVEL (SM-SP)	5.5
GLACIAL TILL DENSE SAND, SILT AND GRAVEL (SM)	6.5
ONONDAGA LIMESTONE	



EASTERN HALF OF SITE

(GW- 1A, 1B, 2B, 4B)

UNIT	THICKNESS (FEET)
FILL SAND AND GRAVEL	1.6-8.0
GLACIAL OUTWASH SILTY-SAND, FINE TO MEDIUM SAND (SM-SP)	0-8.6
LACUSTRINE SEDIMENTS SILTY-CLAY, CLAYEY-SILT (CL-ML)	30.1-33
ICE CONTACT DRIFT SILTY-SAND AND GRAVEL (SM-SP)	14-34
GLACIAL TILL DENSE SAND, SILT AND GRAVEL (SM)	4.0-9.1
ONONDAGA LIMESTONE	

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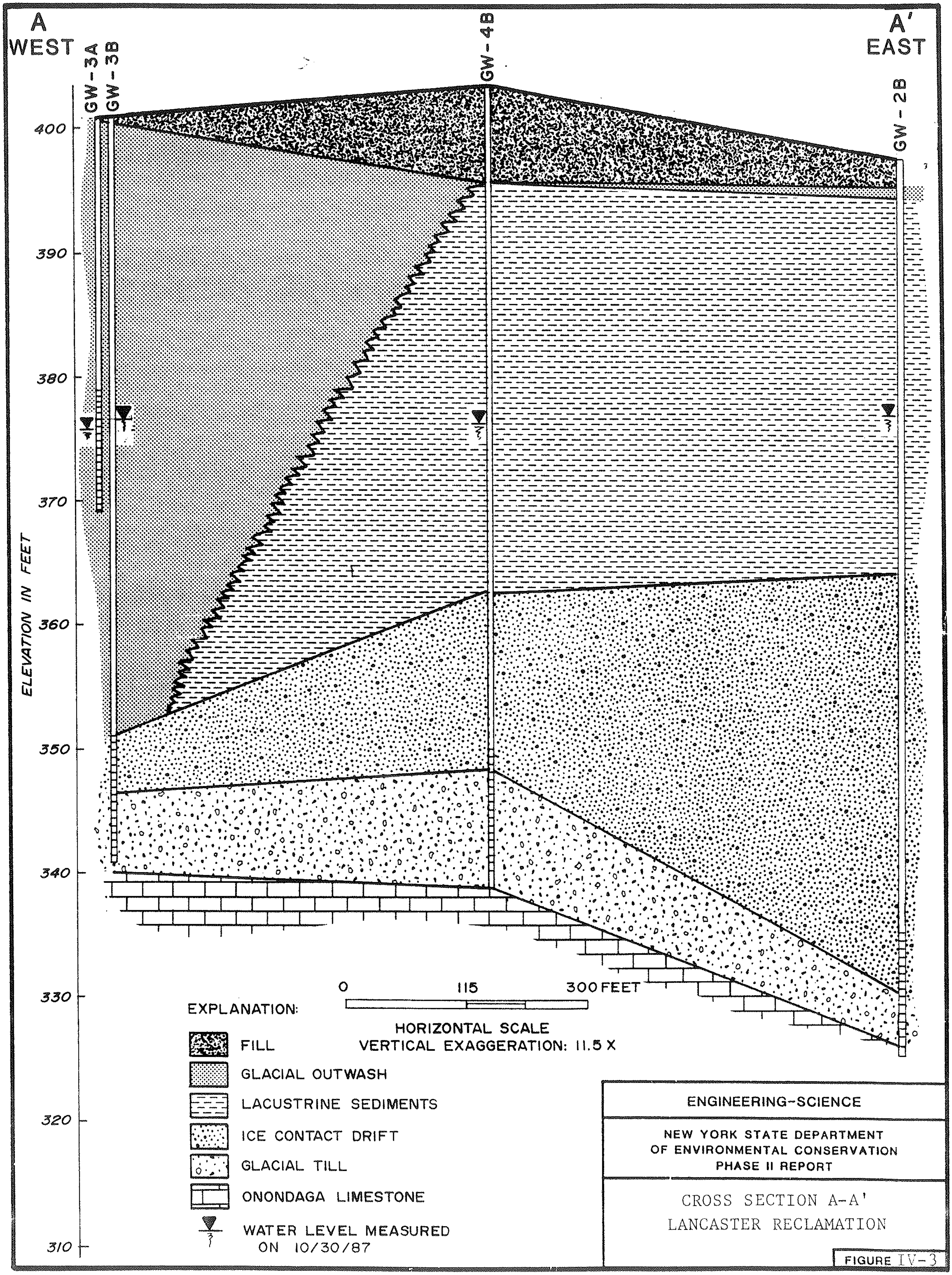
GENERALIZED STRATIGRAPHIC
COLUMN
LANCASTER RECLAMATION

FIGURE IV-2



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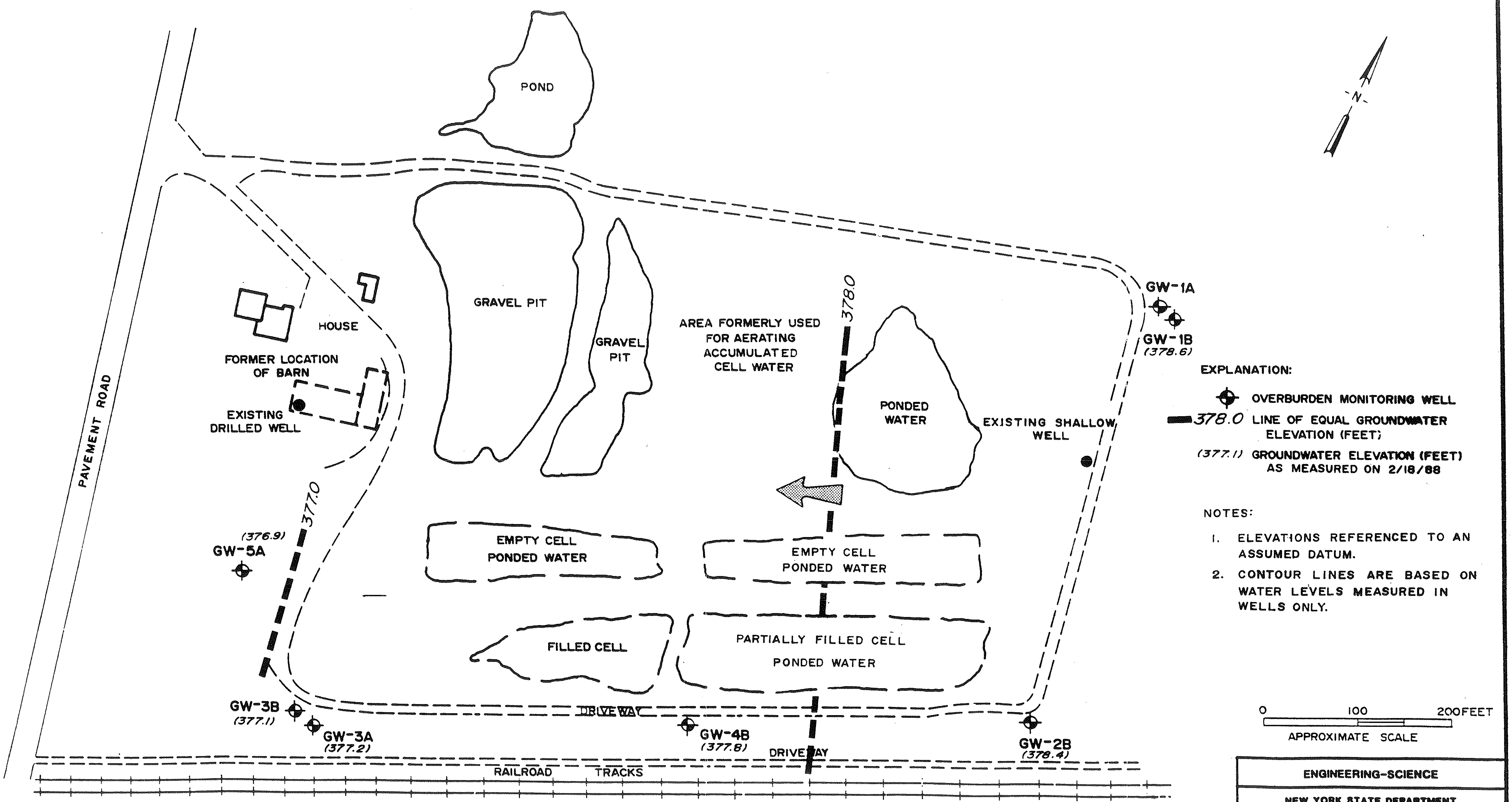
CROSS SECTION A-A'
LANCASTER RECLAMATION

FIGURE IV-3



EXPLANATION:

- ⊕ OVERBURDEN MONITORING WELL
- 378.0 LINE OF EQUAL GROUNDWATER ELEVATION (FEET)
- (377.1) GROUNDWATER ELEVATION (FEET) AS MEASURED ON 2/18/88

NOTES:

1. ELEVATIONS REFERENCED TO AN ASSUMED DATUM.
2. CONTOUR LINES ARE BASED ON WATER LEVELS MEASURED IN WELLS ONLY.

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GROUNDWATER CONTOUR MAP
2/18/88
LANCASTER RECLAMATION

FIGURE IV-4

SECTION V

FINAL APPLICATION OF HAZARD RANKING SYSTEM

NARRATIVE SUMMARY

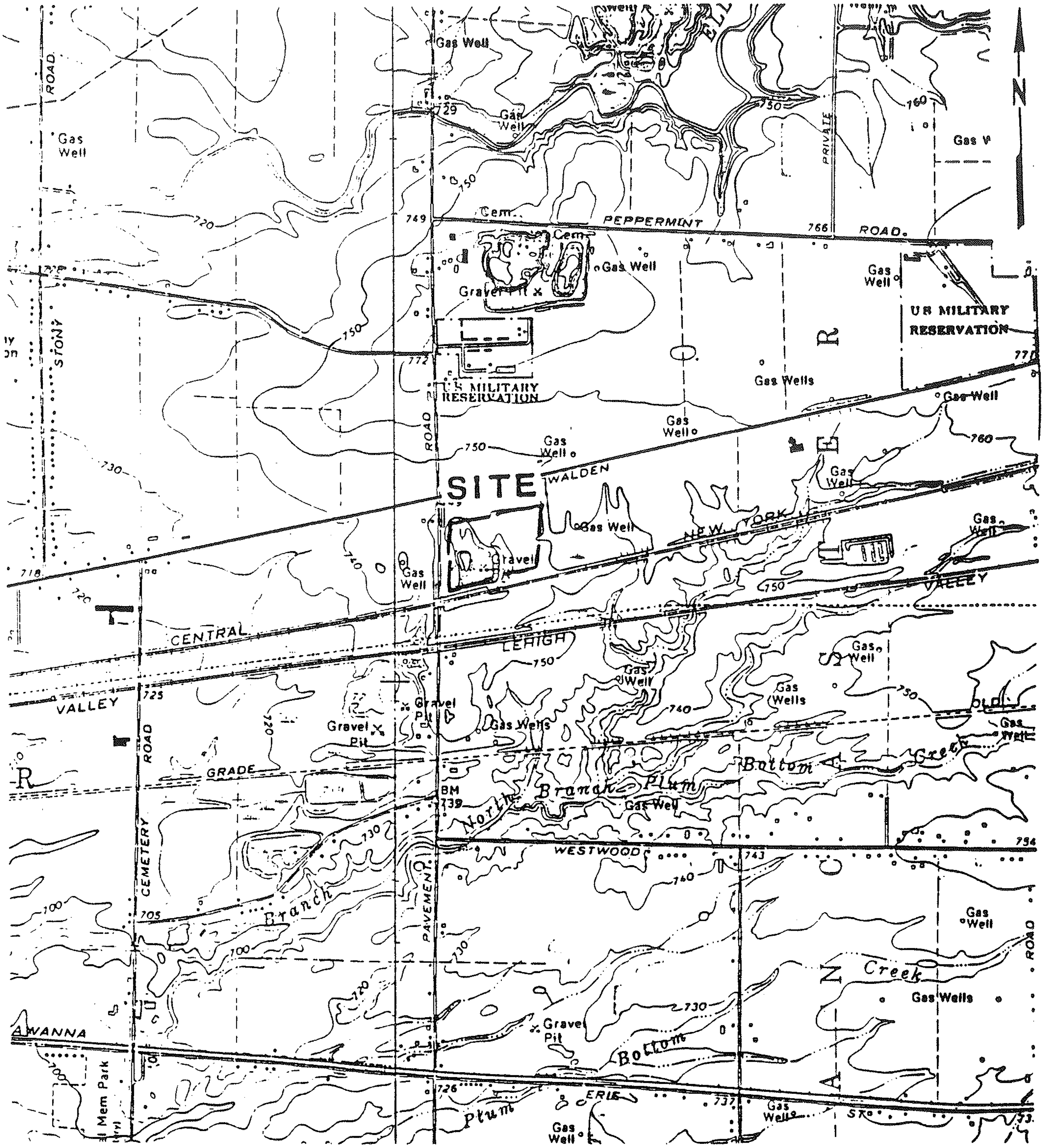
The Lancaster Reclamation Company is located on a 12.9-acre parcel in the Town of Lancaster, Erie County, New York. The owners of the Lancaster Reclamation Company purchased the former gravel pit in 1976 and began disposal operations under plans approved by the NYSDEC. Wastes disposed at the site included bentonite clay slurry, foundry sand slurry and a cement slurry containing asbestos. Disposal of these wastes were approved by NYSDEC.

In 1979, an initial operating permit was issued for the site by NYSDEC. Subsequent to this, the Lancaster Reclamation Company received permission from NYSDEC to dispose on-site, shot blast dust, wallpaper production waste and oily sludges. Wastes were generally dewatered prior to being landfilled in below-grade cells constructed on-site. Waste disposal ended in approximately late 1983.

Sampling conducted during the Phase II investigation indicated downgradient well concentrations in excess of three times the upgradient concentrations for three organic compounds and eight metals found on the Hazardous Substance List (HSL). Those results indicate the source of the groundwater contamination is located on-site.

In the vicinity of the site, most residents are served by a municipal water system which has Lake Erie as its source. Lake Erie is more than three miles downstream of the site. Approximately 100 residents within 3 miles of the site are apparently utilizing groundwater as a drinking water source. For the most part, these residents live in the few areas not serviced by the public water supply. The nearest drinking water well is located about two miles from the site.

Surface water on-site consists of ponded water in the full and partially full cells. The surface water on-site is not directly connected to any off-site surface water body. No cleanup actions have been recommended or undertaken at the site and no enforcement actions have occurred. The site is presently inactive.



LATITUDE: 42°55'18"
LONGITUDE: 78°37'30"

SCALE

0 1000 2000 3000 4000 FEET

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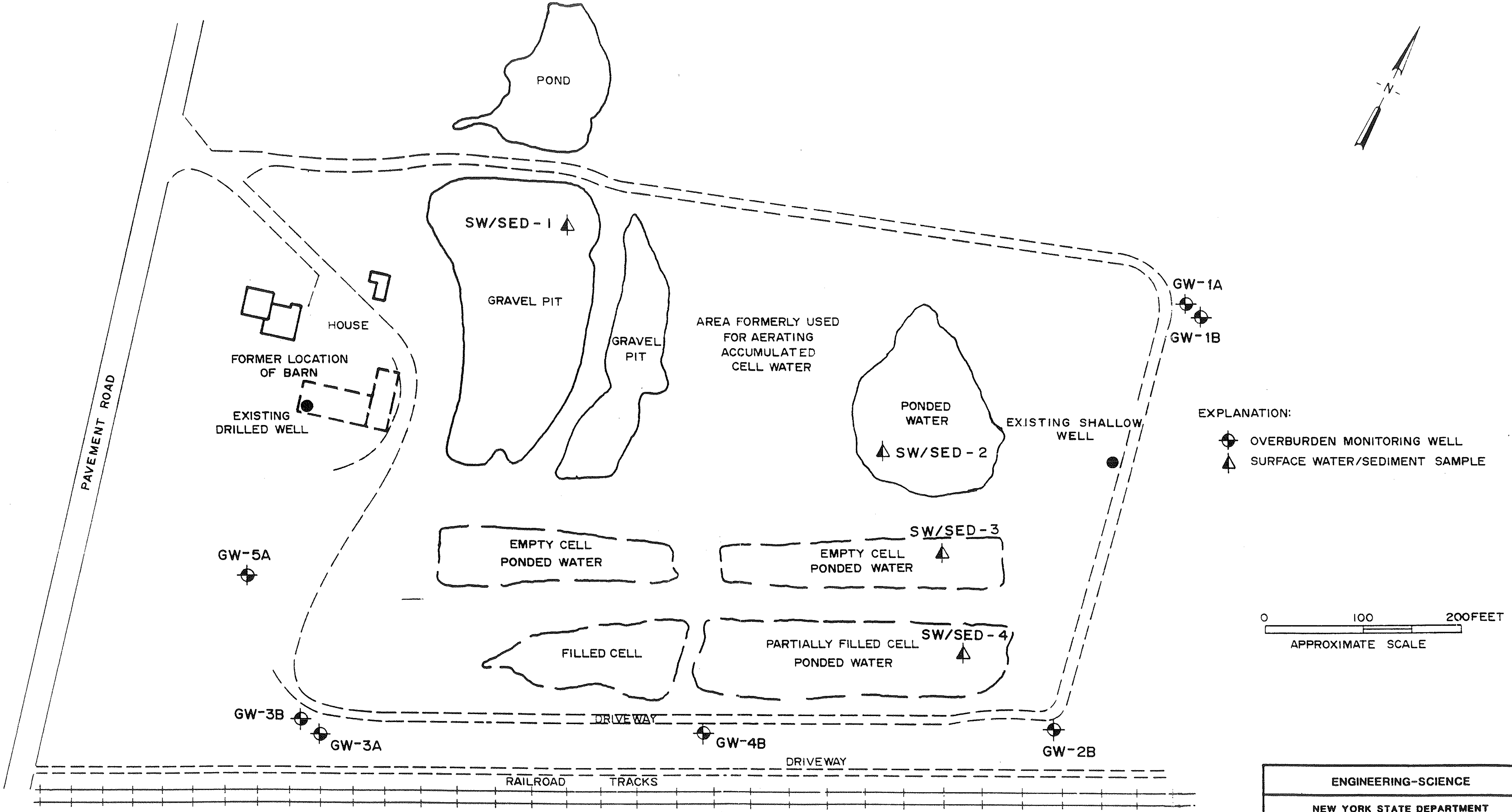
SITE LOCATION MAP

LANCASTER RECLAMATION

FIGURE V-1

REFERENCE: U.S.G.S. 7.5' Topographic Map
Clarence, NY (1965) Quadrangle



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SITE PLAN
LANCASTER RECLAMATION

FIGURE V-2

Facility Name: Lancaster Reclamation Date: 1/5/88

Ground Water Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
$\boxed{1}$ Observed Release	0 [✓ 45]	1	45	45	3.1
If observed release is given a score of 45, proceed to line $\boxed{4}$. If observed release is given a score of 0, proceed to line $\boxed{2}$.					
$\boxed{2}$ Route Characteristics					3.2
Depth to Aquifer of Concern	0 1 2 [✓ 3]	2	6	6	
Net Precipitation	0 1 [✓ 2] 3	1	2	3	
Permeability of the Unsaturated Zone	[✓ 0] 1 2 3	1	0	3	
Physical State	0 1 2 [✓ 3]	1	3	3	
Total Route Characteristics Score			11	15	
$\boxed{3}$ Containment	0 1 2 [✓ 3]	1	3	3	3.3
$\boxed{4}$ Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 12 15 [✓ 18]	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 [✓ 8]	1	8	8	
Total Waste Characteristics Score			26	26	
$\boxed{5}$ Targets					3.5
Ground Water Use	0 1 [✓ 2] 3	3	6	9	
Distance to Nearest Well/Population Served	0 4 6 [✓ 8] 10 12 16 18 20 24 30 32 35 40	1	8	40	
Total Targets Score			14	49	
$\boxed{6}$ If line $\boxed{1}$ is 45, multiply $\boxed{1}$ x $\boxed{4}$ x $\boxed{5}$ If line $\boxed{1}$ is 0, multiply $\boxed{2}$ x $\boxed{3}$ x $\boxed{4}$ x $\boxed{5}$			16,380	57,330	
$\boxed{7}$ Divide line $\boxed{6}$ by 57,330 and multiply by 100			S_{gw} = 28.57		

GROUND WATER ROUTE WORK SHEET

Facility Name: Lancaster Reclamation Date: 1/5/88

Surface Water Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Observed Release	[✓ 0] 45	1	0	45	4.1
If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2.					
2 Route Characteristics					4.2
Facility Slope and Intervening Terrain	[✓ 0] 1 2 3	1	0	3	
1-yr. 24-hr. Rainfall	0 1 [✓ 2] 3	1	2	3	
Distance to Nearest Surface Water	[✓ 0] 1 2 3	2	0	6	
Physical State	0 1 2 [✓ 3]	1	3	3	
Total Route Characteristics Score			5	15	
3 Containment	[✓ 0] 1 2 3	1	0	3	4.3
4 Waste Characteristics					4.4
Toxicity/Persistence	[✓ 0] 3 6 9 12 15 18	1	0	18	
Hazardous Waste Quantity	[✓ 0] 1 2 3 4 5 6 7 8	1	0	8	
Total Waste Characteristics Score			0	26	
5 Targets					4.5
Surface Water Use	0 1 [✓ 2] 3	3	6	9	
Distance to a Sensitive Environment	0 [✓ 1] 2 3	2	2	6	
Population Served/ Distance to Water Intake Downstream	[✓ 0] 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
Total Targets Score			8	55	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			0	64,350	
7 Divide line 6 by 64,350 and multiply by 100			S_{SW} = 0		

SURFACE WATER ROUTE WORK SHEET

Facility Name: Lancaster Reclamation

Date: 1/5/88

Air Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
$\boxed{1}$ Observed Release	[✓ 0] 45	1	0	45	5.1
Date and Location:					
Sampling Protocol:					
If line $\boxed{1}$ is 0, the S_a = 0. Enter on line $\boxed{5}$. If line $\boxed{1}$ is 45, then proceed to line $\boxed{2}$.					
$\boxed{2}$ Waste Characteristics					5.2
Reactivity and Incompatibility	[✓ 0] 1 2 3	1	0	3	
Toxicity	[✓ 0] 1 2 3	3	0	9	
Hazardous Waste	[✓ 0] 1 2 3 4 5 6 7 8	1	0	8	
	Total Waste Characteristics Score		0	20	
$\boxed{3}$ Targets					5.3
Population Within 4-Mile Radius	0 9 12 [✓ 15] 18 21 24 27 30	1	15	30	
Distance to Sensitive Environment	0 [✓ 1] 2 3	2	2	6	
Land Use	0 1 2 [✓ 3]	1	3	3	
	Total Targets Score		20	39	
$\boxed{4}$ Multiply $\boxed{1}$ x $\boxed{2}$ x $\boxed{3}$			0	35,100	
$\boxed{5}$ Divide line $\boxed{4}$ by 35,100 and multiply by 100			S_a = 0		

AIR ROUTE WORK SHEET

Facility Name: Lancaster Reclamation   Date: 1/5/88

Fire and Explosion Work Sheet

Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Containment	[✓ 1] 3	1	1	3	7.1
2 Waste Characteristics					7.2
Direct Evidence	[✓ 0] 3	1	0	3	
Ignitability	[✓ 0] 1 2 3	1	0	3	
Reactivity	[✓ 0] 1 2 3	1	0	3	
Incompatibility	[✓ 0] 1 2 3	1	0	3	
Hazardous Waste Quantity	[✓ 0] 1 2 3 4 5 6 7 8	1	0	8	
Total Waste Characteristics Score			0	20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 [✓ 3] 4 5	1	3	5	
Distance to Nearest Building	0 [✓ 1] 2 3	1	1	3	
Distance to Sensitive Environment	[✓ 0] 1 2 3	1	0	3	
Land Use	0 1 2 [✓ 3]	1	3	3	
Population Within 2-Mile Radius	0 1 2 3 [✓ 4] 5	1	4	5	
Buildings Within 2-Mile Radius	0 1 2 3 [✓ 4] 5	1	4	5	
Total Targets Score			15	24	
4 Multiply 1 x 2 x 3			0	1,440	
5 Divide line 4 by 1,440 and multiply by 100			S_{FE} = 0		

FIRE AND EXPLOSION WORK SHEET

Facility Name: Lancaster Reclamation   Date: 1/5/88

Direct Contact Work Sheet

Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
$\boxed{1}$ Observed Incident	[✓ 0] 45	1	0	45	8.1
If line $\boxed{1}$ is 45, proceed to line $\boxed{4}$ If line $\boxed{1}$ is 0, proceed to line $\boxed{2}$					
$\boxed{2}$ Accessibility	0 1 2 [✓ 3]	1	3	3	8.2
$\boxed{3}$ Containment	0 [✓ 15]	1	15		8.3
$\boxed{4}$ Waste Characteristics Toxicity	0 1 2 [✓ 3]	5	15	15	8.4
$\boxed{5}$ Targets					8.5
Population Within 1-Mile Radius	0 1 [✓ 2] 3 4 5	4	8	20	
Distance to a Critical Habitat	[✓ 0] 1 2 3	4	0	12	
Total Targets Score			8	32	
$\boxed{6}$ If line $\boxed{1}$ is 45, multiply $\boxed{1}$ x $\boxed{4}$ x $\boxed{5}$ If line $\boxed{1}$ is 0, multiply $\boxed{2}$ x $\boxed{3}$ x $\boxed{4}$ x $\boxed{5}$			5,400	21,600	
$\boxed{7}$ Divide line $\boxed{6}$ by 21,600 and multiply by 100			S_{DC} =	25.00	

DIRECT CONTACT WORK SHEET

Facility Name: Lancaster Reclamation Date: 1/5/88

Worksheet for Computing S_M

	S	S^2
Groundwater Route Score (S_{gw})	28.57	816.24
Surface Water Route Score (S_{sw})	0	0
Air Route Score (S_a)	0	0
$S^2_{gw} + S^2_{sw} + S^2_a$	▨	816.24
$\sqrt{S^2_{gw} + S^2_{sw} + S^2_a}$	▨	28.57
$\sqrt{S^2_{gw} + S^2_{sw} + S^2_a} / 1.73 = S_M =$	▨	16.51

WORK SHEET FOR COMPUTING S_M

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: The purpose of these records is to provide a convenient way to prepare an auditable record of the data and documentation used to apply the Hazard Ranking System to a given facility. As briefly as possible summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference that will make the document used for a given data point easier to find. Include the location of the document and consider appending a copy of the relevant page(s) for ease in review.

FACILITY NAME: Lancaster Reclamation

LOCATION: Pavement Road, Town of Lancaster, Erie County, New York

GROUND WATER ROUTE

1. OBSERVED RELEASE

Assigned Value = 45

Contaminants detected (5 maximum):

Lead was detected at 3.6 ug/l in GW-1B, and at 39.2 ug/l in GW-3B (Nanco Labs, Inc., 1987).

Rationale for attributing the contaminants to the facility:

The downgradient concentration of lead in GW-3B exceeded the upgradient concentration in GW-1B by more than three times.

***

2. ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Assigned Value = 3

Name/description of aquifer(s) of concern:

Overburden aquifer (ES Boring Logs, 1987, Frey, 1988).

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

18.9 feet in GW-2B on 2/18/88 (ES, 1988).

Depth from the ground surface to the lowest point of waste disposal/storage:

Approximately 13 feet (Buffalo Drilling Company, 1984).

Net Precipitation

Assigned Value = 2

Mean annual or seasonal precipitation (list months for seasonal):

Mean annual precipitation is 36 inches (USDOC, 1979).

Mean annual lake or seasonal evaporation (list months for seasonal):

Mean annual lake evaporation is 27 inches (USDOC, 1979).

Net precipitation (subtract the above figures):

36 inches - 27 inches = net precipitation of 9 inches.

Permeability of Unsaturated Zone **Assigned Value = 0**

Soil type in unsaturated zone:

The site was originally a gravel pit. The disposal cells are constructed in a zone of silty-clays (Buffalo Drilling Company, 1984).

Permeability associated with soil type:

2.21×10^{-8} cm/s - Sample 12-14 Feet - GW-1A

1.97×10^{-8} cm/s - Sample 17-19 Feet - GW-2B

(R&R International, Inc., 1987).

Physical State **Assigned Value = 3**

Physical state of substances at time of disposal (or at present time for generated gases):

Industrial waste slurries and sands. Score = 3: Liquid, Sludge (NYSDEC, 1987; Wendel Engineers, 1979).

***

3. CONTAINMENT

Containment **Assigned Value = 3**

Method(s) of waste or leachate containment evaluated:

Landfill (NYSDEC, 1983; Wendel Engineers, 1979).

Method with highest score:

A score of 3 is assigned since there is no liner, no run-on control, and the landfill surface encourages ponding (Wendel Engineers, 1984).

***

4. WASTE CHARACTERISTICS

Toxicity and Persistence **Assigned Value = 18**

Compound(s) evaluated:

Lead in well GW-3B (Nanco Labs, Inc., 1987).

Compound with highest score:

Lead - Score = 18 (EPA, 1984).

Hazardous Waste Quantity **Assigned Value = 8**

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

More than 2,500 cubic yards of solid material (after dewatering) containing various hazardous waste constituents (Including heavy metals) have been disposed on-site.

Basis of estimating and/or computing waste quantity:

Lancaster Reclamation, Inc. records (J. Ferry, 1985) and NYSDEC Applications for Treatment or Disposal of an Industrial or Hazardous Waste Stream (NYSDEC, 1978 through 1981).

***

5. TARGETS

Ground Water Use **Assigned Value = 2**

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:

A small segment of the population uses ground water as a drinking water supply. To the best of our knowledge, groundwater is not used for purposes of irrigation (Armitage, 1988; Campbell, 1988; Keysa, 1988; Koczaja, 1988).

Distance to Nearest Well **Assigned Value (matrix) = 8**

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply:

Westwood Road, Town of Alden (USGS, 1965 and Frey, 1988).

Distance to above well or building:

The nearest well is about 2.25 miles (USGS, 1965 and Frey, 1988).

Population Served by Ground Water Wells Within a 3-Mile Radius

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

27 homes; 3.8 people/home based on house count (Armitage, 1988; Campbell, 1988; Keysa, 1988; USGS, 1965).

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

To the best of our knowledge, groundwater is not used for purposes of irrigation within 3 miles of the site (Koczaja, 1988).

Total population served by ground water within a 3-mile radius:

103 people (= 27 wells x 3.8 people/well) (Armitage, 1988; Campbell, 1988; Keysa, 1988; USGS, 1965).

SURFACE WATER ROUTE

1. OBSERVED RELEASE

Assigned Value = 0

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

No surface water samples other than those taken from the disposal cells on-site were collected. No upgradient comparisons are available.

Rationale for attributing the contaminants to the facility:

The site cannot be scored for observed release since the surface water on-site does not connect to an off-site body of water (ES Field Investigations, 1987; USGS, 1965).

***

2. ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain **Assigned Value = 0**

Average slope of facility in percent:

The average slope of the facility is less than 1% (USGS, 1965).

Name/description of nearest downslope surface water:

North Branch Plum Bottom Creek (USGS, 1965).

Average slope of terrain between facility and above-cited surface water body in percent:

The average slope of terrain between the facility and North Branch Plum Bottom Creek is 1% (USGS, 1965).

Is the facility located either totally or partially in surface water?

No (USGS, 1965).

NOTE: Water is ponded in two of the on-site disposal cells, but is confined to the site.

Is the facility completely surrounded by areas of higher elevation?

No (USGS, 1965).

1-Year 24-Hour Rainfall in Inches **Assigned Value = 2**

2 to 2.5 inches (US Department of Commerce Technical Paper No. 40).

Distance to Nearest Downslope Surface Water **Assigned Value = 0**

There are no apparent courses whereby runoff can be expected to reach surface water (USGS, 1965; ES Site Inspection, 1985).

Physical State of Waste **Assigned Value = 3**

Sludge, Liquid (NYSDEC, 1987).

***

3. CONTAINMENT

Containment **Assigned Value = 0**

Method(s) of waste or leachate containment evaluated:

Unlined landfill with no run-on control and surface encourages ponding (Wendel Engineers, 1984).

Method with highest score:

Table 9 of the HRS User's Manual (EPS, 1984) states that a containment score of zero is assigned when intervening terrain precludes runoff from entering surface water. A containment score of zero is assigned in this case since wastes are contained in on-site cells which are below ground (Wendel Engineers, 1984; ES Site Inspection, 1985).

***

4. WASTE CHARACTERISTICS

Toxicity and Persistence **Assigned Value = 0**

Compound(s) evaluated

The score for toxicity and persistence is zero since wastes cannot migrate from the site via the surface water pathway (EPS, 1984).

Compound with highest score:

Not applicable; the containment score is zero.

Hazardous Waste Quantity **Assigned Value = 0**

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

The hazardous waste quantity is zero since the containment score is zero (see above).

Basis of estimating and/or computing waste quantity:

Not applicable; the hazardous waste quantity is zero.

***

5. TARGETS

Surface Water Use **Assigned Value = 2**

The North Branch of Plum Bottom Creek is a Class D stream with limited recreational use (6 NYCRR Volume E Article 1, Part 837, Map 7).

Use(s) of surface water within 3 miles downstream of the hazardous substance:

Is there tidal influence?

No (USGS, 1965).

Distance to a Sensitive Environment **Assigned Value = 1**

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

The site is not near the coast (USGS, 1965).

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

There is a wetland 4,400 feet northwest of the site (Farquhar, 1987).

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

There are no federally designated critical habitats of endangered species within the State of New York (Ozard, 1988).

Population Served by Surface Water **Assigned Value (matrix) = 0**

There are no water supply intakes within 3 miles of the site (NYSDOH, 1982).

Location(s) of water-supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance and population served by each intake:

Not applicable: there are no surface water intakes within the specified distance (NYSDOH, 1982).

Computation of land area irrigated by above-cited intake(s) and conversion to population (1.5 people per acre):

Not applicable: there are no surface water intakes within three miles of the site (NYSDOH, 1982).

Total population served:

Not applicable: there are no surface water intakes within three miles of the site (NYSDOH, 1982).

Name/description of nearest of above water bodies:

Not applicable: there are no surface water intakes within three miles of the site (NYSDOH, 1982).

Distance to above-cited intakes, measured in stream miles:

Not applicable: there are no surface water intakes within three miles of the site (NYSDOH, 1982).

AIR ROUTE

1. OBSERVED RELEASE

Assigned Value = 0

Contaminants detected:

Readings above background were not detected during routine on-site monitoring for volatile organic vapors (ES Boring Logs, 1987).

Date and location of detection of contaminants:

Not applicable. No contaminants were detected.

Methods used to detect the contaminants:

Photovac-TIP.

Rationale for attributing the contaminants to the site:

No hazardous waste with the potential to impact the air pathway is known to exist on-site (NYSDEC, 1987; Ferry, 1985).

***

2. WASTE CHARACTERISTICS

Reactivity and Incompatibility

Assigned Value = 0

Most reactive compound:

No reactive compounds with the potential to impact the air pathway are known to exist on-site (NYSDEC, 1987; Ferry, 1985).

Most incompatible pair of compounds:

No incompatible pairs of compounds with the potential to impact the air pathway are known to exist on-site (NYSDEC, 1987; Ferry, 1985).

Toxicity

Assigned Value = 0

Most toxic compound:

No hazardous waste with the potential to impact the air pathway is known to exist on-site (NYSDEC, 1987; ES Field Investigations, 1987).

Hazardous Waste Quantity **Assigned Value = 0**

Total quantity of hazardous waste:

The score is zero because no hazardous wastes with the potential to impact the air pathway are known to exist on-site (NYSDEC, 1987; ES Field Investigations, 1987).

Basis of estimating and/or computing waste quantity:

Not applicable; see comment above.

***

3. TARGETS

Population Within 4-Mile Radius **Assigned Value = 15**

Circle radius used, give population, and indicate how determined:

0 to 4 mi [✓ 0 to 1 mi] 0 to 1/2 mi 0 to 1/4 mi

946 people within 1 mile (US Census Tract Data, 1980).

Distance to a Sensitive Environment **Assigned Value = 1**

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

The site is not near the coast (USGS, 1965).

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

There is a wetland 4,400 feet northwest of the site (USGS, 1965; Farquhar, 1987).

Distance to critical habitat of an endangered species, if 1 mile or less:

There are no federally designated critical habitats of endangered species within the State of New York (Ozard, 1988).

Land Use **Assigned Value = 3**

Distance to commercial/industrial area, if 1 mile or less:

There is no commercial/industrial area within one mile of the site (USGS, 1965).

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

There is no national or state park, forest, or wildlife reserve within two miles of the site (USGS, 1965).

Distance to residential area, if 2 miles or less:

There is a residence on-site. The nearest concentration of residences is along Westwood Road, about one mile south of the site (USGS, 1965; ES Field Investigations, 1987).

Distance to agricultural land in production within past 5 years, if 1 mile or less:

0.0 miles. Actively farmed agricultural land is located adjacent to the site (Bielli, 1988).

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

0.0 miles. Actively farmed prime agricultural land is located adjacent to the site (Bielli, 1988).

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

There is no historic or landmark site within view of the site (USDOI, 1983; Federal Register, 1983).

FIRE AND EXPLOSION

1. CONTAINMENT

Assigned Value = 1

Hazardous substances present:

No information which indicates that fire and explosion related to hazardous materials at the site has occurred (or could occur) at the site was discovered during the Phase I and Phase II studies. A fire destroyed a barn on the property during the mid 1980's, however the barn was not associated with the waste disposal use of the site.

Type of containment, if applicable:

***

2. WASTE CHARACTERISTICS

Direct Evidence **Assigned Value = 0**

Type of instrument and measurements:

No measurements of the potential for fire and explosion were taken on-site.

Ignitability **Assigned Value = 0**

Compound used:

No ignitable compounds are known to be present on-site (ES Field Investigations, 1987; Ferry, 1985).

Reactivity **Assigned Value = 0**

Most reactive compound:

No reactive compounds are known to be present on-site (ES Field Investigations, 1987; Ferry, 1985).

Incompatibility **Assigned Value = 0**

Most incompatible pair of compounds:

No incompatible compounds are known to exist on-site (ES Field Investigations, 1987; Ferry, 1985).

Hazardous Waste Quantity **Assigned Value = 0**

Total quantity of hazardous substances at the facility:

Ignitable and/or reactive waste is not known to be present on-site (ES Field Investigations, 1987; Ferry, 1985).

Basis of estimating and/or computing waste quantity:

Not applicable; see comment above.

***

3. TARGETS

Distance to Nearest Population **Assigned Value = 3**

There is a residence on-site which is approximately 374 feet from the disposal cells (ES Site Inspection, 1985).

Distance to Nearest Building **Assigned Value = 1**

There is a residence on-site which is approximately 374 feet from the surface impoundments (ES Site Inspection, 1985).

Distance to Sensitive Environment **Assigned Value = 0**

Distance to wetlands:

There is a wetland 4,400 feet northwest of the site (USGS, 1965; Farquhar, 1987).

Distance to critical habitat:

There are no federally designated critical habitats of endangered species within the State of New York (Ozard, 1988).

Land Use **Assigned Value = 3**

Distance to commercial/industrial area, if 1 mile or less:

There is no commercial/industrial area within one mile of the site (USGS, 1965).

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

There is no national or state park, forest, or wildlife reserve within 2 miles of the site (USGS, 1965; ES Field Investigations, 1987).

Distance to residential area, if 2 miles or less:

There is a residence on-site which is approximately 374 feet from the disposal cells (ES Site Inspection, 1985).

Distance to agricultural land in production within past 5 years, if 1 mile or less:

0.0 miles; actively farmed agricultural land is adjacent to the site (Bielli, 1988).

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

0.0 miles; actively farmed prime agricultural land is adjacent to the site (Bielli, 1988).

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

There is no historic or landmark site within view of the site (USDOI, 1983; Federal Register, 1983).

Population Within 2-Mile Radius **Assigned Value = 4**

3,586 people (US Census Tract Data, 1980).

Buildings Within 2-Mile Radius **Assigned Value = 4**

944 buildings were identified within a 2-mile radius of the site by counting buildings located on topographic maps (USGS, 1965).

DIRECT CONTACT

1. OBSERVED INCIDENT

Assigned Value = 0

Date, location, and pertinent details of incident:

Based on information revealed during the Phase I Study, there is not a confirmed instance in which contact with hazardous substances at the site has caused injury, illness or death to humans or animals (Phase II Record Search, 1987-1988).

***

2. ACCESSIBILITY

Assigned Value = 3

Describe type of barrier(s):

A score of 3 is assigned since barriers do not completely surround the facility (ES Site Visits, 1987).

***

3. CONTAINMENT

Assigned Value = 15

Type of containment, if applicable:

The waste is contained in open, unlined disposal cells on-site. Waste is therefore accessible via direct contact (ES Site Inspection, 1985, and Field Investigations, 1987).

***

4. WASTE CHARACTERISTICS

Toxicity **Assigned Value = 3**

Compounds evaluated:

Samples from the sediments and waters at the site were analyzed for volatile and semivolatile organics, and metals (Nanco Labs, Inc., 1987).

Compound with highest score:

Phenol has a score of 3 (EPA, 1984).

5. TARGETS

Population within one-mile radius **Assigned Value = 2**

946 people (US Census Tract Data, 1980).

Distance to critical habitat (of endangered species) **Assigned Value = 0**

There are no federally designated critical habitats of endangered species within the State of New York (Ozard, 1988).

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Site Inspection Report

LANCASTER RECLAMATION

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D000513911

II. SITE NAME AND LOCATION

01 SITE NAME *(Legal, common, or descriptive name of site)*: Lancaster Reclamation

02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER: 403 Pavement Road

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Lancaster	NY	14086	Erie	029	38

09 COORDINATES LATITUDE: 42 55' 18". LONGITUDE: 78 37' 30".

10 TYPE OF OWNERSHIP *(Check one)*
☐ A. PRIVATE ☐ B. FEDERAL ______ ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER ______ ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION: 10 /28/ 85 * (MONTH DAY YEAR)

02 SITE STATUS: ☒ ACTIVE ☐ INACTIVE

03 YEARS OF OPERATION: 1976 (BEGINNING YEAR) | 1983-84 (ENDING YEAR) ____ UNKNOWN

04 AGENCY PERFORMING INSPECTION *(Check all that apply)*
☐ A. EPA ☐ B. EPA CONTRACTOR ______ *(Name of firm)* ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR ______ *(Name of firm)*
☐ E. STATE ☒ F. STATE CONTRACTOR Engineering-Science *(Name of firm)* ☐ G. OTHER ______ *(Specify)*

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
John P. McAuliffe	Environmental Engineer	Engineering Science	(315) 451-9560

09 OTHER INSPECTORS	10 TITLE	11 ORGANIZATION	12 TELEPHONE NO.
			( )
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
Paul Ferry	site operator	403 Pavement Rd. Lancaster, NY 14086	(716) 684-9624
			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY *(Check one)*	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☐ PERMISSION ☐ WARRANT	1:00 PM	clear and cool

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF *(Agency/Organization)*	03 TELEPHONE NO.
George Moreau	Engineering-Science(ES)	(315) 451-9560

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Michele A. Anatra	ES			8 19 87 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

* Revised December 13,1988

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES *(Check all that apply)*

☐ A. SOLID
☐ B. POWDER, FINES
☒ C. SLUDGE
☐ D. OTHER ______ *(Specify)*
☒ E. SLURRY
☒ F. LIQUID
☐ G. GAS

02 WASTE QUANTITY AT SITE *(Measures of waste quantities must be independent)*

TONS ______
CUBIC YARDS 52,00
NO. OF DRUMS ______

03 WASTE CHARACTERISTICS *(Check all that apply)*

☒ A. TOXIC
☐ B. CORROSIVE
☐ C. RADIOACTIVE
☒ D. PERSISTENT
☐ E. SOLUBLE
☐ F. INFECTIOUS
☐ G. FLAMMABLE
☐ H. IGNITABLE
☐ I. HIGHLY VOLATILE
☐ J. EXPLOSIVE
☐ K. REACTIVE
☐ L. INCOMPATIBLE
☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	52,000	CY	Disposal cell wastes include:
OLW	OILY WASTE			bentonite clay, foundry sands
SOL	SOLVENTS			oils mixed with bentonite clay
PSD	PESTICIDES			(sm. quantity),asbestos slurry,
OCC	OTHER ORGANIC CHEMICALS			wallpaper production wastes, steel
IOC	INORGANIC CHEMICALS			shot blast, oily garage sludge
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES *(See Appendix for most frequently cited CAS Numbers)*

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OLW	oil	8002-05-9	SI/LF	4500-21400	PPM
OCC	PCB's	1336-36-3	SI/LF	300	PPM
OCC	Phenols	108-95-2	SI/LF	0.01-0.026	PPM
MES	Cadmium	7440-43-9			
MES	lead	7439-92-1			
MES	Selenium	7782-49-2			
MES	Zinc	7440-66-6			
	Asbestos	1332-21-4			
OCC	1,1,1-Trichloroethane				
	(suspected)				

V. FEEDSTOCKS *(See Appendix for CAS Numbers)*

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

Interview with Paul Ferry at site inspection by ES on 10/28/85;
EPA site inspection form (ES and Dames & Moore inspection conducted 3/21/85) from NYSDEC Phase I report

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE

02 SITE NUMBER

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION
02 ☒ OBSERVED (DATE: 12/8/87) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 103
04 NARRATIVE DESCRIPTION

Two organic and eight metals were detected in downgradient wells at concentrations in excess of three times the upgradient concentrations.

01 ☒ B. SURFACE WATER CONTAMINATION
02 ☐ OBSERVED (DATE: 10/8/87) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0
04 NARRATIVE DESCRIPTION

Ponded water was visible on "Green Machine" area and in each of the 3 partially filled waste cells at the time of the ES site visit (10/28/85); no surface streams were apparent on site. No surface water samples were taken other than those from the cells on-site. Hazardous substances including heavy metals detected in samples.

01 ☒ C. CONTAMINATION OF AIR
02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: unknown
04 NARRATIVE DESCRIPTION

Reading above background were not detected during routine on-site monitoring for organic vapors.

01 ☒ D. FIRE/EXPLOSIVE CONDITIONS
02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED:
04 NARRATIVE DESCRIPTION

No information which indicates that fire and explosion has occurred(or could occur) at the site was discovered during Phase I and Phase II studies. A barn on-site burned duri
the mid-1980's. The barn was not associated with the former waste disposal use of the si

01 ☒ E. DIRECT CONTACT
02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED:
04 NARRATIVE DESCRIPTION

Based on information revealed during the Phase II study, there is not a confirmed instance in which contact with hazardous substances at the site has caused injury, illness or death to humans or animals. (Phase II record search, 1988).

01 ☒ F. CONTAMINATION OF SOIL
02 ☐ OBSERVED (DATE: 10/8/87) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: about 1 (Acres)
04 NARRATIVE DESCRIPTION

Hazardous substances detected in sediments from on-site surface water bodies, including phenol, toluene and heavy metals.

01 ☐ G. DRINKING WATER CONTAMINATION
02 ☐ OBSERVED (DATE:) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 103
04 NARRATIVE DESCRIPTION

27 identified water-supply wells located within a 3-mile radius of the site, drawing water from groundwater wells. On-site wells contained hazardous substances.

01 ☐ H. WORKER EXPOSURE/INJURY
02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED:
04 NARRATIVE DESCRIPTION

01 ☐ I. POPULATION EXPOSURE/INJURY
02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED:
04 NARRATIVE DESCRIPTION

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE | 02 SITE NUMBER

II. HAZARDOUS CONDITIONS AND INCIDENTS *(Continued)*

01 ☐ J. DAMAGE TO FLORA   02 ☐ OBSERVED (DATE: __________)   ☐ POTENTIAL   ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ K. DAMAGE TO FAUNA   02 ☐ OBSERVED (DATE: __________)   ☐ POTENTIAL   ☐ ALLEGED
04 NARRATIVE DESCRIPTION *(Include name(s) of species)*

01 ☐ L. CONTAMINATION OF FOOD CHAIN   02 ☐ OBSERVED (DATE: __________)   ☐ POTENTIAL   ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES *(Spills/Runoff/Standing liquids, Leaking drums)*   02 ☐ OBSERVED (DATE: __________)   ☐ POTENTIAL   ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: unknown   04 NARRATIVE DESCRIPTION

Open, unlined landfill cells with no run-on diversion structure (ES Field Investigation,1987)

01 ☐ N. DAMAGE TO OFFSITE PROPERTY   02 ☐ OBSERVED (DATE: __________)   ☐ POTENTIAL   ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs   02 ☐ OBSERVED (DATE: __________)   ☐ POTENTIAL   ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING   02 ☐ OBSERVED (DATE: __________)   ☐ POTENTIAL   ☐ ALLEGED
04 NARRATIVE DESCRIPTION

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: __________

IV. COMMENTS

V. SOURCES OF INFORMATION *(Cite specific references, e. g., state files, sample analysis, reports)*

Interview with Paul Ferry during ES site inspection on 10/28/85;
(ES and Dames & Moore site visit on 3/21/85) from NYSDEC Phase I report.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED *(Check all that apply)*	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☒ G. STATE *(Specify)*	2021/2290	10/25/79	11/1/82	solid waste management/operat
☒ H. LOCAL *(Specify)*	81-1/81-2	7/19/79		
☐ I. OTHER *(Specify)*				
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL *(Check all that apply)*	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☒ F. LANDFILL	52,000	Cu Yards
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER ______ *(Specify)*		

04 TREATMENT *(Check all that apply)*

- ☐ A. INCENERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER ______ *(Specify)*

05 OTHER

☐ A. BUILDINGS ON SITE

06 AREA OF SITE

13.2 *(Acres)*

07 COMMENTS

2 disposal cells; one is full, one is partially filled with industrial sludges.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES *(Check one)*

☐ A. ADEQUATE, SECURE ☒ B. MODERATE ☐ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

Soil underlying disposal cells is natural clay:Bentonite clay which has been disposed in the cells may help contain collected surface water.
A dike road separates cells from pond, basin and "green machine" areas; a dike road also separates the pond and basin from the "Green Machine" area.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☐ YES ☒ NO

02 COMMENTS

Access to site is unrestricted

VI. SOURCES OF INFORMATION *(Cite specific references, e.g. state files, sample analysis, reports)*

ES site visit (10/25/85) and EPA site inspection form (ES- Dames & Moore site visit 3/21/85) from NYSDEC Phase I & Phase II reports.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION
01 STATE
02 SITE NUMBER

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY *(Check as applicable)*

	SURFACE	WELL
COMMUNITY	A. ☒	B. ☐
NON-COMMUNITY	C. ☐	D. ☒

02 STATUS

	ENDANGERED	AFFECTED	MONITORED
	A. ☐	B. ☐	C. ☐
	D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE
Lake Erie
A. 14 (mi)
B. 2.25 (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY *(Check one)*

☐ A. ONLY SOURCE FOR DRINKING
☒ B. DRINKING *(Other sources available)* COMMERCIAL, INDUSTRIAL, IRRIGATION *(No other water sources available)*
☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION *(Limited other sources available)*
☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER 103

03 DISTANCE TO NEAREST DRINKING WATER WELL 2.25 (mi)

04 DEPTH TO GROUNDWATER 18-20 (ft)

05 DIRECTION OF GROUNDWATER FLOW W-SW

06 DEPTH TO AQUIFER OF CONCERN 18-20 (ft)

07 POTENTIAL YIELD OF AQUIFER unknown (gpd)

08 SOLE SOURCE AQUIFER ☐ YES ☒ NO

09 DESCRIPTION OF WELLS *(including useage, depth, and location relative to population and buildings)*

103 people within a 3-mile radius are serviced by 27 drinking water supply wells.
USGS Topo maps- house count

10 RECHARGE AREA
☐ YES
☐ NO
COMMENTS

11 DISCHARGE AREA
☐ YES
☐ NO
COMMENTS

IV. SURFACE WATER

01 SURFACE WATER USE *(Check one)*

☒ A. RESERVOIR, RECREATION DRINKING WATER SOURCE
☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES
☐ C. COMMERCIAL, INDUSTRIAL
☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
North Branch Plum Bottom Creek	☐	0.33 (mi)
	☐	(mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE A. 946 NO. OF PERSONS
TWO (2) MILES OF SITE B. 3,586 NO. OF PERSONS
THREE (3) MILES OF SITE C. 14,337 NO. OF PERSONS

B. Steele-
980 Census
reau

02 DISTANCE TO NEAREST POPULATION 0.0 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE 944

04 DISTANCE TO NEAREST OFF-SITE BUILDING 0.1 (mi)

05 POPULATION WITHIN VICINITY OF SITE *(Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)*

site is in sparsely populated rural area

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE
02 SITE NUMBER

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE *(Check one)*

☒ A. $10^{-6} - 10^{-8}$ cm/sec ☐ B. $10^{-4} - 10^{-6}$ cm/sec ☐ C. $10^{-4} - 10^{-3}$ cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

soil in which bottom of cells are located

02 PERMEABILITY OF BEDROCK *(Check one)*

☐ A. IMPERMEABLE *(Less than 10^{-6} cm/sec)* ☒ B. RELATIVELY IMPERMEABLE *($10^{-4} - 10^{-6}$ cm/sec)* ☐ C. RELATIVELY PERMEABLE *($10^{-2} - 10^{-4}$ cm/sec)* ☐ D. VERY PERMEABLE *(Greater than 10^{-2} cm/sec)*

03 DEPTH TO BEDROCK: 60-75 (ft)

04 DEPTH OF CONTAMINATED SOIL ZONE: unknown (ft)

05 SOIL pH: unknown

06 NET PRECIPITATION: 9 (in)

07 ONE YEAR 24 HOUR RAINFALL: 2 to 2.5 (in)

08 SLOPE

SITE SLOPE: less than ~~1.0~~ %

DIRECTION OF SITE SLOPE: W

TERRAIN AVERAGE SLOPE: 1.0 %

09 FLOOD POTENTIAL

SITE IS IN greater than 100 YEAR FLOODPLAIN

10 ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS *(5 acre minimum)*

ESTUARINE A. more than 1 (mi)

OTHER B. 0.9 (mi)

12 DISTANCE TO CRITICAL HABITAT *(of endangered species)*

(mi)

ENDANGERED SPECIES:

ource:
egion 9
NYSDEC-Fish
Wildlife
. Farquhar
9/28/87

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL A. more than 1 (mi)

RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES B. more than 1 (mi)

AGRICULTURAL LANDS

PRIME AG LAND C. less than 1/4 (mi)

AG LAND D. less than 1/4 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

site is adjacent to farmland, topography has less than 3% slopes.

VII. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

T. Bielli, 1988
Letter from J. Ozard (NYSDEC Wildlife Resources Center) to M. Anatra (ES)-7/28/87

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	7	Nanco Laboratories	now
SURFACE WATER	4	Nanco Laboratories	now
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL			
VEGETATION			
OTHER surface water /sediment	4	Nanco Laboratories, York Labs	now

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
Photovac/HNV	all upwind and downwind readings were less than 1 ppm during the
	ES- Dames & Moore site inspection on 3/21/85 and during the ES site
	site inspection on 10/28/85. Monitoring conducted as health and
	safety measures during Phase II field work in late 1987. No readings
	above background.

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☒ GROUND ☐ AERIAL

02 IN CUSTODY OF Engineering-Science (Name of organization or individual)

03 MAPS ☒ YES ☐ NO

04 LOCATION OF MAPS Engineering-Science

V. OTHER FIELD DATA COLLECTED *(Provide narrative description)*

VI. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

ES site inspection (10/28/85)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER

II. CURRENT OWNER(S)			**PARENT COMPANY** *(If applicable)*		
01 NAME Lancaster Reclamation		02 D+B NUMBER	08 NAME		09 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)* 403 Pavement Road		04 SIC CODE	10 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		11 SIC CODE
05 CITY Lancaster	06 STATE NY	07 ZIP CODE 14086	12 CITY	13 STATE	14 ZIP CODE
01 NAME		02 D+B NUMBER	08 NAME		09 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE	10 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		11 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
01 NAME		02 D+B NUMBER	08 NAME		09 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE	10 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		11 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
01 NAME		02 D+B NUMBER	08 NAME		09 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE	10 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		11 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) *(List most recent first)*			**IV. REALTY OWNER(S)** *(If applicable; list most recent first)*		
01 NAME		02 D+B NUMBER	01 NAME		02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE	03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
01 NAME Rose Pietruszewski		02 D+B NUMBER	01 NAME		02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE	03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
01 NAME		02 D+B NUMBER	01 NAME		02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE	03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER

II. CURRENT OPERATOR *(Provide if different from owner)*

01 NAME Lancaster Reclamation		02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)* 403 Pavement Road		04 SIC CODE
05 CITY Lancaster	06 STATE NY	07 ZIP CODE 14086
08 YEARS OF OPERATION 1976-1983	09 NAME OF OWNER same	

OPERATOR'S PARENT COMPANY *(If applicable)*

10 NAME		11 D+B NUMBER
12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		13 SIC CODE
14 CITY	15 STATE	16 ZIP CODE

III. PREVIOUS OPERATOR(S) *(List most recent first; provide only if different from owner)*

01 NAME		02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE
05 CITY	06 STATE	07 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD	
01 NAME		02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE
05 CITY	06 STATE	07 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD	
01 NAME		02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE
05 CITY	06 STATE	07 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD	

PREVIOUS OPERATORS' PARENT COMPANIES *(If applicable)*

10 NAME		11 D+B NUMBER
12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		13 SIC CODE
14 CITY	15 STATE	16 ZIP CODE
10 NAME		11 D+B NUMBER
12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		13 SIC CODE
14 CITY	15 STATE	16 ZIP CODE
10 NAME		11 D+B NUMBER
12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		13 SIC CODE
14 CITY	15 STATE	16 ZIP CODE

IV. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER

II. ON-SITE GENERATOR

01 NAME		02 D+B NUMBER	
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE	

III. OFF-SITE GENERATOR(S)

01 NAME Dresser Industries		02 D+B NUMBER	01 NAME Fabriton		02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE	03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE
05 CITY Depew	06 STATE NY	07 ZIP CODE	05 CITY Alden	06 STATE NY	07 ZIP CODE
01 NAME Chevrolet Division, GM		02 D+B NUMBER	01 NAME Reed Holdings		02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE	03 STREET ADDRESS *(P.O. Box, RFD #, etc.)* 2775 Broadway P.O. Box 27		04 SIC CODE
05 CITY Tonawanda	06 STATE NY	07 ZIP CODE	05 CITY Buffalo	06 STATE NY	07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME Lancaster Reclamation		02 D+B NUMBER	01 NAME Ferry Construction Co.		02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)* 403 Pavement Road		04 SIC CODE	03 STREET ADDRESS *(P.O. Box, RFD #, etc.)* 3179 Walden Ave.		04 SIC CODE
05 CITY Lancaster	06 STATE NY	07 ZIP CODE 14086	05 CITY Depew	06 STATE NY	07 ZIP CODE 14043
01 NAME Ken Straub, Jr. Trucking Co.		02 D+B NUMBER	01 NAME		02 D+B NUMBER
03 STREET ADDRESS *(P.O. Box, RFD #, etc.)* Box B, Station B		04 SIC CODE	03 STREET ADDRESS *(P.O. Box, RFD #, etc.)*		04 SIC CODE
05 CITY Buffalo	06 STATE NY	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

(ES-Dames & Moore site visit 3/21/85).

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE | 02 SITE NUMBER

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ D. SPILLED MATERIAL REMOVED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ E. CONTAMINATED SOIL REMOVED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ F. WASTE REPACKAGED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ G. WASTE DISPOSED ELSEWHERE 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ H. ON SITE BURIAL 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ I. IN SITU CHEMICAL TREATMENT 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ J. IN SITU BIOLOGICAL TREATMENT 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ K. IN SITU PHYSICAL TREATMENT 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ L. ENCAPSULATION 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ M. EMERGENCY WASTE TREATMENT 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ N. CUTOFF WALLS 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ P. CUTOFF TRENCHES/SUMP 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ Q. SUBSURFACE CUTOFF WALL 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE

02 SITE NUMBER

II PAST RESPONSE ACTIVITIES *(Continued)*

01 ☐ R. BARRIER WALLS CONSTRUCTED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ S. CAPPING/COVERING 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ T. BULK TANKAGE REPAIRED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ U. GROUT CURTAIN CONSTRUCTED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ V. BOTTOM SEALED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ W. GAS CONTROL 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ X. FIRE CONTROL 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ Y. LEACHATE TREATMENT 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ Z. AREA EVACUATED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ 1. ACCESS TO SITE RESTRICTED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ 2. POPULATION RELOCATED 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION
no

01 ☐ 3. OTHER REMEDIAL ACTIVITIES 02 DATE ______ 03 AGENCY ______
04 DESCRIPTION none

III. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☒ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

III. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

letter from Vance Bryant, Div. Env. Enforcement to Michele Anatra, ES-July 7, 198

HRS REFERENCES*

LANCASTER RECLAMATION SITE

1. Nanco Labs, Inc., 1987. Analytical Results for Lancaster Reclamation site.
2. ES Boring Logs, 1987. Lancaster Reclamation site.
3. Frey, W., 1988. Telephone conversation with W. Bradford, Engineering-Science, May 2, 1988.
4. Engineering-Science, Inc., 1988. Phase II Report Lancaster Reclamation Site, Table IV-4.
5. Buffalo Drilling Company, 1984. Figure 3, Geotechnical Report for Lancaster Reclamation site.
6. USDOC, 1979. US Department of Commerce National Climatic Center, Climatic Atlas of the United States, 1979.
7. R&R International, Inc., 1987. Permeability Test Results for Phase II Investigation at Lancaster Reclamation site.
8. NYSDEC, 1987. Inactive Hazardous Waste Disposal Site Report dated November 16, 1983.
9. Wendel Engineers, 1979. Restricted-Use Landfill Site for Lancaster Reclamation Company report dated May 1979.
10. Wendel Engineers, 1984. Restricted use landfill permit update for Lancaster Reclamation Company per October 25, 1979 approval and June 21, 1979 report; June 22, 1984.
11. EPA, 1984. Uncontrolled Hazardous Waste Site Ranking System: A Users Manual (HW-10). United States Environmental Protection Agency.
12. Ferry, J., 1985. Interview with J. Ferry of Lancaster Reclamation, April 26, 1985. Summary of Wastes Disposed at Lancaster Reclamation Site from Phase II report, Table IV-5.
13. NYSDEC, 1978-1981. Applications for Treatment or Disposal of an Industrial or Hazardous Waste Stream, dated February 20, 1978; March 29, 1979; September 19, 1980; May 4, 1981; December 4, 1981.
14. Armitage, R. 1988. Telephone conversation with W. Bradford, Engineering-Science, April 29, 1988.

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*All these references were used for HRS Documentation, while some of them were also used as general references.

GENERAL REFERENCES**

LANCASTER RECLAMATION SITE

29. ARO Corporation, 1981. Analytical Results dated 3/11/81.

30. ARO Corporation, 1982. Analytical Results dated 6/8/82.

31. Buffalo Drilling Company, 1984. Geotechnical Report on Investigation and Interpretation of Subsurface Conditions for Lancaster Reclamation Site, dated August 6, 1988.

32. Erie County, 1988. Tax Map 105.00-3-44.1, Department of Real Property Tax Service.

33. Freeze and Cherry, 1979. "Groundwater" Freeze and Cherry, Prentice-Hall, Englewood Cliffs, New Jersey.

34. Frontier Chemical Wastes Process, Inc., 1976. Laboratory Report dated February 4, 1976.

35. Lancaster Reclamation Company, 1987. Telephone conversation with John and Paul Ferry October 23, 1987.

36. NYSDEC, 1978a. letter to Ferry Construction, dated January 24, 1978.

37. NYSDEC, 1978b. Application for Treatment of Disposal of an Industrial or Hazardous Waste Stream, Application no. 2 dated March 27, 1978.

38. NYSDEC, 1979a. Application for Approval to Operate a Solid Waste Management Facility, dated May 11, 1979.

39. NYSDEC, 1979b. Letter to John Ferry, Lancaster Reclamation Company dated January 4, 1979.

40. NYSDEC, 1979c. Notice of Permit for Operation as a Restricted Use Landfill dated October 25, 1979.

41. NYSDEC, 1980. Letter to Lancaster Reclamation Company dated October 29, 1980.

42. NYSDEC, 1981a. Letter to John L. Ferry, Lancaster Reclamation Company dated June 16, 1981.

43. NYSDEC, 1981b. Letter to John L. Ferry, Lancaster Reclamation Company dated March 3, 1981.

44. NYSDEC, 1982. Letter to John L. Ferry, Lancaster Reclamation Company dated May 27, 1982.

**These references were not used for HRS Documentation. See also "HRS REFERENCES" above.

15. Campbell, V. 1988. Telephone conversation with W. Bradford, Engineering-Science, April 29, 1988.

16. Keysa, S. 1988. Telephone conversation with W. Bradford, Engineering-Science, April 29, 1988.

17. Koczaja, 1988. Personal communication from R. Koczaja of Erie County Department of Health to M. Anatra of Engineering-Science on February 5, 1988.

18. USGS, 1965. Topographic Maps; Clarence, New York, 1965, and Lancaster, New York, 1965.

19. U.S. Department of Commerce Technical Paper No. 40.

20. Engineering-Science Site Inspection, 1985. ES Site Inspection Checklist, October 28, 1985.

21. 6 NYCRR Volume E Article 1, Part 837, Map 7.

22. Farquhar, 1987. Region 9 NYSDEC Fish and Wildlife. Personal communication to Liz Dobson of Engineering-Science on September 2, 1987.

23. Ozard, J. 1988 (NYSDEC). Interview for Phase II Investigation, April 14, 1988.

24. NYSDOH, 1982. New York State Atlas of Community Water System Sources, 1982. New York State Department of Health, Division of Environmental Protection, Bureau of Public Water Supply Protection.

25. U.S. Census Tract Data, 1980. Copies not included due to volume of material.

26. Bielli, T., 1988. Soil maps provided by T. Bielli (USDA, Soil Conservation Service) February 10, 1988. Maps were provided to M. Anatra of Engineering-Science.

27. USDOI, 1983. U.S. Department of Interior, National Park Service, 1983. "National Register of Historic Places Annual Listing of Properties January 1979 through December 1982", July 1983.

28. Federal Register, 1983. Part III, Department of the Interior, National Park Service, "National Registry of Natural Landmarks", March 1, 1983.

45. NYSDEC, 1984. Notice of Incomplete Application dated November 16, 1984.

46. NYSMSS, 1977. New York State Museum and Science Service Quarternary Geology Map, 1977.

47. Town of Lancaster, no date. Certificate of Zoning Compliance, by Building Inspector, Town of Lancaster.

48. Town of Lancaster, 1980. Resolution dated November 5, 1980.

49. Town of Lancaster, 1988. Town Assessors Office, telephone conservation on January 20, 1988. Copy not provided.

50. USDA, 1986. United States Department of Agriculture Soil Survey of Erie County, dated December 1986.

51. USGS, 1968. Ground-Water Resources of the Erie-Niagara Basin, by A.M. LaSala, Jr., Basin Planning Report ENB-3.

52. Wendel Engineers, 1979. Restricted-Use Landfill Site Report, May 1979, Project No. 1911-2.

53. Wendel Engineers, 1980. Letter to NYSDEC dated February 13, 1980.

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INORGANIC ANALYSIS DATA SHEET
FORM I

SMPL NO.: GW-1B

Lab Name : NANCO LABORATORIES, INC.

Customer Name: Engineering Science

SOW NO. : N/A

Lab Receipt Date : 10/31/87

Lab Sample ID: 87-EW-3763

Date Reported: 12/9/87

RESUBMITTED
MAR 01 1988

Location ID: LANCASTER RECLAMATION

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW __X__ MEDIUM ______

MATRIX : WATER __X__ SOIL ______ SLUDGE _____ OTHER ______

[✓ UG/L] OR MG/KG DRY WEIGHT (CIRCLE ONE)

1. ALUMINUM	1150.0 P	13. MAGNESIUM	13900.0 P
2. ANTIMONY	50.0 UP N	14. MANGANESE	15.0 UP
3. ARSENIC	3.0 UF N	15. MERCURY	0.2 U C.V.
4. BARIUM	[120.0]P	16. NICKEL	25.0 UP
5. BERYLLIUM	2.0 UP N	17. POTASSIUM	8300.0 P
6. CADMIUM	5.0 UP	18. SELENIUM	3.0 UF N
7. CALCIUM	65900.0 P	19. SILVER	10.0 UP N
8. CHROMIUM	18.0 P	20. SODIUM	56600.0 P
9. COBALT	30.0 UP	21. THALLIUM	2.0 UF
10. COPPER	15.0 UP	22. VANADIUM	25.0 UP
11. IRON	2435.0 P	23. ZINC	39.0 P N
12. LEAD	[3.6]F N	PERCENT SOLIDS (%)	NA
CYANIDE	NR		
PHENOL	NR		

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS : This sample was a clear, colorless liquid and remained clear and colorless after ICP and furnace digestion procedures.

....
LAB MANAGER

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INORGANIC ANALYSIS DATA SHEET
FORM I

SMPL NO.: GW-3B

①

Lab Name : NANCO LABORATORIES, INC.

Customer Name: Engineering Science

SOW NO. : N/A

Lab Receipt Date : 10/31/87

Lab Sample ID: 87-EW-3759

Date Reported: 12/9/87

RESUBMITTED
MAR 01 1988
MK

Location ID: LANCASTER RECLAMATION

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW __X__ MEDIUM ______

MATRIX : WATER __X__ SOIL _______ SLUDGE _____ OTHER ______

[✓ UG/L] OR MG/KG DRY WEIGHT (CIRCLE ONE)

1.	ALUMINUM	7610.0 P	13.	MAGNESIUM	53800.0 P
2.	ANTIMONY	50.0 UP N	14.	MANGANESE	444.0 UP
3.	ARSENIC	4.1 UF N	15.	MERCURY	0.2 U C.V.
4.	BARIUM	[214.0]P	16.	NICKEL	25.0 UP
5.	BERYLLIUM	2.0 UP N	17.	POTASSIUM	4500.0 P
6.	CADMIUM	5.0 UP	18.	SELENIUM	15.0 UF N
7.	CALCIUM	117800.0 P	19.	SILVER	10.0 UP N
8.	CHROMIUM	94.0 UP	20.	SODIUM	16600.0 P
9.	COBALT	30.0 UP	21.	THALLIUM	2.0 UF
10.	COPPER	15.0 UP	22.	VANADIUM	25.0 UP
11.	IRON	15861.0 P	23.	ZINC	163.0 P N
12.	LEAD	[39.2]FN		PERCENT SOLIDS (%)	NA
	CYANIDE	NR			
	PHENOL	NR			

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS : This sample was a tan, clear liquid. The sample became colorless after ICP and lt yellow after furnace digestion procedures.

....
LAB MANAGER

ENGINEERING-SCIENCE DRILLING RECORD

DRILLING CONTRACTOR:
Driller: D. Reynolds RDC.
Inspector: W. Lilley
Rig Type: CME
Drilling Method: 4 1/4" ID HSA

PROJECT NAME: DEC Phase II - Lancaster
PROJECT NO.: 8Y01214

BORING NO.: GW-1A
Sheet 1 of 1
Location: North east corner of the site

GROUND WATER OBSERVATIONS

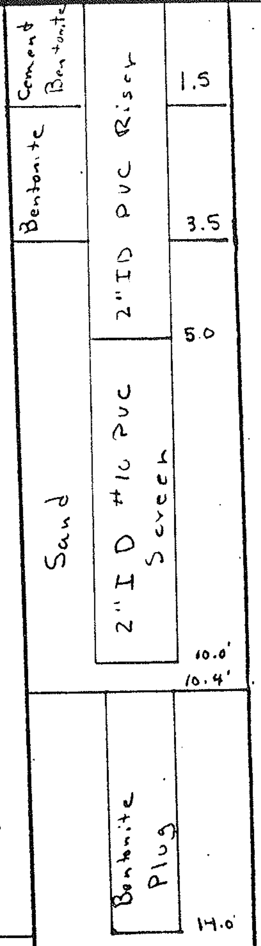
Water Level	2.5		
Time	8:30		
Date	10/1		
Casing Depth	10'		

Weather: Cloudy & Rain
Date/Time Start: 9/30/87 3:30 pm
Date/Time Finish: 9/30/87 5:00 pm

Plot Plan

Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	Comments
				No Sampling - See Boring Log 1B	
	12-14 Shelby Tube		Push	Gray Clay, little Silt, Trace Sand & Gravel (stiff) (moist)	
				14'	
				Boring Terminated	

WELL SCHEMATIC



SPT - STANDARD PENETRATION TEST
D = DRY W = WASHED C = CORED
U = UNDISTURBED SS = SPLIT SPOON
P = PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary

DRILLING CONTRACTOR:

Driller: Steve Loranty

Inspector: Henry M. Wise

Rig Type CME-55

Drilling Method HSA (6¼") to 65' flush joint casing (3") to 75' C to 80'

ENGINEERING-SCIENCE
DRILLING RECORD

PROJECT NAME Lancaster Reclamation

PROJECT NO. SY012.14

BORING NO. GW-1B (2

Sheet 1 of 4

Location

GROUND WATER OBSERVATIONS

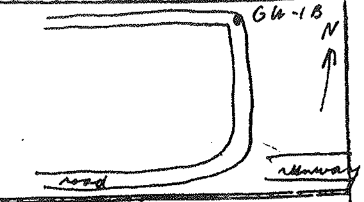
Water Level	21.3'	21.0'
Time	4:20P	9:00A
Date	9/23/87	9/24/87
Casing Depth	75'	75'

Weather Clear & Cool

Date/Time Start 9/21/87

Date/Time Finish 9/24/87

Plot Plan



Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
-0.1	0-2'	1	22	dark brown silt with some pea gravel, moist & loose (slag fill) 0.8'		photovac baseline is -0.1
			40	dry, dark reddish brown silt with some very fine grained sand (slag fill) 1.6'		
	Rec. 14"		13			
			18	loose, wet, light brown sand, medium grained		
-0.6	5-7'	2	8			photovac baseline is -0.6
			10			
	Rec. 11"		12			water table at 7'
			16	10.2'		
-0.8	10-12'	3	4	sticky, moderately stiff, reddish brown clay	Cement / Bentonite Grout 2" ID PVC casing	photovac baseline is -0.8
			8			
	Rec. 22"		12			
			16		14.0'	
0.0	15-17'	4	6		Bentonite Slurry	photovac baseline was reset to read 0.0
			10			
	Rec. 17"		12			
			16			

SPT - STANDARD PENETRATION TEST

D = DRY W = WASHED C = CORED

U = UNDISTURBED SS = SPLIT SPOON

P = PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary

②

DRILLING CONTRACTOR:

Driller:

Inspector:

Rig Type

Drilling Method

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Lancaster Reclamation

PROJECT NO. SY012.14

BORING NO. GW-1B

Sheet 2 of 4

Location

GROUND WATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather

Date/Time Start

Date/Time Finish

Plot Plan

See Sheet No. 1

Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
0.0	20-22'	5	5	20.9'		
			17			
	Rec. 18½"		25	wet, grey silt		
			25			
				25.0'		
-0.3	25-27'	6	5	reddish brown, sticky, moderately stiff clay		photovac baseline is -0.3
			6			
	Rec. 16.5"		8			
			9			
-0.3	30-32'	7	3		Bentonite slurry 2" I.D. PVC casing	
			4			
	Rec. 20"		6			
			8			
-0.3	35-37'	8	4			
			6			
	Rec. 17.5"		8			
			10			

SPT - STANDARD PENETRATION TEST

D = DRY W = WASHED C = CORED

U = UNDISTURBED SS = SPLIT SPOON

P = PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary

2

DRILLING CONTRACTOR:

riller:
nspector:
g Type
illing Method

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME Lancaster Reclamation
PROJECT NO. SY012.14

BORING NO. GW-1B
Sheet 3 **of** 4
Location

GROUND WATER OBSERVATIONS

Water Level			
Time			
Date			
asing Depth			

Weather
Date/Time Start
Date/Time Finish

Plot Plan

See Sheet No. 1

Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
	40-42'		15	40.3' wet, soft, reddish grey, fine grained sand 45.0'		
		8	27			
	Rec 15"		21			
			20			
0.0	45-47'	9	7	greyish brown, wet, compact, fine to very fine grained sand 50.5'		photovac baseline is 0.0
	Rec. 18.5"		10			
			26			
			50			
-0.3	51-52'	10		greyish brown, loose, wet, fine grained sand. sand becomes compact with depth 55.0'	Bentonite Slurry 2" ID PVC casing	photovac baseline is -0.3
			16			
			27			
-0.6	55-57'	11	7	greyish brown, wet, loose, fine grained sand. - black, well rounded limestone pebble at 56.2' sand becomes very fine grained and compact with depth		photovac baseline is -0.6
			23			
	Rec. 21.5"		29			
			90			

PT - STANDARD PENETRATION TEST
D - DRY W - WASHED C - CORED
U - UNDISTURBED SS - SPLIT SPOON
P - PIT A - AUGER CUTTINGS

Soil Stratigraphy Summary

ENGINEERING-SCIENCE
DRILLING RECORD

DRILLING CONTRACTOR:
riller:
nspector:
g Type
rilling Method

PROJECT NAME Lancaster Reclamation
PROJECT NO. SY012.14

BORING NO. GW-1B
Sheet 4 of 4
Location

②

GROUND WATER OBSERVATIONS

Water Level		
Time		
Date		
Casing Depth		

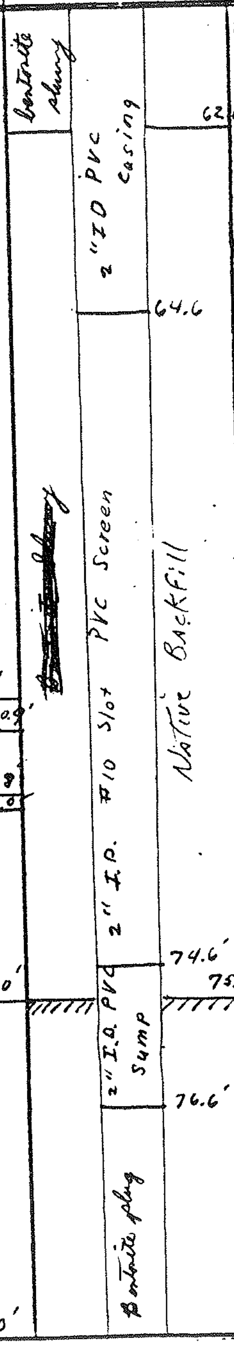
Weather
Date/Time Start
Date/Time Finish

Plot Plan

See Sheet No. 1

Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	Comments
-0.7	60-62'	12	10	dark grey some, gravel at base (well rounded)	photovac baseline is -0.7
			31		
	Rec. 16.5"		53		
			56		
-0.5	65-66'	13	33		photovac baseline is -0.5
			100		
	Rec 10"				
-0.3	70.5-72'			70.5'	photovac baseline is -0.3
		14	4	grey, saturated gravel, poorly sorted, fine to coarse grained, broken fragments 70.9'	
	Rec 7"		5	grey, saturated silty clay 71.8	
			8	black pebble, well rounded 72.0	
				refusal 75.0'	refusal at 75.0'
0.3	75-80'	C-1		grey, massive limestone with occasional horizontal fractures, some stylolites at the base.	
	C.-5'				
	Rec. 5'				
				80.0'	

WELL SCHEMATIC



PT - STANDARD PENETRATION TEST
D - DRY W - WASHED C - CORED
U - UNDISTURBED SS - SPLIT SPOON
P - PIT A - AUGER CUTTINGS

Soil Stratigraphy Summary

ENGINEERING-SCIENCE
DRILLING RECORD

DRILLING CONTRACTOR:

Driller: Dave Reynolds

Inspector: W. Lilley

Rig Type: CME

Drilling Method: 4" ID HSA to 35' 3" Flush joint to 74'

PROJECT NAME: DEC Phase II - Lancaster

PROJECT NO.: SY0 12 14

BORING NO.: 2-B

Sheet 1 of 4.

Location: Southeast Corner near runway

GROUND WATER OBSERVATIONS

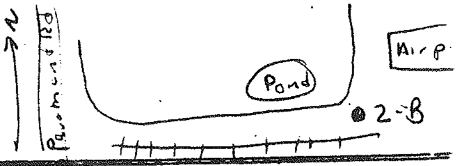
Water Level	19.5'
Time	9:10
Date	9/30
Casing Depth	74.0'

Weather: Cloudy

Date/Time Start: 9/24/87 10:40 am

Date/Time Finish:

Plot Plan



Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
0.0	0.0-2.0	S-1	14	Black Sand & Gravel (dry)		
	SS		16	Gray & Brown Sand & Gravel (moist)		
	Rec 3"		13	(fill)		
			14	2.0		
0.0	2.0-4.0	S-2	6			
	SS		5	3.0 Brown Sand & Silt (wet)		
	Rec 20"		9			
			10	Brown to Gray Silt & Clay (stiff & moist)		
0.0	4.0-6.0	S-3	6	Brown Silt & Clay Trace Sand & Gravel		
	SS		10			
	Rec 24"		12	(soft & moist)		
			16			
0.0	6.0-8.0	S-4	13	Brown Silt & Clay Trace Sand & Gravel		
	SS		16	(stiff & moist)		
	Rec 24"		21			
			19			
0.0	8-10	S-5	8	Brown Silt & Clay Trace F Gravel	Bentonite / cement grout 2" ID PVC Casing	
	SS		10	(stiff & moist)		
	Rec 23"		14			
			16			
0.0	15-17	S6	7	16.0' Brown Silt & Clay Trace F Sand & Gravel		
	SS		10	Gray Brown Clay little Silt Trace F Sand		
	Rec 24"		8	(soft & wet)		
			7			
	17-19			Gray Brown Clay		
	Shelby					
	Tube					
0.0	20-22	S-7	6	Gray Brown Clay little Silt Trace F Gravel		
	SS		5	(soft & wet)		
	Rec 24"		7		21.5'	
			8			

SPT - STANDARD PENETRATION TEST

D = DRY W = WASHED C = CORED

U = UNDISTURBED SS = SPLIT SPOON

P = PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary: Sand and Gravel Fill over Silty Sand to 3.0' over Silt and cla to 36. over, Fine sand and Sand and gra to 70.0' over till to 74' over bedrock.

DRILLING CONTRACTOR:

Driller:

Inspector:

Rig Type

Drilling Method

ENGINEERING-SCIENCE
DRILLING RECORD

PROJECT NAME DEC Phase II-Landcaster

PROJECT NO. SY012 14

BORING NO. 2B ②

Sheet 2 of 4

Location Southeast Corner

GROUND WATER OBSERVATIONS

Water Level		
Time		
Date		
Casing Depth		

Weather Clear

Date/Time Start 9/25

Date/Time Finish

Plot Plan

See Sheet No 1

Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
0.0	25-27	S-8	8	Gray Brown Clay (Soft & moist)		
	SS		8			
	Rec 24"		9			
			9			
0.0	30-32	S-9	3	Gray Brown Clay trace F Gravel		
	SS		4	(Soft & moist)		
	Rec24"		5			
			5			
0.0	35-37	S-10	11		Bentonite Slurry Plug 2" ID PVC Casing	
	SS		12	36' GrayBrown Clay trace F Gravel		
	Rec24		17	Gray Fine Sand (wet)		
			20			
0.0	40-42	S-11	32	Gray very Fine Sand (wet)		
	SS		41	(well sorted - somewhat compact)		
	Rec 21"		47			
			60			
0.0	45-47	S-12	5			
	SS		7			
	Rec 13"		49			
			37			

SPT - STANDARD PENETRATION TEST

D = DRY W = WASHED C = CORED

U = UNDISTURBED SS = SPLIT SPOON

P = PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary

DRILLING CONTRACTOR:
Driller: Steve Lorentz
Inspector: Henry M. Wise
Rig Type: CME 55.
Drilling Method:

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME: Lancaster Reclamation
PROJECT NO.: SY 012.14

BORING NO. GW-2B ②
Sheet 3 of 4.
Location:

GROUND WATER OBSERVATIONS

Water Level		
Time		
Date		
Casing Depth		

Weather:
Date/Time Start:
Date/Time Finish:

Plot Plan

See Sheet No. 1

Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
			37			
					49.0'	
0.0	50-50'5"	S-13	105			refusal at 50'5"
	SS					
	Rec 5"					
0.0	55-57'	S-14	43			
	SS		17			
	Rec 8½"		17	rock pebble at base of sample	Natural Sand Pack 2" I.D PVC	
			19			
				59'		
				black gravel, some chert gravel		gravel in wash cuttings
0.0	60-60'5"	S-15	100	60'5"		refusal at 60'5"
	SS					
	Rec. 1"					
					62.0	
					2" PVC 10 Slot Screen	
0.0	65-67'	S-16	11	Gray black m-Fine Sand		
	SS		25	(Wet to Sat)		
	Rec 8"		65	Gray black Gravel + Sand some Silt		
			49			

SPT - STANDARD PENETRATION TEST
D - DRY W - WASHED C - CORED
U - UNDISTURBED SS - SPLIT SPOON
P - PIT A - AUGER CUTTINGS

Soil Stratigraphy Summary

DRILLING CONTRACTOR:

Driller:

Inspector:

Rig Type

Drilling Method

ENGINEERING-SCIENCE
DRILLING RECORD

PROJECT NAME Lancaster

PROJECT NO. SY012.04

BORING NO. GW-2B

Sheet 4 of 4

Location

GROUND WATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather

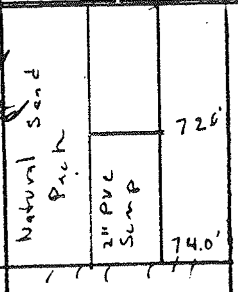
Date/Time Start

Date/Time Finish

Plot Plan

See Sheet No. 1

Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
	70-71'5'	S-17	23	wt, dark grey sand and Gravel		
	SS		53	sand is fine to coarse grained, poorly sorted		
	Rec 16"		100/5"	Gravel is fine to coarse grained, poorly sorted		
				final refusal at 74'		



SPT - STANDARD PENETRATION TEST

D = DRY W = WASHED C = CORED

U = UNDISTURBED SS = SPLIT SPOON

P = PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary

②

DRILLING CONTRACTOR:
Driller: Steve Loranty
Inspector: Henry M. Wise
Rig Type CME-55.
Drilling Method 4"ID HSA, no sampler taken

ENGINEERING-SCIENCE
DRILLING RECORD

PROJECT NAME Lancaster Reclamation
PROJECT NO. SY012.14

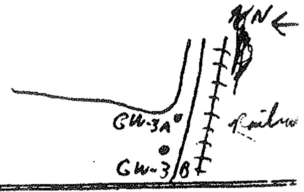
BORING NO. GW-3A
Sheet 1 of 1.
Location about 30' E of GW-3

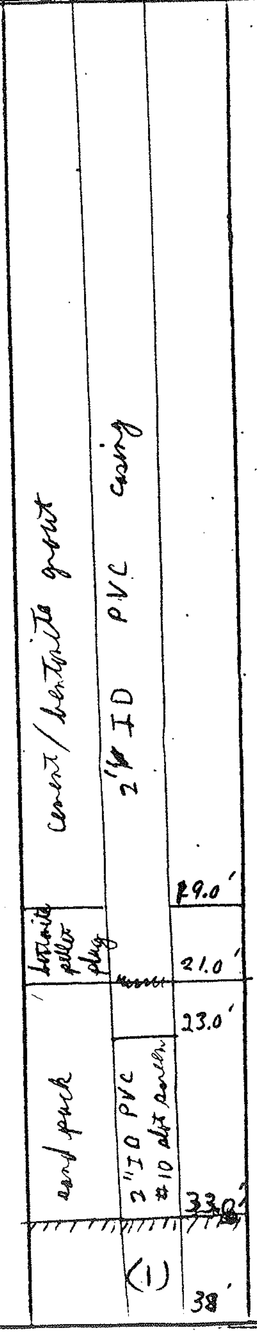
GROUND WATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather Overcast & cold
Date/Time Start 10/1/87
Date/Time Finish 10/1/87

Plot Plan



Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC (not to scale)	Comments
				no sampler taken water table intersected at about 25'. Drilled To 38.0 feet. See log GW-3B for soil description. Borehole collapsed AT 38 feet To 33.0 feet. Wellpoint set AT 33.0 feet.		(i) NATURA BackFil 38' To Well point 33'.

SPT - STANDARD PENETRATION TEST
D - DRY W - WASHED C - CORED
U - UNDISTURBED SS - SPLIT SPOON
P - PIT A - AUGER CUTTINGS

Soil Stratigraphy Summary

ENGINEERING-SCIENCE
DRILLING RECORD

②

DRILLING CONTRACTOR:
Driller: D. Reynolds
Inspector: W. Lilley
Rig Type: CME
Drilling Method: 4 1/4" HSA

PROJECT NAME: DEC Phase II - Lancaster
PROJECT NO.: SY 012 14

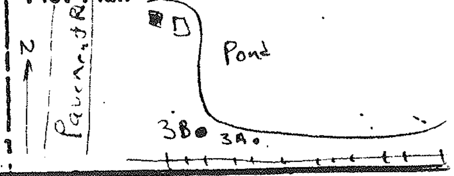
BORING NO.: 3B
Sheet 1 of 4
Location: South West Corner

GROUND WATER OBSERVATIONS

Water Level	25		
Time	9:00		
Date	9/29		
Casing Depth	—		

Weather: Fair
Date/Time Start: 9/25/87 11:30 am
Date/Time Finish: 9/28/87

Plot Plan



Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comment:
0.0	0.0-2.0	S-1	20	.5 Black Sand & Gravel little Silt (Fill)		
	SS		18	Brown M-Fine Sand & Silt (Dry)		
	Rec 16"		6			
			7			
0.0	2.0-4.0	S-2	5	Brown M-Fine Sand, little Silt Trace Gravel (moist)		
	SS		5			
	Rec 16"		4			
			4			
0.0	4.0-6.0	S-3	3	Brown M-Fine Sand (moist)	Cement/bentonite grout 2" I.D. PVC Casing	
	SS		2			
	Rec 18"		2			
			4			
0.0	6.0-8.0	S-4	5			
	SS		6			
	Rec 18"		9			
			10	Brown M-Fine Sand (moist)		
0.0	8.0-10	S-5	8			
	SS		7			
	Rec 14"		3			
			2			
0.0	10-12	S-6	3			
	SS		3			
	Rec 16"		8	Brown M-Fine Sand (moist-Dry)		
			5			
0.0	12-14	S7	8			
0.0	SS		8			
	R. 18"		14			
			14	Brown M-Fine Sand (moist)		
0.0	14-16	S-8	17			
	SS		22			
	Rec 18"		15			
			18			
0.0	16-18	S-9	21			
	SS		27			
	R. 19"		22			
			26			
0.0	18-20		18			
	SS		19			
	Rec 18"		18			
			21			

SPT - STANDARD PENETRATION TEST
D = DRY W = WASHED C = CORED
U = UNDISTURBED SS = SPLIT SPOON
P = PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary: Sand and Gravel Fill to 0.5 over Brown Sand to 49.5' Gray Sand to 58' over Till to 61.5'

②

DRILLING CONTRACTOR:
Driller: Dave Reynolds
Inspector: W. Lilley
Rig Type
Drilling Method

ENGINEERING-SCIENCE
DRILLING RECORD

PROJECT NAME DEC Phase II - Lancaster
PROJECT NO.

BORING NO. 3B
Sheet 2 of 4
Location

GROUND WATER OBSERVATIONS

Water Level		
Time		
Date		
Casing Depth		

Weather Fair
Date/Time Start 9/28
Date/Time Finish

Plot Plan

Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL
0.0	20-22	S-11	7	Br M-Fine Sand (moist)
	SS		8	
	Rec 23"		8	
			13	
0.0	22-24	S-12	12	
	SS		11	
	Rec 22"		11	
			12	
0.0	24-26	S-13	8	▼ Br. M-Fine Sand (Wet)
	SS		8	
	Rec 23"		11	
			18	
0.0	28-30	S-15	10	
	SS		11	
	Rec 24"		15	
			21	
0.0	30-32	S-16	7	
	SS		10	
	Rec 24"		12	
			14	
0.0	32-34	S-17	12	
	SS		15	
	Rec 24		20	
			22	
0.0	35-37	S-18	13	
	SS		17	
	Rec 10		16	
			14	

WELL SCHEMATIC

Cement/Bentonite Grout

25'

Bentonite Slurry Plug

2" ID PVC Casing

Comment

Soil Stratigraphy Summary

SPT - STANDARD PENETRATION TEST
D - DRY W - WASHED C - CORED
U - UNDISTURBED SS - SPLIT SPOON
P - PIT A - AUGER CUTTINGS

②

DRILLING CONTRACTOR:
Driller: Steve Lorantz
Inspector: Henry Wise
Rig Type CME 55
Drilling Method

ENGINEERING-SCIENCE
DRILLING RECORD

PROJECT NAME DEC Phase II - Lancaster
PROJECT NO.

BORING NO. 3B
Sheet 3 of 4
Location

GROUND WATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather
Date/Time Start
Date/Time Finish

Plot Plan

Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comment
0.0	40-42	S-19	14	Brown M-Fine Sand (wet)	Bentonite Slurry plug	
	SS		25	Brown M-V.Fine Sand		
	Rec 15"		21			
			21		2" ID PVC Casing	
					45'	
0.0	45-47	S-20	15	Brown Fine Sand (wet)		
	SS		23			
	Rec 14"		29			
			22			
					49.5	
				49.5'		
0.0	50-52	S-21	7	Brownish gray V.Fine Sand little Clay (wet)		
	SS		9			
	Rec 7"		11			
			15			
					2" ID PVC # Screen	
				55.		
0.0	55-57	S-22	8	Gray Silt & V.Fine Sand little Gravel (wet)		
	SS		7			
	Rec 14"		7			
			10			
					Natural sand pack	
					57.5	

SPT - STANDARD PENETRATION TEST
D = DRY W = WASHED C = CORED
U = UNDISTURBED SS = SPLIT SPOON
P = PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary

②

ENGINEERING-SCIENCE
DRILLING RECORD

DRILLING CONTRACTOR:
Driller: Steve Loantz
Inspector: Henry Wise
Rig Type CME 55
Drilling Method 3" Flush Casing

PROJECT NAME DEC Phase II - Lancaster
PROJECT NO.

BORING NO. 3B
Sheet 4 of 4
Location

Plot Plan

GROUND WATER OBSERVATIONS

Water Level		
Time		
Date		
Casing Depth		

Weather
Date/Time Start
Date/Time Finish

Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC		Comments
						59.5	
	60-61½'	S-23	35		2" ID PVC Sump		
	SS		53				
	Rec 0		106	No Recovery		61.5'	
				Final refusal at 61½'			

SPT - STANDARD PENETRATION TEST
D = DRY W = WASHED C = CORED
U = UNDISTURBED SS = SPLIT SPOON
P = PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary

ENGINEERING-SCIENCE
DRILLING RECORD

DRILLING CONTRACTOR:
Driller: D. Reynolds R.D.C.
Inspector: W. Lilley
Rig Type: CME
Drilling Method: 4¼"ID HSA

PROJECT NAME: DEC Phase II - Lancaster
PROJECT NO.: SY01214

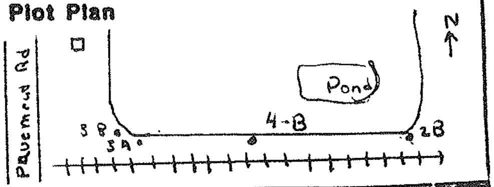
BORING NO.: 4-B
Sheet: 1 of 3
Location: Middle of South road

GROUND WATER OBSERVATIONS

Water Level	26		
Time	12:00		
Date	9/29		
Casing Depth	64		

Weather: Cloudy
Date/Time Start: 9/22/87
Date/Time Finish:

Plot Plan



Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
0	0-2	S-1	33	Black Sand + Gravel (Dry) (Fill)	Cement Grout	
	SS		56			
	Rec 8"		28			
			12	2'		
0	5-7	S-2	3	5.5' Brown Sand + Fine Gravel (moist)	6.0	
	SS		2	Brown Sand, Trace Silt (moist)		
	Rec 9"		3	(Stiff)		
			2			
				7.5		
				8.0 Black Silt and Sand, Trace Clay (Topsoil)	Bentonite Slurry Plug 2" ID PVC Riser Casing	
0	10-12	S-3	9	Red Brown Silt + Clay Trace Fine Sand		
	SS		8	Gray Brown Silt + Clay (moist)		
	Rec 12"		9	(Stiff)		
			11			
0	15-17	S-4	2	Gray Brown Clay, Trace Silt (soft)		
	SS		3			
	Rec 24"		3			
			5			
	17-19	S-5	2	Trace Fine Sand		
	SS		3			
	Rec 24		4			
			6			
0	20-22	S-6	3			
	SS		10	Gray Clay with Sand Layers (Varved Red Clay) (wet to Saturated) (Soft)		
	Rec 24		12			
			10			

SPT = STANDARD PENETRATION TEST
D = DRY W = WASHED C = CORED
U = UNDISTURBED SS = SPLIT SPOON
P = PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary: Sand and Gravel Fill to 8.0 over Silt and Clay to 41' over Fine Sand to 55' over Sand and Gravel till to 64.1 bedrock refusal

②

DRILLING CONTRACTOR:
Driller: Dave Reynold
Inspector: W. Lilley
Rig Type: CME
Drilling Method: 4¼" HSA

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME: DEC Phase II - Landcaster
PROJECT NO.: SY012 14

BORING NO.: 4-B
Sheet: 2 of 3
Location:

GROUND WATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather:
Date/Time Start:
Date/Time Finish:

Plot Plan

See Sheet No 1

Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
0.0	25-27	S-7	3	Gray Clay (Soft & moist)	Bentonite Slurry Plus 2" ID PVC Casing	
	SS		3	Trace Fine Gravel		
	Rec 24"		4			
			4			
				(Soft & moist)		
0.0	30-32	S-8	4	Gray Clay		
	SS		4			
	Rec 24"		5			
			8			
				Gray Clay (Soft & moist)		
0.0	35-37	S-9	3			
	SS		3			
	Rec 24"		5			
			6			
0.0	40-42	S-10	6	Gray Clay & Silt Trace F Sand		
	SS		8	41.0' (Soft & wet)		
	Rec 24"		9	Gray Fine sand Trace Coarse Sand (wet)		
			8			
0.0	45-47	S-11	32	Gray Fine Sand Trace Coarse Sand		
	SS		38	(Wet to Saturated)		
	Rec 20"		48			
			51			

SPT - STANDARD PENETRATION TEST
D = DRY W = WASHED C = CORED
U = UNDISTURBED SS = SPLIT SPOON
P = PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary

DRILLING CONTRACTOR:
Driller: D. Reynolds
Inspector: W. Lilley
Rig Type CME
Drilling Method 4 1/4" ID HSA

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME DEC Phase II - Lancaster
PROJECT NO. S 401214

BORING NO. 4-B
Sheet 3 of 3
Location

GROUND WATER OBSERVATIONS

Water Level		
Time		
Date		
Casing Depth		

Weather
Date/Time Start
Date/Time Finish

Plot Plan

See Sheet No.1

Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
0	50-52	S-12	15	Gray Fine Sand (wet - Saturated)	Bentonite Slurry Plus 2" PVC Riser 52'	
	SS		20			
	Rec 20		37			
			56			
				55'		
0.2	55-56	S-13	73	Gray medium sand and Gravel (wet)	Natural Sand Pack 2" ID #10 PVC Screen	
	SS		105			
	Rec 10					
					62'	
				64.1'	2" ID PVC Sump 64.1	Auger refusal bedrock 64.1'
				Boring terminated		

SPT - STANDARD PENETRATION TEST
D = DRY W = WASHED C = CORED
U = UNDISTURBED SS = SPLIT SPOON
P = PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary

DRILLING CONTRACTOR:
Driller: Dave Reynolds
Inspector: W. Lilley
Rig Type: CME
Drilling Method: 4 1/4" HSA

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME: DEC Phase II - Lancaster
PROJECT NO.: SY01214

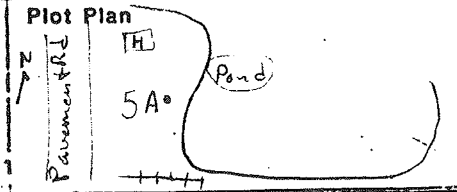
BORING NO.: 5A ②
Sheet 1 of 2
Location: Parking lot East Side of Site

GROUND WATER OBSERVATIONS

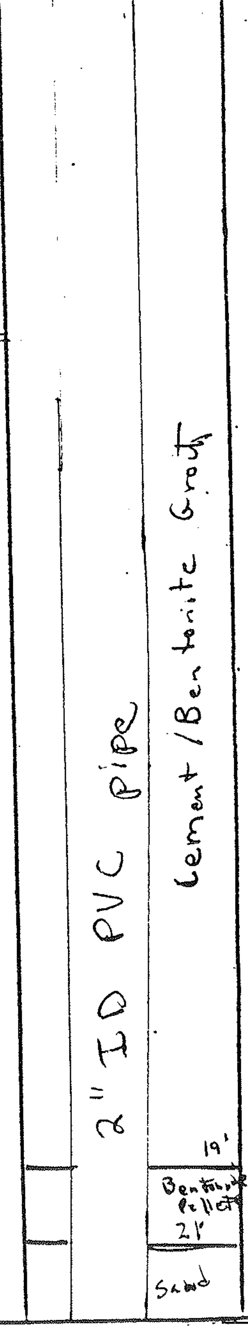
Water Level	26		
Time	12:00		
Date	10/1		
Casing Depth	33		

Weather: cloudy
Date/Time Start: Oct 1 9:30 am
Date/Time Finish: Oct 1 3:30 pm

Plot Plan



Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
0.0	0-2.0	S-1	3	Brown Sand & Gravel little Silt		
	SS		25	(Fill) (wet)		
	Rec 7"		25			
			13			
				5.5'		
0.0	5.0-7.0	S-2	24			
	SS		25	Topsoil 2"		
	Rec 10"		23	Brown M-F Sand (moist)		
			29			
0.0	10-12	S-3	12	Brown M-F Sand (moist)		
	SS		15			
	Rec 24"		22			
			23			
0.0	15-17	S-4	11	Brown M-F Sand (moist)		
	SS		16			
	Rec 21		20			
			21			
0 0	20-22	S-5	9	Brown - M-F Sand (moist)		
	SS		11			
	Rec 22"		14			
			16			



SPT - STANDARD PENETRATION TEST
D = DRY W = WASHED C = CORED
U = UNDISTURBED SS = SPLIT SPOON
P = PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary: Sand and Gravel Fill to 5.5' over Brown Sand to 33'.

②

ENGINEERING-SCIENCE
DRILLING RECORD

DRILLING CONTRACTOR:
Driller: D. Reynolds
Inspector: W. Lilley
Rig Type CME
Drilling Method 4¼ HSA

PROJECT NAME DEC Phase II - Lancaster
PROJECT NO. 54012 14

BORING NO. 5A
Sheet 2 of 2
Location

GROUND WATER OBSERVATIONS

Water Level		
Time		
Date		
Casing Depth		

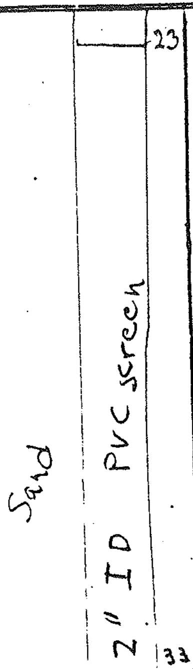
Weather
Date/Time Start
Date/Time Finish

Plot Plan

See Sheet No 1

Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL
0.0	25-27	S-6	11	Brown M-F Sand (wet to Saturated)
	SS		13	▼ 26'
	Rec 23"		12	
			14	
0.0	30-32	S-7	10	Brown M-F Sand (wet to Saturated)
	SS		16	
	Rec 24"		22	
			30	
				Boring Terminated at 33'

WELL SCHEMATIC



Comments

SPT - STANDARD PENETRATION TEST
D = DRY W = WASHED C = CORED
U = UNDISTURBED SS = SPLIT SPOON
P = PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary

ES ENGINEERING-SCIENCE
COMPANIES

MEMORANDUM TO FILE ③

JOB NO. SY012.14
FILE DESIGNATION TELECON
DATE 5/2/88 TIME 10:30

PHONE CALL FROM W. Bradford PHONE NO.
PHONE CALL TO W. Frey / Frey Well Drilling PHONE NO. (716) 937-7977
11565 Broadway, Alden NY, 14004
CONFERENCE WITH
PLACE

SUBJECT Depth of wells w/in 3 mi of Lancaster Reclamation

W. F. provided the following information regarding wells:

Town of Clarence:
Tillman Road – "in rock"

Town of Alden
Kieffer Rd. – "top of rock"
Westwood Rd. – "top of rock"
Zoeller Rd. – "in rock"

["rock" = bedrock]

SIGNED W. Bradford

TABLE IV-4

WATER LEVEL DATA

LANCASTER RECLAMATION SITE

					Water Level Data			
					Date 10/30/87		Date 2/18/88	
Well I.D.	Ground Surface Elevation (Feet*)	Top of PVC Well Pipe Elevation (Feet*)	Well Screen Interval Elevation (Feet*)	Stratigraphic Unit Screened	Depth to Water Level (Feet**)	Water Level Elevation (Feet*)	Depth to Water Level (Feet**)	Water Level Elevation (Feet*)
1A	398.7	400.7	393.7 - 388.7	Outwash Sand	4.2	396.5	2.1	398.6
1B	398.4	400.5	333.8 - 323.8	Till and Ice Contact	22.9	377.6	21.9	378.6
2B	397.3	399.3	335.3 - 325.3	Till and Ice Contact	22.1	377.2	20.9	378.4
3A	402.0	404.5	379.0 - 369.0	Outwash Sand	28.0	376.5	27.3	377.2
3B	401.9	404.4	352.4 - 342.4	Till and Ice Contact	28.1	376.3	27.3	377.1
4B	403.1	405.8	351.1 - 341.1	Till and Ice Contact	29.0	376.8	28.0	377.8
5A	401.2	403.2	378.2 - 368.2	Outwash Sand	27.0	376.2	26.3	376.9

* Referenced to an assumed datum.
** Water level depth from top of PVC well pipe.

4

Lanc. Rec. ⑤

BUFFALO ◈ DRILLING ◈ COMPANY INC.

1965 Sheridan Drive
Kenmore, New York 14223
(716)-875-0906

foundation test borings
rock coring ● monitoring wells
geotechnical instrumentation
construction dewatering

RECEIVED
AUG 23 1984
N Y S DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
REGION 9 HEADQUARTERS

GEOTECHNICAL REPORT
on
INVESTIGATION AND INTERPRETATION
of
SUBSURFACE CONDITIONS
for
LANCASTER RECLAMATION SITE

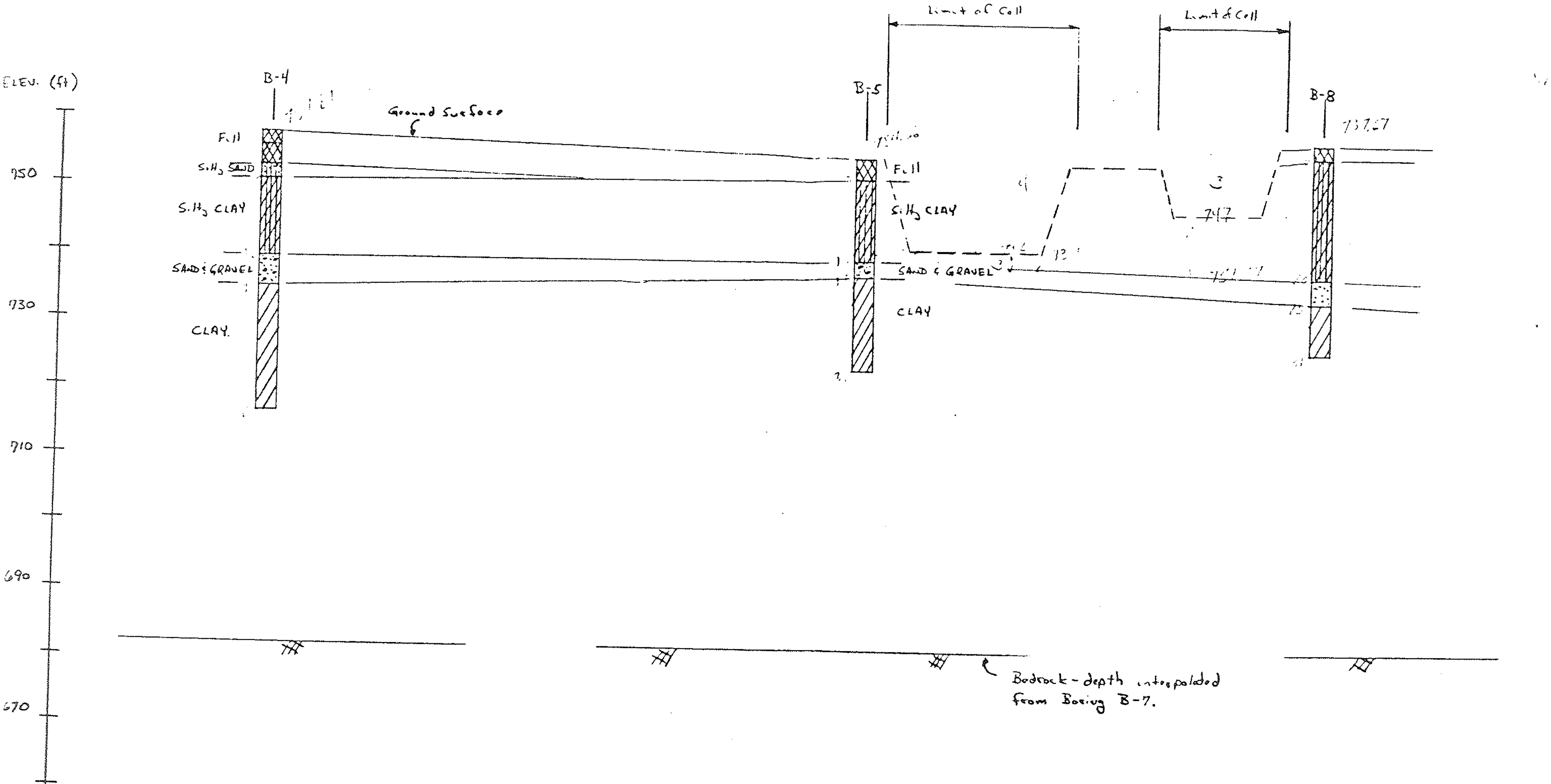
submitted to:

Lancaster Reclamation Company

prepared by:

Mr. James S. Barron, P.E.

Job No. 84-115
August 6, 1984



Bedrock - depth interpolated from Boring B-7.

PROFILE: SECTION B-B'

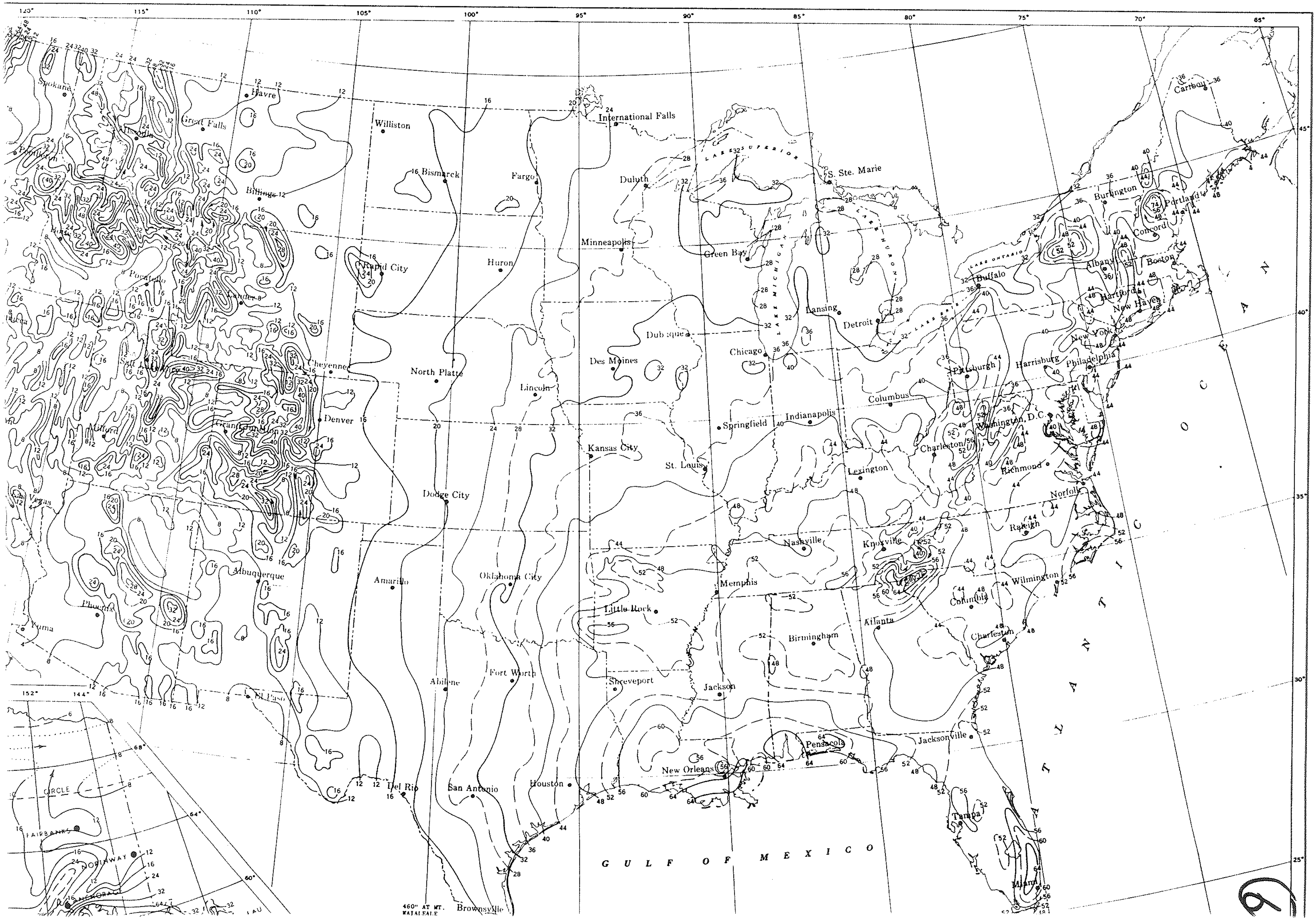
SCALE: (H) 1" = 80'
(V) 1" = 15'

BUFFALO DRILLING COMPANY, INC.
Figure No. 3
Date: June 1984 By: JS Barrow

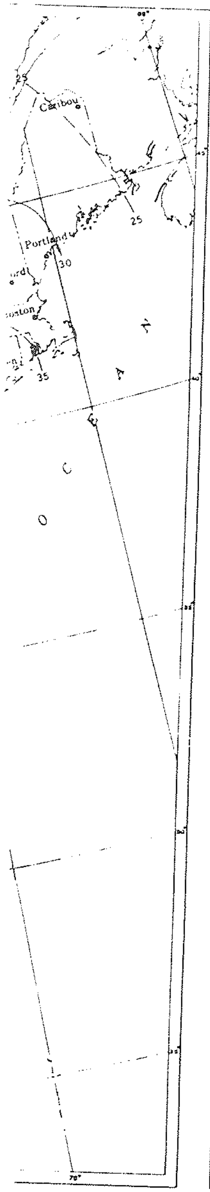
CLIMATIC ATLAS OF THE UNITED STATES

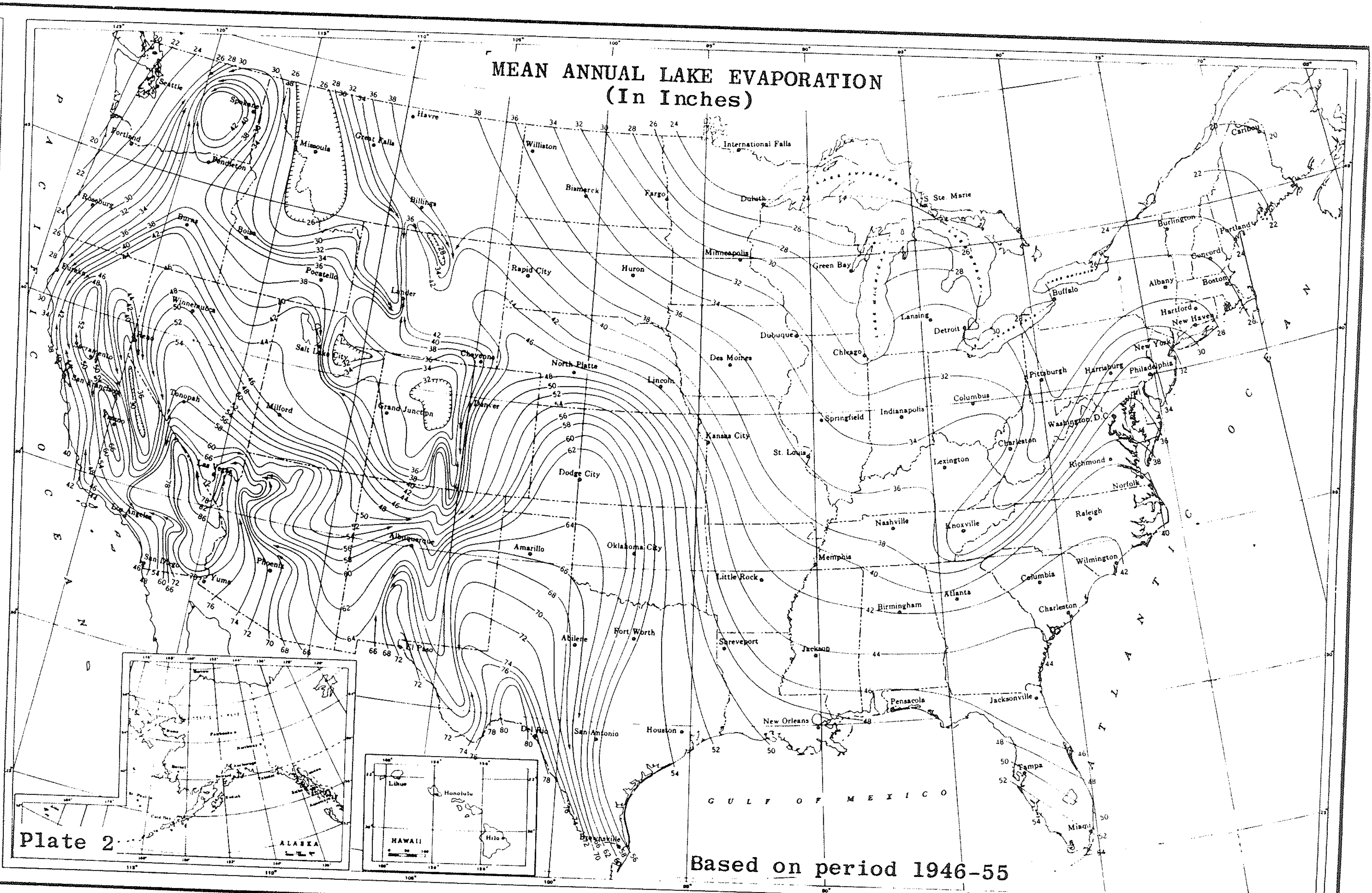
U.S. DEPARTMENT OF COMMERCE • Environmental Science Services Administration • Environmental Data Service

NORMAL ANNUAL TOTAL PRECIPITATION (Inches)



AN AND LAKE EVAPORATION

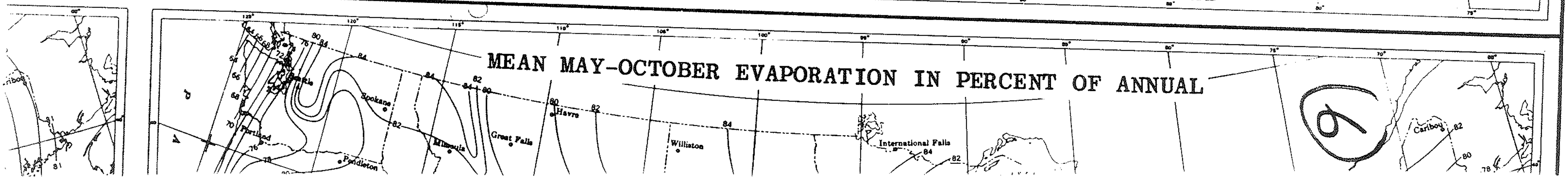




MEAN ANNUAL LAKE EVAPORATION
(In Inches)

Plate 2

Based on period 1946-55



MEAN MAY-OCTOBER EVAPORATION IN PERCENT OF ANNUAL

9

⑦

R&R
INTERNATIONAL,INC.

PERMEABILITY TEST DATA
ASTM D-2434

DATE:12-30-87

Chamber No.:2

Undisturbed

Client:Engineering Science

Project No.:870834

Location:Lancaster Reclamation

Tested by:S.Patel

Boring No.:1-A

Sample No.:N/A

Depth: 12 to 14 feet

Initial		Final		Test Pressures (psi)	
Ht.(ins)=	3.6	Ht.(ins)=	3.6	Chamber=	60
Di.(ins)=	2.8	Di.(ins)=	2.8	Lower=	50
Wt.(gms)=	845.5	Wt.(gms)=	850.1	Upper=	40

Duration of Test (min)= 670.0

PERMEABILITY (cm/s)= 2.21E-8

⑦

R&R
INTERNATIONAL,INC.

PERMEABILITY TEST DATA
ASTM D-2434

DATE:12/15/87

Chamber No.:1

Undisturbed

Client:Engineering Science

Project No.:870834

Location:Lancaster Reclamation

Tested by:S.Patel

Boring No.:2-B

Sample No.:N/A

Depth: 17 to 19 feet

Initial		Final		Test Pressures (psi)	
Ht.(ins)=	3.6	Ht.(ins)=	3.6	Chamber=	60
Di.(ins)=	2.9	Di.(ins)=	2.9	Lower=	50
Wt.(gms)=	785.5	Wt.(gms)=	792.8	Upper=	40

Duration of Test (min)= 915.0

PERMEABILITY (cm/s)= 1.97E-8

(8)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION
INACTIVE HAZARDOUS WASTE DISPOSAL REPORT

CLASSIFICATION CODE: 2a REGION: 9 SITE CODE: 915069
EPA ID: NYD000513911

NAME OF SITE : Lancaster Reclamation
STREET ADDRESS: 403 Pavement Rd.
TOWN/CITY: Lancaster
COUNTY: Erie
ZIP:

SITE TYPE: Open Dump- Structure- Lagoon- Landfill-X Treatment Pond-
ESTIMATED SIZE: 10 Acres

SITE OWNER/OPERATOR INFORMATION:
CURRENT OWNER NAME....: Lancaster Reclaimation
CURRENT OWNER ADDRESS.: 403 Pavement Rd., Lancaster, NY
OWNER(S) DURING USE...: Lancaster Reclamation Inc.
OPERATOR DURING USE...: Lancaster Reclaimation Inc.
OPERATOR ADDRESS......: 403 Pavement Road, Lancaster, NY
PERIOD ASSOCIATED WITH HAZARDOUS WASTE: From To

SITE DESCRIPTION:
Former sand quarry. Foundry sand, diatomaceous earth, distressed oils are disposed. Site presently inactive, Part 360 application submitted to the Department and under review for upgrading the site.
Phase I investigation for this site has been completed. A Phase II investigation for this site is underway.

HAZARDOUS WASTE DISPOSED: Confirmed-X Suspected-

TYPE	QUANTITY (units)
Foundry sand w/phenolic binders	Unknown
Sludges of Diatomaceous Earth	Unknown
Distressed Oils	Unknown

8

SITE CODE: 915069

ANALYTICAL DATA AVAILABLE:
ir- Surface Water- Groundwater-X Soil-X Sediment- None-

CONTRAVENTION OF STANDARDS:
roundwater- Drinking Water- Surface Water- Air-

LEGAL ACTION:

YPE..: State- Federal-
STATUS: Negotiation in Progress- Order Signed-

EMEDIAL ACTION:

Proposed- Under design- In Progress- Completed-
ATURE OF ACTION:

GEOTECHNICAL INFORMATION:
SOIL TYPE: Sandy
ROUNDWATER DEPTH: 12+ ft.

ASSESSMENT OF ENVIRONMENTAL PROBLEMS:

Inadequate data to assess environmental problems.

ASSESSMENT OF HEALTH PROBLEMS:

Medium	Contaminants Available	Migration Potential	Potentially Exposed Population	Need for Investigation
Air	Likely	Likely	Yes	High
Surface Soil	Likley	Unlikely	yes	Medium
Groundwater	Identified	Highly Likely	Yes	High
Surface Water	Likely	Unlikely	No	Low

Health Department Site Inspection Date : 7/85

MUNICIPAL WASTE ID: 15-S-08

[illegible]

⑨

RESTRICTED-USE LANDFILL SITE

For

LANCASTER RECLAMATION COMPANY
(Formerly Ferry Concrete Construction Co., Inc.)
403 Pavement Road
Lancaster, NY 14086

By

WENDEL ENGINEERS, P.C.
Consulting Engineers/Planners/Surveyors
7405 Canal Road
Lockport, New York

Project No. 1911-2
May 1979

9

TABLE OF CONTENTS

9

BACKGROUND

It will be the purpose of this report to develop a physical plan for the implementation of an existing restricted-use landfill for the private use of the Owner/Operator, Lancaster Reclamation Company. At present, the type of waste to be dumped at this landfill is: (1) A slurry consisting of Bentonite Clay in a 90% water mixture that has been coagulated with a poly-electolite to a gelatinous percipitate (see Appendix 2); (2) Slurry composed of portland cement, asbestos fibers and glass fibers (see Appendix 8); (3) Spent casting sand including broken brick (see Appendix 10) and (4) Sand fines (slurry) from foundry wastewater treatment (see Appendix 6). The slurry wastes will be hauled to the site in dump trucks with sealed bodies to prevent leakage. The foundry sand will be hauled in covered dump trucks to eliminate blowing sand during transport.

The estimated total quantity of waste that can be presently handled at the site, excluding the pond and shallow surface water holding pond, is 81,000 cubic yards. Based on the present combined quantity of dry and dewatered industrial wastes, the life expectancy of the site would be approximately 6.5 years. If the Owner elects not to accept any one or more of the previously mentioned wastes the life expectancy of the site will be increased and the report data pertaining to life expectancies would have to be revised at that time.

Calculations for life expectancy are based on the following quantities of wastes:

Bentonite Clay Slurry - 20,400 cy/yr. x 10% solids =
2040 c.y. solids/year

Asbestos Cement/Glass fiber Slurry - 20,400 gal./yr. x 35% solids = 7140 gal. solids/202 gal. per cy = 35 c.y. solids/yr.

Foundry Wastewater Treatment Slurry - 2,400,000 gal./yr. x 35% solids = 840,000 gal. solids/202 gal. per c.y. = 4160 c.y. solids/yr.

Foundry sand - 6000 cy/yr.

2040 cy + 35 cy + 4160 cy + 6000 cy = 12235 cy/yr. total solids

Total number c.y. acceptable at site = $\frac{81,000 \text{ cy}}{12,235 \text{ cy/yr.}}$ = 6.5 yrs.

if all anticipated industrial wastes are accepted.

Lanc Rec ⑩

RESTRICTED USE LANDFILL

PERMIT UPDATE

FOR

LANCASTER RECLAMATION COMPANY
403 PAVEMENT ROAD
LANCASTER, NY 14086

PERMIT NO: DEC: 2021
SITE NO: DEC 15 S 08

PER OCTOBER 25, 1979 APPROVAL
AND JUNE 21, 1979 REPORT WENDEL ENGINEERS

6/22/84

PROJECT NO. 1911-3

It is expected that any water encountered above bedrock is traped or perched in localized pockets. Natural groundwater most likely moves at the bedrock interface. The ponds on site are symptomatic of this effect.

The underlaying clay is a stiff (ML - CL) plastic to moderately plastic soil which will exhibit low permeability in the 10^{-8} cm/sec or lower range.

Occassional sand, and sand-gravel seams were encountered on-site and all the likely conductors of the shallow acquifers that recharge the ponds, and most likely the well in the barn.

Our conclusion from the 8 test borings and trenches is to place the waste cells in the clay areas as proposed and install a clay cut off wall north to south through the sand-gravel lense into the deeper clay level to isolate horizontal migration into the acquifer area.

It is proposed to abandon the east well and install a new well to bedrock to more accurately monitor groundwater quality. It is felt from field observations the current east well only monitors surface water recharge, explaining the intermittent phenol elevations, due to natural surface causes, ie., leaf rot.

Two additional wells should be installed, one on the north and south perimeters, again to bedrock to monitor quality and establish actual hydraulic gradients of the site.

WASTE CELLS

It is intended to continue disposal into open cells of natural material bases and side slopes. Slurries will be disposed in the cells for settling and hydraulic compaction. Dry wastes will be spread and compacted and covered. Waiver of daily cover is requested on slurries disposed. When final grade is reached, a final cover layer will be placed with a 6 inch layer of topsoil graded to drain, seeded and fertilized.

Cells will be graded to drain to a low point (sump) for collection of precipitation, decanted liquid and any leachate generated. Leachate disposal is proposed to be by land application, spray irrigation, seasonally over the wooded and vegetated area of the site to maximized evapotranspiration and percolation in the graded overburden.

Cell 3 will be drained to Cell 4 by piping for collection and pumping future cells can be individually sumped.

Where periodic tests indicate contamination, collection, transport and disposal at a proper wastewater treatment plant will be utilized.

⑪

Uncontrolled Hazardous Waste Site Ranking System

A Users Manual

(HW-10)

Originally Published in
the July 16, 1982, *Federal Register*

United States
Environmental Protection
Agency

1984

11

Table I (cont.)

Chemical/Compound	Ground Water and Surface Water Pathway Values	Air Pathway Values
Fluorine	18	9
Formaldehyde	9	9
Formic Acid	9	6
Heptachlor	18	9
Hexachlorobenzene	15	6
Hexachlorobutadiene	18	9
Hexachlorocyclohexane, NOS	18	9
Hexachlorocyclopentadiene	18	9
Hydrochloric Acid	9	6
Hydrogen Sulfide	18	9
Indene	12	6
Iron & Compounds, NOS	18	9
Isophorone	12	6
Isopropyl Ether	9	3
Kelthane	15	6
Kepone	18	9
Lead	18	9
Lindane	18	9
Magnesium & Compounds, NOS	15	6
Manganese & Compounds, NOS	18	9
Mercury	18	9
Mercury Chloride	18	9
Methoxychlor	15	6
4, 4-Methylene-Bis-(2-Chloroaniline)	18	9
Methylene Chloride	12	6
Methyl Ethyl Ketone	6	6
Methyl Isobutyl Ketone	12	6
4-Methyl-2-Nitroaniline	12	9
Methyl Parathion	9	9
2-Methylpyridine	12	6
Mirex	18	9

TABLE 4
WASTE CHARACTERISTICS VALUES FOR SOME COMMON CHEMICALS

CHEMICAL/COMPOUND	TOXICITY[1]	PERSISTENCE[2]	IGNITABILITY[3]	REACTIVITY[3]
Acetaldehyde	3	0	3	2
Acetic Acid	3	0	2	1
Acetone	2	0	3	0
Aldrin	3	3	1	0
Ammonia, Anhydrous	3	0	1	0
Aniline	3	1	2	0
Benzene	3	1	3	0
Carbon Tetrachloride	3	3	0	0
Chlordane	3	3	0*	0*
Chlorobenzene	2	2	3	0
Chloroform	3	3	0	0
Cresol-O	3	1	2	0
Cresol-M&P	3	1	1	0
Cyclohexane	2	2	3	0
Endrin	3	3	1	0
Ethyl Benzene	2	1	3	0
Formaldehyde	3	0	2	0
Formic Acid	3	0	2	0
Hydrochloric Acid	3	0	0	0
Isopropyl Ether	3	1	3	1
Lindane	3	3	1	0
Methane	1	1	3	0
Methyl Ethyl Ketone	2	0	3	0
Methyl Parathion in Xylene Solution	3	0Δ	3	2
Naphthalene	2	1	2	0
Nitric Acid	3	0	0	0
Parathion	3	0Δ	1	2
PCB	3	3	0Δ	0Δ
Petroleum, Kerosene (Fuel Oil No. 1)	3	1	2	0
Phenol	3	1	2	0
Sulfuric Acid	3	0	0	2
Toluene	2	1	3	0
Trichlorobenzene	2	3	1	0
α-Trichloroethane	2	2	1	0
Xylene	2	1	3	0

[1] Sax, N. I., Dangerous Properties of Industrial Materials, Van Nostrand Reinhold Co., New York, 4th ed., 1975. The highest rating listed under each chemical is used.

[2] JRB Associates, Inc., Methodology for Rating the Hazard Potential of Waste Disposal Sites, May 5, 1980.

[3] National Fire Protection Association, National Fire Codes, Vol. 13, No. 49, 1977.

* Professional judgment based on information contained in the U.S. Coast Guard CHRIS Hazardous Chemical Data, 1978.

Δ Professional judgment based on existing literature.

TABLE IV-5

SUMMARY OF WASTES DISPOSED AT THE LANCASTER RECLAMATION COMPANY SITE

Date Permit Approved	Generator	Waste Type	Quantity Disposed (1)	Constituents Of Concern
5/11/76	Dresser Transportation Equipment Division	Bentonite Clay Slurry	76,000 cu. yd. Prior to Thickening	Leachate: Zinc
1/24/78	Chevrolet Division General Motors	Foundry Sand Slurry	1.7 Million Gallons	Pit: Oil Pit Leachate: Selenium, Cadmium Mixture: Oil, PCB Mixture Leachate: Cadmium, Lead
1/4/79	Fabritron	Cement, Asbestos, and Glass Fiber Slurry	7,000 Gallons	Asbestos
5/11/76	Dresser Transportation Equipment Division	Foundry Sand	2,200 cu. yd.	Leachate: Phenols
6/16/81	Reed Holdings	Surface Print Waste, Prepaste Polymer, Prepaste Alkali	120,000 Gallons	---
10/29/80	Dresser Transportation Equipment Division	Shot Blast of Steel Castings	Mixed with Foundry Sand	Leachate: Phenols
5/27/82	Sweet Home Central School Bus Garage	Dirt and Sludge From Catch Basin	See Below	Sludge: Oil
7/7/83	Ormsby Vocational School Bus Garage	Dirt and Sludge From Catch Basin	9,000 cu. yd., Includes Sweet Home	Heavy Metals and Oil and Grease

(1) Based on telephone interview with J. Ferry of Lancaster Reclamation, Inc., 4/25/85.

Lanc. Refile

(13)

New York State Department of Environmental Conservation

APPLICATION FOR TREATMENT OR DISPOSAL
OF AN INDUSTRIAL OR HAZARDOUS WASTE STREAM

See Application Instructions on Reverse Side

FOR STATE USE ONLY

SITE NO.	APPLICATION NO.	DATE RECEIVED
DEPARTMENT ACTION ☐ Approved ☐ Disapproved		DATE

Water ____
Air ____
Gen. ____
File ____

1. Project/Facility Name: 403 Pavement Road
2. County: Erie
3. Site No.: 1911-1
4. Application No.: 1
5. Owner's Name: Ferry Concrete Const.
6. Address (Street, City, State, Zip Code): 3179 Walden Av Depew, N.Y 14043
7. Telephone No.: 684-1703
8. Operator's Name: Ferry Concrete Const. Co., Inc.
9. Address (Street, City, State, Zip Code): 3179 Walden Av Depew, N.Y. 14043
10. Telephone No.: 684-1703
11. Method of Treatment or Disposal: Lagooning
12. Company Generating Waste: Dresser Transp. Equip. Div.
13. Address of Facility Generating Waste (Street, City, State, Zip): 2 Main Street, Depew, New York 14043
14. Representative of Waste Generator: A. E. Eicheldinger
15. Mailing Address of Representative: 2 Main Street, Depew, N.Y. 14043
16. Telephone No.: 716-683-6000
17. Description of Process Producing Waste: Sand and Air Washing
18. Expected Annual Waste Production: ,000 cu.yds~~Tons~~/yr. ____ Gal./yr.
19. Waste Hauled In: ☐ Drums ☐ Bulk Tank ☐ Roll-off Container ☒ Other Bulk Truck
20. Waste Composition
a. Average Percent Solids ____ %
b. Physical State: ☐ Liquid ☐ Slurry ☒ Sludge ☐ Solid ☐ Contained Gas
c. pH Range 7.5 to 8.0
d. Components

Components	CONCENTRATION (dry weight) Upper	Lower	Typical %	UNIT (check one) WT.%	PPM
1) Moisture (% water) = 91.5%				☐	☐
2) Total Solids 8.50%, consisting of:				☐	☐
3) Loss of Ignition			9.75	☒	☐
4) SiO_2 (Sand Type)			22.25	☒	☐
5) $Al_2Si_4O_x$ (Clay Type)			65.19	☒	☐
6) Fe_2O_3 (Iron Oxide)			1.25	☒	☐
7) CaO (Lime Type)			.36	☒	☐

21. Was a Leaching Potential Test conducted on the Waste? ☐ Yes ☒ No If yes, attach form.
22. Detail all hazards and nuisance problems associated with the wastes. List necessary safety, handling, treatment and disposal precautions.

NONE

23. Waste Hauler: Ferry Concrete
24. Address (street, city, state, zip code): 3179 Walden Av Depew, N.Y. 14043
25. N.Y.S. Reg. No.: 15-001
26. Telephone No.: 684-1703

27. CERTIFICATION:
I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

a. Representative of Waste Generator: A. E. Eicheldinger
A. E. Eicheldinger, Plant Engineer — 2-10-78
Signature and Title — Date

b. Representative of Treatment or Disposal Facility: John L. Ferry
John L. Ferry, Treasurer — 2-20-78
Signature and Title — Date

(NYSDEC 1979)

⑬

ork State Department of Environmental Conservation

APPLICATION FOR TREATMENT OR DISPOSAL OF AN INDUSTRIAL OR HAZARDOUS WASTE STREAM

See Application Instructions on Reverse Side

FOR STATE USE ONLY

SITE NO.

APPLICATION NO.

DATE RECEIVED

DEPARTMENT ACTION ☐ Approved ☐ Disapproved

DATE

1. Project/Facility Name: 403 Pavement Road
2. County: Erie
3. Site No.: 1911-1
4. Application No.: 3
5. Owner's Name: Lancaster Reclamation
6. Address (Street, City, State, Zip Code): 3179 Walden Ave., Depew, N.Y 14043
7. Telephone No.: 684-1703
8. Operator's Name: Lancaster Reclamation
9. Address (Street, City, State, Zip Code): Same as above
10. Telephone No.: 684-1703
11. Method of Treatment or Disposal: Lagooning (mixed with bentonite clay sludge)
12. Company Generating Waste: Dresser Tranp. Equip. Div.
13. Address of Facility Generating Waste (Street, City, State, Zip): 2 Main Street, Depew, New York 14043
14. Representative of Waste Generator: A. E. Eicheldinger
15. Mailing Address of Representative: 2 Main Street, Depew, N.Y. 14043
16. Telephone No.: 716-683-6000
17. Description of Process Producing Waste: Core Making Sands
18. Expected Annual Waste Production: 6,000 cu.yds/yr. ____ Gal./yr.
19. Waste Hauled In: ☐ Drums ☐ Bulk Tank ☐ Roll-off Container ☒ Other Bulk Truck
20. Waste Composition
    a. Average Percent Solids %
    b. Physical State: ☐ Liquid ☐ Slurry ☐ Sludge ☒ Solid ☐ Contained Gas
    c. pH Range 7.0 to 8.0
    d. Components

d. Components	CONCENTRATION (dry weight) Upper	Lower	Typical %	UNIT (check one) WT.%	PPM
				☐	☐
1) Moisture (% water)= 3.62%				☐	☐
2) Total solids 96.38% consisting of:					
3) Loss of ignition			2.04	☒	☐
4) SiO2 (Sand Type)			90.50	☒	☐
5) AL2O3.4SIO2 (Clay Type)			3.66	☒	☐
6) Fe2O3 (Iron Oxide)			2.26	☒	☐
7) CaO (Lime Type)			0.24	☒	☐
Phenolic Compounds			0.0002	X	

21. Was a Leaching Potential Test conducted on the Waste? ☒ Yes ☐ No If yes, attach form.
22. Detail all hazards and nuisance problems associated with the wastes. List necessary safety, handling, treatment and disposal precautions.

NONE

23. Waste Hauler: Ferry Concrete
24. Address (street, city, state, zip code): 3179 Walden Ave, Depew, N.Y 14043
25. N.Y.S. Reg. No.: 15-001
26. Telephone No.: 684-1703
27. CERTIFICATION:

I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

a. Representative of Waste Generator: A. E. Eicheldinger
A. E. Eicheldinger, Plant Engineer — Signature and/Title
3-29-79 — Date

b. Representative of Treatment or Disposal Facility:
Signature and Title
3-[illegible]-79 — Date

ION FOR TREATMENT OR DISPOSAL OF AN
DUSTRIAL OR HAZARDO WASTE STREAM

DEP NT ACTION
☐ proved ☐ Disapproved

DATE

(13)

PLICATION INSTRUCTIONS ON REVERSE SIDE

NAME OF PROJECT/FACILITY: ncaster Reclamation Company
2. COUNTY: Erie
3. SITE NO.: 15S08
4. APPLICATION N: 6

AME OF OWNER: Lancaster Reclamation Company
6. ADDRESS (Street, City, State, Zip Code): 403 Pavement Rd., Lancaster, New York
7. TELEPHONE NO.: 684-1703

ME OF OPERATOR: me as above
9. ADDRESS (Street, City, State, Zip Code): Same as above
10. TELEPHONE NO.: Same

METHOD OF TREATMENT OR DISPOSAL

gooning

MPANY GENERATING WASTE: Dresser Transportation Equipment Division
13. ADDRESS OF FACILITY GENERATING WASTE (Street, City, State, Zip Code): 2 Main Street, Depew, New York 14043

RESENTATIVE OF WASTE GENERATOR: E. Eicheldinger
15. MAILING ADDRESS OF REPRESENTATIVE: 2 Main Street, Depew, New York 14043
16. TELEPHONE NO.: 716-683-6000

DESCRIPTION OF PROCESS PRODUCING WASTE

st collection during shot blasting of our low carbon mild steel castings.

EXPECTED ANNUAL WASTE PRODUCTION: 215 cu. yds Tons/Year ______ Gallons/Year

19. WASTE HAULED IN: ☐ Drums ☐ Bulk Tank ☐ Roll-off Container ☒ Other Bulk Truck

STE COMPOSITION

a. Average Percent Solids 10 %

b. Physical State: ☐ Liquid ☒ Slurry ☐ Sludge ☐ Solid ☐ Contained Gas

c. pH Range ______ to ______

d.	COMPONENTS	CONCENTRATION (Dry Weight) Upper	Lower	Typical	UNIT (Check One) Wt. %	PPM
1)	See attached "Leaching Potential Test Report" on				☐	☐
2)	solids before it is added to slurry shown on application				☐	☐
	#1.				☐	☐
4)					☐	☐
					☐	☐
					☐	☐
7)					☐	☐

s a Leaching Potential Test conducted on the Waste? ☒ Yes ☐ No If "Yes", attach a Leaching Potential Test Report Form

DETAIL ALL HAZARDS AND NUISANCE PROBLEMS ASSOCIATED WITH THE WASTES. List necessary safety, handling, treatment and disposal precautions.

NONE

AME OF WASTE HAULER: Ferry Concrete Constr. Co.
24. ADDRESS (Street, City, State, Zip Code): 3179 Walden Ave., Depew, N.Y.
25. N.Y.S. Registration No.: 9A-061
26. TELEPHONE NO.: 684-1703

RTIFICATION

I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits is true to the best of my knowledge an belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

a. SIGNATURE AND TITLE OF REPRESENTATIVE OF WASTE GENERATOR
X Supr. Wks. Eng'g
DATE

SIGNATURE AND TITLE OF REPRESENTATIVE OF TREATMENT OR DISPOSAL FACILITY
X
DATE 9/[illegible]

(12/77)

ʌK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

LEACHING POTENTIAL (ST REPORT

DEPART . ACTION ☐ Approved ☐ Disapproved | DATE

13

STRUCTIONS ON REVERSE SIDE

OF PROJECT/FACILITY: a: :aster Reclamation Company
2. COUNTY: Erie
3. SITE NO.: 15S08
4. APPLICATION NO.: 6
ME OF OWNER: a· aster Reclamation Company
6. ADDRESS (Street, City, State, Zip Code): 403 Pavement Rd., Lancaster, New York
7. TELEPHONE NO.: 684-1703
OF OPERATOR: ame as above
9. ADDRESS (Street, City, State, Zip Code): Same as above
10. TELEPHONE NO.: Same
MPANY GENERATING WASTE: ser Transportation Equipment Division
12. ADDRESS OF FACILITY GENERATING WASTE (Street, City, State, Zip Code): 2 Main Street, Depew, New York 14043
RESENTATIVE OF WASTE GENERATOR: E. Eicheldinger
14. MAILING ADDRESS OF REPRESENTATIVE: 2 Main Street, Depew, New York 14043
15. TELEPHONE NO.: 716-683-6000
SAMPLES TAKEN: -80
17. SAMPLES TAKEN BY (Name and Employer): A. E. Eicheldinger
GANIZATION PERFORMING ANALYSES: abs, Inc., Teck: Labs Division
19. ADDRESS (Street, City, State, Zip Code): West Cordon Street at Clark Lane, Bradford, Pa. 16701
ENTATIVE OF ORGANIZATION PERFORMING ANALYSES: hn S. Mitchell
21. TITLE: Director
22. TELEPHONE NO.: 814-368-6087

SES OF LIQUID FRACTION: pH: Sample 1 ____ Sample 2 ____ Sample 3 ____

COMPONENT	CONCENTRATION			UNIT (Check One)	
	Sample 1	Sample 2	Sample 3	Wt. %	PPM
				☐	☐
				☐	☐
				☐	☐
				☐	☐
				☐	☐
				☐	☐

A..SES OF SOLIDS FRACTION: Percent Solids: Sample 1 100 Sample 2 100 Sample 3 100

COMPONENT	CONCENTRATION (Dry Weight)			UNIT (Check One)	
	Sample 1	Sample 2	Sample 3	Wt. %	PPM
Total Chromium	0.0263	0.0210	0.0225	☒	☐
				☐	☐
				☐	☐
				☐	☐
				☐	☐
				☐	☐

CHING TEST ON SOLIDS FRACTION: pH: Sample 1 6.8 Sample 2 6.9 Sample 3 7.0

COMPONENT	CONCENTRATION			UNIT (Check One)	
	Sample 1	Sample 2	Sample 3	Wt. %	PPM
Total Iron	0.56	0.41	1.09	☐	☒
Chromium	0.007	0.006	0.009	☐	☒
Manganese	0.009	0.004	0.018	☐	☒
Molybdenum	0.66	0.64	0.94	☐	☒
Carbon Total Total Organic	25.17.	20.12.	24.16.	☐	☒
Silicon	1.87	1.87	1.96	☐	☒

ICATION

I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits is true to the best of my knowledge and ief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

NATURE AND TITLE OF REPRESENTATIVE OF WASTE GENERATOR: A. E. Eicheldinger SUPR. WKS. ENG'G. | DATE 9/18/80

SIGNATURE AND TITLE OF REPRESENTATIVE OF TREATMENT OR DISPOSAL FACILITY: | DATE 9/19/80

STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ATION FOR TREATMENT OR DISPOSAL OF AN DUSTRIAL OR HAZARDOUS WASTE STREAM

CATION INSTRUCTIONS ON REVERSE SIDE

FOR STATE USE ONLY

SITE NO.	APPLICATION NO.	DATE RECEIVED
15S08	81-1	5/6/81
DEPARTMENT ACTION ☒ Approved ☐ Disapproved		DATE 6/15/81

ME OF PROJECT/FACILITY ncaster Reclamation Co.	2. COUNTY Erie	3. SITE NO. 15-S08	4. APPLICATION NO. 9
AME OF OWNER Same As Above	6. ADDRESS (Street, City, State, Zip Code) 403 Pavement Rd Lancaster, N.Y. 14086		7. TELEPHONE NO. 716 684-9624
NAME OF OPERATOR ne As Above	9. ADDRESS (Street, City, State, Zip Code) Same As above		10. TELEPHONE NO. 716-684-1703

ETHOD OF TREATMENT OR DISPOSAL

Lagooning

COMPANY GENERATING WASTE Reed Holdings, Inc.	13. ADDRESS OF FACILITY GENERATING WASTE (Street, City, State, Zip Code) 2775 Broadway(P.O.Box 27) Bflo.N.Y.14240	
14. REPRESENTATIVE OF WASTE GENERATOR John J. Davern	15. MAILING ADDRESS OF REPRESENTATIVE Same As above	16. TELEPHONE NO. 716-891-8334

DESCRIPTION OF PROCESS PRODUCING WASTE

Sludge Residue from surface print production

EXPECTED ANNUAL WASTE PRODUCTION

_______ Tons/Year 2400. Gallons/Year

19. WASTE HAULED IN ☐ Drums ☒ Bulk Tank ☐ Roll-off Container ☐ Other ______

20. WASTE COMPOSITION

a. Average Percent Solids 20 %

b. Physical State ☐ Liquid ☐ Slurry ☒ Sludge ☐ Solid ☐ Contained Gas

c. pH Range 7 to 8

d. COMPONENTS	CONCENTRATION (Dry Weight) Upper	Lower	Typical	UNIT (Check One) Wt. %	PPM
1) See Attachments				☐	☐
2)				☐	☐
3)				☐	☐
4)				☐	☐
5)				☐	☐
6)				☐	☐
7)				☐	☐

21. Was a Leaching Potential Test conducted on the Waste? ☒ Yes ☐ No If "Yes", attach a Leaching Potential Test Report Form

DETAIL ALL HAZARDS AND NUISANCE PROBLEMS ASSOCIATED WITH THE WASTES. List necessary safety, handling, treatment and disposal precautions.

None

23. NAME OF WASTE HAULER	24. ADDRESS (Street, City, State, Zip Code)	25. N.Y.S. Registration No.	26. TELEPHONE NO.
ancaster Reclamation Co.	403 Pavement Rd. Lanc.N.Y. 14086	XX 9A-026	684-9624 684-1703

CERTIFICATION

I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

SIGNATURE AND TITLE OF REPRESENTATIVE OF WASTE GENERATOR

X [illegible] Consultant [illegible] DATE 5-4-81

SIGNATURE AND TITLE OF REPRESENTATIVE OF TREATMENT OR DISPOSAL FACILITY

John Ferry, Co-Owner DATE [illegible]

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

APPLICATION FOR TREATMENT OR DISPOSAL OF AN INDUSTRIAL OR HAZARDOUS WASTE STREAM

SITE NO.	APPLICATION NO.	DATE RECEIVED
DEPARTMENT ACTION ☐ Approved ☐ Disapproved		DATE

13

E APPLICATION INSTRUCTIONS ON REVERSE SIDE

NAME OF PROJECT/FACILITY: Lancaster Reclamation Co.
2. COUNTY: Erie
3. SITE NO.: 15-S08
4. APPLICATION NO: 10

NAME OF OWNER: Lancaster Reclamation Co.
6. ADDRESS (Street, City, State, Zip Code): 403 Pavement Rd. Lancaster, N.Y.
7. TELEPHONE NO.: 684-9624

8. NAME OF OPERATOR: Same as above
9. ADDRESS (Street, City, State, Zip Code): same as above
10. TELEPHONE NO.: 684-1703

. METHOD OF TREATMENT OR DISPOSAL

Lagooning

12. COMPANY GENERATING WASTE: eneral Motors Corp.-Chevrolet Metal Casting
13. ADDRESS OF FACILITY GENERATING WASTE (Street, City, State, Zip Code): Tonawanda, N.Y. 14150

4. REPRESENTATIVE OF WASTE GENERATOR: William Newstead
15. MAILING ADDRESS OF REPRESENTATIVE: same as above
16. TELEPHONE NO.: 879-5150

. DESCRIPTION OF PROCESS PRODUCING WASTE

waste molding and core sands from gray iron casting manufacturing including washed sands from sand reclamation process.

. EXPECTED ANNUAL WASTE PRODUCTION: 200,000 Tons/Year ________ Gallons/Year

19. WASTE HAULED IN ☐ Drums ☐ Bulk Tank ☐ Roll-off Container ☒ Other Bulk Dump Truck

20. WASTE COMPOSITION a. Average Percent Solids ________ %

b. Physical State ☐ Liquid ☐ Slurry ☐ Sludge ☐ Solid ☐ Contained Gas

c. pH Range ________ to ________

d.	COMPONENTS	CONCENTRATION (Dry Weight) Upper	Lower	Typical	UNIT (Check One) Wt. %	PPM
1)	" See Attachments "				☐	☐
2)					☐	☐
3)					☐	☐
4)					☐	☐
5)					☐	☐
6)					☐	☐
7)					☐	☐

21. Was a Leaching Potential Test conducted on the Waste? ☒ Yes ☐ No If "Yes", attach a Leaching Potential Test Report Form

2. DETAIL ALL HAZARDS AND NUISANCE PROBLEMS ASSOCIATED WITH THE WASTES. List necessary safety, handling, treatment and disposal precautions.

23. NAME OF WASTE HAULER: erry Concrete Const.Co.Inc
24. ADDRESS (Street, City, State, Zip Code): 3179 Walden Av Depew, N.Y.
25. N.Y.S. Registration No.: 9A-061
26. TELEPHONE NO.: 684-1703

7. CERTIFICATION

I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits is true to the best of my knowledge an belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

a. SIGNATURE AND TITLE OF REPRESENTATIVE OF WASTE GENERATOR
X W Newstead
DATE 12-7-81

b. SIGNATURE AND TITLE OF REPRESENTATIVE OF TREATMENT OR DISPOSAL FACILITY
X Owner
DATE 12-4-81

7-19-7 (12/77)

ENGINEERING-SCIENCE COMPANIES

MEMORANDUM TO FILE

14

JOB NO. SY012.14

FILE DESIGNATION TELECON

DATE 4/29/88 TIME 10:20

PHONE CALL FROM W. Bradford (ES) PHONE NO.

PHONE CALL TO Rose Armitage PHONE NO. (716) 937-9286

CONFERENCE WITH

PLACE

SUBJECT Water sources in Town of Alden (R.A. works at the Town of Alden Supervisor's office; title: Confidential Secretary and Bookkeeper to the Supervisor)

I asked R.A. if any of the people on Zoeller Rd. (just north of Walden Ave), Westwood Rd. (just east of Town Line Rd), or Kieffer Rd (just east of Town Line Rd) relied on well water for drinking. She said yes, that they all did.

SIGNED W. Bradford

ES ENGINEERING-SCIENCE

15

INTERVIEW FORM

INTERVIEWEE/CODE Virginia Campbell /

TITLE - POSITION Water District Clerk

ADDRESS 1 Town Pl. Att: Water Department

CITY Clarence STATE NY ZIP 14031

PHONE (716) 741-3263 RESIDENCE PERIOD ______ TO ______

LOCATION Telephone INTERVIEWER W. Bradford

DATE/TIME 4/29/88 / 10:00 AM

SUBJECT: Water sources

REMARKS: Residents of Wehrle Dr. (east end), Shisler Rd. (just north of I 90), and Ransom Rd. (north of I 90) receive water from the Water Department. Residents on Tillman Rd rely on well water for drinking.

Addition

Note: There are no residents on Shishler Rd. - North for app. 3/4" from the I 90. but the rest is covered by our water supply.

I AGREE WITH THE ABOVE SUMMARY OF THE INTERVIEW:

SIGNATURE: Virginia M. Campbell

COMMENTS:

ENGINEERING-SCIENCE
COMPANIES

MEMORANDUM TO FILE

16

JOB NO. 5Y012.14

FILE DESIGNATION TELECON

DATE 4/29/88 TIME 9:45

PHONE CALL FROM W. Bradford (ES) PHONE NO.

PHONE CALL TO Stan Keysa, Town of Lancaster Supervisor PHONE NO. (716) 683-1610

CONFERENCE WITH

PLACE

SUBJECT Water Sources in Town of Lancaster

I asked S.K. if there were any people in the Town of Lancaster who relied ~~excto~~. on well water for drinking. He said no, that water from Erie County Water Authority was available to everyone.

SIGNED W. Bradford

Lancaster Rec.

ES ENGINEERING-SCIENCE COMPANIES

MEMORANDUM TO FILE

①

JOB NO. 54012.14 (NYDEC Phase II)

FILE DESIGNATION Lancaster Rec.

DATE 2/5/88 TIME 330 PM

PHONE CALL FROM Michele Anatra PHONE NO.

PHONE CALL TO Ron Koczaja PHONE NO. 716-846-7677

Erie Co. DOH

CONFERENCE WITH

PLACE phone conversation

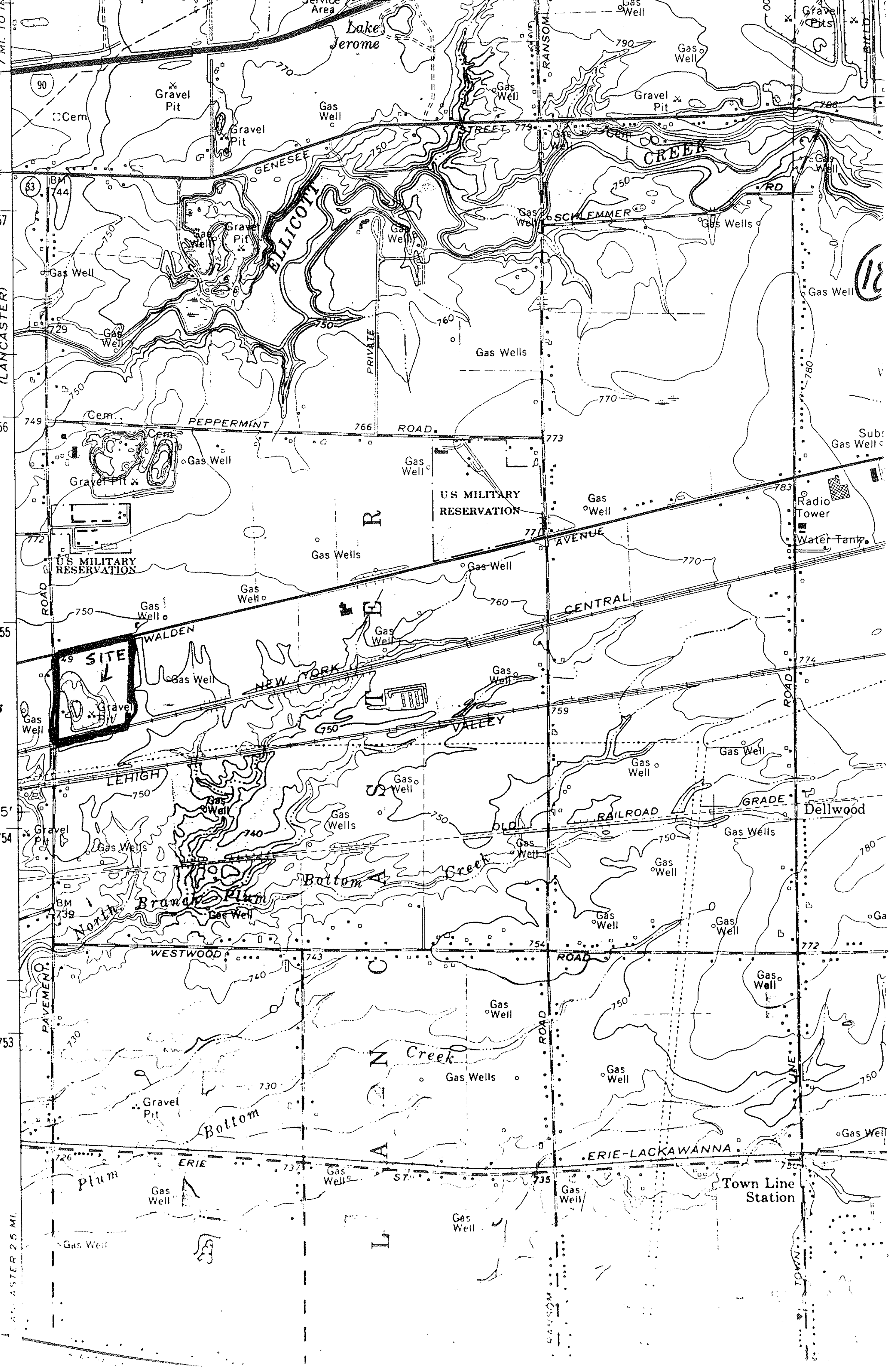
SUBJECT water supply within a 3 mile radius of the Lancaster Reclamation site on Pavement Road in the Town of Lancaster

Mr. Koczaja indicated that public water supply service was made available to the residents in question within the last year or so. Prior to that time, everyone within the specified radius was on private wells. Mr. Koczaja felt that even though public water was available, many residents continue to use their private wells. He agreed that for purposes of HRS scoring it would be safe (and conservative) to assume that everyone is still on private wells.

Irrigation by wells is unlikely.

SIGNED Michele Anatra

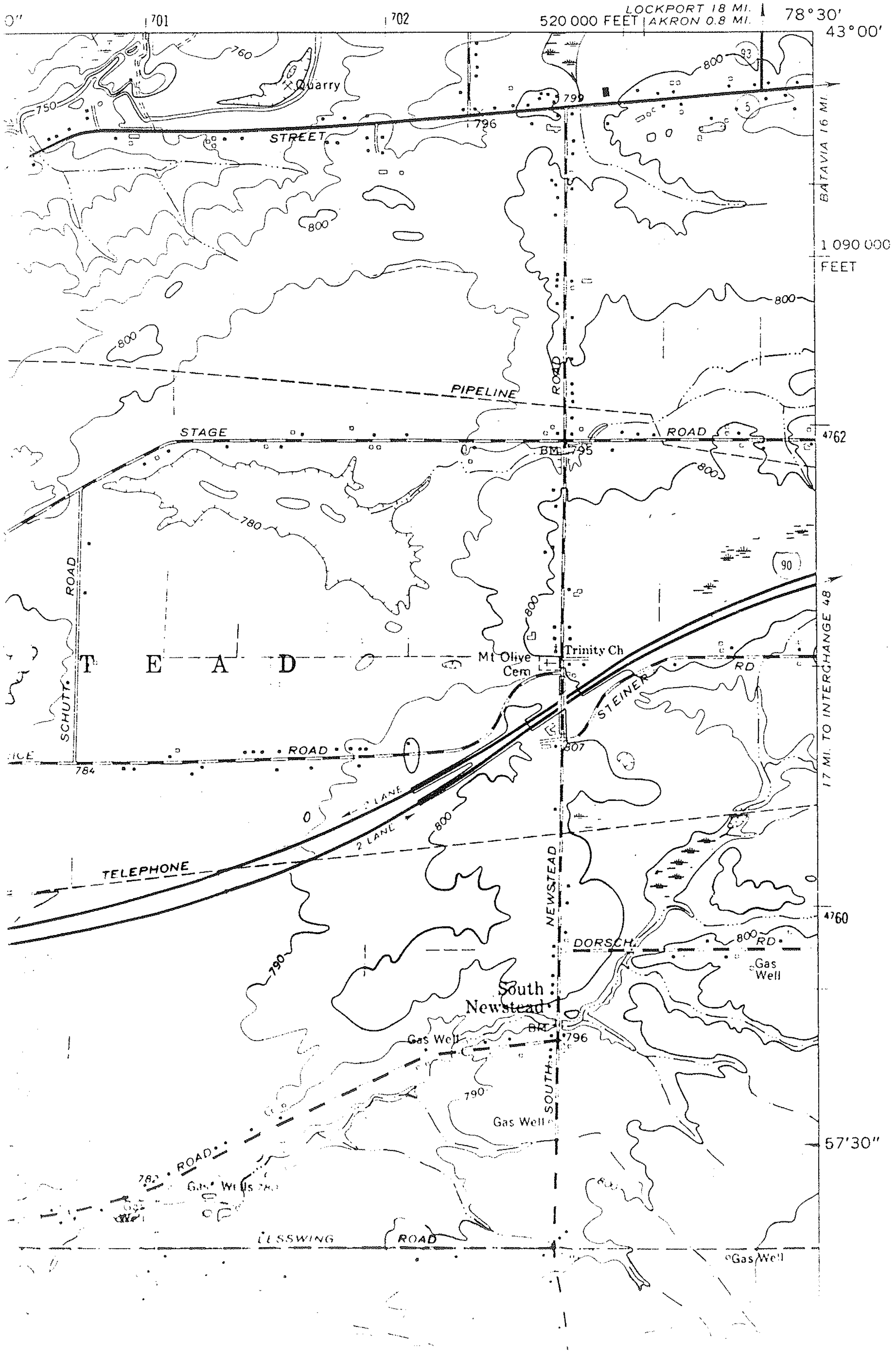
Site →


SITE
Lake Jerome
Service Area
90
Gravel Pit
Gravel Pits
Gas Well
Gas Wells
Cem
GENESEE STREET
ELLICOTT CREEK
SCHLEMMER RD
RANSOM
PRIVATE
PEPPERMINT ROAD
US MILITARY RESERVATION
AVENUE
WALDEN
NEW YORK CENTRAL
LEHIGH VALLEY
OLD RAILROAD GRADE
Dellwood
Radio Tower
Water Tank
Subs
North Branch Plum Bottom Creek
WESTWOOD ROAD
PAVEMENT
ROAD
Creek
Bottom
Plum
ERIE-LACKAWANNA
ERIE ST
Town Line Station
TOWN LINE ROAD
LANCASTER
BM 744
BM 739
33
BOWMANSVILLE 3.8 MI.
7 MI. TO
5269 I NW (LANCASTER)
LANCASTER 2.5 MI.
4757
4756
4755
4754
4753
55'
729
749
750
760
766
770
772
773
774
779
780
783
790
796
759
740
743
754
730
726
737
735
49

⑱

CLARENCE QUADRANGLE
NEW YORK–ERIE CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
NE/4 DEPEW 15' QUADRANGLE

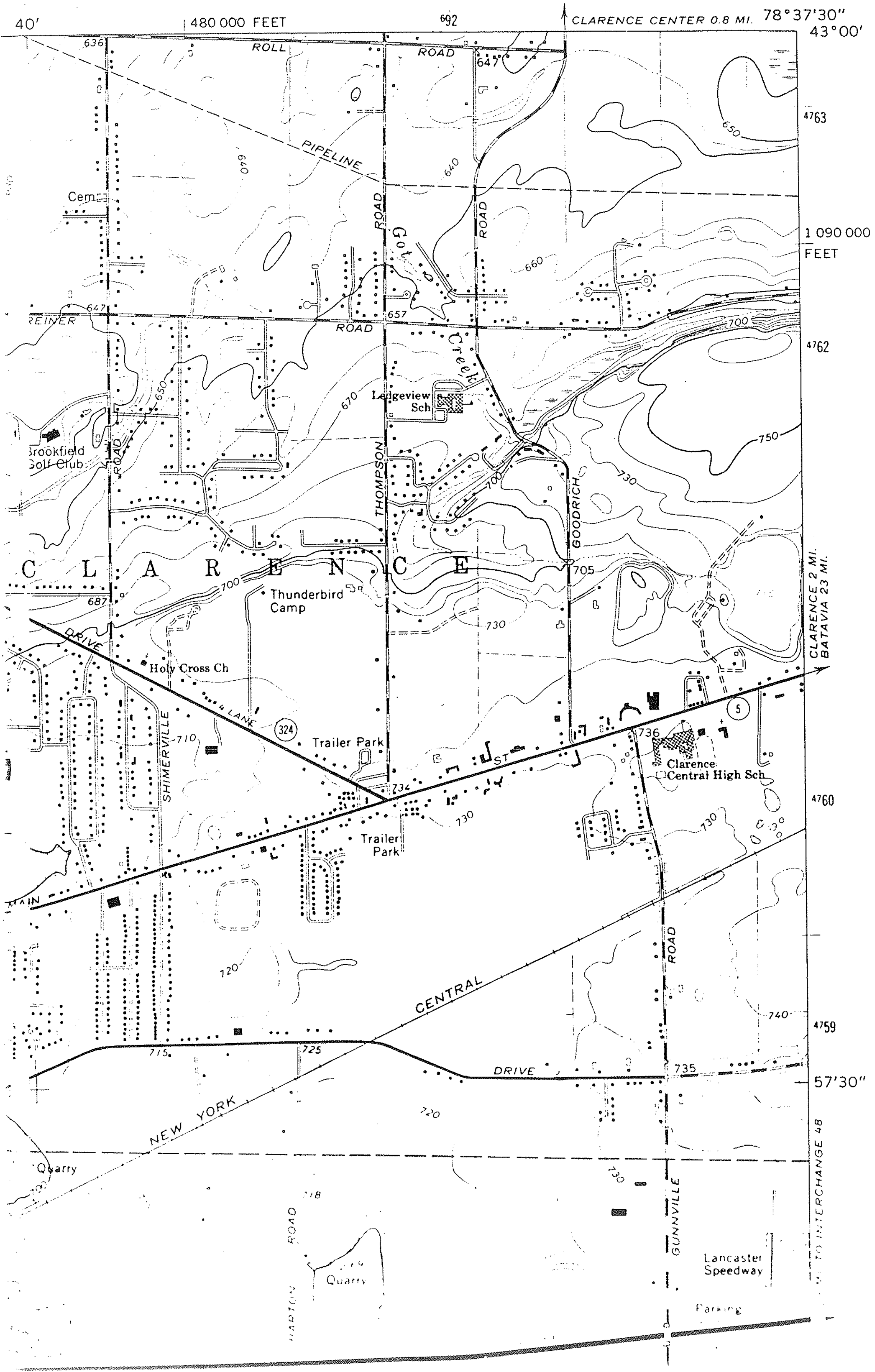
5370 III SW
(AKRON)



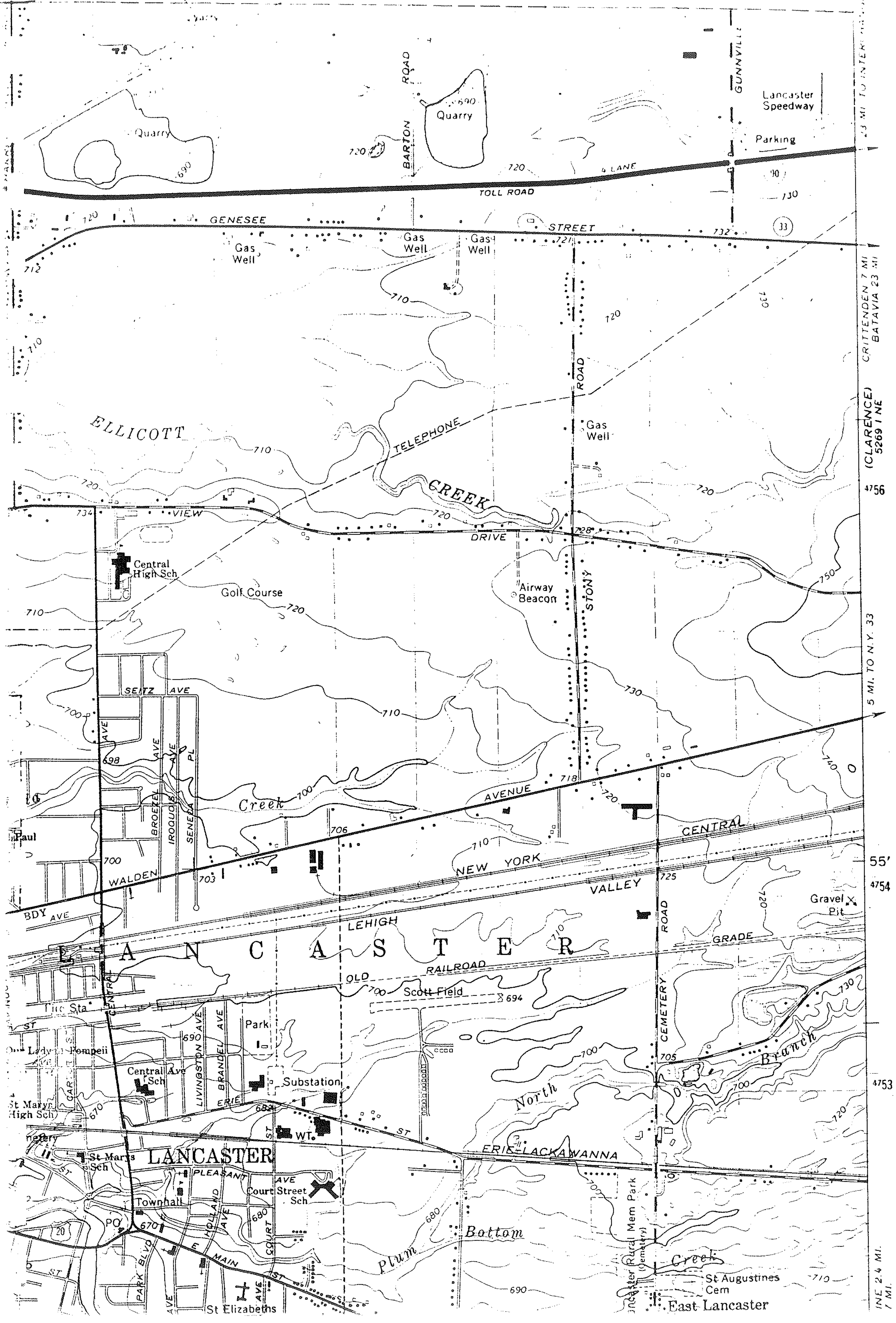
LANCASTER QUADRANGLE
NEW YORK–ERIE CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
NW/4 DEPEW 15' QUADRANGLE

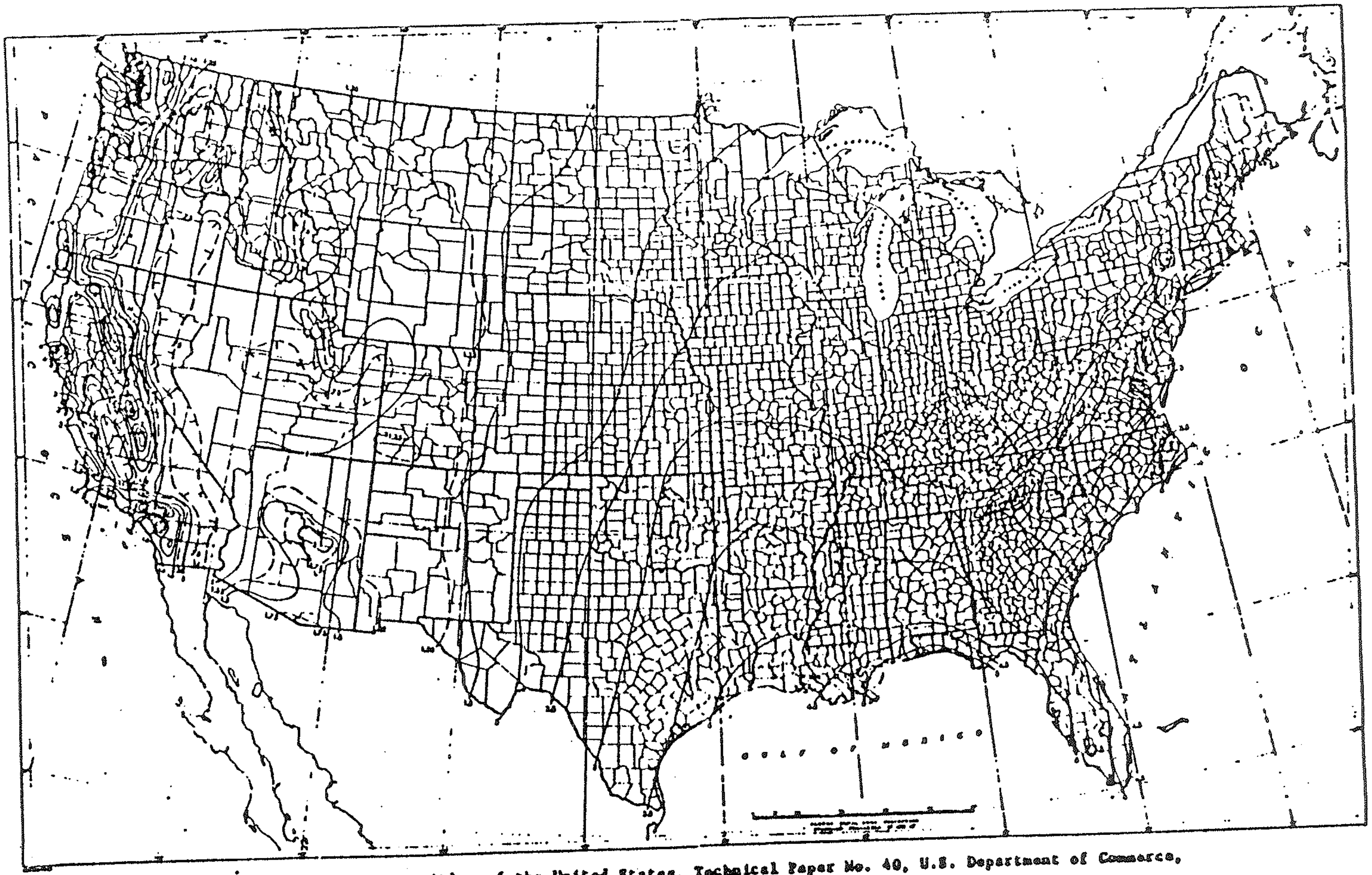
5270 II SE
(WOLCOTTSVILLE)

(18)



18


Quarry
Quarry
690
720
BARTON ROAD
GUNNVILLE
Lancaster Speedway
Parking
4 LANE
TOLL ROAD
90
730
GENESEE STREET
Gas Well
Gas Well
Gas Well
712
732
33
23 MI TO INTERCHANGE
CRITTENDEN 7 MI
BATAVIA 23 MI
(CLARENCE)
5269 I NE
ELLICOTT
TELEPHONE
CREEK
STONY ROAD
710
720
Gas Well
4756
734
VIEW DRIVE
728
750
Central High Sch
Golf Course
Airway Beacon
5 MI. TO N.Y. 33
SEITZ AVE
CENTRAL AVE
BROEZEL AVE
IROQUOIS AVE
SENECA PL
700
698
Creek
AVENUE
718
706
WALDEN
703
BDY AVE
St Paul
NEW YORK CENTRAL
55′
4754
725
VALLEY
LEHIGH
Gravel Pit
LANCASTER
GRADE
RAILROAD
OLD
CEMETERY ROAD
Scott Field
694
Fire Sta
Park
LIVINGSTON AVE
BRANDEL AVE
Our Lady of Pompeii
Central Ave Sch
Substation
705
North
Branch
4753
St Marys High Sch
ERIE
682
ST
WT
ERIE-LACKAWANNA
LANCASTER
St Marys Sch
PLEASANT AVE
Court Street Sch
Townhall
PO
670
20
HOLLAND AVE
COURT ST
E MAIN ST
PARK BLVD
680
Bottom
Plum
Creek
Lancaster Rural Mem Park (Cemetery)
St Augustines Cem
690
710
East Lancaster
St Elizabeths
INE 2.4 MI.
1 MI.



Source: Rainfall Frequency Atlas of the United States, Technical Paper No. 40, U.S. Department of Commerce, U.S. Government Printing Office, Washington, D.C., 1963.

FIGURE 8
1-YEAR 24-HOUR RAINFALL
(INCHES)

19

Job Phase II, 3rd Round
Client NYS DEC
Job No.

ENGINEERING-SCIENCE, INC.

SITE INSPECTION CHECKLIST

Site Name Lancaster Reclamation
Site Location (Directions) East on Walden Rd South on Pavement Rd
Date/Time 10/28/85 11 PM Weather Clear + Cool
Inspection Team David Vitale, Ahmad Tayyebi (DEC) J. McAuliffe (ES)
Site Representatives Paul Fairy [sic]
Other Parties No

Site Description

1. Prepare a site location sketch and site map (Figure 1) noting approximate area of site, site boundary, surface water features, streets, north arrow, access roads, containment or storage areas, impoundments, areas of contamination, odor and leachate or seepage areas, vegetative stress areas, monitoring well locations, areas of past waste surface water, sediment or soil sampling.

2. Take 35mm photographs of significant site features. Provide a description and reference for each photo. (See map for Directions)

1. looking E across filled and partially filled cell
2. " " " the two central cells
3. " W at Pavement Road toward proposed SW-3
4. " W along southern edge of site and RR tracks at proposed SW-4
5. " W along dike between cells
6. " W across two outer cells
7. " SW at proposed SW-1 location (note Domtar Tanks)
8. " W across the "Green Machine"
9. " N from "Green Machine" off site
10. " S across site (note dike road W of "Green Machine"
11. " SW across basin and pond toward basin from north road
12. " SW from north road at gravel pit just north of site
13. " E at test pit constructed into basin area
14. "

20

Site Map (Figure 1)

See attached

3. Climate Physiography - Regional Reference

4. Geology - Regional Reference Phase II

Blankets of sands occasionally underlain by lacustrine silts and clays. Bedrock is limestone dolostone and shale.

5. Surface Water - Regional Reference Phase II

Regional Bedrock aquifer flows to the South

6. Groundwater - Regional Reference Phase II

Regional Bedrock aquifer flows to the South

7. Access:

Condition of access roads Access roads are in fine condition

Adjacent Property Owners (Permissions Required) Conrail RR tracks run south of property/possible access for wells

Accessibility to Proposed Well/Sampling Locations All locations are accessible except SW-3 and 4 which are actually on a steep bank running down to the RR tracks

8. Topography/Relief - Site Visit

The cells were excavated and the spoil used to construct the dikes. The Green Machine is elevated above the cells and slopes to the W. The pond and basin both seem to be lower than the cell levels

9. Geology - Site Visit (i.e., bedrock outcrops, surface soil description, site specific information gained from DEC personnel or others). No bedrock. Gravel pit was located on site and just north of site. Thick clay deposits occur on eastern side of property. This limited its value for sand and gravel pits.

10. Surface Water - Site Visit (i.e., location, direction of flow, estimated size, expected seasonal changes). Surface streams are not apparent at the site. There is water in each of the three non-full cells, the pond and also ponded water on the "Green Machine"

11. Groundwater - Site Visit (Groundwater seeps, recharge or discharge area, site specific information gained from DEC personnel, groundwater usage, location of private wells, industrial wells). I suspect that the water in the pond may be connected to a shallow aquifer (wet year round, deep, supports bass)

12. Waste Types - Describe type, quantity, and physical state of wastes present Waste Cells - foundry sands, WWTP sludges, (see phase I Report)

13. Storage of Wastes - Record number, condition and location of drums, tanks, surface impoundments, etc. Stored in filled cells. Water was pumped from the partially filled cell to the top of the west central cell and allowed to run down the cell. Water was also pumped up on the Green Machine and allowed to evaporate

14. Contamination - Record any visual evidence of contamination.

a. HNu Meter readings upwind and downwind <1 ppm

c. Odor No

d. Drum/Tank leakage No

e. Visible leadhate, seepage No

f. Surface discoloration No

g. Surface water In cells

15. Containment - Record presence and characteristic features of natural or manmande containment measures such as dikes, barriers, pits, slurry walls, etc. Dikes as shown on drawings between each cell and W of the Green Machine

16. Facility Management Practices - Describe based on personnel interviews and site visit. Water pumped from partially filled cells into other cells and on to the Green machine in an effort to dewater the sludges

17. Remedial Actions - Record status and extent of any remedial activity such as:

a. Liners, dike, barrier walls

b. Monitoring wells Yes, east of site (shallow may be collecting surface water)

c. Access restrictions No

d. Leachate/waste treatment No Longer in operation

e. Drum/soil/waste removal No

f. Covers, surface water diversions No

18. Area Land Use - Note proximity of residential areas, industrial commerical entities and any environmentally sensitive areas.

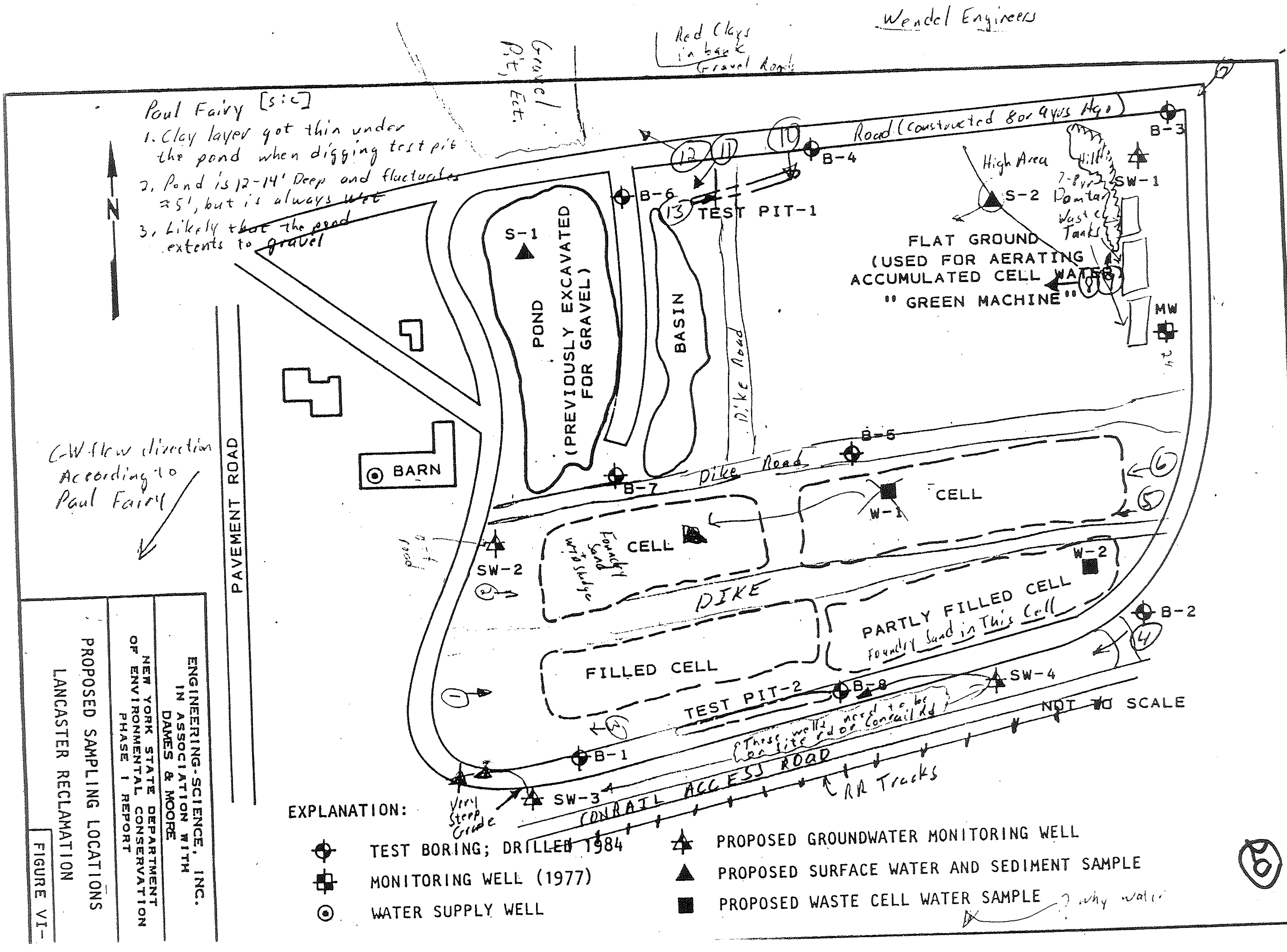
Private airport directly to the east.
Conrail property directly to the south

19. Recommended:
- a geophysical - ER
- b. Wells - 1 up and 3 down to 50 ft
- c. surface water and sed - 2 locations
- d. waste cell analysis - 2 location

Signature J. P. McAuliffe

Date 10/28/85

20. Question
- a. GW - do we have a good idea of GW flow. (shallow aquifer)
  - do we want to address contamination in the shallow aquifer (i.e. cluster wells)
- b. Why not surface water and sed samples in W-1 and W-2 also (possibly move W-1 to Western cell)
- c. Have we addressed info from Buffalo Drilling



Paul Fairy [sic]
1. Clay layer got thin under the pond when digging test pit
2. Pond is 12-14' Deep and fluctuates ±5', but is always wet
3. Likely that the pond extents to gravel

GW flow direction According to Paul Fairy

ENGINEERING-SCIENCE, INC.
IN ASSOCIATION WITH
DAMES & MOORE

NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
PHASE I REPORT

PROPOSED SAMPLING LOCATIONS
LANCASTER RECLAMATION

FIGURE VI-

Stream Classification
6 NYCRR Volume E

ite Name	Stream	Classif.	Standards	Reference Article	Part #	Map*
Condville	Delaware R	A	A(T) TROUT	4	815	N-19
ul Kron	Fall Kill	C	C	10	862	N-24
Norton	Mettawee R	C	C(T)	7	830	6-26
Copeland	Valatie Kill Trib.	D	D	10	863	K-25 S
anBuren	Waterbase Creek	D	D	14	897	6:14
	Oswego River	C	C	14	897	6 14 c
eRoy	Mud River	D	D	5	821	J-8 NW
	Trib to Oatka Creek	D	D			
Ontario Knife	Ishua Creek	C	C(T)	1	801	1
Buffalo Pumps	Niagara River	A*	A*	8	837	2
Pratt & Letchworth	Scajaquada Creek	B	B	8	837	6
acNaughton-Brooks	Buffalo River	D	D	8	837	6
hisholm Ryder	Niagara River	A*	A*	8	837	1
Nash Rd	Sawyer Creek	D	D	8	837	2
aster Rec.	N. Branch Plum Bottom Creek	D	D	8	837	7
Mina	French Creek Trib.	D	D	1	800	2
Fox Rd-Erie C	Jennings Creek	B	B	8	837	10
Allied	Buffalo R.	D	D	8	837	6
Ashland	Niagara R	A*	A*	8	837	6
	Two Mile Creek	B	B	8	837	2
Split Rock						
Onondaga L.						
SWOCO						

800 - French Creek D. Basin / 801 - Olean Creek / 837 L. Erie - N. River D. Basin / 897 Oswego River / 8

* - SPECIAL INTERNATIONAL boundary waters 862 - Lower Hudson 815 - Delaware R / 830 - Champlain - Mettawee S. basin.

22

New York State Department of Environmental Conservation
FISH AND WILDLIFE DIVISION - REGION 9
600 Delaware Avenue, Buffalo, New York 14202-1073
(716) 847-4550

Thomas C. Jorling
Commissioner

September 2, 1987

Ms. Elizabeth M. Dobson
Engineering-Science
290 Elwood Davis Road
Liverpool, New York 13088

Dear Ms. Dobson:

This letter will serve as verification that I traced NYS designated wetland boundaries on the accompanying maps. The boundaries shown are from official Department of Environmental Conservation Maps promulgated on September 10, 1986 (Erie County) and December 5, 1984 (Niagara County).

Very truly yours,

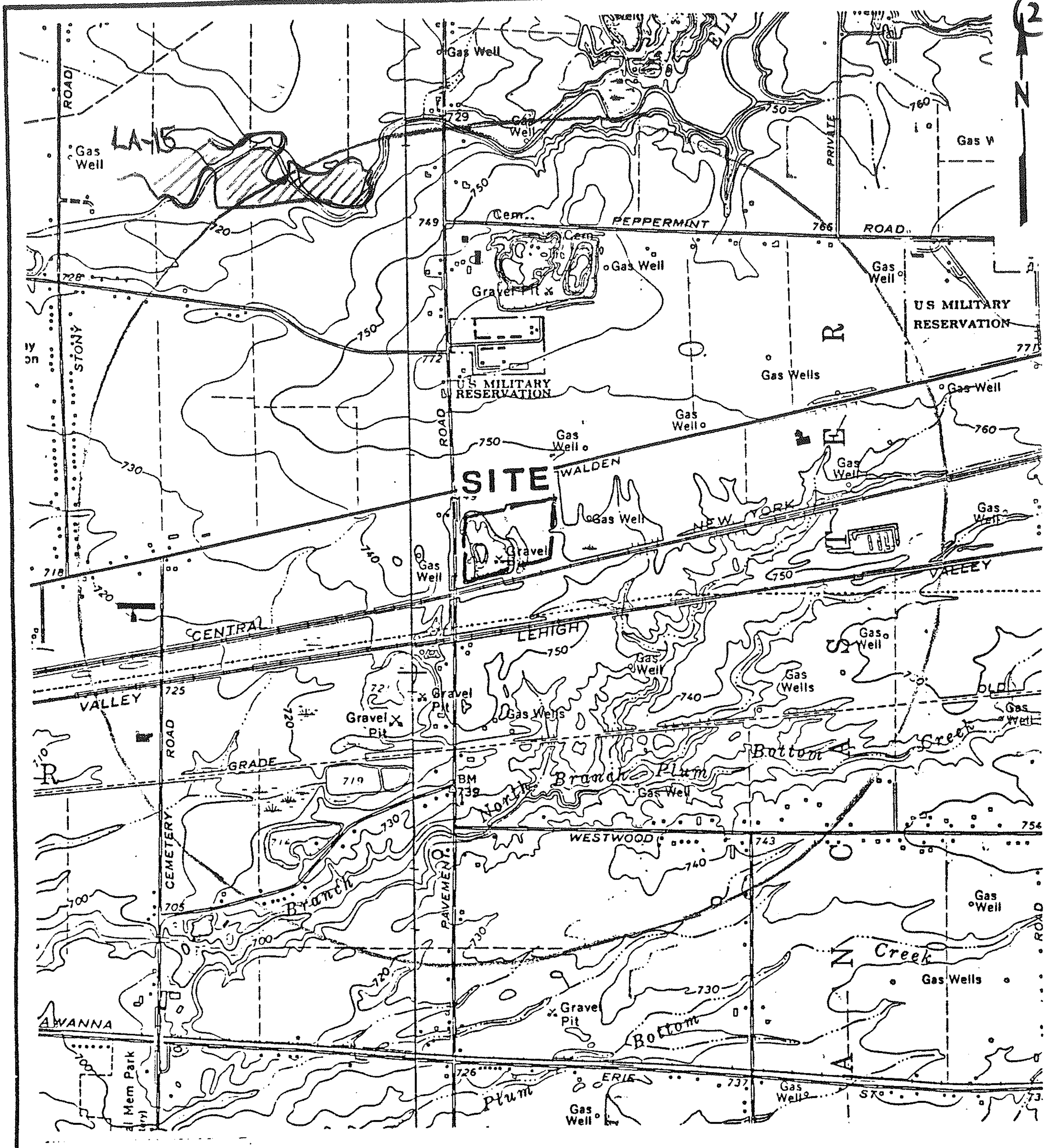
James F Farquhar III

James F. Farquhar III
Fish and Wildlife Division

JFF:slm

cc: Mr. Gordon R. Batcheller

Enclosures



LATITUDE: 42°55'18"
LONGITUDE: 78°37'30"

Erie County

SCALE
0 1000 2000 3000 4000 FEET

ENGINEERING-SCIENCE, INC.
IN ASSOCIATION WITH
DAMES & MOORE

NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
PHASE I REPORT

SITE LOCATION MAP

LANCASTER RECLAMATION

FIGURE iv-

REFERENCE: U.S.G.S. 7.5' Topographic Map
Clarence, NY (1965) Quadrangle

INTERVIEW FORM

INTERVIEWEE/CODE John W. Ozard /

TITLE – POSITION Senior Wildlife Biologist

ADDRESS WRC New York State DEC

CITY Delmar STATE NY ZIP 12054

PHONE (518) 439-7488 RESIDENCE PERIOD ______ TO ______

LOCATION phone conversation INTERVIEWER W. Bradford

DATE/TIME 4/14/88 / 11:00 AM

SUBJECT: Critical habitats in New York state.

REMARKS: There are no federally designated critical habitats of endangered species located within New York state.

I AGREE WITH THE ABOVE SUMMARY OF THE INTERVIEW: John W. Ozard

SIGNATURE: JOHN W. OZARD

COMMENTS:

New York State Atlas of Community Water System Sources

1982

NEW YORK STATE
DEPARTMENT OF HEALTH

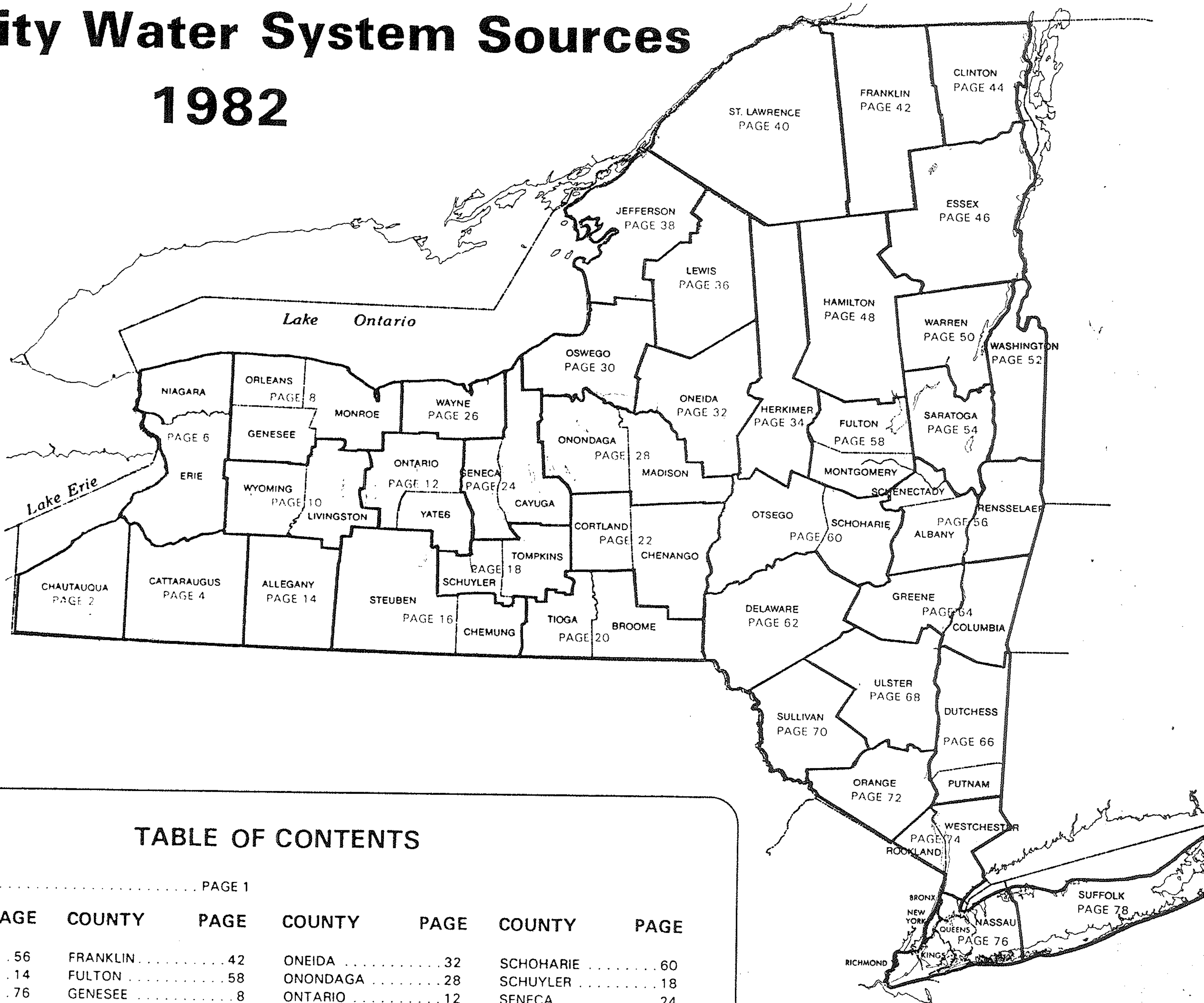


TABLE OF CONTENTS

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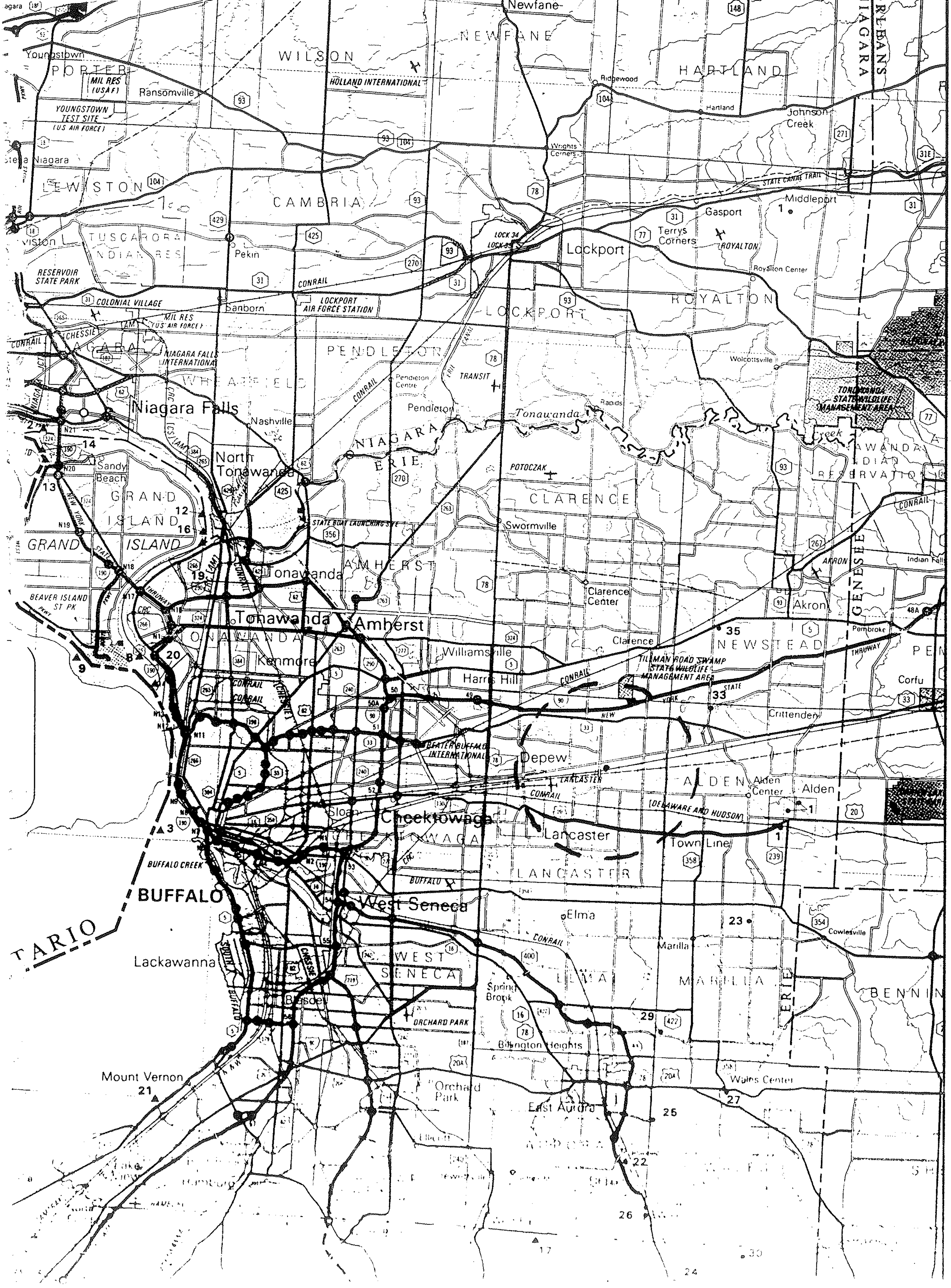


N OF COMMUNITY WATER SYSTEM SOURCES-1982

DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF PUBLIC WATER SUPPLY PROTECTION

ERIE COUNTY

ID NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
Municipal Community			
	Akron Village (See No 1 Wyoming Co, Page 10)	3640	
1	Alden Village	3460.	Wells
2	Angola Village	8500.	Lake Erie
3	Buffalo City Division of Water	357870.	Lake Erie
4	Caffee Water Company	210.	Wells
5	Collins Water District #3	704.	Wells
6	Collins Water Districts #1 and #2	1384.	Wells
7	Erie County Water Authority (Sturgeon Point Intake)	375000.	Lake Erie
8	Erie County Water Authority (Van DeWater Intake)	NA.	Niagara River - East Branch
9	Grand Island Water District #2	9390.	Niagara River
10	Holland Water District	1670.	Wells
11	Lawtons Water Company	138.	Wells
12	Lockport City (Niagara Co)		Niagara River - East Branch
13	Niagara County Water District (Niagara Co)		Niagara River - West Branch
14	Niagara Falls City (Niagara Co)		Niagara River - West Branch
15	North Collins Village	1500.	Wells
16	North Tonawanda City (Niagara Co)		Niagara River - West Branch
17	Orchard Park Village	3671.	Pipe Creek Reservoir
18	Springville Village	4169.	Wells
19	Tonawanda City	18538.	Niagara River - East Branch
20	Tonawanda Water District #1	91269.	Niagara River
21	Wanakah Water Company	10750.	Lake Erie
Non-Municipal Community			
22	Aurora Mobile Park	125.	Wells
23	Bush Gardens Mobile Home Park	270.	Wells
24	Circle B Trailer Court	50.	Wells
25	Circle Court Mobile Park	125.	Wells
26	Creekside Mobile Home Park	120.	Wells
27	Donnelly's Mobile Home Court	99.	Wells
28	Gowanda State Hospital	NA.	Clear Lake
29	Hillside Estates	160.	Wells
30	Hunters Creek Mobile Home Park	150.	Wells
31	Knox Apartments	NA.	Wells
32	Maple Grove Trailer Court	72.	Wells
33	Millgrove Mobile Park	100.	Wells
34	Perkins Trailer Park	75.	Wells
35	Quarry Hill Estates	400.	Wells
36	Springville Mobile Park	114.	Wells
37	Springwood Mobile Village	132.	Wells
38	Taylors Grove Trailer Park	39.	Wells
39	Valley View Mobile Court	42.	Wells
40	Villager Apartments	NA.	Wells

US CENSUS DATA, 1980

US Census Data used in the HRS scoring was obtained from various County Planning Offices. This data was not obtained from a report. The raw census data combined with County Planning Maps was used to estimate the population within 1, 2, 3, and 4 miles of the Phase II site being investigated. Because of the voluminous amount of data used, the data are not provided.

Lancaster Rec.

RECEIVED
FEB 17 1988

(26)

United States
Department of
Agriculture

Soil
Conservation
Service

21 South Grove St.
East Aurora, New York 14052

February 10, 1988

Michele A. Anatra
Engineering-Science, Inc.
290 Elwood Davis Rd.
Liverpool, New York 13088

Dear Michele,

Enclosed please find several soil maps which should satisfy your request of Feburary 5. The project area which you have indicated is shown in blue. The prime farmland mapping units for Erie County are colored red, and active farmland is outlined in orange.

Please note that the active farmland shown is that which is operated by participants of USDA farm programs. There may be active agricultural land within the specified radii which is not registered for any USDA programs or operated by a USDA cooperator.

Please contact this office if you require any additional information.

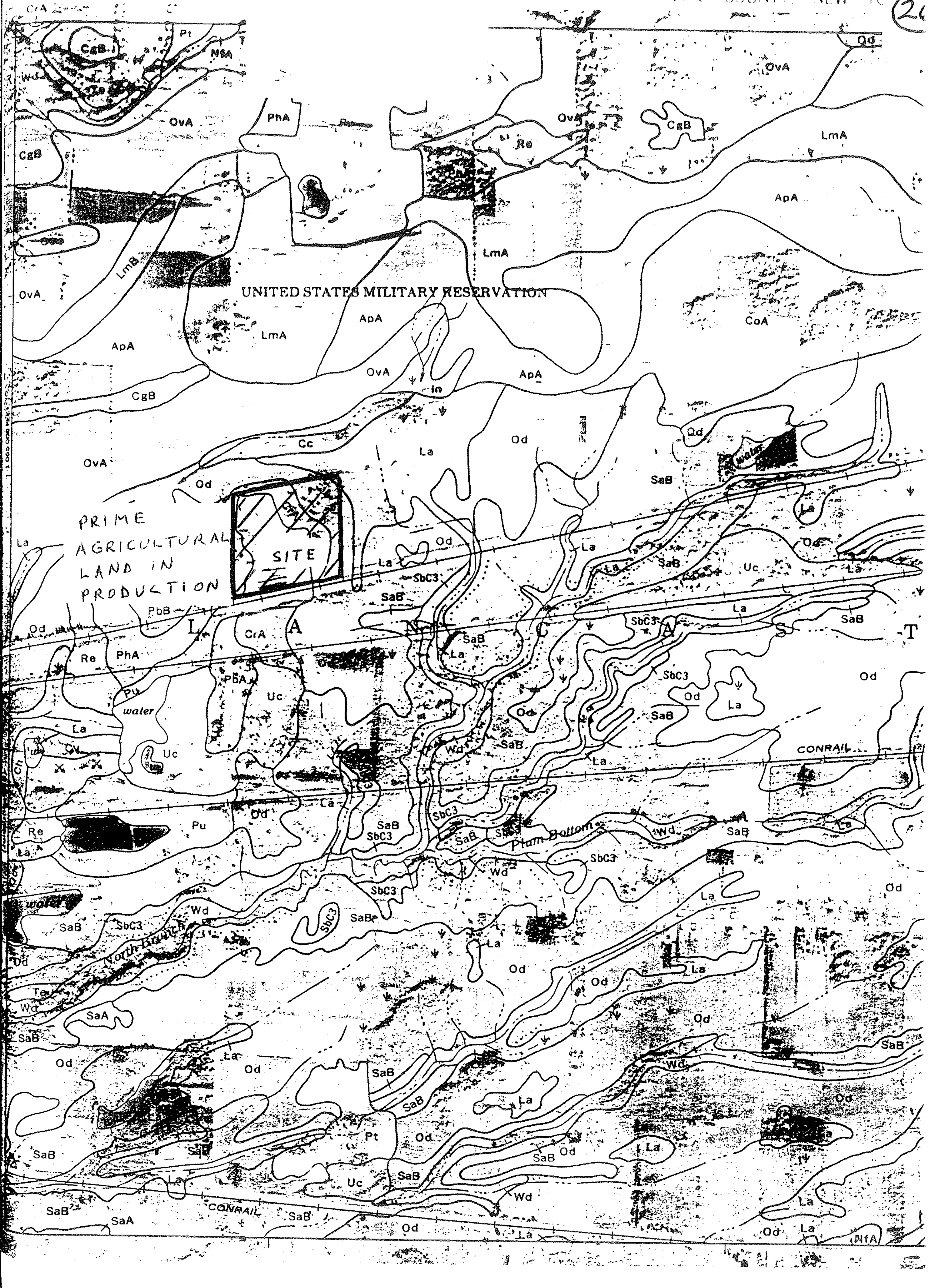
Sincerely,

Thomas Bielli

Thomas Bielli
Soil Consrevationist

cc:John Whitney, SCS District Conservationist
I&E File

26


UNITED STATES MILITARY RESERVATION
PRIME AGRICULTURAL LAND IN PRODUCTION
SITE
L A N C A S T
CONRAIL
Plum Bottom
North Branch
water
CrA
Pt
NfA
CgB
OvA
PhA
Re
LmA
ApA
LmB
CoA
In
Cc
Od
La
SaB
SbC3
Uc
PbB
PbA
Pu
Wd
Te
SaA
Ch
Od
NfA

㉗

ATIONAL REGISTER OF HISTORIC PLACES

ANNUAL LISTING OF PROPERTIES

ANUARY 1979 THROUGH DECEMBER 1982

U.S. DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
JULY 1983

EPA 2070-13
SECTION VI
REFERENCES

federal register

Tuesday
March 1, 1983

Part III

Department of the Interior

National Park Service

National Registry of Natural Landmarks

29

THE ARO CORPORATION
BUFFALO DIVISION
3695 BROADWAY, BUFFALO, N.Y. 14227
ARO
TELEPHONE 716-683-0440
TELEX 9-1250

ENVIRONMENTAL LABORATORY
ANALYTICAL RESULTS

Customer Reed Holdings, Inc.

ARO Laboratory Number 20,028 W-2433 Customer P.O. # 2682

Date: Collected 2/26/81 Received 2/26/81 Reported 3/11/81

Sampling Point/Description Surface Print Waste — —

The above referenced material has been classified as

x Non-hazardous ______ Hazardous

as a result of testing for the following characteristics according to the procedures and protocols in 40CFR261.

Ignitability:	______ ignitable	______ non-ignitable	x not tested
Corrosivity:	______ corrosive	______ non-corrosive	x not tested
Reactivity:	______ reactive	______ non-reactive	x not tested
EP Toxicity:	______ toxic	x non-toxic	______ not tested

Hazardous Constituents (per 40CFR 261; Appendix VII)

1. ______ 2. ______
3. ______ 4. ______

RESULTS OF EP TOXICITY TEST

Contaminant	Allowed (mg/L)	Found (mg/L)	Contaminant	Allowed (mg/L)	Found (mg
Arsenic	5.0	< 0.001	Silver	5.0	< 0.001
Barium	100.0	0.028	Endrin	0.02	< 0.000
Cadmium	1.0	< 0.001	Lindane	0.40	< 0.000
Chromium	5.0	0.008	Methoxychlor	10.0	< 0.000
Lead	5.0	< 0.001	Toxaphene	0.5	< 0.000
Mercury	0.2	< 0.0002	2,4-D	10.0	< 0.000
Selenium	1.0	< 0.001	2,4,5-TP	1.0	< 0.000

The above characteristics have been determined in accordance with 40CFR 261 and the EPA manual Test Methods for the Evaluation of Solid Waste; SW-846, Revision A; August 8, 1980.

Bernard J. Gruza

Bernard J. Grucza, Director
Environmental Laboratory

Form No. G-03/81

THE ARO CORPORATION
BUFFALO DIVISION
3695 BROADWAY, BUFFALO, N.Y. 14227

ARO

TELEPHONE 716-683-3480
TELEX 9-1250

29

ENVIRONMENTAL LABORATORY
ANALYTICAL RESULTS

Customer Reed Holdings, Inc.

ARO Laboratory Number 20,028 W-2435 Customer P.O. # 2682

Date: Collected 2/26/81 Received 2/26/81 Reported 3/11/81

Sampling Point/Description Prepaste Polymer

The above referenced material has been classified as

x Non-hazardous ______ Hazardous

as a result of testing for the following characteristics according to the procedures and protocols in 40CFR261.

Ignitability:	____ ignitable	____ non-ignitable	x not tested
Corrosivity:	____ corrosive	____ non-corrosive	x not tested
Reactivity:	____ reactive	____ non-reactive	x not tested
EP Toxicity:	____ toxic	x non-toxic	____ not tested

Hazardous Constituents (per 40CFR 261; Appendix VII)

1. ______________ 2. ______________
3. ______________ 4. ______________

RESULTS OF EP TOXICITY TEST

Contaminant	Allowed (mg/L)	Found (mg/L)	Contaminant	Allowed (mg/L)	Found (mg
Arsenic	5.0	< 0.001	Silver	5.0	< 0.001
Barium	100.0	0.012	Endrin	0.02	< 0.0000
Cadmium	1.0	< 0.001	Lindane	0.40	< 0.0000
Chromium	5.0	0.003	Methoxychlor	10.0	< 0.0000
Lead	5.0	0.010	Toxaphene	0.5	< 0.0005
Mercury	0.2	< 0.0002	2,4-D	10.0	< 0.0001
Selenium	1.0	< 0.001	2,4,5-TP	1.0	< 0.0001

The above characteristics have been determined in accordance with 40CFR 261 and the EPA manual Test Methods for the Evaluation of Solid Waste; SW-846, Revision A; August 8, 1980.

Bernard J. Grucza

Bernard J. Grucza, Director
Environmental Laboratory

Form No. G-03/81

THE ARO CORPORATION
BUFFALO DIVISION
3695 BROADWAY, BUFFALO, N.Y. 14227

ARO

TELEPHONE 716-683-0440
TELEX 9-1290

2

ENVIRONMENTAL LABORATORY
ANALYTICAL RESULTS

ustomer Reed Holdings, Inc.
RO Laboratory Number 20,028 W-2434 Customer P.O. # 2682
ate: Collected 2/26/81 Received 2/26/81 Reported 3/11/81
ampling Point/Description Prepaste Alkali

he above referenced material has been classified as

x Non-hazardous ____ Hazardous

s a result of testing for the following characteristics according to the procedures and rotocols in 40CFR261.

Ignitability:	____ ignitable	____ non-ignitable	x not tested
Corrosivity:	____ corrosive	____ non-corrosive	x not tested
Reactivity:	____ reactive	____ non-reactive	x not tested
EP Toxicity:	____ toxic	x non-toxic	____ not tested

Hazardous Constituents (per 40CFR 261; Appendix VII)

1. ____ 2. ____
3. ____ 4. ____

RESULTS OF EP TOXICITY TEST

ontaminant	Allowed(mg /L)	Found (mg /L)	Contaminant	Allowed (mg /L)	Found (mg /L
rsenic	5.0	0.016	Silver	5.0	0.002
3arium	100.0	0.034	Endrin	0.02	< 0.00005
admium	1.0	< 0.001	Lindane	0.40	< 0.00001
hromium	5.0	0.010	Methoxychlor	10.0	< 0.00002
ead	5.0	0.009	Toxaphene	0.5	< 0.0005
lercury	0.2	< 0.0002	2,4-D	10.0	< 0.0001
elenium	1.0	0.005	2,4,5-TP	1.0	< 0.0001

The above characteristics have been determined in accordance with 40CFR 261 and the EPA manual Test Methods for the Evaluation of Solid Waste; SW-846, Revision A; August 8, 1980.

Bernard J. Grucza
Bernard J. Grucza, Director
Environmental Laboratory

orm No. G-03/81

THE ARO CORPORATION
BUFFALO DIVISION
3695 BROADWAY, BUFFALO, N.Y. 14227

ARO

TELEPHONE 716-683-0440
TELEX 9-1280

3C

ANALYTICAL RESULTS

ustomer: HICKMAN, COWARD & WATTLES 125 Gardenville, Cheektowaga N.Y.

ATE: COLLECTED: ? RECEIVED: 6/4/82 COMPLETED: 6/8/8

.O. NO. ARO W.O. 20,472W-5103

TEST	Sludge Tank - Bottom				
Oil & Grease	30.66 gm/Kg (3.07%)				

NOTE: Sample dewatered and airdried prior to extraction (soxhelt)

Bernard J. Grucza

Bernard J. Grucza, Ph.D.
Director, Environmental Laboratory

Lanc. Rec.

31

BUFFALO ◆ DRILLING ◆ COMPANY INC.

1965 Sheridan Drive
Kenmore, New York 14223
(716)-875-0906

foundation test borings
rock coring ● monitoring wells
geotechnical instrumentation
construction dewatering

RECEIVED
AUG 23 1984
N Y S DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
REGION 9 HEADQUARTERS

GEOTECHNICAL REPORT
on
INVESTIGATION AND INTERPRETATION
of
SUBSURFACE CONDITIONS
for
LANCASTER RECLAMATION SITE

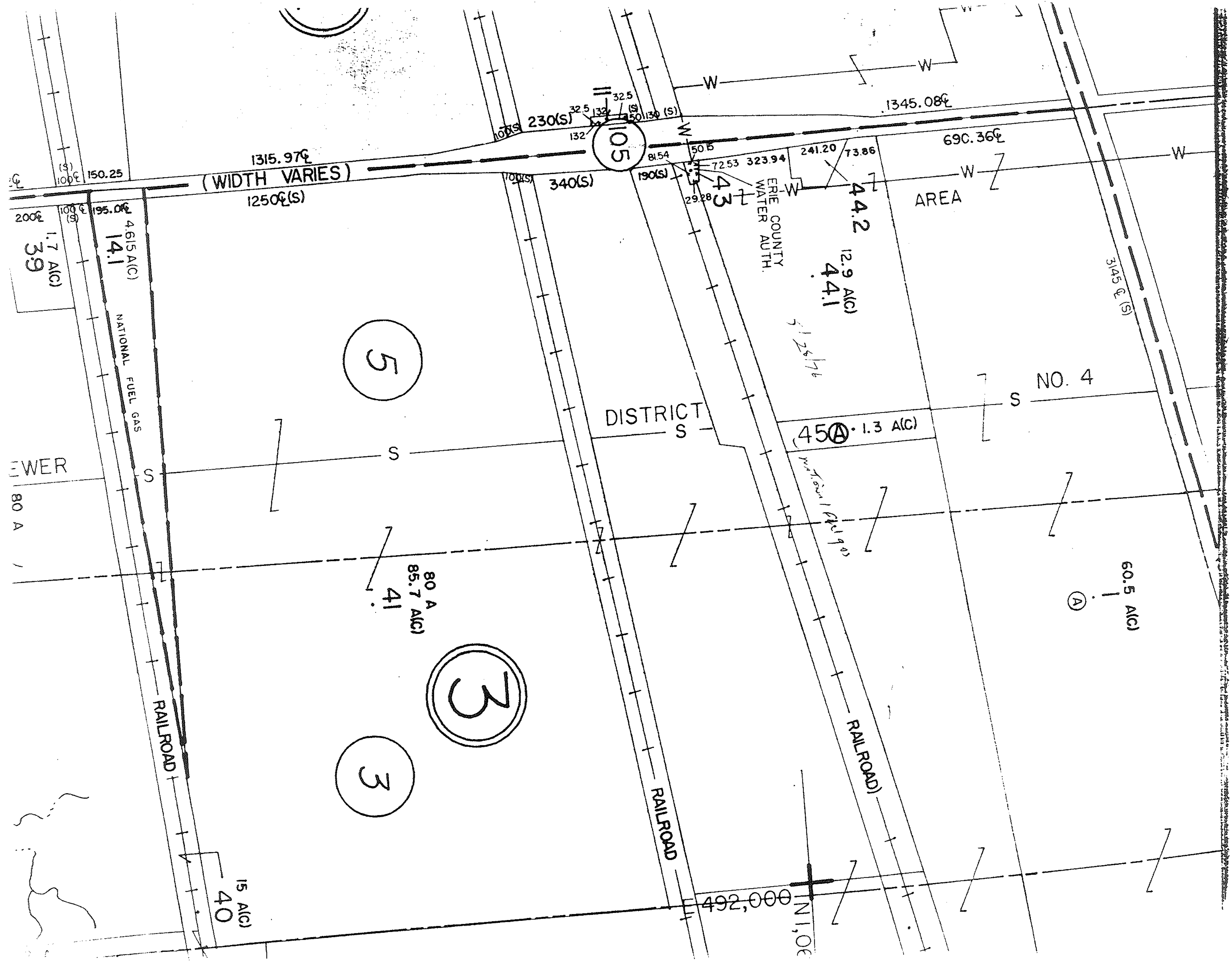
submitted to:

Lancaster Reclamation Company

prepared by:

Mr. James S. Barron, P.E.

Job No. 84-115
August 6, 1984



Lancaster Reclamation

1" = 400'

105.00-3-44.1

(32)

33

R. Allan Freeze

Department of Geological Sciences
University of British Columbia
Vancouver, British Columbia

John A. Cherry

Department of Earth Sciences
University of Waterloo
Waterloo, Ontario

GROUNDWATER

Prentice-Hall, Inc.
Englewood Cliffs, New Jersey 07632

FRONTIER CHEMICAL WASTE PROCESS INC. 1976

ENVIRONMENTAL LABORATORY

4626 Royal Avenue, Niagara Falls, New York 14303

JOB: Ferry Concrete Construction Co., Inc.
3179 Walden Avenue, Depew, New York 14043

SAMPLE AND WORK REQUESTED BY: Mr. John Ferry

DATE: February 4, 1976

FRONTIER CHEMICAL LAB NO. FC-2476

I. COMPOSITION OF SLUDGE

ITEM	PARAMETER	FINDINGS AND DESCRIPTION
1	Physical Characteristics	Black Thixotrophic Sludg
2	Color: (wet) (dry)	Black Gray
3	Percent Solid: Mimimum Maximum Mean Average	6.15% 8.31% 7.33%
4	Acidity of Sludge	Neutral

CHEMICAL COMPOSITIONS

5	Moisture (Percent Water)		91.50%
6	Total Solid		8.50%
7	*Loss of Ignition (percent Carbonesion)	9.95%	
8	SiO_2 (Sand type)	22.25%	
9	**$Al_2Si_4O_x$ (Clay Type)	65.19%	
10	***Fe_2O_3 (Iron Oxide)	1.25%	
11	CaO (Lime type)	0.36%	

* Organic components plus carbon

** Clay is Bentanite consisting mainly of Montmorillonite

*** Non-magnetic

FRONTIER CHEMICAL WASTE PROCESS INC.

ENVIRONMENTAL LABORATORY

4626 Royal Avenue, Niagara Falls, New York 14303

JOB: Ferry Concrete Construction Co., Inc.

3179 Walden Avenue, Depew, New York 14043

SAMPLE AND WORK REQUESTED BY: Mr. John Ferry

DATE: February 4, 1976

FRONTIER CHEMICAL LAB NO. FC-2476

II. COMPOSITION OF WATER

ITEM	PARAMETER	ANALYSIS
1	Origins	Filtrate from Sludge filtrat
2	PH	7.75
3	Specific gravity	1.03 @ Rt
4	Color (APHA unit)	20
5	Total Dissolved Solids (TDS)	30,500 ppm
6	Chlorides (Cl)	13,500 ppm
7	Sulfates (SO_4)	600 ppm
8	Silica (SiO)	45 ppm.
9	Nitrate (NO_3)	70 ppm
10	Calcium (Ca)	9,600 ppm
11	Sodium (Na)	480 ppm
12	Iron (Fe)	125 ppm
13	Zinc (Zn)	45 ppm
14	Aluminum (Al)	50 ppm
15	Total Organics (TOC)	1.100 ppm

ES ENGINEERING-SCIENCE COMPANIES

(35) **MEMORANDUM TO FILE**

JOB NO. SY012.14

FILE DESIGNATION (External)

DATE 10/30/87 TIME 12^{00}

PHONE CALL FROM George Moreau PHONE NO.

PHONE CALL TO Paul Ferry PHONE NO. 716 684 962

CONFERENCE WITH

PLACE

SUBJECT Site History

He hadn't been able to review Phase I report for inaccuracies. I read him a few lines from the site history section I was preparing regarding the initial owner/operator (Ferry Concrete Construction Company) and that between 1978 and 1979 the owners began doing business as Concrete Reclamation Company. Paul wasn't sure of the exact date of the changeover, but it sounded correct to him. In either case the owners of both companies are one and the same.

Paul appreciated our attempts to correct deficiencies in the Phase I. I told him the sampling should be wrapped up this week and surveyors would be out next.

GM

SIGNED

ES ENGINEERING-SCIENCE COMPANIES

③⑤ MEMORANDUM TO FILE

JOB NO. 54012.04

FILE DESIGNATION external

DATE 10/30/87 TIME 1⁰⁰

PHONE CALL FROM John Ferry PHONE NO. 716 6848624

PHONE CALL TO George Moran PHONE NO.

CONFERENCE WITH

PLACE

SUBJECT Site History - Phase I Executive Summary

John had some further concerns on inaccuracies in Phase I.

PCB's - in executive summary 3rd P. pg I-1.

I thought this was in reference to testing of sand or pit sludge from Chevy plant - results from 11/80. John indicated that Cwaste Rec had been given approval to dispose of this waste, however they had never accepted any of it.

Phenols - John felt the detection of phenol in groundwat was a one-time occurrence, caused during his mishandling of a sample.

John will review the Phase I in detail to identify any further problems

GAm

SIGNED

ES ENGINEERING-SCIENCE COMPANIES

(35)

MEMORANDUM TO FILE

JOB NO. Syor. 14

FILE DESIGNATION External

DATE 10/23/87 TIME 1:10

PHONE CALL FROM George Moreau PHONE NO.

PHONE CALL TO John Ferry - Lancaster Reclamation PHONE NO. 716 684 9624

CONFERENCE WITH Paul Ferry

PLACE

SUBJECT History Lancaster Reclamation Site

Site was probably originally a farm. Owned by Rose P. for many years. Operated as a gravel pit over 25 years ago under an apparent agreement with the owner.

Lancaster Rec purchased property in 1976. May 11 1976 - 15S08 -

Made arrangements for securing approval for landfill prior to purchase.

1st permit granted on May 11 1976 (construction plans stamped).

- Would prefer use of term cell instead of impoundments or lagoons

- Sand from Worthington never disposed on site. Correspondence dated 3/2/84 was a precursor to an anticipated agreement. Dropped when DEC failed to renew the Lancaster Reclamation permit.

- John + Paul estimated disposal ended in early 1984.

- Both John and Paul will review the Phase I site history & identify inaccuracies such as disposal began in "October 1985."

G Km

SIGNED

Appendix 5

36

York State Department of Environmental Conservation
584 Delaware Avenue, Buffalo, NY 14202

Peter A. A. Berle,
Commissioner

January 24, 1978

Ferry Construction
3179 Walden Avenue
Cheektowaga, NY 14225

Attn: John Ferry

Re: Disposal of Foundry Sand Slurry
Chevrolet - Tonawanda

Gentlemen:

This is to advise you that this Department has no objection to the disposal of the foundry sand slurry water from Chevrolet foundry in the site located on Pavement Road, providing that this material is placed in the same area where the bentonite sludges from Dresser Industries are also disposed.

Particular care should be taken to assure that the liquids do not enter any surface water courses. Also, no organic (i.e. putrescible) material should be placed in the areas where either the bentonite sludges or sand slurry wastes are disposed of.

Very truly yours,

John S. Tygert, P.E.
Senior Sanitary Engineer

JST:amw

(37)

New York State Department of Environmental Conservation

APPLICATION FOR TREATMENT OR DISPOSAL
OF AN INDUSTRIAL OR HAZARDOUS WASTE STREAM

See Application Instructions on Reverse Side

FOR STATE USE ONLY

SITE NO.	APPLICATION NO.	DATE RECEIVED
DEPARTMENT ACTION ☐ Approved ☐ Disapproved		DATE

RDPHE
Water
Air
Gen
Circ.
File

1. Project/Facility Name: 403 Pavement Road
2. County: Erie
3. Site No.: 1911-1
4. Application No.: 2
5. Owner's Name: Ferry Concrete Const. Co., Inc.
6. Address (Street, City, State, Zip Code): 3179 Walden Av Depew, N.Y 14043
7. Telephone No.: 684-1703
8. Operator's Name: Ferry Concrete Const. Co., Inc.
9. Address (Street, City, State, Zip Code): 3179 Walden Av Depew, N.Y. 14043
10. Telephone No.: 684-1703
11. Method of Treatment or Disposal: Lagooning
12. Company Generating Waste: General Motors Corp.
13. Address of Facility Generating Waste (Street, City, State, Zip): Chevrolet Motor Division, Tonawanda, N.Y. 14150
14. Representative of Waste Generator: A. M. DiCocco
15. Mailing Address of Representative:
16. Telephone No.:
17. Description of Process Producing Waste: Sand Fines (Slurry) From Foundry Waste Water Treatment
18. Expected Annual Waste Production: ____ Tons/yr. 2.1 Mill Gal./yr.
19. Waste Hauled In: ☐ Drums ☒ Bulk Tank ☐ Roll-off Container ☐ Other ____
20. Waste Composition
a. Average Percent Solids 35 %
b. Physical State: ☐ Liquid ☒ Slurry ☐ Sludge ☐ Solid ☐ Contained Gas
c. pH Range 7.7 to 9.0
d. Components

Components	CONCENTRATION (dry weight) Upper	Lower	Typical	UNIT (check one) WT.%	PPM
1) See Attached Sheet				☐	☐
2)				☐	☐
3)				☐	☐
4)				☐	☐
5)				☐	☐
6)				☐	☐
7)				☐	☐

21. Was a Leaching Potential Test conducted on the Waste? ☐ Yes ☒ No If yes, attach form.

22. Detail all hazards and nuisance problems associated with the wastes. List necessary safety, handling, treatment and disposal precautions.

Slurry is a water residue of fine sand, bentonite clay, metal oxides, col ash and carbon. Chem fix test methods indicate the run off water is ine and requires no special handling except containment for solids retention.

23. Waste Hauler: Ken Staub Jr. Trucking
24. Address (street, city, state, zip code): Box B. Sta. B. Bflo, N.Y.
25. N.Y.S. Reg. No.: Pending
26. Telephone No.: 716-874-5920

27. CERTIFICATION:
I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

a. Representative of Waste Generator: Richard R. ____ GEN. SUPT. MAINT. & P.E.
Signature and Title
3/27/78
Date

b. Representative of Treatment or Disposal Facility: ____
Signature and Title
4/4/78
Date

ICATION FOR APPROVAL TO CONSTRUCT A SOLID WASTE MANAGEMENT FACILITY

NSTRUCTIONS ON REVERSE SIDE

(38)

FOR STATE USE ONLY
PROJECT NO. 15508
DATE RECEIVE J 11/
DEPARTMENT ACTION ☐ Approved ☐ Disapproved
DATE

ME
cer Reclamation Company

2. ADDRESS (Street, City, State, Zip Code)
403 Pavement Road, Lancaster, NY 14086

3. Telephone No.
681-7571

OR'S NAME
caster Reclamation Company

5. ADDRESS (Street, City, State, Zip Code)
403 Pavement Road, Lancaster, NY 14086

6. Telephone No.
681-7571

GINEER'S NAME
Wendel Engineers, P.C.

8. ADDRESS (Street, City, State, Zip Code)
7405 Canal Road, Lockport, NY 14094

9. Telephone No.
433-5993

NGINEER'S N.Y.S. LICENSE NO.
038129

10. TYPE OF PROJECT FACILITIES:
☐ Composting ☐ Transfer ☐ Shredding ☐ Baling ☐ Sanitary Landfill ☐ Incineration
☐ Pyrolysis ☐ Resource Recovery-Energy ☐ Resource Recovery-Materials ☒ Other Restricted Landfi

Briefly describe the project including the basic process and major components: Filling of excavated lagoons with:
1) Bentonite clay slurry consisting of 10% bentonite clay & 90% water; 2) Asbestos cement slur nsisting of 20% Portland cement, 5% asbestos fibers, 10% glass fibers & 65% water; 3) Spent cast nd with broken bricks; 4) Slurry from foundry wastewater treatment containing 65% water.

escribe location of facility. (Attach a USGS Topographic Map showing the exact location of the facility)

Site is located on east side of Pavement Road. 1000± feet south of Walden Ave. is the Town of Lancaster.

ounty in which facility is located:
Erie

14. Environmental Conservation Region in which facility is located:
9

Municipalities Served by Facility	County	No. of Municipalit
N/A		

Describe briefly how the proposed facility relates to the Comprehensive Solid Waste Management Plan for the Municipality. Explain any deviation from that Plan.

N/A

the facility is other than a sanitary landfill, describe the residues in terms of quantities and types. Also indicate the methods and locations of residue dispos or, if recyclable, indicate markets:

No residues from this facility.

f the facility is a sanitary landfill, provide the following information:

a. Total useable area – ______ Acres
b. Distance to nearest surface water – ______ Feet
c. Depth to nearest ground water – ______ Feet
d. Depth to nearest rock – ______ Feet
e. Distance to nearest airport – ______ miles
f. Expected life of site – ______ years
g. Is site on a flood plain? ☐ Yes ______ Year Flood ☐ No
h. Predominant type of soil on site: ______
(Use Unified Soil Classification System)

nticipated construction starting and completion dates
From: In Progress
To: 1986

20. Estimated Population Served
Current: N/A
Design: N/A

stimated Cost
Initial: N/A
Annual: N/A

22. Estimated Daily Tonnages of Solid Waste
Current: 100 Ton/Month
Design: Same

Operating Hours per Day
8 Hours/Week

24. Are attached plans and specifications in substantial conformance with "Content Guidelines for Plans and Specifications"? ☒ Yes ☐ No

ERTIFICATION:
The undersigned does hereby certify that the information in this application and in other attached statements and exhibits is true, correct and complete to the best of his knowledge and belief.

5-11-79
Date

President
Signature and Title

CENTRAL OFFICE COPY

Appendix 7

(39)

York State Department of Environmental Conservation
584 Delaware Avenue Buffalo, NY 14202

Robert F. Flack
Commissioner

January 4, 1979

John Ferry
Lancaster Reclamation
3179 Walden Avenue
Depew, NY 14043

Re: Fabritron Wastes

Dear Mr. Ferry:

This is to advise you that this Department has no objection to the disposal of fabritron's transite slurry waste, provided it is deposited in the same area, or a similar area, as the chevy foundry sand slurry waste.

Particular care should be taken to assure that the liquids do not enter any surface water course and that no putrescible material is deposited with these wastes.

Very truly yours,

John C. McMahon, P.E.
Regional Engineer, Solid and
Hazardous Waste Program

JEB:dd

Please copy for files.
Then to PRD,

(4)

FILE COPY

RECEIVED
JAN 2[illegible] 1980
BUREAU OF HAZARDOUS WASTE MANAGEMENT PROGRAMS

RECEIVED
OCT 2[illegible] 1979
DIRECTOR, DIVISION OF SOLID WASTE MANAGEMENT

To ~~[illegible]~~ [illegible] FYA [illegible] 1/3/80

RECEIVED
BUREAU OF MANAGEMENT PROGRAMS

October 25, 1979

Lancaster Reclamation Company
403 Pavement Road
Lancaster, New York 14086

Attn: Mr. John L. Ferry

Re: Operation Permit Restricted Use Landfill
Facility #15S08
Lancaster Reclamation Company
Lancaster (T), Erie (C)

Dear Mr. Ferry:

Enclosed are the Permit issued to you for the above facility and a Permit Sign which must be posted at the project site.

The Permit contains 9 special conditions, all of which are important. However, we call your specific attention to conditions 2 and 3 which require the installation of an additional monitoring well and stabilization thereof, followed by sampling of the new well and the existing well.

In addition, we would like to direct your attention to condition 6 which requests that only facilities registered under the provisions of Part 364 NYCRR 364 shall be used in transporting waste materials to the landfill area.

Upon receipt of an additional copy of the engineering plans prepared by your consultant, we will stamp and forward these to you.

If you have any questions relative to this, please do not hesitate to contact the writer or Mr. Tygert at 842-5041.

Very truly yours,

JLB

John L. Beecher
Associate Chemical Engineer

Enclosures
JLB:mfw
cc: Erie County DEP
Mr. Nosenchuck
Mr. Tygert
Lancaster Town Clerk

NOTICE OF PERMIT

for:

☐ CONSTRUCTION ☒ INITIAL ISSUE ☐ REISSUANCE

☒ OPERATION ☐ RENEWAL ☐ MODIFICATION

has been issued to: Lancaster Reclamation Co.

address: 403 Pavement Road, Lancaster, New York 14086

for a project described as: Restricted Use Landfill

under the Environmental Conservation Law,
Article 27, Title 5, Part 360 (Solid Waste Management Facilities)

NOTE:

- This Notice of Permit must be posted on the project site in such a manner that it is protected from weather and is in a location readily visible to the public.
- A copy of the Permit with the general and special conditions noted thereon will be shown to anyone upon request.

John L. Beecher
Issuing Officer

584 Delaware Avenue, Buffalo, New York, 14202
Address

2021	10/25/79	11/1/82
Permit No.	**Issue Date**	**Expiration [illegible]**

New York State
Department of Environmental Conservation

47-12-2 (8/77)

Lancaster

40

④

New York State Department of Environmental Conservation
600 Delaware Avenue, Buffalo, New York 14202

Robert F. Flacke
Commissioner

October 29, 1980

TO E+B
CS
FYA
11-1-80

Lancaster Reclamation Company
403 Pavement Road
Lancaster, New York 14086

Attn: Mr. Ferry

Re: Modification to Operation Permit Restricted Use Landfill - Facility #15S08
Permit #2290 - Lancaster Reclamation Company - Lancaster (T), Erie (C)

Dear Mr. Ferry:

Enclosed herewith is Permit #2290, modification to Permit #2021 dated October 25, 1979. This permit modification entails the acceptance of dust particles from the shot blast collector to be mixed with the bentonite clay slurry described in your application dated May 11, 1979. The special conditions of your original permit still remain in full force and effect.

If you should have any questions regarding this matter, please do not hesitate to contact the writer at 716/842-3837.

Very truly yours,

John S. Tygert, P.E.

John S. Tygert, P.E.
Senior Sanitary Engineer

JST:las

Enclosure

cc: ECDEP
Lancaster (T) Clerk
Albany Central Office - NYSDEC

RECEIVED

1980

BUREAU OF MANAGEMENT
PROGRAMS

FILE

Nosenchuck

D. O'Toole

42

New York State Department of Environmental Conservation
600 Delaware Avenue, Buffalo, New York 14202

Robert F. Flacke
Commissioner

15506

RECEIVED

JUN 19 1981

DIRECTOR'S OFFICE
DIVISION OF SOLID WASTE

PROGRAMS

June 16, 1981

Mr. John L. Ferry
Lancaster Reclamation Company
403 Pavement Road
Lancaster, New York 14086

Re: Permit #2021 Revision to Accept Sludge Residue from Surface Print Production

Dear Mr. Ferry:

This cover letter modifies Permit #2021 issued October 25, 1979. This modification permits acceptance of sludge residue from surface print production as described in your application dated May 4, 1981. The expiration date of this modification will be November 1, 1982. This is also the expiration date of Permit #2021.

A new numbered permit will not be issued as in response to a previous request (Permit #2290) because of this small quantity (2,400 gallons/year) involved.

Very truly yours,

Robert J. Mitrey, P.E.
Associate Sanitary Engineer

RJM:ADM:las

cc: Mr. D. Campbell, Erie County Department of Environment and Planning
Mr. N. Nosenchuck, NYSDEC-Albany

K STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

CATION FOR TREATMENT OR DISPOSAL OF AN NDUSTRIAL OR HAZARDOUS WASTE STREAM

(42)

FOR STATE USE ONLY

SITE NO.	APPLICATION NO.	DATE RECEIVED
15508	81-1	5/6/81
DEPARTMENT ACTION ☒ Approved ☐ Disapproved		DATE 6/15/81

PPLICATION INSTRUCTIONS ON REVERSE SIDE

NAME OF PROJECT/FACILITY: ncaster Reclamation Co.
2. COUNTY: Erie
3. SITE NO.: 15-S08
4. APPLICATION NO: 9

NAME OF OWNER: me As Above
6. ADDRESS (Street, City, State, Zip Code): 403 Pavement Rd Lancaster, N.Y. 14086
7. TELEPHONE NO.: 716 684-9624

NAME OF OPERATOR: me As Above
9. ADDRESS (Street, City, State, Zip Code): Same As above 716
10. TELEPHONE NO.: 684-1703

METHOD OF TREATMENT OR DISPOSAL

Lagooning

COMPANY GENERATING WASTE: Reed Holdings, Inc.
13. ADDRESS OF FACILITY GENERATING WASTE (Street, City, State, Zip Code): 2775 Broadway (P.O. Box 27) Bflo, N.Y. 1424

REPRESENTATIVE OF WASTE GENERATOR: John J. Davern
15. MAILING ADDRESS OF REPRESENTATIVE: Same As above 716
16. TELEPHONE NO.: 891-8334

DESCRIPTION OF PROCESS PRODUCING WASTE

Sludge Residue from surface print production

EXPECTED ANNUAL WASTE PRODUCTION: ______ Tons/Year 2400 Gallons/Year

19. WASTE HAULED IN: ☐ Drums ☒ Bulk Tank ☐ Roll-off Container ☐ Other

WASTE COMPOSITION

a. Average Percent Solids 20 %

b. Physical State: ☐ Liquid ☐ Slurry ☒ Sludge ☐ Solid ☐ Contained Gas

c. pH Range 7 to 8

d.	COMPONENTS	CONCENTRATION (Dry Weight) Upper	Lower	Typical	UNIT (Check One) Wt. %	PPM
1)	See Attachments				☐	☐
2)					☐	☐
3)					☐	☐
4)					☐	☐
5)					☐	☐
6)					☐	☐
7)					☐	☐

Was a Leaching Potential Test conducted on the Waste? ☒ Yes ☐ No If "Yes", attach a Leaching Potential Test Report Form

DETAIL ALL HAZARDS AND NUISANCE PROBLEMS ASSOCIATED WITH THE WASTES. List necessary safety, handling, treatment and disposal precautions.

None

NAME OF WASTE HAULER: ncaster Reclamation Co.
24. ADDRESS (Street, City, State, Zip Code): 403 Pavement Rd. Lanc. N.Y. 14086
25. N.Y.S. Registration No.: XX 9A-026
26. TELEPHONE NO.: 684-9624 684-1703

CERTIFICATION

I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

SIGNATURE AND TITLE OF REPRESENTATIVE OF WASTE GENERATOR
X
DATE 5-4-81

SIGNATURE AND TITLE OF REPRESENTATIVE OF TREATMENT OR DISPOSAL FACILITY
John Ferry, Co-Owner
DATE 5-4-81

(77)

(43)

Cam C. Rec.
file

(NYSDEC 1981)

600 Delaware Avenue, Buffalo, NY 14202

March 3, 1981

FILE: NJ08

Mr. John L. Perry
Lancaster Reclamation Co.
433 Pavement Road
Lancaster, NY 14086

re: Disposal of Wheelabrator
Shot Blasting Sand from
Dresser Industries, Inc.

Dear Mr. Perry:

This office has reviewed your proposal for disposal of the above subject waste. The analysis shows that the waste is non-hazardous. Hence, this waste can be disposed of at your landfill.

Furthermore, please be advised that Perry Concrete must have their Industrial Waste Hauler Permit modified in order to transport this waste to your site.

If you have any questions, please contact this office.

Very truly yours,

Robert J. Mitrey, P.E.
Associate Sanitary Engineer

KBH:amd
att.
cc: ECDEP

4

15

RECEIVED

JUN 02 1982

Bureau of Municipal Waste
Division of Solid Waste

600 Delaware Avenue, Buffalo, New York 14202 - 1073

May 27, 1982

Mr. John L. Ferry
Lancaster Reclamation Company
403 Pavement Road
Lancaster, NY 14086

Re: Disposal of Bus Washing Solids from
Sweet Home Central School
Lancaster Reclamation Co.-Facility #1580
Lancaster (T), Erie County

Dear Mr. Ferry:

Attached is a copy of the approval for the sludge from the holding tank for the Sweet Home Central School bus garage. It is understood that the material that is to be removed is the solids in the bottom of the tank and consists of dirt, gravel and other material waste from the buses. This material is to be admixed with the excess diatomaceous earth from Dresser Industries to preclude leaching of any oily material which may be resident in the solid residues.

You have indicated that you have received other requests for similar type operations, and we are advising that an analyses should be performed on the solid material to determine the presence of any extractable oil or grease for these future applications.

If you have any questions, please do not hesitate to contact the writer.

Very truly yours,

John S. Tygert, P.E.
Senior Sanitary Engineer

JST:sk

Attachment

cc: Mr. Don Campbell (Erie County Department of Environment & Planning)
Mr. Dave O'Toole (NYSDEC/Albany/Solid Waste) ✓

YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

CATION FOR TREATMENT OR DISPOSAL OF AN NDUSTRIAL OR HAZARDOUS WASTE STREAM

(44)

ICATION INSTRUCTIONS ON REVERSE SIDE

FOR STATE USE ONLY		
SITE NO.	APPLICATION NO.	DATE RECEIVED
DEPARTMENT ACTION ☐ Approved ☐ Disapproved		DATE

ME OF PROJECT/FACILITY: Lancaster Reclamation Co.

2. COUNTY: Erie

3. SITE NO.: 15-[illegible]

4. APPLICATION N

NAME OF OWNER: Lancaster Reclamation Co.

6. ADDRESS (Street, City, State, Zip Code): 403 Pavement Rd Lancaster, N.Y. 1408

7. TELEPHONE NO: [illegible]

NAME OF OPERATOR: Same as above

9. ADDRESS (Street, City, State, Zip Code): Same as above

10. TELEPHONE NO: Same

1. METHOD OF TREATMENT OR DISPOSAL

Mixed with diatamaceous earth for solidification and lagoon burial

2. COMPANY GENERATING WASTE: et Home School Bus Garage

13. ADDRESS OF FACILITY GENERATING WASTE (Street, City, State, Zip Code): 1741 Sweet Home Rd. Amherst, N.Y. 142

REPRESENTATIVE OF WASTE GENERATOR: . Leaderstorf

15. MAILING ADDRESS OF REPRESENTATIVE: Same as # 13

16. TELEPHONE NO.: 689-52[illegible]

7. DESCRIPTION OF PROCESS PRODUCING WASTE

olding tank accumulation from floor drains in bus garage

8. EXPECTED ANNUAL WASTE PRODUCTION

______ Tons/Year 1,000 Gallons/Year

19. WASTE HAULED IN

☐ Drums ☒ Bulk Tank ☐ Roll-off Container ☐ Other ______

WASTE COMPOSITION

a. Average Percent Solids 20 %

b. Physical State

☐ Liquid ☐ Slurry ☒ Sludge ☐ Solid ☐ Contained Gas

c. pH Range ______ to ______

d.

	COMPONENTS	CONCENTRATION (Dry Weight) Upper	Lower	Typical	UNIT (Check One) Wt. %	PPM
1)	Dirt sludge from catch basin accumulation				☐	☐
2)					☐	☐
3)					☐	☐
4)					☐	☐
5)					☐	☐
6)					☐	☐
7)					☐	☐
					☐	☐

. Was a Leaching Potential Test conducted on the Waste? ☐ Yes ☒ No If "Yes", attach a Leaching Potential Test Report Form

2. DETAIL ALL HAZARDS AND NUISANCE PROBLEMS ASSOCIATED WITH THE WASTES. List necessary safety, handling, treatment and disposal precautions.

one

. NAME OF WASTE HAULER: caster Reclamation Co.

24. ADDRESS (Street, City, State, Zip Code): 403 Pavement Rd.
Lancaster, N.Y. [illegible]

25. N.Y.S. Registration No.: 9A-0[illegible]

26. TELEPHONE NO.: [illegible]

CERTIFICATION

I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits is true to the best of my knowledge a belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

a. SIGNATURE AND TITLE OF REPRESENTATIVE OF WASTE GENERATOR
X

DATE

b. SIGNATURE AND TITLE OF REPRESENTATIVE OF TREATMENT OR DISPOSAL FACILITY
X

DATE

7-19-7 (12/77)

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Regulatory Affairs - Region 9
600 Delaware Avenue
Buffalo, New York 14202-1073

(45)

File

NOTICE OF INCOMPLETE APPLICATION

November 16, 1984

TO: Mr. John L. Ferry
Lancaster Reclamation Company
403 Pavement Road
Lancaster, New York 14086

Permit Applied for: Solid Waste Renewal Location: Lancaster

Application Number: 90-84-1211
(Please refer to this number in all your correspondence.)

YOUR APPLICATION FOR THIS PERMIT IS INCOMPLETE.

☐ You failed to include with your application the full amount of the required fee. Please submit a check or money order in the amount of $________ payable to the Department of Environmental Conservation.

☒ Please submit the following data: See attached

☐ It appears that other DEC permits may be required in connection with your proposed project. In order for a comprehensive review of all DEC permits for this project to be made, it is necessary for you to submit application(s) for the following permit(s):

If you have reason to request that all permits not be processed simultaneously, please notify the permit agent below to discuss the matter.

☐ It has been determined that your project is subject to Article 8 of the Environmental Conservation Law, the State Environmental Quality Review Act (SEQR). Your application will be considered complete when

For further information, contact this office.

Permit Agent: Paul Eismann Telephone Number: 716/847-4555

If you wish to withdraw your application rather than complete it, please notify the permit agent for refund of application fee.

cc: K. Hintz ✓

14-12-5(10/77)

1. It is the judgement of Department staff that spray irrigation is not an environmentally sound method of leachate disposal, and staff continues to oppose that method as not meeting regulatory requirements. All leachate must be prop collected and removed to a specified treatment plant by a registered waste hauler. Your application should therefore be revised accordingly or possible denial of your application may resul

2. The total volume of the site can be specified even though life of facility cannot be predicted due to uncertainty of waste receipts.

3. Why has not the direction of groundwater flow not been determined? This needs to be determined if the wells are to be correctly placed.

4. Even if east well is monitoring surface water, what is the source of phenols? This would seem to indicate that surface runoff from site is contaminated. Furthermore, how can one be assured that the high phenol concentrations are not resulting from the disposal of foundry sand.

5. What is the depth to the seasonally high groundwater table, perched or otherwise?

7. Need variance application with adequate justification for exemption from daily cover.

8. Proposed monitoring program not outlined.

9. Need cost estimate for closure and 30 years of post closure monitoring and maintenance in order to establish a surety instrument.

10. No wastes with a solid content of 20% or less may be accepted at this site unless a thoroughly documented variance is submitted and approved

11. Location of well to replace east well not shown, nor is the location of the well on the south perimeter.

12. No details on the clay wall and its installation.

13. Plan should show those areas which are already filled.

14. Please explain why a clay cutoff wall is only needed on the northwest side. Borings 1 and 8 indicate the need for such on the south side. Why no a cutoff wall along the east side as well, or along the entire west side?

15. Bottom elevations of proposed cells not outlined.

16. One drawing showing exisitng topography and another to show final topography should be submitted.

17. Disposal of waste into trenches containing liquid is unacceptable.

18. No construction details on clay cutoff wall.

19. Plan sheet needs to show the existing monitor well locations and the proposed locations for the 2 new wells.

20. Need deed or property map showing ownership of such.

21. How is site access controlled? Equipment maintenance facility and employee facilities not shown.

22. With a 3 to 5 foot thick sand/gravel layer on east side of site, what is to prevent lateral migration? In addition, with the upper 5 feet being a fill layer, what is to prevent lateral migration through this area or the 1 foot silty sand layer below?

23. Need testing data to verify that soils have permeability of 10^{-7} cm/sec. or less. Samples of the silty clay and clay soils should be sent to the lab for determination of grain size, Atterburg limits, and classification.

24. Additional borings needed to confirm that the deepest permeable layer is continuous/discontinuous and to further identify the bedrock location.

25. Boring numbers on the plan sheet are not consistent with the drilling report/logs.

26. In which general direction does the bedrock slope?

27. A pond can only be used for surface water monitoring, not groundwater monitoring.

28. The [illegible] of Cell [illegible] feet) of the [illegible].

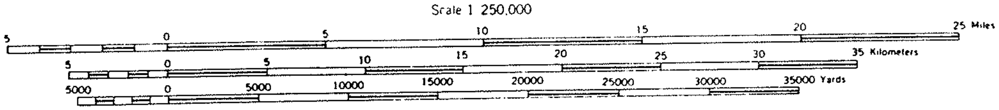
29. The monitor well detail shows the screen to be in the impermeable silty clay layer. This screen location will yield no sample. The bedrock interface (upper 5 feet) should be sampled and the permeable sand/gravel layer. Hence, cluster wells will be required.

30. The proposed well construction is inadequate. The wells should be a 2 inch minimum, flush coupled PVC with cement sentonite grout to surface, not random backfill. Details shall be provided.

KRH:vs

QUATERNARY GEOLOGY OF NEW YORK, NIAGARA SHEET

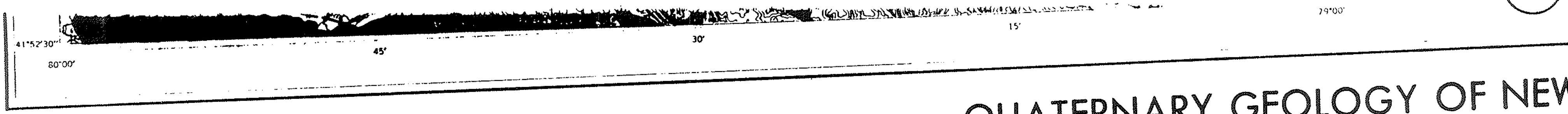
by Ernest H. Muller



MAP DATA SOURCES

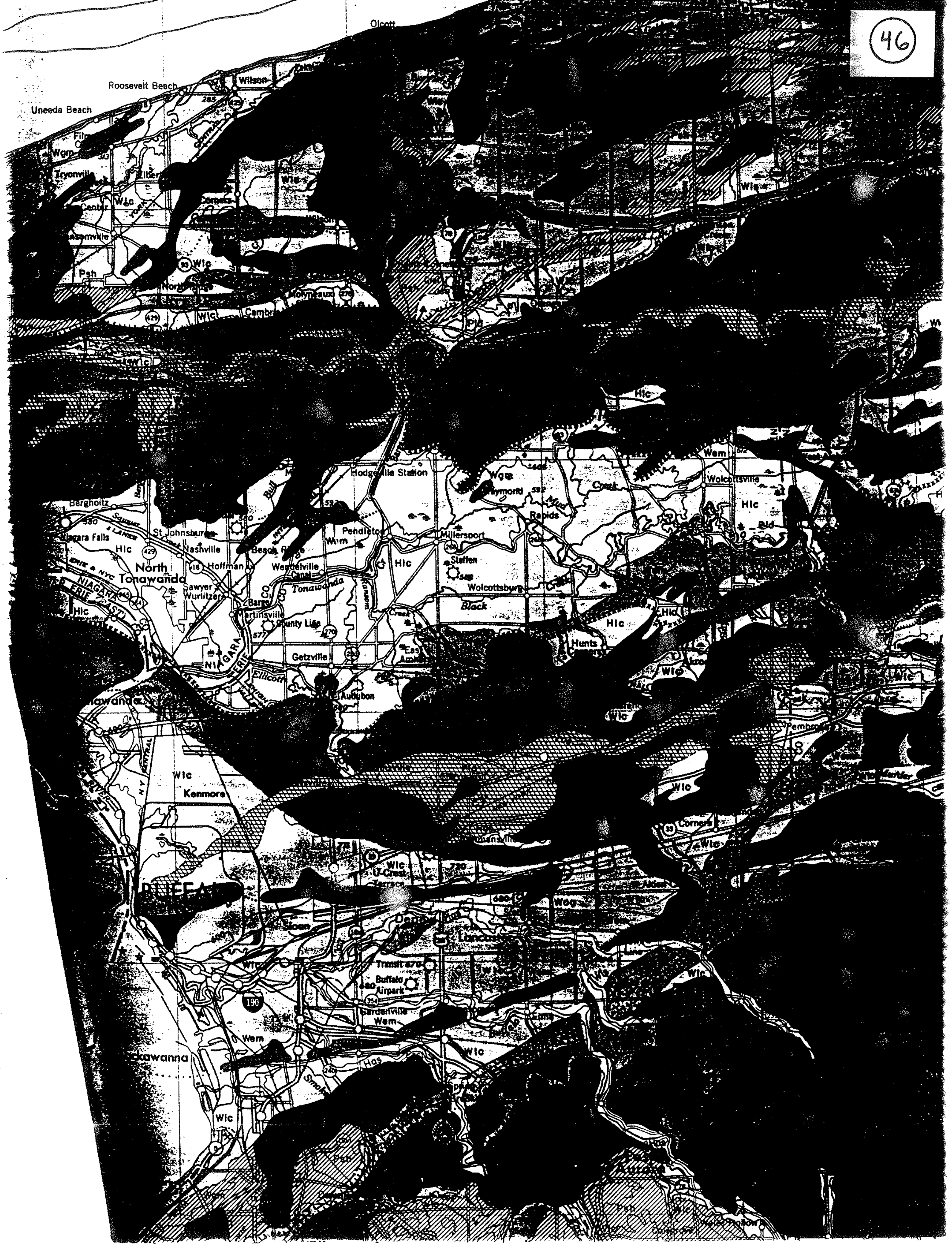
1. Bartolomucci, Henry A., 1968, A sedimentological study of the Niagara Falls Moraine. S.U.N.Y. Buffalo, M.A. thesis, 76p.
2. Blackmon, Paul, 1956, Glacial geology of the East Aurora, New York Quadrangle. Univ. of Buffalo, M.S. thesis.
3. Bryant, Jay C., 1955, A refinement of the upland glacial drift border in southern Cattaraugus County, N.Y. Cornell Univ. M.S. thesis, 127p.
4. Calkin, Parker, 1970, Strandlines and chronology of the Glacial Great Lakes in northwestern New York: Ohio Jour. Sci. 70:78-96.
5. Chapman, L.F. and D.F. Putnam, 1966, The physiography of southern Ontario. Univ. of Toronto Press, 386p.
6. D'Agostino, John, 1957, Glacial Lake Tonawanda history and development. Unpub. M.S. thesis, S.U.N.Y. Buffalo.
7. Denny, Charles S., 1956, Surficial geology and geomorphology of Potter County, Pennsylvania. U.S.G.S. Prof. Paper 288, 72p.
8. Feenstra, B.H., 1972, Quaternary geology of the Niagara area, southern Ontario; Ontario Div. Mines, Prelim. Map P.764, 1:50,000.
9. Feenstra, B.H., 1972, Quaternary geology of the Welland area, southern Ontario; Ontario Div. Mines, Prelim. Map P.796, 1:50,000.
10. Karrow, P.F., 1963, Pleistocene geology of the Hamilton-Galt area, Ontario; Ontario Mines, Geol. Rep. 16, 68p. and Map 2033.
11. Kindle, E.M. and F.B. Taylor, 1913, Description of the Niagara quadrangle. U.S.G.S. C Atlas Folio 190, 25p.
12. Leverett, Frank, 1902, Glacial formations and drainage features of the Erie and Ohio Ba U.S.G.S. Monograph 41, 802p.
13. Muller, E.H., 1963, Geology of Chautauqua County, N.Y. Part II: Pleistocene Geol N.Y.S.M. Bull. 392, 60p.
14. Muller, E.H., Unpub. field mapping. New York State Museum.
15. Shepps, V.C., G.W. White, J.B. Droste and R.F. Sitler, 1959, Glacial geology of northwes Pennsylvania. Penna. Geol. Survey Bull. G-32, 4th ser.
16. Sweeney, J.F., 1969, Glacial geology of the Springville, New York and northern part of Ashford Hollow, New York quadrangles. S.U.N.Y. Buffalo, M.S. thesis, 51p.
17. Symecko, R.E., 1967, Glacial geology of the Orchard Park, New York, quadrangle. S.U. Buffalo, M.A. thesis, 64p.
18. Wilson, Michael, 1973, Gravity studies in the vicinity of Walnut Creek, southwestern York. Unpub. M.S. thesis, S.U.N.Y. College at Fredonia.

Lancaster S.E.



QUATERNARY GEOLOGY OF NEW
by Ernest H. M

Muller, Ernest H. (1977)
New York State Museum and Science Service


Olcott
Roosevelt Beach
Wilson
Uneeda Beach
Wgm
Tryonville
Elberta
Center
Wlc
Ransomville
Psh
Wlc
Cambria
Molyneaux
Wlc
Wlc
Hlc
Wem
Wgm
Raymond
Hodgeville Station
Wolcottsville
Hlc
Mud
Creek
Rapids
Bergholtz
Niagara Falls
Hlc
St Johnsburg
Nashville
North
Tonawanda
Hoffman
Sawyer
Wurlitzer
Pendleton
Wem
Wendelville
Canal
Tonawanda
Hlc
Millersport
Steffen
Wolcottsburg
Black
Creek
Hlc
Hlc
Martinsville
County Line
Getzville
Niagara
Erie
Ellicott
Audubon
Hunts Corners
Wlc
Wlc
Wlc
Tonawanda
Wlc
Kenmore
Wlc
Corners
Wlc
Pembroke
Buffalo
Wlc
Wog
Transit
Buffalo Airpark
190
Gardenville
Wem
Wem
Wlc
Lackawanna
Wlc
Aurora
Psh
Psh

EXPLANATION

HOLOCENE

☐ **Has**

Alluvial sand and silt

Medium to coarse sand with subordinate intercalated silt and gravel, loosely packed and permeable; generally oxidized and noncalcareous; mellow, but commonly with high water table.

Floodplain deposits of streams in mature reaches. Overbank deposition by streams flowing on low gradients and in open valleys

☐ **Hag**

Alluvial gravel

Pebble to cobble gravel with subordinate medium to coarse sand, loosely packed and permeable; generally oxidized and noncalcareous; locally bouldery.

Alluvial fan and channel deposits of streams flowing on steep gradients or emanating from narrow valleys into rapidly aggrading reaches

☐ **Hls**

Beach sand and gravel

Coarse sand with subordinate medium sand and gravel lenses; cross-bedded; highly permeable generally well sorted, without significant silt or clay.

Strand and nearshore deposits of large lakes in basins possessing closure independent of the former receding glacier margin, hence persisting after deglaciation. Notable are shore deposits of Lakes Erie and Ontario and former Lake Tonawanda

☐ **Hlc**

Lake silt, sand and clay

Silt, fine to medium sand and clay; thin-bedded to massive; in part very regularly bedded with cyclic alternation of clay and silt laminae; moderately permeable along along bedding surfaces.

Offshore deposits of lakes in basins which did not require an imponding ice margin for closure, hence persisted after deglaciation. Notable among filled basins is that of former Lake Tonawanda.

■ **Hws**

Wind deposited sand

Fine to medium sand; well sorted; oxidized and noncalcareous; cross-bedded; highly permeable. Closely associated with strand and nearshore deposits of postglacial lakes.

Wind-reworked littoral and beach sand initially deposited in postglacial lake basins.

☐ **Hpm**

Peat, marl and muck

Bog deposits, dominantly peat and muck with subordinate gyttja; marl is a major component except in the southern tier of counties. Silt and clay are intercalated at base of organic section.

Deposition during late stages of in-filling of pond and lake basins, including numerous kettles and other shallow depressions on glacial drift; also parts of former Lake Tonawanda such as the Oak Orchard and Bergen Swamps.

PLEISTOCENE

WISCONSINAN

Woodfordian

☐ **Wls**

Beach sand and gravel of ice-dammed lakes

Coarse sand with subordinate meduim sand and gravel lenses; cross-bedded; well-sorted and without significant silt or clay; highly permeable.

Strand and nearshore deposits in proglacial Lakes Whittlesey and Warren in the Erie Basin and Lake Iroquois in the Ontario Basin.

Includes suitable material for generally small scale sand and gravel production.

☐ **Wlc**

Lake silt, sand and clay

Silt, fine to medium sand and clay; thin-bedded to massive; regularly bedded, in part with cyclic alternation of clay and silt laminae; moderate bedding plane permeability.

Offshore deposits in basins which required ice marginal impondment for closure; includ es primitive lakes in northward-draining troughs as well as ancestral Lakes Whittlesey and Warren in the Erie Basin and Lake Iroquois in the Ontario Basin.

☐ **Wem**

End moraine

Includes both ablation and lodgment till; till generally rather stony with limited admixture of poorly sorted gravel; carbonate and crystalline clasts generally exceed 20%; thickness and permeability variable but generally greater than in associated ground moraine.

Deposited by melting of ice at edge of ice sheet either at end of an advance or during stillstand at a stable ice-border position

See figure 2 for names of principal moraines and schematic representation of chronology of glacial advance and retreat.

☐ **Wgm**

Ground moraine

Dominantly lodgment till; silty clay till and sandy till; sparsely to moderately stony; carbonate and crystalline clasts generally exceed 20%; compact and generally very impermeable.

Variably comminuted rock material, transported by and lodged beneath actively flowing ice of the continental ice sheet.

■ **Wkg**

Ice-contact stratified drift

Coarse gravel and sand; sorting, poor and variable; ranges from sand to boulder gravel; in some areas with subordinate lenses of unsorted flow till; attitude of beds variable; moderately to highly permeable; carbonate and crystalline clasts comprise more than 20% and commonly dominate coarse fraction; locally indurated by secondary calcium carbonate.

Deposition as ablation moraine, mudflow and by saltwater streams distributing drift on stagnant ice to be deposited finally as the buried ice melted. Steep slopes commonly mark former ice-contact surfaces.

Comprises a major gravel source, but requires washing and crushing for many purposes.

■ **Wog**

Outwash, terrace and delta gravel

Pebble and cobble gravel with subordinate sand; well sorted; extremely permeable; carbonate and crystalline clasts generally exceed 30% of the coarse fraction; locally cemented by secondary calcium carbonate.

Deposition by strongly aggrading streams flowing from former ice sheets. Coarse alluvium deposited in coalescent aprons near the ice sheet, or as valley trains where streams drained freely from the glacier margin. Commonly persist as stream terraces or terrace remnants. Includes minor lenses of very coarse torrent (hlaup) deposits.

Comprises a major source of relatively clean and uniform gravel

Altonian

☐ **Aem**

End moraine

Includes both ablation and lodgment till; silty clay till to sandy till, moderately to abundantly stony with admixture of poorly sorted gravel, sandstone and siltstone channers generally comprise more than 80% of coarse fraction; permeability and thickness variable but generally greater than for associated ground moraine.

Deposited by melting of ice at edge of ice sheet either at end of an advance or during stillstand at a stable ice-border position.

☐ **Agm**

Ground moraine

Dominatly lodgment till but locally with a veneer of variably washed ablation drift, clay till, silty clay till and sandy till; moderately to abundantly stony; siltstone and sandstone channers comprise more than 80% of coarse fraction; deeply oxidized and essentially noncalcareous; compact and generally impermeable.

Variably comminuted rock material, transported by and lodged beneath actively flowing ice of the continental ice sheet.

■ **Akg**

Ice-contact stratified drift

Coarse gravel and sand; sorting poor and variable; ranges from sand to boulder gravel, in some areas with subordinate lenses of unsorted flow till; attitude of beds variable; moderately to highly permeable; siltstone and sandstone generally more than 80% of coarse fraction; generally uncemented.

Deposition as ablation moraine, mudflow and by meltwater streams distributing drift on stagnant ice to be deposited finally as the buried ice melted. Steep slopes commonly mark former ice-contact surfaces.

Comprises a major gravel source but requires washing and crushing for many purposes.

■ **Aog**

Outwash, terrace and delta gravel

Pebble and cobble gravel with subordinate sand; well sorted; extremely permeable, carbonate and crystalline clasts generally less than 30% of the coarse fraction; generally uncemented.

Deposition by strongly aggrading streams flowing from former ice sheets. Coarse alluvium deposited in coalescent aprons near the ice sheet, or as valley trains where streams drained freely from the glacier margin. Commonly persist as stream terraces or terrace remnants.

Comprises a major source of relatively clean and uniform gravel.

ILLINOIAN

■ **Iem**

End moraine

Includes both ablation and lodgment till; silty clay till; moderately to abundantly stony with admixture of poorly sorted gravel; sandstone and siltstone channers dominate coarse fraction; permeability and thickness variable but generally greater than for associated ground moraine

Deposited by melting of ice at edge of ice sheet either at the end of an advance or during stillstand at a stable ice-border position

■ **Igm**

Ground moraine

Dominantly lodgment till but with local veneer of variably washed ablation drift, clay till to silty clay till; moderately to abundantly stony; siltstone and sandstone channers dominate coarse fraction; deeply oxidized and essentially noncalcareous; compact and generally impermeable.

Variably comminuted rock material, transported by and lodged beneath actively flowing ice of the continental ice sheet.

■ **Ikg**

Ice-contact stratified drift

Coarse gravel with subordinate pebbly sand; well stratified but laterally variable, ranging from sand to coarse gravel and subordinate lenses of unsorted flow till; attitude of beds variable; moderately to highly permeable; siltstone and sandstone dominate coarse fraction; oxidized and essentially noncalcareous; uncemented.

Deposition as ablation moraine, mudflow and by meltwater streams distributing drift on stagnant ice to be deposited finally as the buried ice melted. Steep slopes commonly mark former ice-contact surfaces.

Of minor extent near limit of glaciation where it is an important gravel source.

░ **Iog**

Outwash and terrace gravel

Pebble and cobble gravel with subordinate sand; well-sorted; extremely permeable; carbonate and crystalline clasts generally less than 30% of the coarse fraction; generally uncemented; contains lower proportion of shale than in associated materials; oxidized and noncalcareous in general.

Deposition by strongly aggrading streams flowing from ice sheets. Coarse alluvium deposited as valley trains and preserved as limited terrace remnants beyond the glaciated region.

Comprises a potential source of gravel.

▨ **Psh**

☐ **Pss**

░ **Pld**

A small fraction of a
living matter is made up
carbon) which disintegrat
5570 · 130 years. In fossi
ing Radiocarbon atoms to a
affords a basis for estima
organism died.

SITE	NAME, TOWN
1	Otto, Otto
2	Clear Creek, Collins
3	Corry Bog, Corry
4	Nichols Bk., Sardinia

Appendix I

FERRY CONCRETE CONSTRUCTION CO., INC.
3179 Walden Avenue
Depew, New York 14043

CERTIFICATE OF ZONING COMPLIANCE

Your application of October 27, 1975, for premises consisting approximately fourteen (14) acres at 403 Pavement Road, Town of Lancaster, is hereby granted upon the following terms and conditions:

1. That fill to be deposited shall consist of inert, non-putrescible, non-combustible material as set forth in your letter of October 27, 1975.
2. That all necessary permits from the County of Erie and State of New York relative to such operation shall be obtained prior to commencement of operations and a copy filed with the undersigned Building Inspector.
3. That all other Ordinances or Laws of the State of New York, County of Erie and Town of Lancaster be adhered to, including the recently enacted Wetlands Act and Article 8 of the Environmental Conservation Law pertaining to environmental quality review.
4. That the operations at the subject site shall be rigidly supervised by the applicant and special care shall be taken to avoid any littering of public highways and that fill operations shall not exceed existing topographical grades.
5. That this use by the applicant shall be personal to the operations of the applicant and shall be primarily for the depositing of waste materials from Dresser Industries, Inc., Depew, New York.
6. That any change in the type, kind or quality of materials to be deposited on the aforementioned site shall not be made until the Building Inspector of the Town of Lancaster shall have received prior notice and given written approval for such deposit.

William F. Dougherty, Jr.
Building Inspector

Lanc. Rec

Councilman Barnhardt requested a suspension of the necessary rule for immediate consideration of the following resolution - SUSPENSION GRANTED.

THE FOLLOWING RESOLUTION WAS OFFERED
BY COUNCILMAN BARNHARDT , WHO MOVED
ITS ADOPTION, SECONDED BY COUNCILMAN
BERENT , TO WIT:

WHEREAS, John Ferry, Paul Ferry, and Margaret Krzyzanowski, D/B/A Lancaster Reclamation Company, has previously been issued a "Certificate of Zoning Compliance" in relation to the dumping and depositing of certain waste materials on premises located at 403 Pavement Road, Lancaster, New York, and

WHEREAS, Lancaster Reclamation Company, by letter dated October 21, 1980, has requested a modification of the "Certificate of Zoning Compliance" previously issued by the Building Inspector so as to accomodate the dumping of "Shot Blast Dust" from Dresser Industries, and

WHEREAS, the New York State Department of Environmental Conservation by letter dated October 29, 1980, has issued State Permit #2290 which modifies State Permit #2021, dated October 25, 1979, which modification entitles the permittee to accept at 403 Pavememnt Road, Lancaster, New York, a waste substance known as "Shot Blast Dust"

NOW, THEREFORE, BE IT RESOLVED, that the "Certificate of Zoning Compliance" issued on July 19, 1979, by the Building Inspector of the Town of Lancaster, to John Ferry, Paul Ferry, and Margaret Krzyzanowski, D/B/A Lancaster Reclamation Company, be and is hereby modified by addition of the following Section:

> Item 7. "Acceptance and Deposit at the Reclamation Site of waste materials from Dresser Industries, Inc. known as "Shot Blast Dust" in strict accordance with the application and State Permit No. 2290, is acceptable"

and,

BE IT FURTHER RESOLVED, that the Town Clerk of the Town of Lancaster be and is hereby directed to forward a certified copy of this resolution to the Building Inspector of the Town of Lancaster and to Lancaster Reclamation Company.

The question of the adoption of the foregoing resolution was duly put to a vote on roll call which resulted as follows:

COUNCILMAN BARNHARDT	VOTED YES
COUNCILMAN BERENT	VOTED YES
COUNCILMAN CZAPLA	VOTED YES
COUNCILMAN GRZYBOWSKI	VOTED YES
SUPERVISOR KEYSA	VOTED YES

~~duly~~

The resolution was thereupon unanimously adopted.

November 3, 1980

State of New York
County of Erie } ss:
Town of Lancaster

This is to certify that I, ROBERT P. THILL, Town Clerk and Registrar of Vital Statistics of the Town of Lancaster in the said County of Erie, have compared the foregoing copy of a resolution with the original thereof filed in my office at Lancaster, New York, on the 3rd day of November, 19 80 and that the same is a true and correct copy of said original, and of the whole thereof.

In Witness Whereof, I have hereunto set my hand and affixed the seal of said Town this 5th day of November, 19 80.

Robert P Thill
Town Clerk and Registrar of
Vital Statistics

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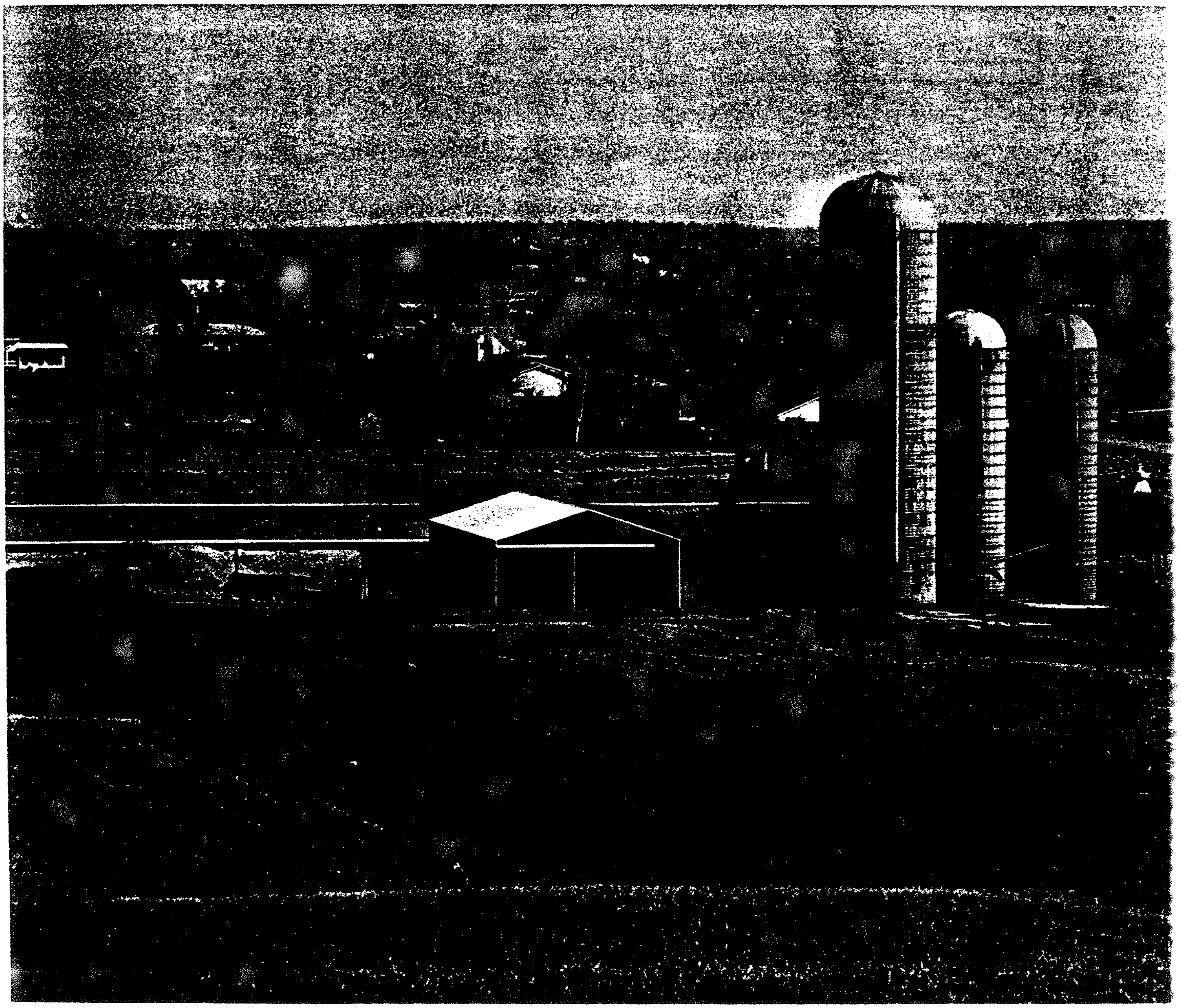
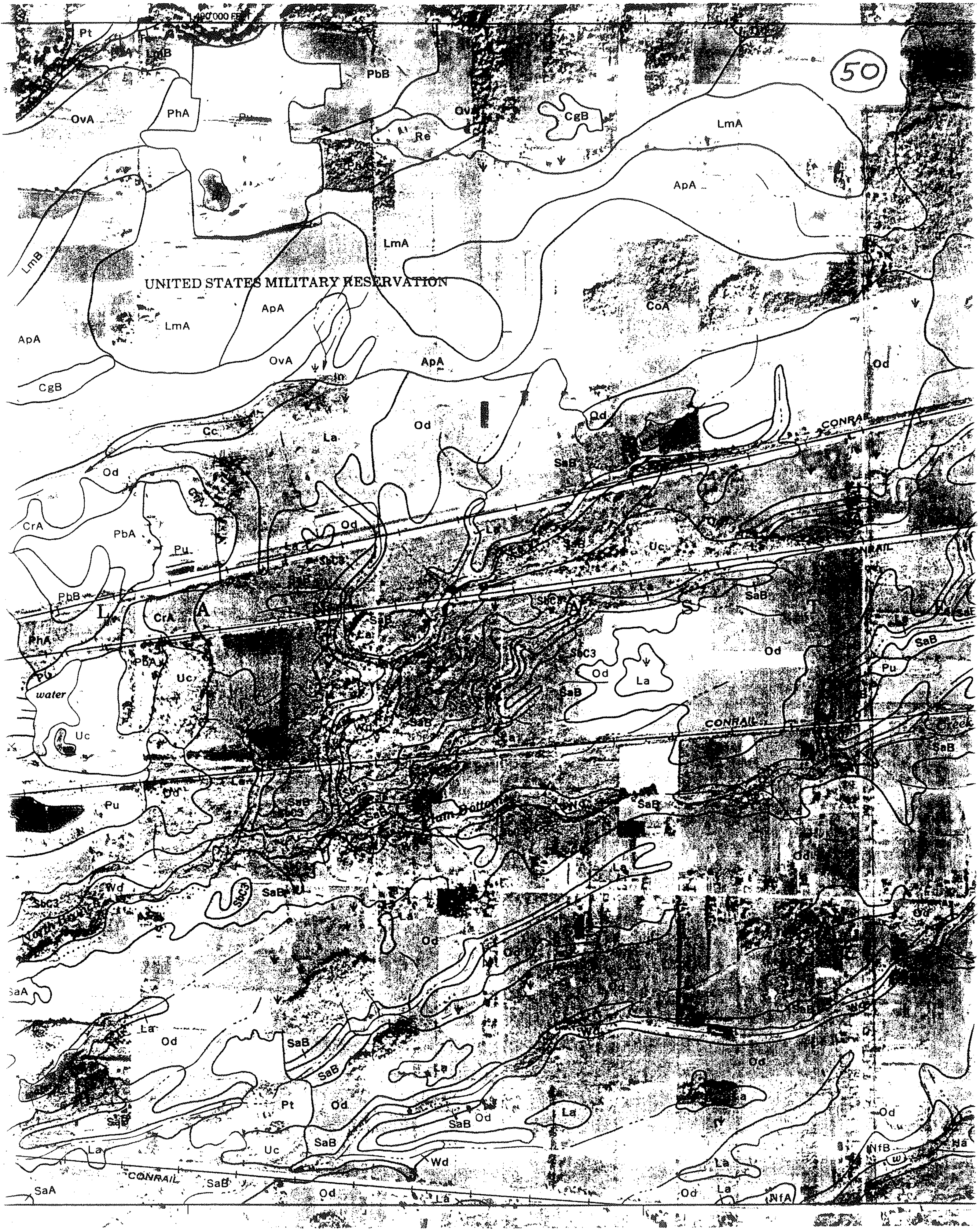
United States
Department of
Agriculture

Soil
Conservation
Service

In Cooperation with
the Cornell University
Agricultural
Experiment Station

Soil Survey of Erie County, New York




50
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Mud Bottom
SaA
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NfB
Ha
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w

SOIL LEGEND

The publication symbol consists of letters. The first letter always a capital, is the initial letter of the mapping unit name. The second letter is a small letter. The third letter, always a capital A, B, C, D, E, or F, indicates the slope. Symbols without a slope letter are those of nearly level soils. A final number, 3, shows that the soil is severely eroded.

SYMBOL	NAME
AlA	Allard silt loam, 0 to 3 percent slopes
AlB	Allard silt loam, 3 to 8 percent slopes
AmA	Alton fine gravelly loam, 0 to 3 percent slopes
AmB	Alton fine gravelly loam, 3 to 8 percent slopes
AmC	Alton fine gravelly loam, 8 to 15 percent slopes
AnB	Alton gravelly loam, silty substratum, 3 to 8 percent slopes
AnC	Alton gravelly loam, silty substratum, 8 to 15 percent slopes
AoA	Angola silt loam, 0 to 3 percent slopes
AoB	Angola silt loam, 3 to 8 percent slopes
ApA	Appleton silt loam, 0 to 3 percent slopes
ApB	Appleton silt loam, 3 to 8 percent slopes
ArB	Arkport very fine sandy loam, 3 to 8 percent slopes
ArC	Arkport very fine sandy loam, 8 to 15 percent slopes
ArD	Arkport very fine sandy loam, 15 to 25 percent slopes
ArE	Arkport very fine sandy loam, 25 to 40 percent slopes
AuC	Aurora shaly silt loam, 8 to 15 percent slopes
Be	Beaches
BlA	Benson very cherty loam, 0 to 3 percent slopes
BlB	Benson very cherty loam, 3 to 8 percent slopes
BgC	Benson very cherty loam, very rocky, 8 to 15 percent slopes
BnB	Benson-Rock outcrop complex, 3 to 8 percent slopes
BlA	Blasdell shaly silt loam, 0 to 3 percent slopes
BlB	Blasdell shaly silt loam, 3 to 8 percent slopes
BlC	Blasdell shaly silt loam, 8 to 15 percent slopes
BlD	Blasdell shaly silt loam, 15 to 25 percent slopes
BrA	Brockport silty clay loam, 0 to 3 percent slopes
BrB	Brockport silty clay loam, 3 to 8 percent slopes
Ca	Canadice silt loam
Cb	Canadice silt loam, shaly till substratum
Cc	Canandaigua silt loam
Cd	Canandaigua mucky silt loam
CeA	Castile gravelly loam, 0 to 3 percent slopes
CeB	Castile gravelly loam, 3 to 8 percent slopes
CfB	Cayuga silt loam, 3 to 8 percent slopes
CfC	Cayuga silt loam, 8 to 15 percent slopes
CgB	Cazenovia silt loam, 3 to 8 percent slopes
CgC	Cazenovia silt loam, 8 to 15 percent slopes
Ch	Cheektowaga fine sandy loam
CkA	Chenango gravelly loam, 0 to 3 percent slopes
CkB	Chenango gravelly loam, 3 to 8 percent slopes
CkC	Chenango gravelly loam, 8 to 15 percent slopes
CkD	Chenango gravelly loam, 15 to 25 percent slopes
ClA	Chenango channery silt loam, fan, 0 to 3 percent slopes
ClB	Chenango channery silt loam, fan, 3 to 8 percent slopes
CmE	Chenango and Palmyra soils, 25 to 40 percent slopes
Cn	Chippewa silt loam
CoA	Churchville silt loam, 0 to 3 percent slopes
CoB	Churchville silt loam, 3 to 8 percent slopes
CrA	Claverack loamy fine sand, 0 to 3 percent slopes
CrB	Claverack loamy fine sand, 3 to 8 percent slopes
CsA	Collamer silt loam, 0 to 3 percent slopes
CsB	Collamer silt loam, 3 to 8 percent slopes
CsC	Collamer silt loam, 8 to 15 percent slopes
CtB	Collamer silt loam, till substratum, 3 to 8 percent slopes
CuB	Colonie loamy fine sand, 3 to 8 percent slopes
CuC	Colonie loamy fine sand, 8 to 15 percent slopes
Cv	Cosad loamy fine sand
DaB	Danley silt loam, 3 to 8 percent slopes
DaC	Danley silt loam, 8 to 15 percent slopes
DaD	Danley silt loam, 15 to 25 percent slopes
DbA	Darien silt loam, 0 to 3 percent slopes
DbB	Darien silt loam, 3 to 8 percent slopes
DbC	Darien silt loam, 8 to 15 percent slopes
DcB	Darien silt loam, silty substratum, 3 to 8 percent slopes
DdA	Derb silt loam, 0 to 3 percent slopes
DdB	Derb silt loam, 3 to 8 percent slopes
DdC	Derb silt loam, 8 to 15 percent slopes
Dp	Dumps
Du	Dumps, slag
Ed	Edwards muck
ElA	Elnora loamy fine sand, 0 to 3 percent slopes
ElB	Elnora loamy fine sand, 3 to 8 percent slopes
ErA	Erie channery silt loam, 0 to 3 percent slopes
ErB	Erie channery silt loam, 3 to 8 percent slopes
ErC	Erie channery silt loam, 8 to 15 percent slopes
FaA	Farmington cherty loam, 0 to 3 percent slopes
FaB	Farmington cherty loam, 3 to 8 percent slopes
FbA	Farnham shaly silt loam, 0 to 3 percent slopes
FbB	Farnham shaly silt loam, 3 to 8 percent slopes
FcA	Farnham shaly silt loam, fan, 0 to 3 percent slopes
FcB	Farnham shaly silt loam, fan, 3 to 8 percent slopes
Fu	Fluvaquents and Udifluvents, frequently flooded
GaA	Galen very fine sandy loam, 0 to 3 percent slopes
GaB	Galen very fine sandy loam, 3 to 8 percent slopes
GbB	Galen fine sandy loam, till substratum, 3 to 8 percent slopes
Ge	Getzville silt loam
Ha	Halsey silt loam
Hn	Haplaquolls, ponded
Hm	Hamlin silt loam
HoA	Honeoye loam, 0 to 3 percent slopes
HoB	Honeoye loam, 3 to 8 percent slopes
HrA	Hornell silt loam, 0 to 3 percent slopes
HrB	Hornell silt loam, 3 to 8 percent slopes
HsC	Hornell silt clay loam, 8 to 15 percent slopes
HuB	Hudson silt loam, 3 to 8 percent slopes
HuC	Hudson silt loam, 8 to 15 percent slopes
HvD	Hudson silty clay loam, 15 to 25 percent slopes
HvE	Hudson silty clay loam, 25 to 40 percent slopes
HwD	Hudson gravelly loam, hilly
In	Ilion silt loam
Ke	Kendaia silt loam
La	Lakemont silt loam
Lb	Lakemont mucky silt loam
Lc	Lamson very fine sandy loam
Ld	Lamson mucky very fine sandy loam
LfB	Langford channery silt loam, 3 to 8 percent slopes
LfC	Langford channery silt loam, 8 to 15 percent slopes
LfD	Langford channery silt loam, 15 to 25 percent slopes
LgC	Langford channery silt loam, silty substratum, 8 to 15 percent slopes
LgD	Langford channery silt loam, silty substratum, 15 to 25 percent slopes
LmA	Lima loam, 0 to 3 percent slopes
LmB	Lima loam, 3 to 8 percent slopes
Ly	Lyons silt loam
Lz	Lyons mucky silt loam
MaA	Manlius shaly silt loam, 0 to 3 percent slopes
MaB	Manlius shaly silt loam, 3 to 8 percent slopes
MaC	Manlius shaly silt loam, 8 to 15 percent slopes
MaD	Manlius shaly silt loam, 15 to 25 percent slopes
MbE	Manlius very shaly silt loam, 25 to 35 percent slopes
MbF	Manlius very shaly silt loam, 35 to 50 percent slopes
McB	Mardin silt loam, 3 to 8 percent slopes
McC	Mardin silt loam, 8 to 15 percent slopes
MdB	Mardin channery silt loam, 3 to 8 percent slopes
MdC	Mardin channery silt loam, 8 to 15 percent slopes
MdD	Mardin channery silt loam, 15 to 25 percent slopes
MeF	Mardin-Valois complex, 25 to 50 percent slopes
MfA	Marilla shaly silt loam, 0 to 3 percent slopes
MfB	Marilla shaly silt loam, 3 to 8 percent slopes
MfC	Marilla shaly silt loam, 8 to 15 percent slopes
Mg	Middlebury silt loam
Mh	Minoa very fine sandy loam
Ne	Newstead loam
NfA	Niagara silt loam, 0 to 3 percent slopes
NfB	Niagara silt loam, 3 to 8 percent slopes
Ng	Niagara silt loam, fan
Nh	Niagara silt loam, till substratum
Od	Odessa silt loam
Oe	Odessa Lakemont silt loams
OrA	Orpark silty clay loam, 0 to 3 percent slopes
OrB	Orpark silty clay loam, 3 to 8 percent slopes
OrC	Orpark silty clay loam, 8 to 15 percent slopes
OvA	Ovid silt loam, 0 to 3 percent slopes
OvB	Ovid silt loam, 3 to 8 percent slopes
Pa	Palms muck
PbA	Palmyra gravelly loam, 0 to 3 percent slopes
PbB	Palmyra gravelly loam, 3 to 8 percent slopes
Pc	Patchin silt loam
PhA	Phelps gravelly loam, 0 to 3 percent slopes
PhB	Phelps gravelly loam, 3 to 8 percent slopes
Pt	Pits, borrow
Pu	Pits, gravel
Qu	Quarries
RaA	Raynham silt loam, 0 to 3 percent slopes
RaB	Raynham silt loam, 3 to 8 percent slopes
Re	Red Hook silt loam
RlA	Remsen silty clay loam, 0 to 3 percent slopes
RlB	Remsen silty clay loam, 3 to 8 percent slopes
RlC	Remsen silty clay loam, 8 to 15 percent slopes
RgA	Rhinebeck silt loam, 0 to 3 percent slopes
RgB	Rhinebeck silt loam, 3 to 8 percent slopes
RhC3	Rhinebeck silty clay loam, 8 to 15 percent slopes, severely eroded
RkA	Rhinebeck gravelly loam, 0 to 3 percent slopes
RkB	Rhinebeck gravelly loam, 3 to 8 percent slopes
RmA	Rhinebeck silty clay loam, stratified substratum, 0 to 3 percent slopes
RmB	Rhinebeck silty clay loam, stratified substratum, 3 to 8 percent slopes
Ro	Rock outcrop
SaA	Schoharie silt loam, 0 to 3 percent slopes
SaB	Schoharie silt loam, 3 to 8 percent slopes
SbC3	Schoharie silty clay loam, 8 to 15 percent slopes, severely eroded
ScD	Schuyler silt loam, 15 to 25 percent slopes
ScE	Schuyler silt loam, 25 to 40 percent slopes
Sd	Scio silt loam
Sw	Swormville clay loam
Te	Teel silt loam
To	Tioga silt loam
Uc	Udorthents, smoothed
Ud	Urban land
UeB	Urban land-Benson complex, 3 to 6 percent slopes
Uf	Urban land-Canandaigua complex
Ug	Urban land-Cayuga complex
Uh	Urban land-Churchville complex
Uk	Urban land-Claverack complex
UmA	Urban land-Collamer complex, 1 to 6 percent slopes
UnB	Urban land-Colonie complex, 3 to 6 percent slopes
Uo	Urban land-Cosad complex
Up	Urban land-Galen complex
UrA	Urban land-Lima complex, 1 to 6 percent slopes
Us	Urban land-Niagara complex
Ut	Urban land-Odessa complex
Uu	Urban land-Schoharie complex
Uv	Urban land-Swormville complex
Uw	Urban land-Teel complex
Ux	Urban land-Wassaic complex
VaB	Valois gravelly silt loam, 3 to 8 percent slopes
VaC	Valois gravelly silt loam, 8 to 15 percent slopes
VaD	Valois gravelly silt loam, 15 to 25 percent slopes
VbA	Varysburg gravelly loam, 0 to 3 percent slopes
VbB	Varysburg gravelly loam, 3 to 8 percent slopes
VbC	Varysburg gravelly loam, 8 to 15 percent slopes
VbD	Varysburg gravelly loam, 15 to 25 percent slopes
VbE	Varysburg gravelly loam, 25 to 40 percent slopes
VoA	Volusia silt loam, 0 to 3 percent slopes
VoB	Volusia silt loam, 3 to 8 percent slopes
VpA	Volusia channery silt loam, 0 to 3 percent slopes
VpB	Volusia channery silt loam, 3 to 8 percent slopes
WaA	Wassaic silt loam, 0 to 3 percent slopes
WaB	Wassaic silt loam, 3 to 8 percent slopes
WbB	Wassaic very stony loam, 3 to 8 percent slopes
WcE	Wassaic-Rock outcrop complex, 25 to 40 percent slopes
Wd	Wayland silt loam
WeB	Williamson silt loam, 3 to 8 percent slopes
WeC	Williamson silt loam, 8 to 15 percent slopes

GROUND-WATER RESOURCES OF THE ERIE-NIAGARA BASIN, NEW YORK

Prepared for the
Erie-Niagara Basin Regional Water Resources
Planning Board

by

A. M. La Sala, Jr.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
in cooperation with
THE NEW YORK STATE CONSERVATION DEPARTMENT
DIVISION OF WATER RESOURCES

STATE OF NEW YORK
CONSERVATION DEPARTMENT
WATER RESOURCES COMMISSION

Basin Planning Report ENB-3
1968

Gebhart copy (52)

RESTRICTED-USE LANDFILL SITE

For

LANCASTER RECLAMATION COMPANY
(Formerly Ferry Concrete Construction Co., Inc.)
403 Pavement Road
Lancaster, NY 14086

By

WENDEL ENGINEERS, P.C.
Consulting Engineers/Planners/Surveyors
7405 Canal Road
Lockport, New York

Project No. 1911-2
May 1979

53

[illegible]

WENDEL
ENGINEERS P.C.
consulting engineers / planners / surveyors
7405 CANAL ROAD LOCKPORT, NEW YORK 14094 716-433-5993 716-625-8228

February 13, 1980

RE: Lancaster Reclamation Company
Facility No. 15 508
Permit Conditions
WE Proj. No. 1911-2

New York State
Department of Environmental Conservation
584 Delaware Ave.
Buffalo, NY 14202

ATTENTION: Mr. John L. Beecher,
Associate Chemical Engineer

Gentlemen:

Please be advised that the Special Condition - Operations No. 1 for the permit issued October 25, 1979 has been met.

The monitoring well was installed in the approximate location shown on the plan Sheet 3 of 3 and in accordance with the monitor well detail shown on the same sheet. Initial samples of water showed a high pH. Additional pumping was accomplished and water samples were taken from the well as well as from four (4) other locations on the site. A copy of the results of the analysis of these samples are included herewith.

You will note that the results of sample point 1, the new monitor well show a high pH as well as a high concentration of phenols. Since one of the other samples revealed similar results we are concerned that the sample taken may reflect a surface run-off water through the crushed stone. We have suggested to the Operator that he install an impermeable clay cap at the ground surface around the well casing to eliminate surface run-off entering the well. When this is accomplished, further samples will be taken and analyzed.

[illegible]

yes.

We feel that both high valves will drop off with the elimination of surface run-off.

If you have any questions, please call.

WENDEL ENGINEERS, P.C.

James A. Huffcut

James A. Huffcut, P.E., L.S.
Vice President - Engineering

Enc.
JAH:jh
xc: Lancaster Reclamation Co.

APPENDIX A

FIELD PROCEDURES

APPENDIX A

FIELD PROCEDURES

These procedures have been utilized by Engineering-Science, Inc. field teams during the Phase II field investigations. These procedures are taken from the NYSDEC-approved "Quality Assurance Project Plan for the Phase II Engineering Investigations and Evaluations at Inactive Hazardous Waste Disposal Sites", dated June, 1987.

The following procedures are contained in this Appendix: drilling overburden and bedrock, monitoring well installations, well development, and sampling program, which includes groundwater sampling, surface water sampling, sediment sampling, and air monitoring. Procedures for performing the geophysical surveys are presented in Appendix B.

DRILLING OVERBURDEN AND BEDROCK

The procedures utilized in drilling overburden and bedrock were taken from "Guidelines for Exploratory Boring, Monitoring Wells Installation, and Documentation of these Activities", as promulgated by NYSDEC. These procedures, as found in the project Work Plan and Quality Assurance Plan, were modified in the field with NYSDEC approval, in response to site-specific conditions encountered.

Prior to beginning each well boring, the downhole drilling equipment and tools were steam-cleaned. During the progress of this work, the downhole equipment and tools were generally placed on wooden pallets or sheets of plastic to limit cross-contamination.

Drilling was accomplished with a CME-55 truck-mounted drilling rig. Generally, the overburden was drilled with 4 1/4-inch inside diameter hollow-stem augers. As drilling conditions became more difficult, 3-inch inside diameter flush-joint casing was used. When the 3-inch casing was used, clean water from a municipal supply was used as the drilling fluid. In general, soil samples were collected at intervals of five feet and visually classified in terms of moisture content, color, texture, density and structure. The soil samples were also screened with a Photovac Tip-II photoionization detector to determine the presence of volatile organic compounds. The soil cuttings were also monitored with the Photovac. Since no readings in excess of 5 ppm above background were recorded, the soil materials were left on the ground surface.

Bedrock was cored and sampled utilizing an Nx core barrel and clean water from a municipal supply. The core was placed in wooden boxes and classified in terms of lithology, color, structure and competence.

MONITORING WELL INSTALLATION

All wells were constructed of two-inch inside diameter PVC riser pipe and .010-inch slotted screen. Depending on the location, well screens were 5 to 10 feet in length. On several wells, a two-foot sump constructed with PVC riser pipe was attached to the bottom of the screen to limit blockage of the screen by sedimentation. All well materials were steam-cleaned prior to insertion in the borehole.

Once the PVC well materials were set in place through the augers or casing, quartz sand backfill was placed around the well screen with tremie, to a point one to two feet above the screen. For all other well installations when a running sand condition was encountered, the natural formation was allowed to collapse around the well screen.

A bentonite seal was placed above the screen to isolate the screened zone. For deeper well installations, a bentonite slurry was placed above the sand pack with tremie. For the shallow well installations, a bentonite pellet seal two feet thick was placed with tremie. Above the bentonite pellets or slurry, a cement/bentonite grout was placed up to ground surface. A vented PVC cap was placed on the well pipe, and the well was secured with the installation of a locking 6-inch inside diameter steel protective casing.

WELL DEVELOPMENT

Once the well installation was complete, the well materials were allowed to set-up for a period of approximately 12 hours or more. Each well was then developed by removing water until the water was less than 100 Jackson Turbidity units, or was visually sediment-free.

Development methods included bailing, air-lift pumping, and centrifugal pumping. For the air-lift method, the discharge of the air line was first monitored with a Photovac to ensure readings were not above background. An oil-separating device was placed on the discharge line of the compressor. The air line was steam-cleaned prior to placement in the well. Once the air line was in place just above the screened section, the air pressure was increased until the water could be lifted out of the top of the well casing. Under all development methods, the wells were periodically surged to aid in removing sediment, and all downhole equipment was steam-cleaned prior to insertion in the wells.

SAMPLING PROGRAM

The sampling program at the Lancaster Reclamation site consisted of groundwater, surface water, and sediment sampling. Samples were collected in accordance with the Quality Assurance Project Plan. In addition to the media sampled, several types of blanks were collected. A trip blank consisting of organic-free water was prepared by the laboratory and accompanied the sample bottle shipment. This blank provides a measure of the impact of the bottle preparation procedures and shipment on the samples. The trip blanks were analyzed for volatile organic compounds. A wash blank was collected by pouring organic-free water, provided by the laboratory or a commercial distributor, over the sampling equipment as a measure of the field decontamination procedures. Typically, the wash blank was assigned a non-existent well designation and was analyzed for volatile organic compounds. An atmospheric blank was also collected and analyzed for volatile organic compounds. The atmospheric blank consists of bottles filled with organic-free water, prepared by the laboratory. The bottles are opened during sampling as a measure of the impact of airborn organic contaminants on the sample integrity.

Prior to sampling at each location, the sampling equipment was decontaminated by successively rinsing with detergent (Alconox) water, methanol, and distilled water. After collection of the water samples, field tests were performed on an additional sample to determine pH, temperature and specific conductivity. Field sampling records are presented in Appendix D.

Groundwater Sampling

Prior to collecting the groundwater samples, the static water level in the well was recorded from the top of the two-inch PVC casing, and at least three well volumes of water were removed with a teflon bailer. The sample bottles were then filled using the same teflon bailer. Dedicated polypropylene rope was used to bail each well.

Surface Water Sampling

Surface water samples were collected by dipping a stainless steel beaker beneath the water surface, and pouring the sample into the sample bottles.

Sediment Sampling

Sediment samples were collected with a long-handled stainless steel spoon at the same location that the surface water samples were collected.

AIR QUALITY MONITORING

Air quality monitoring for volatile organic compounds with an Photovac Tip-II photoionization meter was implemented during the geophysical surveys, drilling and well installations and sampling events. Monitoring was generally performed as a health and safety measure. The meter was calibrated on a daily basis before use with a 100 ppm isobutylene standard. The intake of the instrument was held at head height for 30 seconds and the reading was recorded. Vapors emanating from surface water were measured by holding the intake 6 to 12 inches above the water for 30 seconds. During drilling, the split-spoon soil samples were held within several inches of the intake to test for volatile organic vapors emanating from the soil samples. The air in the completed well was monitored by placing the intake over the well opening and removing the PVC cap. The intake was then placed into the well opening and readings were recorded.

APPENDIX B

GEOPHYSICAL SURVEY METHODS AND RESULTS

APPENDIX B

GEOPHYSICAL SURVEY METHODS AND RESULTS

GEOPHYSICAL SURVEY METHODOLOGY

A geophysical investigation was conducted at the Lancaster Reclamation site in the Town of Lancaster, Erie County, New York. This investigation was part of the Phase II (Third Round) engineering investigations and evaluations at inactive hazardous waste disposal sites in the State of New York, conducted by ES under a contract with the New York State Department of Environmental Conservation (DEC).

Electrical Resistivity (ER)

A Bison model 2350B resistivity meter was used for the electrical resistivity survey. This instrument has a resolution of one part in 10,000 maximum scale reading and an accuracy of ±2 percent per range setting. Typical measurements are indicative of the electrical resistance of the earth (in ohm-meters of ohm-feet) to the conductance of an induced electric current through metal probes, or electrodes, placed in the ground. As a general example of the resistive nature of the subsurface, a fresh-water aquifer will exhibit a relatively high resistivity, compared to a fresh-water aquifer containing polar organic molecules and/or ionized metals which exhibit a relatively low resistivity.

The ER surveys performed consisted of sounding and profiles. Resistivity soundings are indicative of vertical resistivity variations in the earth. Resistivity profiles are indicative of lateral variations in the earth's resistivity.

The ER soundings utilize the Modified Wenner Electrode Array (Carrington and Watson, 1981). The electrode configuration for this method is depicted in Figure 1. In this method, the current electrodes, located furthest from the center of the array, are kept stationary while the potential electrodes, those closest to the center of the array, are moved away from the center in equal increments.

The potential electrode distance closely approximates the depth of investigation into the subsurface. For example, a sounding with a total potential electrode distance of 30 feet would indicate resistivity values at approximately 30 feet below the ground surface.

The ER profiles utilized the Standard Wenner Array (Bison, 1975). The electrode configuration for this method is depicted in Figure 2. In this method, the current and potential electrodes are spaced at equal distances from one another. The depth of investigation is a plane of the subsurface approximately three-fourths to one times the electrode spacing. For example, an electrode spacing of 50 feet in the Wenner Array investigated a plane of the subsurface approximately 38 to 50 feet deep.

SITE SPECIFIC METHODS AND RESULTS

The objectives of the geophysical survey at the Lancaster Reclamation site included defining the presence of detectable conductive plumes, delineating significant discontinuities, obtaining supplemental information on geology, and aiding in identifying locations for the placement of borings and monitoring wells.

Geophysical survey techniques utilized at the site were electrical resistivity (ER) soundings and profiles. The objectives of the site investigation provided the basis for the type of geophysical survey employed at the site.

This section describes the procedures used in conducting the geophysical survey at the Lancaster Reclamation site and presents the field survey results. The findings of this study are based on interpretations of data acquired from indirect subsurface investigation methods and are therefore preliminary and subject to verification by direct methods.

Electrical Resistivity Survey - Soundings

This survey consisted of five soundings. The locations of these soundings are shown on Figure 3. Four soundings were conducted to a depth of 100 feet at the four proposed well locations. A fifth sounding was performed to a depth of 30 feet over one of the on-site disposal cells. Sounding S-1 was performed at the eastern property line of the site, along the access road. Sounding S-2 was performed in the south-western portion of the site near the equipment storage area. Sounding S-3 was conducted off the southwest corner of the site, in the Conrail right-of-way. Sounding S-4 was also performed off the southern portion of the site, approximately 525 feet eastward along the Conrail right-of-way. Sounding S-5 was performed over the southwesternmost on-site disposal cell. The purpose of the soundings was to investigate variations in subsurface resistivity and to relate these variations to subsurface lithology, and past activities in the area. In addition, the soundings were expected to aid in determining the depth to bedrock. This information is useful in determining monitoring well placement.

The electrical resistivity sounding results are tabulated in Tables 1 through 5. The sounding graphs are shown in Figures 4 through 8. Due to the lack of detailed boring logs, the interpretation of the soundings are approximate based upon available information. The influence of lateral variations in resistivity has not been assessed for this site because perpendicular sounding lines were not practical due to topographical limitations. In general, the sounding data indicate that across the site and in adjacent off-site areas to the south, bedrock may be encountered at a depth of 42 to 58 feet. Bedrock is slightly deeper on-site, (56 to 58 feet) than along the Contrail right-of-way, (42 to 44 feet). Fill within the southwesternmost on-site disposal cell may exist to a depth of 6 feet.

Electrical Resistivity Survey - Profiles

The locations at which 23 profiles were performed are shown on Figure 3. The purpose of the profiles was to investigate the lateral variations in ground resistivity, and in particular, attempt to identify potential conductive contaminant plumes which may exist beneath the site. The electrical resistivity profile data are summarized in Table 6. The profile data were contoured to identify areas with low resistivity anomalies. Low resistivity areas may indicate a conductive contaminant plume in the subsurface. The contoured profile data are presented in Figures 9 through 12. The profiles were performed to depths of 20, 50, 75, and 100 feet.

Two anomalous areas of low resistivity were identified at the 20-foot depth along the southern portion of the site (Figure 9). The resistivity values in these areas ranged between 54 and 77 ohm-feet. A narrow band of moderate resistivity anomalies were recorded south and southeast of the disposal cell area at the 50-foot depth (Figure 10). The resistivity values in this area ranged between 106 and 193 ohm-feet. This anomalous band also is evident at the 75-foot depth (Figure 11). These anomalies may be associated with conductive contaminant plumes originating in the southernmost disposal cells. The small anomalous area in the southeast corner of the site shown on the 100-foot profile map has a value of 155 ohm-feet (Figure 12).

Recommendations

The following recommendations were made at the completion of the geophysical surveys, prior to initiating the monitoring well installations.

- The placement of the four monitoring well couplets as proposed in the work plan appears appropriate to intercept a conductive plume which may exist at the southwestern and southern portions of the site. However, an additional pair of wells (GW-5a and 5b) located in the southeast corner of the site are recommended to provide more complete downgradient coverage (Figure 13). Low to moderate resistivity values were recorded at depth in this area.

- Downgradient well locations GW-3 and GW-4 should be relocated due to buried telephone cables and other utilities off the southwest corner of the site, and along the railroad right-of-way. Installation of wells along the site road is recommended.

- Groundwater analyses should be performed on the samples from the existing deep and shallow well, if the construction details of the wells can be confirmed. Depth to the groundwater in the deep well inside the barn was measured at 24.2 feet below the top of the steel casing.

- The work plan proposes a 20-foot depth for the overburden wells. This estimate is recommended to be increased to at least 30 feet to compensate for the change in elevation of the relocated downgradient wells (GW-3, GW-4 and proposed GW-5) near the site access road.

- The depth of the bedrock interface wells was estimated at 80 feet in the work plan. Based on the geophysical results, these wells may be on the order of 55 to 75 feet deep.

TABLE 1. LANCASTER RECLAMATION SOUNDING 1

p-pi spacing (feet)	dial reading (ohms)	scale multiplier	corrected reading (ohms)	*k (feet)	apparent resistivity (ohm-ft)
2	15.50	0.01	0.16	2499.80	387.47
4	29.50	0.01	0.30	1249.50	368.60
6	37.50	0.01	0.38	832.60	312.23
8	50.00	0.01	0.50	624.00	312.00
10	62.50	0.01	0.63	498.80	311.75
12	74.50	0.01	0.75	415.20	309.32
14	86.50	0.01	0.87	355.40	307.42
16	99.00	0.01	0.99	310.50	307.40
18	111.50	0.01	1.12	275.50	307.18
20	126.00	0.01	1.26	247.50	311.85
22	136.50	0.01	1.37	224.50	306.44
24	147.00	0.01	1.47	205.30	301.79
26	158.50	0.01	1.59	189.10	299.72
28	171.00	0.01	1.71	175.10	299.42
30	181.00	0.01	1.81	162.90	294.85
32	198.00	0.01	1.98	152.30	301.55
34	206.50	0.01	2.07	142.80	294.88
36	216.50	0.01	2.17	134.40	290.98
38	229.50	0.01	2.30	126.80	291.01
40	245.00	0.01	2.45	120.00	294.00
42	257.00	0.01	2.57	113.80	292.47
44	268.50	0.01	2.69	108.10	290.25
46	282.50	0.01	2.83	102.90	290.69
48	297.50	0.01	2.98	98.20	292.15
50	308.00	0.01	3.08	93.80	288.90
52	322.50	0.01	3.23	89.70	289.28
54	336.50	0.01	3.37	85.80	288.72
56	348.50	0.01	3.49	82.30	286.82
58	363.50	0.01	3.64	79.00	287.17
60	378.50	0.01	3.79	75.80	286.90
62	390.00	0.01	3.90	72.90	284.31
64	402.50	0.01	4.03	70.10	282.15
66	417.50	0.01	4.18	67.50	281.81
68	431.50	0.01	4.32	65.00	280.48
70	441.50	0.01	4.42	62.70	276.82
72	457.50	0.01	4.58	60.40	276.33
74	472.00	0.01	4.72	58.30	275.18
76	490.00	0.01	4.90	56.30	275.87
78	504.50	0.01	5.05	54.40	274.45
80	518.50	0.01	5.19	52.50	272.21
82	533.00	0.01	5.33	50.70	270.23
84	548.00	0.01	5.48	49.00	268.52
86	564.00	0.01	5.64	47.40	267.34
88	579.50	0.01	5.80	45.80	265.41
90	596.50	0.01	5.97	44.30	264.25
92	616.50	0.01	6.17	42.80	263.86
94	637.00	0.01	6.37	41.40	263.72
96	671.50	0.01	6.72	40.10	269.27
98	680.50	0.01	6.81	38.80	264.03
100	695.50	0.01	6.96	37.50	260.81

TABLE 2: LANCASTER RECLAMATION SOUNDING 2

p-pi spacing (feet)	dial reading (ohms)	scale multiplier	corrected reading (ohms)	*k (feet)	apparent resistivity (ohm-ft)
2	4.50	0.10	0.45	2499.80	1124.91
4	5.00	0.10	0.50	1249.50	624.75
6	13.00	0.10	1.30	832.60	1082.38
8	9.00	0.10	0.90	624.00	561.60
10	9.00	0.10	0.90	498.80	448.92
12	10.00	0.10	1.00	415.20	415.20
14	10.00	0.10	1.00	355.40	355.40
16	12.00	0.10	1.20	310.50	372.60
18	18.00	0.10	1.80	275.50	495.90
20	14.00	0.10	1.40	247.50	346.50
22	14.00	0.10	1.40	224.50	314.30
24	17.50	0.10	1.75	205.30	359.28
26	16.00	0.10	1.60	189.10	302.56
28	17.50	0.10	1.75	175.10	306.43
30	18.00	0.10	1.80	162.90	293.22
32	19.00	0.10	1.90	152.30	289.37
34	26.50	0.10	2.65	142.80	378.42
36	24.00	0.10	2.40	134.40	322.56
38	24.50	0.10	2.45	126.80	310.66
40	25.50	0.10	2.55	120.00	306.00
42	26.50	0.10	2.65	113.80	301.57
44	28.00	0.10	2.80	108.10	302.68
46	30.50	0.10	3.05	102.90	313.85
48	32.00	0.10	3.20	98.20	314.24
50	37.00	0.10	3.70	93.80	347.06
52	40.50	0.10	4.05	89.70	363.28
54	48.50	0.10	4.85	85.80	416.13
56	65.00	0.10	6.50	82.30	534.95
58	63.50	0.10	6.35	79.00	501.65
60	66.00	0.10	6.60	75.80	500.28
62	73.00	0.10	7.30	72.90	532.17
64	78.00	0.10	7.80	70.10	546.78
66	83.50	0.10	8.35	67.50	563.63
68	88.50	0.10	8.85	65.00	575.25
70	95.50	0.10	9.55	62.70	598.79
72	104.50	0.10	10.45	60.40	631.18
74	110.50	0.10	11.05	58.30	644.22
76	112.00	0.10	11.20	56.30	630.56
78	118.50	0.10	11.85	54.40	644.64
80	131.00	0.10	13.10	52.50	687.75
82	136.00	0.10	13.60	50.70	689.52
84	139.50	0.10	13.95	49.00	683.55
86	144.50	0.10	14.45	47.40	684.93
88	148.50	0.10	14.85	45.80	680.13
90	152.00	0.10	15.20	44.30	673.36
92	156.50	0.10	15.65	42.80	669.82
94	158.50	0.10	15.85	41.40	656.19
96	162.50	0.10	16.25	40.10	651.63
98	165.50	0.10	16.55	38.80	642.14
100	171.50	0.10	17.15	37.50	643.13

TABLE 3: LANCASTER RECLAMATION SOUNDING 3

p-pl spacing (feet)	dial reading (ohms)	scale multiplier	corrected reading (ohms)	*k (feet)	apparent resistivity (ohm-ft)
2	12.50	0.01	0.13	2499.80	312.48
4	34.50	0.01	0.35	1249.50	431.08
6	49.00	0.01	0.49	832.60	407.97
8	62.50	0.01	0.63	624.00	390.00
10	74.50	0.01	0.75	498.80	371.61
12	96.50	0.01	0.97	415.20	400.67
14	118.00	0.01	1.18	355.40	419.37
16	134.00	0.01	1.34	310.50	416.07
18	147.00	0.01	1.47	275.50	404.99
20	162.00	0.01	1.62	247.50	400.95
22	183.00	0.01	1.83	224.50	410.84
24	195.50	0.01	1.96	205.30	401.36
26	220.50	0.01	2.21	189.10	416.97
28	243.00	0.01	2.43	175.10	425.49
30	263.50	0.01	2.64	162.90	429.24
32	278.50	0.01	2.79	152.30	424.16
34	293.00	0.01	2.93	142.80	418.40
36	324.00	0.01	3.24	134.40	435.46
38	335.50	0.01	3.36	126.80	425.41
40	348.00	0.01	3.48	120.00	417.60
42	364.00	0.01	3.64	113.80	414.23
44	397.00	0.01	3.97	108.10	429.16
46	410.50	0.01	4.11	102.90	422.40
48	442.50	0.01	4.43	98.20	434.53
50	48.00	0.10	4.80	93.80	450.24
52	48.50	0.10	4.85	89.70	435.05
54	53.00	0.10	5.30	85.80	454.74
56	55.50	0.10	5.55	82.30	456.77
58	55.50	0.10	5.55	79.00	438.45
60	58.50	0.10	5.85	75.80	443.43
62	61.50	0.10	6.15	72.90	448.34
64	62.50	0.10	6.25	70.10	438.12
66	64.00	0.10	6.40	67.50	432.00
68	67.50	0.10	6.75	65.00	438.75
70	68.50	0.10	6.85	62.70	429.50
72	73.50	0.10	7.35	60.40	443.94
74	74.00	0.10	7.40	58.30	431.42
76	74.00	0.10	7.40	56.30	416.62
78	77.50	0.10	7.75	54.40	421.60
80	79.00	0.10	7.90	52.50	414.75
82	82.00	0.10	8.20	50.70	415.74
84	84.50	0.10	8.45	49.00	414.05
86	80.00	0.10	8.00	47.40	379.20
88	86.00	0.10	8.60	45.80	393.88
90	81.50	0.10	8.15	44.30	361.05
92	93.50	0.10	9.35	42.80	400.18
94	91.00	0.10	9.10	41.40	376.74
96	97.50	0.10	9.75	40.10	390.98
98	100.50	0.10	10.05	38.80	389.94
100	102.50	0.10	10.25	37.50	384.38

TABLE 4: LANCASTER RECLAMATION SOUNDING 4

p-pl spacing (feet)	dial reading (ohms)	scale multiplier	corrected reading (ohms)	*k (feet)	apparent resistivity (ohm-ft)
2	19.50	0.10	1.95	2499.80	4874.61
4	12.50	0.10	1.25	1249.50	1561.88
6	9.50	0.10	0.95	832.60	790.97
8	39.50	0.01	0.40	624.00	246.48
10	44.50	0.01	0.45	498.80	221.97
12	54.50	0.01	0.55	415.20	226.28
14	65.50	0.01	0.66	355.40	232.79
16	75.50	0.01	0.76	310.50	234.43
18	79.00	0.01	0.79	275.50	217.65
20	81.50	0.01	0.82	247.50	201.71
22	94.00	0.01	0.94	224.50	211.03
24	99.50	0.01	1.00	205.30	204.27
26	112.00	0.01	1.12	189.10	211.79
28	15.50	0.10	1.55	175.10	271.41
30	15.00	0.10	1.50	162.90	244.35
32	16.00	0.10	1.60	152.30	243.68
34	16.50	0.10	1.65	142.80	235.62
36	17.50	0.10	1.75	134.40	235.20
38	18.50	0.10	1.85	126.80	234.58
40	20.00	0.10	2.00	120.00	240.00
42	22.00	0.10	2.20	113.80	250.36
44	21.00	0.10	2.10	108.10	227.01
46	22.00	0.10	2.20	102.90	226.38
48	22.00	0.10	2.20	98.20	216.04
50	22.50	0.10	2.25	93.80	211.05
52	23.00	0.10	2.30	89.70	206.31
54	23.50	0.10	2.35	85.80	201.63
56	24.50	0.10	2.45	82.30	201.64
58	26.00	0.10	2.60	79.00	205.40
60	27.00	0.10	2.70	75.80	204.66
62	27.50	0.10	2.75	72.90	200.48
64	28.50	0.10	2.85	70.10	199.79
66	29.00	0.10	2.90	67.50	195.75
68	30.00	0.10	3.00	65.00	195.00
70	31.00	0.10	3.10	62.70	194.37
72	32.00	0.10	3.20	60.40	193.28
74	33.00	0.10	3.30	58.30	192.39
76	34.00	0.10	3.40	56.30	191.42
78	34.50	0.10	3.45	54.40	187.68
80	36.50	0.10	3.65	52.50	191.63
82	37.50	0.10	3.75	50.70	190.13
84	38.00	0.10	3.80	49.00	186.20
86	39.00	0.10	3.90	47.40	184.86
88	39.50	0.10	3.95	45.80	180.91
90	41.00	0.10	4.10	44.30	181.63
92	42.50	0.10	4.25	42.80	181.90
94	43.00	0.10	4.30	41.40	178.02
96	44.50	0.10	4.45	40.10	178.45
98	45.50	0.10	4.55	38.80	176.54
100	46.50	0.10	4.65	37.50	174.38

TABLE 5: LANCASTER RECLAMATION SOUNDING 5

p-p1 spacing (feet)	dial reading (ohms)	scale multiplier	corrected reading (ohms)	*k (feet)	apparent resistivity (ohm-ft)
2	4.00	0.10	0.40	224.80	89.92
4	7.00	0.10	0.70	112.00	78.40
6	10.50	0.10	1.05	74.30	78.02
8	13.50	0.10	1.35	55.30	74.66
10	17.00	0.10	1.70	43.80	74.46
12	21.00	0.10	2.10	36.00	75.60
14	24.00	0.10	2.40	30.40	72.96
16	27.00	0.10	2.70	26.10	70.47
18	30.00	0.10	3.00	22.80	68.40
20	34.00	0.10	3.40	20.00	68.00
22	36.50	0.10	3.65	17.70	64.61
24	40.50	0.10	4.05	15.80	63.99
26	44.50	0.10	4.45	14.10	62.75
28	48.50	0.10	4.85	12.60	61.11
30	53.00	0.10	5.30	11.30	59.89

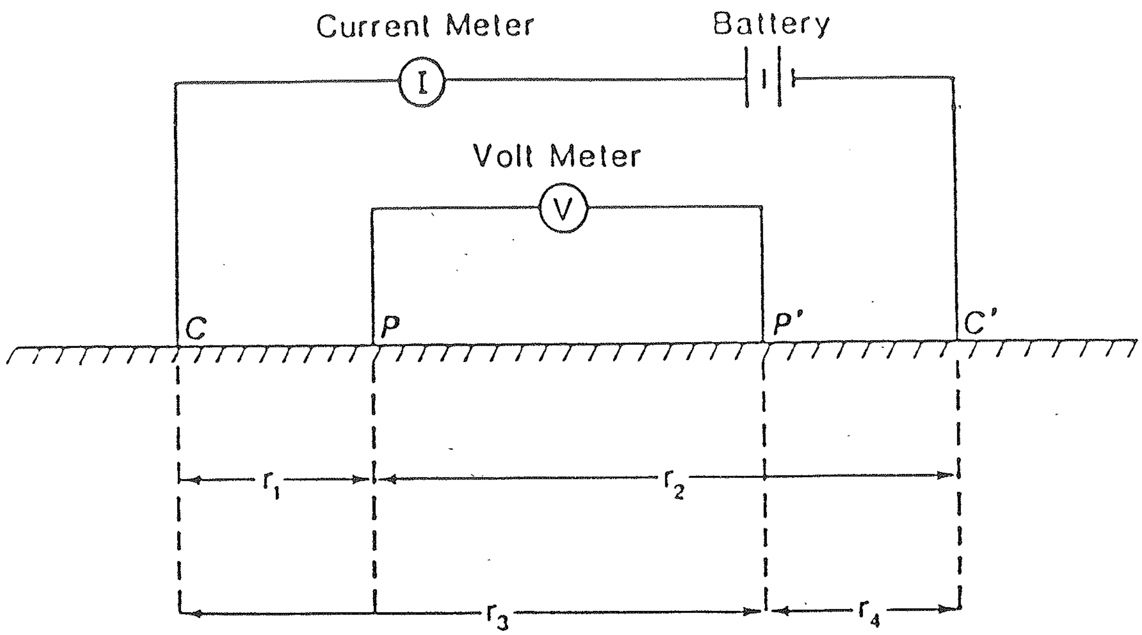
TABLE 6

LANCASTER RECLAMATION

ER PROFILE DATA SUMMARY

(ohm-feet)

Profile Location	Profile Depth 20-Foot	50-Foot	75-Foot	100-Foot
P-1	144	217.5	311.25	430
P-2	159	217.5	303.75	360
P-3	71	192.5	123.75	155
P-4	64	107.5	172.5	430
P-5	54	185	146.25	230
P-6	74	147.5	172.5	260
P-7	104	205	281.25	410
P-8	136	215	288.75	350
P-9	189	232.5	311.25	375
P-10	297	265	337.5	435
P-11	185	275	401.25	490
P-12	198	297.5	420	525
P-13	296	350	438.75	535
P-14	153	195	367.5	460
P-15	136	337.5	468.75	585
P-16	222	347.5	532.5	405
P-17	64	227.5	337.5	465
P-18	151	247.5	660	785
P-19	187	247.5	330	420
P-20	77	145	202.5	245
P-21	167	275	386.25	440
P-22	225	390	345	430
P-23	277	300	412.5	435



P,P' are potential electrode positions
C,C' are current electrode positions

Formula for Apparent Resistivity

$$\rho = (2\pi R)\left[\frac{1}{1/r_1 - 1/r_2 - 1/r_3 + 1/r_4}\right]$$

Where R represents the resistance measured by the ratio V/I in ohms

r_1, r_2, r_3, and r_4 are electrode separation distances

Specifically r_1 is the distance from potential electrode P to current electrode C

r_2 is the distance from potential electrode P to current electrode C'

r_3 is the distance from potential electrode P' to current electrode C

r_4 is the distance from potential electrode P' to current electrode C'

NOTE: The quantity ($2\pi R$) or ($2\pi V/I$) was read directly from the Bison Resistivity meter used.

SOURCE : Carrington & Watson, 1981

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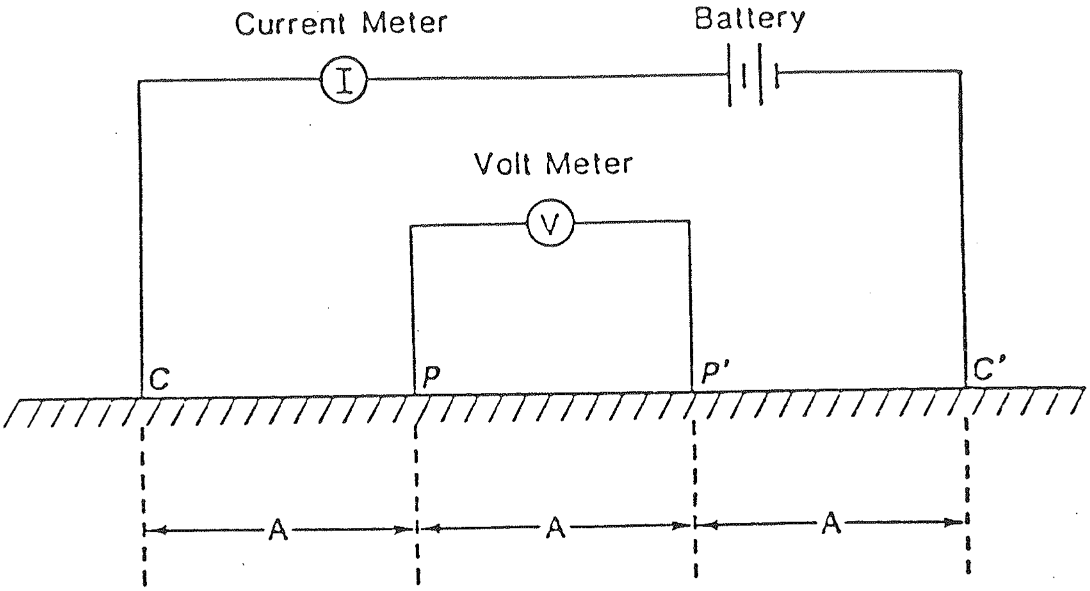
Modified Wenner Array
LANCASTER RECLAMATION

FIGURE 1



P, P' are potential electrode positions
C, C' are current electrode positions

Formula for Apparent Resistivity

$$\rho = A(2\pi R)$$

Where A represents the electrode spacing

R represents the resistance measured by the ratio V/I in ohms

NOTE: The quantity $(2\pi R)$ or $(2\pi V/I)$ was read directly from the Bison resistivity meter used.

SOURCE : Bison, 1975

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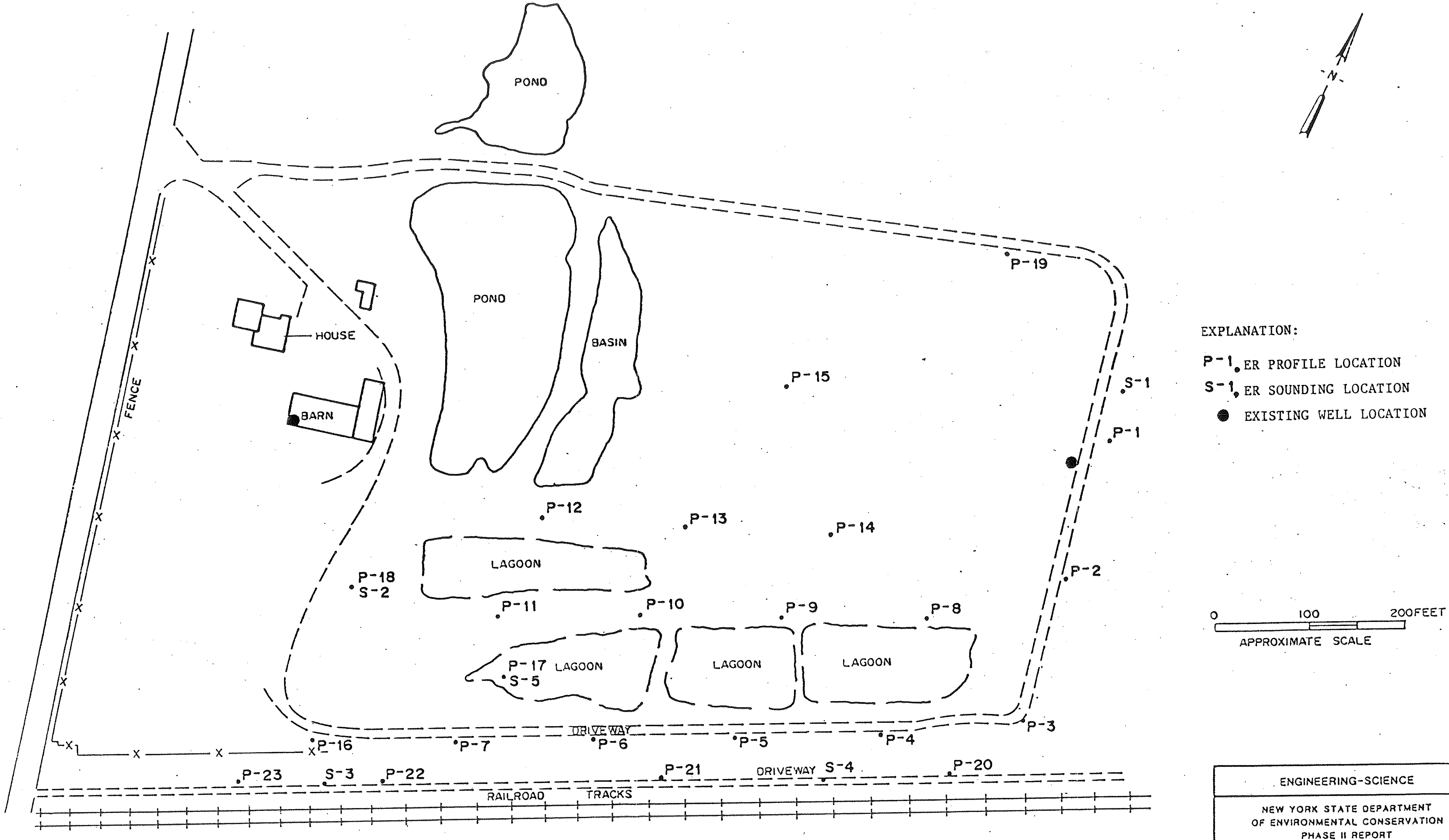
Wenner Array
LANCASTER RECLAMATION

FIGURE 2



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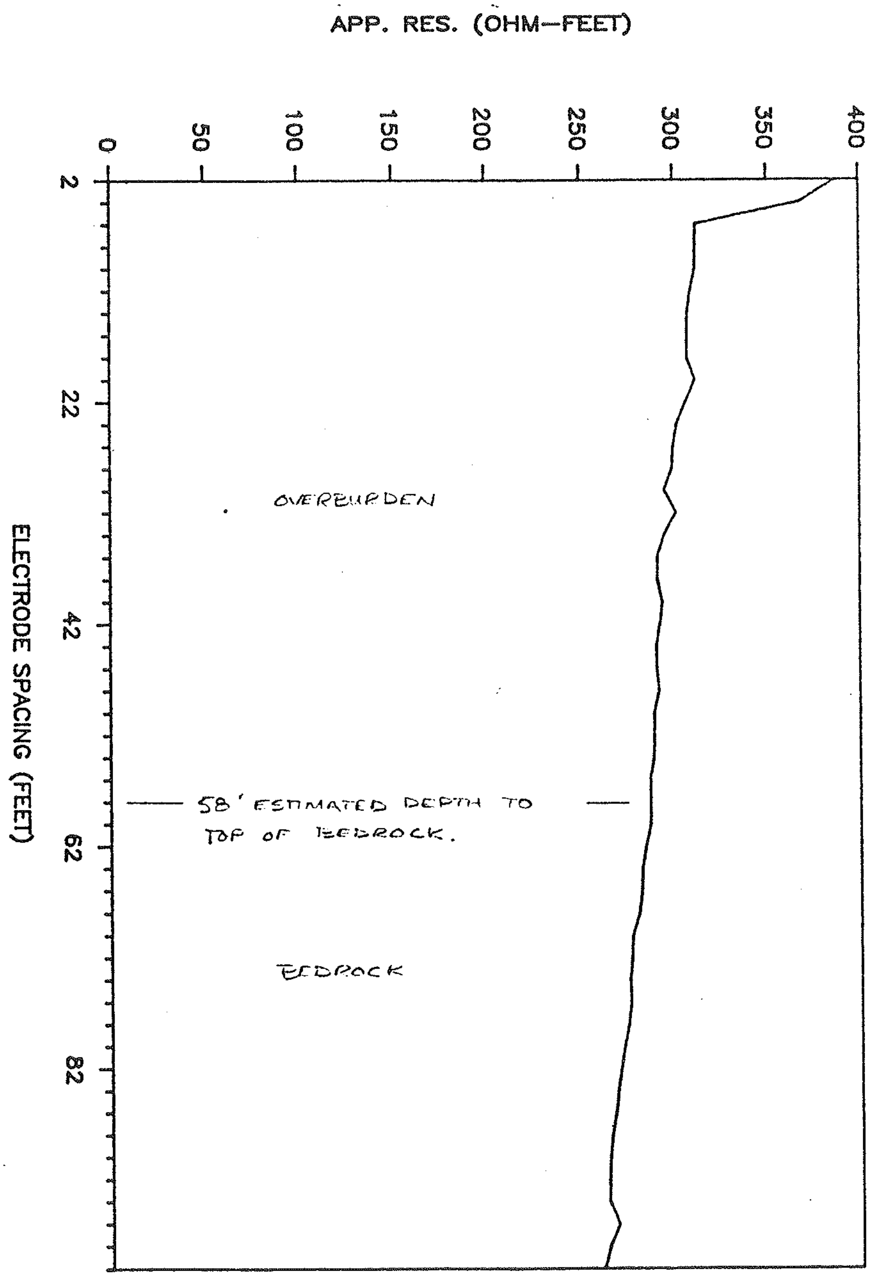
ELECTRICAL RESISTIVITY SOUNDING
AND PROFILE LOCATION MAP
LANCASTER RECLAMATION

FIGURE 3



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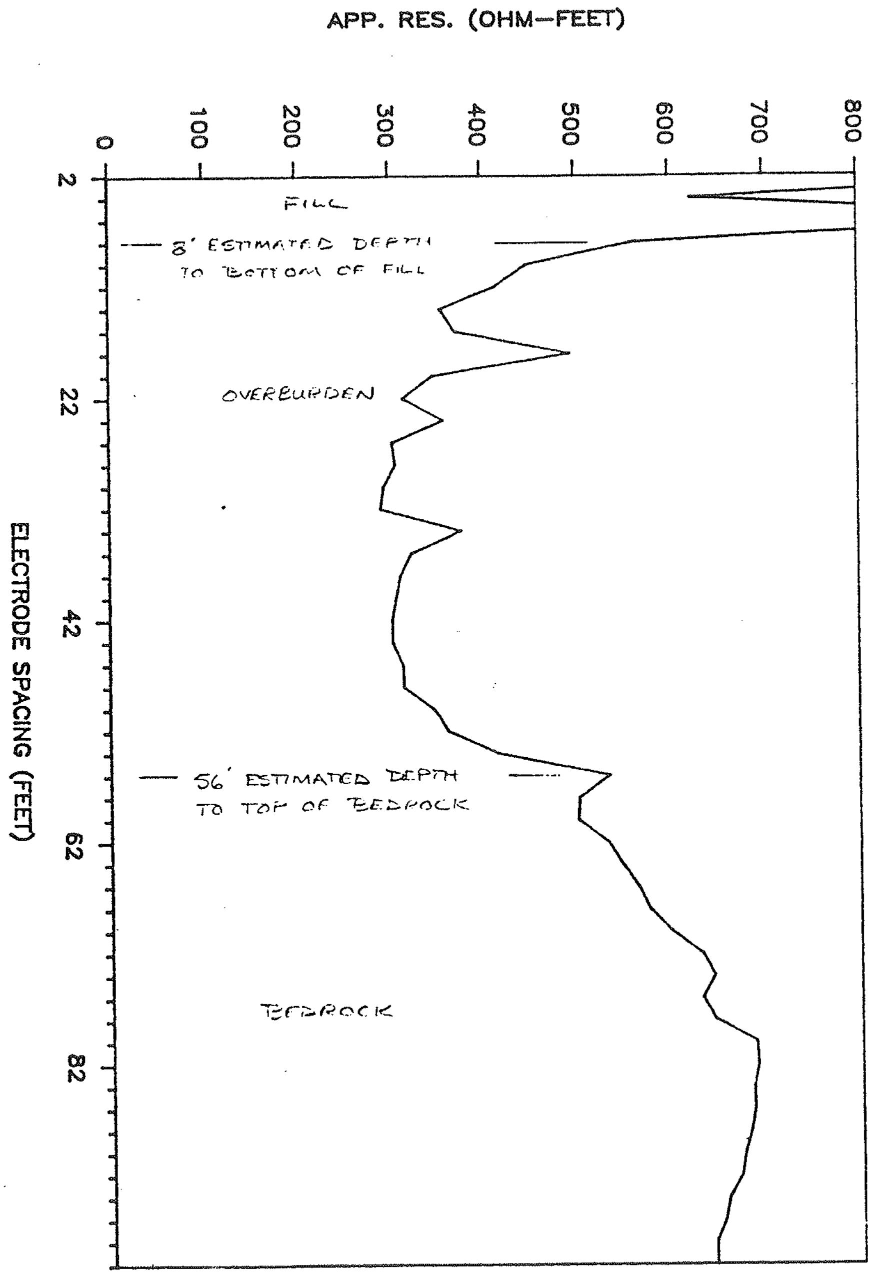
ELECTRICAL RESISTIVITY
SOUNDING PLOT S-1
LANCASTER RECLAMATION

FIGURE 4



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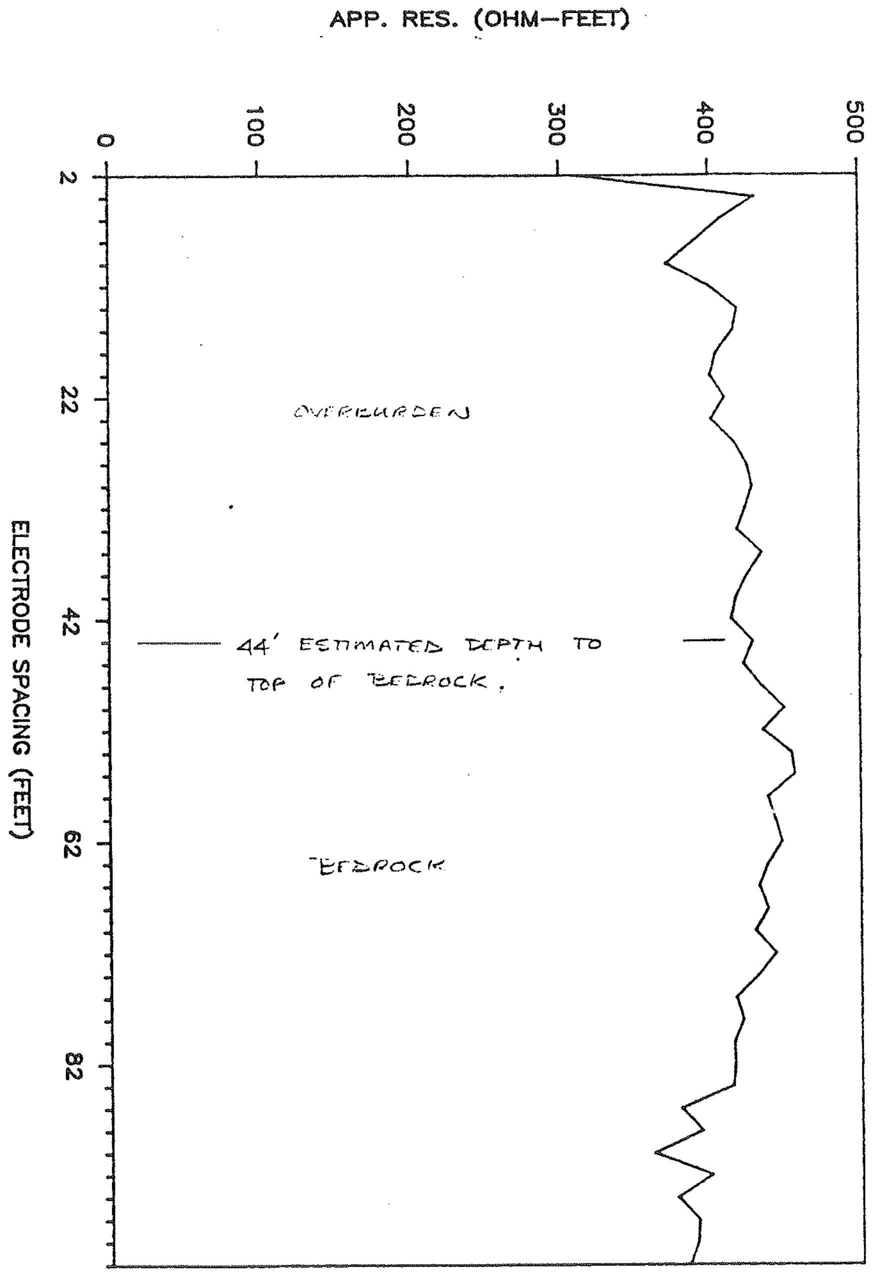
ELECTRICAL RESISTIVITY
SOUNDING PLOT S-2
LANCASTER RECLAMATION

FIGURE 5



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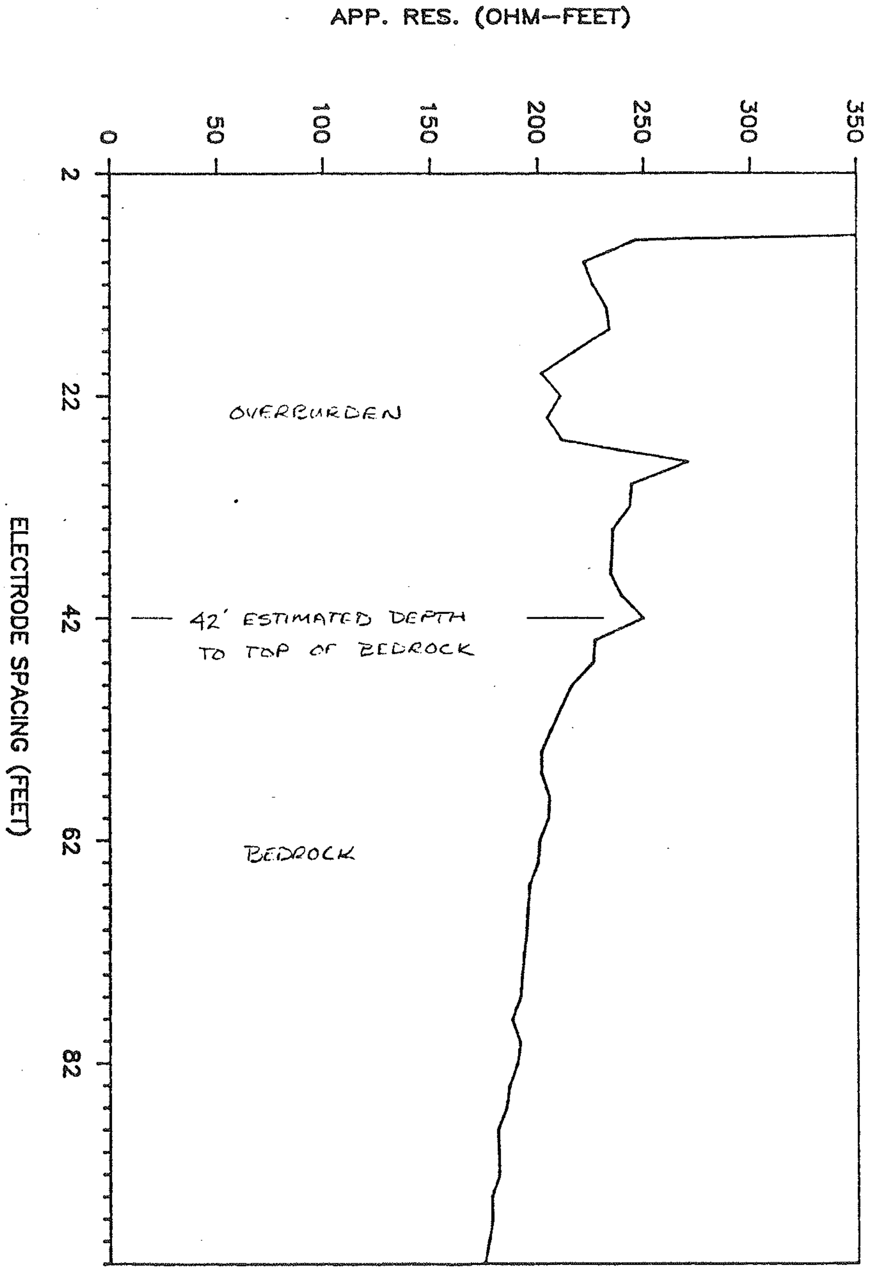
ELECTRICAL RESISTIVITY
SOUNDING PLOT S-3
LANCASTER RECLAMATION

FIGURE 6



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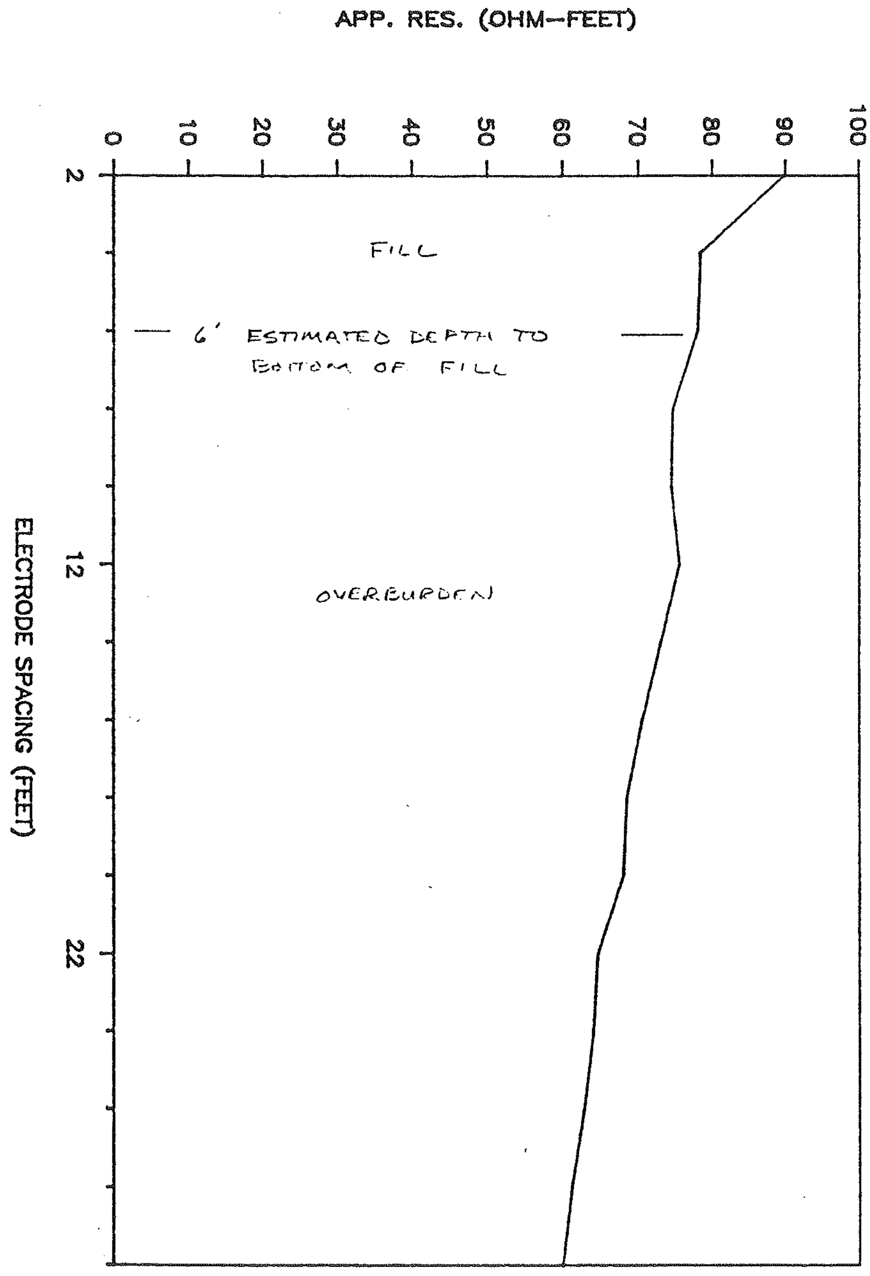
ELECTRICAL RESISTIVITY
SOUNDING PLOT S-4
LANCASTER RECLAMATION

FIGURE 7



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ELECTRICAL RESISTIVITY
SOUNDING PLOT S-5
LANCASTER RECLAMATION

FIGURE 8

EXPLANATION:

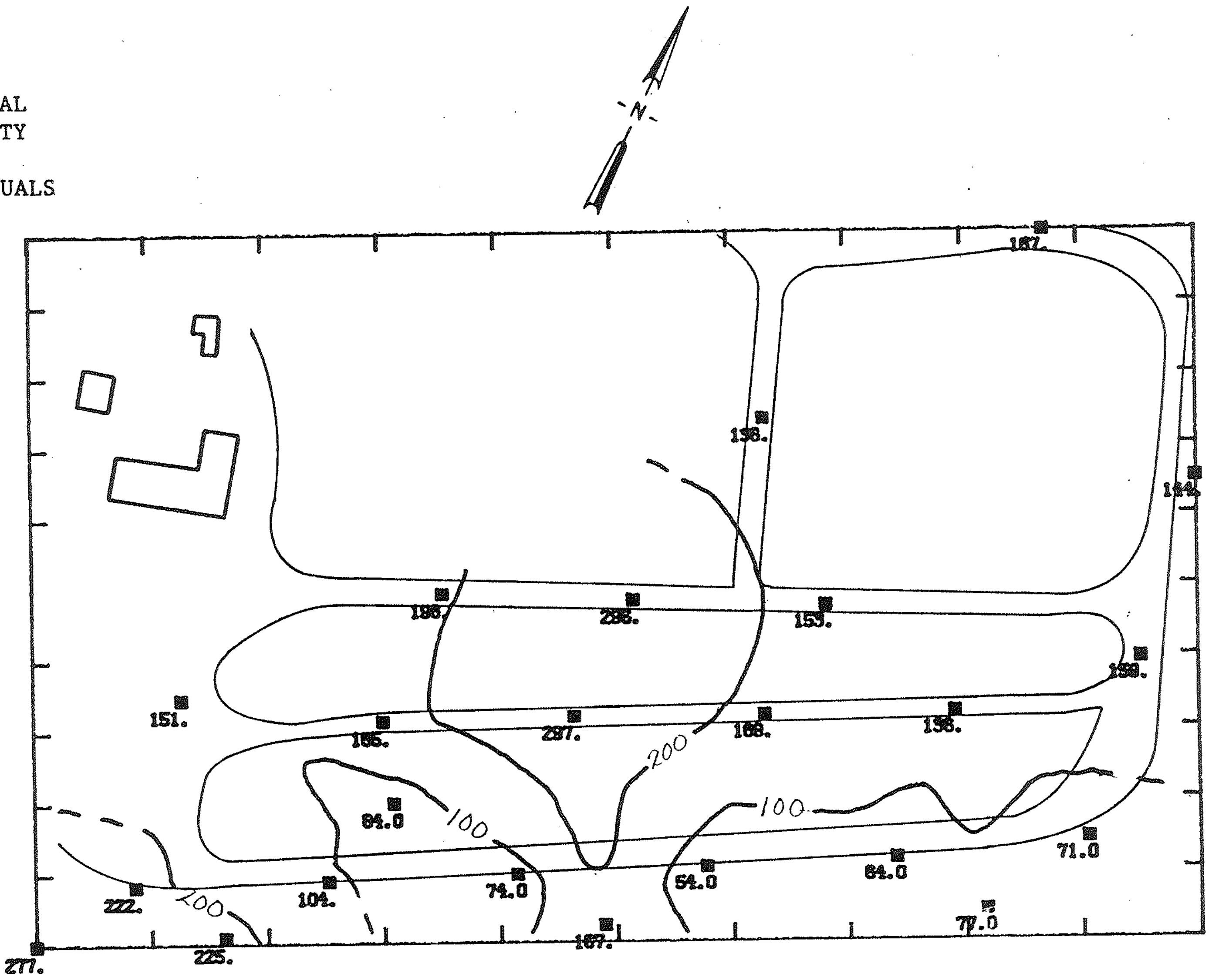
■ PROFILE LOCATIONS

-200- CONTOUR LINE OF EQUAL APPARENT RESISTIVITY IN ohm-feet

CONTOUR INTERVAL EQUALS 100 ohm-feet

0 133.2 FEET

APPROXIMATE SCALE



ENGINEERING-SCIENCE

NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
PHASE II REPORT

ELECTRICAL RESISTIVITY PROFILE
CONTOUR MAP AT 20 FEET
LANCASTER RECLAMATION

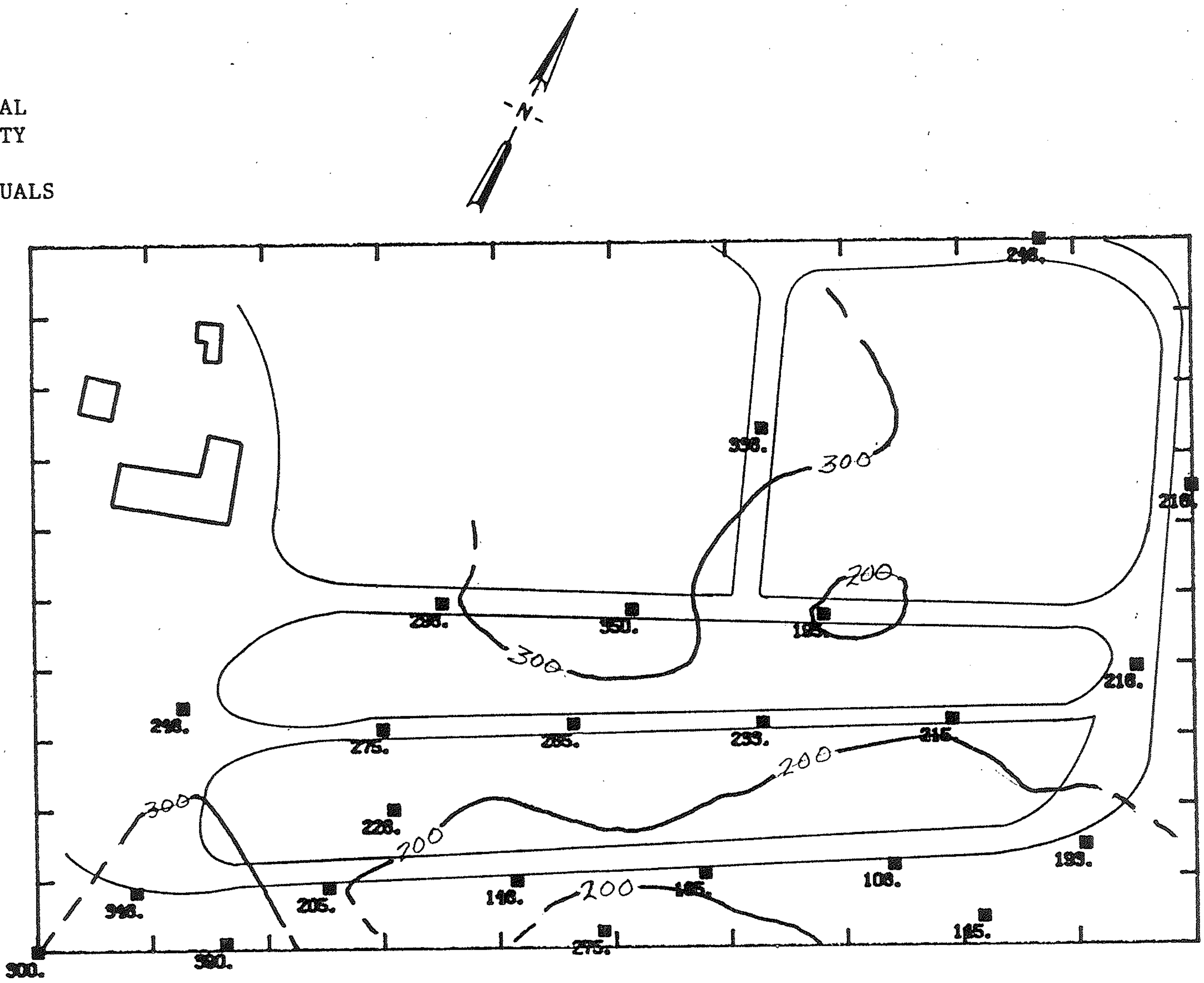
FIGURE 9

ES ENGINEERING-SCIENCE

EXPLANATION:

■ PROFILE LOCATIONS

-200- CONTOUR LINE OF EQUAL APPARENT RESISTIVITY IN ohm-feet
CONTOUR INTERVAL EQUALS 100 ohm-feet



0 133.2 FEET
APPROXIMATE SCALE

ENGINEERING-SCIENCE

NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
PHASE II REPORT

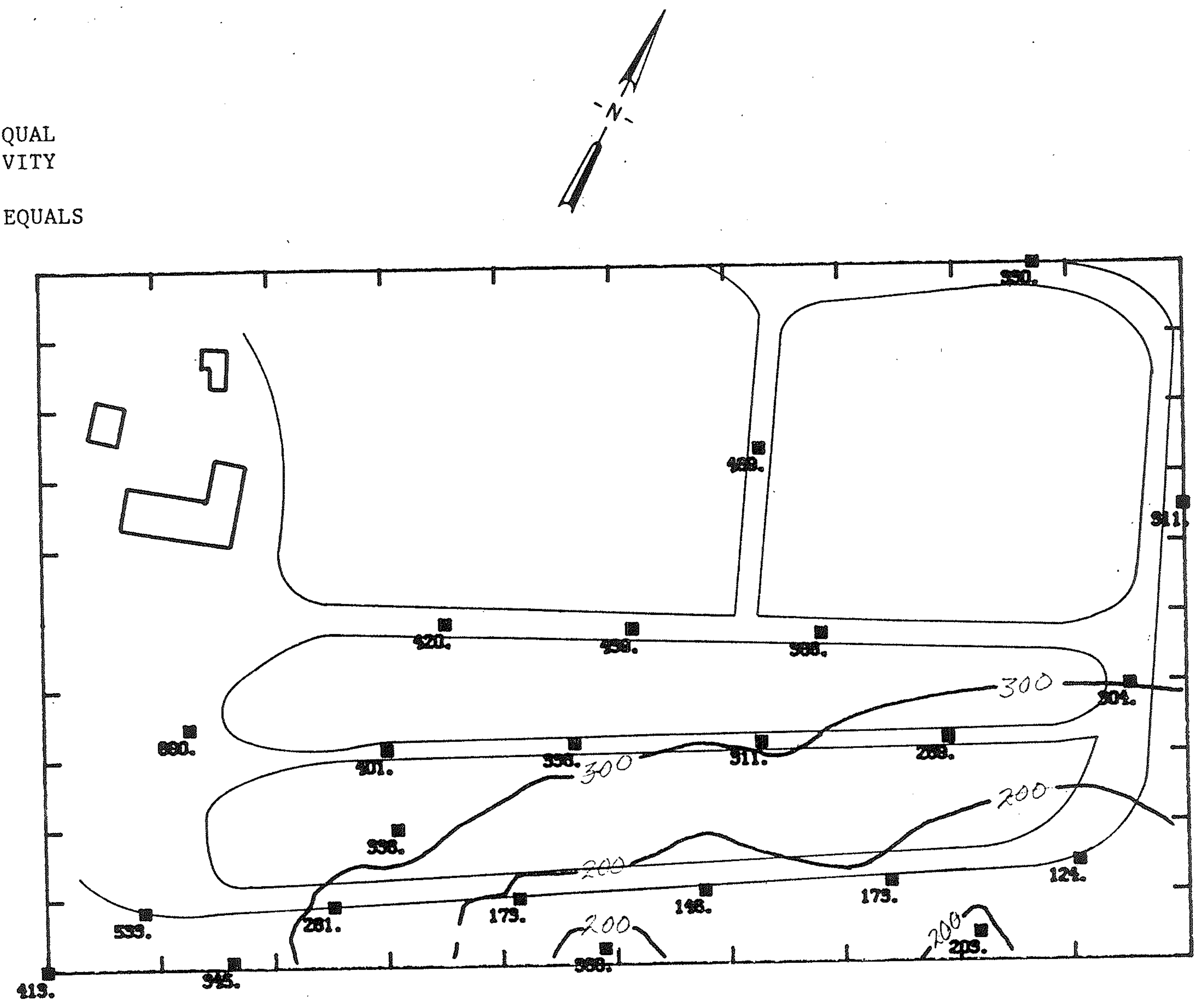
ELECTRICAL RESISTIVITY PROFILE
CONTOUR MAP AT 50 FEET
LANCASTER RECLAMATION

FIGURE 10

ES ENGINEERING-SCIENCE

EXPLANATION:

- ■ PROFILE LOCATIONS
- -200- CONTOUR LINE OF EQUAL APPARENT RESISTIVITY IN ohm-feet CONTOUR INTERVAL EQUALS 100 ohm-feet



0 133.2 FEET

APPROXIMATE SCALE

ENGINEERING-SCIENCE

NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
PHASE II REPORT

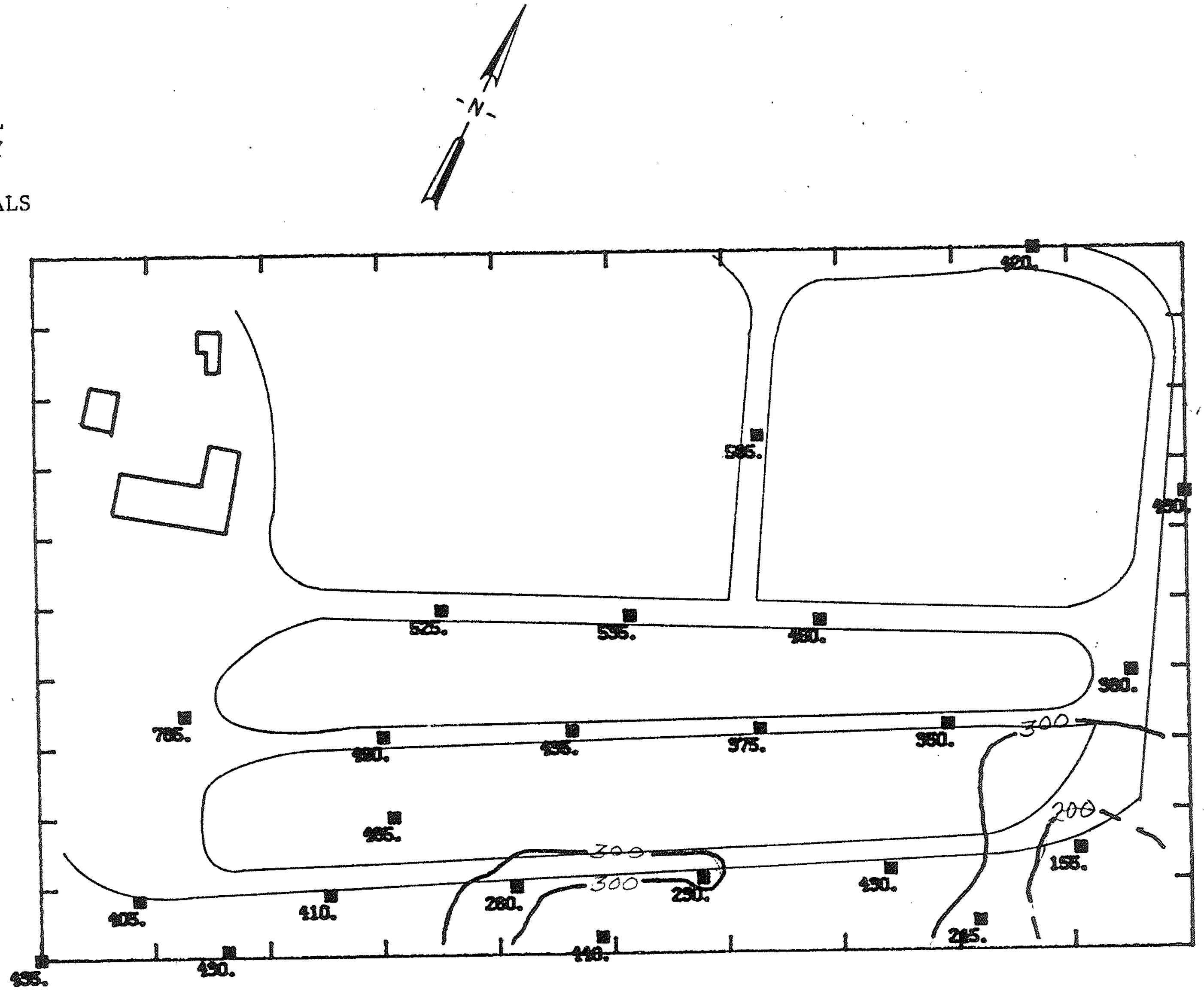
ELECTRICAL RESISTIVITY PROFILE
CONTOUR MAP AT 75 FEET
LANCASTER RECLAMATION

FIGURE 11

EXPLANATION:

■ PROFILE LOCATIONS

-200- CONTOUR LINE OF EQUAL APPARENT RESISTIVITY IN ohm-feet
CONTOUR INTERVAL EQUALS 100 ohm-feet



0 133.2 FEET
APPROXIMATE SCALE

ENGINEERING-SCIENCE

NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION
PHASE II REPORT

ELECTRICAL RESISTIVITY PROFILE
CONTOUR MAP AT 100 FEET
LANCASTER RECLAMATION

FIGURE 12

ES ENGINEERING-SCIENCE

GEOPHYSICAL SURVEY RAW DATA

SOUNDING 1

ENGINEERING-SCIENCE, INC.
RESISTIVITY DATA SHEET
MODIFIED WENNER ARRAY

Job No. SY012.14

Date 23 JUNE 1987

Site Name LANCASTER REC

C_1-C_2 Spacing 200 feet

Observers BAKER, BONNER, STANGL, VIANI

Depth of Investigation 100 feet

Comments (soil conditions, etc.)

Test Mode Dial Reading 321.5

Test Mode Current 28.5 milliamperes

P-P_1 Electrode Spacing (feet)	Dial Reading (ohm)	Scale Multiplier	Corrected Reading (ohm)	*K (feet)	Apparent Resistivity (ohm-feet)	Cumulative Resistivity (ohm-feet)
2	15.5	.01	0.155	2499.8	387.46	
4	29.5	.01	0.295	1249.5	368.60	
6	37.5	.01	0.375	832.6	312.22	
8	50	.01	0.50	624.0	312	
10	62.5	.01	0.625	498.8	311.75	
12	74.5	.01	0.745	415.2	309.32	
14	86.5	.01	0.865	355.4	307.42	
16	99	.01	0.99	310.5	307.39	
18	111.5	.01	1.115	275.5	307.18	
20	126	.01	1.26	247.5	311.85	
22	136.5	.01	1.365	224.5	306.44	
24	147	.01	1.47	205.3	301.79	

5-1

P-P_1 Electrode Spacing (feet)	Dial Reading (ohm)	Scale Multiplier	Corrected Reading (ohm)	*K (feet)	Apparent Resistivity (ohm-feet)	Cumulative Resistivity (ohm-feet)
26	158.5	.01	1.585	189.1	299.72	
28	171	.01	1.71	175.1	299.42	
30	181	.01	1.81	162.9	294.84	
32	198	.01	1.98	152.3	301.55	
34	206.5	.01	2.065	142.8	294.88	
36	216.5	.01	2.165	134.4	290.97	
38	229.5	.01	2.295	126.8	291.00	
40	245	.01	2.45	120.0	294.00	
42	257	.01	2.57	113.8	292.46	
44	268.5	.01	2.685	108.1	290.24	
46	282.5	.01	2.825	102.9	290.69	
48	297.5	.01	2.975	98.2	292.14	
50	308	.01	3.08	93.8	288.90	
52	322.5	.01	3.225	89.7	289.28	
54	336.5	.01	3.365	85.8	288.71	
56	348.5	.01	3.485	82.3	286.81	

S-1

P-P$_1$ Electrode Spacing (feet)	Dial Reading (ohm)	Scale Multiplier	Corrected Reading (ohm)	*K (feet)	Apparent Resistivity (ohm-feet)	Cumulative Resistivity (ohm-feet)
58	363.5	.01	3.635	79.0	287.16	
60	378.5	.01	3.785	75.8	286.90	
62	390	.01	3.90	72.9	284.31	
64	402.5	.01	4.025	70.1	282.15	
66	417.5	.01	4.175	67.5	281.81	
68	431.5	.01	4.315	65.0	280.47	
70	441.5	.01	4.415	62.7	276.82	
72	457.5	.01	4.575	60.4	276.33	
74	472	.01	4.72	58.3	275.17	
76	490	.01	4.90	56.3	275.87	
78	504.5	.01	5.045	54.4	274.44	
80	518.5	.01	5.185	52.5	272.21	
82	533	.01	5.33	50.7	270.23	
84	548	.01	5.48	49.0	268.52	
86	564	.01	5.64	47.4	267.33	
88	579.5	.01	5.795	45.8	265.41	

S-1

P-P$_1$ Electrode Spacing (feet)	Dial Reading (ohm)	Scale Multiplier	Corrected Reading (ohm)	*K (feet)	Apparent Resistivity (ohm-feet)	Cumulative Resistivity (ohm-feet)
90	596.5	.01	5.965	44.3	264.24	
92	616.5	.01	6.165	42.8	263.86	
94	637	.01	6.37	41.4	263.71	
96	671.5	.01	6.715	40.1	269.27	
98	686.5	.01	6.805	38.8	264.03	
100	695.5	.01	6.955	37.5	260.81	

*Apparent Resistivity $= (2\pi R)\left[\dfrac{1}{1/r_1 - 1/r_2 - 1/r_3 + 1/r_4}\right]$ where K = [ ]

and $2\pi R$ = Dial Reading x Scale Multiplier

SOUNDING 2
LANCASTER REC

ENGINEERING-SCIENCE, INC.
RESISTIVITY DATA SHEET
MODIFIED WENNER ARRAY

Job No. 54012.74

Date JUNE 23, 1987

Site Name LANCASTER REC

C_1-C_2 Spacing 200 feet

Observers BAKER, BONNER, STANGL

Depth of Investigation 100 feet

Comments (soil conditions, etc.) MOIST

Test Mode Dial Reading ~~28~~ 320.5

Test Mode Current 26 ~~320.~~ milliamperes

P-P_1 Electrode Spacing (feet)	Dial Reading (ohm)	Scale Multiplier	Corrected Reading (ohm)	*K (feet)	Apparent Resistivity (ohm-feet)	Cumulative Resistivity (ohm-feet)
2	4.5	0.1	0.45	2499.8	1124.91	
4	5	0.1	0.5	1249.5	624.75	
6	13 ~~27.5~~	0.1	1.3	832.6	1082.38	
8	9 ~~13~~	0.1	0.9	624.0	561.60	
10	9 ~~[illegible]~~	0.1	0.9	498.8	448.92	
12	10	0.1	1	415.2	415.20	
14	10	0.1	1	355.4	355.4	
16	12	0.1	1.2	310.5	372.6	
18	18	0.1	1.8	275.5	495.9	
20	14	0.1	1.4	247.5	346.50	
22	14	0.1	1.4	224.5	314.30	
24	17.5	0.1	1.75	205.3	359.27	

S-2

$P\text{-}P_1$ Electrode Spacing (feet)	Dial Reading (ohm)	Scale Multiplier	Corrected Reading (ohm)	*K (feet)	Apparent Resistivity (ohm-feet)	Cumulative Resistivity (ohm-feet)
26	16	0.1	1.6	189.1	302.56	
28	17.5	0.1	1.75	175.1	306.42	
30	18	0.1	1.8	162.9	293.22	
32	19	0.1	1.9	152.3	289.37	
34	26.5	0.1	2.65	142.8	378.42	
36	24	0.1	2.4	134.4	322.56	
38	24.5	0.1	2.45	126.8	310.66	
40	25.5	0.1	2.55	120.0	306.00	
42	26.5	0.1	2.65	113.8	301.57	
44	28	0.1	2.8	108.1	302.68	
46	30.5	0.1	3.05	102.9	313.84	
48	32	0.1	3.2	98.2	314.24	
50	37	0.1	3.7	93.8	347.06	
52	40.5	0.1	4.05	89.7	363.28	
54	48.5	0.1	4.85	85.8	416.13	
56	65	0.1	6.5	82.3	534.95	

S-2

P-P$_1$ Electrode Spacing (feet)	Dial Reading (ohm)	Scale Multiplier	Corrected Reading (ohm)	*K (feet)	Apparent Resistivity (ohm-feet)	Cumulative Resistivity (ohm-feet)
58	63.5	0.1	6.35	79.0	501.65	
60	66	0.1	6.6	75.8	500.28	
62	73	0.1	7.3	72.9	532.17	
64	78	0.1	7.8	70.1	546.78	
66	83.5	0.1	8.35	67.5	563.62	
68	88.5	0.1	8.85	65.0	575.25	
70	95.5	0.1	9.55	62.7	598.78	
72	104.5	0.1	10.45	60.4	631.18	
74	110.5	0.1	11.05	58.3	644.21	
76	112	0.1	11.2	56.3	630.56	
78	118.5	0.1	11.85	54.4	644.64	
80	131	0.1	13.1	52.5	687.75	
82	136	0.1	13.6	50.7	689.52	
84	139.5	0.1	13.95	49.0	683.55	
86	144.5	0.1	14.45	47.4	684.93	
88	148.5	0.1	14.85	45.8	680.13	

5-2

$P-P_1$ Electrode Spacing (feet)	Dial Reading (ohm)	Scale Multiplier	Corrected Reading (ohm)	*K (feet)	Apparent Resistivity (ohm-feet)	Cumulative Resistivity (ohm-feet)
90	152	0.1	15.2	44.3	673.36	
92	156.5	0.1	15.65	42.8	669.82	
94	158.5	0.1	15.85	41.4	656.19	
96	162.5	0.1	16.25	40.1	651.62	
98	165.5	0.1	16.55	38.8	642.14	
100	171.5	0.1	17.15	37.5	643.12	

*Apparent Resistivity $= (2\pi R)\left[\dfrac{1}{1/r_1 - 1/r_2 - 1/r_3 + 1/r_4}\right]$ where K = [ ]

and $2\pi R$ = Dial Reading x Scale Multiplier

ENGINEERING-SCIENCE, INC.
RESISTIVITY DATA SHEET
MODIFIED WENNER ARRAY

SOUNDING 3
LANCASTER REC.

Job No. 57012.14

Date JUNE 23, 1987

Site Name LANCASTER REC

C_1-C_2 Spacing 200 feet

Observers BAKER, BONNER, STANGL

Depth of Investigation 100 feet

Comments (soil conditions, etc.) MOIST

Test Mode Dial Reading ~~321.5~~ RB

Test Mode Current ~~28.5~~ R.B milliamperes

P-P_1 Electrode Spacing (feet)	Dial Reading (ohm)	Scale Multiplier	Corrected Reading (ohm)	*K (feet)	Apparent Resistivity (ohm-feet)	Cumulative Resistivity (ohm-feet)
2	12.5	0.01	0.125	2499.8	312.47	
4	34.5	0.01	0.345	1249.5	431.07	
6	49	0.01	0.49	832.6	407.97	
8	62.5	0.01	0.625	624.0	390.0	
10	74.5	0.01	0.745	498.8	371.60	
12	96.5	0.01	0.965	415.2	400.66	
14	118	0.01	1.18	355.4	419.37	
16	134	0.01	1.34	310.5	416.07	
18	147	0.01	1.47	275.5	404.98	
20	162	0.01	1.62	247.5	400.95	
22	183	0.01	1.83	224.5	410.83	
24	195.5	0.01	1.955	205.3	401.36	

SOUNDING 3
LANCASTER RE

P-P$_1$ Electrode Spacing (feet)	Dial Reading (ohm)	Scale Multiplier	Corrected Reading (ohm)	*K (feet)	Apparent Resistivity (ohm-feet)	Cumulative Resistivity (ohm-feet)
26	220.5	0.01	2.205	189.1	416.96	
28	243	0.01	2.43	175.1	425.49	
30	263.5	0.01	2.635	162.9	429.24	
32	278.5	0.01	2.785	152.3	424.15	
34	293	0.01	2.93	142.8	418.40	
36	324	0.01	3.24	134.4	435.45	
38	335.5	0.01	3.355	126.8	425.41	
40	348	0.01	3.48	120.0	417.60	
42	364	0.01	3.64	113.8	414.23	
44	397	0.01	3.97	108.1	429.15	
46	410.5	0.01	4.105	102.9	422.40	
48	442.5	0.01	4.425	98.2	434.53	
50	48	0.1 ~~0.0~~	4.80	93.8	450.24	
52	48.5	0.1 ~~0.01~~	4.85	89.7	435.04	
54	53	0.1	5.30	85.8	454.74	
56	55.5	0.1	5.55	82.3	456.76	

SOUNDING 3
LANCASTER REC

P-P1 Electrode Spacing (feet)	Dial Reading (ohm)	Scale Multiplier	Corrected Reading (ohm)	*K (feet)	Apparent Resistivity (ohm-feet)	Cumulative Resistivity (ohm-feet)
58	55.5	0.1	5.55	79.0	438.45	
60	58.5	0.1	5.85	75.8	443.43	
62	61.5	0.1	6.15	72.9	448.33	
64	62.5	0.1	6.25	70.1	438.12	
66	64	0.1	6.4	67.5	432.0	
68	67.5	0.1	6.75	65.0	438.75	
70	68.5	0.1	6.85	62.7	429.49	
72	73.5	0.1	7.35	60.4	443.94	
74	74	0.1	7.4	58.3	431.42	
76	74	0.1	7.4	56.3	416.62	
78	77.5	0.1	7.75	54.4	421.60	
80	79	0.1	7.9	52.5	414.75	
82	82	0.1	8.2	50.7	415.74	
84	84.5	0.1	8.45	49.0	414.05	
86	80	0.1	8.0	47.4	379.20	
88	86	0.1	8.6	45.8	393.88	

SOUNDING 3
LANCASTER REC

$P-P_1$ Electrode Spacing (feet)	Dial Reading (ohm)	Scale Multiplier	Corrected Reading (ohm)	*K (feet)	Apparent Resistivity (ohm-feet)	Cumulative Resistivity (ohm-feet)
90	81.5	0.1	8.15	44.3	361.04	
92	93.5	0.1	9.35	42.8	400.18	
94	91	0.1	9.1	41.4	376.74	
96	97.5	0.1	9.75	40.1	390.97	
98	100.5	0.1	10.05	38.8	389.94	
100	102.5	0.1	10.25	37.5	384.37	

*Apparent Resistivity $= (2\pi R) \left[\frac{1}{1/r_1 - 1/r_2 - 1/r_3 + 1/r_4}\right]$ where K = [ ]

and $2\pi R$ = Dial Reading x Scale Multiplier

SOUNDING 4.

ENGINEERING-SCIENCE, INC.
RESISTIVITY DATA SHEET
MODIFIED WENNER ARRAY

Job No. 54012.14

Date JUNE 23, 1987

Site Name LANCASTER REC

C_1-C_2 Spacing 200 feet

Observers BAKER, BONNER, STANGEL

Depth of Investigation 100 feet

Comments (soil conditions, etc.) MOIST

Test Mode Dial Reading 321.5

Test Mode Current 28.5 milliamperes

P-P_1 Electrode Spacing (feet)	Dial Reading (ohm)	Scale Multiplier	Corrected Reading (ohm)	*K (feet)	Apparent Resistivity (ohm-feet)	Cumulative Resistivity (ohm-feet)
2	19.5	0.1	1.95	2499.8	4874.61	
4	12.5	0.1	1.25	1249.5	1561.87	
6	9.5	0.1	0.95	832.6	790.97	
8	39.5	0.01	0.395	624.0	246.48	
10	44.5	0.01	0.445	498.8	221.96	
12	54.5	0.01	0.545	415.2	226.28	
14	65.5	0.01	0.655	355.4	232.78	
16	75.5	0.01	0.755	310.5	234.42	
18	79.0	0.01	0.79	275.5	217.64	
20	81.5	0.01	0.815	247.5	201.71	
22	94.0	0.01	0.940	224.5	211.03	
24	99.5	0.01	0.995	205.3	204.27	

S-4

P-P_1 Electrode Spacing (feet)	Dial Reading (ohm)	Scale Multiplier	Corrected Reading (ohm)	*K (feet)	Apparent Resistivity (ohm-feet)	Cumulative Resistivity (ohm-feet)
26	112.0	0.01	1.12	189.1	211.79	
28	15.5	0.1	1.55 ~~1.155~~	175.1	271.40	
30	15.0	0.1	1.50	162.9	244.35	
32	16.0	0.1	1.60	152.3	243.68	
34	16.5	0.1	1.65	142.8	235.62	
36	17.5	0.1	1.75	134.4	235.20	
38	18.5	0.1	1.85	126.8	234.58	
40	20.0	0.1	2.0	120.0	240	
42	22.0	0.1	2.20	113.8	250.36	
44	21.0	0.1	2.10	108.1	227.01	
46	22.0	0.1	2.20	102.9	226.38	
48	22.0	0.1	2.20	98.2	216.04	
50	22.5	0.1	2.25	93.8	211.05	
52	23	0.1	2.3	89.7	206.31	
54	23.5	0.1	2.35	85.8	201.63	
56	24.5	0.1	2.45	82.3	201.63	

P-P$_1$ Electrode Spacing (feet)	Dial Reading (ohm)	Scale Multiplier	Corrected Reading (ohm)	*K (feet)	Apparent Resistivity (ohm-feet)	Cumulative Resistivity (ohm-feet)
58	26	0.1	2.6	79.0	205.40	
60	27	0.1	2.7	75.8	204.66	
62	27.5	0.1	2.75	72.9	200.47	
64	28.5	0.1	2.85	70.1	199.79	
66	29	0.1	2.9	67.5	195.75	
68	30	0.1	3.0	65.0	195	
70	31	0.1	3.1	62.7	194.37	
72	32	0.1	3.2	60.4	193.28	
74	33	0.1	3.3	58.3	192.39	
76	34	0.1	3.4	56.3	191.42	
78	34.5	0.1	3.45	54.4	187.68	
80	36.5	0.1	3.65	52.5	191.62	
82	37.5	0.1	3.75	50.7	190.12	
84	38	0.1	3.8	49.0	186.20	
86	39	0.1	3.9	47.4	184.86	
88	39.5	0.1	3.95	45.8	180.91	

S-4

P-P$_1$ Electrode Spacing (feet)	Dial Reading (ohm)	Scale Multiplier	Corrected Reading (ohm)	*K (feet)	Apparent Resistivity (ohm-feet)	Cumulative Resistivity (ohm-feet)
90	41	0.1	4.1	44.3	181.63	
92	42.5	0.1	4.25	42.8	181.90	
94	43	0.1	4.3	41.4	178.02	
96	44.5	0.1	4.45	40.1	178.44	
98	45.5	0.1	4.55	38.8	176.54	
100	46.5	0.1	4.65	37.5	174.37	

*Apparent Resistivity $= (2\pi R) \left[\frac{1}{1/r_1 - 1/r_2 - 1/r_3 + 1/r_4} \right]$ where K = [ ]

and $2\pi R$ = Dial Reading x Scale Multiplier

Sounding 5
Lancaster Rec

ENGINEERING-SCIENCE, INC.
RESISTIVITY DATA SHEET
MODIFIED WENNER ARRAY

Job No. 57012.14 Date JUNE 25, 1987

Site Name Lancaster Rec. C_1-C_2 Spacing 60 feet

Observers BAKER, BONNER, STANGL, VIAN Depth of Investigation 30 feet

Comments (soil conditions, etc.) Damp

Test Mode Dial Reading 318 Test Mode Current 28.5 milliamperes

P_1-P_1 Electrode Spacing (feet)	Dial Reading (ohm)	Scale Multiplier	Corrected Reading (ohm)	*K (feet)	Apparent Resistivity (ohm-feet)	Cumulative Resistivity (ohm-feet)
2	4.0	0.1	.40	224.8	89.92	
4	7.0	0.1	.70	112.0	78.40	
6	10.5	0.1	1.05	74.3	78.01	
8	13.5	0.1	1.35	55.3	74.65	
10	17.0	0.1	1.70	43.8	74.46	
12	21.0	0.1	2.10	36.0	75.60	
14	24.0	0.1	2.40	30.4	72.96	
16	27.0	0.1	2.7	26.1	70.47	
18	30.0	0.1	3	22.8	68.40	
20	34.0	0.1	3.4	20.0	68	
22	36.5	0.1	3.65	17.7	64.60	
24	40.5	0.1	4.05	15.8	63.99	

5-5

P-P$_1$ Electrode Spacing (feet)	Dial Reading (ohm)	Scale Multilier	Corrected Reading (ohm)	*K (feet)	Apparent Resistivity (ohm-feet)	Cumulative Resistivity (ohm-feet)
26	44.5	0.1	4.45	14.1	62.74	
28	48.5	0.1	4.85	12.6	61.11	
30	53.0	0.1	5.30	11.3	59.89	

*Apparent Resistivity = $(2\pi R) \left[\dfrac{1}{1/r_1 - 1/r_2 - 1/r_3 + 1/r_4}\right]$ where K = [ ]

and $2\pi R$ = Dial Reading x Scale Multiplier

ENGINEERING-SCIENCE, INC.
RESISTIVITY PROFILE DATA SHEET

Job No. SY012.14

Date JUNE 24, 1987

Site Name LANCASTER REC

Site Location LANCASTER, NY

Observer(s) BAKER, BONNER, STANGL

Comments (soil conditions, etc.) MOIST

Equipment Used (name, serial #) BISON 2350B

Electrode Array Method Used WENNER

Test Mode Dial Reading 318.5

Test Mode Current 28.5 milliamperes

Station Location	Electrode Spacing (feet)	2π V/I (ohms)	Scale Multiplier	Corrected Reading (ohms)	Apparent Resistivity (ohm - feet)
P-1	20	72	0.1	7.2	144
P-1	50	43.5	0.1	4.35	217.5
P-1	75	41.5	0.1	4.15	311.25
P-1	100	43	0.1	4.3	430
P-2	20	79.5	0.1	7.95	159
P-2	50	43.5	0.1	4.35	217.5
P-2	75	40.5	0.1	4.05	303.75

Bison Unit: Apparent Resistivity = Electrode Spacing x (2π V/I x Scale Multiplier) where ( ) = Corrected Reading

Form B-1
Page 2 of 4

LANCASTER REC
JUNE 24, 1987

Station Location	Electrode Spacing (feet)	2π V/I (ohms)	Scale Multiplier	Corrected Reading (ohms)	Apparent Resistivity (ohm - feet)
P-2	100	36	0.1	3.6	360
P-3	20	35.5	0.1	3.55	71
P-3	50	38.5	0.1	3.85	192.5
P-3	75	16.5	0.1	1.65	123.75
P-3	100	15.5	0.1	1.55	155.0
P-4	20	32	0.1	3.2	64
P-4	50	21.5	0.1	2.15	107.5
P-4	75	23	0.1	2.3	172.5
P-4	100	43	0.1	4.3	430
P-5	20	27	0.1	2.7	54

Form B-1
Page 3 of 9

LANCASTER REC.
JUNE 24, 1987

Station Location	Electrode Spacing (feet)	2 π V/I (ohms)	Scale Multiplier	Corrected Reading (ohms)	Apparent Resistivity (ohm - feet)
P-5	50	37	0.1	3.7	185.0
P-5	75	19.5	0.1	1.95	146.25
P-5	100	23	0.1	2.3	230.0
P-6	20	37	0.1	3.7	74.0
P-6	50	29.5	0.1	2.95	147.5
P-6	75	23	0.1	2.3	172.5
P-6	100	26	0.1	2.6	260.0
P-7	20	52	0.1	5.2	104
P-7	50	41	0.1	4.1	205
P-7	75	37.5	0.1	3.75	281.25
P-7	100	41	0.1	4.1	410.0

Form B-1
Page 4 of 9

LANCASTER REC.
JUNE 24, 1987

Station Location	Electrode Spacing (feet)	2 π V/I (ohms)	Scale Multiplier	Corrected Reading (ohms)	Apparent Resistivity (ohm - feet)
P-8	20	68	0.1	6.8	136.0
P-8	50	43	0.1	4.3	215.0
P-8	75	38.5	0.1	3.85	288.75
P-8	100	35	0.1	3.5	350.0
P-9	20	94.5	0.1	9.45	189
P-9	50	~~6.5~~ 46.5	0.1	~~0.65~~ ~~4.65~~	~~32.5~~ 232.5
P-9	75	41.5 ~~13.5~~	0.1	1.35	~~101.25~~ 311.25
P-9	100	37.5	0.1	3.75	375
P-10	20	148.5	0.1	14.85	297
P-10	50	53	0.1	5.3	265

Form B-1
Page 5 of 9

LANCASTER REC

JUNE 24, 1987

Station Location	Electrode Spacing (feet)	2π V/I (ohms)	Scale Multiplier	Corrected Reading (ohms)	Apparent Resistivity (ohm - feet)
P-10	75	45	0.1	4.5	337.5
P-10	100	43.5	0.1	4.35	435
P-11	20	92.5	0.1	9.25	~~184.2~~ ~~182~~ 185
P-11	50	55.0	0.1	5.50	275
P-11	75	53.5	0.1	5.35	401.25
P-11	100	49.0	0.1	4.90	490.00
P-12	20	99	0.1	9.9	198.0
P-12	50	59.5	0.1	5.95	297.5
P-12	75	56	0.1	5.6	420.0
P-12	100	52.5	0.1	5.25	525.0

LANCASTER REC
JUNE 24, 1987

Station Location	Electrode Spacing (feet)	2 π V/I (ohms)	Scale Multiplier	Corrected Reading (ohms)	Apparent Resistivity (ohm - feet)
P-13	20	148	0.1	14.8	296
P-13	50	70	0.1	7	350
P-13	75	58.5	0.1	5.85	438.75
P-13	100	53.5	0.1	5.35	535.
P-14	20	76.5	0.1	7.65	153
P-14	50	39	0.1	3.9	195
P-14	75	49	0.1	4.9	367.5
P-14	100	46	0.1	4.6	460
P-15	20	68	0.1	6.8	136
P-15	50	67.5	0.1	6.75	337.5
P-15	75	62.5	0.1	6.25	468.75
P-15	100	58.5	0.1	5.85	585.0

LANCASTER REC.
JUNE 25, 1987

TEST
DIAL READING 321.5
CURRENT 28.5

Station Location	Electrode Spacing (feet)	2π V/I (ohms)	Scale Multiplier	Corrected Reading (ohms)	Apparent Resistivity (ohm - feet)
P-16	20	111	0.1	11.1	222
P-16	50	69.5	0.1	6.95	347.5
P-16	75	71	0.1	7.1	532.5
P-16	100	40.5	0.1	4.05	405
P-17	20	32.0	0.1	3.20	64
P-17	50	45.5	0.1	4.55	227.5
P-17	75	45.0 ~~13.5~~	0.1	4.5 ~~1.35~~	~~101.25~~ ~~134~~ 337.5
P-17	100	46.5	0.1	4.65	465
P-18	20	75.5	0.1	7.55	151
P-18	50	49.5	0.1	4.95	247.5

Form B-1
Page 8 of 9
LANCASTER REC
JUNE 25, 1987

Station Location	Electrode Spacing (feet)	2 π V/I (ohms)	Scale Multiplier	Corrected Reading (ohms)	Apparent Resistivity (ohm - feet)
P-18	75	88	0.1	8.8	660
P-18	100	78.5	0.1	7.85	785
P-19	20	93.5	0.1	9.35	187
P-19	50	49.5	0.1	4.95	247.5
P-19	75	44	0.1	4.4	330
P-19	100	42	0.1	4.2	420
P-20	20	38.5	0.1	3.85	77
P-20	50	29	0.1	2.9	145
P-20	75	27	0.1	2.7	202.5
P-20	100	24.5	0.1	2.45	245

LANCASTER REC.

JUNE 25, 1987

Station Location	Electrode Spacing (feet)	2 π V/I (ohms)	Scale Multiplier	Corrected Reading (ohms)	Apparent Resistivity (ohm - feet)
P-21	20	83.5	0.1	8.35	167
P-21	50	55	0.1	5.5	275
P-21	75	51.5	0.1	5.15	386.25
P-21	100	44	0.1	4.4	440
P-22	20	112.5	0.1	11.25	225
P-22	50	78.0	0.1	7.80	390
P-22	75	46.0	0.1	4.60	345
P-22	100	43.0	0.1	4.30	430
P-23	20	138.5	0.1	13.85	277
P-23	50	60	0.1	6.0	300
P-23	75	55	0.1	5.5	412.5
P-23	100	43.5	0.1	4.35	435

APPENDIX C

GEOLOGIC DATA

BORING LOGS AND WELL SCHEMATICS

DRILLING CONTRACTOR:
iller: D. Reynolds RDC.
Inspector: W. Lilley
ig Type CME
rilling Method 4 1/4" ID HSA

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME DEC Phase II - Lancaster
PROJECT NO. SY01214

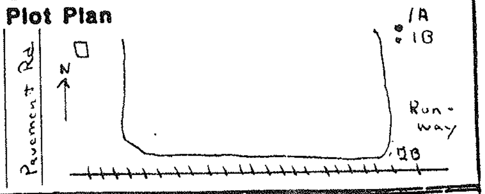
BORING NO. GW-1A
Sheet 1 of 1
Location North east corner of the site

GROUND WATER OBSERVATIONS

Water Level	2.5		
Time	8:30		
Date	10/1		
Casing Depth	10'		

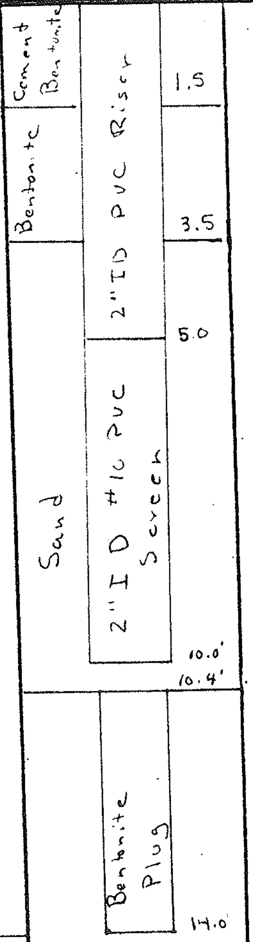
Weather Cloudy & Rain
Date/Time Start 9/30/87 3:30 pm
Date/Time Finish 9/30/87 5:00 pm

Plot Plan



Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL
				No Sampling - See Boring Log 1B
	12-14 Shelby Tube		Push	Gray Clay, little Silt, Trace Sand & Gravel (stiff) (moist)
				14'
				Boring Terminated

WELL SCHEMATIC



Comments

SPT - STANDARD PENETRATION TEST
D = DRY W = WASHED C = CORED
U = UNDISTURBED SS = SPLIT SPOON
P = PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary

DRILLING CONTRACTOR:
D..er: Steve Loranty
Inspector: Henry M. Wise
Type CME-55
lling Method HSA (4¼") to 65' flush joint casing (3") to 75' C to 80'

ENGINEERING-SCIENCE
DRILLING RECORD

PROJECT NAME Lancaster Reclamation
PROJECT NO. SY012.14

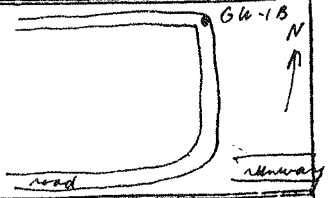
BORING NO. GW-1B
Sheet 1 of 4
Location

ROUND WATER OBSERVATIONS

Water Level	21.3'	21.0'
Time	4:20P	9:00A
ate	9/23/87	9/24/87
asing Depth	75'	75'

Weather Clear & Cool
Date/Time Start 9/21/87
Date/Time Finish 9/24/87

Plot Plan



otovac eading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
-0.1	0-2'	1	22	dark brown silt with some pea gravel, moist & loose		photovac baseline is -0.1
			40	(slag fill) 0.8' dry, dark reddish brown silt with some very fine grained		
	Rec. 14"		13	sand (slag fill) 1.6'		
			18	loose, wet, light brown sand, medium grained		
-0.6	5-7'	2	8			photovac baseline is -0.6
			10			
	Rec. 11"		12			water table at 7'
			11			
					Cement / Bentonite Grout	
					2" ID PVC casing	
				10.2'		
-0.8	10-12'	3	4			photovac baseline is -0.8
			8	sticky, moderately stiff, reddish brown clay		
	Rec. 22"		12			
			16			
					14.0'	
0.0	15-17'	4	6		Bentonite Slurry	photovac baseline was reset to read 0.0
			10			
	Rec. 17"		12			
			16			

T- STANDARD PENETRATION TEST
D = DRY W = WASHED C = CORED
U = UNDISTURBED SS = SPLIT SPOON
P = PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary

DRILLING CONTRACTOR:
Driller:
Inspector:
Type
lling Method

ENGINEERING-SCIENCE
DRILLING RECORD

PROJECT NAME Lancaster Reclamation
PROJECT NO. SY012.14

BORING NO. GW-1B
Sheet 2 of 4
Location

ROUND WATER OBSERVATIONS

Water Level			
Time			
ate			
asing Depth			

Weather
Date/Time Start
Date/Time Finish

Plot Plan
See Sheet No. 1

Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
0.0	20-22'	5	5	20.9'		
			17			
	Rec. 18½"		25	wet, grey silt		
			25			
				25.0'		
-0.3	25-27'	6	5	reddish brown, sticky, moderately stiff clay		photovac baseline is -0.3
			6			
	Rec. 16.5"		8			
			9			
-0.3	30-32'	7	3		Bentonite slurry 2" I.D. PVC casing	
			4			
	Rec. 20"		6			
			8			
-0.3	35-37'	8	4			
			6			
	Rec. 17.5"		8			
			10			

PT-STANDARD PENETRATION TEST
D = DRY W = WASHED C = CORED
U = UNDISTURBED SS = SPLIT SPOON
P = PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary

DRILLING CONTRACTOR:

ril :

spector:

ype

g Method

ENGINEERING-SCIENCE
DRILLING RECORD

PROJECT NAME Lancaster Reclamation

PROJECT NO. SY012.14

BORING NO. GW-1B

Sheet 3 of 4

Location

OUND WATER OBSERVATIONS

Water Level		
Time		
e		
g Depth		

Weather

Date/Time Start

Date/Time Finish

Plot Plan

See Sheet No. 1

-tovac ding	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
				40.3'		
	40-42'	~~[illegible]~~	15	wet, soft, reddish grey, fine grained sand		
		8	27			
	Rec 15"		21			
			20			
				45.0'		
0.0	45-47'	9	7	greyish brown, wet, compact, fine to very fine grained sand		photovac baseline is 0.0
	Rec. 18.5"		10			
			26			
			50			
				50.5'		
.3	51-52'	10	6	greyish brown, loose, wet, fine grained sand. sand becomes compact with depth	Bentonite Slurry 2" ID PVC casing	photovac baseline is -0.3
			~~20~~16			
			27			
				55.0'		
-0.6	55-57'	11	7	greyish brown, wet, loose, fine grained sand.		photovac baseline is -0.6
			23	- black, well rounded limestone pebble at 56.2'		
	Rec. 21.5"		29			
			90			
				sand becomes very fine grained and compact with depth		

- STANDARD PENETRATION TEST

- DRY W - WASHED C - CORED

U - UNDISTURBED SS - SPLIT SPOON

- PIT A - AUGER CUTTINGS

Soil Stratigraphy Summary

DRILLING CONTRACTOR:
ril :
spector:
ig ype
ri g Method

ENGINEERING-SCIENCE
DRILLING RECORD

PROJECT NAME Lancaster Reclamation
PROJECT NO. SY012.14

BORING NO. GW-1B
Sheet 4 of 4
Location

G OUND WATER OBSERVATIONS

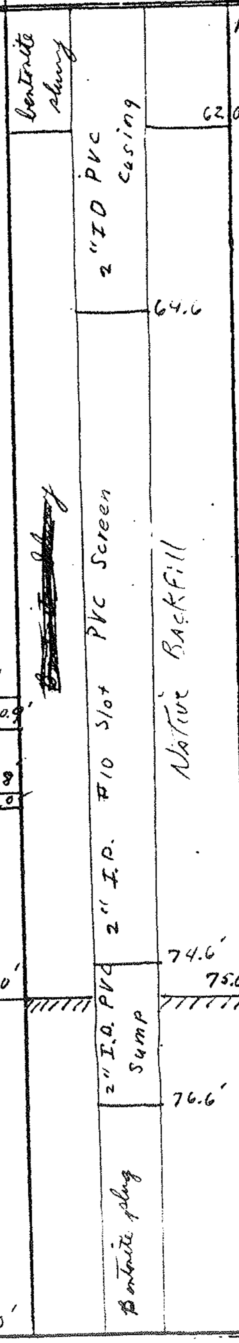
Vater Level		
Time		
C e		
a j Depth		

Weather
Date/Time Start
Date/Time Finish

Plot Plan
See Sheet No. 1

Photovac R ding	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	Comments
-0.7	60-62'	12	10	some, dark grey gravel at base (wellrounded)	photovac baseline is -0.7
			31		
	Rec. 16.5"		53		
			56		
-0.5	65-66'	13	33		photovac baseline is -0.5
			100		
	Rec 10"				
				70.5'	
-0.3	70.5-72'				
		14	4	grey, saturated gravel, poorly sorted, fine to coarse grained, broken fragments 70.9'	photovac baseline is -0.3
	Rec 7"		5	grey, saturated silty clay 71.8'	
			8	black pebble, well rounded 72.0'	
				refusal 75.0'	refusal at 75.0'
0.3	75-80'	C-1		grey, massive limestone with occasional horizontal fractures, some stylolites at the base.	
	C.-5'				
	Rec. 5'				
				80.0'	

WELL SCHEMATIC



SPT • STANDARD PENETRATION TEST
• DRY W • WASHED C • CORED
U • UNDISTURBED SS • SPLIT SPOON
• PIT A • AUGER CUTTINGS

Soil Stratigraphy Summary

DRILLING CONTRACTOR:

Driller: Dave Reynolds

Inspector: W. Lilley

Rig Type: CME

Drilling Method: 4" ID HSA to 35', 3" Flush joint to 74'

ENGINEERING-SCIENCE
DRILLING RECORD

PROJECT NAME: DEC Phase II - Lancaster

PROJECT NO.: SY0 12 14

BORING NO.: 2-B

Sheet 1 of 4.

Location: Southeast Corner near runway

GROUND WATER OBSERVATIONS

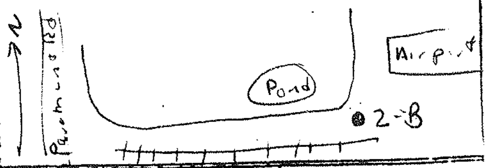
Water Level	19.5'
Time	9:10
Date	9/30
Casing Depth	74.0'

Weather: Cloudy

Date/Time Start: 9/24/87 10:40 am

Date/Time Finish:

Plot Plan



Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
0.0	0.0-2.0	S-1	14	Black Sand & Gravel (dry)		
	SS		16	Gray & Brown Sand & Gravel (moist) (Fill)		
	Rec 13"		13			
			14	2.0		
0.0	2.0-4.0	S-2	6	3.0 Brown Sand & Silt (Wet)		
	SS		5			
	Rec 20"		9	Brown to Gray Silt & Clay (stiff & moist)		
			10			
0.0	4.0-6.0	S-3	6	Brown Silt & Clay Trace Sand & Gravel (Soft & moist)		
	SS		10			
	Rec 24"		12			
			16			
0.0	6.0-8.0	S-4	13	Brown Silt & Clay Trace Sand & Gravel (Stiff & moist)		
	SS		16			
	Rec 24"		21			
			19			
0.0	8-10	S-5	8	Brown Silt & Clay Trace F Gravel (Stiff & moist)	Bentonite / cement grout 2" ID PVC Casing	
	SS		10			
	Rec 23"		14			
			16			
0.0	15-17	S6	7	16.0' Brown Silt & Clay Trace F Sand & Gravel		
	SS		10	Gray Brown Clay little Silt Trace F Sand (Soft & ~~Wet~~)		
	Rec 24"		8			
			7			
	17-19			Gray Brown Clay		
	Shelby					
	Tube					
0.0	20-22	S-7	6	Gray Brown Clay little Silt Trace F Gravel (Soft & Wet)		
	SS		5			
	Rec 24"		7		21.5'	
			8			

SPT - STANDARD PENETRATION TEST

D - DRY W - WASHED C - CORED

U - UNDISTURBED SS - SPLIT SPOON

P - PIT A - AUGER CUTTINGS

Soil Stratigraphy Summary: Sand and Gravel Fill 2.0 over Silty Sand to 3.0' over Silt and clay to 36. over Fine sand and Sand and gravel to 70.0' over till to 74' over bedrock.

DRILLING CONTRACTOR:

Driller:
Inspector:
Rig Type
Drilling Method

ENGINEERING-SCIENCE
DRILLING RECORD

PROJECT NAME DEC Phase II-Landcaster
PROJECT NO. SY01214

BORING NO. 2B
Sheet 2 of 4
Location Southeast Corner

GROUND WATER OBSERVATIONS

Water Level		
Time		
Date		
Casing Depth		

Weather Clear
Date/Time Start 9/25
Date/Time Finish

Plot Plan

See Sheet No 1

Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
0.0	25-27	S-8	8	Gray Brown Clay (Soft & moist)		
	SS		8			
	Rec 24"		9			
			9			
0.0	30-32	S-9	3	Gray Brown Clay trace F Gravel		
	SS		4	(Soft & moist)		
	Rec 24"		5			
			5			
					Bentonite Slurry Plug 2" ID PVC Casing	
0.0	35-37	S-10	11			
	SS		12	36' GrayBrown Clay trace F Gravel		
	Rec 24		17	Gray Fine Sand (wet)		
			20			
0.0	40-42	S-11	32	Gray very Fine Sand (wet)		
	SS		41	(Well sorted - somewhat compact)		
	Rec 21"		47			
			60			
0.0	45-47	S-12	5			
	SS		7			
	Rec 13"		49			
			37			

SPT - STANDARD PENETRATION TEST
D = DRY W = WASHED C = CORED
U = UNDISTURBED SS = SPLIT SPOON
P = PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary

DRILLING CONTRACTOR:
: Steve Lorentz
spector: Henry M Wise
ig ype CME 55.
g Method

ENGINEERING-SCIENCE
DRILLING RECORD

PROJECT NAME Lancaster Reclamation
PROJECT NO. SY 012.14

BORING NO. GW-2B
Sheet 3 of 4
Location

GROUND WATER OBSERVATIONS

ater Level			
Time			
e			
Depth			

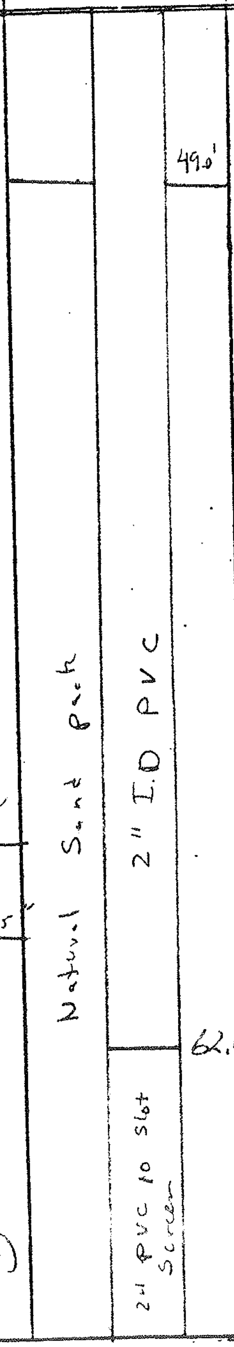
Weather
Date/Time Start
Date/Time Finish

Plot Plan

See Sheet No. 1

lovec ding	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	Comments
			37		
.0	50-50'5"	S-13	105		refusal
	SS				at 50'5"
	Rec 5"				
	55-57'	S-14	43		
	SS		17	rock pebble at base of sample	
	Rec 8½"		17		
			19		
				59'	gravel in
					wash cuttings
				black gravel, some chert gravel	refusal at
				60'5"	60'5"
.0	60-60'5"	S-15	100		
	SS				
	Rec. 1"				
0.0	65-67'	S-16	11	Gray black m-Fine Sand	
	SS		25	(Wet to Sat)	
	Rec 8"		65		
			47	Gray black Gravel & Sand Some Silt	

WELL SCHEMATIC



- STANDARD PENETRATION TEST
• DRY W • WASHED C • CORED
U • UNDISTURBED SS • SPLIT SPOON
• PIT A • AUGER CUTTINGS

Soil Stratigraphy Summary

DRILLING CONTRACTOR:

ll :

pector:

g pe

g Method

ENGINEERING-SCIENCE
DRILLING RECORD

PROJECT NAME Lancaster

PROJECT NO. SY012.04

BORING NO. GW-2B

Sheet 4 of 4

Location

UND WATER OBSERVATIONS

ater Level		
Time		
D		
Depth		

Weather

Date/Time Start

Date/Time Finish

Plot Plan

See Sheet No. 1

R ding	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
	70-71'5"	S-17	23	wet, dark grey sand and Gravel.	Natural Sand Pack	
	SS		53	sand is fine to coarse grained, poorly sorted		
	Rec 16"		100/5"	Gravel is fine to coarse grained, poorly sorted	72.0'	
					2" PVC Sump	
				final refusal at 74'	74.0'	

- STANDARD PENETRATION TEST

= DRY W = WASHED C = CORED

U = UNDISTURBED SS = SPLIT SPOON

= PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary

ENGINEERING-SCIENCE
DRILLING RECORD

DRILLING CONTRACTOR:
Driller: Steve Loranty
Inspector: Henry M. Wise
Rig Type CME-55.
Drilling Method 4"ID HSA, no samples taken

PROJECT NAME Lancaster Reclamation
PROJECT NO. SY012.14

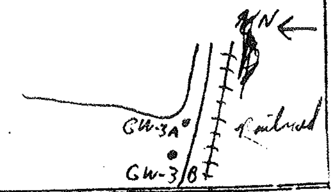
BORING NO. GW-3A
Sheet 1 of 1.
Location about 30' E of GW-3B

GROUND WATER OBSERVATIONS

Water Level		
Time		
Date		
Casing Depth		

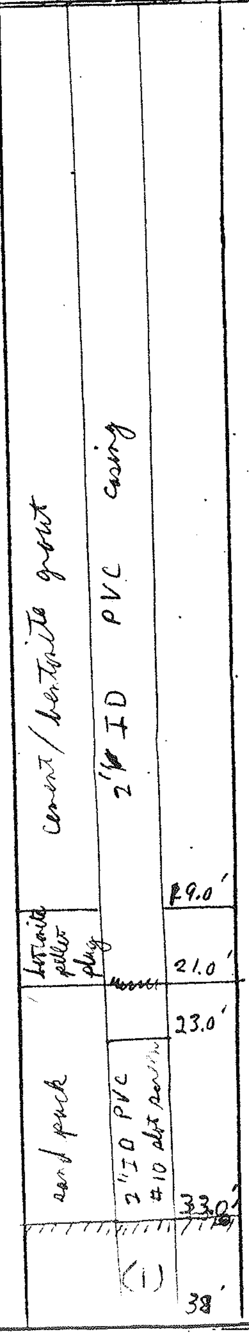
Weather Overcast & cold
Date/Time Start 10/1/87
Date/Time Finish 10/1/87

Plot Plan



Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL
				no samples taken water table intersected at about 25'.
				Drilled To 38.0 feet. See log GW-3B for soil description. Borehole collapsed AT 38 feet To 33.0 feet. Wellpoint set AT 33.0 feet.

WELL SCHEMATIC (not to scale)



Comments

(i) Natural Backfill 38' To 33

Well point, 33'.

SPT - STANDARD PENETRATION TEST
D - DRY W - WASHED C - CORED
U - UNDISTURBED SS - SPLIT SPOON
P - PIT A - AUGER CUTTINGS

Soil Stratigraphy Summary

ENGINEERING-SCIENCE
DRILLING RECORD

DRILLING CONTRACTOR:
Driller: D. Reynolds
Inspector: W. Lilley
Rig Type: CME
Drilling Method: 4 1/4" HSA

PROJECT NAME: DEC Phase II - Lancaster
PROJECT NO.: S4 012 14

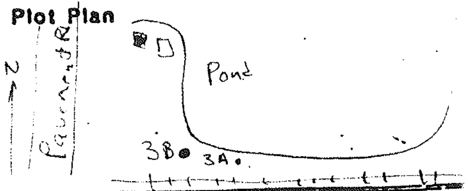
BORING NO.: 3B
Sheet 1 of 4
Location: South West Corner

GROUND WATER OBSERVATIONS

Water Level	25		
Time	9:00		
Date	9/29		
Casing Depth	–		

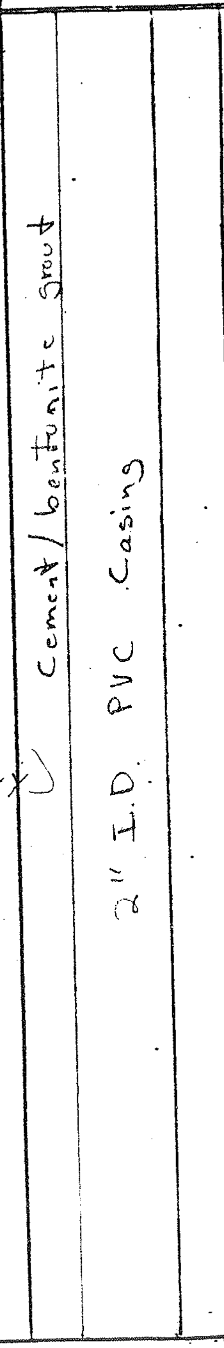
Weather: Fair
Date/Time Start: 9/25/87 11:30 am
Date/Time Finish: 9/28/87

Plot Plan



Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL
0.0	0.0-2.0	S-1	20	.5 Black Sand & Gravel little Silt (Fill)
	SS		18	Brown M-Fine Sand & Silt (Dry)
	Rec 16"		6	
			7	
0.0	2.0-4.0	S-2	5	Brown M-Fine Sand, little Silt
	SS		5	Trace Gravel (moist)
	Rec 16"		4	
			4	
0.0	4.0 6.0	S-3	3	Brown M-Fine Sand (moist)
	SS		2	
	Rec 18"		2	
			4	
0.0	6.0-8.0	S-4	5	
	SS		6	
	Rec 18"		9	
			10	
0.0	8.0-10	S-5	8	Brown M-Fine Sand (moist)
	SS		7	
	Rec 14"		3	
			2	
0.0	10-12	S-6	3	
	SS		3	
	Rec 16"		8	
			5	Brown M-Fine Sand (moist-Dry)
0.0	12-14	S7	8	
0.0	SS		8	
	R. 18"		14	
			14	
0.0	14-16	S-8	17	Brown M-Fine Sand (Moist)
	SS		22	
	Rec 18"		15	
			18	
0.0	16-18	S-9	21	
	SS		27	
	R. 19"		22	
			26	
0.0	18-20		18	
	SS		19	
	Rec 18"		18	
			21	

WELL SCHEMATIC



Comments

SPT - STANDARD PENETRATION TEST
D = DRY W = WASHED C = CORED
U = UNDISTURBED SS = SPLIT SPOON
P = PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary: Sand and Gravel Fill to 0.5' over Broan Sand to 49.5 Gray Sand to 58' over Till to 61.5'

DRILLING CONTRACTOR:
Driller: Dave Reynolds
Inspector: W. Lilley
Rig Type
Drilling Method

ENGINEERING-SCIENCE
DRILLING RECORD

PROJECT NAME DEC Phase II - Lancaster
PROJECT NO.

BORING NO. 3B
Sheet 2 of 4
Location

GROUND WATER OBSERVATIONS

Water Level		
Time		
Date		
Casing Depth		

Weather Fair
Date/Time Start 9/28
Date/Time Finish

Plot Plan

Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
0.0	20-22	S-11	7	Br. M-Fine Sand (Moist)	Cement/Bentonite Grout	
	SS		8			
	Rec 23"		8			
			13			
0.0	22-24	S-12	12			
	SS		11			
	Rec 22"		11			
			12			
0.0	24-26	S-13	8	Br. M-Fine Sand (Wet)	25'	
	SS		8			
	Rec 23"		11			
			17			
0.0	28-30	S-15	10		Bentonite Slurry Plug 2" ID PVC Casing	
	SS		11			
	Rec 24"		15			
			21			
0.0	30-32	S-16	7			
	SS		10			
	Rec 24"		12			
			14			
0.0	32-34	S-17	12			
	SS		15			
	Rec 24		20			
			22			
0.0	35-37	S-18	13			
	SS		17			
	Rec 10		16			
			14			

SPT - STANDARD PENETRATION TEST
D - DRY W - WASHED C - CORED
U - UNDISTURBED SS - SPLIT SPOON
P - PIT A - AUGER CUTTINGS

Soil Stratigraphy Summary

DRILLING CONTRACTOR:
Driller: Steve Lorantz
Inspector: Henry Wise
Rig Type CME 55
Drilling Method

ENGINEERING-SCIENCE
DRILLING RECORD

PROJECT NAME DEC Phase II - Lancaster
PROJECT NO.

BORING NO. 3B
Sheet 3 of 4
Location

GROUND WATER OBSERVATIONS

Water Level		
Time		
Date		
Casing Depth		

Weather
Date/Time Start
Date/Time Finish

Plot Plan

Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
0.0	40-42	S-19	14	Brown M-Fine Sand (wet)	Bentonite Slurry Plug 2" ID PVC Casing	
	SS		25			
	Rec 15½"		21	Brown M-V.Fine Sand		
			21			
					45'	
0.0	45-47	S-20	15	Brown Fine Sand (wet)		
	SS		23			
	Rec 14"		29			
			22			
				49.5'	49.5	
0.0	50-52	S-21	7	Brownish gray V.Fine Sand little Clay (wet)	Natural Sand pack 2" ID PVC # Screen	
	SS		9			
	Rec 7"		11			
			15			
				55.		
0.0	55-57	S-22	8	Gray Silt & V.Fine Sand little Gravel (wet)		
	SS		7			
	Rec 14"		7			
			10			
					57.5	

SPT - STANDARD PENETRATION TEST
D = DRY W = WASHED C = CORED
U = UNDISTURBED SS = SPLIT SPOON
P = PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary

DRILLING CONTRACTOR:
Driller: Steve Loantz
Inspector: Henry Wise
Rig Type CME 55.
Drilling Method 3" Flush Casing

ENGINEERING-SCIENCE
DRILLING RECORD

PROJECT NAME DEC Phase II - Lancaster
PROJECT NO.

BORING NO. 3B
Sheet 4 of 4
Location

GROUND WATER OBSERVATIONS

Water Level		
Time		
Date		
Casing Depth		

Weather
Date/Time Start
Date/Time Finish

Plot Plan

Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
					59.5	
					2" ID PVC Sump	
	60 - 61½'	S-23	35			
	SS		53			
	Rec 0		106	No Recovery	61.5'	
				Final refusal at 61½'		

SPT - STANDARD PENETRATION TEST
D - DRY W - WASHED C - CORED
U - UNDISTURBED SS - SPLIT SPOON
P - PIT A - AUGER CUTTINGS

Soil Stratigraphy Summary

DRILLING CONTRACTOR:
Driller: D. Reynolds R.D.C.
Inspector: W. Lilley
Rig Type: CME
Drilling Method: 4¼"ID HSA

ENGINEERING-SCIENCE
DRILLING RECORD

PROJECT NAME: DEC Phase II - Lancaster
PROJECT NO.: SY01214

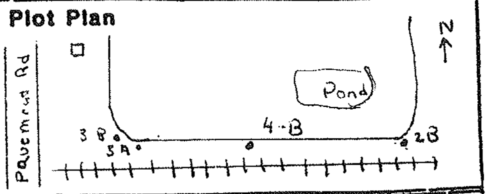
BORING NO.: 4-B
Sheet: 1 of 3
Location: Middle of South road

GROUND WATER OBSERVATIONS

Water Level	6		
Time	12:00		
Date	9/29		
Casing Depth	64		

Weather: Cloudy
Date/Time Start: 9/22/87
Date/Time Finish:

Plot Plan



Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
0	0-2	S-1	33	Black Sand & Gravel (Dry) (Fill)		
	SS		56			
	Rec 8"		28			
			12	2' - - - - - - - - - - - -		
					Cement Grout	
0	5-7	S-2	3	5.5' Brown Sand & Fine Gravel (moist)		
	SS		2	Brown Sand, Trace Silt (moist)	6.0'	
	Rec 9"		3	(Stiff)		
			2			
				7.5		
				8.0 Black Silt and Sand, Trace Clay (Topsoil)		
0	10-12	S-3	9	Red Brown Silt & Clay Trace Fine Sand		
	SS		8	Gray Brown Silt & Clay (moist)		
	Rec 12"		9	(Stiff)		
			11			
					Bentonite Slurry Plug 2" ID PVC Riser Casing	
0	15-17	S-4	2	Gray Brown Clay, Trace Silt (Soft)		
	SS		3			
	Rec 24"		3			
			5			
	19-19.	S-5	2	Trace Fine Sand		
	SS		3			
	Rec24		4			
	.		6			
0	20-22	S-6	3	- - - - - - - - - - - -		
	SS		10	Gray Clay with Sand Layers (Varved Red		
	Rec 24		12	Clay) (wet to Saturated) (Soft)		
			10			

SPT - STANDARD PENETRATION TEST
D = DRY W = WASHED C = CORED
U = UNDISTURBED SS = SPLIT SPOON
P = PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary Sand and Gravel Fill to 8.0' over Silt and Clay to 41' over Fine Sand to 55' over Sand and Gravel till To 64.1 bedrock refusal

DRILLING CONTRACTOR:
Driller: Dave Reynold
Inspector: W. Lilley
Rig Type CME
Drilling Method 4¼" HSA

ENGINEERING-SCIENCE
DRILLING RECORD

PROJECT NAME OEC Phase II - Landcaster
PROJECT NO. 5401214

BORING NO. 4-B
Sheet 2 of 3
Location

GROUND WATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather
Date/Time Start
Date/Time Finish

Plot Plan

See Sheet No 1

Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
0.0	25-27	S-7	3	Gray Clay (Soft & moist)	Bentonite Slurry Plus 2" ID PVC Casing	
	SS		3	Trace Fine Gravel		
	Rec 24"		4			
			4			
0.0	30-32	S-8	4	Gray Clay (Soft & moist)		
	SS		4			
	Rec 24"		5			
			8			
0.0	35-37	S-9	3	Gray Clay (Soft & moist)		
	SS		3			
	Rec 24"		5			
			6			
0.0	40-42	S-10	6	Gray Clay & Silt Trace F Sand		
	SS		8	41.0' (Soft & wet)		
	Rec 24"		9	Gray Fine sand Trace Coarse Sand (wet)		
			8			
0.0	45-47	S-11	32	Gray Fine Sand Trace Coarse Sand		
	SS		38	(Wet to Saturated)		
	Rec 20"		48			
			51			

SPT - STANDARD PENETRATION TEST
D = DRY W = WASHED C = CORED
U = UNDISTURBED SS = SPLIT SPOON
P = PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary

DRILLING CONTRACTOR:
ller: D. Reynolds
Inspector: W. Lilley
g Type CME
illing Method 4¼" ID HSA

ENGINEERING-SCIENCE DRILLING RECORD

PROJECT NAME DEC Phase II - Lancaster
PROJECT NO. S 401214

BORING NO. 4-B
Sheet 3 of 3
Location

ROUND WATER OBSERVATIONS

Water Level			
Time			
Date			
sing Depth			

Weather
Date/Time Start
Date/Time Finish

Plot Plan
See Sheet No. 1

Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
0	50-52	S-12	15	Gray Fine Sand (wet - Saturated)	Bentonite Slurry Plug; 2" PVC Riser	
	SS		20		52'	
	Rec 20'		37			
			56		Natural Sand Pack; 2" ID #10 PVC Screen	
				55'		
0.2	55-56	S-13	73	Gray medium sand and Gravel (wet)		
	SS		105			
	Rec 10					
					62'	
					2" ID PVC Sump	Auger refusal bedrock 64.1'
				64.1'	64.1	
				Boring terminated		

SPT - STANDARD PENETRATION TEST
D = DRY W = WASHED C = CORED
U = UNDISTURBED SS = SPLIT SPOON
P = PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary

ENGINEERING-SCIENCE DRILLING RECORD

DRILLING CONTRACTOR:

Driller: Dave Reynolds

Inspector: W. Lilley

Rig Type: CME

Drilling Method: 4 1/4" HSA

PROJECT NAME: DEC Phase II - Lancaster

PROJECT NO.: SY01214

BORING NO.: 5A

Sheet 1 of 2

Location: Parking Lot East Side of Site

GROUND WATER OBSERVATIONS

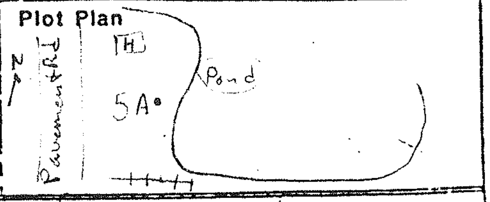
Water Level	26		
Time	12:00		
Date	10/1		
Casing Depth	33		

Weather: cloudy

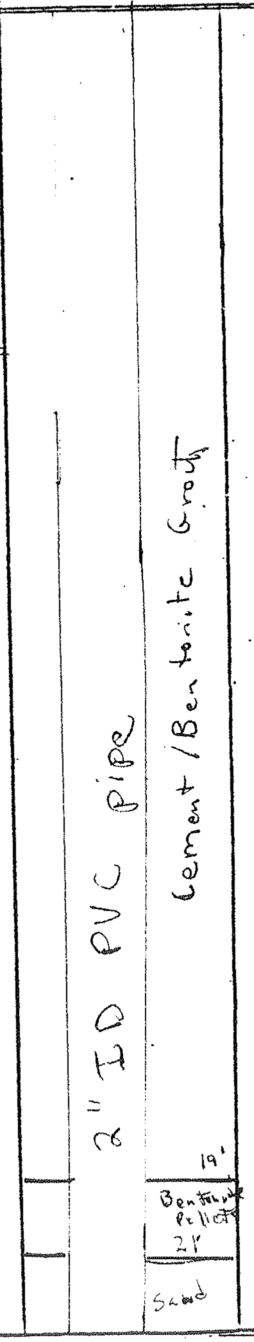
Date/Time Start: Oct 1 9:30 am

Date/Time Finish: Oct 1 3:30 pm

Plot Plan



Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
0.0	00-2.0	S-1	3	Brown Sand + Gravel little Silt		
	SS		25	(Fill) (wet)		
	Rec 7"		25			
			13			
0.0	5.0-7.0	S-2	24	5.5'		
.	SS		25	Topsoil 2"		
	Rec 10"		23	Brown M-F Sand (moist)		
			29			
0.0	10-12	S-3	12	Brown M-F Sand (moist)		
	SS		15			
	Rec 24"		22			
			23			
0.0	15-17	S-4	11	Brown M-F Sand (moist)		
	SS		16			
	Rec 21		20			
			21			
	20-22	S-5	9	Brown - M-F Sand (moist)		
	SS		11			
	Rec 22"		14			
			16			



SPT - STANDARD PENETRATION TEST

D = DRY W = WASHED C = CORED

U = UNDISTURBED SS = SPLIT SPOON

P = PIT A = AUGER CUTTINGS

Soil Stratigraphy Summary: Sand and Gravel Fill to 5.5' over Brown Sand to 33'.

DRILLING CONTRACTOR:
Driller: D. Reynolds
Inspector: W. Willey
Rig Type: CME
Drilling Method: 4 1/4 HSA

ENGINEERING-SCIENCE
DRILLING RECORD

PROJECT NAME DEC Phase II - Lancaster
PROJECT NO. 54012 14

BORING NO. 5 A
Sheet 2 of 2
Location

GROUND WATER OBSERVATIONS

Water Level			
Time			
Date			
Casing Depth			

Weather
Date/Time Start
Date/Time Finish

Plot Plan

See Sheet No 1

Photovac Reading	SAMPLE DEPTHS	SAMPLE I.D.	SPT	FIELD IDENTIFICATION OF MATERIAL	WELL SCHEMATIC	Comments
					23	
0.0	25-27	S-6	11	Brown M-F Sand (wet to Saturated)		
	SS		13	▼ 26'		
	Rec 23"		12			
			14			
0.0	30-32	S-7	10	Brown M-F Sand (wet to Saturated)	Sand 2" ID PVC screen	
	SS		16			
	Rec 24"		22			
			30			
					33	
				Boring Terminated at 33'		

SPT - STANDARD PENETRATION TEST
D - DRY W - WASHED C - CORED
U - UNDISTURBED SS - SPLIT SPOON
P - PIT A - AUGER CUTTINGS

Soil Stratigraphy Summary

GEOTECHNICAL ANALYSES RESULTS

R&R
INTERNATIONAL, INC.

PROJECT: LANCASTER RECLAMATION, PHASE II PROJECT NUMBER: 870834

MOISTURE AND GRADATION ANALYSIS

Gradation
(% Retained on Standard Sieve)

BORING NUMBER	DEPTH (FT.)	MOISTURE PERCENT	#4	#10	#40	#100	#200	SILT	CLAY	CLASSIFICATION
1-B	5.0	18.0	0.2	0.1	10.3	64.7	13.1	11.6		SM-SP
1-B	51.0	6.9	0.0	0.1	2.3	29.4	38.9	29.3		SM
2-B	6.0	14.1	22.6	2.8	6.3	5.0	5.3	30.8	27.2	CL-ML
2-B	45.0	13.6	0.4	1.0	3.8	18.0	30.9	45.9		SM
3-B	14.0	3.8	2.5	0.1	16.9	35.8	9.2	35.5		SM
3-B	55.0	13.5	8.4	3.0	5.4	15.2	26.8	41.2		SM
4-B	15.0	22.7	0.0	0.3	0.6	0.6	0.6	40.3	57.6	CL
4-B	30.0	21.9	0.0	0.2	0.5	2.4	2.5	40.2	54.2	CL
4-B	50.0	18.0	0.0	0.3	32.1	44.9	12.5	10.2		SM-SP
5-A	15.0	5.7	0.0	0.1	8.1	45.7	11.5	34.6		SM

R&R
INTERNATIONAL,INC.

PROJECT: DEC PHASE II HOLE NO.: 2-B SAMPLE NO.: 4

ELAPSED TIME min	TEMP. C	ACTUAL HYD. READING R	CORR. HYD. READING R	% FINER	HYD. CORR ONLY FOR MENISCUS R	L FROM TABLE 6-5	L/T	K FROM TABLE 6-4	D mm
1	22.00	52	47.40	93.9	53	7.6	7.645	0.0132	0.0365
2	22.00	49	44.40	87.9	50	8.1	4.068	0.0132	0.0266
4	21.90	43	38.38	76.0	44	9.1	2.279	0.0132	0.0199
8	21.60	40	35.32	69.9	41	9.6	1.201	0.0133	0.0145
16	21.50	37.5	32.80	64.9	38.5	10.0	0.626	0.0133	0.0105
30	21.40	34	29.28	58.0	35	10.6	0.353	0.0133	0.0079
60	21.00	30	25.20	49.9	31	11.2	0.187	0.0134	0.0058
120	20.30	27	22.06	43.7	28	11.7	0.098	0.0135	0.0042
240	19.50	24.5	19.35	38.3	25.5	12.1	0.051	0.0136	0.0031
780	20.70	20	15.14	30.0	21	12.9	0.017	0.0134	0.0017
1050	21.60	20	15.32	30.3	21	12.9	0.012	0.0133	0.0015
1440	19.00	19	13.70	27.1	20	13.0	0.009	0.0137	0.0013

% CLAY = 27.16
% SILT = 30.84

R&R
INTERNATIONAL,INC.

PROJECT: DEC PHASE II HOLE NO.: 4-B SAMPLE NO.: 4

ELAPSED TIME min	TEMP. C	ACTUAL HYD. READING R	CORR. HYD. READING R	% FINER	HYD. CORR ONLY FOR MENISCUS R	L FROM TABLE 6-5	L/T	K FROM TABLE 6-4	D mm
1	21.50	56	51.30	101.6	57	7.0	6.992	0.0133	0.0351
2	21.50	54	49.30	97.6	55	7.3	3.659	0.0133	0.0254
4	21.50	51	46.30	91.7	52	7.8	1.952	0.0133	0.0185
8	21.50	48	43.30	85.7	49	8.3	1.037	0.0133	0.0135
16	21.50	45	40.30	79.8	46	8.8	0.549	0.0133	0.0098
30	21.30	40	35.26	69.8	41	9.6	0.320	0.0133	0.0075
60	21.00	36	31.20	61.8	37	10.3	0.171	0.0134	0.0055
120	20.30	32	27.06	53.6	33	10.9	0.091	0.0135	0.0041
240	19.50	29.5	24.35	48.2	30.5	11.3	0.047	0.0136	0.0029
780	20.70	23.5	18.64	36.9	24.5	12.3	0.016	0.0134	0.0017
1050	21.60	0.32	-4.56	-9.0	1.32	16.1	0.015	0.0133	0.0016
1440	19.00	22	16.70	33.1	23	12.5	0.009	0.0137	0.0013

% CLAY = 57.63
% SILT = 40.27

PROJECT: DEC PHASE II HOLE NO.: 4-B SAMPLE NO.: 8

ELAPSED TIME min	TEMP. C	ACTUAL HYD. READING R	CORR. HYD. READING R	% FINER	HYD. CORR ONLY FOR MENISCUS R	L FROM TABLE 6-5	L/T	K FROM TABLE 6-4	D mm
1	22.00	55	50.40	99.8	56	7.2	7.155	0.0132	0.0353
2	22.00	52.5	47.90	94.8	53.5	7.6	3.782	0.0132	0.0257
4	22.00	50	45.40	89.9	51	8.0	1.993	0.0132	0.0186
8	21.90	47	42.38	83.9	48	8.5	1.058	0.0132	0.0136
16	21.60	43	38.32	75.9	44	9.1	0.570	0.0133	0.0100
30	21.40	40	35.28	69.9	41	9.6	0.320	0.0133	0.0075
60	21.00	35	30.20	59.8	36	10.4	0.174	0.0134	0.0056
120	20.30	32	27.06	53.6	33	10.9	0.091	0.0135	0.0041
240	19.50	30	24.85	49.2	31	11.2	0.047	0.0136	0.0029
780	20.70	24.5	19.66	38.9	25.5	12.1	0.016	0.0134	0.0017
1040	21.60	24	19.32	38.3	25	12.2	0.012	0.0133	0.0014
1448	19.00	23	17.70	35.0	24	12.4	0.009	0.0137	0.0013

% CLAY = 54.25
% SILT = 40.15

R&R
INTERNATIONAL,INC.

PROJECT: ENGINEERING-SCIENCE, INC.
DEC PHASE II LANCASTER RECLAMATION

PROJECT NUMBER: 870834

MOISTURE AND GRADATION ANALYSIS

Gradation
(% Retained on Standard Sieve)

BORING NUMBER	DEPTH (FT.)	MOISTURE PERCENT	#4	#10	#40	#100	#200	SILT AND CLAY (%)	CLASSIFICATION
1A	12'-14'		2.5	1.5	3.2	2.9	3.9	86.0	CL-ML

R&R
INTERNATIONAL,INC.

PROJECT: ENGINEERING SCIENCE
DEC PHASE II LANCASTER RECLAMATION

PROJECT NUMBER: 870834

ATTERBERG LIMITS

BORING NUMBER	DEPTH (FT.)	MOISTURE PERCENT	L.L.	P.L.	P.I.
1A	12'-14'		20.8	14.2	6.6

R&R
INTERNATIONAL,INC.

PERMEABILITY TEST DATA
ASTM D-2434

DATE:12/15/87

Chamber No.:1

Undisturbed

Client:Engineering Science

Project No.:870834

Location:Lancaster Reclamation

Tested by:S.Patel

Boring No.:2-B

Sample No.:N/A

Depth: 17 to 19 feet

Initial		Final		Test Pressures (psi)	
Ht.(ins)=	3.6	Ht.(ins)=	3.6	Chamber=	60
Di.(ins)=	2.9	Di.(ins)=	2.9	Lower=	50
Wt.(gms)=	785.5	Wt.(gms)=	792.8	Upper=	40

Duration of Test (min)= 915.0

PERMEABILITY (cm/s)= 1.97E-8

R&R
INTERNATIONAL,INC.

PERMEABILITY TEST DATA
ASTM D-2434

DATE:12-30-87

Chamber No.:2

Undisturbed

Client:Engineering Science

Project No.:870834

Location:Lancaster Reclamation

Tested by:S.Patel

Boring No.:1-A

Sample No.:N/A

Depth: 12 to 14 feet

Initial		Final		Test Pressures (psi)	
Ht.(ins)=	3.6	Ht.(ins)=	3.6	Chamber=	60
Di.(ins)=	2.8	Di.(ins)=	2.8	Lower=	50
Wt.(gms)=	845.5	Wt.(gms)=	850.1	Upper=	40

Duration of Test (min)= 670.0

PERMEABILITY (cm/s)= 2.21E-8

APPENDIX D

LABORATORY ANALYTICAL DATA

APPENDIX D

LABORATORY ANALYTICAL DATA

Previous Analytical Results

Groundwater Results

Surface Water Results

Sediment Results

Each group noted above is organized by sample number. Results are listed in the following order: volatile organics, semivolatile organics, pesticide/PCBs, inorganics, and TOX. Only the sediment samples were analyzed for pesticide/PCBs. Organic data qualifiers can be found at the bottom of each Form I, page 1 (volatile compounds). Inorganic data qualifiers are listed following this cover page.

DATA QUALIFIERS
PAGE 2

Lab Name: NANCO LABORATORIES, INC.
Lab Address: Robinson Lane, RD 6
Wappingers Falls, New York

DATE REPORTED:

VALUE - IF THE RESULT IS A VALUE GREATER THAN OR EQUAL TO THE INSTRUMENT DETECTION LIMIT BUT LESS THAN THE CONTRACT-REQUIRED DECTECTION LIMIT, THE VALUE IS REPORTED IN BRACKETS (i.e., [10]. THE ANALYTICAL METHOD USED IS INDICATED WITH P (FOR ICP), A (FOR FLAME AA) OR F (FOR FURNACE AA).

U - INDICATES ELEMENT WAS ANALYZED FOR BUT NOT DETECTED. REPORTED WITH THE INSTRUMENT DETECTION LIMIT VALUE (e.g., 10 U).

E - INDICATES A VALUE ESTIMATED OR NOT REPORTED DUE TO THE PRESENCE OF INTERFERENCE.

s - INDICATES A VALUE DETERMINED BY METHOD OF STANDARD ADDITION.

N - INDICATES SPIKE SAMPLE RECOVERY IS NOT WITHIN CONTROL LIMITS.

* - INDICATES DUPLICATE ANALYSIS IS NOT WITHIN CONTROL LIMITS.

+ - INDICATES THE CORRELATION COEFFICIENT FOR METHOD OF STANDARD ADDITION IS LESS THAN 0.995

M - INDICATES DUPLICATE INJECTION RESULTS EXCEEDED CONTROL LIMITS.

P - INDICATES ICP ANALYSIS

F - INDICATES FURNACE ANALYSIS

[] - INDICATES SAMPLE VALUE IS BETWEEN IDL AND CRDL

COMMENTS :

PREVIOUS ANALYTICAL RESULTS

FRONTIER CHEMICAL WASTE PROCESS INC.
ENVIRONMENTAL LABORATORY
4626 Royal Avenue, Niagara Falls, New York 14303

JOB: Ferry Concrete Construction Co., Inc.
3179 Walden Avenue, Depew, New York 14043

SAMPLE AND WORK REQUESTED BY: Mr. John Ferry

DATE: February 4, 1976

FRONTIER CHEMICAL LAB NO. FC-2476

I. COMPOSITION OF SLUDGE

ITEM	PARAMETER	FINDINGS AND DESCRIPTIONS
1	Physical Characteristics	Black Thixotrophic Sludg
2	Color: (wet) (dry)	Black Gray
3	Percent Solid: Mimimum Maximum Mean Average	6.15% 8.31% 7.33%
4	Acidity of Sludge	Neutral

CHEMICAL COMPOSITIONS

5	Moisture (Percent Water)		91.50%
6	Total Solid		8.50%
7	*Loss of Ignition (percent Carbonesion)	9.95%	
8	SiO_2 (Sand type)	22.25%	
9	**$Al_2Si_4O_x$ (Clay Type)	65.19%	
10	***Fe_2O_3 (Iron Oxide)	1.25%	
11	CaO (Lime type)	0.36%	

* Organic components plus carbon

** Clay is Ben[illegible] [illegible]ing [illegible]ly of Montmorillonite

*** Non-magnetic

FRONTIER CHEMICAL WASTE PROCESS INC.

ENVIRONMENTAL LABORATORY

4626 Royal Avenue, Niagara Falls, New York 14303

JOB: Ferry Concrete Construction Co., Inc.
3179 Walden Avenue, Depew, New York 14043

SAMPLE AND WORK REQUESTED BY: Mr. John Ferry

DATE: February 4, 1976

FRONTIER CHEMICAL LAB NO. FC-2476

	II. COMPOSITION OF WATER	
ITEM	PARAMETER	ANALYSIS
1	Origins	Filtrate from Sludge filtrati
2	PH	7.75
3	Specific gravity	1.03 @ Rt
4	Color (APHA unit)	20
5	Total Dissolved Solids (TDS)	30.500 ppm
6	Chlorides (Cl)	18,500 ppm
7	Sulfates (SO_4)	600 ppm
8	Silica (SiO)	45 ppm
9	Nitrate (NO_3)	70 ppm
10	Calcium (Ca)	9,600 ppm
11	Sodium (Na)	480 ppm
12	Iron (Fe)	125 ppm
13	Zinc (Zn)	45 ppm
14	Aluminum (Al)	50 ppm
15	Total Organics (TOC)	1,100 ppm

Appendix 12

FRONTIER CHEMICAL WASTE PROCESS INC.
ENVIRONMENTAL LABORATORY
4626 Royal Avenue, Niagara Falls, New York 14303

JOB: FERRY CONCRETE CONSTRUCTION COMPANY, INC.
3179 Walden Avenue, Depew, New York

SAMPLE AND WORK REQUESTED BY: John Ferry

DATE: February 25, 1976

FRONTIER CHEMICAL LAB NO. 2256

ITEM	PARAMETER	ANALYSIS
1	Origin: (Sample from Lancaster Pond)	
2	Order:	none
3	Colon (APHA) Unit*	15
4	Specific gravity (@ room temperature)	1.010
5	Ph	8.20
6	Total Suspended Solid (TSS)**	850 ppm
7	Total Disolved Solid (TDS)	4,000 ppm
8	Chloride (Cl^-)	220 ppm
9	Sulfate ($SO_4^=$)	260 ppm
10	Silica (SiO_2)	20 ppm
11	Nitrate (NO_3^-)	10 ppm
12	Calcium (Ca^{+2})	9,500 ppm
13	Sodium (Na^+)	30 ppm
14	Iron (Fe^{+2})	20 ppm
15	Zinc (Zn^{+2})	Trace
16	Total Organic (TOC)	100 ppm

BUFFALO TESTING LABORATORIES
INCORPORATED
CHEMISTS — METALLURGISTS BIOLOGISTS — ENGINEERS
902 Kenmore Ave. Buffalo, N. Y. - 14216

Phone: AC 716—873-2302

Purchase
Order No.
Report No. 70,639

May 23, 1978

Attn: Mr. John Ferry
Ferry Construction
3179 Walden Avenue
Depew, NY 14043

Gentlemen:

Following are the results of the tests performed on the samples which you submitted to us on May 17th, 1978.

Samples Submitted: Two (2) water samples identified as:
(1) 1st Draw
(2) 2nd Draw

Object: Chemical analysis

Results:

Test	Sample #1	Sample #2	Specs.
pH	7.75	8.05	7.7 - 9.0
Dissolved Solids	345 ppm	338 ppm	36 - 1306 ppm
Suspended Solids	25.0 ppm	3.5 ppm	268 - 359 ppm
BOD	<.6 ppm	<.6 ppm	1 - 12 ppm
COD	< 10 ppm	<10 ppm	10 - 240 ppm
Chloride	16.3 ppm	16.3 ppm	2.5 - 16 ppm
Sulfide	<.1 ppm	<.1 ppm	.02 - .1 ppm

BUFFALO TESTING LABORATORIES
INCORPORATED

Results: (cont.)

Test	Sample #1	Sample #2	Specs.
Fluoride	1.0 ppm	1.0 ppm	1.8 - 18.77 ppm
Cyanide	<.01 ppm	<.01 ppm	.02 - .1 ppm
Phenol	<.1 ppb	<.1 ppb	2 - 15 ppb
Zinc	0.16 ppm	0.08 ppm	.05 - 6.0 ppm
Lead	<.01 ppm	<.01 ppm	.1 - 1.3 ppm
Mercury	<.01 ppm	<.01 ppm	.1 - 1.3 ppm
Manganese	<.25 ppm	<.25 ppm	.02 - 3.0 ppm
Iron	3.3 ppm	1.7 ppm	1 - 30 ppm
Volatile Content	<1%	<1%	2 - 8%

Very truly yours,
BUFFALO TESTING LABORATORIES, INC

Edward J. Kris
EDWARD J. KRIS
Technical Director

EJK/mec
cc: Wendell Engineers

THE ARO CORPORATION
BUFFALO DIVISION
3695 BROADWAY, BUFFALO, N.Y. 14225

TELEPHONE 716-683-0440
TELEX 9-1250

ENVIRONMENTAL LABORATORY

ANALYTICAL RESULTS

ustomer Ferry Concrete Construction, 3179 Walden Ave. Depew, N.Y. 14043

RO Laboratory Number 1063W-690 Customer P.O. # 125

ate: Collected 4/17/79 Received 4/17/79 Reported 4/17/79

mpling Point/Description SAMPLE #3 Surface Water Basin

lkalinity
ionic Detergents (MBAS)
ochemical Oxygen
Demand (BOD_5)
emical Oxygen
Demand (COD)
hlorides
nductivity
anides
uorides
rdness
rogen, Ammonia
itrogen, Total Kjeldahl
rogen, Nitrates
rogen, Nitrites
henols * <.1 ppb

fates
tal Dissolved Solids
al Suspended Solids
al Solids
rbidity

drin
ndane
thoxychlor
xaphene
4-D
,5-TP (Silvex

(As) Arsenic
(Ba) Barium
(Cd) Cadmium
(Cr) Chromium
(Cu) Copper
(Fe) Iron
Iron-soluble
(Pb) Lead
(Mg) Magnesium
(Mn) Manganese
(Hg) Mercury
(K) Potassium
(Se) Selenium
(Ag) Silver
(Na) Sodium
(Zn) Zinc

Trihalomethanes (THM's)

Chloroform
Bromodichloromethane
Dibromochloromethane
Bromoform

Total THM'S)

* All preserved with H_3PO_4 + $CuSO_4$

Bernard J. Grucza

Bernard J. Grucza
Director, Environmental Laboratory

THE ARO CORPORATION
BUFFALO DIVISION
3695 BROADWAY, BUFFALO, N.Y. 14225
ARO
TELEPHONE 716-683-0440
TELEX 9-1250

ENVIRONMENTAL LABORATORY

ANALYTICAL RESULTS

stomer Ferry Concrete Construction, 3179 Walden Ave., Depew, N.Y. 14043

RO Laboratory Number 1063W-689 Customer P.O. # 125

ate: Collected 4/17/79 Received 4/17/79 Reported 4/17/79

mpling Point/Description SAMPLE #2 Wetlands High

kalinity
nionic Detergents (MBAS)
ochemical Oxygen Demand (BOD5)
hemical Oxygen Demand (COD)
lorides
onductivity
anides
uorides
ardness
trogen, Ammonia
itrogen, Total Kjeldahl
itrogen, Nitrates
trogen, Nitrites
henols * < 1. ppb
H
lfates
otal Dissolved Solids
otal Suspended Solids
otal Solids
urbidity

ndrin
Lindane
ethoxychlor
oxaphene
2, 4-D
4,5-TP (Silvex

* All preserved with $H_3PO_4 + CuSO_4$

(As) Arsenic
(Ba) Barium
(Cd) Cadmium
(Cr) Chromium
(Cu) Copper
(Fe) Iron
Iron-soluble
(Pb) Lead
(Mg) Magnesium
(Mn) Manganese
(Hg) Mercury
(K) Potassium
(Se) Selenium
(Ag) Silver
(Na) Sodium
(Zn) Zinc

Trihalomethanes (THM's)

Chloroform
Bromodichloromethane
Dibromochloromethane
Bromoform

Total THM'S)

Bernard J. Grucza
Bernard J. Grucza
Director, Environmental Laboratory

THE ARO CORPORATION
BUFFALO DIVISION
3695 BROADWAY, BUFFALO, N.Y. 14225

ARO

TELEPHONE 716-683-0440
TELEX 9-1250

ENVIRONMENTAL LABORATORY

ANALYTICAL RESULTS

ustomer Ferry Concrete Construction, 3179 Walden Ave. Depew, N.Y. 14043

O Laboratory Number 1063W-688 Customer P.O. # 125

te: Collected 4/17/79 Received 4/17/79 Reported 4/17/79

ampling Point/Description SAMPLE #1 Existing Lagoon Chem. Slurry

---

lkalinity
ionic Detergents (MBAS)
iochemical Oxygen
Demand (BOD_5)
emical Oxygen
Demand (COD)
lorides
nductivity
yanides
uorides
rdness
itrogen, Ammonia
trogen, Total Kjeldahl
trogen, Nitrates
itrogen, Nitrites
henols * 28. ppb

ulfates
tal Dissolved Solids
tal Suspended Solids
otal Solids
rbidity

ndrin
ndane
ethoxychlor
oxaphene
4-D
4,5-TP (Silvex

* All preserved with $H_3PO_4 + CuSO_4$

(As) Arsenic
(Ba) Barium
(Cd) Cadmium
(Cr) Chromium
(Cu) Copper
(Fe) Iron
Iron-soluble
(Pb) Lead
(Mg) Magnesium
(Mn) Manganese
(Hg) Mercury
(K) Potassium
(Se) Selenium
(Ag) Silver
(Na) Sodium
(Zn) Zinc

Trihalomethanes (THM's)

Chloroform
Bromodichloromethane
Dibromochloromethane
Bromoform

Total THM'S)

Bernard J. Grucza

Bernard J. Grucza
Director, Environmental Laboratory

Appendix 8

PHONE:
716-937 9167

Fabritron Inc.

11650 GENESEE ST. ● ALDEN, N.Y. 14004

JANUARY 09, 1979

LANCASTER RECLAMATION
~~FERRY CONSTRUCTION~~
3179 WALDEN AVENUE
LANCASTER, N.Y.

DEAR JOHN,

THE MATERIAL THAT WE WILL BE DUMPING AT YOUR SITE IS A UNILAYERED LOW VISCOSITY SLUDGE COMPOSED OF PORTLAND CEMENT, ASBESTOS AND GLASS FIBRES IN THE APPROXIMATE AMOUNTS SHOWN BELOW:

PORTLAND CEMENT	20%
ASBESTOS FIBERS	5%
GLASS FIBRES	10%
WATER	65%

SINCERELY YOURS,

ROBERT LOWREY
PLANT MANAGER

"FULL LINE" DISTRIBUTORS AND FABRICATORS OF:
Laminated Plastics (Phenolic, Melamine, Epoxy, Silicone, etc.), Thermoplastics (Nylon, Teflon, Delrin, Acrylic, etc.), And Vulcanized Fibre In Sheet, Rod and Tube Form; Asbestos Cement, Flexible Insulation, Insulation Varnishes and Industrial Paints.

Appendix 10

New York State Department of Environmental Conservation

APPLICATION FOR TREATMENT OR DISPOSAL OF AN INDUSTRIAL OR HAZARDOUS WASTE STREAM

See Application Instructions on Reverse Side

FOR STATE USE ONLY		
SITE NO.	APPLICATION NO.	DATE RECEIVED
DEPARTMENT ACTION ☐ Approved ☐ Disapproved		DATE

1. Project/Facility Name: 403 Pavement Road
2. County: Erie
3. Site No.: 1911-1
4. Application No.: 3
5. Owner's Name: Lancaster Reclamation
6. Address (Street, City, State, Zip Code): 3179 Walden Ave., Depew, N.Y
7. Telephone No.: 684-1703
8. Operator's Name: Lancaster Reclamation
9. Address (Street, City, State, Zip Code): Same as above 14043
10. Telephone No.: 684-1703
11. Method of Treatment or Disposal: Lagooning (mixed with bentonite clay sludge)
12. Company Generating Waste: Dresser Tranp. Equip. Div.
13. Address of Facility Generating Waste (Street, City, State, Zip): 2 Main Street, Depew, New York 14043
14. Representative of Waste Generator: A. E. Eicheldinger
15. Mailing Address of Representative: 2 Main Street, Depew, N.Y. 14043
16. Telephone No.: 716-683-6000
17. Description of Process Producing Waste: Core Making Sands
18. Expected Annual Waste Production: 6,000 cu.yds~~Tons~~/yr. ____Gal./yr.
19. Waste Hauled In: ☐ Drums ☐ Bulk Tank ☐ Roll-off Container ☒ Other Bulk Truck
20. Waste Composition
    a. Average Percent Solids ____ %
    b. Physical State: ☐ Liquid ☐ Slurry ☐ Sludge ☒ Solid ☐ Contained Gas
    c. pH Range 7.0 to 8.0
    d. Components

d. Components	CONCENTRATION (dry weight) Upper	Lower	Typical %	UNIT (check one)	WT.%	PPM
1) Moisture (% water) = 3.62%					☐	☐
2) Total solids 96.38% consisting of:					☐	☐
3) Loss of ignition			2.04		☒	☐
4) SiO2 (Sand Type)			90.50		☒	☐
5) AL2O3.4SIO2 (Clay Type)			3.66		☒	☐
6) Fe2O3 (Iron Oxide)			2.26		☒	☐
7) CaO (Lime Type)			0.24		☒	☐
Phenolic Compounds			0.0002		X	

21. Was a Leaching Potential Test conducted on the Waste? ☒ Yes ☐ No If yes, attach form.
22. Detail all hazards and nuisance problems associated with the wastes. List necessary safety, handling, treatment and disposal precautions.

NONE

23. Waste Hauler: Ferry Concrete
24. Address (street, city, state, zip code): 3179 Walden Ave, Depew, N.Y 14043
25. N.Y.S. Reg. No.: 15-001
26. Telephone No.: 684-1703
27. CERTIFICATION:

I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

a. Representative of Waste Generator: A. E. Eicheldinger, Plant Engineer — Signature and Title — 3-29-79 Date

b. Representative of Treatment or Disposal Facility: ____ Signature and Title — [illegible] Date

Appendix 11

New York State Department of Environmental Conservation

LEACHING POTENTIAL TEST REPORT

See Instructions on Reverse Side

FOR STATE USE ONLY

SITE NO.	APPLICATION NO.	DATE RECEIVED
DEPARTMENT ACTION ☐ Approved ☐ Disapproved		DATE

1. Project/Facility Name 403 Pavement Road
2. County Erie
3. Site No. 1911-1
4. Application No. 3
5. Owner's Name Lancaster Reclamation
6. Address (Street, City, State, Zip Code) 3179 Walden Ave, Depew, N.Y., 14043
7. Telephone No. 684-1703
8. Operator's Name Lancaster Reclamation
9. Address (Street, City, State, Zip Code) Same as above
10. Telephone No. 684-1703
11. Company Generating Waste Dresser Industries, Inc.
12. Address of Facility Generating Waste (Street, City, State, Zip Code) 2 Main Street, Depew, New York 14043
13. Representative of Waste Generator A. E. Eicheldinger
14. Mailing Address of Representative Same
15. Telephone No. 716-683-6000
16. Date Samples Taken March 8, 1979
17. Samples Taken By (Name and Employer) John Ferry, Ferry Concrete Construction Co., Inc.
18. Organization Performing Analyses The ARO Corporation
19. Address (Street, City, State, Zip Code) 3695 Broadway, Buffalo, New York 14225
20. Representative of Organization Performing Analyses Bernard Grucza
21. Title Director, Lab
22. Telephone No. 716-683-0440

23. Analyses of Liquid Fraction: pH: Sample 1 ______ Sample 2 ______ Sample 3 ______

	Component	Concentration			Unit (check one)	
		Sample 1	Sample 2	Sample 3	Wt.%	PPM
1)	N/A				☐	☐
2)					☐	☐
3)					☐	☐
4)					☐	☐
5)					☐	☐

24. Analyses of Solids Fraction: Percent Solids: Sample 1 ______ Sample 2 ______ Sample 3 ______

	Component	Concentration (Dry Weight)			Unit (check one)	
		Sample 1	Sample 2	Sample 3	Wt.%	PPM
1)	See Attachment				☐	☐
2)					☐	☐
3)					☐	☐
4)					☐	☐
5)					☐	☐

25. Leaching Test on Solids Fraction: pH: Sample 1 7.5 Sample 2 7.5 Sample 3 7.5

	Component	Concentration			Unit (check one)	
		Sample 1	Sample 2	Sample 3	Wt.%	PPM
1)	Phenol	1.97	1.87	2.05	☐	☒
2)					☐	☐
3)					☐	☐
4)					☐	☐
5)					☐	☐

26. CERTIFICATION:

I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

a. Representative of Waste Generator: A. E. Eicheldinger A. E. Eicheldinger, Plant Engineer — Signature and Title — 3-29-79 Date

b. Representative of Treatment or Disposal Facility: ______ Signature and Title — 3-29-79 Date

THE ARO CORPORATION
BUFFALO DIVISION
3695 BROADWAY, BUFFALO, N.Y. 14227
ARO
TELEPHONE 716-883-0440
TELEX 9-1230

ENVIRONMENTAL LABORATORY ANALYTICAL RESULTS

Customer Reed Holdings, Inc.

RO Laboratory Number 20,028 W-2433 Customer P.O. # 2682

Date: Collected 2/26/81 Received 2/26/81 Reported 3/11/81

ampling Point Description Surface Print Waste

The above referenced material has been classified as

x Non-hazardous ____ Hazardous

s a result of testing for the following characteristics according to the procedures and protocols in 40CFR261.

Ignitability:	____ ignitable	____ non-ignitable	x not tested
Corrosivity:	____ corrosive	____ non-corrosive	x not tested
Reactivity:	____ reactive	____ non-reactive	x not tested
EP Toxicity:	____ toxic	x non-toxic.	____ not tested

Hazardous Constituents (per 40CFR 261; Appendix VII)

1. ____ 2. ____
3. ____ 4. ____

RESULTS OF EP TOXICITY TEST

Contaminant	Allowed (mg /L)	Found (mg /L)	Contaminant	Allowed (mg /L)	Found (mg /
Arsenic	5.0	< 0.001	Silver	5.0	< 0.001
Barium	100.0	0.028	Endrin	0.02	< 0.00005
Cadmium	1.0	< 0.001	Lindane	0.40	< 0.00001
Chromium	5.0	0.008	Methoxychlor	10.0	< 0.00002
Lead	5.0	< 0.001	Toxaphene	0.5	< 0.0005
Mercury	0.2	< 0.0002	2,4-D	10.0	< 0.0001
Selenium	1.0	< 0.001	2,4,5-TP	1.0	< 0.0001

The above characteristics have been determined in accordance with 40CFR 261 and the EPA manual Test Methods for the Evaluation of Solid Waste; SW-846, Revision A; August 8, 1980.

Bernard J. Gniczak, Director
Environmental Laboratory

Form No. G-03 '81

THE ARO CORPORATION
BUFFALO DIVISION
3695 BROADWAY, BUFFALO, N.Y. 14227

ARO

TELEPHONE 716-683-6040
TELEX 9-1290

ENVIRONMENTAL LABORATORY
ANALYTICAL RESULTS

ustomer Reed Holdings, Inc.

RO Laboratory Number 20,028 W-2434 Customer P.O. # 2682

te: Collected 2/26/81 Received 2/26/81 Reported 3/11/81

mpling Point/Description Prepaste Alkali

The above referenced material has been classified as

x Non-hazardous ____ Hazardous

a result of testing for the following characteristics according to the procedures and otocols in 40CFR261.

Ignitability:	____ ignitable	____ non-ignitable	x not tested
Corrosivity:	____ corrosive	____ non-corrosive	x not tested
Reactivity:	____ reactive	____ non-reactive	x not tested
EP Toxicity:	____ toxic	x non-toxic	____ not tested

Hazardous Constituents (per 40CFR 261; Appendix VII)

1. ____________ 2. ____________
3. ____________ 4. ____________

RESULTS OF EP TOXICITY TEST

ntaminant	Allowed (mg/L)	Found (mg/L)	Contaminant	Allowed (mg/L)	Found (mg/L)
rsenic	5.0	0.016	Silver	5.0	0.002
Barium	100.0	0.034	Endrin	0.02	< 0.00005
dmium	1.0	< 0.001	Lindane	0.40	< 0.00001
romium	5.0	0.010	Methoxychlor	10.0	< 0.00002
Lead	5.0	0.009	Toxaphene	0.5	< 0.0005
rcury	0.2	< 0.0002	2,4-D	10.0	< 0.0001
lenium	1.0	0.005	2,4,5-TP	1.0	< 0.0001

The above characteristics have been determined in accordance with 40CFR 261 and the EPA manual Test Methods for the Evaluation of Solid Waste; SW-846, Revision A; August 8, 1980.

Bernard J. Grucza

Bernard J. Grucza, Director
Environmental Laboratory

Form No. C-03/81

THE ARO CORPORATION
BUFFALO DIVISION
3695 BROADWAY, BUFFALO, N.Y. 14227
ARO
TELEPHONE 716-[illegible]
TELEX 91290

ENVIRONMENTAL LABORATORY
ANALYTICAL RESULTS

ustomer Reed Holdings, Inc.

ARO Laboratory Number 20,028 W-2435 Customer P.O. # 2682

ate: Collected 2/26/81 Received 2/26/81 Reported 3/11/81

ampling Point/Description Prepaste Polymer

The above referenced material has been classified as

x Non-hazardous ____ Hazardous

as a result of testing for the following characteristics according to the procedures and rotocols in 40CFR261.

Ignitability:	____ ignitable	____ non-ignitable	x not tested
Corrosivity:	____ corrosive	____ non-corrosive	x not tested
Reactivity:	____ reactive	____ non-reactive	x not tested
EP Toxicity:	____ toxic	x non-toxic	____ not tested

Hazardous Constituents (per 40CFR 261; Appendix VII)

1. ____ 2. ____
3. ____ 4. ____

RESULTS OF EP TOXICITY TEST

Contaminant	Allowed(mg/L)	Found (mg/L)	Contaminant	Allowed (mg/L)	Found (mg/L)
rsenic	5.0	< 0.001	Silver	5.0	< 0.001
Barium	100.0	0.012	Endrin	0.02	< 0.00005
admium	1.0	< 0.001	Lindane	0.40	< 0.00001
hromium	5.0	0.003	Methoxychlor	10.0	< 0.00002
Lead	5.0	0.010	Toxaphene	0.5	< 0.0005
ercury	0.2	< 0.0002	2,4-D	10.0	< 0.0001
elenium	1.0	< 0.001	2,4,5-TP	1.0	< 0.0001

The above characteristics have been determined in accordance with 40CFR 261 and the EPA manual Test Methods for the Evaluation of Solid Waste; SW-846, Revision A; August 8, 1980.

Bernard J. Grucza
Bernard J. Grucza, Director
Environmental Laboratory

Form No. G-03/81

GROUNDWATER RESULTS

SAMPLE DATA

GW-1A

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER
GW-1A

Lancaster Reclaimation

Laboratory Name:NANCO LABORATORY INC.
Lab File ID No:>A3001
Sample Matrix: WATER
Data Release Authorized By: Kathleen M. Kelly

Case No: ENG. SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 10/31/87

VOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 11/03/87
Date Analyzed: 11/03/87
Conc/Dil Factor: 1 pH: 10.0
Percent Moisture: N/A

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	3.3 JB
67-64-1	Acetone	4.5 J
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	5.0 U
107-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	10.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
108-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	5.0 U
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE

If the result is a value greater than or equal to the detection limit, report the value.

U

Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U(e.g.10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J

Indicates an estimated value.This flag is used either when estimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: ENG. SCIENCE
Lancaster Reclaimation

SAMPLE NO.
GW-1A

SEMIVOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 11/03/87
Date Analyzed: 12/01/87
Conc/Dil Factor:------------> 1
Percent Moisture: N/A

GPC Cleanup: Yes_____ No__X__
Separatory Funnel Extraction: Yes__X__
Continuous Liquid - Liquid Extraction: Yes___

CAS Number		[✓ ug/L] or ug/Kg (Circle One)
108-95-2	Phenol	10.0 U
111-44-4	bis(-2-Chloroethyl)Ether	10.0 U
95-57-8	2-Chlorophenol	10.0 U
541-73-1	1,3-Dichlorobenzene	10.0 U
106-46-7	1,4-Dichlorobenzene	10.0 U
100-51-6	Benzyl Alcohol	10.0 U
95-50-1	1,2-Dichlorobenzene	10.0 U
95-48-7	2-Methylphenol	10.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	10.0 U
106-44-5	4-Methylphenol	10.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	10.0 U
67-72-1	Hexachloroethane	10.0 U
98-95-3	Nitrobenzene	10.0 U
78-59-1	Isophorone	10.0 U
88-75-5	2-Nitrophenol	10.0 U
105-67-9	2,4-Dimethylphenol	10.0 U
65-85-0	Benzoic Acid	50.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	10.0 U
120-83-2	2,4-Dichlorophenol	10.0 U
120-82-1	1,2,4-Trichlorobenzene	10.0 U
91-20-3	Naphthalene	10.0 U
106-47-8	4-Chloroaniline	10.0 U
87-68-3	Hexachlorobutadiene	10.0 U
59-50-7	4-Chloro-3-Methylphenol	10.0 U
91-57-6	2-Methylnaphthalene	10.0 U
77-47-4	Hexachlorocyclopentadiene	10.0 U
88-06-2	2,4,6-Trichlorophenol	10.0 U
95-95-4	2,4,5-Trichlorophenol	50.0 U
91-58-7	2-Chloronaphthalene	10.0 U
88-74-4	2-Nitroaniline	50.0 U
131-11-3	Dimethyl Phthalate	10.0 U
208-96-8	Acenaphthylene	10.0 U
99-09-2	3-Nitroaniline	50.0 U

CAS Number		[✓ ug/L] or ug/Kg (Circle One)
83-32-9	Acenaphthene	10.0 U
51-28-5	2,4-Dinitrophenol	50.0 U
100-02-7	4-Nitrophenol	50.0 U
132-64-9	Dibenzofuran	10.0 U
121-14-2	2,4-Dinitrotoluene	10.0 U
606-20-2	2,6-Dinitrotoluene	10.0 U
84-66-2	Diethylphthalate	10.0 U
7005-72-3	4-Chlorophenyl-phenylether	10.0 U
86-73-7	Fluorene	10.0 U
100-01-6	4-Nitroaniline	50.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	50.0 U
86-30-6	N-Nitrosodiphenylamine (1)	10.0 U
101-55-3	4-Bromophenyl-phenylether	10.0 U
118-74-1	Hexachlorobenzene	10.0 U
87-86-5	Pentachlorophenol	50.0 U
85-01-8	Phenanthrene	10.0 U
120-12-7	Anthracene	10.0 U
84-74-2	Di-n-Butylphthalate	10.0 U
206-44-0	Fluoranthene	10.0 U
129-00-0	Pyrene	10.0 U
85-68-7	Butylbenzylphthalate	10.0 U
91-94-1	3,3'-Dichlorobenzidine	20.0 U
56-55-3	Benzo(a)Anthracene	10.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	7.3 J
218-01-9	Chrysene	10.0 U
117-84-0	Di-n-Octyl Phthalate	10.0 U
205-99-2	Benzo(b)Fluoranthene	10.0 U
207-08-9	Benzo(k)Fluoranthene	10.0 U
50-32-8	Benzo(a)Pyrene	11.4 B
193-39-5	Indeno(1,2,3-cd)Pyrene	10.0 U
53-70-3	Dibenz(a,h)Anthracene	10.0 U
191-24-2	Benzo(g,h,i)Perylene	10.0 U

(1) - Cannot be separated from diphenylamine

ORGANICS ANALYSIS DATA SHEET

(PAGE 4)

SAMPLE NUMBER
GW-1A

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENG. SCIENCE
Lancaster Reclaimation

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or [✓ Scan] Number	Estimated Concentration ([✓ ug/l] or ug/Kg)
1	----	NONE FOUND	VOA	----	-----
2					
3	----	UNKNOWN	BNA	120	75.0 J
4	----	UNKNOWN	BNA	1277	25.0 J
5	----	UNKNOWN ALKENE	BNA	1388	20.0 J
6	----	UNKNOWN ALKANE	BNA	1544	12.0 J
7	----	UNKNOWN	BNA	1590	13.0 J
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

0000003

INORGANIC ANALYSIS DATA SHEET

FORM I

SMPL NO.: GW-1A

Lab Name : NANCO LABORATORIES, INC.

Customer Name: Engineering Science

SOW NO. : N/A

Lab Receipt Date : 10/31/87

Lab Sample ID: 87-EW-3757

Date Reported: 12/9/87

Location ID: LANCASTER RECLAMATION

RESUBMITTED
MAR 01 1988

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW __X__ MEDIUM ______

MATRIX : WATER __X__ SOIL ______ SLUDGE _____ OTHER ______

[✓ UG/L] OR MG/KG DRY WEIGHT (CIRCLE ONE)

1.	ALUMINUM	41000.0 P	13.	MAGNESIUM	154500.0 P
2.	ANTIMONY	50.0 U N	14.	MANGANESE	3671.0 P
3.	ARSENIC	10.6 SF N	15.	MERCURY	0.2 U C.V.
4.	BARIUM	415.0 P	16.	NICKEL	104.0 P
5.	BERYLLIUM	2.0 UP N	17.	POTASSIUM	11100.0 P
6.	CADMIUM	5.0 P	18.	SELENIUM	15.0 UF N
7.	CALCIUM	359200.0 P	19.	SILVER	10.0 UP N
8.	CHROMIUM	189.0 P	20.	SODIUM	35100.0 P
9.	COBALT	39.0 P	21.	THALLIUM	2.0 UF
10.	COPPER	121.0 P	22.	VANADIUM	108.0 P
11.	IRON	~~101.9~~ P 101900. GAM 12/12/88	23.	ZINC	474.0 P N
12.	LEAD	362.0 F N * (1:10)		PERCENT SOLIDS (%)	NA
	CYANIDE	NR			
	PHENOL	NR			

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS : This sample was a brown, clear liquid. The sample became colorless after ICP digestions and lt yellow after furnace digestions. Lead was analyzed at a 1:10 dilution.

LAB MANAGER

SAMPLE DATA

GW-1B

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER
GW-1B

Lancaster Reclaimation
Case No: ENG. SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 10/31/87

Laboratory Name:NANCO LABORATORY INC.
Lab File ID No:>A3027
Sample Matrix: WATER
Data Release Authorized By: Kathleen M. Kelley

VOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 11/04/87
Date Analyzed: 11/04/87
Conc/Dil Factor: 1 pH: 10.9
Percent Moisture: N/A

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	53.9 B
67-64-1	Acetone	21.0 B
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	5.0 U
107-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	10.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
108-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	5.0 U
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE

If the result is a value greater than or equal to the detection limit, report the value.

U

Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U(e.g.10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J

Indicates an estimated value.This flag is used either when estimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

ORGANIC ANALYSIS DATA SHEET

(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: ENG. SCIENCE
Lancaster Reclaimation

SAMPLE NO.
GW-1B

SEMIVOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 11/03/87
Date Analyzed: 12/03/87
Conc/Dil Factor:-----------> 1
Percent Moisture: N/A

GPC Cleanup: Yes_____ No__X__
Separatory Funnel Extraction: Yes__X__
Continuous Liquid - Liquid Extraction: Yes___

CAS Number		[✓ ug/L] or ug/Kg (Circle One)
108-95-2	Phenol	10.0 U
111-44-4	bis(-2-Chloroethyl)Ether	10.0 U
95-57-8	2-Chlorophenol	10.0 U
541-73-1	1,3-Dichlorobenzene	10.0 U
106-46-7	1,4-Dichlorobenzene	10.0 U
100-51-6	Benzyl Alcohol	10.0 U
95-50-1	1,2-Dichlorobenzene	10.0 U
95-48-7	2-Methylphenol	10.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	10.0 U
106-44-5	4-Methylphenol	10.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	10.0 U
67-72-1	Hexachloroethane	10.0 U
98-95-3	Nitrobenzene	10.0 U
78-59-1	Isophorone	10.0 U
88-75-5	2-Nitrophenol	10.0 U
105-67-9	2,4-Dimethylphenol	10.0 U
65-85-0	Benzoic Acid	50.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	10.0 U
120-83-2	2,4-Dichlorophenol	10.0 U
120-82-1	1,2,4-Trichlorobenzene	10.0 U
91-20-3	Naphthalene	10.0 U
106-47-8	4-Chloroaniline	10.0 U
87-68-3	Hexachlorobutadiene	10.0 U
59-50-7	4-Chloro-3-Methylphenol	10.0 U
91-57-6	2-Methylnaphthalene	10.0 U
77-47-4	Hexachlorocyclopentadiene	10.0 U
88-06-2	2,4,6-Trichlorophenol	10.0 U
95-95-4	2,4,5-Trichlorophenol	50.0 U
91-58-7	2-Chloronaphthalene	10.0 U
88-74-4	2-Nitroaniline	50.0 U
131-11-3	Dimethyl Phthalate	10.0 U
208-96-8	Acenaphthylene	10.0 U
99-09-2	3-Nitroaniline	50.0 U

CAS Number		[✓ ug/L] or ug/Kg (Circle One)
83-32-9	Acenaphthene	10.0 U
51-28-5	2,4-Dinitrophenol	50.0 U
100-02-7	4-Nitrophenol	50.0 U
132-64-9	Dibenzofuran	10.0 U
121-14-2	2,4-Dinitrotoluene	10.0 U
606-20-2	2,6-Dinitrotoluene	10.0 U
84-66-2	Diethylphthalate	10.0 U
7005-72-3	4-Chlorophenyl-phenylether	10.0 U
86-73-7	Fluorene	10.0 U
100-01-6	4-Nitroaniline	50.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	50.0 U
86-30-6	N-Nitrosodiphenylamine (1)	10.0 U
101-55-3	4-Bromophenyl-phenylether	10.0 U
118-74-1	Hexachlorobenzene	10.0 U
87-86-5	Pentachlorophenol	50.0 U
85-01-8	Phenanthrene	10.0 U
120-12-7	Anthracene	10.0 U
84-74-2	Di-n-Butylphthalate	10.0 U
206-44-0	Fluoranthene	10.0 U
129-00-0	Pyrene	10.0 U
85-68-7	Butylbenzylphthalate	10.0 U
91-94-1	3,3'-Dichlorobenzidine	20.0 U
56-55-3	Benzo(a)Anthracene	10.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	163.9
218-01-9	Chrysene	10.0 U
117-84-0	Di-n-Octyl Phthalate	10.0 U
205-99-2	Benzo(b)Fluoranthene	10.0 U
207-08-9	Benzo(k)Fluoranthene	10.0 U
50-32-8	Benzo(a)Pyrene	10.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	10.0 U
53-70-3	Dibenz(a,h)Anthracene	10.0 U
191-24-2	Benzo(g,h,i)Perylene	10.0 U

(1) - Cannot be separated from diphenylamine

ORGANICS ANALYSIS DATA SHEET

(PAGE 4)

SAMPLE NUMBER
GW-1B

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENG. SCIENCE
Lancaster Reclaimation

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or [✓ Scan] Number	Estimated Concentration ([✓ ug/L] or ug/Kg)
1	----	NONE FOUND	VOA	----	----
2					
3	127184	ETHENE, TETRACHLORO	BNA	56	10.0 J
4	505180	PYRIDINE,2,3,4,5-TETRAHYDRO	BNA	127	18.0 J
5	928949	2-HEXEN-1-OL	BNA	175	34.0 J
6	----	UNKNOWN	BNA	230	87.0 J
7	----	UNKNOWN	BNA	233	13.0 J
8	----	UNKNOWN	BNA	346	16.0 J
9	----	UNKNOWN	BNA	1469	14.0 J
10	----	UNKNOWN	BNA	1537	21.0 J
11	56771483	CYCLOPROPANAMINE, N-METHYL-1-PHENYL	BNA	1600	31.0 J
12	----	UNKNOWN	BNA	1659	42.0 J
13	----	UNKNOWN	BNA	1717	37.0 J
14	----	UNKNOWN	BNA	1782	130.0 J
15	----	UNKNOWN	BNA	1860	26.0 J
16	----	UNKNOWN	BNA	1954	15.0 J
17	----	UNKNOWN	BNA	2072	14.0 J
18					
19					
20					
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0000009

INORGANIC ANALYSIS DATA SHEET

FORM I

SMPL NO.: GW-1B

Lab Name : NANCO LABORATORIES, INC.

Customer Name: Engineering Science

SOW NO. : N/A

Lab Receipt Date : 10/31/87

Lab Sample ID: 87-EW-3763

Date Reported: 12/9/87

Location ID: LANCASTER RECLAMATION

RESUBMITTED
MAR 01 1988

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW __X__ MEDIUM ______

MATRIX : WATER __X__ SOIL _______ SLUDGE _____ OTHER ______

[✓ UG/L] OR MG/KG DRY WEIGHT (CIRCLE ONE)

1.	ALUMINUM	1150.0 P	13.	MAGNESIUM	13900.0 P
2.	ANTIMONY	50.0 UP N	14.	MANGANESE	15.0 UP
3.	ARSENIC	3.0 UF N	15.	MERCURY	0.2 U C.V.
4.	BARIUM	[120.0]P	16.	NICKEL	25.0 UP
5.	BERYLLIUM	2.0 UP N	17.	POTASSIUM	8300.0 P
6.	CADMIUM	5.0 UP	18.	SELENIUM	3.0 UF N
7.	CALCIUM	65900.0 P	19.	SILVER	10.0 UP N
8.	CHROMIUM	18.0 P	20.	SODIUM	56600.0 P
9.	COBALT	30.0 UP	21.	THALLIUM	2.0 UF
10.	COPPER	15.0 UP	22.	VANADIUM	25.0 UP
11.	IRON	2435.0 P	23.	ZINC	39.0 P N
12.	LEAD	[3.6]F N		PERCENT SOLIDS (%)	NA
	CYANIDE	NR			
	PHENOL	NR			

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS : This sample was a clear, colorless liquid and remained clear and colorless after ICP and furnace digestion procedures.

LAB MANAGER

SAMPLE DATA

GW-2B

ORGANICS ANALYSIS DATA SHEET
(PAGE 1)

SAMPLE NUMBER
GW-2B

Lancaster Reclaimation
Case No: ENG. SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 10/31/87

Laboratory Name:NANCO LABORATORY INC.
Lab File ID No:>A3002
Sample Matrix: WATER
Data Release Authorized By: Kathleen M. Kelly

VOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 11/03/87
Date Analyzed: 11/03/87
Conc/Dil Factor: 1 pH: 11.4
Percent Moisture: N/A

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	7.9 B
67-64-1	Acetone	10.8
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	5.0 U
107-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	10.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
108-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	5.0 U
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE
If the result is a value greater than or equal to the detection limit, report the value.

U
Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U(e.g.10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J
Indicates an estimated value.This flag is used either when estimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C
This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B
This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER
Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: ENG. SCIENCE
Lancaster Reclaimation

SAMPLE NO.
GW-2B

SEMIVOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 11/03/87
Date Analyzed: 12/01/87
Conc/Dil Factor:------------> 1
Percent Moisture: N/A

GPC Cleanup: Yes_____ No__X__
Separatory Funnel Extraction: Yes__X__
Continuous Liquid - Liquid Extraction: Yes___

CAS Number		[✓ ug/L] or ug/Kg (Circle One)
108-95-2	Phenol	10.0 U
111-44-4	bis(-2-Chloroethyl)Ether	10.0 U
95-57-8	2-Chlorophenol	10.0 U
541-73-1	1,3-Dichlorobenzene	10.0 U
106-46-7	1,4-Dichlorobenzene	10.0 U
100-51-6	Benzyl Alcohol	10.0 U
95-50-1	1,2-Dichlorobenzene	10.0 U
95-48-7	2-Methylphenol	10.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	10.0 U
106-44-5	4-Methylphenol	10.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	10.0 U
67-72-1	Hexachloroethane	10.0 U
98-95-3	Nitrobenzene	10.0 U
78-59-1	Isophorone	10.0 U
88-75-5	2-Nitrophenol	10.0 U
105-67-9	2,4-Dimethylphenol	10.0 U
65-85-0	Benzoic Acid	50.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	10.0 U
120-83-2	2,4-Dichlorophenol	10.0 U
120-82-1	1,2,4-Trichlorobenzene	10.0 U
91-20-3	Naphthalene	10.0 U
106-47-8	4-Chloroaniline	10.0 U
87-68-3	Hexachlorobutadiene	10.0 U
59-50-7	4-Chloro-3-Methylphenol	10.0 U
91-57-6	2-Methylnaphthalene	10.0 U
77-47-4	Hexachlorocyclopentadiene	10.0 U
88-06-2	2,4,6-Trichlorophenol	10.0 U
95-95-4	2,4,5-Trichlorophenol	50.0 U
91-58-7	2-Chloronaphthalene	10.0 U
88-74-4	2-Nitroaniline	50.0 U
131-11-3	Dimethyl Phthalate	10.0 U
208-96-8	Acenaphthylene	10.0 U
99-09-2	3-Nitroaniline	50.0 U

CAS Number		[✓ ug/L] or ug/Kg (Circle One)
83-32-9	Acenaphthene	10.0 U
51-28-5	2,4-Dinitrophenol	50.0 U
100-02-7	4-Nitrophenol	50.0 U
132-64-9	Dibenzofuran	10.0 U
121-14-2	2,4-Dinitrotoluene	10.0 U
606-20-2	2,6-Dinitrotoluene	10.0 U
84-66-2	Diethylphthalate	10.0 U
7005-72-3	4-Chlorophenyl-phenylether	10.0 U
86-73-7	Fluorene	10.0 U
100-01-6	4-Nitroaniline	50.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	50.0 U
86-30-6	N-Nitrosodiphenylamine (1)	10.0 U
101-55-3	4-Bromophenyl-phenylether	10.0 U
118-74-1	Hexachlorobenzene	10.0 U
87-86-5	Pentachlorophenol	50.0 U
85-01-8	Phenanthrene	10.0 U
120-12-7	Anthracene	10.0 U
84-74-2	Di-n-Butylphthalate	2.4 J
206-44-0	Fluoranthene	10.0 U
129-00-0	Pyrene	10.0 U
85-68-7	Butylbenzylphthalate	10.0 U
91-94-1	3,3'-Dichlorobenzidine	20.0 U
56-55-3	Benzo(a)Anthracene	10.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	89.5
218-01-9	Chrysene	10.0 U
117-84-0	Di-n-Octyl Phthalate	30.7
205-99-2	Benzo(b)Fluoranthene	10.0 U
207-08-9	Benzo(k)Fluoranthene	10.0 U
50-32-8	Benzo(a)Pyrene	11.9 B
193-39-5	Indeno(1,2,3-cd)Pyrene	10.0 U
53-70-3	Dibenz(a,h)Anthracene	10.0 U
191-24-2	Benzo(g,h,i)Perylene	10.0 U

(1) - Cannot be separated from diphenylamine

ORGANICS ANALYSIS DATA SHEET

(PAGE 4)

SAMPLE NUMBER
GW-2B

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENG. SCIENCE
Lancaster Reclaimation

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or [✓ Scan] Number	Estimated Concentration ([✓ ug/l] or ug/Kg)
1	----	NONE FOUND	VOA	----	-----
2					
3	----	UNKNOWN	BNA	121	42.0
4	----	UNKNOWN ALKENE	BNA	1158	14.0
5	----	UNKNOWN	BNA	1289	740.0
6	----	ISOMER OF EICOSENE	BNA	1291	34.0
7	----	UNKNOWN ALKANE	BNA	1335	31.0
8	----	UNKNOWN ALKANE	BNA	1342	40.0
9	----	UNKNOWN	BNA	1390	550.0
10	----	UNKNOWN ALKANE	BNA	1396	56.0
11	----	UNKNOWN ALKANE	BNA	1447	56.0
12	----	UNKNOWN ALKANE	BNA	1497	54.0
13	----	UNKNOWN ALKANE	BNA	1545	95.0
14	28553120	1,2 BENZENEDICARBOXYLIC ACID, DIISONYL ESTER	BNA	1563	61.0
15	28553120	1,2 BENZENEDICARBOXYLIC ACID, DIISONYL ESTER	BNA	1575	28.0
16	----	UNKNOWN ALKANE	BNA	1591	120.0
17	544763	HEXADECANE	BNA	1635	64.0
18	26761400	1,2 BENZENEDICARBOXYLIC ACID, DIISODECYL ESTER	BNA	1666	29.0
19	112958	EICOSANE	BNA	1678	38.0
20					
21					
22					
23					
24					
25					
26					

0000004

INORGANIC ANALYSIS DATA SHEET

FORM I

SMPL NO.: GW-2B

Lab Name : NANCO LABORATORIES, INC.

Customer Name: Engineering Science

SOW NO. : N/A

Lab Receipt Date : 10/31/87

Lab Sample ID: 87-EW-3758

Date Reported: 12/9/87

Location ID: LANCASTER RECLAMATION

MAR 0 1 1988

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW __X__ MEDIUM ______

MATRIX : WATER __X__ SOIL ______ SLUDGE ______ OTHER ______

[✓ UG/L] OR MG/KG DRY WEIGHT (CIRCLE ONE)

1.	ALUMINUM	930.0 P	13.	MAGNESIUM	7400.0 P
2.	ANTIMONY	50.0 UP N	14.	MANGANESE	15.0 UP
3.	ARSENIC	3.0 UF N	15.	MERCURY	0.2 U C.V.
4.	BARIUM	[80.0]P	16.	NICKEL	25.0 UP
5.	BERYLLIUM	2.0 UP N	17.	POTASSIUM	35100.0 P
6.	CADMIUM	5.0 UP	18.	SELENIUM	15.0 UF N
7.	CALCIUM	42100.0 P	19.	SILVER	10.0 UP N
8.	CHROMIUM	10.0 UP	20.	SODIUM	85700.0 P
9.	COBALT	30.0 UP	21.	THALLIUM	2.0 UF
10.	COPPER	15.0 UP	22.	VANADIUM	25.0 UP
11.	IRON	1853.0 P	23.	ZINC	33.0 P N
12.	LEAD	[4.4]F N		PERCENT SOLIDS (%)	NA
	CYANIDE	NR			
	PHENOL	NR			

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS : This sample was a clear and colorless liquid. The sample remained colorless after ICP digestions but became lt yellow after furnace digestions.

LAB MANAGER

SAMPLE DATA

GW-3A

ORGANICS ANALYSIS DATA SHEET
(PAGE 1)

SAMPLE NUMBER
GW-3A

Laboratory Name:NANCO LABORATORY INC.
Lab File ID No:>A3004
Sample Matrix: WATER
Data Release Authorized By: Kathleen M Kelley

Lancaster Reclaimation
Case No: ENG. SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 10/31/87

VOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 11/03/87
Date Analyzed: 11/03/87
Conc/Dil Factor: 1 pH: 7.8
Percent Moisture: N/A

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	17.0 B
67-64-1	Acetone	12.7
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	5.0 U
107-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	10.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
108-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	5.0 U
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE

f the result is a value greater than or equal to the detection imit, report the value.

U

Indicates compound was analyzed for but not detected. Report he minimum detection limit for the sample with the U(e.g.10U ased on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should ead U-Compound was analyzed for but not detected.The number is he minimum attainable detection limit for the sample.

J

ndicates an estimated value.This flag is used either when stimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data ndicates the presence of a compound that meets the identification iteria but the result is less than the specified detection limit greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: ENG. SCIENCE
Lancaster Reclaimation

SAMPLE NO.
GW-3A

SEMIVOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 11/03/87
Date Analyzed: 12/01/87
Conc/Dil Factor:------------> 1
Percent Moisture: N/A

GPC Cleanup: Yes_____ No__X__
Separatory Funnel Extraction: Yes__X__
Continuous Liquid - Liquid Extraction: Yes___

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
108-95-2	Phenol	10.0 U
111-44-4	bis(-2-Chloroethyl)Ether	10.0 U
95-57-8	2-Chlorophenol	10.0 U
541-73-1	1,3-Dichlorobenzene	10.0 U
106-46-7	1,4-Dichlorobenzene	10.0 U
100-51-6	Benzyl Alcohol	10.0 U
95-50-1	1,2-Dichlorobenzene	10.0 U
95-48-7	2-Methylphenol	10.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	10.0 U
106-44-5	4-Methylphenol	10.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	10.0 U
67-72-1	Hexachloroethane	10.0 U
98-95-3	Nitrobenzene	10.0 U
78-59-1	Isophorone	10.0 U
88-75-5	2-Nitrophenol	10.0 U
105-67-9	2,4-Dimethylphenol	10.0 U
65-85-0	Benzoic Acid	50.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	10.0 U
120-83-2	2,4-Dichlorophenol	10.0 U
120-82-1	1,2,4-Trichlorobenzene	10.0 U
91-20-3	Naphthalene	10.0 U
106-47-8	4-Chloroaniline	10.0 U
87-68-3	Hexachlorobutadiene	10.0 U
59-50-7	4-Chloro-3-Methylphenol	10.0 U
91-57-6	2-Methylnaphthalene	10.0 U
77-47-4	Hexachlorocyclopentadiene	10.0 U
88-06-2	2,4,6-Trichlorophenol	10.0 U
95-95-4	2,4,5-Trichlorophenol	50.0 U
91-58-7	2-Chloronaphthalene	10.0 U
88-74-4	2-Nitroaniline	50.0 U
131-11-3	Dimethyl Phthalate	10.0 U
208-96-8	Acenaphthylene	10.0 U
99-09-2	3-Nitroaniline	50.0 U

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
83-32-9	Acenaphthene	10.0 U
51-28-5	2,4-Dinitrophenol	50.0 U
100-02-7	4-Nitrophenol	50.0 U
132-64-9	Dibenzofuran	10.0 U
121-14-2	2,4-Dinitrotoluene	10.0 U
606-20-2	2,6-Dinitrotoluene	10.0 U
84-66-2	Diethylphthalate	10.0 U
7005-72-3	4-Chlorophenyl-phenylether	10.0 U
86-73-7	Fluorene	10.0 U
100-01-6	4-Nitroaniline	50.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	50.0 U
86-30-6	N-Nitrosodiphenylamine (1)	10.0 U
101-55-3	4-Bromophenyl-phenylether	10.0 U
118-74-1	Hexachlorobenzene	10.0 U
87-86-5	Pentachlorophenol	50.0 U
85-01-8	Phenanthrene	10.0 U
120-12-7	Anthracene	10.0 U
84-74-2	Di-n-Butylphthalate	7.7 J
206-44-0	Fluoranthene	10.0 U
129-00-0	Pyrene	10.0 U
85-68-7	Butylbenzylphthalate	10.0 U
91-94-1	3,3'-Dichlorobenzidine	20.0 U
56-55-3	Benzo(a)Anthracene	10.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	25.9
218-01-9	Chrysene	10.0 U
117-84-0	Di-n-Octyl Phthalate	10.0 U
205-99-2	Benzo(b)Fluoranthene	10.0 U
207-08-9	Benzo(k)Fluoranthene	10.0 U
50-32-8	Benzo(a)Pyrene	10.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	10.0 U
53-70-3	Dibenz(a,h)Anthracene	10.0 U
191-24-2	Benzo(g,h,i)Perylene	10.0 U

(1) - Cannot be separated from diphenylamine

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

SAMPLE NUMBER
GW-3A

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENG. SCIENCE
Lancaster Reclaimation

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or [✓ Scan] Number	Estimated Concentration ([✓ ug/L] or ug/Kg)
1	----	UNKNOWN ALDEHYDE	VOA	292	5.0 J
2					
3	127184	ETHENE, TETRACHLORO	BNA	67	43.0 J
4	----	UNKNOWN	BNA	138	40.0 J
5	928949	2-HEXEN-1-OL	BNA	185	82.0 J
6	----	UNKNOWN	BNA	187	42.0 J
7	----	UNKNOWN	BNA	190	22.0 J
8	930687	2-CYCLOHEXEN-1-ONE	BNA	240	76.0 J
9	----	UNKNOWN	BNA	243	10.0 J
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

0000005

INORGANIC ANALYSIS DATA SHEET
FORM I

SMPL NO.: GW-3A

Lab Name : NANCO LABORATORIES, INC.

Customer Name: Engineering Science

SOW NO. : N/A

Lab Receipt Date : 10/31/87

Lab Sample ID: 87-EW-3760

Date Reported: 12/9/87

Location ID: LANCASTER LANDFILL

SUBMITTED
MAR 01 1988

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW __X__ MEDIUM ______

MATRIX : WATER __X__ SOIL ______ SLUDGE _____OTHER ______

[✓ UG/L] OR MG/KG DRY WEIGHT (CIRCLE ONE)

1.	ALUMINUM	21420.0 P	13.	MAGNESIUM	137500.0
2.	ANTIMONY	50.0 UP N	14.	MANGANESE	2933.0 P
3.	ARSENIC	19.2 F N	15.	MERCURY	0.2 U C.V.
4.	BARIUM	257.0 P	16.	NICKEL	76.0 P
5.	BERYLLIUM	2.0 UP N	17.	POTASSIUM	9300.0 P
6.	CADMIUM	5.0 UP	18.	SELENIUM	15.0 UF N
7.	CALCIUM	325800.0 P	19.	SILVER	12.0 P N
8.	CHROMIUM	64.0 P	20.	SODIUM	11300.0 P
9.	COBALT	67.0 P	21.	THALLIUM	2.0 UF
10.	COPPER	211.0 P	22.	VANADIUM	[48.0]P
11.	IRON	101300.0 P	23.	ZINC	1526.0 P N
12.	LEAD	195.0 F N* (1:10)		PERCENT SOLIDS (%)	NA
	CYANIDE	NR			
	PHENOL	NR			

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS : This sample was a brown, clear liquid. The sample became colorless after ICP digestions and lt yellow after furnace digestions. Lead was analyzed at a 1:10 dilution.

LAB MANAGER

SAMPLE DATA

GW-3B

ORGANICS ANALYSIS DATA SHEET
(PAGE 1)

SAMPLE NUMBER
GW-3B

Lancaster Reclaimation
Case No: ENG. SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 10/31/87

Laboratory Name:NANCO LABORATORY INC.
Lab File ID No:>A3003
Sample Matrix: WATER
Data Release Authorized By: Kathleen M. Kelly

VOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 11/03/87
Date Analyzed: 11/03/87
Conc/Dil Factor: 1 pH: 8.7
Percent Moisture: N/A

CAS Number		[✓ ug/L] or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	24.0 B
67-64-1	Acetone	18.6
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	5.0 U
107-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	10.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
108-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		[✓ ug/L] or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	5.0 U
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE

If the result is a value greater than or equal to the detection limit, report the value.

U

Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U(e.g.10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J

Indicates an estimated value.This flag is used either when estimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

FORM I

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: ENG. SCIENCE
Lancaster Reclaimation

SAMPLE NO.
GW-3B

SEMIVOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 11/03/87
Date Analyzed: 12/01/87
Conc/Dil Factor:------------> 1
Percent Moisture: N/A

GPC Cleanup: Yes_____ No__X__
Separatory Funnel Extraction: Yes__X__
Continuous Liquid - Liquid Extraction: Yes___

CAS Number		[✓ ug/L] or ug/Kg (Circle One)
108-95-2	Phenol	10.0 U
111-44-4	bis(-2-Chloroethyl)Ether	10.0 U
95-57-8	2-Chlorophenol	10.0 U
541-73-1	1,3-Dichlorobenzene	10.0 U
106-46-7	1,4-Dichlorobenzene	10.0 U
100-51-6	Benzyl Alcohol	10.0 U
95-50-1	1,2-Dichlorobenzene	10.0 U
95-48-7	2-Methylphenol	10.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	10.0 U
106-44-5	4-Methylphenol	10.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	10.0 U
67-72-1	Hexachloroethane	10.0 U
98-95-3	Nitrobenzene	10.0 U
78-59-1	Isophorone	10.0 U
88-75-5	2-Nitrophenol	10.0 U
105-67-9	2,4-Dimethylphenol	10.0 U
65-85-0	Benzoic Acid	50.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	10.0 U
120-83-2	2,4-Dichlorophenol	10.0 U
120-82-1	1,2,4-Trichlorobenzene	10.0 U
91-20-3	Naphthalene	10.0 U
106-47-8	4-Chloroaniline	10.0 U
87-68-3	Hexachlorobutadiene	10.0 U
59-50-7	4-Chloro-3-Methylphenol	10.0 U
91-57-6	2-Methylnaphthalene	10.0 U
77-47-4	Hexachlorocyclopentadiene	10.0 U
88-06-2	2,4,6-Trichlorophenol	10.0 U
95-95-4	2,4,5-Trichlorophenol	50.0 U
91-58-7	2-Chloronaphthalene	10.0 U
88-74-4	2-Nitroaniline	50.0 U
131-11-3	Dimethyl Phthalate	10.0 U
208-96-8	Acenaphthylene	10.0 U
99-09-2	3-Nitroaniline	50.0 U

CAS Number		[✓ ug/L] or ug/Kg (Circle One)
83-32-9	Acenaphthene	10.0 U
51-28-5	2,4-Dinitrophenol	50.0 U
100-02-7	4-Nitrophenol	50.0 U
132-64-9	Dibenzofuran	10.0 U
121-14-2	2,4-Dinitrotoluene	10.0 U
606-20-2	2,6-Dinitrotoluene	10.0 U
84-66-2	Diethylphthalate	10.0 U
7005-72-3	4-Chlorophenyl-phenylether	10.0 U
86-73-7	Fluorene	10.0 U
100-01-6	4-Nitroaniline	50.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	50.0 U
86-30-6	N-Nitrosodiphenylamine (1)	10.0 U
101-55-3	4-Bromophenyl-phenylether	10.0 U
118-74-1	Hexachlorobenzene	10.0 U
87-86-5	Pentachlorophenol	50.0 U
85-01-8	Phenanthrene	10.0 U
120-12-7	Anthracene	10.0 U
84-74-2	Di-n-Butylphthalate	4.0 J
206-44-0	Fluoranthene	10.0 U
129-00-0	Pyrene	10.0 U
85-68-7	Butylbenzylphthalate	10.0 U
91-94-1	3,3'-Dichlorobenzidine	20.0 U
56-55-3	Benzo(a)Anthracene	10.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	10.0 U
218-01-9	Chrysene	10.0 U
117-84-0	Di-n-Octyl Phthalate	10.0 U
205-99-2	Benzo(b)Fluoranthene	10.0 U
207-08-9	Benzo(k)Fluoranthene	10.0 U
50-32-8	Benzo(a)Pyrene	10.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	10.0 U
53-70-3	Dibenz(a,h)Anthracene	10.0 U
191-24-2	Benzo(g,h,i)Perylene	10.0 U

(1) - Cannot be separated from diphenylamine

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

SAMPLE NUMBER
GW-3B

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENG. SCIENCE
LANCASTER LANDFILL

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or [✓ Scan] Number	Estimated Concentration ([✓ ug/l] or ug/Kg)
1	3769231	1-HEXENE 4-METHYL	VOA	596	8.0 J
2					
3	127184	ETHENE, TETRACHLORO	BNA	70	61.0 J
4	----	UNKNOWN	BNA	140	58.0 J
5	----	UNKNOWN AMINE	BNA	187	110.0 J
6	----	UNKNOWN	BNA	190	70.0 J
7	----	UNKNOWN ALKENE	BNA	244	120.0 J
8	----	UNKNOWN CARBOXYLIC ACID	BNA	1488	2800.0 J
9	----	UNKNOWN	BNA	1570	230.0 J
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

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INORGANIC ANALYSIS DATA SHEET

FORM I

SMPL NO.: GW-3B

Lab Name : NANCO LABORATORIES, INC.

Customer Name: Engineering Science

SOW NO. : N/A

Lab Receipt Date : 10/31/87

Lab Sample ID: 87-EW-3759

Date Reported: 12/9/87

RESUBMITTED
MAR 01 1988

Location ID: LANCASTER RECLAMATION

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW __X__ MEDIUM ______

MATRIX : WATER __X__ SOIL ______ SLUDGE _____OTHER ______

[✓ UG/L] OR MG/KG DRY WEIGHT (CIRCLE ONE)

1.	ALUMINUM	7610.0 P	13.	MAGNESIUM	53800.0 P
2.	ANTIMONY	50.0 UP N	14.	MANGANESE	444.0 UP
3.	ARSENIC	4.1 UF N	15.	MERCURY	0.2 U C.V.
4.	BARIUM	[214.0]P	16.	NICKEL	25.0 UP
5.	BERYLLIUM	2.0 UP N	17.	POTASSIUM	4500.0 P
6.	CADMIUM	5.0 UP	18.	SELENIUM	15.0 UF N
7.	CALCIUM	117800.0 P	19.	SILVER	10.0 UP N
8.	CHROMIUM	94.0 UP	20.	SODIUM	16600.0 P
9.	COBALT	30.0 UP	21.	THALLIUM	2.0 UF
10.	COPPER	15.0 UP	22.	VANADIUM	25.0 UP
11.	IRON	15861.0 P	23.	ZINC	163.0 P N
12.	LEAD	[39.2]FN ☆		PERCENT SOLIDS (%)	NA
	CYANIDE	NR			
	PHENOL	NR			

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS : This sample was a tan, clear liquid. The sample became colorless after ICP and lt yellow after furnace digestion procedures.

LAB MANAGER

SAMPLE DATA

GW-4B

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER
GW-4B

Lancaster Reclaimation
Case No: ENG. SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 10/31/87

Laboratory Name:NANCO LABORATORY INC.
Lab File ID No:>A3023
Sample Matrix: WATER
Data Release Authorized By: Kathleen M. Kelley

VOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 11/04/87
Date Analyzed: 11/04/87
Conc/Dil Factor: 1 pH: 9.5
Percent Moisture: N/A

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	52.4 B
67-64-1	Acetone	23.3 B
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	5.0 U
107-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	10.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
108-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	1.7 J
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	6.0 J
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE
If the result is a value greater than or equal to the detection limit, report the value.

U
Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U(e.g.10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J
Indicates an estimated value.This flag is used either when estimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C
This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B
This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER
Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: ENG. SCIENCE
Lancaster Reclaimation

SAMPLE NO.
GW-4B

SEMIVOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 11/03/87
Date Analyzed: 12/01/87
Conc/Dil Factor:-----------> 1
Percent Moisture: N/A

GPC Cleanup: Yes_____ No__X__
Separatory Funnel Extraction: Yes__X__
Continuous Liquid - Liquid Extraction: Yes___

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
108-95-2	Phenol	10.0 U
111-44-4	bis(-2-Chloroethyl)Ether	10.0 U
95-57-8	2-Chlorophenol	10.0 U
541-73-1	1,3-Dichlorobenzene	10.0 U
106-46-7	1,4-Dichlorobenzene	10.0 U
100-51-6	Benzyl Alcohol	10.0 U
95-50-1	1,2-Dichlorobenzene	10.0 U
95-48-7	2-Methylphenol	10.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	10.0 U
106-44-5	4-Methylphenol	10.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	10.0 U
67-72-1	Hexachloroethane	10.0 U
98-95-3	Nitrobenzene	10.0 U
78-59-1	Isophorone	10.0 U
88-75-5	2-Nitrophenol	10.0 U
105-67-9	2,4-Dimethylphenol	10.0 U
65-85-0	Benzoic Acid	50.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	10.0 U
120-83-2	2,4-Dichlorophenol	10.0 U
120-82-1	1,2,4-Trichlorobenzene	10.0 U
91-20-3	Naphthalene	10.0 U
106-47-8	4-Chloroaniline	10.0 U
87-68-3	Hexachlorobutadiene	10.0 U
59-50-7	4-Chloro-3-Methylphenol	10.0 U
91-57-6	2-Methylnaphthalene	10.0 U
77-47-4	Hexachlorocyclopentadiene	10.0 U
88-06-2	2,4,6-Trichlorophenol	10.0 U
95-95-4	2,4,5-Trichlorophenol	50.0 U
91-58-7	2-Chloronaphthalene	10.0 U
88-74-4	2-Nitroaniline	50.0 U
131-11-3	Dimethyl Phthalate	10.0 U
208-96-8	Acenaphthylene	10.0 U
99-09-2	3-Nitroaniline	50.0 U

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
83-32-9	Acenaphthene	10.0 U
51-28-5	2,4-Dinitrophenol	50.0 U
100-02-7	4-Nitrophenol	50.0 U
132-64-9	Dibenzofuran	10.0 U
121-14-2	2,4-Dinitrotoluene	10.0 U
606-20-2	2,6-Dinitrotoluene	10.0 U
84-66-2	Diethylphthalate	10.0 U
7005-72-3	4-Chlorophenyl-phenylether	10.0 U
86-73-7	Fluorene	10.0 U
100-01-6	4-Nitroaniline	50.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	50.0 U
86-30-6	N-Nitrosodiphenylamine (1)	10.0 U
101-55-3	4-Bromophenyl-phenylether	10.0 U
118-74-1	Hexachlorobenzene	10.0 U
87-86-5	Pentachlorophenol	50.0 U
85-01-8	Phenanthrene	10.0 U
120-12-7	Anthracene	10.0 U
84-74-2	Di-n-Butylphthalate	15.4
206-44-0	Fluoranthene	10.0 U
129-00-0	Pyrene	10.0 U
85-68-7	Butylbenzylphthalate	10.0 U
91-94-1	3,3'-Dichlorobenzidine	20.0 U
56-55-3	Benzo(a)Anthracene	10.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	10.0 U
218-01-9	Chrysene	10.0 U
117-84-0	Di-n-Octyl Phthalate	10.0 U
205-99-2	Benzo(b)Fluoranthene	10.0 U
207-08-9	Benzo(k)Fluoranthene	10.0 U
50-32-8	Benzo(a)Pyrene	10.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	10.0 U
53-70-3	Dibenz(a,h)Anthracene	10.0 U
191-24-2	Benzo(g,h,i)Perylene	10.0 U

(1) - Cannot be separated from diphenylamine

ORGANICS ANALYSIS DATA SHEET

(PAGE 4)

SAMPLE NUMBER
GW-4B

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENG. SCIENCE
Lancaster Reclaimation

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or [✓ Scan] Number	Estimated Concentration ([✓ ug/l] or ug/Kg)
1	----	NONE FOUND	VOA	----	----
2					
3	127184	ETHENE	BNA	68	47.0 J
4	----	UNKNOWN	BNA	119	10.0 J
5	505180	PYRIDINE, 2,3,4,5-TETRAHYDRO	BNA	138	45.0 J
6	----	UNKNOWN ALKENE	BNA	186	11.0 J
7	----	UNKNOWN	BNA	189	40.0 J
8	----	UNKNOWN	BNA	193	9.0 J
9	930687	2-CYCLOHEXEN-1-ONE	BNA	242	103.0 J
10	----	UNKNOWN	BNA	244	11.0 J
11	----	UNKNOWN	BNA	1477	17.0 J
12	----	UNKNOWN	BNA	1566	84.0 J
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

INORGANIC ANALYSIS DATA SHEET

FORM I

SMPL NO.: GW-4B

Lab Name : NANCO LABORATORIES, INC.

Customer Name: Engineering Science

SOW NO. : N/A

Lab Receipt Date : 10/31/87

Lab Sample ID: 87-EW-3761

Date Reported: 12/9/87

RESUBMITTED
MAR 01 1988

Location ID: LANCASTER RECLAMATION

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW __X__ MEDIUM ______

MATRIX : WATER __X__ SOIL ______ SLUDGE _____OTHER ______

[✓ UG/L] OR MG/KG DRY WEIGHT (CIRCLE ONE)

1.	ALUMINUM	4960.0 P	13.	MAGNESIUM	21400.0 P
2.	ANTIMONY	50.0 UP N	14.	MANGANESE	233.0 P
3.	ARSENIC	19.3 F N	15.	MERCURY	0.2 U C.V.
4.	BARIUM	327.0 P	16.	NICKEL	[31.0]P
5.	BERYLLIUM	2.0 UP N	17.	POTASSIUM	12700.0 P
6.	CADMIUM	5.0 UP	18.	SELENIUM	3.0 UF N
7.	CALCIUM	56300.0 P	19.	SILVER	10.0 UP N
8.	CHROMIUM	18.0 P	20.	SODIUM	45400.0 P
9.	COBALT	30.0 UP	21.	THALLIUM	2.0 UF
10.	COPPER	15.0 UP	22.	VANADIUM	25.0 P
11.	IRON	9738.0 P	23.	ZINC	47.0 P N
12.	LEAD	19.3 SF N*		PERCENT SOLIDS (%)	NA
	CYANIDE	NR			
	PHENOL	NR			

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS : This sample was an opaque, brown liquid. The sample became colorless after both ICP and furnace digestion procedures.

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LAB MANAGER

SAMPLE DATA

GW-5A

ORGANICS ANALYSIS DATA SHEET
(PAGE 1)

SAMPLE NUMBER
GW-5A

Lancaster Reclaimation
Case No: ENG. SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 10/31/87

Laboratory Name:NANCO LABORATORY INC.
Lab File ID No:>A3031
Sample Matrix: WATER
Data Release Authorized By: Kathleen M. Kelley

VOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 11/05/87
Date Analyzed: 11/05/87
Conc/Dil Factor: 100 pH: 8.5
Percent Moisture: N/A

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
74-87-3	Chloromethane	1000.0 U
74-83-9	Bromomethane	1000.0 U
75-01-4	Vinyl Chloride	1000.0 U
75-00-3	Chloroethane	1000.0 U
75-09-2	Methylene Chloride	985.5 B
67-64-1	Acetone	2500.0 B
75-15-0	Carbon Disulfide	500.0 U
75-35-4	1,1-Dichloroethene	5059.7
75-34-3	1,1-Dichloroethane	500.0 U
156-60-5	Trans-1,2-Dichloroethene	500.0 U
67-66-3	Chloroform	500.0 U
107-06-2	1,2-Dichloroethane	500.0 U
78-93-3	2-Butanone	1000.0 U
71-55-6	1,1,1-Trichloroethane	500.0 U
56-23-5	Carbon Tetrachloride	500.0 U
108-05-4	Vinyl Acetate	1000.0 U
75-27-4	Bromodichloromethane	500.0 U

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	500.0 U
78-87-5	1,2-Dichloropropane	500.0 U
10061-02-6	Trans-1,3-Dichloropropene	500.0 U
79-01-6	Trichloroethene	5019.0
124-48-1	Dibromochloromethane	500.0 U
79-00-5	1,1,2-Trichloroethane	500.0 U
71-43-2	Benzene	5250.8
10061-01-5	cis-1,3-Dichloropropene	500.0 U
110-75-8	2-Chloroethylvinylether	1000.0 U
75-25-2	Bromoform	500.0 U
591-78-6	2-Hexanone	1000.0 U
108-10-1	4-Methyl-2-Pentanone	1000.0 U
127-18-4	Tetrachloroethene	500.0 U
108-88-3	Toluene	5206.5
108-90-7	Chlorobenzene	5273.7
100-41-4	Ethylbenzene	500.0 U
100-42-5	Styrene	500.0 U
	Total Xylenes	500.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE

If the result is a value greater than or equal to the detection limit, report the value.

U

Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U(e.g.10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J

Indicates an estimated value.This flag is used either when estimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

FORM I

ORGANIC ANALYSIS DATA SHEET

(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: ENG. SCIENCE
Lancaster Reclaimation

SAMPLE NO.
GW-5A

SEMIVOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 11/03/87
Date Analyzed: 12/01/87
Conc/Dil Factor:------------> 1
Percent Moisture: N/A

GPC Cleanup: Yes_____ No__X__
Separatory Funnel Extraction: Yes__X__
Continuous Liquid - Liquid Extraction: Yes___

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
108-95-2	Phenol	17.0
111-44-4	bis(-2-Chloroethyl)Ether	10.0 U
95-57-8	2-Chlorophenol	30.4
541-73-1	1,3-Dichlorobenzene	10.0 U
106-46-7	1,4-Dichlorobenzene	10.0 U
100-51-6	Benzyl Alcohol	10.0 U
95-50-1	1,2-Dichlorobenzene	10.0 U
95-48-7	2-Methylphenol	10.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	10.0 U
106-44-5	4-Methylphenol	10.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	10.0 U
67-72-1	Hexachloroethane	10.0 U
98-95-3	Nitrobenzene	10.0 U
78-59-1	Isophorone	10.0 U
88-75-5	2-Nitrophenol	10.0 U
105-67-9	2,4-Dimethylphenol	10.0 U
65-85-0	Benzoic Acid	50.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	10.0 U
120-83-2	2,4-Dichlorophenol	10.0 U
120-82-1	1,2,4-Trichlorobenzene	10.0 U
91-20-3	Naphthalene	10.0 U
106-47-8	4-Chloroaniline	10.0 U
87-68-3	Hexachlorobutadiene	10.0 U
59-50-7	4-Chloro-3-Methylphenol	14.4
91-57-6	2-Methylnaphthalene	10.0 U
77-47-4	Hexachlorocyclopentadiene	10.0 U
88-06-2	2,4,6-Trichlorophenol	10.0 U
95-95-4	2,4,5-Trichlorophenol	50.0 U
91-58-7	2-Chloronaphthalene	10.0 U
88-74-4	2-Nitroaniline	50.0 U
131-11-3	Dimethyl Phthalate	10.0 U
208-96-8	Acenaphthylene	10.0 U
99-09-2	3-Nitroaniline	50.0 U

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
83-32-9	Acenaphthene	10.0 U
51-28-5	2,4-Dinitrophenol	50.0 U
100-02-7	4-Nitrophenol	50.0 U
132-64-9	Dibenzofuran	10.0 U
121-14-2	2,4-Dinitrotoluene	10.0 U
606-20-2	2,6-Dinitrotoluene	10.0 U
84-66-2	Diethylphthalate	10.0 U
7005-72-3	4-Chlorophenyl-phenylether	10.0 U
86-73-7	Fluorene	10.0 U
100-01-6	4-Nitroaniline	50.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	50.0 U
86-30-6	N-Nitrosodiphenylamine (1)	10.0 U
101-55-3	4-Bromophenyl-phenylether	10.0 U
118-74-1	Hexachlorobenzene	10.0 U
87-86-5	Pentachlorophenol	50.0 U
85-01-8	Phenanthrene	10.0 U
120-12-7	Anthracene	10.0 U
84-74-2	Di-n-Butylphthalate	1.9 J
206-44-0	Fluoranthene	10.0 U
129-00-0	Pyrene	10.0 U
85-68-7	Butylbenzylphthalate	10.0 U
91-94-1	3,3'-Dichlorobenzidine	20.0 U
56-55-3	Benzo(a)Anthracene	10.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	107.9
218-01-9	Chrysene	10.0 U
117-84-0	Di-n-Octyl Phthalate	10.0 U
205-99-2	Benzo(b)Fluoranthene	10.0 U
207-08-9	Benzo(k)Fluoranthene	10.0 U
50-32-8	Benzo(a)Pyrene	10.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	10.0 U
53-70-3	Dibenz(a,h)Anthracene	10.0 U
191-24-2	Benzo(g,h,i)Perylene	10.0 U

(1) - Cannot be separated from diphenylamine

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

SAMPLE NUMBER
GW-5A

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENG. SCIENCE
Lancaster Reclaimation

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or [✓ Scan] Number	Estimated Concentration [✓ (ug/l)] or ug/Kg)
1	----	UNKNOWN	VOA	12	830.0 J
2	----	UNKNOWN	VOA	16	810.0 J
3					
4	127184	ETHENE, TETRACHLORO	BNA	69	3.0 J
5	505180	PYRIDINE 2,3,4,5 TETRAHYDRO	BNA	139	2.0 J
6	----	UNKNOWN ALCOHOL	BNA	180	52.0 J
7	----	UNKNOWN	BNA	185	25.0 J
8	----	UNKNOWN KETONE	BNA	190	14.0 J
9	930687	2-CYCLOHEXEN-1-ONE	BNA	241	32.0 J
10	95578	PHENOL, 2-CHLORO	BNA	318	3.0 J
11	----	ISOMER OF PHENOL CHLORO METHYL	BNA	636	10.0 J
12					
13					
14					
15					
16					
17					
18					
19					
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22					
23					
24					
25					
26					

FORM I, PART B

0000008

INORGANIC ANALYSIS DATA SHEET
FORM I

SMPL NO.: GW-5A

Lab Name : NANCO LABORATORIES, INC.

Customer Name: Engineering Science

SOW NO. : N/A

Lab Receipt Date : 10/31/87

Lab Sample ID: 87-EW-3762

Date Reported: 12/9/87

Location ID: LANCASTER RECLAMATION

RESUBMITTED
MAR 01 1988

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW __X__ MEDIUM ______

MATRIX : WATER __X__ SOIL ______ SLUDGE _____OTHER ______

[✓ UG/L] OR MG/KG DRY WEIGHT (CIRCLE ONE)

1.	ALUMINUM	13660.0 P	13.	MAGNESIUM	96800.0 P
2.	ANTIMONY	113.0 P N	14.	MANGANESE	1915.0 P
3.	ARSENIC	[9.4]F N	15.	MERCURY	0.2 U C.V.
4.	BARIUM	[159.0]P~~N~~	16.	NICKEL	52.0 P
5.	BERYLLIUM	2.0 UPN	17.	POTASSIUM	8200.0 P
6.	CADMIUM	5.0 UP	18.	SELENIUM	15.0 UFN
7.	CALCIUM	200600.0 P	19.	SILVER	10.0 UP N
8.	CHROMIUM	73.0 P	20.	SODIUM	27000.0 P
9.	COBALT	[43.0]P	21.	THALLIUM	2.0 UF
10.	COPPER	122.0 P	22.	VANADIUM	25.0 UP
11.	IRON	54300.0 P	23.	ZINC	684.0 PN
12.	LEAD	61.6 SF N ★		PERCENT SOLIDS (%)	NA
	CYANIDE	NR			
	PHENOL	NR			

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS : This sample was an opaque-tan liquid. The sample became colorless after both ICP and furnace digestion procedures.

LAB MANAGER

NANCO
LABORATORIES

SAMPLE DATA

88-EW-0408
GW-5A.14
Resampling
(VOA ONLY)

ORGANICS ANALYSIS DATA SHEET
(PAGE 1)

pg 6/21/88

LANCASTER REC.

SAMPLE NUMBER

GW-5A.14

Laboratory Name:NANCO LABORATORY INC.
Lab File ID No:>H1209
Sample Matrix:WATER
Data Release Authorized By:

Case No: ENGINEERING SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 06/02/88

VOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 06/12/88
Date Analyzed:06/12/88
Conc/Dil Factor: 1 pH: 8.04
Percent Moisture: N/A

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	4.2 JB
67-64-1	Acetone	14.0 B
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	5.0 U
107-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	10.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
108-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	5.0 U
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE

If the result is a value greater than or equal to the detection limit, report the value.

J

Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U(e.g.10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J

Indicates an estimated value.This flag is used either when estimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

FORM I

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

SAMPLE NUMBER

GW-5A.14

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENGINEERING SCIENCE
LAN~~D~~CASTER REC.

pls
6/21/88

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	[✓ RT] or Scan Number	Estimated Concentration ([✓ ug/l] or ug/Kg)
1	------	NONE FOUND	VOA	------	------
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
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25					
26					

SAMPLE DATA

TRIP BLANK

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER
TRIP BLANK

Lancaster Reclaimation
Case No: ENG. SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 10/31/87

Laboratory Name:NANCO LABORATORY INC.
Lab File ID No:>A3007
Sample Matrix: WATER
Data Release Authorized By: Kathleen M. Kelly

VOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 11/03/87
Date Analyzed: 11/03/87
Conc/Dil Factor: 1 pH: 6.3
Percent Moisture: N/A

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	19.6 B
67-64-1	Acetone	12.8
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	5.0 U
107-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	10.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
108-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	5.0 U
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE

If the result is a value greater than or equal to the detection limit, report the value.

U

Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U(e.g.10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J

Indicates an estimated value.This flag is used either when estimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

FORM I

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

SAMPLE NUMBER
TRIP BLANK

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENG. SCIENCE
Lancaster Reclaimation

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or [✓ Scan] Number	Estimated Concentration [✓ (ug/l] or ug/Kg)
1	----	NONE FOUND	VOA	----	----
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
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25					
26					

FORM I, PART B

C1

60

SAMPLE DATA PACKAGE

TRIP Blank

00042

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

6/21/88

LAN~~D~~CASTER REC.

SAMPLE NUMBER

TRIP BLANK

Laboratory Name:NANCO LABORATORY INC.
Lab File ID No:>H1198
Sample Matrix:WATER
Data Release Authorized By:

Case No: ENGINEERING SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 06/02/88

VOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 06/11/88
Date Analyzed:06/11/88
Conc/Dil Factor: 1 pH: 7.87
Percent Moisture: N/A

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	7.0 B
67-64-1	Acetone	10.0 B
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	5.0 U
107-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	5.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
108-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	5.0 U
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE

If the result is a value greater than or equal to the detection limit, report the value.

U

Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U(e.g.10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J

Indicates an estimated value.This flag is used either when estimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

FORM I

SAMPLE DATA

GW-4A

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER
GW-4A

Lancaster Reclaimation
Case No: ENG. SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 10/31/87

Laboratory Name:NANCO LABORATORY INC.
Lab File ID No:>A3006
Sample Matrix: WATER
Data Release Authorized By: Kathleen M. Kelley

VOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 11/03/87
Date Analyzed: 11/03/87
Conc/Dil Factor: 1 pH: 6.6
Percent Moisture: N/A

AS umber		[✓ ug/l] or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	23.9 B
67-64-1	Acetone	18.9
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	6.3
107-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	10.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
108-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	5.0 U
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE

f the result is a value greater than or equal to the detection imit, report the value.

U

Indicates compound was analyzed for but not detected. Report he minimum detection limit for the sample with the U(e.g.10U ased on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should ead U-Compound was analyzed for but not detected.The number is he minimum attainable detection limit for the sample.

J

Indicates an estimated value.This flag is used either when stimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification riteria but the result is less than the specified detection limit ut greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

ORGANICS ANALYSIS DATA SHEET

(PAGE 4)

SAMPLE NUMBER
GW-4A

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENG. SCIENCE
LANCASTER LANDFILL

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or [✓ Scan] Number	Estimated Concentration ([✓ ug/l] or ug/Kg)
1	----	NONE FOUND	VOA	----	----
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

SAMPLE DATA

GW-5B

FIELD BLANK

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER
GW-5B

Lancaster Reclaimation
Case No: ENG. SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 10/31/87

Laboratory Name:NANCO LABORATORY INC.
Lab File ID No:>A3005
Sample Matrix: WATER
Data Release Authorized By: Kathleen M Kelly

VOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 11/03/87
Date Analyzed: 11/03/87
Conc/Dil Factor: 1 pH: 6.8
Percent Moisture: N/A

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	24.2 B
67-64-1	Acetone	12.5
75-15-0	Carbon Disulfide	1.9 J
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	5.0 U
107-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	53.5
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
108-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	5.0 U
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE

'f the result is a value greater than or equal to the detection imit, report the value.

U

Indicates compound was analyzed for but not detected. Report he minimum detection limit for the sample with the U(e.g.10U ased on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should ead U-Compound was analyzed for but not detected.The number is he minimum attainable detection limit for the sample.

J

Indicates an estimated value.This flag is used either when stimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification riteria but the result is less than the specified detection limit ut greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

FORM I

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

SAMPLE NUMBER
GW-5B

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENG. SCIENCE
Lancaster Reclaimation

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or [✓ Scan] Number	Estimated Concentration ([✓ ug/l] or ug/Kg)
1	----	NONE FOUND	VOA	----	----
2					
3					
4					
5					
6					
7					
8					
9					
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26					

FORM I, PART B

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

SAMPLE NUMBER
GW-5B

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENG. SCIENCE
LANCASTER LANDFILL

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or [✓ Scan] Number	Estimated Concentration ([✓ ug/l] or ug/Kg)
1	----	NONE FOUND	VOA	----	----
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
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25					
26					

INORGANIC ANALYSIS DATA SHEET
FORM I

Lab Name : NANCO LABORATORIES, INC.

Customer: Engineering Science

QC Batch: EW 3757-63

Lab Receipt Date : 10/31/87

LOCATION ID: LANCASTER RECLAMATION

DATE REPORTED : 12/9/87

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW __X__ MEDIUM ______

MATRIX : WATER __X__ SOIL ______ SLUDGE _____ OTHER ______

[✓ UG/L] OR MG/KG DRY WEIGHT (CIRCLE ONE)

PROJECT ID	SAMPLE ID:	T.O.X.	Instrument Detection Limit
GW-1A	EW-3757	32	5 ug/L
GW-2B	EW-3758	5U	5 ug/L
GW-3B	EW-3759	34	5 ug/L
GW-3A	EW-3760	5U	5 ug/L
GW-4B	EW-3761	9	5 ug/L
GW-5A	EW-3762	6	5 ug/L
GW-5A MS	EW-3762 MS	73	5 ug/L
GW-5A MSD	EW-3762 MSD	78	5 ug/L
GW-1B	EW-3763	5U	5 ug/L

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS : BMRL = RESULTS ARE BELOW MINIMUM REPORTING LEVEL
ND = RESULTS ARE NOT DETECTED

LAB MANAGER

SURFACE WATER RESULTS

SAMPLE DATA

SW-1

ORGANICS ANALYSIS DATA SHEET
(PAGE 1)

SAMPLE NUMBER
SW-1

LANCASTER REC.

Laboratory Name:NANCO LABORATORY INC.
Lab File ID No:>F0952
Sample Matrix:WATER
Data Release Authorized By: P.J.Wunsch

Case No:ENG. SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 09/10/87

VOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 09/14/87
Date Analyzed:09/14/87
Conc/Dil Factor: 1 pH: 8.0
Percent Moisture: N/A

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	3.0 JB
67-64-1	Acetone	12.0 B
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	5.0 U
107-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	10.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
108-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	5.0 U
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

vALUE
If the result is a value greater than or equal to the detection imit, report the value.

Indicates compound was analyzed for but not detected. Report he minimum detection limit for the sample with the U(e.g.10U ased on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected.The number is he minimum attainable detection limit for the sample.

Indicates an estimated value.This flag is used either when stimating a concentration for tentatively identified compounds here a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification riteria but the result is less than the specified detection limit ut greater than zero (e.g. 10J).

C
This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B
This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER
Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

S
This flag denotes that the compound is a spike compound and was added to the sample prior to analysis.

FORM I

ORGANIC ANALYSIS DATA SHEET

(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: ENGINEERING SCIENCE
LANCASTER REC.

SAMPLE NO.
SW-1

SEMIVOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 09/14/87
Date Analyzed: 09/18/87
Conc/Dil Factor:------------> 1
Percent Moisture: N/A

GPC Cleanup: Yes____ No__X__
Separatory Funnel Extraction: Yes__X__
Continuous Liquid - Liquid Extraction: Yes___

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
108-95-2	Phenol	10.0 U
111-44-4	bis(-2-Chloroethyl)Ether	10.0 U
95-57-8	2-Chlorophenol	10.0 U
541-73-1	1,3-Dichlorobenzene	10.0 U
106-46-7	1,4-Dichlorobenzene	10.0 U
100-51-6	Benzyl Alcohol	10.0 U
95-50-1	1,2-Dichlorobenzene	10.0 U
95-48-7	2-Methylphenol	10.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	10.0 U
106-44-5	4-Methylphenol	10.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	10.0 U
67-72-1	Hexachloroethane	10.0 U
98-95-3	Nitrobenzene	10.0 U
78-59-1	Isophorone	10.0 U
88-75-5	2-Nitrophenol	10.0 U
105-67-9	2,4-Dimethylphenol	10.0 U
65-85-0	Benzoic Acid	50.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	10.0 U
120-83-2	2,4-Dichlorophenol	10.0 U
120-82-1	1,2,4-Trichlorobenzene	10.0 U
91-20-3	Naphthalene	10.0 U
106-47-8	4-Chloroaniline	10.0 U
87-68-3	Hexachlorobutadiene	10.0 U
59-50-7	4-Chloro-3-Methylphenol	10.0 U
91-57-6	2-Methylnaphthalene	10.0 U
77-47-4	Hexachlorocyclopentadiene	10.0 U
88-06-2	2,4,6-Trichlorophenol	10.0 U
95-95-4	2,4,5-Trichlorophenol	50.0 U
91-58-7	2-Chloronaphthalene	10.0 U
88-74-4	2-Nitroaniline	50.0 U
131-11-3	Dimethyl Phthalate	10.0 U
208-96-8	Acenaphthylene	10.0 U
99-09-2	3-Nitroaniline	50.0 U

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
83-32-9	Acenaphthene	10.0 U
51-28-5	2,4-Dinitrophenol	50.0 U
100-02-7	4-Nitrophenol	50.0 U
132-64-9	Dibenzofuran	10.0 U
121-14-2	2,4-Dinitrotoluene	10.0 U
606-20-2	2,6-Dinitrotoluene	10.0 U
84-66-2	Diethylphthalate	10.0 U
7005-72-3	4-Chlorophenyl-phenylether	10.0 U
86-73-7	Fluorene	10.0 U
100-01-6	4-Nitroaniline	50.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	50.0 U
86-30-6	N-Nitrosodiphenylamine (1)	10.0 U
101-55-3	4-Bromophenyl-phenylether	10.0 U
118-74-1	Hexachlorobenzene	10.0 U
87-86-5	Pentachlorophenol	50.0 U
85-01-8	Phenanthrene	10.0 U
120-12-7	Anthracene	10.0 U
84-74-2	Di-n-Butylphthalate	10.0 U
206-44-0	Fluoranthene	10.0 U
129-00-0	Pyrene	10.0 U
85-68-7	Butylbenzylphthalate	10.0 U
91-94-1	3,3'-Dichlorobenzidine	20.0 U
56-55-3	Benzo(a)Anthracene	10.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	10.0 U
218-01-9	Chrysene	10.0 U
117-84-0	Di-n-Octyl Phthalate	10.0 U
205-99-2	Benzo(b)Fluoranthene	10.0 U
207-08-9	Benzo(k)Fluoranthene	10.0 U
50-32-8	Benzo(a)Pyrene	11.8 B
193-39-5	Indeno(1,2,3-cd)Pyrene	10.0 U
53-70-3	Dibenz(a,h)Anthracene	10.0 U
191-24-2	Benzo(g,h,i)Perylene	10.0 U

(1) - Cannot be separated from diphenylamine

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

SAMPLE NUMBER
SW-1

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENGINEERING SCIENCE
LANCASTER REC.

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or [✓ Scan] Number	Estimated Concentration ([✓ ug/L] or ug/Kg)
1	-----	NONE FOUND	VOA	-----	-----
2					
3	-----	UNKNOWN	BNA	54	2.0 J
4	-----	UNKNOWN	BNA	67	2.0 J
5	-----	UNKNOWN	BNA	125	6.4 J
6	3522949	HEXANE,2,2,5-TRIMETHYL	BNA	234	3.0 J
7	75268074	ACETAALDEHYDE,Z-BUTENYLHYDRAZONE	BNA	313	3.0 J
8	-----	UNKNOWN	BNA	323	2.0 J
9	-----	UNKNOWN	BNA	345	2.0 J
10	-----	UNKNOWN	BNA	653	2.0 J
11	-----	UNKNOWN	BNA	748	2.0 J
12	-----	UNKNOWN	BNA	971	4.0 J
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

003

INORGANIC ANALYSIS DATA SHEET

FORM I

SMPL NO.: SW-1

Lab Name : NANCO LABORATORIES, INC.

Customer Name: Engineering Science

SOW NO. : N/A

Lab Receipt Date : 09/10/87

Lab Sample ID: 87-EW-2439

Date Reported: 10/07/87

Location ID: Lancaster Rec.

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW __X__ MEDIUM ______

MATRIX : WATER __X__ SOIL _______ SLUDGE _____OTHER ______

[✓ UG/L] OR MG/KG DRY WEIGHT (CIRCLE ONE)

1. ALUMINUM	[186.0]P N	13. MAGNESIUM	18231.0 P E
2. ANTIMONY	58.0 UP	14. MANGANESE	16.0 P
3. ARSENIC	3.0 UF	15. MERCURY	0.2 U C.V. N
4. BARIUM	19.0 UP	16. NICKEL	12.0 UP
5. BERYLLIUM	0.6 UP	17. POTASSIUM	[842.0]P
6. CADMIUM	5.0 UP	18. SELENIUM	5.0 UF N
7. CALCIUM	27870.0 P E	19. SILVER	15.0 P
8. CHROMIUM	9.0 UP	20. SODIUM	9739.0 P
9. COBALT	13.0 UP	21. THALLIUM	5.0 UF
10. COPPER	3.0 UP	22. VANADIUM	5.0 UP
11. IRON	345.0 P N	23. ZINC	26.0 P
12. LEAD	5.0 UF N	PERCENT SOLIDS (%)	N/A
CYANIDE	10.0 U		
PHENOL	NR		

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS : This sample was a clear colorless liquid. The sample remained colorless after both ICP and furnace digestion procedures.

LAB MANAGER

SAMPLE DATA

SW-2

ORGANICS ANALYSIS DATA SHEET
(PAGE 1)

SAMPLE NUMBER
SW-2

LANCASTER REC.

Laboratory Name:NANCO LABORATORY INC.
Lab File ID No:>F0955
Sample Matrix:WATER
Data Release Authorized By: P.Y. Wunsch

Case No:ENG. SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 09/10/87

VOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 09/14/87
Date Analyzed:09/14/87
Conc/Dil Factor: 1 pH: 8.4
Percent Moisture: N/A

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	6.0 B
67-64-1	Acetone	20.0 B
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	5.0 U
107-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	10.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
108-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	5.0 U
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE

If the result is a value greater than or equal to the detection limit, report the value.

U

Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U(e.g.10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J

Indicates an estimated value.This flag is used either when estimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

S

This flag denotes that the compound is a spike compound and was added to the sample prior to analysis.

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: ENGINEERING SCIENCE
LANCASTER REC.

SAMPLE NO.
SW-2

SEMIVOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 09/14/87
Date Analyzed: 09/18/87
Conc/Dil Factor:------------> 1
Percent Moisture: N/A

GPC Cleanup: Yes_____ No__X__
Separatory Funnel Extraction: Yes__X__
Continuous Liquid - Liquid Extraction: Yes___

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
108-95-2	Phenol	10.0 U
111-44-4	bis(-2-Chloroethyl)Ether	10.0 U
95-57-8	2-Chlorophenol	10.0 U
541-73-1	1,3-Dichlorobenzene	10.0 U
106-46-7	1,4-Dichlorobenzene	10.0 U
100-51-6	Benzyl Alcohol	10.0 U
95-50-1	1,2-Dichlorobenzene	10.0 U
95-48-7	2-Methylphenol	10.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	10.0 U
106-44-5	4-Methylphenol	10.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	10.0 U
67-72-1	Hexachloroethane	10.0 U
98-95-3	Nitrobenzene	10.0 U
78-59-1	Isophorone	10.0 U
88-75-5	2-Nitrophenol	10.0 U
105-67-9	2,4-Dimethylphenol	10.0 U
65-85-0	Benzoic Acid	50.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	10.0 U
120-83-2	2,4-Dichlorophenol	10.0 U
120-82-1	1,2,4-Trichlorobenzene	10.0 U
91-20-3	Naphthalene	10.0 U
106-47-8	4-Chloroaniline	10.0 U
87-68-3	Hexachlorobutadiene	10.0 U
59-50-7	4-Chloro-3-Methylphenol	10.0 U
91-57-6	2-Methylnaphthalene	10.0 U
77-47-4	Hexachlorocyclopentadiene	10.0 U
88-06-2	2,4,6-Trichlorophenol	10.0 U
95-95-4	2,4,5-Trichlorophenol	50.0 U
91-58-7	2-Chloronaphthalene	10.0 U
88-74-4	2-Nitroaniline	50.0 U
131-11-3	Dimethyl Phthalate	10.0 U
208-96-8	Acenaphthylene	10.0 U
99-09-2	3-Nitroaniline	50.0 U

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
83-32-9	Acenaphthene	10.0 U
51-28-5	2,4-Dinitrophenol	50.0 U
100-02-7	4-Nitrophenol	50.0 U
132-64-9	Dibenzofuran	10.0 U
121-14-2	2,4-Dinitrotoluene	10.0 U
606-20-2	2,6-Dinitrotoluene	10.0 U
84-66-2	Diethylphthalate	10.0 U
7005-72-3	4-Chlorophenyl-phenylether	10.0 U
86-73-7	Fluorene	10.0 U
100-01-6	4-Nitroaniline	50.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	50.0 U
86-30-6	N-Nitrosodiphenylamine (1)	10.0 U
101-55-3	4-Bromophenyl-phenylether	10.0 U
118-74-1	Hexachlorobenzene	10.0 U
87-86-5	Pentachlorophenol	50.0 U
85-01-8	Phenanthrene	10.0 U
120-12-7	Anthracene	10.0 U
84-74-2	Di-n-Butylphthalate	16.2
206-44-0	Fluoranthene	10.0 U
129-00-0	Pyrene	10.0 U
85-68-7	Butylbenzylphthalate	10.0 U
91-94-1	3,3'-Dichlorobenzidine	20.0 U
56-55-3	Benzo(a)Anthracene	10.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	10.0 U
218-01-9	Chrysene	10.0 U
117-84-0	Di-n-Octyl Phthalate	10.0 U
205-99-2	Benzo(b)Fluoranthene	10.0 U
207-08-9	Benzo(k)Fluoranthene	10.0 U
50-32-8	Benzo(a)Pyrene	12.2 B
193-39-5	Indeno(1,2,3-cd)Pyrene	10.0 U
53-70-3	Dibenz(a,h)Anthracene	10.0 U
191-24-2	Benzo(g,h,i)Perylene	10.0 U

(1) - Cannot be separated from diphenylamine

~~003~~ mw
004

INORGANIC ANALYSIS DATA SHEET
FORM I

SMPL NO.: SW-2

Lab Name : NANCO LABORATORIES, INC.

Customer Name: Engineering Science

SOW NO. : N/A

Lab Receipt Date : 09/10/87

Lab Sample ID: 87-EW-2440

Date Reported: 10/07/87

Location ID: Lancaster Rec.

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW __X__ MEDIUM ______

MATRIX : WATER __X__ SOIL ______ SLUDGE _____OTHER ______

[✓ UG/L] OR MG/KG DRY WEIGHT (CIRCLE ONE)

1. ALUMINUM	762.0 P✓	13. MAGNESIUM	7503.0 PE
2. ANTIMONY	86.0 P	14. MANGANESE	29.0 P
3. ARSENIC	3.0 UF	15. MERCURY	0.2 U C.V. ✓
4. BARIUM	[30.0]P	16. NICKEL	[28.0]P
5. BERYLLIUM	[1.0]P	17. POTASSIUM	[2062.0]P
6. CADMIUM	12.0 P	18. SELENIUM	5.0 UF✓
7. CALCIUM	43650.0 PE	19. SILVER	40.0 P
8. CHROMIUM	26.0 P	20. SODIUM	[1446.0]P
9. COBALT	13.0 UP	21. THALLIUM	5.0 UF
10. COPPER	35.0 P	22. VANADIUM	[13.0]P
11. IRON	801.0 P✓	23. ZINC	58.0 P
12. LEAD	5.0 UF✓	PERCENT SOLIDS (%)	N/A
CYANIDE	14.9		
PHENOL	NR		

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS : This sample was a clear colorless liquid. The sample remained colorless for furnace and ICP digestion procedure

George O'Neill

LAB MANAGER

ORGANICS ANALYSIS DATA SHEET

(PAGE 4)

SAMPLE NUMBER
SW-2

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENGINEERING SCIENCE
LANCASTER REC.

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or [✓ Scan] Number	Estimated Concentration ([✓ ug/l] or ug/Kg)
1	-----	NONE FOUND	VOA	-----	-----
2					
3	-----	NONE FOUND	BNA	-----	-----
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
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21					
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23					
24					
25					
26					

FORM I, PART B

SAMPLE DATA

SW-3

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER
SW-3

LANCASTER REC.

Laboratory Name:NANCO LABORATORY INC.
Lab File ID No:>F0956
Sample Matrix:WATER
Data Release Authorized By: P.H.Wunsch

Case No:ENG. SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 09/10/87

VOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 09/14/87
Date Analyzed:09/14/87
Conc/Dil Factor: 1 pH: 7.9
Percent Moisture: N/A

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	2.0 JB
67-64-1	Acetone	12.0 B
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	5.0 U
107-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	10.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
108-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	5.0 U
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE

If the result is a value greater than or equal to the detection limit, report the value.

I

Indicates compound was analyzed for but not detected. Report he minimum detection limit for the sample with the U(e.g.10U ased on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected.The number is he minimum attainable detection limit for the sample.

J

Indicates an estimated value.This flag is used either when stimating a concentration for tentatively identified compounds here a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification riteria but the result is less than the specified detection limit ut greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

S

This flag denotes that the compound is a spike compound and was added to the sample prior to analysis.

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: ENGINEERING SCIENCE
LANCASTER REC.

SAMPLE NO.
SW-3

SEMIVOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 09/14/87
Date Analyzed: 09/18/87
Conc/Dil Factor:-----------> 1
Percent Moisture: N/A

GPC Cleanup: Yes_____ No__X__
Separatory Funnel Extraction: Yes__X__
Continuous Liquid - Liquid Extraction: Yes___

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
108-95-2	Phenol	10.0 U
111-44-4	bis(-2-Chloroethyl)Ether	10.0 U
95-57-8	2-Chlorophenol	10.0 U
541-73-1	1,3-Dichlorobenzene	10.0 U
106-46-7	1,4-Dichlorobenzene	10.0 U
100-51-6	Benzyl Alcohol	10.0 U
95-50-1	1,2-Dichlorobenzene	10.0 U
95-48-7	2-Methylphenol	10.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	10.0 U
106-44-5	4-Methylphenol	10.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	10.0 U
67-72-1	Hexachloroethane	10.0 U
98-95-3	Nitrobenzene	10.0 U
78-59-1	Isophorone	10.0 U
88-75-5	2-Nitrophenol	10.0 U
105-67-9	2,4-Dimethylphenol	10.0 U
65-85-0	Benzoic Acid	50.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	10.0 U
120-83-2	2,4-Dichlorophenol	10.0 U
120-82-1	1,2,4-Trichlorobenzene	10.0 U
91-20-3	Naphthalene	10.0 U
106-47-8	4-Chloroaniline	10.0 U
87-68-3	Hexachlorobutadiene	10.0 U
59-50-7	4-Chloro-3-Methylphenol	10.0 U
91-57-6	2-Methylnaphthalene	10.0 U
77-47-4	Hexachlorocyclopentadiene	10.0 U
88-06-2	2,4,6-Trichlorophenol	10.0 U
95-95-4	2,4,5-Trichlorophenol	50.0 U
91-58-7	2-Chloronaphthalene	10.0 U
88-74-4	2-Nitroaniline	50.0 U
131-11-3	Dimethyl Phthalate	10.0 U
208-96-8	Acenaphthylene	10.0 U
99-09-2	3-Nitroaniline	50.0 U

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
83-32-9	Acenaphthene	10.0 U
51-28-5	2,4-Dinitrophenol	50.0 U
100-02-7	4-Nitrophenol	50.0 U
132-64-9	Dibenzofuran	10.0 U
121-14-2	2,4-Dinitrotoluene	10.0 U
606-20-2	2,6-Dinitrotoluene	10.0 U
84-66-2	Diethylphthalate	10.0 U
7005-72-3	4-Chlorophenyl-phenylether	10.0 U
86-73-7	Fluorene	10.0 U
100-01-6	4-Nitroaniline	50.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	50.0 U
86-30-6	N-Nitrosodiphenylamine (1)	10.0 U
101-55-3	4-Bromophenyl-phenylether	10.0 U
118-74-1	Hexachlorobenzene	10.0 U
87-86-5	Pentachlorophenol	50.0 U
85-01-8	Phenanthrene	10.0 U
120-12-7	Anthracene	10.0 U
84-74-2	Di-n-Butylphthalate	8.4 J
206-44-0	Fluoranthene	10.0 U
129-00-0	Pyrene	10.0 U
85-68-7	Butylbenzylphthalate	10.0 U
91-94-1	3,3'-Dichlorobenzidine	20.0 U
56-55-3	Benzo(a)Anthracene	10.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	47.6 B
218-01-9	Chrysene	10.0 U
117-84-0	Di-n-Octyl Phthalate	6.0 J
205-99-2	Benzo(b)Fluoranthene	10.0 U
207-08-9	Benzo(k)Fluoranthene	10.0 U
50-32-8	Benzo(a)Pyrene	11.7 B
193-39-5	Indeno(1,2,3-cd)Pyrene	10.0 U
53-70-3	Dibenz(a,h)Anthracene	10.0 U
191-24-2	Benzo(g,h,i)Perylene	10.0 U

(1) - Cannot be separated from diphenylamine

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

SAMPLE NUMBER
SW-3

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENGINEERING SCIENCE
LANCASTER REC.

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or [✓ Scan] Number	Estimated Concentration ([✓ ug/l] or ug/Kg)
1	-----	NONE FOUND	VOA	-----	-----
2					
3	-----	NONE FOUND	BNA	-----	-----
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

FORM I, PART B

005

INORGANIC ANALYSIS DATA SHEET
FORM I

SMPL NO.: SW-3

Lab Name : NANCO LABORATORIES, INC.

Customer Name: Engineering Science

SOW NO. : N/A

Lab Receipt Date : 09/10/87

Lab Sample ID: 87-EW-2441

Date Reported: 10/07/87

Location ID: Lancaster Rec.

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW __X__ MEDIUM ______

MATRIX : WATER __X__ SOIL ______ SLUDGE _____ OTHER ______

[✓ UG/L] OR MG/KG DRY WEIGHT (CIRCLE ONE)

1.	ALUMINUM	1404.0 PN	13.	MAGNESIUM	27404.0 PE
2.	ANTIMONY	62.0 P	14.	MANGANESE	51.0 P
3.	ARSENIC	3.0 UF	15.	MERCURY	0.2 U C.V.N
4.	BARIUM	[55.0]P	16.	NICKEL	[23.0]P
5.	BERYLLIUM	0.6 UP	17.	POTASSIUM	[4025.0]P
6.	CADMIUM	5.0 UP	18.	SELENIUM	5.0 UFN
7.	CALCIUM	35802.0 PE	19.	SILVER	33.0 P
8.	CHROMIUM	13.0 P	20.	SODIUM	18018.0 P
9.	COBALT	13.0 UP	21.	THALLIUM	5.0 UF
10.	COPPER	[11.0]P	22.	VANADIUM	[5.0]P
11.	IRON	1923.0 PN	23.	ZINC	86.0 P
12.	LEAD	5.0 UFN		PERCENT SOLIDS (%)	N/A
	CYANIDE	10.0 U			
	PHENOL	NR			

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS : This sample was a cloudy liquid and orange/tan in coloration. The sample became colorless from ICP and furnace digestion procedures.

LAB MANAGER

SAMPLE DATA

SW - 4

Lancaster Rec.

ORGANICS ANALYSIS DATA SHEET
(PAGE 1)

SAMPLE NUMBER
SW-4
LANCASTER REC.

Laboratory Name:NANCO LABORATORY INC.
Lab File ID No:>F0989
Sample Matrix: WATER
Data Release Authorized By:

Case No: ENGINEERING SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 09/11/87

VOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 09/16/87
Date Analyzed:09/16/87
Conc/Dil Factor: 1 pH: 7.0
Percent Moisture: N/A

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	10.0 B
67-64-1	Acetone	8.2 JB
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	5.0 U
07-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	10.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
08-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	5.0 U
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE

If the result is a value greater than or equal to the detection imit, report the value.

Indicates compound was analyzed for but not detected. Report ne minimum detection limit for the sample with the U(e.g.10U ased on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should ead U-Compound was analyzed for but not detected.The number is ne minimum attainable detection limit for the sample.

Indicates an estimated value.This flag is used either when stimating a concentration for tentatively identified compounds here a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification iteria but the result is less than the specified detection limit ut greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

FORM I

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: ENGINEERING SCIENCE

SAMPLE NO.
SW-4
LANCASTER REC.

SEMIVOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 09/14/87
Date Analyzed: 10/02/87
Conc/Dil Factor:------------> 1
Percent Moisture: N/A

GPC Cleanup: Yes_____ No__XXX___
Separatory Funnel Extraction: Yes__XXX___
Continuous Liquid - Liquid Extraction: Yes___

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
108-95-2	Phenol	10.0 U
111-44-4	bis(-2-Chloroethyl)Ether	10.0 U
95-57-8	2-Chlorophenol	10.0 U
541-73-1	1,3-Dichlorobenzene	10.0 U
106-46-7	1,4-Dichlorobenzene	10.0 U
100-51-6	Benzyl Alcohol	10.0 U
95-50-1	1,2-Dichlorobenzene	10.0 U
95-48-7	2-Methylphenol	10.0 U
39638-32-9	bis(2-chloroisopropyl)Ether	10.0 U
106-44-5	4-Methylphenol	10.0 U
621-64-7	N-Nitroso-Di-n-Propylamine	10.0 U
67-72-1	Hexachloroethane	10.0 U
98-95-3	Nitrobenzene	10.0 U
78-59-1	Isophorone	10.0 U
88-75-5	2-Nitrophenol	10.0 U
105-67-9	2,4-Dimethylphenol	10.0 U
65-85-0	Benzoic Acid	50.0 U
111-91-1	bis(-2-Chloroethoxy)Methane	10.0 U
120-83-2	2,4-Dichlorophenol	10.0 U
120-82-1	1,2,4-Trichlorobenzene	10.0 U
91-20-3	Naphthalene	10.0 U
106-47-8	4-Chloroaniline	10.0 U
87-68-3	Hexachlorobutadiene	10.0 U
59-50-7	4-Chloro-3-Methylphenol	10.0 U
91-57-6	2-Methylnaphthalene	10.0 U
77-47-4	Hexachlorocyclopentadiene	10.0 U
88-06-2	2,4,6-Trichlorophenol	10.0 U
95-95-4	2,4,5-Trichlorophenol	50.0 U
91-58-7	2-Chloronaphthalene	10.0 U
88-74-4	2-Nitroaniline	50.0 U
131-11-3	Dimethyl Phthalate	10.0 U
208-96-8	Acenaphthylene	10.0 U
99-09-2	3-Nitroaniline	50.0 U

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
83-32-9	Acenaphthene	10.0 U
51-28-5	2,4-Dinitrophenol	50.0 U
100-02-7	4-Nitrophenol	50.0 U
132-64-9	Dibenzofuran	10.0 U
121-14-2	2,4-Dinitrotoluene	10.0 U
606-20-2	2,6-Dinitrotoluene	10.0 U
84-66-2	Diethylphthalate	10.0 U
7005-72-3	4-Chlorophenyl-phenylether	10.0 U
86-73-7	Fluorene	10.0 U
100-01-6	4-Nitroaniline	50.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	50.0 U
86-30-6	N-Nitrosodiphenylamine (1)	10.0 U
101-55-3	4-Bromophenyl-phenylether	10.0 U
118-74-1	Hexachlorobenzene	10.0 U
87-86-5	Pentachlorophenol	50.0 U
85-01-8	Phenanthrene	10.0 U
120-12-7	Anthracene	10.0 U
84-74-2	Di-n-Butylphthalate	11.0
206-44-0	Fluoranthene	10.0 U
129-00-0	Pyrene	10.0 U
85-68-7	Butylbenzylphthalate	10.0 U
91-94-1	3,3'-Dichlorobenzidine	20.0 U
56-55-3	Benzo(a)Anthracene	10.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	290.0 B
218-01-9	Chrysene	10.0 U
117-84-0	Di-n-Octyl Phthalate	10.0 U
205-99-2	Benzo(b)Fluoranthene	10.0 U
207-08-9	Benzo(k)Fluoranthene	10.0 U
50-32-8	Benzo(a)Pyrene	11.0 B
193-39-5	Indeno(1,2,3-cd)Pyrene	10.0 U
53-70-3	Dibenz(a,h)Anthracene	10.0 U
191-24-2	Benzo(g,h,i)Perylene	10.0 U

(1) - Cannot be separated from diphenylamine

FORM I

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

SAMPLE NUMBER

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENGINEERING SCIENCE

SW-4
LANCASTER REC.

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or [✓ Scan] Number	Estimated Concentration ([✓ ug/l] or ug/Kg)
1	-----	NONE FOUND	VOA	----	-------
2					
3					
4					
5	-----	UNKNOWN	BNA	1411	15.0 J
6	26761400	1,2-BENZENEDICARBOXYLIC ACID, DIISODECYL ESTER	BNA	1528	40.0 J
7	-----	UNKNOWN	BNA	1534	49.0 J
8	-----	UNKNOWN	BNA	1541	38.0 J
9	-----	UNKNOWN	BNA	1547	30.0 J
10	-----	UNKNOWN	BNA	1553	20.0 J
11	79061	2-PROPENAMIDE	BNA	1557	19.0 J
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

0000008

INORGANIC ANALYSIS DATA SHEET
FORM I

SMPL NO.: SW-4

Lab Name : NANCO LABORATORIES, INC.

Customer Name: Engineering Science

SOW NO. : N/A

Lab Receipt Date : 09/11/87

Lab Sample ID: 87-EW-2503

Date Reported:

Location ID: Lancaster Rec

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW __X__ MEDIUM ______

MATRIX : WATER __X__ SOIL _______ SLUDGE _____OTHER ______

[✓ UG/L] OR MG/KG DRY WEIGHT (CIRCLE ONE)

1. ALUMINUM	29.0 UPN	13. MAGNESIUM	6638.0 P
2. ANTIMONY	58.0 UP	14. MANGANESE	49.0 P N
3. ARSENIC	3.0 UF	15. MERCURY	0.2 U C.V.N
4. BARIUM	19.0 UP	16. NICKEL	12.0 UP N
5. BERYLLIUM	0.6 UPN	17. POTASSIUM	[2173.0]P
6. CADMIUM	5.0 UP	18. SELENIUM	5.0 UF
7. CALCIUM	26163.0 PE	19. SILVER	14.0 P N
8. CHROMIUM	9.0 UP	20. SODIUM	13315.0 P
9. COBALT	13.0 UP	21. THALLIUM	5.0 UF N
10. COPPER	3.0 UP N	22. VANADIUM	5.0 UP
11. IRON	151.0 P	23. ZINC	55.0 P N
12. LEAD	5.0 UFN	PERCENT SOLIDS (%)	NA
CYANIDE	10.0 U		
PHENOL	NR		

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS : This sample was a clear liquid. After ICP and furnace digestion procedures this sample remained colorless.

LAB MANAGER

SAMPLE DATA

FIELD BLANK

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER
FIELD BLANK

LANCASTER REC.

Laboratory Name:NANCO LABORATORY INC.
Lab File ID No:>F0957
Sample Matrix:WATER
Data Release Authorized By: P.J. Wunsch

Case No:ENG. SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 09/10/87

VOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 09/14/87
Date Analyzed:09/14/87
Conc/Dil Factor: 1 pH:
Percent Moisture: N/A

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	4.2 JB
67-64-1	Acetone	14.0 B
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	7.0
107-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	10.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
108-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	5.0 U
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE

If the result is a value greater than or equal to the detection limit, report the value.

U

Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U(e.g.10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J

Indicates an estimated value.This flag is used either when estimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

S

This flag denotes that the compound is a spike compound and was added to the sample prior to analysis.

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

SAMPLE NUMBER
FIELD BLANK

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENGINEERING SCIENCE
LANCASTER REC.

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or [✓ Scan] Number	Estimated Concentration ([✓ ug/l] or ug/Kg)
1	75285	PROPANE,2-METHYL	VOA	54	9.1 J
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

SAMPLE DATA

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ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER
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LANCASTER REC.

Laboratory Name:NANCO LABORATORY INC.
Lab File ID No:>F0960
Sample Matrix:WATER
Data Release Authorized By: P.J. Wunsch

Case No:ENG. SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 09/10/87

VOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 09/14/87
Date Analyzed:09/14/87
Conc/Dil Factor: 1 pH: 7.2 pls
Percent Moisture: N/A

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	2.0 JB
67-64-1	Acetone	8.1 JB
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	5.0 U
107-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	10.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
108-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		[✓ ug/l] or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	5.0 U
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE
If the result is a value greater than or equal to the detection limit, report the value.

U
Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U(e.g.10U based on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J
Indicates an estimated value.This flag is used either when estimating a concentration for tentatively identified compounds where a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J).

C
This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B
This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER
Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

S
This flag denotes that the compound is a spike compound and was added to the sample prior to analysis.

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

SAMPLE NUMBER
TRIP BLANK

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENGINEERING SCIENCE
LANCASTER REC.

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or [✓ Scan] Number	Estimated Concentration [✓ (ug/l] or ug/Kg)
1	------	NONE FOUND	VOA	-----	-----
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

FORM I, PART B

INORGANIC ANALYSIS DATA SHEET
FORM I

Lab Name : NANCO LABORATORIES, INC.

Customer: Engineering Science

QC Batch: EW 2439-41; ES 2443-50

Lab Receipt Date : 09/10/87

DATE : 10/7/87

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW ___X___ MEDIUM ______

MATRIX : WATER ___X___ SOIL ______ SLUDGE _____ OTHER ______

[✓ UG/L] OR MG/KG DRY WEIGHT (CIRCLE ONE)

	SAMPLE ID:	T.O.X.
SW-1	EW-2439	1.3
SW-2	EW-2440	16
SW-3	EW-2441	9.1

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS :

LAB MANAGER

INORGANIC ANALYSIS DATA SHEET
FORM I

Lab Name : NANCO LABORATORIES, INC.

Customer: Engineering Science

QC Batch: EW 2492-2496; EW 2503

Lab Receipt Date : 09/11/87

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW __X__ MEDIUM ______

MATRIX : WATER __X__ SOIL ______ SLUDGE _____OTHER ______

UG/L OR MG/KG DRY WEIGHT (CIRCLE ONE)

PROJECT ID	SAMPLE ID:	T.O.X.	Instrument Detection Limit
Lancaster Rec	SW-4 EW-2503	14	5 ug/L
Lancaster Rec	EW-2503 MS	60% RECOVERY	

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS : BMRL = RESULTS ARE BELOW MINIMUM REPORTING LEVEL
ND = RESULTS ARE NOT DETECTED

LAB MANAGER

SEDIMENT RESULTS

SAMPLE DATA

SED-1

ORGANICS ANALYSIS DATA SHEET
(PAGE 1)

SAMPLE NUMBER
SED-1

LANCASTER REC.

Laboratory Name:NANCO LABORATORY INC.
Lab File ID No:>B2474
Sample Matrix: SOIL
Data Release Authorized By: P.Y.L.Gursch

Case No:ENG SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 09/10/87

VOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 09/11/87
Date Analyzed:09/11/87
Conc/Dil Factor: 5 pH: 7.6
Percent Moisture: 26

S mber		ug/l or [✓ ug/Kg] (Circle One)
74-87-3	Chloromethane	50.0 U
-83-9	Bromomethane	50.0 U
5-01-4	Vinyl Chloride	50.0 U
75-00-3	Chloroethane	50.0 U
5-09-2	Methylene Chloride	10.0
7-64-1	Acetone	460.0 B
75-15-0	Carbon Disulfide	34.0
75-35-4	1,1-Dichloroethene	25.0 U
5-34-3	1,1-Dichloroethane	25.0 U
56-60-5	Trans-1,2-Dichloroethene	25.0 U
67-66-3	Chloroform	25.0 U
07-06-2	1,2-Dichloroethane	25.0 U
3-93-3	2-Butanone	50.0 U
71-55-6	1,1,1-Trichloroethane	25.0 U
5-23-5	Carbon Tetrachloride	25.0 U
08-05-4	Vinyl Acetate	50.0 U
75-27-4	Bromodichloromethane	25.0 U

CAS Number		ug/l or [✓ ug/Kg] (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	25.0 U
78-87-5	1,2-Dichloropropane	25.0 U
10061-02-6	Trans-1,3-Dichloropropene	25.0 U
79-01-6	Trichloroethene	25.0 U
124-48-1	Dibromochloromethane	25.0 U
79-00-5	1,1,2-Trichloroethane	25.0 U
71-43-2	Benzene	11.0 J
10061-01-5	cis-1,3-Dichloropropene	25.0 U
110-75-8	2-Chloroethylvinylether	50.0 U
75-25-2	Bromoform	25.0 U
591-78-6	2-Hexanone	50.0 U
108-10-1	4-Methyl-2-Pentanone	50.0 U
127-18-4	Tetrachloroethene	25.0 U
108-88-3	Toluene	25.0 U
108-90-7	Chlorobenzene	25.0 U
100-41-4	Ethylbenzene	25.0 U
100-42-5	Styrene	25.0 U
	Total Xylenes	25.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE

If the result is a value greater than or equal to the detection mit, report the value.

Indicates compound was analyzed for but not detected. Report e minimum detection limit for the sample with the U(e.g.10U sed on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should ead U-Compound was analyzed for but not detected.The number is e minimum attainable detection limit for the sample.

Indicates an estimated value.This flag is used either when timating a concentration for tentatively identified compounds ere a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification iteria but the result is less than the specified detection limit t greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

S

This flag denotes that the compound is a spike compound and was added to the sample prior to analysis.

FORM I

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

SAMPLE NO.
SED-1

LABORATORY NAME: NANCO LABS. INC.
CASE NO: ENGINEERING SCIENCE
LANCASTER REC.

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09/16/87
Date Analyzed: 09/30/87
Conc/Dil Factor:------------> 1
Percent Moisture: 26

GPC Cleanup: Yes____ No_X_
Separatory Funnel Extraction: Yes____
Continuous Liquid - Liquid Extraction: Yes___

		ug/l or ug/Kg (Circle One)
	Phenol	770.0
	bis(-2-Chloroethyl)Ether	330.0 U
	2-Chlorophenol	760.0
	1,3-Dichlorobenzene	330.0 U
	1,4-Dichlorobenzene	330.0 U
5	Benzyl Alcohol	330.0 U
	1,2-Dichlorobenzene	330.0 U
	2-Methylphenol	330.0 U
2-9	bis(2-chloroisopropyl)Ether	330.0 U
5	4-Methylphenol	330.0 U
-7	N-Nitroso-Di-n-Propylamine	330.0 U
	Hexachloroethane	330.0 U
	Nitrobenzene	330.0 U
	Isophorone	330.0 U
5	2-Nitrophenol	330.0 U
-9	2,4-Dimethylphenol	330.0 U
)	Benzoic Acid	1600.0 U
-1	bis(-2-Chloroethoxy)Methane	330.0 U
-2	2,4-Dichlorophenol	330.0 U
	1,2,4-Trichlorobenzene	330.0 U
3	Naphthalene	330.0 U
-8	4-Chloroaniline	330.0 U
3	Hexachlorobutadiene	330.0 U
7	4-Chloro-3-Methylphenol	460.0
6	2-Methylnaphthalene	330.0 U
-4	Hexachlorocyclopentadiene	330.0 U
-2	2,4,6-Trichlorophenol	330.0 U
-4	2,4,5-Trichlorophenol	1600.0 U
-7	2-Chloronaphthalene	330.0 U
-4	2-Nitroaniline	1600.0 U
1-	Dimethyl Phthalate	330.0 U
6-8	Acenaphthylene	330.0 U
-7	3-Nitroaniline	1600.0 U

CAS Number		ug/l or ug/Kg (Circle One)
83-32-9	Acenaphthene	330.0 U
51-28-5	2,4-Dinitrophenol	1600.0 U
100-02-7	4-Nitrophenol	1600.0 U
132-64-9	Dibenzofuran	330.0 U
121-14-2	2,4-Dinitrotoluene	330.0 U
606-20-2	2,6-Dinitrotoluene	330.0 U
84-66-2	Diethylphthalate	330.0 U
7005-72-3	4-Chlorophenyl-phenylether	330.0 U
86-73-7	Fluorene	330.0 U
100-01-6	4-Nitroaniline	1600.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	1600.0 U
86-30-6	N-Nitrosodiphenylamine (1)	330.0 U
101-55-3	4-Bromophenyl-phenylether	330.0 U
118-74-1	Hexachlorobenzene	330.0 U
87-86-5	Pentachlorophenol	1600.0 U
85-01-8	Phenanthrene	330.0 U
120-12-7	Anthracene	330.0 U
84-74-2	Di-n-Butylphthalate	330.0 U
206-44-0	Fluoranthene	330.0 U
129-00-0	Pyrene	330.0
85-68-7	Butylbenzylphthalate	330.0 U
91-94-1	3,3'-Dichlorobenzidine	660.0 U
56-55-3	Benzo(a)Anthracene	330.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	330.0 U
218-01-9	Chrysene	330.0 U
117-84-0	Di-n-Octyl Phthalate	330.0 U
205-99-2	Benzo(b)Fluoranthene	330.0 U
207-08-9	Benzo(k)Fluoranthene	330.0 U
50-32-8	Benzo(a)Pyrene	330.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	330.0 U
53-70-3	Dibenz(a,h)Anthracene	330.0 U
191-24-2	Benzo(g,h,i)Perylene	330.0 U

(1) - Cannot be separated from diphenylamine

Soil

TABLE 2.5
30890-0092
ENGINEERING SCIENCE
EPA TCL PESTICIDES/PCB's

All results reported as ug/Kg.

Sample Identification

Dilution Factor	1.00	1.28	
ethod Blank I.D.	1019 -B02	1019 -B02	
ompound	Method Blank	SED-1	Lower Limits of Detection with no Dilution
alpha BHC	U	U	8.0
eta BHC	U	U	8.0
elta BHC	U	U	8.0
gamma BHC	U	U	8.0
eptachlor	U	U	8.0
ldrin	U	U	8.0
Heptachlor Epoxide	U	U	8.0
ndosulfan I	U	U	8.0
ieldrin	U	U	16
4,4' DDE	U	U	16
Endrin	U	U	16
Endosulfan II	U	U	16
4,4' DDD	U	U	16
Endosulfan Sulfate	U	U	16
4,4' DDT	U	U	16
Methoxychlor	U	U	80
Endrin Ketone	U	U	16
alpha Chlordane	U	U	80
gamma Chlordane	U	U	80
Toxaphene	U	U	160
Aroclor - 1016	U	U	80
Aroclor - 1221	U	U	80
Aroclor - 1232	U	U	80
Aroclor - 1242	U	U	80
Aroclor - 1248	U	U	80
Aroclor - 1254	U	U	160
Aroclor - 1260	U	U	160

U, J - See Appendix for definition.

ORGANICS ANALYSIS DATA SHEET

(PAGE 4)

SAMPLE NUMBER
SED-1

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENGINEERING SCIENCE
LANCASTER REC.

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or [✓ Scan] Number	Estimated Concentration (ug/l or [✓ ug/Kg])
1	110543	HEXANE	VOA	256	27.0 J
2					
3	35	BENZENE,METHYL	BNA	6	1300.0 J
4	123422	2-PENTANONE,4-HYDROXY-4-METHYL	BNA	129	30000.0 J
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

INORGANIC ANALYSIS DATA SHEET
FORM I

SMPL NO.: SED-1

Lab Name : NANCO LABORATORIES, INC.

Customer Name: Engineering Science

SOW NO. : N/A

Lab Receipt Date : 09/10/87

Lab Sample ID: 87-ES-2442

Date Reported: 10/07/87

Location ID: Lancaster Rec.

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW __X__ MEDIUM ______

MATRIX : WATER ______ SOIL __X__ SLUDGE ______ OTHER ______

UG/L OR [✓ MG/KG DRY WEIGHT] (CIRCLE ONE)

1.	ALUMINUM	2971.9 P	13.	MAGNESIUM	23573.0 P	
2.	ANTIMONY	91.6 P✓	14.	MANGANESE	278.6 P	
3.	ARSENIC	14.7 F✓*	15.	MERCURY	0.1 U C.V.✓	
4.	BARIUM	[22.7]P✓	16.	NICKEL	20.8 P	
5.	BERYLLIUM	[0.3]P✓	17.	POTASSIUM	[448.4]P	
6.	CADMIUM	2.7 P	18.	SELENIUM	1.4 UF✓	
7.	CALCIUM	62179.7 P	19.	SILVER	32.2 P✓	
8.	CHROMIUM	21.6 P	20.	SODIUM	265.1 UP	
9.	COBALT	13.5 P	21.	THALLIUM	13.5 UF✓	(1:10)
10.	COPPER	13.0 P	22.	VANADIUM	[13.2]P	
11.	IRON	6979.2 P	23.	ZINC	41.9 P	
12.	LEAD	50.0 P		PERCENT SOLIDS (%)	74.0	
	CYANIDE	NR				
	PHENOL	NR				

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS : This sample was fine medium texture and grey in coloration. The sample became light yellow after I used furnace digestion procedure. It was analyzed at a 1:10 dilution.

George [illegible]

LAB MANAGER

SAMPLE DATA

SED-2

ORGANICS ANALYSIS DATA SHEET

(PAGE 1)

SAMPLE NUMBER
SED-2

LANCASTER REC.

Laboratory Name:NANCO LABORATORY INC.
Lab File ID No:>B2475
Sample Matrix: SOIL
Data Release Authorized By: P.J. Wunsch

Case No:ENG. SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 09/10/87

VOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 09/11/87
Date Analyzed:09/11/87
Conc/Dil Factor: 1 pH: 7.9
Percent Moisture: 28

CAS Number		ug/l or [✓ ug/Kg] (Circle One)
74-87-3	Chloromethane	10.0 U
74-83-9	Bromomethane	10.0 U
75-01-4	Vinyl Chloride	10.0 U
75-00-3	Chloroethane	10.0 U
75-09-2	Methylene Chloride	2.3 J
67-64-1	Acetone	22.0 B
75-15-0	Carbon Disulfide	5.0 U
75-35-4	1,1-Dichloroethene	5.0 U
75-34-3	1,1-Dichloroethane	5.0 U
156-60-5	Trans-1,2-Dichloroethene	5.0 U
67-66-3	Chloroform	5.0 U
107-06-2	1,2-Dichloroethane	5.0 U
78-93-3	2-Butanone	10.0 U
71-55-6	1,1,1-Trichloroethane	5.0 U
56-23-5	Carbon Tetrachloride	5.0 U
108-05-4	Vinyl Acetate	10.0 U
75-27-4	Bromodichloromethane	5.0 U

CAS Number		ug/l or [✓ ug/Kg] (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	1.6 J
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE

If the result is a value greater than or equal to the detection limit, report the value.

Indicates compound was analyzed for but not detected. Report he minimum detection limit for the sample with the U(e.g.10U ased on necessary concentration dilution actions. (This is not necessarily the instrument detection limit.) The footnote should read U-Compound was analyzed for but not detected.The number is he minimum attainable detection limit for the sample.

J

Indicates an estimated value.This flag is used either when stimating a concentration for tentatively identified compounds here a 1 1 response is assumed or when the mass spectral data indicates the presence of a compound that meets the identification riteria but the result is less than the specified detection limit ut greater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

S

This flag denotes that the compound is a spike compound and was added to the sample prior to analysis.

FORM I

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

SAMPLE NO.
SED-2

LABORATORY NAME: NANCO LABS. INC.
CASE NO: ENGINEERING SCIENCE
LANCASTER REC.

SEMIVOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 09/16/87
Date Analyzed: 10/01/87
Conc/Dil Factor:------------> 1
Percent Moisture: 28

GPC Cleanup: Yes_____ No__X__
Separatory Funnel Extraction: Yes_____
Continuous Liquid - Liquid Extraction: Yes___

er		ug/l or [✓ ug/Kg] (Circle One)
2	Phenol	330.0 U
44-4	bis(-2-Chloroethyl)Ether	330.0 U
T 3	2-Chlorophenol	330.0 U
1	1,3-Dichlorobenzene	330.0 U
46-7	1,4-Dichlorobenzene	330.0 U
51-6	Benzyl Alcohol	330.0 U
5(1	1,2-Dichlorobenzene	330.0 U
4L 7	2-Methylphenol	330.0 U
38-32-9	bis(2-chloroisopropyl)Ether	330.0 U
5	4-Methylphenol	330.0 U
7	N-Nitroso-Di-n-Propylamine	330.0 U
72-1	Hexachloroethane	330.0 U
95-3	Nitrobenzene	330.0 U
5 1	Isophorone	330.0 U
75-5	2-Nitrophenol	330.0 U
-67-9	2,4-Dimethylphenol	330.0 U
8 0	Benzoic Acid	1600.0 U
-1	bis(-2-Chloroethoxy)Methane	330.0 U
-83-2	2,4-Dichlorophenol	330.0 U
-82-1	1,2,4-Trichlorobenzene	330.0 U
2 3	Naphthalene	330.0 U
-47-8	4-Chloroaniline	330.0 U
68-3	Hexachlorobutadiene	330.0 U
-5 7	4-Chloro-3-Methylphenol	330.0 U
5 6	2-Methylnaphthalene	330.0 U
-47-4	Hexachlorocyclopentadiene	330.0 U
-C 2	2,4,6-Trichlorophenol	330.0 U
-9 4	2,4,5-Trichlorophenol	1600.0 U
-58-7	2-Chloronaphthalene	330.0 U
-74-4	2-Nitroaniline	1600.0 U
-3	Dimethyl Phthalate	330.0 U
3- -8	Acenaphthylene	330.0 U
-09-2	3-Nitroaniline	1600.0 U

CAS Number		ug/l or [✓ ug/Kg] (Circle One)
83-32-9	Acenaphthene	330.0 U
51-28-5	2,4-Dinitrophenol	1600.0 U
100-02-7	4-Nitrophenol	1600.0 U
132-64-9	Dibenzofuran	330.0 U
121-14-2	2,4-Dinitrotoluene	330.0 U
606-20-2	2,6-Dinitrotoluene	330.0 U
84-66-2	Diethylphthalate	330.0 U
7005-72-3	4-Chlorophenyl-phenylether	330.0 U
86-73-7	Fluorene	330.0 U
100-01-6	4-Nitroaniline	1600.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	1600.0 U
86-30-6	N-Nitrosodiphenylamine (1)	330.0 U
101-55-3	4-Bromophenyl-phenylether	330.0 U
118-74-1	Hexachlorobenzene	330.0 U
87-86-5	Pentachlorophenol	1600.0 U
85-01-8	Phenanthrene	330.0 U
120-12-7	Anthracene	330.0 U
84-74-2	Di-n-Butylphthalate	330.0 U
206-44-0	Fluoranthene	330.0 U
129-00-0	Pyrene	330.0 U
85-68-7	Butylbenzylphthalate	330.0 U
91-94-1	3,3'-Dichlorobenzidine	660.0 U
56-55-3	Benzo(a)Anthracene	330.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	330.0 U
218-01-9	Chrysene	330.0 U
117-84-0	Di-n-Octyl Phthalate	330.0 U
205-99-2	Benzo(b)Fluoranthene	330.0 U
207-08-9	Benzo(k)Fluoranthene	330.0 U
50-32-8	Benzo(a)Pyrene	330.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	330.0 U
53-70-3	Dibenz(a,h)Anthracene	330.0 U
191-24-2	Benzo(g,h,i)Perylene	330.0 U

(1) - Cannot be separated from diphenylamine

Soil

TABLE 2.5
30890-0092
ENGINEERING SCIENCE
EPA TCL PESTICIDES/PCB's

All results reported as ug/Kg.

Sample Identification

tion Factor	1.00	1.25	
Blank I.D.	1019 -B02	1019 -B02	
nd	Method Blank	SED-2	Lower Limits of Detection with no Dilution
a BHC	U	U	8.0
HC	U	U	8.0
a BHC	U	U	8.0
a BHC	U	U	8.0
hlor	U	U	8.0
	U	U	8.0
achlor Epoxide	U	U	8.0
ulfan I	U	U	8.0
in	U	U	16
DDE	U	U	16
in	U	U	16
lfan II	U	U	16
DDD	U	U	16
sulfan Sulfate	U	U	16
DDT	U	U	80
ychlor	U	U	16
in Ketone	U	U	80
ha Chlordane	U	U	80
Chlordane	U	U	160
phene	U	U	80
clor - 1016	U	U	80
or - 1221	U	U	80
or - 1232	U	U	80
clor - 1242	U	U	80
or - 1248	U	U	160
or - 1254	U	U	160
clor - 1260	U	U	

– See Appendix for definition.

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

SAMPLE NUMBER
SED-2

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENGINEERING SCIENCE
LANCASTER REC.

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or [✓ Scan] Number	Estimated Concentration (ug/l or [✓ ug/Kg])
1	-----	NONE FOUND	VOA	----	-----
2					
3	35	BENZENE,METHYL	BNA	12	8100.0 J
4	-----	UNKNOWN ALKENE	BNA	64	7200.0 J
5	-----	UNKNOWN	BNA	88	1300.0 J
6	123422	2-PENTANONE,4-HYDROXY,4-METHYL	BNA	127	29000.0 J
7	123422	2-PENTANONE,4-HYDROXY,4-METHYL	BNA	132	15000.0 J
8	691372	1-PENTENE,4-METHYL	BNA	156	1400.0 J
9	------	UNKNOWN ALKANE	BNA	165	1800.0 J
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

007

INORGANIC ANALYSIS DATA SHEET
FORM I

SMPL NO.: SED-2

Lab Name : NANCO LABORATORIES, INC.

Customer Name: Engineering Science

SOW NO. : N/A

Lab Receipt Date : 09/10/87

Lab Sample ID: 87-ES-2443

Date Reported: 10/07/87

Location ID: Lancaster Rec.

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW __X__ MEDIUM ______

MATRIX : WATER ______ SOIL __X__ SLUDGE _____OTHER ______

UG/L OR [✓ MG/KG DRY WEIGHT] (CIRCLE ONE)

. ALUMINUM	5028.1 P		13. MAGNESIUM	34162.8 P	
. ANTIMONY	74.7 P ✓		14. MANGANESE	282.2 P	
. ARSENIC	7.6 SF ✓ *	(1:5)	15. MERCURY	0.1 U C.V. ✓	
. BARIUM	55.6 P ✓		16. NICKEL	16.9 P	
. BERYLLIUM	[0.3]P ✓		17. POTASSIUM	[1008.1]P	
. CADMIUM	9.4 P		18. SELENIUM	13.9 UF ✓	(1:10)
. CALCIUM	67846.1 P		19. SILVER	46.9 P ✓	
. CHROMIUM	18.3 P		20. SODIUM	[640.3]P	
. COBALT	15.8 P		21. THALLIUM	1.4 UF ✓	
COPPER	14.4 P		22. VANADIUM	14.7 P	
11. IRON	9634.4 P		23. ZINC	183.3 P	
LEAD	82.8 P		PERCENT SOLIDS (%)	72.0	
CYANIDE	~~NR~~ 0.1 U GB				
PHENOL	NR				

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS : This sample was of a fine texture and brown in coloration. The sample was light yellow after I used a furnace digestion procedure. As was analyzed at a 1:5 dilution and Se was analyzed at a 1:10 dilution

George O'Dell

LAB MANAGER

SAMPLE DATA

SED-3

ORGANICS ANALYSIS DATA SHEET
(PAGE 1)

SAMPLE NUMBER
SED-3

LANCASTER REC.

ratory Name:NANCO LABORATORY INC.
ab File ID No:>B2482
le Matrix: SOIL
, Release Authorized By:

Case No: ENG. SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 09/10/87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 09/12/87
Date Analyzed:09/12/87
Conc/Dil Factor: 1 pH: 7.6
Percent Moisture: 24

	ug/l or ug/Kg (Circle One)
oromethane	10.0 U
momethane	10.0 U
Vinyl Chloride	10.0 U
oroethane	10.0 U
hylene Chloride	1.6 J
Acetone	50.0 B
Carbon Disulfide	5.0 U
1 -Dichloroethene	4.0 J
1, -Dichloroethane	5.0 U
Trans-1,2-Dichloroethene	5.0 U
oroform	5.0 U
-Dichloroethane	5.0 U
2-Butanone	37.0
1,1-Trichloroethane	5.0 U
bon Tetrachloride	5.0 U
Vinyl Acetate	10.0 U
Bromodichloromethane	5.0 U

CAS Number		ug/l or ug/Kg (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	35.0
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	42.0
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	89.0
108-90-7	Chlorobenzene	51.0
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

t is a value greater than or equal to the detection
t the value.

ompound was analyzed for but not detected. Report
detection limit for the sample with the U(e.g.10U
necessary concentration dilution actions. (This is not
the instrument detection limit.) The footnote should
ound was analyzed for but not detected.The number is
attainable detection limit for the sample.

estimated value.This flag is used either when
a concentration for tentatively identified compounds
1 response is assumed or when the mass spectral data
he presence of a compound that meets the identification
t the result is less than the specified detection limit
ter than zero (e.g. 10J).

C
This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B
This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER
Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

S
This flag denotes that the compound is a spike compound and was added to the sample prior to analysis.

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: ENGINEERING SCIENCE
LANCASTER REC.

SAMPLE NO.
SED-3

SEMIVOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 09/16/87
Date Analyzed: 10/01/87
Conc/Dil Factor:------------> 1
Percent Moisture: 24

GPC Cleanup: Yes_____ No__X__
Separatory Funnel Extraction: Yes_____
Continuous Liquid - Liquid Extraction: Yes___

er		ug/l or [✓ ug/Kg] (Circle One)
[illegible]-2	Phenol	330.0 U
-44-4	bis(-2-Chloroethyl)Ether	330.0 U
57 3	2-Chlorophenol	330.0 U
[illegible]-1	1,3-Dichlorobenzene	330.0 U
-46-7	1,4-Dichlorobenzene	330.0 U
-51-6	Benzyl Alcohol	330.0 U
50 1	1,2-Dichlorobenzene	330.0 U
48 7	2-Methylphenol	330.0 U
38-32-9	bis(2-chloroisopropyl)Ether	330.0 U
[illegible]-5	4-Methylphenol	330.0 U
[illegible]-7	N-Nitroso-Di-n-Propylamine	330.0 U
72-1	Hexachloroethane	330.0 U
95 3	Nitrobenzene	330.0 U
59 1	Isophorone	330.0 U
75-5	2-Nitrophenol	330.0 U
-67-9	2,4-Dimethylphenol	330.0 U
3 0	Benzoic Acid	1600.0 U
[illegible]-1	bis(-2-Chloroethoxy)Methane	330.0 U
-83-2	2,4-Dichlorophenol	330.0 U
-82-1	1,2,4-Trichlorobenzene	330.0 U
2 3	Naphthalene	330.0 U
-47-8	4-Chloroaniline	330.0 U
68-3	Hexachlorobutadiene	330.0 U
-5 7	4-Chloro-3-Methylphenol	330.0 U
-5 6	2-Methylnaphthalene	330.0 U
-47-4	Hexachlorocyclopentadiene	330.0 U
-06-2	2,4,6-Trichlorophenol	330.0 U
-9 4	2,4,5-Trichlorophenol	1600.0 U
-58-7	2-Chloronaphthalene	330.0 U
-74-4	2-Nitroaniline	1600.0 U
1-3	Dimethyl Phthalate	330.0 U
3 6-8	Acenaphthylene	330.0 U
-09-2	3-Nitroaniline	1600.0 U

CAS Number		ug/l or [✓ ug/Kg] (Circle One)
83-32-9	Acenaphthene	330.0 U
51-28-5	2,4-Dinitrophenol	1600.0 U
100-02-7	4-Nitrophenol	1600.0 U
132-64-9	Dibenzofuran	330.0 U
121-14-2	2,4-Dinitrotoluene	330.0 U
606-20-2	2,6-Dinitrotoluene	330.0 U
84-66-2	Diethylphthalate	330.0 U
7005-72-3	4-Chlorophenyl-phenylether	330.0 U
86-73-7	Fluorene	330.0 U
100-01-6	4-Nitroaniline	1600.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	1600.0 U
86-30-6	N-Nitrosodiphenylamine (1)	330.0 U
101-55-3	4-Bromophenyl-phenylether	330.0 U
118-74-1	Hexachlorobenzene	330.0 U
87-86-5	Pentachlorophenol	1600.0 U
85-01-8	Phenanthrene	330.0 U
120-12-7	Anthracene	330.0 U
84-74-2	Di-n-Butylphthalate	330.0 U
206-44-0	Fluoranthene	330.0 U
129-00-0	Pyrene	330.0 U
85-68-7	Butylbenzylphthalate	330.0 U
91-94-1	3,3'-Dichlorobenzidine	660.0 U
56-55-3	Benzo(a)Anthracene	330.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	330.0 U
218-01-9	Chrysene	330.0 U
117-84-0	Di-n-Octyl Phthalate	330.0 U
205-99-2	Benzo(b)Fluoranthene	330.0 U
207-08-9	Benzo(k)Fluoranthene	330.0 U
50-32-8	Benzo(a)Pyrene	330.0 U
193-39-5	Indeno(1,2,3-cd)Pyrene	330.0 U
53-70-3	Dibenz(a,h)Anthracene	330.0 U
191-24-2	Benzo(g,h,i)Perylene	330.0 U

(1) - Cannot be separated from diphenylamine

Soil

TABLE 2.5
30890-0092
ENGINEERING SCIENCE
EPA TCL PESTICIDES/PCB's

All results reported as ug/Kg.

	Sample Identification		
tion Factor	1.00	1.47	
Blank I.D.	1019 -B02	1019 -B02	
nd	Method Blank	SED-3	Lower Limits of Detection with no Dilution
a BHC	U	U	8.0
HC	U	U	8.0
a BHC	U	U	8.0
a BHC	U	U	8.0
hlor	U	U	8.0
	U	U	8.0
achlor Epoxide	U	U	8.0
osulfan I	U	U	8.0
rin	U	U	16
DDE	U	U	16
rin	U	U	16
lfan II	U	U	16
DDD	U	U	16
osulfan Sulfate	U	U	16
DDT	U	U	80
xychlor	U	U	16
rin Ketone	U	U	80
ha Chlordane	U	U	80
m Chlordane	U	U	160
aphene	U	U	80
clor - 1016	U	U	80
or - 1221	U	U	80
or - 1232	U	U	80
clor - 1242	U	U	80
clor - 1248	U	59J	160
or - 1254	U	U	160
clor - 1260	U	U	160

- See Appendix for definition.

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

SAMPLE NUMBER
SED-3

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENGINEERING SCIENCE
LANCASTER REC.

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or [✓ Scan] Number	Estimated Concentration (ug/l or [✓ ug/Kg])
1	-----	UNKNOWN	VOA	229	61.0 J
2					
3	33	BENZENE,METHYL	BNA	11	8500.0 J
4	10098	BUTANE	BNA	88	1200.0 J
5	123422	2-PENTANONE,4-HYDROXY-4-METHYL	BNA	131	40000.0 J
6	691372	1-PENTENE,4-METHYL	BNA	155	1400.0 J
7	-----	UNKNOWN	BNA	164	1900.0 J
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

FORM I, PART B

008

INORGANIC ANALYSIS DATA SHEET
FORM I

SMPL NO.: SED-3

Lab Name : NANCO LABORATORIES, INC.

Customer Name: Engineering Science

SOW NO. : N/A

Lab Receipt Date : 09/10/87

Lab Sample ID: 87-ES-2444

Date Reported: 10/07/87

Location ID: Lancaster Rec.

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW __X__ MEDIUM ______

MATRIX : WATER ______ SOIL __X__ SLUDGE _____OTHER ______

UG/L OR [✓ MG/KG DRY WEIGHT] (CIRCLE ONE)

1. ALUMINUM	7782.1 P		13. MAGNESIUM	23548.2 P	
2. ANTIMONY	92.4 P ✓		14. MANGANESE	462.4 P	
3. ARSENIC	15.3 F✓*	(1:10)	15. MERCURY	0.1 U C.V. ✓	
4. BARIUM	60.3 P ✓		16. NICKEL	33.2 P	
5. BERYLLIUM	[0.5]P ✓		17. POTASSIUM	[1265.8]P	
6. CADMIUM	4.2 P		18. SELENIUM	13.2 UF ✓	(1:10)
7. CALCIUM	69306.6 P		19. SILVER	33.4 P ✓	
8. CHROMIUM	25.0 P		20. SODIUM	258.2 UP	
9. COBALT	17.9 P		21. THALLIUM	1.3 UF ✓	
10. COPPER	20.0 P		22. VANADIUM	22.6 P	
11. IRON	16075.0 P		23. ZINC	69.5 P	
12. LEAD	52.1 P		PERCENT SOLIDS (%)	76.0	
CYANIDE	NR				
PHENOL	NR				

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS : This sample was of a fine texture and grey in coloration. The sample remained grey after ICP and furnace digestion procedures. As, Se were analyzed at a (1:10) dilution.

LAB MANAGER

SAMPLE DATA

Sed-4

Lancaster Rec.

ORGANICS ANALYSIS DATA SHEET
(PAGE 1)

SAMPLE NUMBER
SED-4
LANCASTER REC.

Laboratory Name:NANCO LABORATORY INC.
Lab File ID No:>B2514
Sample Matrix: SOIL
Data Release Authorized By:

Case No: ENGINEERING SCIENCE
QC Report No: N/A
Contract No: N/A
Date Sample Received: 09/11/87

VOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 09/14/87
Date Analyzed:09/14/87
Conc/Dil Factor: 1 pH: 8.3
Percent Moisture: 30

S er		ug/l or [✓ ug/Kg] (Circle One)
-87-3	Chloromethane	10.0 U
5-9	Bromomethane	10.0 U
5 1-4	Vinyl Chloride	10.0 U
5-00-3	Chloroethane	10.0 U
5-09-2	Methylene Chloride	2.3 JB
7 5-1	Acetone	110.0 B
5-15-0	Carbon Disulfide	9.6
5-35-4	1,1-Dichloroethene	5.0 U
5 4-3	1,1-Dichloroethane	5.0 U
5 50-5	Trans-1,2-Dichloroethene	5.0 U
7-66-3	Chloroform	5.0 U
0 06-2	1,2-Dichloroethane	5.0 U
8 3-3	2-Butanone	10.0 U
1-55-6	1,1,1-Trichloroethane	5.0 U
6-23-5	Carbon Tetrachloride	5.0 U
0 05-4	Vinyl Acetate	10.0 U
5-27-4	Bromodichloromethane	5.0 U

CAS Number		ug/l or [✓ ug/Kg] (Circle One)
79-34-5	1,1,2,2-Tetrachloroethane	5.0 U
78-87-5	1,2-Dichloropropane	5.0 U
10061-02-6	Trans-1,3-Dichloropropene	5.0 U
79-01-6	Trichloroethene	5.0 U
124-48-1	Dibromochloromethane	5.0 U
79-00-5	1,1,2-Trichloroethane	5.0 U
71-43-2	Benzene	5.0 U
10061-01-5	cis-1,3-Dichloropropene	5.0 U
110-75-8	2-Chloroethylvinylether	10.0 U
75-25-2	Bromoform	5.0 U
591-78-6	2-Hexanone	10.0 U
108-10-1	4-Methyl-2-Pentanone	10.0 U
127-18-4	Tetrachloroethene	5.0 U
108-88-3	Toluene	5.0 U
108-90-7	Chlorobenzene	5.0 U
100-41-4	Ethylbenzene	5.0 U
100-42-5	Styrene	5.0 U
	Total Xylenes	5.0 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

LUE

the result is a value greater than or equal to the detection , report the value.

ndicates compound was analyzed for but not detected. Report ninimum detection limit for the sample with the U(e.g.10U l on necessary concentration dilution actions. (This is not ecessarily the instrument detection limit.) The footnote should ead U-Compound was analyzed for but not detected.The number is ninimum attainable detection limit for the sample.

ndicates an estimated value.This flag is used either when nating a concentration for tentatively identified compounds a 1 1 response is assumed or when the mass spectral data ndicates the presence of a compound that meets the identification eria but the result is less than the specified detection limit reater than zero (e.g. 10J).

C

This flag applies to pesticide parameters where the identification has been confirmed by GC/MS Single component pesticides greater than or equal to 10 ng/ul in the final extract should be confirmed by GC/MS

B

This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

OTHER

Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

FORM I

ORGANIC ANALYSIS DATA SHEET
(PAGE 2)

LABORATORY NAME: NANCO LABS. INC.
CASE NO: ENGINEERING SCIENCE

SAMPLE NO.

SED-4
LANCASTER REC.

SEMIVOLATILE COMPOUNDS

Concentration: [✓ Low] Medium (Circle One)
Date Extracted/Prepared: 09/16/87
Date Analyzed: 09/23/87
Conc/Dil Factor:------------> 1
Percent Moisture: 30

GPC Cleanup: Yes____ No__XXX__
Separatory Funnel Extraction: Yes_____
Continuous Liquid - Liquid Extraction: Yes___

		ug/l or [✓ ug/Kg] (Circle One)
2	Phenol	330.0 U
4	bis(-2-Chloroethyl)Ether	330.0 U
	2-Chlorophenol	330.0 U
1	1,3-Dichlorobenzene	330.0 U
7	1,4-Dichlorobenzene	330.0 U
5	Benzyl Alcohol	330.0 U
	1,2-Dichlorobenzene	330.0 U
	2-Methylphenol	330.0 U
2-9	bis(2-chloroisopropyl)Ether	330.0 U
5	4-Methylphenol	330.0 U
7	N-Nitroso-Di-n-Propylamine	330.0 U
	Hexachloroethane	330.0 U
	Nitrobenzene	330.0 U
	Isophorone	330.0 U
	2-Nitrophenol	330.0 U
9	2,4-Dimethylphenol	330.0 U
	Benzoic Acid	1600.0 U
1	bis(-2-Chloroethoxy)Methane	330.0 U
2	2,4-Dichlorophenol	330.0 U
-1	1,2,4-Trichlorobenzene	330.0 U
3	Naphthalene	330.0 U
-8	4-Chloroaniline	330.0 U
3	Hexachlorobutadiene	330.0 U
7	4-Chloro-3-Methylphenol	330.0 U
5	2-Methylnaphthalene	330.0 U
4	Hexachlorocyclopentadiene	330.0 U
2	2,4,6-Trichlorophenol	330.0 U
4	2,4,5-Trichlorophenol	1600.0 U
7	2-Chloronaphthalene	330.0 U
4	2-Nitroaniline	1600.0 U
-3	Dimethyl Phthalate	330.0 U
-8	Acenaphthylene	330.0 U
2	3-Nitroaniline	1600.0 U

CAS Number		ug/l or [✓ ug/Kg] (Circle One)
83-32-9	Acenaphthene	330.0 U
51-28-5	2,4-Dinitrophenol	1600.0 U
100-02-7	4-Nitrophenol	1600.0 U
132-64-9	Dibenzofuran	330.0 U
121-14-2	2,4-Dinitrotoluene	330.0 U
606-20-2	2,6-Dinitrotoluene	330.0 U
84-66-2	Diethylphthalate	330.0 U
7005-72-3	4-Chlorophenyl-phenylether	330.0 U
86-73-7	Fluorene	330.0 U
100-01-6	4-Nitroaniline	1600.0 U
534-52-1	4,6-Dinitro-2-Methylphenol	1600.0 U
86-30-6	N-Nitrosodiphenylamine (1)	330.0 U
101-55-3	4-Bromophenyl-phenylether	330.0 U
118-74-1	Hexachlorobenzene	330.0 U
87-86-5	Pentachlorophenol	1600.0 U
85-01-8	Phenanthrene	330.0 U
120-12-7	Anthracene	330.0 U
84-74-2	Di-n-Butylphthalate	330.0 U
206-44-0	Fluoranthene	330.0 U
129-00-0	Pyrene	330.0 U
85-68-7	Butylbenzylphthalate	330.0 U
91-94-1	3,3'-Dichlorobenzidine	660.0 U
56-55-3	Benzo(a)Anthracene	330.0 U
117-81-7	bis(2-Ethylhexyl)Phthalate	250.0 J
218-01-9	Chrysene	330.0 U
117-84-0	Di-n-Octyl Phthalate	330.0 U
205-99-2	Benzo(b)Fluoranthene	330.0 U
207-08-9	Benzo(k)Fluoranthene	330.0 U
50-32-8	Benzo(a)Pyrene	270.0 JB
193-39-5	Indeno(1,2,3-cd)Pyrene	330.0 U
53-70-3	Dibenz(a,h)Anthracene	330.0 U
191-24-2	Benzo(g,h,i)Perylene	330.0 U

(1) - Cannot be separated from diphenylamine

TABLE 2.6
30890-0092
ENGINEERING SCIENCE
EPA TCL PESTICIDES/PCB's

All results reported as ug/Kg.

Sample Identification

lution Factor	1.00	1.75	
	1019	1019	
hod Blank I.D.	-B02	-B02	
pound	Method Blank	SED-4	Lower Limits of Detection with no Dilution
pha BHC	U	U	8.0
eta BHC	U	U	8.0
elta BHC	U	U	8.0
amma BHC	U	U	8.0
eptachlor	U	U	8.0
ldrin	U	U	8.0
eptachlor Epoxide	U	U	8.0
ndosulfan I	U	U	16
ieldrin	U	U	16
,4' DDE	U	U	16
ndrin	U	U	16
ndosulfan II	U	U	16
,4' DDD	U	U	16
ndosulfan Sulfate	U	U	16
,4' DDT	U	U	80
ethoxychlor	U	U	16
ndrin Ketone	U	U	80
lpha Chlordane	U	U	80
amma Chlordane	U	U	160
oxaphene	U	U	80
roclor - 1016	U	U	80
roclor - 1221	U	U	80
roclor - 1232	U	U	80
roclor - 1242	U	U	80
roclor - 1248	U	U	160
roclor - 1254	U	U	160
roclor - 1260	U	U	

U - See Appendix for definition.

ORGANICS ANALYSIS DATA SHEET
(PAGE 4)

SAMPLE NUMBER

LABORATORY NAME :NANCO LABS.INC.
CASE NO: ENGINEERING SCIENCE

SED-4
LANCASTER REC.

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or [✓ Scan] Number	Estimated Concentration (ug/l or [✓ ug/Kg])
1	67641	2-PROPANONE	VOA	100	13.0 J
2					
3					
4					
5					
6	123422	2-PENTANONE, 4-HYDROXY-4-METHYL	BNA	80	66000.0 J
7	-----	UNKNOWN ALKANE	BNA	93	2100.0 J
8	10544500	SULFUR, MOL. (S8)	BNA	1119	1400.0 J
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

FORM I, PART B

INORGANIC ANALYSIS DATA SHEET
FORM I

SMPL NO.: SED-4

Lab Name : NANCO LABORATORIES, INC.

Customer Name: Engineering Science

SOW NO. : N/A

Lab Receipt Date : 09/11/87

Lab Sample ID: 87-ES-2504

Date Reported:

Location ID: Lancaster Rec

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION : LOW __X__ MEDIUM ______

MATRIX : WATER ______ SOIL __X__ SLUDGE ______ OTHER ______

UG/L OR [✓ MG/KG DRY WEIGHT] (CIRCLE ONE)

1.	ALUMINUM	7346.9 P		13.	MAGNESIUM	52252.9 P	
2.	ANTIMONY	37.7 PN		14.	MANGANESE	1139.3 P N	
3.	ARSENIC	8.6 UFN	(1:10)	15.	MERCURY	0.1 U C.V. N	
4.	BARIUM	[52.6]P N		16.	NICKEL	20.6 P N	
5.	BERYLLIUM	[0.3]PN		17.	POTASSIUM	1814.6 P	
6.	CADMIUM	4.6 P N		18.	SELENIUM	14.3 UF N	(1:10)
7.	CALCIUM	63542.0 P~~N~~ MM		19.	SILVER	42.6 P	
8.	CHROMIUM	22.3 P N		20.	SODIUM	280.3 P	
9.	COBALT	14.3 P N		21.	THALLIUM	1.4 UFN	
10.	COPPER	13.1 P N E		22.	VANADIUM	14.9 P N E	
11.	IRON	14417.7 P		23.	ZINC	92.0 P N E	
12.	LEAD	14.2 F ~~N~~			PERCENT SOLIDS (%)	70.0	
	CYANIDE	0.1 U N					
	PHENOL	NR					

FOOTNOTES : FOR REPORTING RESULTS STANDARD RESULT QUALIFIERS ARE USED AS DEFINED ON PAGE 2.

COMMENTS : This sample was of a brown texture after ICP digestion procedure this sample is a light yellow after furnace digestion procedures this sample was diluted. Arsenic and Selenium were analyzed at a (1:10) dilution.

LAB MANAGER

Engineering Science Field Sampling Records

FIGURE 6.3
FIELD SAMPLING RECORD

te Lancaster Rec NYSDEC Site No. Date: 10/29/87

Well GW-1A.14

nplers: Gerry Gould of ES

Liz Doloson of ES

ırıal Static Water Level. . . . . 4'2"

from top of well protective casing) 4.17

ɜ_ation:

ing: Submersible ____ Centrifugal ____

Airlift ____ Positive Displacement ____

Bailed ✓ ~~#2~~ 12 Times

Well Volume Calculation:

2" Casing: 8 ft. of water x .16 = 1.28 gals.

3" Casing: ____ ft. of water x .36 = ____ gals.

4" Casing: ____ ft. of water x .65 = ____ gals.

ɔth to intake from top of protective well casing 7

e of Water removed 4 Gals. (> 3 Well Volumes)

npling: Time 16:45 ~~a.m.~~ ~~p.m.~~

Bailer Type:

Stainless Steel ✓

Teflon ____

From Pos. Dis. Pump Discharge Tube ____

Other ____

	No. of Bottles Filled	I.D. No.	Analyses
l Blank	0		
ɜ._ Blank - Wash/Atmospheric. .(circle one)	0		
ound-water Sample	6	GW-1A.14	

y cal Appearance and Odor brown - cloudy - no odor

Hnu - 0 background 0 - groundwater

f gerate: Date 10/29/87 Time 17:30

eld Tests:

Temperature (C°/°F) 3.2°C

pH 10.63

Spec. Conduc (umhos/cm) 620 umhos

a er Cloudy, 39°F, scattered sleet & rain

m nts

FIGURE 6.3
FIELD SAMPLING RECORD

te Lancaster Rec. NYSDEC Site No.______ Date: 10/29/87

Well GW-1B.14

mplers: Gerry Gould of ES

Liz Dobson of ES

Itial Static Water Level. . . . . 22' 10¾"
from top of well protective casing) 22.90

acuation:

Ing: Submersible ______ Centrifugal ______

Airlift ______ Positive Displacement ______

Bailed ✓ 112 Times

Well Volume Calculation:

2" Casing: 54 ft. of water x .16 = 8.6 gals.

3" Casing: ______ ft. of water x .36 = ______ gals.

4" Casing: ______ ft. of water x .65 = ______ gals.

pth to intake from top of protective well casing 74'

me of Water removed 26 Gals. (> 3 Well Volumes)

mpling: Time 16:45 ~~a.m.~~ ~~p.m.~~

Bailer Type: Stainless Steel ______

Teflon ✓

From Pos. Dis. Pump Discharge Tube ______

Other ______ ______

	No. of Bottles Filled	I.D. No.	Analyses
l Blank	0		
e. Blank - Wash/Atmospheric. .(circle one)	0		
ound-water Sample	6	GW-1B.14	

y cal Appearance and Odor milky transparent, no odor

f gerate: Date 10/29/87 Time 17:30

eld Tests:

Temperature (C°/°F) 3.1 °C

pH 11.66

Spec. Conduc (umhos/cm) 11,500 umhos

a er Cloudy 39°F, scattered sleet, rain

m nts

FIGURE 6.3
FIELD SAMPLING RECORD

, Lancaster Rec.   NYSDEC Site No. ______   Date: 10/30/87

Well 6W-2B

lers: Gerry Gould   of ES

LD Dobson   of ES

ial Static Water Level. . . . . 22.1'

om top of well protective casing)

uation:

g: Submersible ____ Centrifugal ____

Airlift ____ Positive Displacement ____

Bailed ✓ ____ Times

Well Volume Calculation:

2" Casing: 42 ft. of water x .16 = 6.72 gals.

3" Casing: ____ ft. of water x .36 = ____ gals.

4" Casing: ____ ft. of water x .65 = ____ gals.

to intake from top of protective well casing ____

of Water removed 21 Gals. (> 3 Well Volumes)

iling: Time ____   ____ a.m.   ____ p.m.

Bailer Type: Stainless Steel ____

Teflon X

From Pos. Dis. Pump Discharge Tube ____

Other ____ ____

	No. of Bottles Filled	I.D. No.	Analyses
lank	—		
Blank - Wash/Atmospheric. .(circle one)	—		
und-water Sample	6	GW-2B.14	See below

al Appearance and Odor Milky appearance, no sediment, no odor

erate: Date [illegible]   Time 9:00

ld Tests:

Temperature ([✓ C°]/°F) —

pH 11.18

Spec. Conduc (umhos/cm) [illegible]

er Cool, Overcast, Windy 35-40F

its

HSL Metals, Volatiles, Semi Volatiles, Pest/PCB, TOX

FIGURE 6.3
FIELD SAMPLING RECORD

Site Lancaster Rec NYSDEC Site No.________ Date: 10/30/87

Well GW-3A

Samplers: Liz Dobson of ES

Jack Kuhn of ES

Initial Static Water Level. . . . . 28.00'
(from top of well protective casing)

vacuation:
Using: Submersible ____ Centrifugal ____
Airlift ____ Positive Displacement ____
Bailed ✓ ________ Times

Well Volume Calculation:
2" Casing: 7.47 ft. of water x .16 = 1.2 gals.
3" Casing: ____ ft. of water x .36 = ____ gals.
4" Casing: ____ ft. of water x .65 = ____ gals.

epth to intake from top of protective well casing 35.41'
olume of Water removed 7 Gals. (> 3 Well Volumes)

Sampling: Time 11:20 a.m. p.m.

Bailer Type: Stainless Steel ✓
Teflon ____
From Pos. Dis. Pump Discharge Tube ____
Other ________ ____

	No. of Bottles Filled	I.D. No.	Analyses
rip Blank	0		
ield Blank - [✓ Wash]/Atmospheric. .(circle one)	3		
Ground-water Sample	6	GW-3A.14	

hysical Appearance and Odor brown, cloudy, no odor

efrigerate: Date _/_/_ Time ________

Field Tests:

Temperature (C°/°F)		
pH	7.09	
Spec. Conduc (umhos/cm)	900	

eather partly sunny, 45°F

omments ________

FIGURE 6.3
FIELD SAMPLING RECORD

Lancaster NYSDEC Site No. ______ Date: 10/30/87

Well GW 3B

lers: Jack Kuhn of ES

Liz Dobson of ES

Gerry Gould

ial Static Water Level. . . . . 28.05'

om top of well protective casing)

uation:

g: Submersible ______ Centrifugal ______

Airlift ______ Positive Displacement ______

Bailed ✓ ______ Times

Well Volume Calculation:

2" Casing: 23.91 ft. of water x .16 = 3.83 gals.

3" Casing: ______ ft. of water x .36 = ______ gals.

4" Casing: ______ ft. of water x .65 = ______ gals.

to intake from top of protective well casing 51.96'

of Water removed ______ Gals. (> 3 Well Volumes)

ling: Time 11:28 X a.m. ~~p.m.~~

Bailer Type: Stainless Steel ✓

Teflon ______

From Pos. Dis. Pump Discharge Tube ______

Other ______

	No. of Bottles Filled	I.D. No.	Analyses
lank	0		
Blank - Wash/Atmospheric. .(circle one)	0		
nd-water Sample	6	GW-3B.14	

al Appearance and Odor gray no odor, cloudy

erate: Date 10/30/87 Time 11:28

d Tests:

Temperature (C°/°F) ______ ______

H 8.10 ______

Spec. Conduc (umhos/cm) 750 umhos ______

r ______

ts ______

FIGURE 6.3
FIELD SAMPLING RECORD

Site Lancaster Rec. NYSDEC Site No. ______ Date: 10/30/87

Well GW-4B

Samplers: Liz Dobson of ES

Gerry Gould of ES

Initial Static Water Level. . . . . 28.96'
(from top of well protective casing)

Evacuation:

Using: Submersible ______ Centrifugal ______
Airlift ______ Positive Displacement ______
Bailed ✓ ______ Times

Well Volume Calculation:

2" Casing: 25.72 ft. of water x .16 = 4.11 gals.
3" Casing: ______ ft. of water x .36 = ______ gals.
4" Casing: ______ ft. of water x .65 = ______ gals.

Depth to intake from top of protective well casing 54.68

Volume of Water removed 13 Gals. (> 3 Well Volumes)

Sampling: Time 10:15 X a.m. ___ p.m.

Bailer Type: Stainless Steel ______
Teflon X
From Pos. Dis. Pump Discharge Tube ______
Other ______ ______

	No. of Bottles Filled	I.D. No.	Analyses
Trip Blank			
Field Blank - Wash/Atmospheric .(circle one)	3	GW-5B.14	See below
Ground-water Sample	6	GW-4B.14	

Field Blank - Wash/[✓ Atmospheric]

Physical Appearance and Odor

Cloudy Grey - 1st 2 bails had sediment

Refrigerate: Date 10/30/87 Time 1030

Field Tests:

Temperature (C°/°F) —
pH 6.70
Spec. Conduc (umhos/cm) 500

Weather Overcast / cloudy

Comments

did not wash ~~took field blank (wash) called it GW-3A - 10:30~~

Took field blank (atmospheric) called it GW-5B - 11:00

Analyses HSL Vol

FIGURE 6.3
FIELD SAMPLING RECORD

Lancaster Rec NYSDEC Site No. ______ Date: 10/30/87

Well GW-5A

ers: Joey Kuhn of ES

Liz Dobson of ES

Gerry Gould

al Static Water Level. . . . . 27.0'

m top of well protective casing)

ion:

: Submersible ______ Centrifugal ______

Airlift ______ Positive Displacement ______

Bailed ✓ ______ Times

Well Volume Calculation:

2" Casing: 8.03 ft. of water x .16 = 1.28 gals.

3" Casing: ______ ft. of water x .36 = ______ gals.

4" Casing: ______ ft. of water x .65 = ______ gals.

o intake from top of protective well casing 35.03

of Water removed 4 Gals. (> 3 Well Volumes)

ing: Time ~~[illegible]~~ 14:30 ~~a.m.~~ ~~p.m.~~

Bailer Type: Stainless Steel ______

Teflon ✓

From Pos. Dis. Pump Discharge Tube ______

Other ______ ______

	No. of Bottles Filled	I.D. No.	Analyses
ank	0		
lank - Wash/Atmospheric. .(circle one)	0		
d-water Sample	6	GW-5A.14	

l Appearance and Odor

Cloudy Brown

rate: Date 10/30/87 Time 1500

Tests:

emperature (C°/°F) -

H 8.19

Spec. Conduc (umhos/cm) 500

Hnu bg. 0.0/0.0

partly cloudy, 50°F

s matrix spike and duplicate taken here

labelled same ID#/ MS & MSD marked on label

FIGURE 6.3
FIELD SAMPLING RECORD

Date: 6/1/88
EMDD

ANCASTER RECLAMATION NYSDEC Site No. ______
Well GW-5A

: MARK CHAUVIN, LIZ DAVIS of E.S.
of ______

Static Water Level. . . . . 25.99' T.O.C. (1.99' STICK-UP)
top of well protective casing)

ion:
: Submersible ______ Centrifugal ______
Airlift ______ Positive Displacement ______
Bailed X ______ Times

Well Volume Calculation:
2" Casing: 11.0 ft. of water x .16 = 1.76 gals
3" Casing: ______ ft. of water x .36 = ______ gals
4" Casing: ______ ft. of water x .65 = ______ gals
1.76 x 3 = 5.28 ~ 6 gal = 3 volumes

to intake from top of protective well casing 35.0'
of Water removed 6 Gals. (> 3 Well Volumes)

ling: Time 1500 a.m. p.m.

well is 35.0' deep from top of pvc casing.

Bailer Type: Stainless Steel ______
Teflon X
From Pos. Dis. Pump Discharge Tube ______
Other ______ ______

	No. of Bottles Filled	I.D. No.	Analyses
p Blank			
l Blank - Wash/Atmospheric. .(circle one)			
und-water Sample	9	GW-5A.14	Volatiles

cal Appearance and Odor SANDY, light brown, slightly Cloudy
No odor

f-igerate: Date / / Time ______

eld Tests:

Temperature ([✓ C°] °F)	11.2	
pH	7.35	
Spec. Conduc (umhos/cm)	295	

her ______

omments WELL LOCATED IN PARKING LOT.
MS/MSD taken
Good Recharge

FIGURE 6.4
FIELD SURFACE SAMPLING RECORD

S e LANCASTER RECLAMATION NYSDEC Site No.____ Date: 9 10 87

S mplers: Liz Dobson of Engineering-Science
Gerry Gould of "

S PLING: SW-1 / SED-1 Time 1430 ___ a.m. ~~p.m.~~

Sample Type: Surface water and sediment

mpling Method: glass beaker / stainless steel spoon

Depth of Sample: 0-0.5' from water surface / sediment ~ 0.5'

scription of Sampling Point:
Drainage Direction: NA (POND)

Upstream From: —

Downstream From: —

Physical Appearance/Odor: water greenish appearance overall (pond)
fairly clear water

Wildlife Observed: None

Sampling Description:
Suspended Matter: Algae in water

Color/Stain: Clear 1½' to 2' visibility

Odor: None

Other:

Texture: — Sediment - Muddy texture.

Analyze for: HSL Volatiles Semi Volatiles, TOX, PB/BNA Metals

efrigerated: Date: __/__/__ Time ___ a.m. ___ p.m.

ield Tests:

Temperature (C°/°F)	23.5 C°	Weather	
pH	7.84*	Breezy, Partly Sunny	
Conductivity	398.5	70°F	

Comments: Photovac- -0.6 ppm
* tested pH paper ~ looked like between 7-7.2

FIGURE 6.1
FIELD SAMPLING RECORD

CASTER REC Site No. 5Y012.14 Date: 10/13/88
Well SED-1.14

MARK CHAUVIN of ES
BILL BRADFORD of ES

atic Water Level. . . . . ______
op of well protective casing) .

:

Well Volume Calculation:

mersible ______ Centrifugal ______ 2" Casing: ____ ft. of water x .16 = ____ gals.
irlift ______ Positive Displacement ______ 3" Casing: ____ ft. of water x .36 = ____ gals.
led ______ ______ Times 4" Casing: ____ ft. of water x .65 = ____ gals.

intake from top of protective well casing ______
of Water removed ______ Gals. (> 3 Well Volumes)

Time 1530 HRS ____ a.m.
X p.m.

ler Type: Stainless Steel SPOON X
Teflon ______
From Pos. Dis. Pump Discharge Tube ______
Other ______ ______

	No. of Bottles Filled	I.D. No.	Analyses
ank			
nk - Wash/Atmospheric. (circle one)			
ter Sample	1	SED-1.14 (012)	Pest/PCB

Appearance and Odor Brown & Black organic silt, some coarse-fine
, no discernable odor.

rate: Date ______ Time ______

ts:
emperature (C°/°F) ______ ______ ______
______ ______
c. Conduc (umhos/cm) ______ ______

COOL, PARTLY CLOUDY 35°-40° WIND FROM NORTHWEST AT 10 mph

TAKEN FROM NORTHWEST SIDE OF PONDED AREA.

FIGURE 6.4
FIELD SURFACE SAMPLING RECORD

S e Lancaster Reclamation NYSDEC Site No.________ Date: 9/09/87

S plers: Liz Dobson of Engineering-Science
Gerry Gould of "

S PLING: SW-2 Time 1530 HRS ___ a.m. ___ p.m.

Sample Type: Surface Water, Sediment

S pling Method: Glass Beaker, Stainless Steel Spoon

Depth of Sample: 0- 2.0" (inches)

C cription of Sampling Point:
Drainage Direction: NA (standing water)

Upstream From: NA

Downstream From: NA

Physical Appearance/Odor: Clear water / sediment is organic rich, shows mudcracks

Wildlife Observed:

Sampling Description:
Suspended Matter: none

Color/Stain: very clear - no stain

Odor: none

Other: samples from a large puddle about 8" deep - probably all water from recent rain

Texture: sandy w/ small gravel - mudcracks visible on bottom of puddle

Analyze for: HSL volatiles, semivolatiles, TOX, PCB/PNA metals

frigerated: Date: 9/9/87 Time ___ a.m. 530 p.m.

eld Tests:
Temperature (C°/°F) 31.1 Weather breezy & hazy
pH 8.53
Conductivity 364 µS

Comments: Photovac - ~0.6 ppm
Basically this water is standing rain water - can see mudcracks, indicates it usually is dry. Ph paper showed approx 8.0

FIGURE 6.1
FIELD SAMPLING RECORD

ASTER REC — Site No. 5Y012.14 — Date: 10/13/88

Well SEO Z.14

MARK CHAUVIN of ES

BILL BRADFORD of ES

tic Water Level. . . . . ______
of well protective casing) .

Well Volume Calculation:

ersible ______ Centrifugal ______ 2" Casing: ______ ft. of water x .16 = ______ gals.

rlift ______ Positive Displacement ______ 3" Casing: ______ ft. of water x .36 = ______ gals.

lled ______ ______ Times 4" Casing: ______ ft. of water x .65 = ______ gals.

ntake from top of protective well casing ______

Water removed ______ Gals. (> 3 Well Volumes)

Time 1530 ___ a.m. X p.m.

ler
r Type: Stainless Steel spoon X
Teflon ______
From Pos. Dis. Pump Discharge Tube ______
Other ______ ______

	No. of Bottles Filled	I.D. No.	Analyses
nk			
(- Wash/Atmospheric. .(circle one)			
r Sample	1	SEO Z.14 (6EO-001)	PEST/PCB

Appearance and Odor Brown silty sand, some small gravel. No odor.

ate: Date ______ Time ______

s:
mperature (C°/°F) ______ ______ ______

______ ______

. Conduc (umhos/cm) ______ ______

COOL, PARTLY CLOUDY 35°-40° WIND FROM NW AT 10 mph

TAKEN FROM SOUTHWEST SIDE OF PONDED AREA.

✓

FIGURE 6.4
FIELD SURFACE SAMPLING RECORD

ancaster Reclamation NYSDEC Site No.________ Date: 8/19/87

s: Gerry Gould & of Engineering Science

Liz Dobson of " "

S: SW-3 Time 4:30 ___ a.m. X p.m.

e Type: surface water/sediment

g Method: glass beaker/stainless steel spoon

of Sample: surface - 1' for water ½' to 1' for sediment

tion of Sampling Point:

Drainage Direction: na pond w/steep sides

pstream From: na

Downstream From: na

hysical Appearance/Odor: cloudy - no odor

Wildlife Observed: cat tails - no animals

ing Description:

Suspended Matter: none

olor/Stain: gray-brown - visibility 6" - wind & rain may have stirred up sediment

dor: none

Other: —

Texture: clayey

Analyze for: HSL volatiles, semivolatiles BNA/PCB metals

erated: Date: __/__/__ Time ___ a.m. ___ p.m.

Tests:

Temperature (C°/°F) 22.6°C Weather breezy - overcast

pH 6.7 w/pH paper 70°

Conductivity 500 uS

Photvac TRII - 0.9

ments:

FIGURE 6.1

FIELD SAMPLING RECORD

C STER REC

Site No. SY012.14

Well SEO 3.14

Date: 10/13/88

1ARK CHAWVIN of ES

BILL BRADFORD of ES

ic Water Level. . . . . ______

of well protective casing)

Well Volume Calculation:

rsible ______ Centrifugal ______ 2" Casing: ______ ft. of water x .16 = ______ gals.

-lift ______ Positive Displacement ______ 3" Casing: ______ ft. of water x .36 = ______ gals.

d ______ ______ Times 4" Casing: ______ ft. of water x .65 = ______ gals.

intake from top of protective well casing ______

Water removed ______ Gals. (> 3 Well Volumes)

Time 1530 ___ a.m.

X p.m.

Type: Stainless Steel SPOON X

Teflon ______

From Pos. Dis. Pump Discharge Tube ______

Other ______ ______

	No. of Bottles Filled	I.D. No.	Analyses
k			
n - Wash/Atmospheric. .(circle one)			
Sample	1	SEO 3.14 (GEO-002)	PEST/PCB

earance and Odor Brown SILT w/little sand, no odor:

te: Date ______ Time ______

perature (C°/°F) ______ ______ ______

Conduc (umhos/cm) ______ ______

COOL, PARTLY CLOUDY 35°-40° WIND FROM NW AT 10 mph

TAKEN FROM SOUTHEAST SIDE OF PONDED AREA.

✓

FIGURE 6.4
FIELD SURFACE SAMPLING RECORD

ancaster Reclamation NYSDEC Site No.________ Date: 9/10/87

s: Gerry Gold of Engineering Science

Liz Dobson of " "

G: SW-4 Time 9:00 X a.m.
___ p.m.

e Type: Surface water / sediment

g Method: glass beaker / stainless steel spoon

of Sample: water - surface to 1/2', sed - 1/2' to 1'

tion of Sampling Point:

Drainage Direction: na - pond w/ steep banks

pstream From: n/a

Downstream From: n/a

hysical Appearance/Odor: - muddy bank, no odor

Wildlife Observed: frogs, cattails, water plants

ing Description:

Suspended Matter: some algae, floating plants

olor/Stain: water clear, visibility 3', faint yellow-brown stain

dor: none

Other: —

Texture: clayey mud

Analyze for: HSL volatiles, semivolatiles, PCB/BNA metals

erated: Date: __/__/__ Time ___ a.m.
___ p.m.

Tests:

Temperature (C°/°F) 19.5°C Weather Sunny 65°

pH 7.2 meter/5.5 paper light fog

Conductivity 358 uS

Photovac .5

ments: Elevation of water surface here (SW-4) is considerably

her (≈10') than water surface elevation @ SW-3