REPORT

TO

NIAGARA MOHAWK POWER CORPORATION
Syracuse, New York

FOR

PHASE II SITE INVESTIGATION

OLD ERIE CANAL SITE

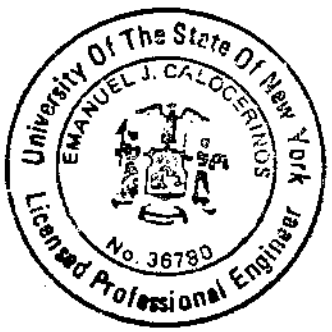
Site ID#'s: 633017, 622006

ONEIDA AND HERKIMER COUNTIES

Prepared by:

CALOCERINOS & SPINA
Consulting Engineers

Richard W. Klippel, P.E.	-	Project Director
Thomas A. Barba	-	Project Chemist
Richard J. Kulibert, CPGS	-	Project Geologist
M. Susan Cullen	-	Environmental Scientist
Mark D. Wilder	-	Geologist



Emanuel J. Calocerinos
Principal

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TABLE OF CONTENTS

		PAGE
SECTION 1	EXECUTIVE SUMMARY	1-1
SECTION 2	PURPOSE OF INVESTIGATION	
2.01	Site Location and History	2-1
2.02	Purpose of Site Investigation	2-1
SECTION 3	SCOPE OF WORK	
3.01	Geophysical Surveys	3-1
3.02	Test Borings	3-1
3.03	Ground-Water Monitoring Well Installation and Sampling	3-2
	A. Monitoring Well Construction	3-2
	B. Ground-Water Sampling	3-4
	C. Analyses of Ground-Water Samples	3-4
	1. Analysis by the C&S Environmental Laboratory	3-4
	2. GC/MS Analysis of Ground-Water - Compuchem Labs	3-5
3.04	Other Sampling and Analyses	3-6
	A. Sediment Sampling and Analyses	3-6
	1. Initial Sediment Sampling	3-6
	2. Intensive Sediment Sampling	3-6
	B. Surface Water Samples	3-7
	C. Air Monitoring	3-7
3.05	Implementation of QA/QC Protocols	3-7
3.06	Calculation of Final HRS Score	3-8
SECTION 4	SITE ASSESSMENT	
4.01	Result of Geophysical Surveys and Test Borings	4-1
	A. Terrain Conductivity Survey	4-1
	B. Resistivity Survey	4-2
	C. Test Borings	4-2
4.02	Physiography, Drainage and Topography	4-3

TABLE OF CONTENTS
(Continued)

		PAGE
4.03	Site Hydrogeology	4-4
	A. Regional Geology	4-4
	B. Site Specific Geology	4-5
	C. Surface Water Flow	4-5
	D. Ground-Water Flow	4-5
4.04	Assessment of Site Contamination	4-7
	A. Soil Sample Analysis	4-7
	B. Ground-Water Analyses	4-7
	C. Canal Water Quality	4-8
	O. Sediment Analyses	4-9
SECTION 5	FINAL APPLICATION OF HAZARD RANKING SYSTEM	
5.01	Narrative Summary	5-1
5.02	HRS Score	5-1

Figures

Figure 1 Site Location Map (U.S.G.S. Quad)
Figure 2 Geophysical Survey Locations, Monitoring Well Locations, Water Levels and Ground-Water Flow Direction
Figure 3 Location of Sediment Sampling Points and Surface Water Sampling Points
Figure 4 EM Conductivity Survey Data
Figure 5 Profile of Resistivity Soundings
Figure 6 Hydrogeologic Profile A-A'

Tables

Table 1 Surveyed Monitoring Well Elevations and Water Levels
Table 2A Split-Spoon Sample Results (Organics)
Table 2B Split-Spoon Sample Results (Inorganics)
Table 3A Organic Parameters Detected in Ground-Water Samples
Table 3B Ground-Water Metals Data
Table 4A Surface Water - Organics
Table 4B Surface Water - Metals
Table 5 Organic Parameters Present in Composite Sediment Sample
Table 6A Sediment Sample Results (VOA's)
Table 6B Sediment Sample Results (PAH's, PCB's)
Table 6C Sediment Sample Results (Inorganics)

TABLE OF CONTENTS
(Continued)

Appendices

Appendice A	Results of Grain Size Distribution, Atterburg Limits, and Moisture Content Tests
Appendice B	Boring Logs and Monitoring Well Construction Details
Appendice C	Calculation of Hydraulic Conductivities
Appendice D	QA/QC Document
Appendice E	Soil (Split Spoon) Analytical Data Sheets
Appendice F	Ground-Water Analytical Data Sheets
Appendice G	Surface Water Analytical Data Sheets
Appendice H	HRS Worksheets and Documentation Records

SECTION 1

EXECUTIVE SUMMARY

A Phase II investigation was conducted to determine the nature and extent of contamination at the property known as the Old Erie Canal (NYSDEC Site Numbers 633017 and 622006). The site, which is located in both Oneida and Herkimer Counties is owned by Niagara Mohawk Power Corporation. The site received a variety of wastewaters from industrial facilities that discharged to a storm sewer which in turn discharged to the western end of the canal.

The Phase II Investigation included geophysical surveys, installation of ground-water monitoring wells, sampling and analysis of soil, ground water, surface water, and sediment, and calculation of a Hazard Ranking System (HRS) score. The results of the study indicate that the major contamination is in the sediment (metals) and to a lesser extent, in the surface water discharging to and from the canal (organics). Ground water adjacent to the canal contained low levels of contamination, but was free from organic contamination downgradient from the site.

Determination of the HRS score indicated that the major potential hazard presented by the Old Erie Canal site was from the ground water migration route. The final migration score was 24.66. However, the score appears to be unrealistically high based on the ground-water flow in the area.

SECTION 2

INTRODUCTION

2.01 Site Location and History

The Old Erie Canal site is located in an area that begins just east of Turner Street in the City of Utica, Oneida County, and extends approximately 4,200 feet in an easterly direction into the Town of Frankfort, Herkimer County, New York (Figure 1). The site is approximately 50 feet wide.

The abandoned canal section has been used as a wastewater disposal site since before 1950 by upgradient manufacturing facilities including electroplaters and arms and munitions factories. These facilities discharged directly to the canal through a 30 inch storm sewer. Several feet of thick, oily sludge have accumulated in the canal bed.

The canal berm was breached during high water in February 1983, and sediment and sludge were washed from the canal bed onto neighboring properties. The breach was repaired during April 1983, but leakage has been reported since then.

Sampling of canal sediments by Niagara Mohawk (NM) and New York State Department of Conservation (NYSDEC) in 1984 has shown various levels of organic compounds and metals, while sampling of canal water (NYSDEC, 1984) has shown no detectable levels of organic or inorganic contaminants. Sampling of two residential wells (Department of Health, 1983) approximately 500 feet from the site has shown no detectable levels of organic contaminants.

2.02 Purpose of Site Investigation

The Oneida and Herkimer County portions of the site are currently designated by the NYSDEC as inactive hazardous waste disposal sites #633017 and #622006, respectively. A Phase I investigation of the site was completed in

September, 1984 by Ecological Analysts, Inc. It was subsequently determined by the NYSDEC that a Phase II investigation should be initiated at the site.

The purpose of the Phase II investigation was to further characterize and determine the significance of the hazardous nature of the site. Specifically, the presence and extent of contamination in the site surface water, sediment and subsurface media was to be determined through various survey and monitoring programs. Subsequently, a final Hazard Ranking System (HRS) score would be calculated.

Calocerinos & Spina, Consulting Engineers (C&S), was authorized by Niagara Mohawk Power Corporation on September 10, 1985, as documented by Purchase Order No. 46812, to proceed with a Phase II investigation on the NM property known as the Old Erie Canal.

SECTION 3

SCOPE OF WORK

The methods of investigation included the following specific tasks, as outlined in accordance with the New York State Department of Environmental Conservation (NYSDEC) Generic Work Plan for Phase II Investigations.

3.01 Geophysical Surveys

Geophysical surveys were performed to characterize the site's subsurface stratigraphy, delineate locations of buried metals, and ascertain the presence of contaminant plumes or leakage from the canal. Terrain conductivity profiling was accomplished using a Geonics EM-34 terrain conductivity meter to take measurements along three traverse lines parallel to the canal. Six locations were chosen for resistivity soundings. At each location, soundings were taken at 5-foot depth intervals from 5 to 30 feet in order to characterize the underlying geologic strata.

3.02 Test Borings

North Star Drilling Company of Cortland, New York, drilled four test borings at the locations shown on Figure 2. All drilling was completed under the supervision of a qualified C&S geologist. Locations and project depths of the borings were determined based on geophysical survey results and a knowledge of the occurrence of ground water in the area. One boring was located upgradient and three were located downgradient, relative to the canal. The final depth of each boring was adjusted in the field to account for actual subsurface conditions. Subsurface sediment samples were obtained utilizing a split-spoon sampler, at standard 5 feet intervals until the water table was penetrated. Continuous split-spoon samples were collected from the depth of occurrence of the water table to refusal at the bedrock horizon, or in the

dense basal till zone overlying bedrock. All split spoon samples collected were classified by the C&S geologist.

Three selected split-spoon samples were analyzed for 24 metals, cyanide, and the 130 organics on the NYSDEC Hazardous Substance List (HSL). Each peak equal to or greater than 10 percent of the nearest calibrating standard was identified and quantified as a part of the analytical protocol. In addition, three separate split-spoon samples, representative of subsurface lithologies were submitted for grain-size distribution, Atterberg Limits, and moisture content tests. The results of these tests are included in Appendix A. Subsequent to the sample collection, the test boring was reamed to 6-1/4 inches diameter utilizing hollow stem augers. All drill cuttings were placed in a 55 gallon drum which was sealed and secured within the fence at the NM Substation at the west end of the site. Descriptions of the lithology penetrated during the drilling of each test boring and well completion information are given in Appendix B.

3.03 Ground-Water Monitoring Well Installation and Sampling

A. Monitoring Well Construction

As each boring was completed, it was converted to a ground-water monitoring well to enable long-term sampling of ground water at that location. Based on the characteristics of the subsurface geology and the observed occurrence of ground water in the test borings, specifications for the construction of ground-water monitoring wells were determined. The most likely zone for potential contamination in the subsurface is the unconsolidated unit overlying basal till. Therefore, the wells were screened from the occurrence of the water table to the top or just below the top of the relatively low permeability layer. Ground-water monitoring well construction details are presented in Appendix B. The

well screens and riser pipes were steam cleaned and protected from contamination prior to installation in the test borings. Each monitor well had the following characteristics, as illustrated in Appendix B.

1. The portion of each borehole below the bottom of the well was filled with bentonite or basal till cuttings to permit construction at the desired total depth.
2. Wells were constructed with 2 inch diameter stainless steel screens and riser pipes.
3. A washed, graded sand was packed in the annulus between the well screen and borehole to at least one foot above the top of the screens.
4. A bentonite seal was placed in the annulus above the sand pack.
5. A Portland Cement/Bentonite grout was used to fill the remaining annulus to land surface.
6. A 4-inch diameter protective steel casing with a lockable cap was inserted over the riser pipe and grouted into place.

After construction, each monitoring well was developed and permeability tests were performed according to the method of Bouwer and Rice (1976). Well development consisted of bailing out the equivalent of ten well volumes of water in order to remove any potential contamination from the drilling process. In addition, water level elevations were recorded before and after development. Plots of the change in water level versus time were recorded at the monitor wells and calculations of the hydraulic conductivity in the vicinity of each monitor well are given in Appendix C. Decontamination of the drilling rig and accessories was performed by steam-cleaning after the completion of each well to prevent any possible cross-contamination between drill sites.

B. Ground-Water Sampling

One ground-water sample was collected from each of the four wells according to the following procedure:

1. The water level was recorded.
2. Three well volumes of ground water were removed and the water level was allowed to recover.
3. A dedicated stainless steel bailer was inserted into the well and filled with ground water.
4. The water in the bailer was emptied into a new, clean sample container.
5. The bailer and rope were left inside the well for future use.
6. A chain-of-custody report was generated for the sample.
7. The sample was preserved in accordance with USEPA protocol.
8. The samples were iced and transported to the C&S Environmental Laboratory along with the chain-of-custody document.

D. Analyses of Ground-Water Samples:

1. Analysis by the C&S Environmental Laboratory - The C&S Environmental Laboratory analyzed a portion of the samples for the following 25 parameters by the referenced analytical methods:
   (1) Aluminum (USEPA 202.1)
   (2) Antimony (USEPA 204.1)
   (3) Arsenic (USEPA 206.3)
   (4) Barium (USEPA 208.1)
   (5) Beryllium (USEPA 210.1)
   (6) Cadmium (USEPA 213.1)
   (7) Calcium (USEPA 215.1)
   (8) Chromium (Total) (USEPA 218.1)

(9) Cobalt (USEPA 219.1)

(10) Copper (USEPA 220.1)

(11) Iron (USEPA 236.1)

(12) Lead (USEPA 239.1)

(13) Magnesium (USEPA 242.1)

(14) Manganese (USEPA 243.1)

(15) Mercury (USEPA 245.1)

(16) Nickel (USEPA 249.1)

(17) Potassium (USEPA 258.1)

(18) Selenium (USEPA 270.2)

(19) Silver (USEPA 272.1)

(20) Sodium (USEPA 273.1)

(21) Thallium (USEPA 279.1)

(22) Tin (USEPA 282.1)

(23) Vanadium (USEPA 286.1)

(24) Zinc (USEPA 289.1)

(25) Cyanide (Total) (USEPA 335.3)

2. GC/MS Analysis of Ground-Water - CompuChem Labs

Separate portions of each of the four ground-water samples were preserved and sent to CompuChem Labs by air freight for GC/MS according to NYSDEC Superfund and Contract Lab Protocol.

The scan included analysis for the 130 organic pollutants contained on the NYSDEC Hazardous Substance List and included identification and quantification of all peaks 10 percent or greater than the nearest calibrating standard.

A chain-of-custody sheet accompanied each sample to the CompuChem Labs and was returned with the analytical results.

3.04 Other Sampling and Analyses

A. Sediment Sampling and Analyses

1. Initial Sediment Sampling

Immediately after initiation of work on the project, portions of samples from three locations at the western end of the canal were composited into one sample. The resulting composite sample was packaged and sent to CompuChem Labs for a GC/MS scan of the 130 organics on the NYSDEC HSL. The GC/MS scan also identified and quantified all peaks 10 percent or greater than the nearest calibrating standard.

2. Intensive Sediment Sampling

A total of 12 sediment samples were collected from sites ECS-1 to ECS-12 as shown on Figure 3. These 12 samples were preserved and analyzed at the C&S Environmental Laboratory for 24 metals, cyanides and percent solids. Based on the results of the initial sediment sampling, all 12 samples were analyzed for PAH's, PCB's and screened for total organic volatile chemicals (Section D - Contract Lab Protocol). Following the screening, the three samples with the highest total volatiles were analyzed for the complete volatile scan. This work was performed by GC/MS at CompuChem Labs.

Each of the 12 samples were also visually logged and analyzed using the HNU photoionization detector. During this work, C&S personnel logged the sediment thickness at the sampling points which were along the centerline of the canal. The sampling points were marked with flagged stakes for future reference.

B. Surface Water Samples

Surface water samples were collected at five locations including four sites in the Canal bed and one site at an opening in a storm sewer draining to the abandoned canal. The locations are shown on Figure 3.

The surface water samples were preserved and transported to the C&S Environmental Laboratory for analysis of 24 metals and cyanide. A separately packaged portion of each sample was shipped by air freight to the CompuChem Labs for a GC/MS scan of the pollutants on the NYSDEC HSL. The scan of the water samples also included the identification and quantification of all peaks 10 percent or greater of the nearest calibrating standard.

C. Air Monitoring

An HNU photoionization detector was utilized on the site on the following occasions:

1. Initially at one upwind and one downwind site to determine the presence of vapors carrying beyond the site.
2. During sediment and soil boring sampling to characterize the general levels of contaminants in the samples..

Once the initial air readings were taken, the Health and Safety Plan was updated to include information on the specific site, data on the site-specific protection requirements, and a map showing the route to the nearest hospital.

3.05 Implementation of QA/QC Protocols

A copy of the C&S QA/QC document, as it pertains to sampling and analysis, is included as Appendix D of this report. The procedures in the plan are those commonly utilized by C&S sampling and laboratory personnel.

Sampling procedures of particular applicability to this project included:

1. Dedicated bailers were used for each monitor well and were left in the well for future sampling.
2. The samples were collected in new, glass containers with Teflon-lined caps and preserved in accordance with USEPA protocols.
3. Samples for the volatile scan were collected in glass vials with Teflon septums and with no air space in the vial.
4. All samples were iced immediately after collection and kept refrigerated until analysis.
5. A chain-of-custody sheet accompanied each sample to the laboratory and was attached to the laboratory results.

Analytical QA/QC procedures applicable to this project included:

1. As required by the NYSDEC QA/QC protocol document, matrix spikes and matrix duplicate spikes were analyzed for each set of samples analyzed for organics.

3.06 Calculation of Final HRS Score

In accordance with the NYSDEC Generic Work Plan, a final HRS score was prepared, complete with the documentation on standard NYSDEC/USEPA forms. A narrative summary was included in the format required.

SECTION 4

SITE ASSESSMENT

4.01 Results of Geophysical Surveys and Test Borings

A. Terrain Conductivity Survey

Terrain conductivity profiling was initiated on September 17, 1985 in the area adjacent to the north border of the canal along State Route 5S. The area is hydraulically downgradient of the canal. The profiling was accomplished utilizing a Geonics EM-34-3 terrain conductivity meter along three parallel 4,200 feet-long traverses. The traverses were located along the drainage ditch on the north side of the canal, along the centerline of Route 5S, and along the northern shoulder of Route 5S (Figure 2). Traverses were not conducted south of the canal because no contaminant plumes were expected to emanate from the upgradient side of the canal. Spacing between data points was ten meters. The surveys were performed to determine if there are occurrences of leachate breakthrough from the canal to the surrounding subsurface, approximate depths to the shallow water table, and/or changes in the physical properties of the shallow subsurface geology. Results of the surveys were intended to be used to modify, if necessary, the location of monitor well installations.

Profile plots of the data collected are presented as Figure 4. In general, the apparent conductivities were relatively low, ranging from a recorded loss of 12 millimhos/meter along Traverse 1 to the recorded high value of 34 millimhos/meter along Traverse 3. The higher conductivity values appear to be related more to cultural interference than to changes in subsurface soil conductivity. During the survey, field personnel observed culverts extending under Route 5S which appeared to drain the

drainage ditch along the south side of Route 5S. Culverts observed during the survey are shown on Figure 2 and their relationship to elevated conductivity values are shown on Figure 4. Other peaks shown on Figure 4 may also result from culverts or other man-made linear features which oriented normal to the traverses. There is no indication of a contaminant plume, which would be characterized by a broad region on each traverse of elevated conductivity values. The two correlative peaks along Traverses 1 and 3 (Figure 4) appear to result from buried pipelines or other man-made linear features.

B. Resistivity Survey

Six locations were chosen for resistivity soundings in the area of the abandoned Erie Canal where the discharge of waste water occurred via the 30 inch storm sewer (Figure 2). At each location, soundings were taken at 5-feet depth intervals to a total depth of 30 feet below land surface. The resistivity survey was initiated and completed on September 18, 1985.

Resistivity values from the soundings were relatively low. Recorded resistivity values were plotted as a function of depth and are presented as Figure 5. The low values probably resulted from saturated, subsurface soils. No abrupt changes in the resistivity values were observed. The lowest values centered around a culvert which drains surface water runoff from the drainage ditch south of Route 5S. The culvert appears to carry runoff in a northerly direction beneath Route 5S and probably discharges into a drainage ditch north of Route 5S. The drainage pipe may be leaking, resulting in ground-water mounding and corresponding low resistivity values. Because of the shallow depth of the culvert, it's impact on ground-water flow is probably insignificant. Using cumulative

methods, calculated bedrock depths ranged from 19 to 22 feet below the generalized ground level shown on Figure 5. However, the apparent bedrock (or hardpacked till) interface has not been elevation corrected, therefore, the 3 feet deviation may not actually exist.

Interpretation of the geophysical data leads to the conclusion that there is no high-conductivity ground-water plume emanating from the canal. However, the presence or absence of low-conductivity organic contamination could not be determined without ground-water sampling and analysis.

C. Test Borings

In general, fill material was penetrated in all test borings, other than the test boring for MW-2, to a depth averaging 6.5 feet below land surface. The land surface in the vicinity of MW-2 was cut and levelled during the construction of Route 5S. Underlying the fill, and from land surface at MW-2, interbedded unconsolidated glaciofluvial and glaciolacustrine deposits were penetrated to a depth averaging 14 feet below land surface. Stiff basal till overlying black shale bedrock of the Utica Shale Formation occurred underlying the unconsolidated sediments (Figure 6).

4.02 Physiography, Drainage and Topography

A small portion of the study area lies within Oneida County boundaries. However, the vast majority of the site lies in Herkimer County.

Herkimer County includes parts of three major physiographic provinces. The Adirondack Mountains Province is located in the north part, the Mohawk Lowlands Province occurs along the Mohawk River, and the dissected Allegheny Plateau Province is situated in the extreme southern section of the county.

Drainage in the county is dominated by the Mohawk River. A small area in the southwestern part of the county drains into the Susquehanna River system. The Mohawk River is the only major stream in the area flowing west to east.

The landscape in Herkimer County is geologically young, an effect of glaciation occurring as recently as 10,000 years before present. There are few large tributaries present in the county. Numerous short tributaries and gullies have extended themselves by headward erosion and developed dendritic drainage patterns. A general lack of flood plain development is evident. Stream meanders exist, but they are closely confined meanders in valleys incised below the upland surface. Interstream tracts are extensive and poorly drained. Drainageways have not had enough time to cut back into uplands and drain these swamps and marshes.

The lowest elevation in the county is 300 feet in the Mohawk Valley along the Mohawk River on the Herkimer-Montgomery County line. The highest elevation is 1,873 feet in the extreme southwestern part of the county. In general, the lowest elevations are in the Mohawk lowland. Elevation increases away from the lowland and toward the Adirondack Mountains to the north, and the Allegheny plateau to the south. Elevation also increases slightly from east to west.

4.03 Site Hydrogeology

A. Regional Geology

Geologic formations spanning from Precambrian times of more than 600 million years ago to the Recent Quaternary Period crop out in the Herkimer County area. The wide assortment of material is a result of several conditions. The Mohawk River bisects the area and has exposed a variety of rocks in forming its present channel. Also, Herkimer County

is situated so that the northern edge of the county borders on the Adirondack Mountains and its abundance of crystalline rocks, and the extreme southern part of the county is on the edge of the Catskill Mountains where sedimentary shale, siltstone, and sandstone occur. A further complicating factor is that the northern part of the county was uplifted during the formation of the Adirondacks, as evidenced by the numerous faults in the area that have their downthrown side away from the Adirondack Mountains. This uplift accelerated erosion, so that, in general, older rocks are exposed north of the Mohawk River.

The region has been further modified by glaciers that repeatedly overran the area during relatively recent times. Many of the soils in the area formed in glacial till that contains much material from exposed formations. The Mohawk River and East and West Canada Creeks acted as proglacial streams when the ice sheets lay to the north of the Mohawk River. During these periods the major streams were choked with coarse-textured sand, gravel and cobblestones from the glacial melt water. When the Mohawk River was blocked by ice to the east, these stream valleys were flooded, and lacustrine (lake) sediment was laid down over outwash and over glacial till and bedrock in a few areas.

B. Site Specific Geology

The study area occurs in the Mohawk Lowlands Physiographic Province along the Mohawk River. As documented by test borings, the area is underlain, in descending order, by cut or fill, interbedded glaciofluvial and glaciolacustrine sediments, glacial lodgement or basal till with a high black shale content, and bedrock of the Utica Shale Formation (Figure 6). The Utica Shale Formation is of Middle Ordovician time and

is composed dominantly of fissile, black shale. The formation strikes northwest- southeast and dips at a low angle to the south-southwest.

C. Surface Water Flow

All surface water in the vicinity of the study area eventually drains to the Mohawk River. Man-made changes have modified natural drainage in the area during construction of roadways, plant sites, and the abandoned Erie Canal. Although surface water is generally pooled in the abandoned canal, there is a small component of eastward flow. Eventually, this water finds its way to the Mohawk River via artificial conduits in the area of the site and subsequently in natural channels away from the site. Streams discharging into the canal are generally intermittent, flowing after precipitation events.

D. Ground-Water Flow

In the study area, most ground water occurs and flows in unconsolidated sediments overlying low permeability basal till. The greatest likelihood for potential migration of contaminants is, therefore, through the unconsolidated sediments. Specifications for the construction of the monitoring wells were designed to permit collection of ground water occurring in this zone. The wells were screened in the interval from water table to basal till.

Although localized variations in the direction of ground-water flow may exist, the dominant direction of ground-water flow is northward through the site to the Mohawk River (Figure 2). Ground-water levels recorded in the monitoring wells document the general direction of flow. Surveyed monitoring well elevations (top and base of wells) and water levels measured and recorded at the wells are listed on Table 1.

The hydraulic conductivity of the sediments ranged from 6×10^{-5} cm/sec in the vicinity of MW-3 to 2×10^{-4} cm/sec in the vicinity of MW-4. The hydraulic conductivity of the soils in the area of MW-1 and MW-2 was equivalent and similar in magnitude to the soils at MW-3. The relatively higher hydraulic conductivity exhibited at MW-4 is due to the occurrence of the thick sand fill interval in that area (Appendix B). MW-4 was screened partially in the sandy fill interval. Therefore, the higher hydraulic conductivity exhibited in the vicinity of MW-4 is not characteristic of the natural hydraulic conductivity in the study area. MW-1, MW-2 and MW-3 were screened dominantly in naturally occurring unconsolidated sediments above basal till. The average hydraulic conductivity of the naturally occurring sediments in the vicinity of MW-1, MW-2, and MW-3 is 8×10^{-5} cm/sec.

In an attempt to quantify the potential extent of contaminant migration from the source area, the seepage velocity of the unconsolidated sediment was calculated. Based on an average hydraulic conductivity of the naturally occurring unconsolidated sediments of 8×10^{-5} cm/sec, a hydraulic gradient of 5×10^{-3} between MW-4 and MW-2 and an effective porosity of 20 percent, the seepage velocity was calculated as 8×10^{-8} ft/sec or less than 3 ft/year.

A conservative estimate of 20 percent for the effective porosity was used to estimate a maximum value for seepage velocity. Assuming that industrial wastes have been deposited in the canal for 40 years, the potential maximum distance of contaminant migration towards the Mohawk River is on the order of 100 feet. It should be emphasized that this is an order-of-magnitude estimate. Many variables relating to contaminant

transport were not considered within the scope of this study. Therefore, the error associated with such an estimate may be considerable.

The abandoned canal is in direct hydraulic communication with ground water in the study area. Ground water flows into and through the canal. During periods of low flow, ground water serves to recharge the canal and maintain base flow. During periods of high surface water run-on into the canal, the canal serves to recharge ground water.

4.04 Assessment of Site Contamination

A. Soil Sample Analysis

Tables 2A and 2B present a summary of analytical data on split-spoon samples obtained from three of the borings for the ground-water monitoring wells (MWSS-1, MWSS-2, MWSS-3). The sample from MWSS-1 contained low levels of several Polynuclear Aromatic Hydrocarbons. This well is considerably east of the other three wells. Sample MWSS-2, which is approximately 225 feet north of the canal showed no organic contamination, while the sample from boring number 3 (MWSS-3) contained low levels of benzene and xylenes, along with bis(2-ethylhexyl)phthalate. The metals data from the split spoon samples did not indicate any significantly high values. Appendix E contains complete data sheets for the soil samples.

B. Ground-Water Analyses

Results of the analysis of ground-water samples from the four monitoring wells is provided in Tables 3A and 3B (See Appendix F for data sheets). Only five total organic parameters were detected, and three of these were only found in monitoring well number 1. As mentioned above, this well is farther east than the other three wells and this may account for the difference in ground-water quality. No organic chemical

contamination was found in monitoring well 2, which is the downgradient well that is off-site. The sample from monitoring well 3 contained only acetone. However, based on a variety of considerations (e.g. lack of significant acetone levels in other samples, presence of acetone in numerous blanks, use of acetone in sampling and drilling equipment clean-up), we feel that the acetone is not actually present in the ground water, but was instead picked up during drilling, sampling or analysis. Monitoring well number four contained low levels of acetone and chloroform.

Metals data (Table 3B) did not provide any indication of significant ground water contamination. Sixty percent of the parameters were not detected in any of the wells and only manganese values exceeded the States limits for Class GA ground-water quality. However, given that the manganese levels in the sediment (see below) were considerably lower than the levels of other metals, it is suspected that the source of the manganese is other than canal itself.

C. Canal Water Quality

A total of 5 water samples were taken from the Erie Canal site (The data is presented in Tables 4A and 4B) (Data Sheets are provided in Appendix G). Sample SW-4 was from a storm sewer that discharges into the west end of the canal, while sample SW-3B is the discharge from the canal. Samples SW-1, SW-2 and SW-3 were obtained at locations along the length of the canal. Sample point locations are shown on Figure 3.

Discharge to the canal through the storm sewer contained detectable levels of 5 volatile organics: trans-1,2-dichloroethylene, chloroform, 1,1,1-trichloroethane, trichloroethylene and tetrachloroethylene. The

discharge from the canal contained detectable levels of three of these compounds, all at levels below the influent levels. The canal discharge also contained three additional contaminants: methylene chloride, methyl cyclohexane and 2,4-dinitrophenol. Sample SW-1, which is closest to the storm sewer discharge to the canal, contained the same five contaminants. The two other canal samples produced results which are somewhat unusual. SW-2 contained two contaminants not found in any other samples from the site: 4,4'-DDT and tetradecanoic acid. SW-3, however, showed no detectable organic contamination.

The metals data was similar in nature to that for the ground-water samples. No significant levels of any metal were noted.

D. Sediment Analyses

Initially a composite sediment sample was submitted for analysis according to the Contract Laboratories Protocol. This analysis was conducted to establish indicator parameters for future analytical work for a more extensive sediment sampling program. The results of the composite sample testing (see Table 5) showed that the sediment was mainly contaminated with PAH's. Minor contaminants were bis(2-ethylhexyl)phthalate, methylene chloride, Arochlor 1254 and toluene. Based on these findings, the analysis of the 12 sediment samples from the length of the canal was conducted as described in Subsection 3.04(A) (See Figure 3). The results are presented in Tables 6A, 6B, and 6C.

The volatile analysis was conducted on samples ECS-2, ECS-3 and ECS-12. The major contaminant found was toluene. Sample ECS-12, which was from the eastern end of the canal showed relatively low levels of volatile organics.

Arochlor 1254 was found in all but one sediment sample, ranging in values from 190 to 9,500 ug/kg. Among the PAH's, phenanthrene and anthracene were most prevalent. Bis-(2-ethylhexyl)phthalate was detected in several samples, in concentration ranging from 1,000 to 210,000 ug/kg.

As would be expected, metals in the sediment were considerably higher than either the adjacent soil or ground and surface water. Of particular note are levels of lead (maximum of 21,600 mg/kg at ECS-7), chromium (11,300 at ECS-5), copper (20,400 at ECS-5) and cyanide (259 at ECS-2).

No sediment was noted as being present in the storm sewer discharging to the canal. This apparently was the result of the periodically high flows in the sewer.

Analytical data reports for sediment samples are included in the separate volumes of laboratory data.

SECTION 5

FINAL APPLICATION OF HAZARD RANKING SYSTEM

5.01 Narrative Summary

The Erie Canal site is a 4,200 long section of the abandoned Erie Canal located near Utica, New York, and is in both Oneida and Herkimer Counties. Figure 1 shows the exact location on a U.S.G.S. quadrangle. The site is owned by Niagara Mohawk Power Corporation and at the western end of the canal, NiMo operated a small electrical substation (currently out of service).

The canal has received wastewaters from nearby industrial facilities and flow from a storm sewer into the canal currently is contaminated with low levels of several common solvents. Samples taken in 1985 indicate the presence of organics in the surface water within and discharging from the canal. This discharge eventually reaches the Mohawk River. The sediment in the canal is highly contaminated with a variety of metals. The quantity of sediment is estimated at 15,500 cubic yards based on an average depth of 2 feet. Ground water at the edge of the canal area showed low levels of organic contamination, but a monitoring well somewhat downgradient from the site was free of any detectable organic contamination. While there are several nearby houses that utilize ground water for their water supply, the lack of any contamination in the ground water at the downgradient well does not indicate that there is a significant risk to these residents.

5.02 HRS Score

The final HRS score for the site was 24.66. The component scores were 40.68 for the ground water route, 12.87 for the surface water route and zero for the air route. The HRS worksheets and Documentation Records are included in Appendix H. The score is considerably lower than that reported in the

Phase I report (Sm = 40.75). The difference is a result of a change in the factor for "Distance to Nearest Well/Population Served". The population served portion of the factor was changed from "1000-3000" to "101-1000" based on the existence of a hydraulic boundary. The Mohawk River acts a line sink to which shallow ground water discharges. Because there is no flow across this hydraulic boundary, wells beyond the River are not affected by the site.

The score is unrealistically high, however, when consideration is given to the number of wells within the 3 mile radius that could potentially be affected by the site. The vast majority of the wells are upgradient of the site. Roughly half of these upgradient wells are located at elevations that are more than 500 feet higher than the water table at the site. The other half of these upgradient wells are at elevations of more than 120 feet above the site water table. In addition, the regional ground-water flow is in the direction of the Mohawk River. Adjusting the HRS score to not include these wells would result in a total score of 16.27.

The EPA Form 2070-13 "Potential Hazardous Waste Site, Site Inspection Form" was updated and is included in Appendix H.

Figures

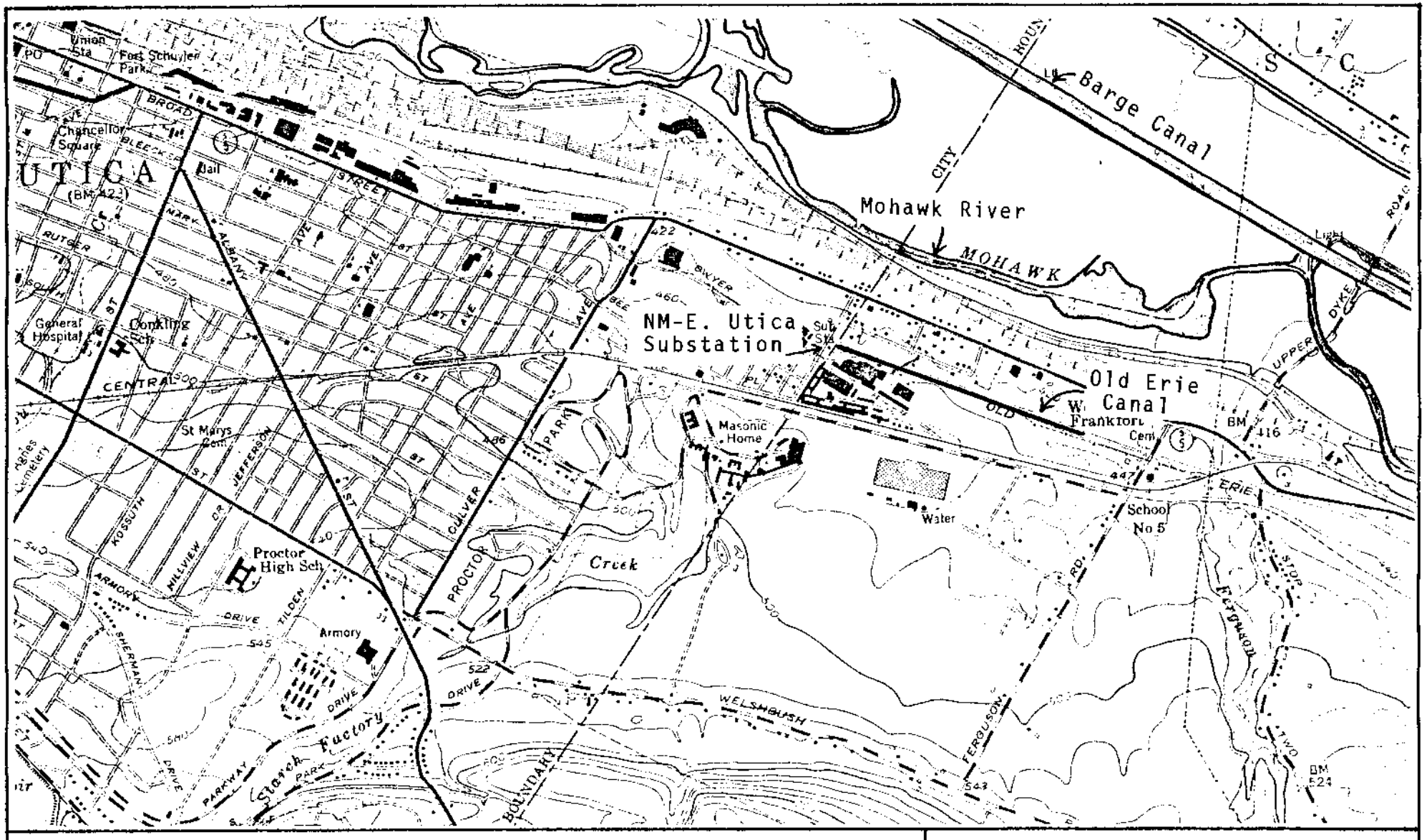


FIGURE 1

Reference: U.S.G.S. Utica East Quadrangle

Calocerinos & Spina
CONSULTING ENGINEERS
Liverpool, New York 13088

EM Conductivity Survey

NM - East Utica Site

West

East

CONDUCTIVITY (millimhos/meter)

35
30
25
20
15
10
5
0

0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300

SPACING (meters)

← CULVERT

← POSSIBLE CULVERT LOCATION

← POSSIBLE CULVERT LOCATION

← CULVERT

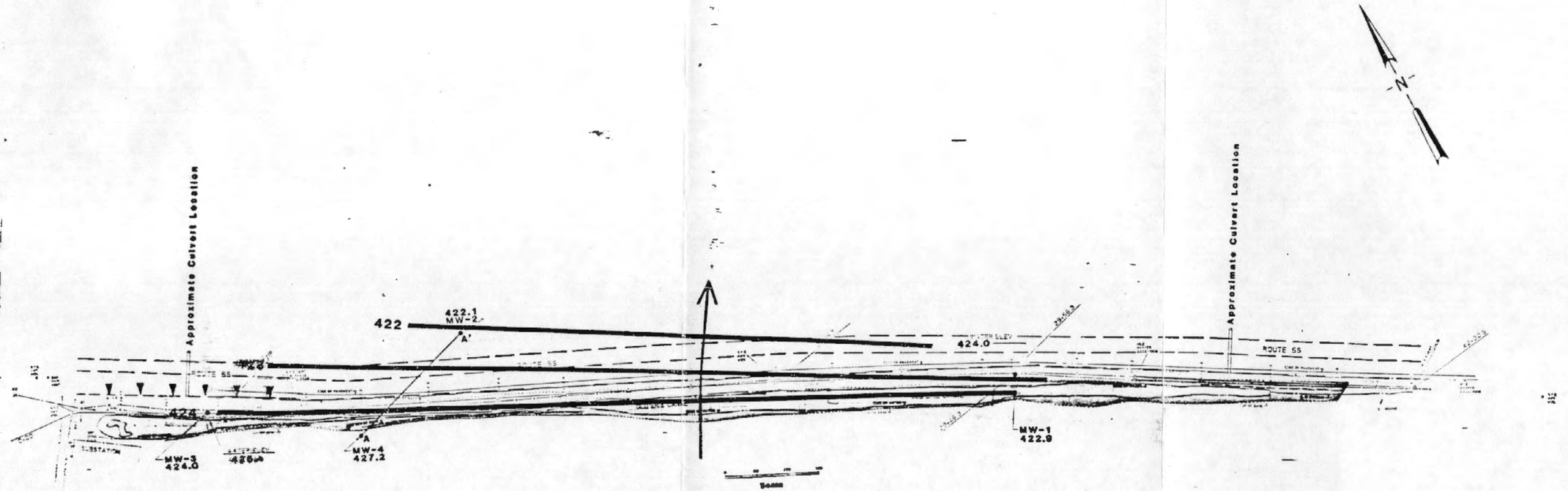
← POSSIBLE CULVERT LOCATION

← 36-inch Concrete CULVERT

T1
T2
T3

FIGURE 4. EM CONDUCTIVITY SURVEY DATA

Calocerinos & Spina
CONSULTING ENGINEERS
Liverpool, New York 13088



LEGEND

- TRAVERSE LINE
- RESISTIVITY SOUNDING LOCATION
- MW-3 424.0 MONITORING WELL LOCATION AND WATER LEVEL (JANUARY 8, 1986)
- OLD ERIE CANAL AREA
- 426 GROUND-WATER EQUIPOTENTIAL LINE
- DIRECTION OF GROUND-WATER FLOW
- A — A' GEOLOGIC PROFILE LOCATION

IN CHARGE OF
MADE BY
CHECKED BY

REVISIONS

NIAGARA MOHAWK POWER CORPORATION

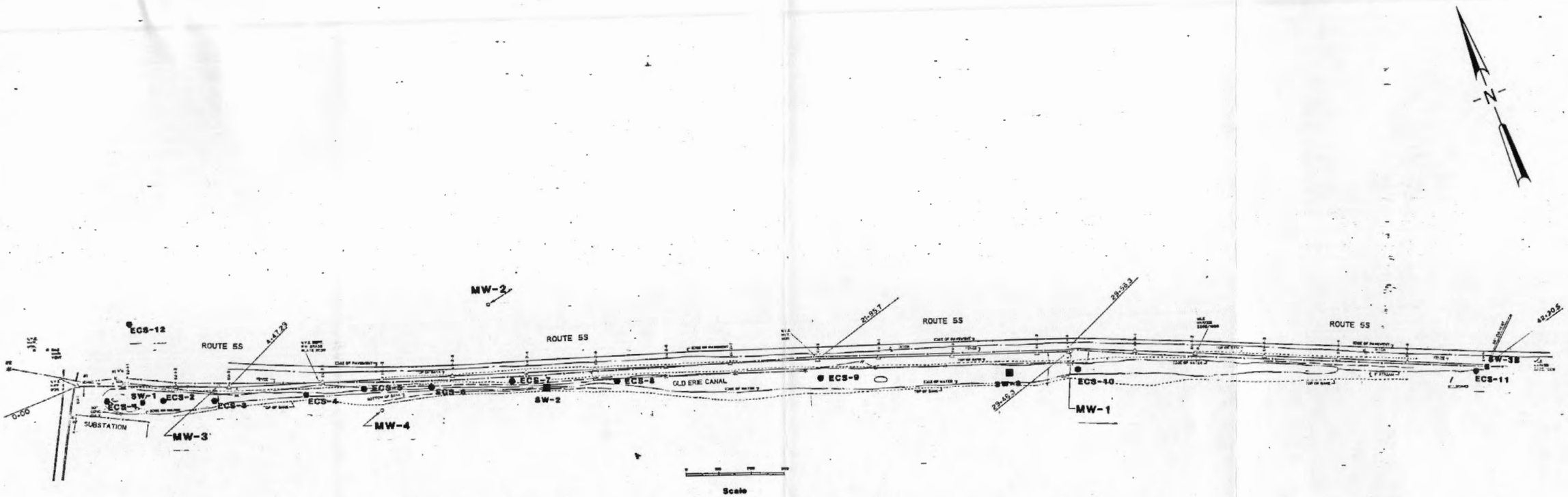
PHASE II SITE INVESTIGATION - OLD ERIE CANAL SITE

GEOPHYSICAL SURVEY LOCATIONS, MONITORING WELL LOCATIONS, WATER LEVELS & GROUNDWATER FLOW DIRECTION

Ceccarinos & Soins CONSULTING ENGINEERS
SYRACUSE · ATLANTA · BUFFALO · ROCHESTER

DATE: JANUARY 1986
SCALE: AS SHOWN
FILE NO. 486.007

FIGURE 2



SW-4

LEGEND

■SW-1 SURFACE WATER SAMPLING LOCATION

●ECS-1 SEDIMENT SAMPLING LOCATION

REVISIONS	NIAGARA MOHAWK POWER CORPORATION	
	PHASE II SITE INVESTIGATION - OLD ERIE CANAL SITE	
	LOCATION OF SEDIMENT SAMPLING POINTS AND SURFACE WATER SAMPLING POINTS	
	Calocerinos & Spina CONSULTING ENGINEERS Liverpool, New York 13088	DATE: JANUARY 1986
		SCALE: AS SHOWN
		FILE NO. 466.007
		FIGURE 3

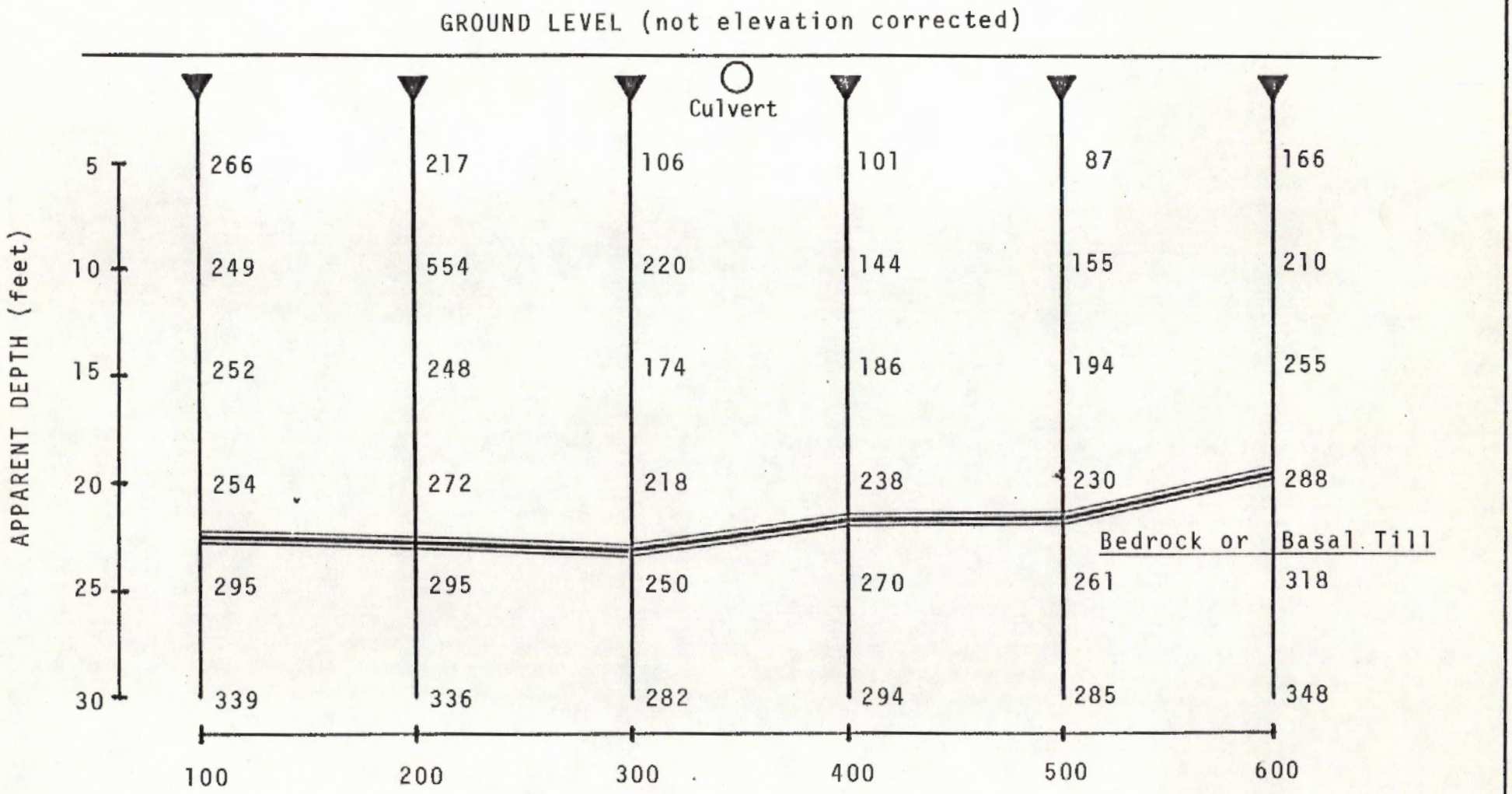
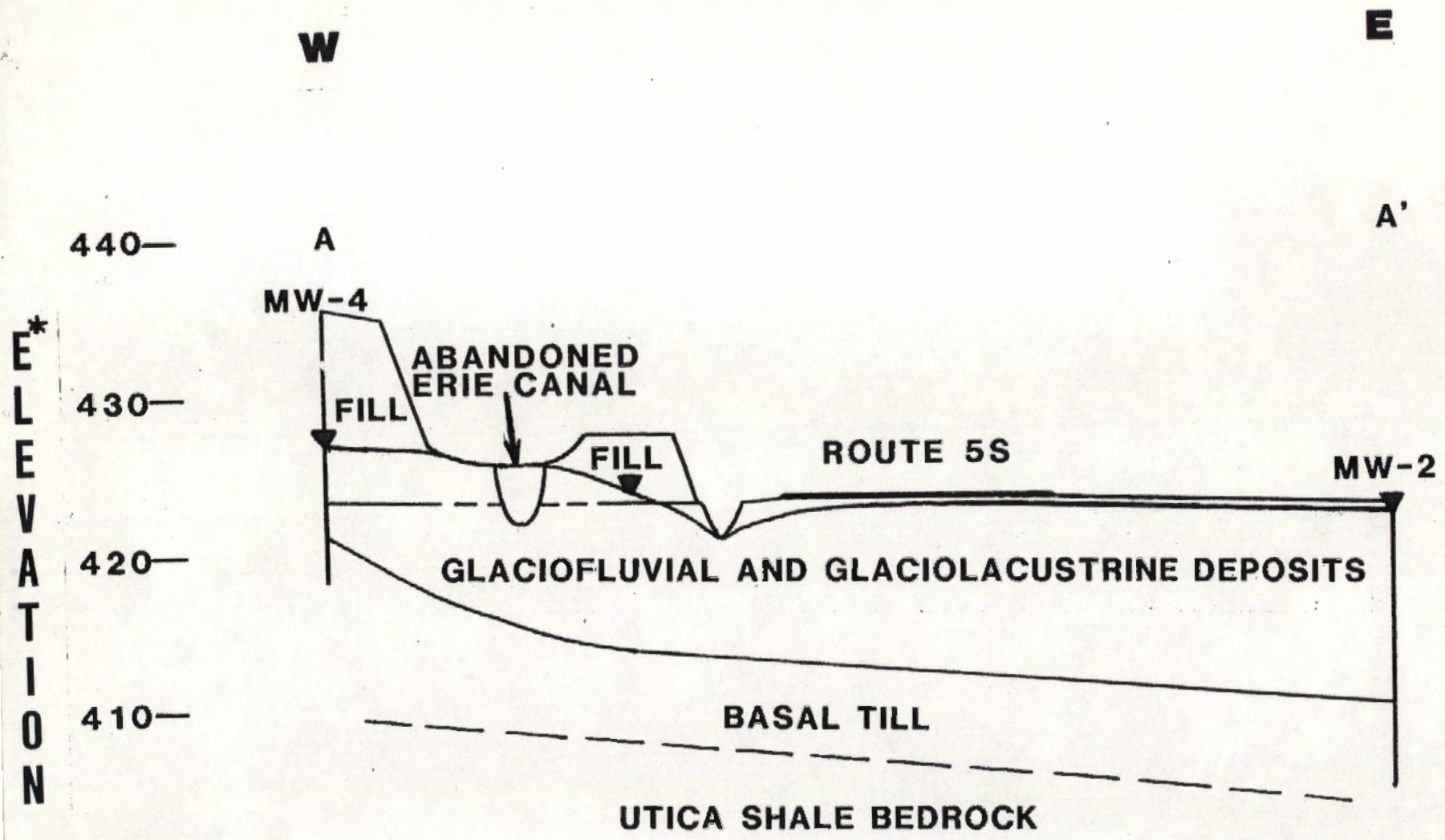


FIGURE 5: Profile of resistivity soundings (ohm-feet)

Calocerinos & Spina
CONSULTING ENGINEERS
Liverpool, New York 13088



1 inch =150 feet

*RELATIVE TO FEET ABOVE MEAN SEA LEVEL

FIGURE 6. HYDROGEOLOGIC PROFILE A-A'

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Liverpool, New York 13088

Tables

TABLE 1

SURVEYED MONITORING WELL ELEVATIONS

AND WATER LEVELS*

	TOP OF WELL	BASE OF WELL	WATER LEVEL**
MW-1	429.4	427.7	422.9
MW-2	424.5	422.7	422.1
MW-3	429.7	427.9	424.0
MW-4	437.2	435.7	427.2

* Elevations Are In Feet Above Mean Sea Level.

** Water Levels Based On Measurements Recorded On January 9, 1986.

TABLE 2A

ERIE CANAL

SPLIT-SPOON SAMPLE RESULTS
(ug/kg)

	MWSS-1	MWSS-2	MWSS-3
Acetone	6.1 J8	7.7 J8	
Fluoranthene	48 J		
Pyrene	61 J		
Benzo(a)anthracene	79 J		
Benzo(b)fluoranthene	79 J		
Benzo(k)fluoranthene	96 J		
Methylene Chloride		98 B	700 B
Ethyl Benzene			2.0 J
Total Xylenes			12
bis(2-ethylhexyl)phthalate			240 J
2-Methylcyclopentanol	370 JB		270 JB
Unknown	410 J		

J = Estimated Value

B = Compound Found in Blank

TABLE 28

ERIE CANAL

SPLIT-SPOON SAMPLE RESULTS
(ug/kg)

	MWSS-1	MWSS-2	MWSS-3
Aluminum	11700	13100	9340
Antimony	LT 6	1.7	1.8
Arsenic	13	16	16
Barium	62	41	55
Beryllium	LT 0.5	LT 0.5	LT 0.5
Cadmium	0.16	0.12	0.18
Calcium	1670	47000	24400
Chromium	13	16	13
Cobalt	9.6	9.3	3.5
Copper	20	30	28
Iron	28500	27300	23300
Lead	4.3	5.8	5.9
Magnesium	3870	18600	7220
Manganese	489	681	512
Mercury	0.11	0.18	0.22
Nickel	18	23	20
Potassium	820	2080	1100
Selenium	LT 0.5	LT 0.5	LT 0.5
Silver	2.1	1.2	LT 1
Sodium	298	651	527
Thallium	LT 1	LT 1	LT 1
Tin	18	5.2	14
Vanadium	22	26	22
Zinc	55	67	78
Cyanide	LT 1	LT 1	LT 1

TABLE 3A

SUMMARY OF ORGANIC PARAMETERS DETECTED

IN GROUND WATER SAMPLES

PARAMETER	CONCENTRATION (ug/l) MW-1	MW-2	MW-3	MW-4
Methylene Chloride	1.0 J	LT 5.0	LT 25	LT 5.0
Acetone	11	LT 10	1,100	6.3 J
Chloroform	1.2 J	LT 5.0	LT 25	1.3 J
Pentachlorophenol	4.6 J	LT 100	LT 100	LT 100
Bis(2-ethylhexyl)phthalate	6.8 J	LT 20	LT 20	LT 20

J = Compound is present but below analytical detection limit; value shown is an estimated value

TABLE 3B
ERIE CANAL
GROUND WATER - METALS DATA
(mg/l)

	MW-1	MW-2	MW-3	MW-4
Aluminum	LT 0.2	LT 0.2	LT 0.2	LT 0.2
Antimony	LT 0.060	LT 0.060	LT 0.060	LT 0.060
Arsenic	LT 0.010	LT 0.010	LT 0.010	LT 0.010
Barium	0.4	0.5	0.5	0.5
Beryllium	LT 0.005	LT 0.005	LT 0.005	LT 0.005
Cadmium	LT 0.005	LT 0.005	LT 0.005	LT 0.005
Calcium	70	120	70	80
Chromium	LT 0.010	LT 0.010	0.010	LT 0.010
Cobalt	LT 0.050	LT 0.050	LT 0.050	LT 0.050
Copper	LT 0.02	LT 0.02	LT 0.02	LT 0.02
Iron	0.06	0.07	0.07	0.10
Lead	LT 0.005	LT 0.005	LT 0.005	LT 0.005
Magnesium	14	29	16	16
Manganese	1.1	0.4	2.0	6.4
Mercury	LT 0.0005	LT 0.0005	LT 0.0005	LT 0.0005
Nickel	LT 0.02	LT 0.02	0.05	0.02
Potassium	1.8	1.8	3.2	7.1
Selenium	LT 0.005	LT 0.005	LT 0.005	LT 0.005
Silver	LT 0.010	LT 0.010	LT 0.010	LT 0.010
Sodium	15	20	17	38
Thallium	LT 0.010	LT 0.010	LT 0.010	LT 0.010
Tin	LT 0.040	LT 0.040	LT 0.040	LT 0.040
Vanadium	LT 0.050	LT 0.050	LT 0.050	LT 0.050
Zinc	0.04	0.06	0.04	0.07
Cyanide	LT 0.004	LT 0.004	LT 0.004	LT 0.004

TABLE 4A

ERIE CANAL

SURFACE WATER - ORGANICS
(ug/l)

	SW-1	SW-2	SW-3	SW-3B	SW-4
t-1,2-Dichloroethylene	56	6.2		8.7	30
Chloroform	2.8 J				4.8 J
1,1,1-Trichloroethane	13			2.8 J	3.6 J
Trichloroethylene	70	8.5		19	25
Tetrachloroethylene	3.8 J				7.8
4,4'-DDT		0.11			
Methylene Chloride				4.9 J	
Tetradecanoic Acid		30 J			
2,4-Dinitrophenol				26 J	
Methylcyclohexane				18 J	

J = Compound is present but below analytical detection limit; value shown is an estimated value.
B = Also found in blank.

TABLE 4B

ERIE CANAL

SURFACE WATER - METALS
(mg/l)

	SW-1	SW-2	SW-3	SW-38	SW-4
Aluminum	0.3	0.4	0.7	0.3	0.3
Antimony	LT 0.060	LT 0.060	LT 0.060	LT 0.060	LT 0.060
Arsenic	LT 0.010	LT 0.010	LT 0.010	LT 0.010	LT 0.010
Barium	LT 0.2	LT 0.2	LT 0.2	LT 0.2	LT 0.2
Beryllium	LT 0.005	LT 0.005	LT 0.005	LT 0.006	LT 0.005
Cadmium	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005
Calcium	LT 10	46	51	76	47
Chromium	0.011	0.044	0.050	0.021	LT 0.010
Cobalt	LT 0.050	LT 0.050	LT 0.050	LT 0.050	LT 0.050
Copper	0.05	0.11	0.11	0.06	0.02
Iron	0.69	0.93	1.1	0.95	0.68
Lead	0.017	0.033	0.024	0.014	0.026
Magnesium	10	9	10	14	9
Manganese	0.14	0.11	0.14	0.12	0.16
Mercury	LT 0.0005	LT 0.0005	LT 0.0005	LT 0.0005	LT 0.0005
Nickel	LT 0.02	LT 0.02	LT 0.04	LT 0.03	LT 0.02
Potassium	2.8	2.6	2.5	3.5	2.7
Selenium	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005
Silver	LT 0.010	LT 0.010	LT 0.010	LT 0.010	LT 0.010
Sodium	29	25	19	14	24
Thallium	LT 0.010	LT 0.010	LT 0.010	LT 0.010	LT 0.010
Tin	LT 0.040	LT 0.040	LT 0.040	LT 0.040	LT 0.040
Vanadium	LT 0.050	LT 0.050	LT 0.050	LT 0.050	LT 0.050
Zinc	0.03	0.02	0.18	0.03	0.05
Cyanide	LT 0.004	LT 0.004	LT 0.004	LT 0.006	LT 0.004

TABLE 5

ORGANIC PARAMETERS PRESENT IN COMPOSITE SEDIMENT SAMPLE

PARAMETER	CONCENTRATION (ug/kg)
Pyrene	170,000
Fluoranthene	170,000
Phenanthrene	140,000
Benzo(b)fluoranthene	110,000
Benzo(k)fluoranthene	110,000
Benzo(a)anthracene	87,000
Chrysene	87,000
Benzo(a)pyrene	70,000
Anthracene	48,000
Benzo(e)pyrene	46,000
bis(2-Ethylhexyl)phthalate	44,000
Methylene chloride	41,000*
Indeno (1,2,3-cd)pyrene	28,000
4H-Cyclopenta(def)phenanthrene	16,000
Aroclor 1254	1,000
Toluene	780**

* Methylene Chloride was found in the Reagent Blank at levels significantly below the sample.

** Toluene also found in the Reagent Blank at levels comparable to the sample.

TABLE 6A

ERIE CANAL SEDIMENT SAMPLES

RESULTS IN ug/kg DRY WEIGHT

	ECS-2	ECS-3	ECS-12
1,1-Dichloroethane	9.4 J	ND	ND
t-1,2-Dichloroethylene	2.6 J	ND	ND
1,1,1-Trichloroethane	ND	22	ND
Toluene	50	5.2 J	ND
Ethylbenzene	180	33	15
Xylenes	1,000	200	76
Trimethyl pentene	140 J	ND	17 J
Tricyclodecane	24 J	ND	ND
Trimethylcyclohexane	140 J	ND	ND
Dimethylethyl phenol	22 J	NO	ND
Dimethylhexene	ND	9 J	ND
Octahydro-methylpentalene	ND	170 J	ND
Ethylmethyl cyclohexane	ND	24 J	ND
Hexane	ND	ND	8 J

J = Compound is present but below analytical detection limit; value shown is an estimated value.

TABLE 6B
ERIE CANAL - SEDIMENT SAMPLES
RESULTS IN ug/kg DRY WEIGHT

	ECS 1	ECS 2	ECS 3	ECS 4	ECS 5	ECS 6	ECS 7	ECS 8	ECS 9	ECS 10	ECS 11	ECS 12
Arochlor 1254	510	1400	8000	190	BDL	2200	4100	1700	9500	4500	1100	2800
Naphthalene	BDL	BDL	BDL	BDL	BDL	BDL	BDL	400	BDL	BDL	BDL	BDL
Phenanthrene **	4800	BDL	810	BDL	BDL	500	BDL	2000	440	1200	BDL	BDL
Anthracene**	BDL	BDL	810	BDL	BDL	500	BDL	2000	BDL	BDL	BDL	BDL
Fluoranthene	4000	1700	BDL	1700	BDL	1500	4200	BDL	BDL	640	BDL	BDL
Pyrene	3200	1700	BDL	BDL	BDL	BDL	2100	BDL	370	490	BDL	BDL
Benzo(a)anthracene	BDL	BDL	BDL	BDL	BDL	690	1700	BDL	BDL	360	BDL	BDL
Chrysene	BDL	BDL	BDL	BDL	BDL	800	3600	BDL	BDL	640	BDL	BDL
Bis(2-ethylhexyl)-phthalate	BDL	27000	BDL	21000	57000	3700	23000	11000	1000	1700	BDL	210000
Benzo(b)fluoranthrene**	BDL	BDL	BDL	BDL	BDL	1500	2700	BDL	570	380	BDL	BDL
Benzo(k)fluoranthene**	BDL	BDL	BDL	BDL	BDL	1500	2700	BDL	570	380	BDL	BDL
Benzo(a)pyrene	BDL	BDL	BDL	BDL	BDL	580	BDL	BDL	BDL	BDL	BDL	BDL
Detection Limit	1700	1700	330	1700	3400	330	1700	330	330	340	330	16000
(limit 60 mg/kg)TOX	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

** = Indistinguishable isomers

TABLE 6C
ERIE CANAL - SEDIMENT SAMPLES
RESULTS IN mg/kg DRY WEIGHT

		ECS 1	ECS 2	ECS 3	ECS 4	ECS 5	ECS 6	ECS 7	ECS 8	ECS 9	ECS 10	ECS 11	ECS 12
Aluminum	P	7840	13600	8200	9310	9610	6650	5240	3740	16200	13200	9190	7600
Antimony	R F	3.6	1.4	1.6	6 U	6.7	2.6	2.0	1.9	6 U	4.0	6 U	1.2
Arsenic	F	8.4	6.1	10	6.8	11	11	11	6.4	37	13	8.7	7.1
Barium	R P	225	222	390	121	207	231	197	67	299	217	76	99
Beryllium	P	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cadmium	F	23	5.3	51	51	3.2	132	43	4.0	6.3	23	2.4	11
Calcium	P	18800	26200	19000	37400	60600	5840	9100	4770	40800	17000	42400	39700
Chromium	P	780	1950	1280	584	11300	6700	3040	2780	4530	9230	339	2600
Cobalt	P	31	176	22	5 U	22	171	47	38	25	44	19	60
Copper	P	1680	5660	1520	2580	20400	12900	5390	7820	6660	13700	735	2920
Iron	P	36100	25200	43600	2080	30300	16300	21600	23700	49700	37100	29400	28500
Lead	P	849	1760	1070	650	2240	16300	21600	822	1680	1820	150	1030
Magnesium	P	4950	6330	4850	3880	5440	2330	2250	1410	7320	6440	14600	10800
Manganese	R P	1110	486	1280	317	501	310	311	271	912	540	899	1370
Mercury	R*	4.3	6.0	5.3	1.5	1.7	4.0	7.6	3.9	9.3	9.1	0.90	2.8
Nickel	P	179	341	175	254	309	524	575	226	188	403	99	153
Potassium	P	519	686	479	571	698	512	418	306	1450	1570	1280	775
Selenium	F*	1.6	3	1.2	2.6	1.7	3.2	6.8	1.9	3.9	8.3	0.75	1.5
Silver	R P	19	24	17	9.5	15	88	20	11	3	8.1	1 U	7.7
Sodium	P	250	363	295	539	299	342	184	229	493	686	173	294
Thallium	R F	0.35	0.68	1.0	0.95	1.1	0.95	0.54	0.27	0.72	0.95	0.53	294
Tin	F*	139	616	656	490	936	240	398	759	352	700	22	730
Vanadium	P	38	46	35	29	70	34	20	32	68	85	28	43
Zinc	R P*	1490	761	3170	206	454	387	1330	206	1560	737	145	223
Cyanide	R	11	259	7.6	6.5	13	11	4.5	1 U	7.8	1 U	1 U	1 U

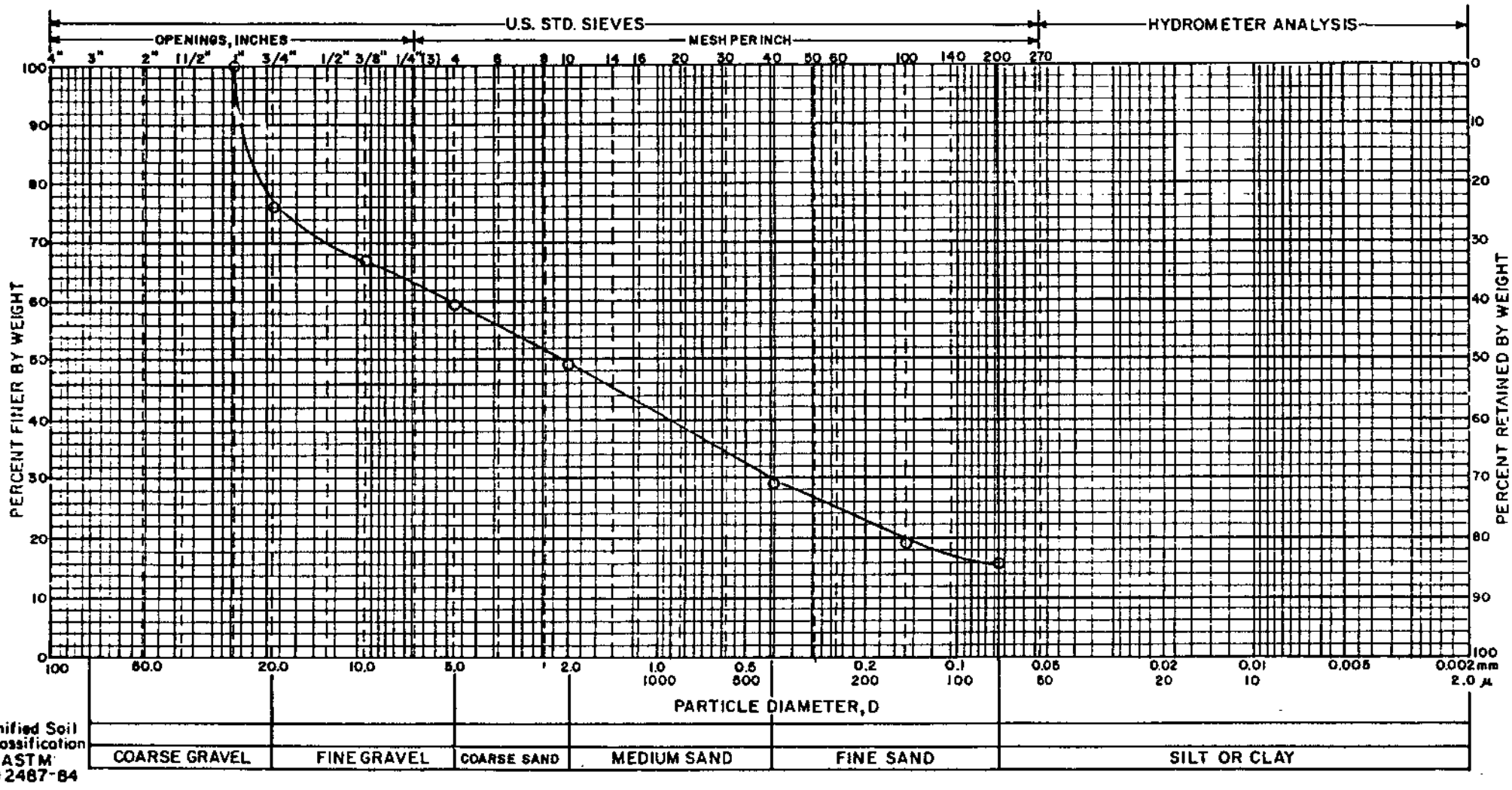
U = Not detected at the specified limit.
* = Duplicate analysis not within control limits.
R = Spike recovery not within control limits.
F = Furnace method was used.
P = ICP/Flame AA method was used.

Appendices

APPENDIX A

RESULTS OF GRAIN SIZE DISTRIBUTION, ATTERBURG LIMITS, AND MOISTURE CONTENT TESTS

PARTICLE SIZE DISTRIBUTION CURVE



SAMPLE INFORMATION:

Boring Number	Sample Number	Depth (ft.)	Natural Water Content (%)
MW-3	S-2	4.0-6.0	10.5

☒ **Insufficient Sample Size per ASTM D 422**

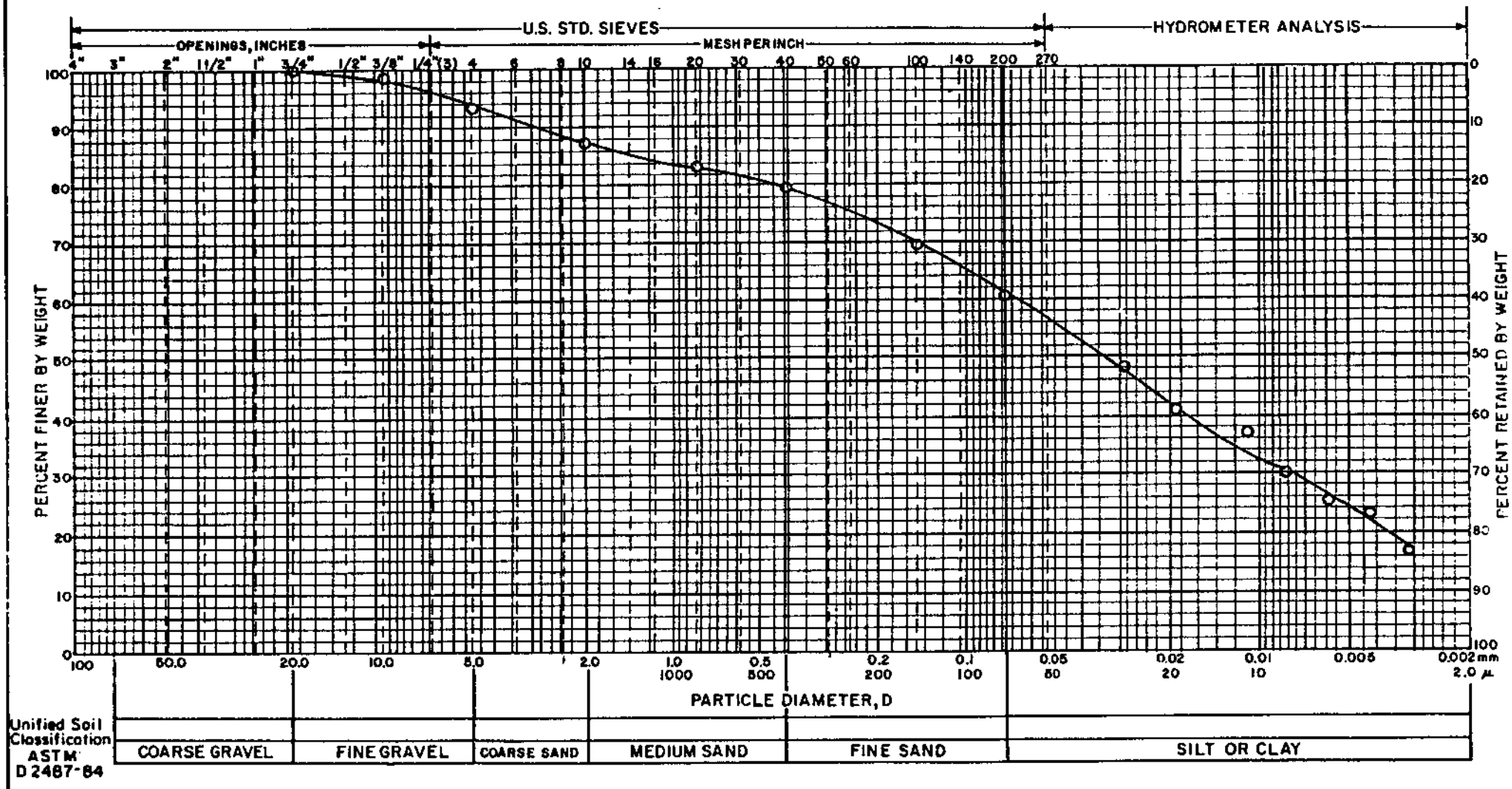
NORTH STAR DRILLING CO.
P.O. Box 67 - Cortland, N.Y. 13045
Telephone (607) 756-8836

PARTICLE SIZE ANALYSIS

ERIE CANAL
NIAGARA MOHAWK

DR. BY:	CK'D.	DATE: 12/85	PROJ. NO. NSD-8542

PARTICLE SIZE DISTRIBUTION CURVE



SAMPLE INFORMATION:

Boring Number	Sample Number	Depth (ft.)	Natural Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index
MW-3	S-6	12.0-14.0	22.9	39	26	13

☒ **Insufficient Sample Size per ASTM D 422**

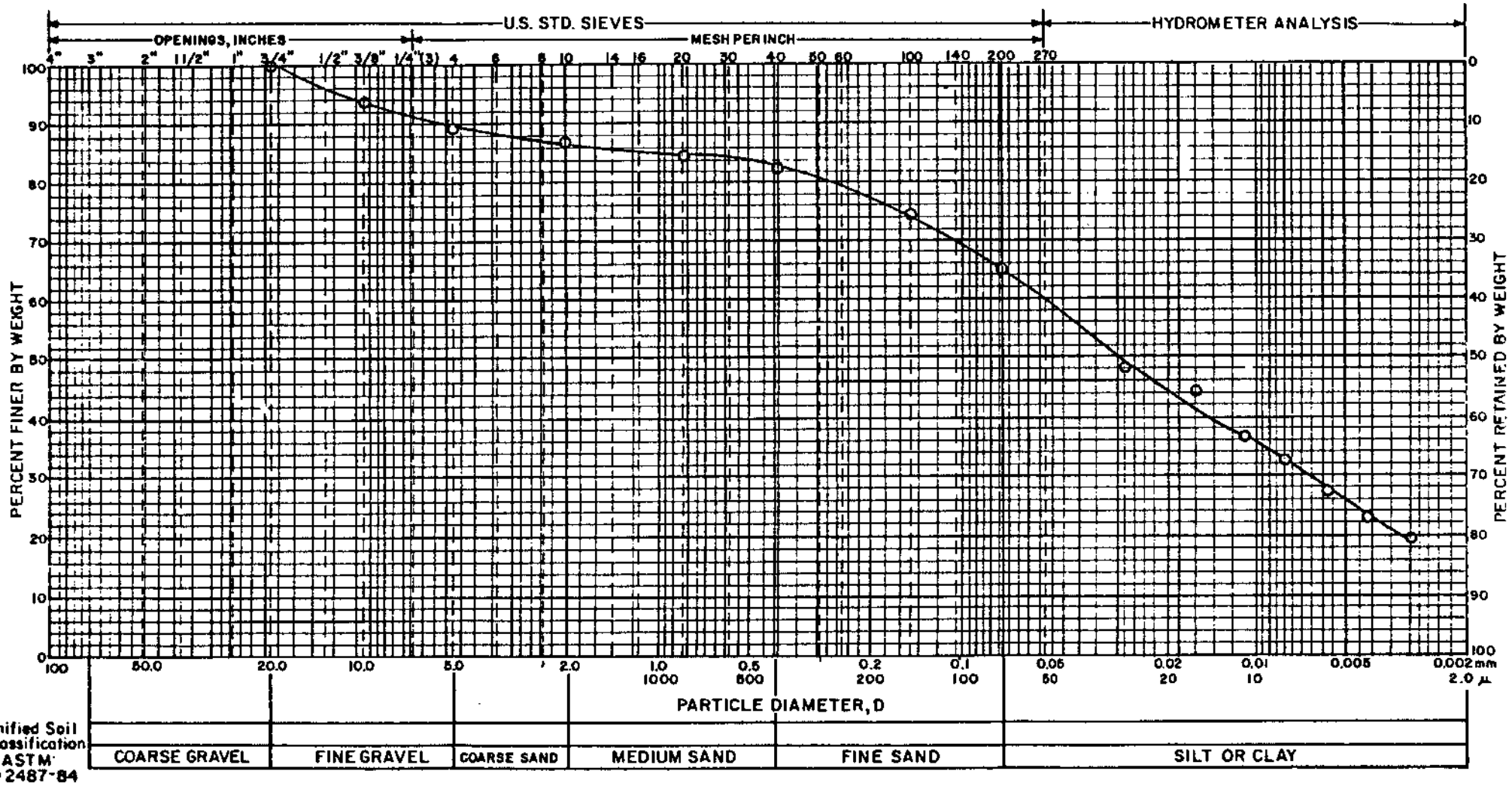
NORTH STAR DRILLING CO.

PARTICLE SIZE ANALYSIS

ERIE CANAL
NIAGARA MOHAWK

DR.BY:	CK'D.	DATE: 12/85	PROJ. NO. NSD-8542

PARTICLE SIZE DISTRIBUTION CURVE



SAMPLE INFORMATION:

Boring Number	Sample Number	Depth (ft.)	Natural Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index
MW-3	S-7	14.0-16.0	29.2	32	20	11

☒ **Insufficient Sample Size per ASTM D 422**

NORTH STAR DRILLING CO.
P.O. Box 67 · Cortland, N.Y. 13045
Telephone 607-756-8836

PARTICLE SIZE ANALYSIS

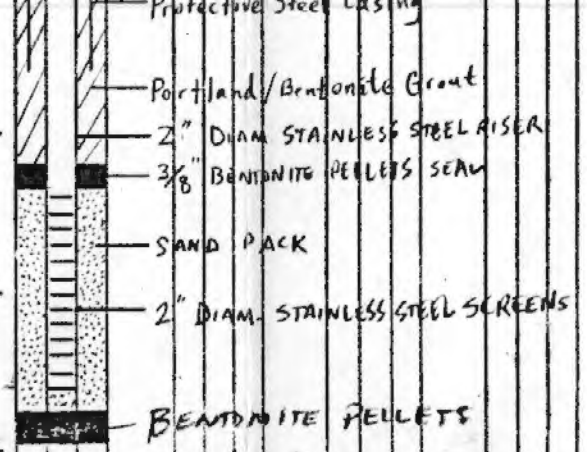
ERIE CANAL
NIAGARA MOHAWK

DR. BY: X	CK'D.	DATE: 12/85	PROJ. NO. NSD-8542

APPENDIX B

BORING LOGS AND MONITORING WELL CONSTRUCTION DETAILS

S-1	3-3	SILTY, MICACEOUS, SANDY, ABUNDANT ROOTS
MW-1	2-6	CLAY, DARK YELLOWISH BROWN TO DUSKY YELLOWISH
S-2	7-6	BROWN, SILTY, SANDY, VF GRAINED (FILL), MOIST
S-3	2-3	CLAY, AS ABOVE, ORGANICS, ORIGINAL LANDSURFACE
MW-1	3-6	CLAY, AS ABOVE, WET
S-4	7-9	SAND, SILTY, CLAYEY, DUSKY TO DARK YELLOWISH
MW-1	4-6	BROWN, AND GRAVEL
S-5	9-14	INTERBEDDED SAND AND GRAVEL AND CLAY LENSES
MW-1	4-34	SAND AND MINOR GRAVEL, LIGHT TO MODERATE BROWN,
S-6	40-76	CLAYEY, DARK AND LIGHT GRAY, SILTY, MED. TO VY STIFF
MW-1	11-20	CLAY, DARK GRAY AND DARK BROWN, VY STIFF,
S-7	25-67	AND SHALE ROCK FRAGMENTS, GRAVEL, SILT, (TILL)
MW-1	8-20	CLAY, SILT, SAND, GRAVEL, (TILL), DARK GRAY,
S-8	30-50	VERY STIFF, SA FRAGMENTS OF SHALE, BLACK



Surface Elevation 427.7 Classified By Mark D. Wilder NOTE: DATA ON THIS SUMMARY SHEET COMPOSITED

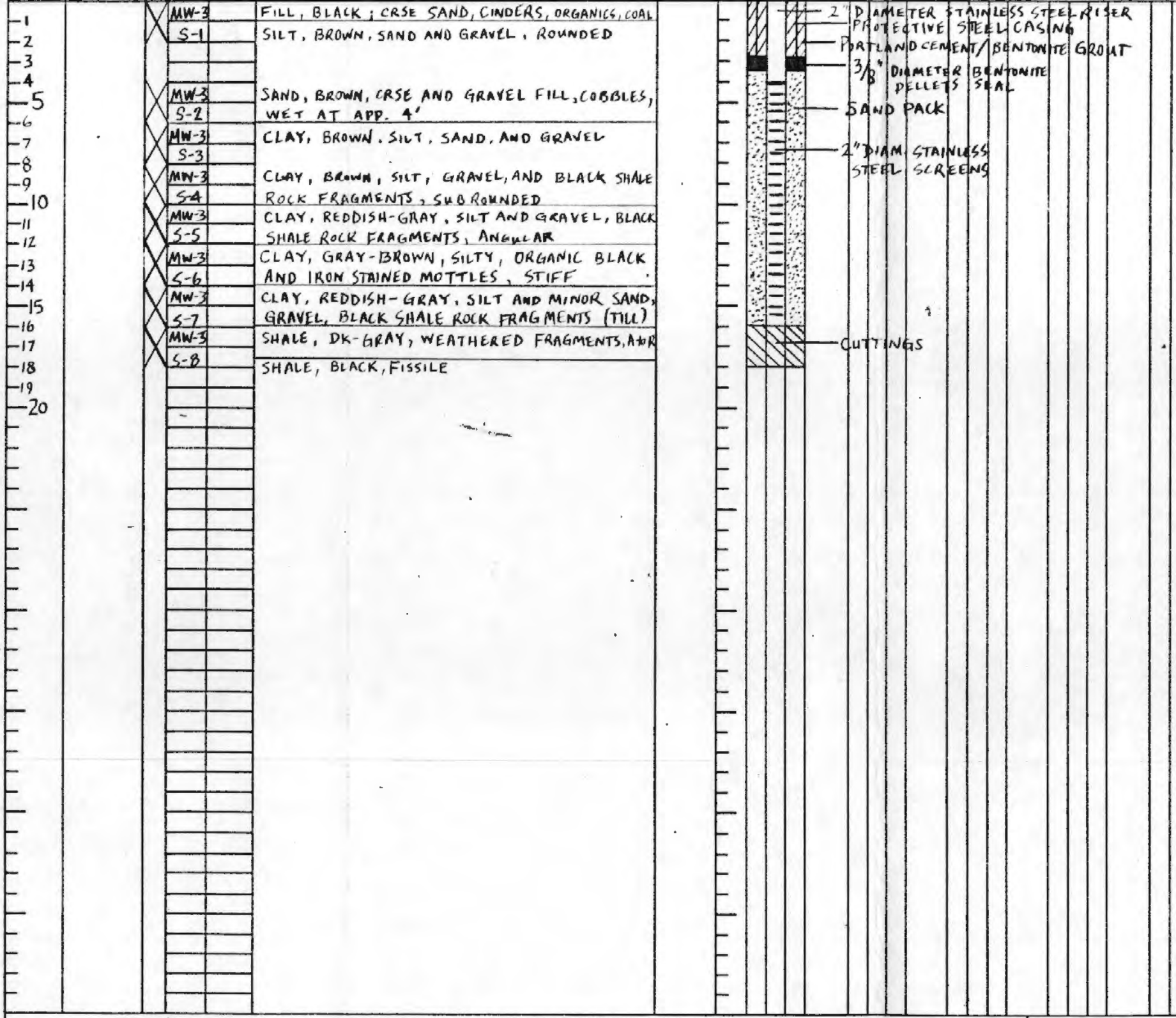
PROJECT: Nia
Old Sco

	S-1	2-2	CLAY, BROWN, SILT AND VF SAND, MOTTLED, ORGANICS
	MW-2	3-4	CLAY, BROWN, VF SAND AND SILT, WET
	S-2	4-5	CLAY, BROWN, SILTY, SAND CONTENT INC. W/ DEPTH
	MW-2	4-4	SILT, BROWN, F TO CRSE SAND, AND MINOR CLAY
	S-3	5-6	CLAY, GRAY, SILTY AND VF SAND, SATURATED
	MW-2	1-1	CLAY, BROWN, SILTY, VF SAND, IRON STAINING
	S-4	3-4	CLAY, GRAY, SILTY, AND MINOR V.F SAND
	MW-2	2-2	CLAY, BROWN, SILTY AND VF SAND; 1 inch CRSE BROWN SAND
	S-5	3-5	LENS @ 10.2'; @10.5' CLAY, GRAY, SILTY (T.D. 12.5')
	MW-2	7-10	CLAY, REDDISH-GRAY (TILL) AND SA BLACK SHALE
	S-6	10-10	FRAGMENTS < 1" DIAMETER
	MW-2	6-6	CLAY, GRAY-BROWN (TILL), CRSE SAND, SILT, AND
	S-7	11-20	SR TO SA BLACK SHALE FRAGMENTS < 1" DIAMETER
	MW-2	13-16	TILL, AS ABOVE
	S-8	19-12	

PROTECTIVE STEEL CASING
3/8" DIAM. BENTONITE PELLETS SEAL
SAND PACK
2" DIAM. STAINLESS STEEL SCREENS
CUTTINGS

Surface Elevation 422.7 Classified By Richard Kulibert NOTE: DATA ON THIS

PROJECT: Niagar



Surface Elevation 427.9 Classified By Richard Kulibert NOTE: DATA ON THIS

PROJECT: Nia

MW-4	1-8	FILL, DARK BROWN AND GRAY, CRSE SAND, CINDERS,
S-1	12-18	SILT, ORGANIC AND IRON-STAINED ZONES
MW-4	10-8	FILL, GRAY - BLACK, SAND, CINDERS, IRON-STAINED
S-2	3-1	SAND, BROWN, CRSE, MOIST, IRON-STAINED
		WET @ APP. 10' BLS
MW-4	2-3	WET SAND, RECOVERY VY POOR, DRILLED HARDER @ 12'
S-3	4-4	NATURAL SURFACE @ 12'
MW-4	7-10	SAND, GRAY-BROWN, SILTY TO 14.3'.
S-4	18-25	TILL, REDDISH-GRAY AND BLACK SHALE FRAGMENTS
MW-4	10-22	TILL, AS ABOVE, FRAGMENTS SA(SANDY, SILTY
S-5	50-40	CLAY

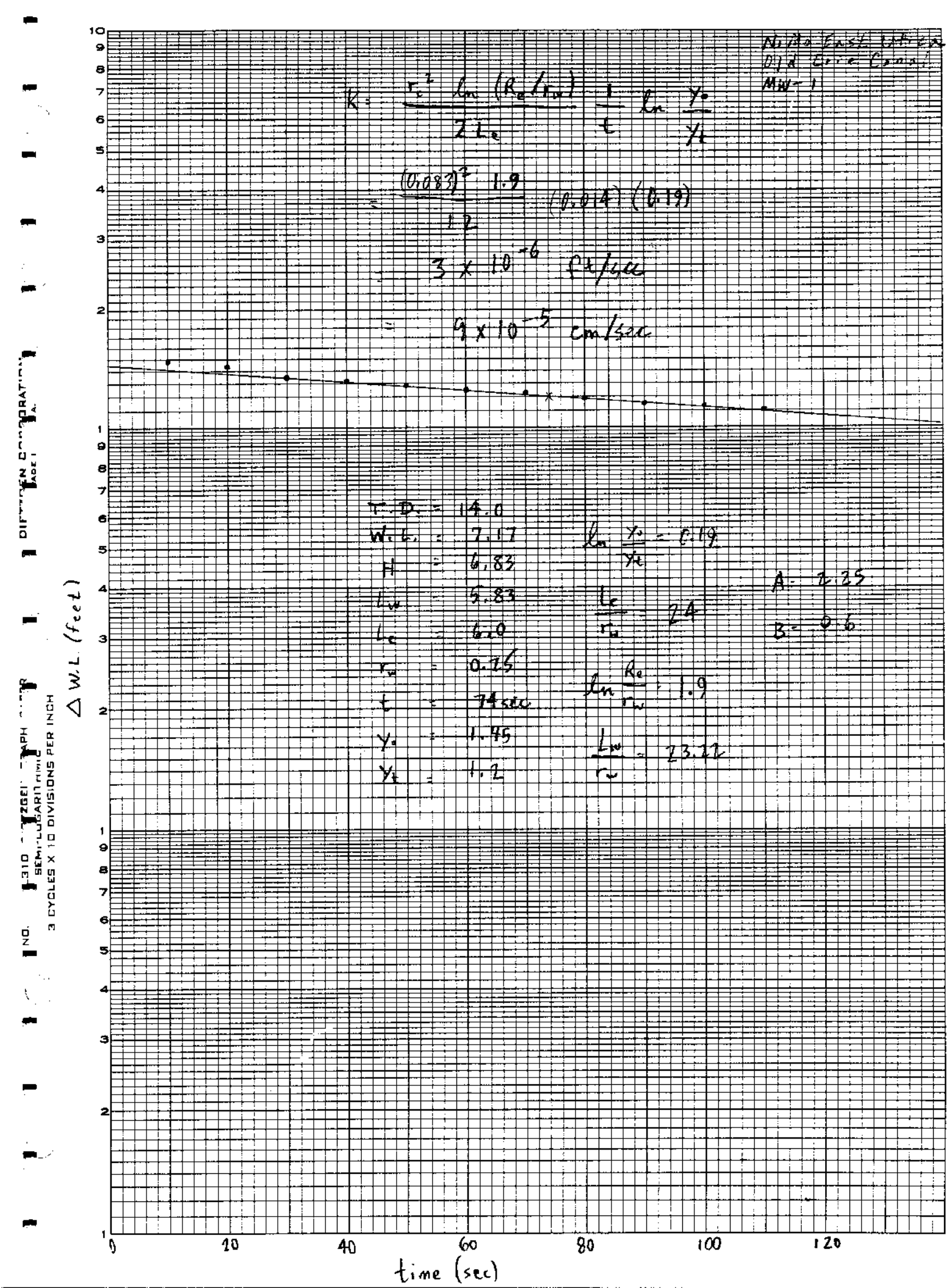
PROTECTIVE STEEL CASING
PORTLAND CEMENT/ BENTONITE GROUT
2" DIAM. STAINLESS STEEL RISER
3/8" BENTONITE PELLETS SEAL
SAND PACK
2" DIAM. STAINLESS STEEL SCREENS
CUTTINGS

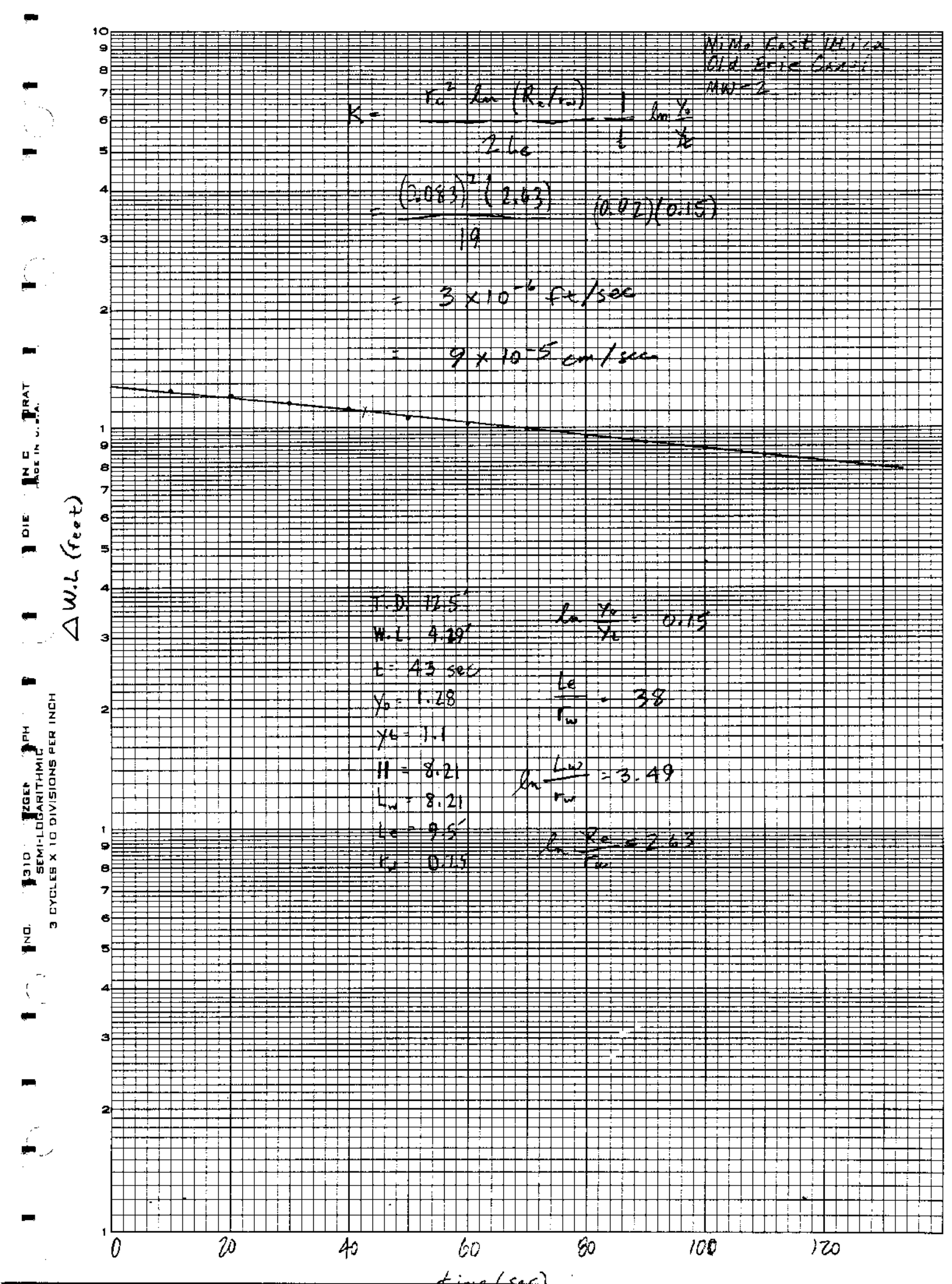
Surface Elevation 435.7 Classified By Richard Kulibert NOTE: DATA ON THIS

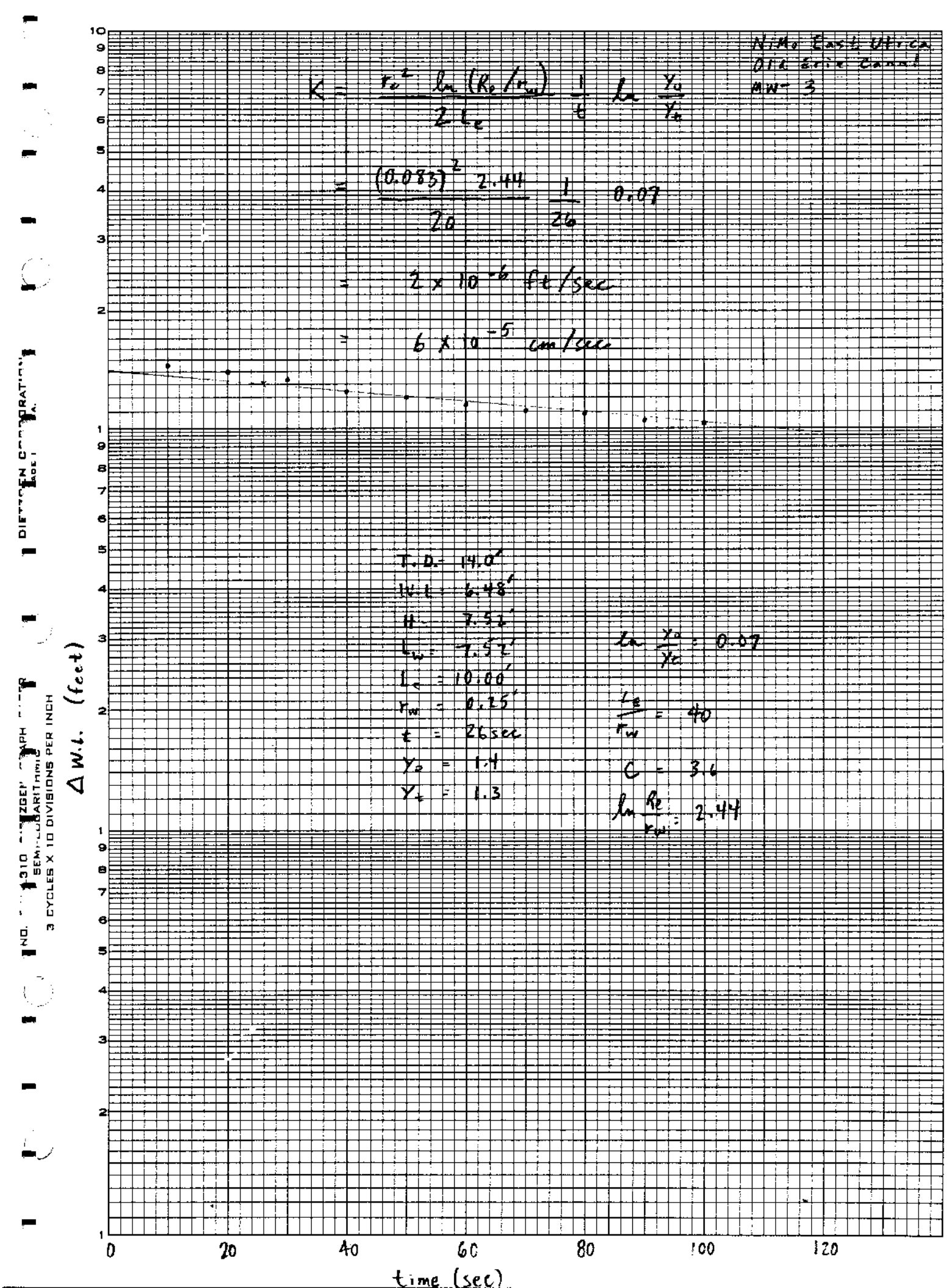
PROJECT: Niag

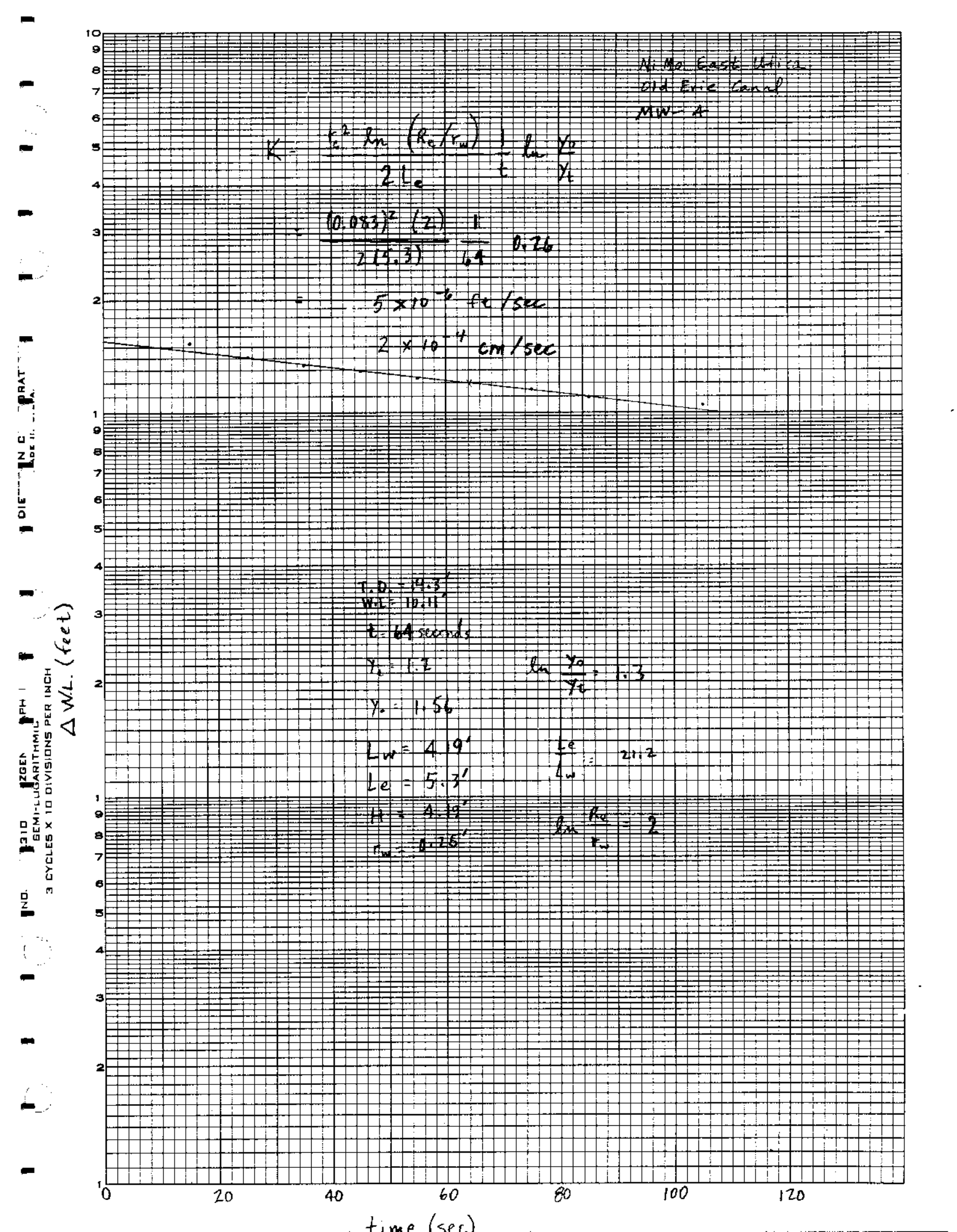
APPENDIX C

CALCULATION OF HYDRAULIC CONDUCTIVITIES


$K = \frac{r_c^2 \ln(R_e/r_w)}{2L_e} \frac{1}{t} \ln \frac{y_0}{y_t}$
$= \frac{(0.083)^2}{12} \frac{1.9}{(0.014)(0.19)}$
3×10^{-6} cm/sec
$= 9 \times 10^{-5}$ cm/sec
r_c D_c = 14.0
$W.L.$ = 7.17
H = 6.83
L_w = 5.83
L_e = 6.0
r_w = 0.25
t = 74 sec
y_0 = 1.45
y_t = 1.2
$\ln \frac{y_0}{y_t} = 0.19$
$\frac{L_e}{r_w}$ = 24
$\ln \frac{R_e}{r_w}$ = 1.9
$\frac{L_w}{r_w}$ = 23.32
A = 2.25
B = 0.6
Δ W.L. (feet)
time (sec)
0
20
40
60
80
100
120
3 CYCLES X 10 DIVISIONS PER INCH


Mimo Cast Well #2
Old Erie Canal
MW-2
$K = \frac{r_c^2 \ln(R_e/r_w)}{2L_e} \frac{1}{t} \ln \frac{y_o}{y_t}$
$= \frac{(0.083)^2 (2.63)}{19} \frac{(0.02)(0.15)}{}$
$= 3 \times 10^{-6}$ ft/sec
$= 9 \times 10^{-5}$ cm/sec
T.D. 12.5'
W.L. 4.29'
t = 43 sec
y_o = 1.28
y_t = 1.1
H = 8.21
L_w = 8.21
L_e = 9.5'
r_c = 0.15
$\ln \frac{y_o}{y_t} = 0.15$
$\frac{L_e}{r_w} = 38$
$\ln \frac{L_w}{r_w} = 3.49$
$\ln \frac{R_e}{r_w} = 2.63$
Δ W.L. (feet)
time (sec)
0
20
40
60
80
100
120
10
9
8
7
6
5
4
3
2
1
DIE
MADE IN U.S.A.
NO. 1310 TIGER 3 PH
SEMI-LOGARITHMIC
3 CYCLES X 10 DIVISIONS PER INCH


NiMo East Utica
Oil Brine Contact
MW- 3
$K = \frac{r_w^2 \ln(R_e/r_w)}{2L_e} \frac{1}{t} \ln \frac{Y_0}{Y_t}$
$= \frac{(0.083)^2}{20} \frac{2.44}{26} \frac{1}{0.07}$
$= 2 \times 10^{-6}$ ft/sec
$= 6 \times 10^{-5}$ cm/sec
T.D. = 14.0'
W.L. = 6.48'
H = 7.52'
L_w = 7.52'
L_e = 10.00'
r_w = 0.25'
t = 26 sec
Y_0 = 1.4
Y_t = 1.3
$\ln \frac{Y_0}{Y_t} = 0.07$
$\frac{L_e}{r_w} = 40$
C = 3.6
$\ln \frac{R_e}{r_w} = 2.44$
DIETZGEN GRAPH PAPER
SEMI-LOGARITHMIC
3 CYCLES X 10 DIVISIONS PER INCH
NO. 1310
Δ W.L. (feet)
time (sec)
0
20
40
60
80
100
120


Mi Mo East Well
Old Erie Canal
MW-A
$K = \frac{r_c^2 \ln(R_e/r_w)}{2L_e} \frac{1}{t} \ln \frac{y_o}{y_t}$
$= \frac{(0.083)^2 (2)}{2(5.3)} \frac{1}{64} 0.26$
$= 5 \times 10^{-6}$ ft/sec
2×10^{-4} cm/sec
T.D. = 19.3'
W.L. = 10.11'
t = 64 seconds
y_t = 1.7
y_o = 1.56
$\ln \frac{y_o}{y_t} = 1.3$
L_w = 4.19'
L_e = 5.3'
H = 4.19'
r_w = 0.25'
$\frac{L_e}{L_w} = 21.2$
$\ln \frac{R_e}{r_w} = 2$
DIETZGEN NO. 310 SEMI-LOGARITHMIC 3 CYCLES X 10 DIVISIONS PER INCH
Δ W.L. (feet)
time (sec)
0
20
40
60
80
100
120

APPENDIX D

QA/QC DOCUMENT

SAMPLING PROTOCOL QA/QC

		PAGE
1.00	Introduction	1
2.00	Ground-Water Monitoring Procedures	1
	2.01 Introduction	1
	2.02 Representative Sample Collection	2
	2.03 Water Level Elevations	3
	2.04 Soil Pore Water Sampling	4
	2.05 Collection of Ground-Water Samples	4
3.00	Surface Water Monitoring Procedures	7
	3.01 Considerations in Determining Representative Sample Locations	7
	3.02 Methods and Equipment for Monitoring Surface Water	8
4.00	Sediment Sampling	9
5.00	Soil Sampling	9
6.00	Sample Integrity	9
	6.01 Equipment Cleaning and Calibration	9
	6.02 Containers, Preservation and Holding Times	10
	6.03 Field Blanks, Duplicates and Split Samples	11
7.00	Work Documentation	11
8.00	Laboratory QA/QC	12

SAMPLING PROTOCOL QA/QC

1.01 Introduction

The observance of proper sampling protocol assures that samples collected are representative of their original environment and their integrity is maintained from the time of sampling through the time of analysis. This assurance is gained through the use of: (1) appropriate sampling methods; (2) clean, calibrated equipment; (3) containers, preservatives and holding times conforming to accepted standards; (4) proper work documentation; and (5) statistical precision and accuracy through the use of blank samples, duplicate samples and, in the laboratory, spike samples.

Since predetermined procedures cannot be applied to all sampling environments; it is the purpose of this manual to define basic sampling methods which apply to most situations, and to present a general overview of the QA/QC considerations necessary to the development of any monitoring program. This sampling protocol has been written to conform with EPA and DEC guidance and standards wherever they were available.

2.00 Ground-Water Monitoring Procedures

2.01 Introduction

In order to assess the impact of the disposal of waste materials to the land on ground-water quality, the behavior of pollutants in the subsurface and the processes governing this behavior must be evaluated. The fundamental objective of monitoring land disposal sites is to serve as a check on potential leachate contamination. The subsurface environment, however, is an extremely complex system subject to extensive physical, chemical and biological changes within small vertical and horizontal distances. Samples from a monitoring well represent a small part of an aquifer horizontally and

in many cases, vertically. Special precautions must be taken to ensure that the sample taken from a given well is representative of the ground water at that location and that the sample is neither altered nor contaminated by the sampling and handling procedure.

The following subsections detail the basic procedures followed by Calocerinos & Spina field crews in monitoring ground water at disposal facilities. These procedures are based on United States Environmental Protection Agency manuals and other ground-water monitoring manuals.

2.02 Representative Sample Collection

During any ground-water sampling program, it must be understood that the composition of the water within the well casing and in close proximity to the well is probably not representative of the overall ground-water quality at that sampling site. This is due to the possible presence of drilling contaminants near the well and because important environmental conditions such as oxidation-reduction potential may differ drastically near the well from the conditions in the surrounding water-bearing materials. In addition, stagnation as well as stratification of water can take place within the well.

To safeguard against collecting non-representative water in a sample, it is highly desirable that a well be pumped or bailed until the well is thoroughly flushed of standing water and contains fresh water from the aquifer. The recommended length of time required to pump or bail prior to sampling is dependent on many factors including the characteristics of the well, the hydrogeological nature of the aquifer, the type of sampling equipment being used, and the parameters of interest.

The generally accepted procedure is to bail between four and ten well volumes prior to sampling. In those situations where the well is bailed to

dryness, the amount bailed prior to sampling will be less. Note also that non-representative samples can result from excessive pre-pumping of the monitoring well. Stratification of the leachate concentrations in the ground-water formation may occur, and excessive bailing can dilute or increase the contaminant concentrations from what is representative of the sampling point of interest.

Determination of the quantity of water in one well volume is calculated from the following formula:

$V = 5.875\ I^2\ (D-W)$

WHERE V = one well volume (gallons)

I = inside diameter of well casing (feet)

D = well depth (feet)

W = Depth to water from top of casing (feet)

For a 2-inch ID well, 6 feet of water is approximately one gallon. In most cases, monitoring of temperature and pH during bailing will be indicative of an adequate volume. When these two parameters stabilize, it is probable that little or no water from casing storage is being bailed.

2.03 Water Level Elevations

Valuable hydrogeological data can be obtained from the periodic monitoring of water level elevations in the ground-water monitoring system at a facility. This information is necessary for the determination of the flow and direction of ground water and to monitor seasonal changes in the ground-water elevation in the area. Frequency of these measurements should be determined by the Project Engineer and Hydrogeologist, but at a minimum, they are taken at each sampling occurrence.

Water level measurements are made using an electronic water level indicator. Depths are measured from the top of the well casing to the water

surface. These measurements are converted to elevations (above mean sea level) using a survey elevation of the well. Measurements are accurate to ±0.1 feet.

2.04 Soil Pore Water Sampling

Since few soils or sediments are chemically inert, movement of leachate through the unsaturated zone frequently will result in chemical changes to the leachate. Samples of soil pore water in the unsaturated zone are collected using vacuum pressure lysimeters. The lysimeters work by creating a vacuum within the sampling vessel; pore water moves toward the sampler and enters the lysimeter through a porous cup. Pressure is then placed on the lysimeter and the sample is forced to the surface.

It should be noted that there are a number of inherent limitations involved with the use of vacuum pressure lysimeters. These include the uncertainty of the degree to which the collected sample represents the surrounding pore water, the disruption of normal drainage patterns caused by suction induced sampling, clogging, and the potential sample contamination from materials used in the lysimeter.

2.05 Collection of Ground-Water Samples

Calocerinos & Spina utilizes a variety of sampling equipment to bail wells and obtain samples. Selection of the type of equipment used is based on depth of well, recovery rate, accessibility, parameters of interest and cost. The following sections describe the equipment and techniques normally used:

a) Bailers

Use of bailers is one of the oldest and simplest methods of sampling ground-water wells. Calocerinos & Spina normally utilizes PVC bailers with a PVC check valve on the bottom, but Teflon or stainless steel bailers are also used for certain projects. These bailers are 1.66" OD

and will fit in a 2 inch well. The low cost of these bailers allows them to be dedicated to individual wells as a means of minimizing cross contamination. In addition, there is no need for external power.

Bailing and sampling technique is dictated by the recovery rate of well, but for most situations, the bailer is lowered to the bottom of the well and retrieved. In the case of wells that have historically had high recovery rates, the first well volume is retrieved from the top of the water column. This insures that the water within the well is fresh and representative of the aquifer of concern. Sampling of ground water for volatile organics is performed with a Teflon Bailer.

b) Air Lift Sampler

The air lift system uses air pressure that is fed down the well and forces water up and out of the well. The airlift system utilized by Calocerinos & Spina is comprised of threaded PVC pipe sections that are connected together as the screened section is lowered into the well. When the sampler is in place it is capped off with a top section of PVC which allows for the introduction of pressurized air or gas. This forces a check valve closed and the well water up out of the sampler.

The air lift sampler, which can be used as either a portable or permanently installed system, is not suitable for pH sensitive parameters such as metals. Gas stripping of volatile organics may occur, and if air or oxygen is used, oxidation may be a problem. For this reason, this system is normally used only for bailing.

c) Bladder Pumps

Bladder pumps (also referred to as gas squeeze pumps) consist of a flexible tube enclosed in a rigid plastic or stainless steel housing. Water enters the housing through a screen and check valve at the bottom

of the pump. Air pressure inflates the bladder and forces the water to the surface (Note: In a similar design, the water enters the bladder and the air pressure introduced into the housing compresses the bladder and forces water to the surface). Upon release of the pressure, an upper check valve prevents water from flowing back into the pump. An automated control system regulates gas flow rates and pressurization cycles to produce a nearly continuous flow.

The bladder pump has several advantages including a wide range of pumping rates, no contact between air and well water and the unit is fairly portable. In addition, once the unit is set up and in operation, constant operation attendance is not needed during bailing operations.

Because of the time involved in disassembly, cleaning and reassembly, Calocerinos & Spina recommends that, where used, bladder pumps should be permanently installed.

d. Handpump

Calocerinos & Spina utilizes a hand operated pump that pumps over 2.5 gallons per minute. The hand pump fits inside a 2-inch well and can sample down to 50 feet or further with extensions. The high flow volume provides for rapid bailing of wells with a high well volume.

e) Suction Lift Pumps

While not normally used for monitoring well sampling, Calocerinos & Spina maintains both automatic and manual suction lift pumps. These pumps (both peristaltic and vacuum) are relatively portable, but sampling is limited to ground water that is within 20 feet of the surface. Use of these pumps may result in degassing and loss of volatile compounds.

Calocerinos & Spina's use of these pumps is generally restricted to monitoring installations such as seepage galleries that are not feasibly sampled by the above described techniques.

3.00 Surface Water Monitoring Procedures

3.01 Considerations in Determining Representative Sample Locations

The collection of surface water samples is performed for the purpose of assessing the general water quality of a particular body of water and/or to measure the impact of point or non-point source discharges on that body. To properly meet the objective of the sampling, consideration must be given to mixing zones, stratification areas, stream hydraulics, flow status (high flow vs. low flow), and any other conditions which influence the character of the water being sampled.

When monitoring the general water quality of a body of surface water, a determination must be made as to the homogeneity of the water. This can be accomplished by either researching historical data on the water body and surrounding land use patterns, by preliminary random sampling, or by in-situ measurement (usually by probe) of certain water quality parameters (such as pH, temperature, dissolved oxygen or specific conductance) prior to sampling.

If the water is known to be homogeneous, a representative sample can be collected at any reasonable location. If the homogeneity of the water cannot be determined, or if it is known to be heterogeneous, the monitoring program must be structured to take into account all sources of variability. At Calocerinos & Spina, this is usually accomplished by theoretically dividing the water body into approximately equal sized sections and taking a representative sample from each section. These samples can be analyzed separately, or composited into one or more representative samples. Stratification of the water column is accounted for by taking samples at more than one depth. These samples can be also be composited if desired.

In addition to the above considerations, samples collected to assess the impact of a particular discharge on a body of water must be defined in terms

of the discharge conditions which they represent. Initially, the discharge location(s) must be pin-pointed so that representative samples can be collected both upstream and downstream of the site. The extent of the mixing zone should be defined so that well-mixed or unmixed samples can be collected, depending on the objectives of the study. Turbulence or aeration at the discharge point is an important consideration when sampling for volatile compounds because these mechanisms may cause the compounds to dissipate. For a worst case analysis of the impact of a particular discharge, samples should be collected when the receiving water is at low flow; this is usually during the summer months.

3.02 Methods and Equipment for Monitoring Surface Water

Calocerinos & Spina monitors water quality both in-situ, using an integrated probe system, and by collection of water samples for laboratory analysis.

In-situ measurements of water quality are performed using a Hydrolab Digital 4041 probe unit. The Hydrolab consists of an underwater sonde unit where the probes are located, a circulator motor to mix the water by the sonde, connector cable to transmit the signals, and an indicator unit where the signals are processed for digital conversion and immediate read-out. The Hydrolab is capable of reading conductivity, pH, dissolved oxygen (D.O.) and temperature. Temperature is measured by a high accuracy thermister, pH using a pH-sensitive glass electrode, D.O. by the Clark polarographic cell, and conductivity using the four electrode technique.

Sample collection by Calocerinos & Spina can be performed by either collecting the water in the sample jar itself, or by using a VanDorn water sampler and transferring the water to the sample jar(s). In either method,

care is taken not to aerate the sample if volatile compounds or oxygen related parameters (such as D.O.) are to be measured.

4.00 Sediment Sampling

Sampling of sediments along river or lake beds is performed by Calocerinos & Spina using either an Eckman dredge, or a Wildco-Ballchek core sampler. The dredge is best suited for soft, sandy, vegetation-free bottoms. It is used to collect grab samples of the top layer of sediment. Penetration of the river bottom to collect deeper layers of sediment is accomplished with the core sampler. The core sampler used by Calocerinos & Spina collects a sample 2 inches in diameter and 30 inches long.

5.00 Soil Sampling

Soil samples for geotechnical purposes are collected in accordance with ASTM method D-1586, "Standard Method for Penetration Test and Split-Barrel Sampling of Soils". The actual sampling is conducted by a drilling subcontractor with supervision by Calocerinos & Spina personnel. A copy of the method is included in Appendix A of this report.

Calocerinos & Spina also collects shallow soil samples for chemical analysis using an Oakfield Soil Probe Tube. A soil core one-inch in diameter and 15 inches long can be collected with the soil probe. Surface materials are collected using a trowel or similar tool.

6.00 Sample Integrity

6.01 Equipment Cleaning and Calibration

Contamination of samples is precluded by proper cleaning of sampling equipment and containers prior to their use in the field, or by the utilization of dedicated equipment. The actual cleaning process is dictated by the analytical procedures designated for the sample, but usually includes the following steps:

1. detergent washing
2. rinse with tap water
3. rinse with a dilute hydrochloric acid solution
4. one or more rinses with distilled deionized water
5. rinse with acetone or hexane
6. rinse with organic-free water

Steps 5 and 6 are generally performed only when samples are to be analyzed for organic compounds.

The cleaning is performed at Calocerinos & Spina prior to going out in the field. When discrete samples are to be collected at multiple locations, additional cleaning, between samples, is performed on-site to prevent carry-over of contaminants. Also, in the case of surface water sampling, the sample jars are usually rinsed in the field with sample water prior to filling. During sampling, equipment is not allowed to come in contact with the ground, other equipment, or potential sources of contamination.

The use of dedicated equipment is optimal for projects where a long-term monitoring program is in place, or where protection from contamination is not adequate through the use of normal cleaning procedures. Calocerinos & Spina frequently uses dedicated equipment for extended ground-water monitoring programs. In this application, well bailers and pumps are used on only one well and are stored in the well between samplings.

Calibration of field instruments is an essential part of quality control in sampling. All necessary instrumentation is calibrated at Calocerinos & Spina prior to going out in the field.

6.02 Containers, Preservatives and Holding Times

Sample integrity is preserved through the use of proper sample containers, addition of the correct preservatives to the samples and meeting

designated holding times (the time from sample collection to sample analysis). Containers, preservatives and holding times used by Calocerinos & Spina are taken from 40 CFR Part 136 and are shown in Table 1. Note that preservation techniques, other than cooling to 4°C, are not generally applicable to solid samples.

6.03 Field Blanks, Duplicates and Split Samples

The use of field blanks, duplicate samples and split samples provide quality assurance in the areas of precision and accuracy.

The use of field blanks provides a method for determining whether or not the sampling and preservation introduces contamination. A sample of organic free or deionized water is handled by the same procedures as the sample. After laboratory analysis, any pollutant concentration in the blank is subtracted from the pollutant concentration of the sample to give the actual sample concentration.

Duplicate samples and split samples (where a single sample is split between two separate laboratories) provide a check on the precision of the sampling process. If the results of the two analyses are different, the discrepancies in results should be evaluated statistically to determine their significance. Duplicate samples are collected by Calocerinos & Spina at a rate of approximately 5% of the total number of samples.

7.00 Work Documentation

An important part of quality control is proper documentation of all aspects of the sampling program. This includes careful labeling of the sample containers, the use of field logs to record pertinent data on-site during sampling events, and the use of chain-of-custody sheets which accompany the sample from collection through analysis. Calocerinos & Spina uses pre-gummed labels with spaces to record client name, sample location, sample description,

date and time of sampling, sampler's name, pH, temperature, grab or composite, filtered or not, preservatives added, and lab log number. The chain-of-custody sheet used by Calocerinos & Spina includes all the information on the label, and in addition: sample type, sampling method, number and type of containers, name, date and time of delivering and receiving the sample at the laboratory, and the date, method and person performing each analysis. Custody sheets used specifically for well-monitoring include information on the type of well, size of well, well depth, depth to water, number of volumes pumped, total volume and pH, temperature, color and appearance of the sample. Standard documents used by Calocerinos & Spina are included in Appendix B of this report.

8.00 Laboratory QA/QC

Calocerinos & Spina Environmental Laboratory follows analytical quality control procedures as documented in their "Quality Control Program Manual". A copy of this manual is available upon request.

APPENDIX A

ASTM METHOD D-1586

Designation: D 1586 – 67 (Reapproved 1974)

Standard Method for PENETRATION TEST AND SPLIT-BARREL SAMPLING OF SOILS[1]

This standard is issued under the fixed designation D 1586; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

This method has been approved for use by agencies of the Department of Defense and for listing in the DoD Index of Specifications and Standards.

1. Scope

1.1 This method describes a procedure for using a split-barrel sampler to obtain representative samples of soil for identification purposes and other laboratory tests, and to obtain a measure of the resistance of the soil to penetration of the sampler.

2. Apparatus

2.1 *Drilling Equipment*—Any drilling equipment shall be acceptable that provides a reasonably clean hold before insertion of the sampler to ensure that the penetration test is performed on undisturbed soil, and that will permit the driving of the sampler to obtain the sample and penetration record in accordance with the procedure described in Section 3. To avoid "whips" under the blows of the hammer, it is recommended that the drill rod have a stiffness equal to or greater than the A-rod. An "A" rod is a hollow drill rod or "steel" having an outside diameter of 1⅝ in. (41.2 mm) and an inside diameter of 1⅛ in. (28.5 mm), through which the rotary motion of drilling is transferred from the drilling motor to the cutting bit. A stiffer drill rod is suggested for holes deeper than 50 ft (15 m). The hole shall be limited in diameter to between 2¼ and 6 in. (57.2 and 152 mm).[2]

2.2 *Split-Barrel Sampler*—The sampler shall be constructed with the dimensions indicated in Fig. 1. The drive shoe shall be of hardened steel and shall be replaced or repaired when it becomes dented or distorted. The coupling head shall have four ½-in. (12.7-mm) (minimum diameter) vent ports and shall contain a ball check valve. If sizes other than the 2-in. (50.8-mm) sampler are permitted, the size shall be conspicuously noted on all penetration records.

2.3 *Drive Weight Assembly*—The assembly shall consist of a 140-lb (63.5-kg) weight, a driving head, and a guide permitting a free fall of 30 in. (0.76 m). Special precautions shall be taken to ensure that the energy of the falling weight is not reduced by friction between the drive weight and the guides.

2.4 *Accessory Equipment*—Labels, data sheets, sample jars, paraffin, and other necessary supplies should accompany the sampling equipment.

3. Procedure

3.1 Clear out the hole to sampling elevation using equipment that will ensure that the material to be sampled is not disturbed by the operation. In saturated sands and silts withdraw the drill bit slowly to prevent loosening of the soil around the hole. Maintain the water level in the hole at or above ground water level.

3.2 In no case shall a bottom-discharge bit be permitted. (Side-discharge bits are permissible.) The process of jetting through an open-tube sampler and then sampling when the

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[1] This method is under the jurisdiction of ASTM Committee D-18 on Soil and Rock.

Current edition approved Oct. 20, 1967. Originally issued 1958. Replaces D 1586 – 64 T.

[2] Hvorslev, M. J., *Surface Exploration and Sampling of Soils for Civil Engineering Purposes*, The Engineering Foundation, 345 East 47th St, New York, N. Y. 10017.

desired depth is reached shall not be permitted. Where casing is used, it may not be driven below sampling elevation. Record any loss of circulation or excess pressure in drilling fluid during advancing of holes.

3.3 With the sampler resting on the bottom of the hole, drive the sampler with blows from the 140-lb (63.5-kg) hammer falling 30 in. (0.76 m) until either 18 in. (0.45 m) have been penetrated or 100 blows have been applied.

3.4 Repeat this operation at intervals not longer than 5 ft (1.5 m) in homogeneous strata and at every change of strata.

3.5 Record the number of blows required to effect each 6 in. (0.15 m) of penetration or fractions thereof. The first 6 in. (0.15 m) is considered to be a seating drive. The number of blows required for the second and third 6 in. (0.15 m) of penetration added is termed the penetration resistance, *N*. If the sampler is driven less than 18 in. (0.45 m), the penetration resistance is that for the last 1 ft (0.30 m) of penetration (if less than 1 ft (0.30 m) is penetrated, the logs shall state the number of blows and the fraction of 1 ft (0.30 m) penetrated).

3.6 Bring the sampler to the surface and open. Describe carefully typical samples of soils recovered as to composition, structure, consistency, color, and condition; then put into jars without ramming. Seal them with wax or hermetically seal to prevent evaporation of the soil moisture. Affix labels to the jar or make notations on the covers (or both) bearing job designation, boring number, sample number, depth penetration record, and length of recovery. Protect samples against extreme temperature changes.

4. Report

4.1 Data obtained in borings shall be recorded in the field and shall include the following:

4.1.1 Name and location of job,

4.1.2 Date of boring—start, finish,

4.1.3 Boring number and coordinate, if available,

4.1.4 Surface elevation, if available,

4.1.5 Sample number and depth,

4.1.6 Method of advancing sampler, penetration and recovery lengths,

4.1.7 Type and size of sampler,

4.1.8 Description of soil,

4.1.9 Thickness of layer,

4.1.10 Depth to water surface; to loss of water; to artesian head; time at which reading was made,

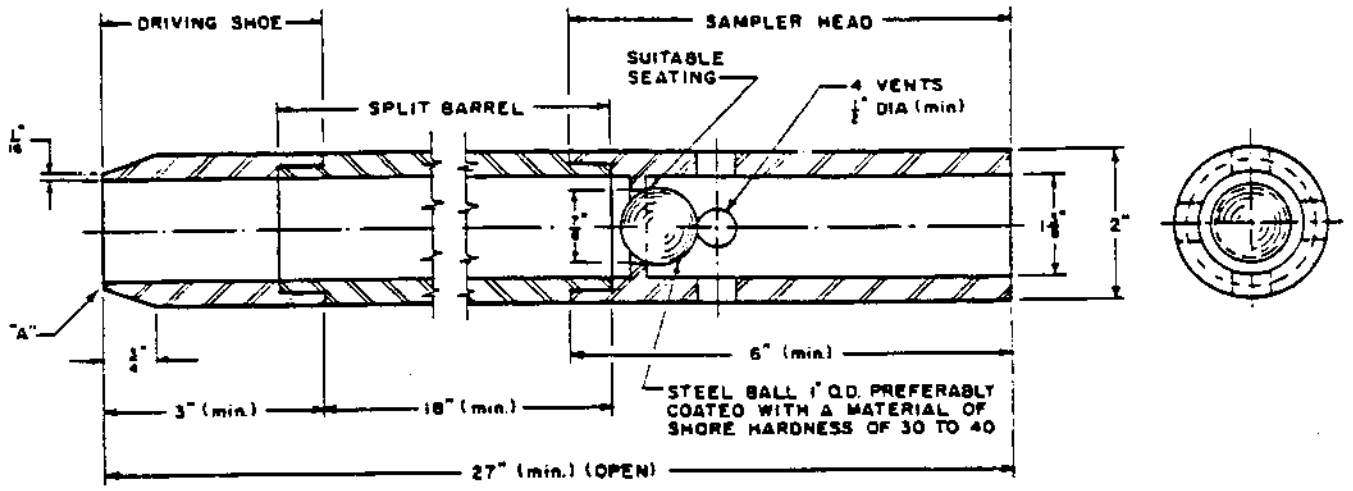
4.1.11 Type and make of machine.

4.1.12 Size of casing, depth of cased hole,

4.1.13 Number of blows per 6 in. (0.15 m),

4.1.14 Names of crewmen, and

4.1.15 Weather; remarks.



NOTE 1—Split barrel may be 1½ in. inside diameter provided it contains a liner of 16-gage wall thickness.
NOTE 2—Core retainers in the driving shoe to prevent loss of sample are permitted.
NOTE 3—The corners at *A* may be slightly rounded.

Metric Equivalents

in.	mm	in.	mm
1/16 (16 gage)	1.5	2	50.8
½	12.7	3	76.2
¾	19.0	6	152.4
⅞	22.2	18	457.2
1⅜	34.9	27	685.8
1½	38.1		

FIG. 1 Standard Split Barrel Sampler Assembly.

APPENDIX B

CHAIN OF CUSTODY FORMS

SAMPLE CHARACTERIZATION & CHAIN OF CUSTODY SHEET

LAB SAMPLE LOG No. _____

SOURCE

CLIENT _____ JOB No. _____

SAMPLE I.D. _____ LOCATION DESCRIPTION _____

_____

SAMPLING

SAMPLE TYPE _____ SAMPLING METHOD _____

CONTAINERS: No. _____ TYPE _____

COMPOSITE: DATE SET _____ TIME _____ BY _____

DATE PICKED-UP _____ TIME _____ BY _____

GRAB: DATE _____ TIME _____ BY _____

NOTES: _____

_____

_____

PRESERVATION

DATE _____

FILTERED: YES _____ NO _____ TIME _____ BY _____

PRESERVED: YES _____ NO _____ TIME _____ BY _____

PRESERVATIVE: ☐ H_2SO_4 ☐ HNO_3 ☐ NaOH ☐ $H_3PO_4 + CuSO_4$ ☐ $Zn(C_2H_3O_2)_2$

☐ COOLED TO 4°C ☐ OTHER _____

NOTES: _____

_____

_____

CUSTODY — C&S LABORATORY

DELIVERED BY _____

DATE _____ TIME _____

RECEIVED BY _____

DATE _____ TIME _____

CUSTODY — LABORATORY SUBCONTRACTOR

NAME OF LAB _____

ADDRESS _____

DELIVERED BY _____

DATE _____ TIME _____

RECEIVED BY _____

DATE _____ TIME _____

FIELD NOTES

_____

_____

_____

_____

_____

ANALYTICAL CUSTODY AVAILABLE UPON REQUEST

SAMPLE CHARACTERIZATION AND CHAIN OF CUSTODY SHEET

LAB SAMPLE LOG NO. _____ JOB NO. _____

SOURCE

CLIENT _____ WELL NO. _____

LOCATION _____ WELL TYPE/SIZE _____

EVACUATION

DATE _____

WELL DEPTH _____

DEPTH TO WATER _____

WELL VOLUME _____

METHOD _____

NO. OF VOLUMES _____

TOTAL VOLUME _____

ITEM	START	FINISH
TIME		
pH		
TEMP.		
DEPTH		
COLOR		
APPEAR.		

WELL CASING VOLUMES

GAL./FT.				
	1-1/4" = 0.077	2" = 0.16	3" = 0.37	4" = .65
	1-1/2" = 0.10	2-1/2" = 0.24	3-1/2" = 0.50	6" = 1.46

SAMPLING

DATE _____ pH _____

TIME _____ TEMP _____

METHOD _____ COLOR _____

CONTAINER _____ APPEAR. _____

SAMPLED BY _____ Eh _____

PRESERVATION

DATE _____

FILTERED: YES _____ NO _____ TIME _____ BY _____

PRESERVED: YES _____ NO _____ TIME _____ BY _____

PRESERVATIVE: ☐ H_2SO_4 ☐ HNO_3 ☐ NaOH ☐ $H_3PO_4 + CuSO_4$ ☐ $Zn(C_2H_3O_2)_2$

☐ COOLED TO 4°C ☐ OTHER _____

CUSTODY

SAMPLER'S SIGNATURE _____

TRANSFERRED TO: #1 _____

RECEIVED BY _____ DATE _____ TIME _____

#2 _____

RECEIVED BY _____ DATE _____ TIME _____

STANDARD FORM LAB-002-1

CONSULTING ENGINEERS
Liverpool, New York 13088

OBSERVATION WELL READINGS

PROJECT ______________________ LOCATION ______________________

METHOD OF READING ______________________

REFERENCE POINT ______________________

DATE ________ TIME (START) ________ TIME (END) ________ INITIALS ________

WEATHER CONDITIONS ______________________

WELL NO.	DEPTH TO WATER	REF. ELEV.	ELEV.	WELL NO.	DEPTH TO WATER	REF. ELEV.	ELEV.

APPENDIX E

SOIL (SPLIT SPOON) ANALYTICAL DATA SHEETS

tal Protection Agency, CLP Sample Management Office
ox 818, Alexandria, VA 22313 703/557-2490

Sample Number
MWSS-1 RE

Organics Analysis Data Sheet
(Page 1)

aboratory Name: CompuChem
Lab Sample ID No: GRD71922C03
Sample matrix: solid
ta Release
...thorized By: _____

Case: C & S
QC Report No: _____
Contract No: PLATINUM
Date Sample
Received: 12-19-85

Volatile Compounds
Concentration: low
Date extracted/prepared: 12-30-85/12-27-85 orig
Date analyzed: 12-31-85
Conc/Dil Factor: 1.27 pH: 7.9
Percent moisture: 22%
Percent moisture (decanted):

CAS Number		ug/kg		CAS Number		ug/kg	
74-87-3	Chloromethane	13.	U	78-87-5	1,2-Dichloropropane	6.3	U
74-83-9	Bromomethane	13.	U	10061-02-6	trans-1,3-Dichloropropene	6.3	U
75-01-4	Vinyl Chloride	13.	U	79-01-6	Trichloroethene	6.3	U
75-00-3	Chloroethane	13.	U	124-48-1	Dibromochloromethane	6.3	U
75-09-2	Methylene Chloride	29.	B	79-00-5	1,1,2-Trichloroethane	6.3	U
67-64-1	Acetone	6.1	J B	71-43-2	Benzene	6.3	U
75-15-0	Carbon Disulfide	6.3	U	10061-01-5	cis-1,3-Dichloropropene	6.3	U
75-35-4	1,1-Dichloroethene	6.3	U	110-75-8	2-Chloroethyl Vinyl Ether	13.	U
75-35-3	1,1-Dichloroethane	6.3	U	75-25-2	Bromoform	6.3	U
156-60-5	trans-1,2-Dichloroethene	6.3	U	591-78-6	2-Hexanone	13.	U
67-66-3	Chloroform	6.3	U	108-10-1	4-Methyl-2-pentanone	13.	U
107-06-2	1,2-Dichloroethane	6.3	U	127-18-4	Tetrachloroethene	6.3	U
78-93-3	2-Butanone	13.	U	108-88-3	Toluene	6.3	U
71-55-6	1,1,1-Trichloroethane	6.3	U	108-90-7	Chlorobenzene	6.3	U
56-23-5	Carbon Tetrachloride	6.3	U	100-41-4	Ethyl Benzene	6.3	U
108-05-4	Vinyl Acetate	13.	U	100-42-5	Styrene	6.3	U
75-27-4	Bromodichloromethane	6.3	U		Total Xylenes	6.3	U
79-34-5	1,1,2,2-Tetrachloroethane	6.3	U				

DATA REPORTING QUALIFIERS

r 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 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 >/= 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.

elB, Alexandria, VA 22313 703/557-2490

Laboratory Name: CompuChem

Organics Analysis Data Sheet
(Page 2)
Semivolatile Compounds

Concentration: low
Date extracted/prepared: 01-14-86/12-27-85 orig
Date analyzed: 01-15-86
Conc/Dil Factor: 43.70

CAS Number		ug/kg		CAS Number		ug/kg	
62-75-9	N-Nitrosodimethylamine	440	U	99-09-2	3-Nitroaniline	2200	U
108-95-2	Phenol	440	U	83-32-9	Acenaphthene	440	U
62-53-3	Aniline	440	U	51-28-5	2,4-Dinitrophenol	2200	U
111-44-4	bis(2-Chloroethyl) ether	440	U	100-02-7	4-Nitrophenol	2200	U
95-57-8	2-Chlorophenol	440	U	132-64-9	Dibenzofuran	440	U
541-73-1	1,3-Dichlorobenzene	440	U	121-14-2	2,4-Dinitrotoluene	440	U
106-46-7	1,4-Dichlorobenzene	440	U	606-20-2	2,6-Dinitrotoluene	440	U
100-51-6	Benzyl Alcohol	440	U	84-66-2	Diethylphthalate	440	U
95-50-1	1,2-Dichlorobenzene	440	U	7005-72-3	4-Chlorophenyl Phenyl ether	440	U
95-48-7	2-Methylphenol	440	U	86-73-7	Fluorene	440	U
39638-32-9	bis(2-Chloroisopropyl) ether	440	U	100-01-6	4-Nitroaniline	2200	U
106-44-5	4-Methylphenol	440	U	534-52-1	4,6-Dinitro-2-methylphenol	2200	U
621-64-7	N-Nitroso-Dipropylamine	440	U	86-30-6	N-nitrosodiphenylamine (1)	440	U
67-72-1	Hexachloroethane	440	U	101-55-3	4-Bromophenyl Phenyl ether	440	U
98-95-3	Nitrobenzene	440	U	118-74-1	Hexachlorobenzene	440	U
78-59-1	Isophorone	440	U	87-86-5	Pentachlorophenol	2200	U
88-75-5	2-Nitrophenol	440	U	85-01-8	Phenanthrene	440	U
105-67-9	2,4-Dimethylphenol	440	U	120-12-7	Anthracene	440	U
65-85-0	Benzoic Acid	2200	U	84-74-2	Di-n-butylphthalate	440	U
111-91-1	bis(2-Chloroethoxy) methane	440	U	206-44-0	Fluoranthene	48.	J
120-83-2	2,4-Dichlorophenol	440	U	92-87-5	Benzidine	2200	U
120-82-1	1,2,4-Trichlorobenzene	440	U	129-00-0	Pyrene	61.	J
91-20-3	Naphthalene	440	U	85-68-7	Butyl Benzyl Phthalate	440	U
106-47-8	4-Chloroaniline	440	U	91-94-1	3,3'-Dichlorobenzidine	870	U
87-68-3	Hexachlorobutadiene	440	U	56-55-3	Benzo(a)anthracene	79.	J
59-50-7	4-Chloro-3-methylphenol	440	U	117-81-7	bis(2-ethylhexyl)phthalate	440	U
91-57-6	2-Methylnaphthalene	440	U	218-01-9	Chrysene	440	U
77-47-4	Hexachlorocyclopentadiene	440	U	117-84-0	Di-n-octyl Phthalate	440	U
88-06-2	2,4,6-Trichlorophenol	440	U	205-99-2	Benzo(b)fluoranthene	440	U
95-95-4	2,4,5-Trichlorophenol	2200	U	207-08-9	Benzo(k)fluoranthene	440	U
91-58-7	2-Chloronaphthalene	440	U	50-32-8	Benzo(a)pyrene	440	U
88-74-4	2-Nitroaniline	2200	U	193-39-5	Indeno(1,2,3-cd)pyrene	440	U
131-11-3	Dimethyl Phthalate	440	U	53-70-3	Dibenz(a,h)anthracene	440	U
208-96-8	Acenaphthylene	440	U	191-24-2	Benzo(g,h,i)perylene	440	U

(1) Cannot be separated from diphenylamine

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: [Low] Medium (Circle One)
Date Extracted/Prepared: 12/27/85
Data Analyzed: 12/31/85
Conc/Dil Factor: _____ 5.16

CAS Number		ug/l or [ug/Kg] (Circle One)	
319-84-6	Alpha - BHC	10.	U
319-85-7	Beta - BHC	10.	U
319-86-8	Delta - BHC	10.	U
58-89-9	Gamma - BHC(Lindane)	10.	U
76-44-8	Heptachlor	10.	U
309-00-2	Aldrin	10.	U
1024-57-3	Heptachlor Epoxide	10.	U
959-98-8	Endosulfan I	10.	U
60-57-1	Dieldrin	21.	U
72-55-9	4-4' - DDE	21.	U
72-20-8	Endrin	21.	U
33213-65-9	Endosulfan II	21.	U
72-54-8	4-4' - DDD	21.	U
7421-93-4	Endrin Aldehyde	21.	U
1031-07-8	Endosulfan Sulfate	21.	U
50-29-3	4-4' - DDT	21.	U
72-43-5	Methoxychlor	100	U
53494-70-5	Endrin Ketone	21.	U
57-74-9	Chlordane	100	U
8001-35-2	Toxaphene	210	U
12674-11-2	Aroclor - 1016	100	U
11104-28-2	Aroclor - 1221	100	U
11141-16-5	Aroclor - 1232	100	U
53469-21-9	Aroclor - 1242	100	U
12672-29-6	Aroclor - 1248	100	U
11097-69-1	Aroclor - 1254	210	U
11096-82-5	Aroclor - 1260	210	U

V(i) = Volume of extract injected (ul)
V(s) = Volume of water extracted (ml)
W(s) = Weight of sample extracted (g)
V(t) = Volume of total extract (ul)

V(s) _____ or W(s) 30.02 V(t) 2000.00 V(i) 1.0

Form 1

Alexandria, Virginia 22313 703/557-3490

MWSS-1

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.		NO VOA COMPOUNDS FOUND			
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.					
27.					
28.					
29.					
30.					

SAMPLE NUMBER MW SS-1

COMPUCHEM FILE GR071922C15

ORGANICS ANALYSIS DATA SHEET (PAGE 4)

TENTATIVELY IDENTIFIED COMPOUNDS

CAS NUMBER	COMPOUND NAME	FRACTION	SCAN NUMBER	ESTIMATED CONC. (UG/L OR UG/KG)	
108-21-4	ACETIC ACID, 1-METHYLETHYL ESTER (ACETATE CONTAMINANT)	SEMI3	297	860.	J B
625-06-9	2-PENTANOL, 2,4-DIMETHYL- (ISOMER CONTAMINANT)	SEMI3	320	25000.	J B
25144-05-2	CYCLOPENTANOL, 2-METHYL-, CIS- (ISOMER NOT SEARCHED)	SEMI3	356	310.	J B
1120-72-5	CYCLOPENTANONE, 2-METHYL- (ISOMER)	SEMI3	363	370.	J
1121-66-0	2-CYCLOHEPTEN-1-ONE (UNKNOWN)	SEMI3	744	410.	J
334-48-5	DECANOIC ACID (UNKNOWN 71% MATCH)	SEMI3	937	660.	J
17408-66-1	2(1H)-NAPHTHALENONE, 4A,5,6,7,8,8A-HEXAHYDRO-7.ALPHA (UNKNOWN)	SEMI3	972	1000.	J
61233-56-5	1H-PYRROLE-2-CARBOXAMIDE, 5-[[(5-AMINO-3,4-DIHYDRO-2 (UNKNOWN)	SEMI3	1087	450.	J
17408-66-1	2(1H)-NAPHTHALENONE, 4A,5,6,7,8,8A-HEXAHYDRO-7.ALPHA (UNKNOWN)	SEMI3	1103	500.	J
53907-79-2	8-THIABICYCLO[5.1.0]OCTANE (UNKNOWN)	SEMI3	1107	460.	J
22872-43-1	BENZENE, 2-BUTYL-1,3,4-TRIFLUORO- (UNKNOWN)	SEMI3	1114	690.	J
61141-59-1	CYCLOOCTENE, 3-(2-PROPENYL)- (UNKNOWN)	SEMI3	1124	2100.	J
27554-26-3	1,2-BENZENEDICARBOXYLIC ACID, DIISOOCTYL ESTER (PHTHALATE UNKNOWN)	SEMI3	1145	480.	J

9 40.00

SPECTROSCOPIST MR

DATE 4/15/91

FORM1, PART B

SAMPLE NUMBER MW 55-1

COMPUCHEM FILE GR071922C15

ORGANICS ANALYSIS DATA SHEET (PAGE 4)

TENTATIVELY IDENTIFIED COMPOUNDS

CAS NUMBER	COMPOUND NAME	FRACTION	SCAN NUMBER	ESTIMATED CONC. (UG/L OR UG/KG)	
69350-61-4	CYCLOHEXANOL, 3-ETHENYL-3-METHYL-2-(1-METHYLETHENYL)	SEMI3	1167	440.	J
55282-68-3	1,1';3',1''-TERCYCLOPENTANE, 2'-DODECYL-	SEMI3	1192	280.	J
13151-77-4	UNDECANE 2-CYCLOHEXYL-, 2-CYCLOHEXYL-	SEMI3	1205	830.	J
74685-87-3	2,5,9-TETRADECATRIENE, 3,12-DIETHYL-	SEMI3	1212	830.	J
50803-80-0	SPIRO[5.6]DODECANE-1,7-DIONE	SEMI3	1250	380.	J
55401-65-5	PENTALENE, OCTAHYDRO-1-(2-OCTYLDECYL)-	SEMI3	1259	500.	J
36237-73-7	8,12-TETRADECADIENOIC ACID, 5-ETHENYL-3,5,9,13-TETRA	SEMI3	1271	458.	J
61142-37-8	CYCLOHEXANE, (1,2-DIMETHYLBUTYL)-	SEMI3	1292	530.	J
55401-65-5	PENTALENE, OCTAHYDRO-1-(2-OCTYLDECYL)-	SEMI3	1305	510.	J

43.700 40.00

SPECTROSCOPIST _____

DATE 1-15-86

FORM I, PART B

...ental Protection Agency, CLP Sample Management Office
...Box 818, Alexandria, VA 22313 703/557-2490

Sample Number
MWSS-2 RE

Organics Analysis Data Sheet
(Page 1)

...boratory Name: CompuChem
Lab Sample ID No: GR071923C03
...ple matrix: solid
...ta Release
Authorized By: _____

Case: C & S
QC Report No: _____
Contract No: PLATINUM
Date Sample
Received: 12-19-85

Volatile Compounds
Concentration: low
Date extracted/prepared: 12-30-85/12-27-85 orig
Date analyzed: 12-31-85
Conc/Dil Factor: 1.22 pH: 7.7
Percent moisture: 18%
Percent moisture (decanted):

CAS Number		ug/kg		CAS Number		ug/kg	
74-87-3	Chloromethane	12.	U	78-87-5	1,2-Dichloropropane	6.1	U
74-83-9	Bromomethane	12.	U	10061-02-6	trans-1,3-Dichloropropene	6.1	U
75-01-4	Vinyl Chloride	12.	U	79-01-6	Trichloroethene	6.1	U
75-00-3	Chloroethane	12.	U	124-48-1	Dibromochloromethane	6.1	U
75-09-2	Methylene Chloride	98.	B	79-00-5	1,1,2-Trichloroethane	6.1	U
67-64-1	Acetone	7.7	J B	71-43-2	Benzene	6.1	U
75-15-0	Carbon Disulfide	6.1	U	10061-01-5	cis-1,3-Dichloropropene	6.1	U
75-35-4	1,1-Dichloroethene	6.1	U	110-75-8	2-Chloroethyl Vinyl Ether	12.	U
75-35-3	1,1-Dichloroethane	6.1	U	75-25-2	Bromoform	6.1	U
156-60-5	trans-1,2-Dichloroethene	6.1	U	591-78-6	2-Hexanone	12.	U
67-66-3	Chloroform	6.1	U	108-10-1	4-Methyl-2-pentanone	12.	U
107-06-2	1,2-Dichloroethane	6.1	U	127-18-4	Tetrachloroethene	6.1	U
78-93-3	2-Butanone	12.	U	108-88-3	Toluene	6.1	U
71-55-6	1,1,1-Trichloroethane	6.1	U	108-90-7	Chlorobenzene	6.1	U
56-23-5	Carbon Tetrachloride	6.1	U	100-41-4	Ethyl Benzene	6.1	U
108-05-4	Vinyl Acetate	12.	U	100-42-5	Styrene	6.1	U
75-27-4	Bromodichloromethane	6.1	U		Total Xylenes	6.1	U
79-34-5	1,1,2,2-Tetrachloroethane	6.1	U				

DATA REPORTING QUALIFIERS

...r 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 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 >/= 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.

...mental Protection Agency, CLP Sample Management Office
...Box 818, Alexandria, VA 22313 703/557-2490

Sample Number
MWSS-2

...oratory Name: CompuChem

Organics Analysis Data Sheet
(Page 2)
Semivolatile Compounds

Concentration: Low
Date extracted/prepared: 01-14-86/12-27-85 orig
Date analyzed: 01-15-86
Conc/Dil Factor: 41.30

CAS Number		ug/kg		CAS Number		ug/kg	
62-75-9	N-Nitrosodimethylamine	410	U	99-09-2	3-Nitroaniline	2100	U
108-95-2	Phenol	410	U	83-32-9	Acenaphthene	410	U
62-53-3	Aniline	410	U	51-28-5	2,4-Dinitrophenol	2100	U
111-44-4	bis(2-Chloroethyl) ether	410	U	100-02-7	4-Nitrophenol	2100	U
95-57-8	2-Chlorophenol	410	U	132-64-9	Dibenzofuran	410	U
541-73-1	1,3-Dichlorobenzene	410	U	121-14-2	2,4-Dinitrotoluene	410	U
106-46-7	1,4-Dichlorobenzene	410	U	606-20-2	2,6-Dinitrotoluene	410	U
100-51-6	Benzyl Alcohol	410	U	84-66-2	Diethylphthalate	410	U
95-50-1	1,2-Dichlorobenzene	410	U	7005-72-3	4-Chlorophenyl Phenyl ether	410	U
95-48-7	2-Methylphenol	410	U	86-73-7	Fluorene	410	U
39638-32-9	bis(2-Chloroisopropyl) ether	410	U	100-01-6	4-Nitroaniline	2100	U
106-44-5	4-Methylphenol	410	U	534-52-1	4,6-Dinitro-2-methylphenol	2100	U
621-64-7	N-Nitroso-Dipropylamine	410	U	86-30-6	N-nitrosodiphenylamine (1)	410	U
67-72-1	Hexachloroethane	410	U	101-55-3	4-Bromophenyl Phenyl ether	410	U
98-95-3	Nitrobenzene	410	U	118-74-1	Hexachlorobenzene	410	U
78-59-1	Isophorone	410	U	87-86-5	Pentachlorophenol	2100	U
88-75-5	2-Nitrophenol	410	U	85-01-8	Phenanthrene	410	U
105-67-9	2,4-Dimethylphenol	410	U	120-12-7	Anthracene	410	U
65-85-0	Benzoic Acid	2100	U	84-74-2	Di-n-butylphthalate	410	U
111-91-1	bis(2-Chloroethoxy) methane	410	U	206-44-0	Fluoranthene	410	U
120-83-2	2,4-Dichlorophenol	410	U	92-87-5	Benzidine	2100	U
120-82-1	1,2,4-Trichlorobenzene	410	U	129-00-0	Pyrene	410	U
91-20-3	Naphthalene	410	U	85-68-7	Butyl Benzyl Phthalate	410	U
106-47-8	4-Chloroaniline	410	U	91-94-1	3,3'-Dichlorobenzidine	820	U
87-68-3	Hexachlorobutadiene	410	U	56-55-3	Benzo(a)anthracene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U	117-81-7	bis(2-ethylhexyl)phthalate	410	U
91-57-6	2-Methylnaphthalene	410	U	218-01-9	Chrysene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U	117-84-0	Di-n-octyl Phthalate	410	U
88-06-2	2,4,6-Trichlorophenol	410	U	205-99-2	Benzo(b)fluoranthene	410	U
95-95-4	2,4,5-Trichlorophenol	2100	U	207-08-9	Benzo(k)fluoranthene	410	U
91-58-7	2-Chloronaphthalene	410	U	50-32-8	Benzo(a)pyrene	410	U
88-74-4	2-Nitroaniline	2100	U	193-39-5	Indeno(1,2,3-cd)pyrene	410	U
131-11-3	Dimethyl Phthalate	410	U	53-70-3	Dibenz(a,h)anthracene	410	U
208-96-8	Acenaphthylene	410	U	191-24-2	Benzo(g,h,i)perylene	410	U

(1) Cannot be separated from diphenylamine

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: [Low] Medium (Circle One)
Date Extracted/Prepared: 12/27/85
Data Analyzed: 12/31/85
Conc/Dil Factor: 4.88

CAS Number		ug/l or [ug/Kg] (Circle One)	
319-84-6	Alpha - BHC	9.8	U
319-85-7	Beta - BHC	9.8	U
319-86-8	Delta - BHC	9.8	U
58-89-9	Gamma - BHC(Lindane)	9.8	U
76-44-8	Heptachlor	9.8	U
309-00-2	Aldrin	9.8	U
1024-57-3	Heptachlor Epoxide	9.8	U
959-98-8	Endosulfan I	9.8	U
60-57-1	Dieldrin	20.	U
72-55-9	4-4' - DDE	20.	U
72-20-8	Endrin	20.	U
33213-65-9	Endosulfan II	20.	U
72-54-8	4-4' - DDD	20.	U
7421-93-4	Endrin Aldehyde	20.	U
1031-07-8	Endosulfan Sulfate	20.	U
50-29-3	4-4' - DDT	20.	U
72-43-5	Methoxychlor	98.	U
53494-70-5	Endrin Ketone	20.	U
57-74-9	Chlordane	98.	U
8001-35-2	Toxaphene	200	U
12674-11-2	Aroclor - 1016	98.	U
11104-28-2	Aroclor - 1221	98.	U
11141-16-5	Aroclor - 1232	98.	U
53469-21-9	Aroclor - 1242	98.	U
12672-29-6	Aroclor - 1248	98.	U
11097-69-1	Aroclor - 1254	200	U
11096-82-5	Aroclor - 1260	200	U

V(i) = Volume of extract injected (ul)
V(s) = Volume of water extracted (ml)
W(s) = Weight of sample extracted (g)
V(t) = Volume of total extract (ul)

V(s) _____ or W(s) 30.01 V(t) 2000.00 V(i) 1.0

Environmental Protection Agency · CLP Sample Management Office
P.O. Box 818 Alexandria, Virginia 22313 703/557-2490

MWSS-C

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.		NO VOA COMPOUNDS FOUND			
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.					
27.					
28.					
29.					
30.					

SAMPLE NUMBER MWSS-2

ORGANICS ANALYSIS DATA SHEET (PAGE 4)

COMPUCHEM FILE GR071923C15

TENTATIVELY IDENTIFIED COMPOUNDS

S NUMBER	COMPOUND NAME	FRACTION	SCAN NUMBER	ESTIMATED CONC. (UG/L OR UG/KG)	
108-21-4	ACETIC ACID, 1-METHYLETHYL ESTER	SEMI3	298	390.	JB
625-06-9	2-PENTANOL, 2,4-DIMETHYL-	SEMI3	321	14000.	JB
~~771-58-4~~	~~BICYCLO[4.1.0]HEPTAN-2-ONE~~	~~SEMI3~~	~~745~~	~~410.~~	~~J~~

.300 40.00

SPECTROSCOPIST JR

DATE 1-15-81

FORM1 PART B

...tal Protection Agency, CLP Sample Management Office
...x 818, Alexandria, VA 22313 703/557-2490

Sample Number
MMSS-3

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: CompuChem
Lab Sample ID No: GH071933918
Sample matrix: solid
...ta Release
...uthorized By: _____

Case: C & S
GC Report No: _____
Contract No: PLATINUM
Date Sample
Received: 12-19-85

Volatile Compounds
Concentration: low
Date extracted/prepared: 12-19-85
Date analyzed: 12-28-85
Conc/Dil Factor: 1.20
Percent moisture: 20%
Percent moisture (decanted):
pH: 7.9

CAS Number		ug/kg		CAS Number		ug/kg	
74-87-3	Chloromethane	12.	U	78-87-5	1,2-Dichloropropane	6.0	U
74-83-9	Bromomethane	12.	U	10061-02-6	trans-1,3-Dichloropropene	6.0	U
75-01-4	Vinyl Chloride	12.	U	79-01-6	Trichloroethene	6.0	U
75-00-3	Chloroethane	12.	U	124-48-1	Dibromochloromethane	6.0	U
75-09-2	Methylene Chloride	700	B	79-00-5	1,1,2-Trichloroethane	6.0	U
67-64-1	Acetone	12.	U	71-43-2	Benzene	6.0	U
75-15-0	Carbon Disulfide	6.0	U	10061-01-5	cis-1,3-Dichloropropene	6.0	U
75-35-4	1,1-Dichloroethene	6.0	U	110-75-8	2-Chloroethyl Vinyl Ether	12.	U
75-35-3	1,1-Dichloroethane	6.0	U	75-25-2	Bromoform	6.0	U
156-60-5	trans-1,2-Dichloroethene	6.0	U	591-78-6	2-Hexanone	12.	U
67-66-3	Chloroform	6.0	U	108-10-1	4-Methyl-2-pentanone	12.	U
107-06-2	1,2-Dichloroethane	6.0	U	127-18-4	Tetrachloroethene	6.0	U
78-93-3	2-Butanone	12.	U	108-88-3	Toluene	6.0	U
71-55-6	1,1,1-Trichloroethane	6.0	U	108-90-7	Chlorobenzene	6.0	U
56-23-5	Carbon Tetrachloride	6.0	U	100-41-4	Ethyl Benzene	2.0	J
108-05-4	Vinyl Acetate	12.	U	100-42-5	Styrene	6.0	U
75-27-4	Bromodichloromethane	6.0	U		Total Xylenes	12.	
79-34-5	1,1,2,2-Tetrachloroethane	6.0	U				

DATA REPORTING QUALIFIERS

...or 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 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 >/= 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.

Protection Agency, EMSL Sample Management
Box 818, Alexandria, VA 22313 703/557-2490

Organics Analysis Data Sheet
(Page 2)
Semivolatile Compounds

Laboratory Name: CompuChem
Concentration: low
Date extracted/prepared: 01-14-86/12-27-85 orig
Date analyzed: 01-15-86
Conc/Dil Factor: 42.30

CAS Number		ug/kg		CAS Number		ug/kg	
62-75-9	N-Nitrosodimethylamine	420	U	99-09-2	3-Nitroaniline	2100	U
108-95-2	Phenol	420	U	83-32-9	Acenaphthene	420	U
62-53-3	Aniline	420	U	51-28-5	2,4-Dinitrophenol	2100	U
111-44-4	bis(2-Chloroethyl) ether	420	U	100-02-7	4-Nitrophenol	2100	U
95-57-8	2-Chlorophenol	420	U	132-64-9	Dibenzofuran	420	U
541-73-1	1,3-Dichlorobenzene	420	U	121-14-2	2,4-Dinitrotoluene	420	U
106-46-7	1,4-Dichlorobenzene	420	U	606-20-2	2,6-Dinitrotoluene	420	U
100-51-6	Benzyl Alcohol	420	U	84-66-2	Diethylphthalate	420	U
95-50-1	1,2-Dichlorobenzene	420	U	7005-72-3	4-Chlorophenyl Phenyl ether	420	U
95-48-7	2-Methylphenol	420	U	86-73-7	Fluorene	420	U
39638-32-9	bis(2-Chloroisopropyl) ether	420	U	100-01-6	4-Nitroaniline	2100	U
106-44-5	4-Methylphenol	420	U	534-52-1	4,6-Dinitro-2-methylphenol	2100	U
621-64-7	N-Nitroso-Dipropylamine	420	U	86-30-6	N-nitrosodiphenylamine (1)	420	U
67-72-1	Hexachloroethane	420	U	101-55-3	4-Bromophenyl Phenyl ether	420	U
98-95-3	Nitrobenzene	420	U	118-74-1	Hexachlorobenzene	420	U
78-59-1	Isophorone	420	U	87-86-5	Pentachlorophenol	2100	U
88-75-5	2-Nitrophenol	420	U	85-01-8	Phenanthrene	420	U
105-67-9	2,4-Dimethylphenol	420	U	120-12-7	Anthracene	420	U
65-85-0	Benzoic Acid	2100	U	84-74-2	Di-n-butylphthalate	420	U
111-91-1	bis(2-Chloroethoxy) methane	420	U	206-44-0	Fluoranthene	420	U
120-83-2	2,4-Dichlorophenol	420	U	92-87-5	Benzidine	2100	U
120-82-1	1,2,4-Trichlorobenzene	420	U	129-00-0	Pyrene	420	U
91-20-3	Naphthalene	420	U	85-68-7	Butyl Benzyl Phthalate	420	U
106-47-8	4-Chloroaniline	420	U	91-94-1	3,3'-Dichlorobenzidine	840	U
87-68-3	Hexachlorobutadiene	420	U	56-55-3	Benzo(a)anthracene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U	117-81-7	bis(2-ethylhexyl)phthalate	240	J
91-57-6	2-Methylnaphthalene	420	U	218-01-9	Chrysene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U	117-84-0	Di-n-octyl Phthalate	420	U
88-06-2	2,4,6-Trichlorophenol	420	U	205-99-2	Benzo(b)fluoranthene	420	U
95-95-4	2,4,5-Trichlorophenol	2100	U	207-08-9	Benzo(k)fluoranthene	420	U
91-58-7	2-Chloronaphthalene	420	U	50-32-8	Benzo(a)pyrene	420	U
88-74-4	2-Nitroaniline	2100	U	193-39-5	Indeno(1,2,3-cd)pyrene	420	U
131-11-3	Dimethyl Phthalate	420	U	53-70-3	Dibenz(a,h)anthracene	420	U
208-96-8	Acenaphthylene	420	U	191-24-2	Benzo(g,h,i)perylene	420	U

(1) Cannot be separated from diphenylamine

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: [Low] Medium (Circle One)
Date Extracted/Prepared: 12/27/85
Data Analyzed: 12/31/85
Conc/Dil Factor: 9.99

CAS Number		ug/l or [ug/Kg] (Circle One)	
319-84-6	Alpha - BHC	20.	U
319-85-7	Beta - BHC	20.	U
319-86-8	Delta - BHC	20.	U
58-89-9	Gamma - BHC(Lindane)	20.	U
76-44-8	Heptachlor	20.	U
309-00-2	Aldrin	20.	U
1024-57-3	Heptachlor Epoxide	20.	U
959-98-8	Endosulfan I	20.	U
60-57-1	Dieldrin	40.	U
72-55-9	4-4' - DDE	40.	U
72-20-8	Endrin	40.	U
33213-65-9	Endosulfan II	40.	U
72-54-8	4-4' - DDD	40.	U
7421-93-4	Endrin Aldehyde	40.	U
1031-07-8	Endosulfan Sulfate	40.	U
50-29-3	4-4' - DDT	40.	U
72-43-5	Methoxychlor	200	U
53494-70-5	Endrin Ketone	40.	U
57-74-9	Chlordane	200	U
8001-35-2	Toxaphene	400	U
12674-11-2	Aroclor - 1016	200	U
11104-28-2	Aroclor - 1221	200	U
11141-16-5	Aroclor - 1232	200	U
53469-21-9	Aroclor - 1242	200	U
12672-29-6	Aroclor - 1248	200	U
11097-69-1	Aroclor - 1254	400	U
11096-82-5	Aroclor - 1260	400	U

V(i) = Volume of extract injected (ul)
V(s) = Volume of water extracted (ml)
W(s) = Weight of sample extracted (g)
V(t) = Volume of total extract (ul)

V(s) _____ or W(s) 30.00 V(t) 2000.00 V(i) 10

MW55-3

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.		NO VOA COMPOUNDS FOUND			
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
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15.					
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26.					
27.					
28.					
29.					
30.					

SAMPLE NUMBER MWSS-3

ORGANICS ANALYSIS DATA SHEET (PAGE 4)

COMPUCHEM FILE GR071933C15

TENTATIVELY IDENTIFIED COMPOUNDS

CAS NUMBER	COMPOUND NAME	FRACTION	SCAN NUMBER	ESTIMATED CONC. (UG/L OR UG/KG)	
108-21-4	ACETONE CONTAMINANT ACETIC ACID, 1-METHYLETHYL ESTER	SEMI3	300	640.	JB
625-06-9	ACETONE CONTAMINANT 2-PENTANOL, 2,4-DIMETHYL-	SEMI3	323	20000.	JB
25144-04-1	CYCLOPENTANOL, 2-METHYL-, TRANS-	SEMI3	358	220.	JB
1120-72-5	ISOMER CYCLOPENTANONE, 2-METHYL-	SEMI3	365	270.	J
5771-58-4	BICYCLO[4.1.0]HEPTAN-2-ONE	SEMI3	746	160.	J

2.300 40.00

SPECTROSCOPIST MR

DATE 4-15-86

FORM I

U.S. EPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 - ALEXANDRIA, VA 22313
703/557-2490 FTS: 8-557-2490

EPA SAMPLE NO: MW88-1

DUE DATE: 1/16/86

INORGANIC ANALYSIS DATA SHEET

LAB NAME: COMPUCHEM LABORATORIES

CASE NO: CALSEP-1

SOW NO: 784

LAB SAMPLE ID NO: 71936

QC REPORT NO: A

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW: XXX MEDIUM: _____ PH-NOT REQUIRED-UNITS DATE _____

MATRIX: WATER _____ SOIL: XXX SLUDGE: _____ OTHER _____

ug/l or (mg/kg) DRY WEIGHT (circle one) DRY WEIGHT FACTOR: 1.15

1	Aluminum	11700	E P*	20U	13	Magnesium	3870 E P* 500U
2	Antimony		F	(6U)	14	Manganese	489 E P 1.5U
3	Arsenic	13	F	1U	15	Mercury	0.11 * CV 0.1U
4	Barium	62	P	20U	16	Nickel	18 P 4U
5	Beryllium		P	(.5U)	17	Potassium	820 * P 500U
6	Cadmium	[0.16] R	F	0.5U	18	Selenium	R F (0.5U)
7	Calcium	1670 *	P	500U	19	Silver	2.1 R P 1U
8	Chromium	13	P	1U	20	Sodium	[298] P 500U
9	Cobalt	9.6	P	5U	21	Thallium	R F (1U)
10	Copper	20 *	RP	2.5U	22	Tin	18 * F 40U
11	Iron	28500 * E	P*	10U	23	Vanadium	22 P 5U
12	Lead	4.3 *	P	0.5U	24	Zinc	55 * E RP 2U

Cyanide _____ (1U) Percent solids (%) 87.3 DATE: 12-27-85

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definitions of such flags must be explicit and contained on Cover Page, however.

COMMENTS: This sample was used for serial dilution. See ICP raw data Page 34.

LAB MANAGER: [signature]

FORM I

U S EPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P. O. BOX 818 - ALEXANDRIA, VA 22313
703/557-2490 FTS: 8-557-2490

EPA SAMPLE NO: MW89-2
DUE DATE:

INORGANIC ANALYSIS DATA SHEET

LAB NAME COMPUCHEM LABORATORIES

CASE NO: CAL&SF-1

SOW NO. 784

LAB SAMPLE ID NO: 71937

QC REPORT NO: A

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW: XXX MEDIUM: _____ PH-NOT REQUIRED-UNITS DATE: _____

MATRIX: WATER: _____ SOIL: XXX SLUDGE: _____ OTHER: _____

ug/l or (mg/kg) DRY WEIGHT (circle one) DRY WEIGHT FACTOR 1.22

1	Aluminum	13100	P*	20U	13.	Magnesium	18600 P* 500U
2.	Antimony	[1.7]	F	(5) ABS 64	14.	Manganese	681 P 1 5U
3.	Arsenic	16.5	F	1U	15.	Mercury	0.18 * CV 0 1U
4.	Barium	41	P	20U	16.	Nickel	~~68~~ 23 P 4U
5.	Beryllium		P	(5U)	17.	Potassium	2080* P 500U
6.	Cadmium	[0.12] R	F	0.5U	18.	Selenium	R F (0.5U)
7.	Calcium	47000*	P	500U	19.	Silver	1.2 R P 1U
8.	Chromium	16	P	1U	20.	Sodium	651 P 500U
9.	Cobalt	9.3	P	5U	21	Thallium	R F (1.)
10.	Copper	30* R	~~RP~~ P	2 5U	22.	Tin	5.2* F 40
11.	Iron	27300*	P *	10U	23.	Vanadium	26 P 5U
12.	Lead	5.8*	P	0.5U	24.	Zinc	67* RP 2U

Cyanide (10) Percent solids (%) 81.9 DATE: 12-27-85

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes expleining results are encouraged. Definitions of such flags must be explicit and contained on Cover Page, however.

COMMENTS: As result is due to MSA. See Pages 9210 of As raw data

LAB MANAGER: [signature]

FORM I

U.S. EPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 - ALEXANDRIA, VA 22313
703/557-2490 FTS: 8-557-2490

EPA SAMPLE NO: MW55-3

EVE DATE 12/16/85

INORGANIC ANALYSIS DATA SHEET

LAB NAME: COMPUCHEM LABORATORIES

CASE NO: CAL&SP-1

SOW NO: 784

LAB SAMPLE ID NO: 71938

QC REPORT NO: A

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW: XXX MEDIUM: _____ PH-NOT REQUIRED-UNITS DATE: _____

MATRIX: WATER: _____ SOIL XXX SLUDGE: _____ OTHER: _____

ug/l or (mg/kg) DRY WEIGHT (circle one) DRY WEIGHT FACTOR: 1.23

1.	Aluminum	9340	P* 20U	13.	Magnesium	7220	P* 500U
2.	Antimony	[8.8]	[1.8] F 6U	14.	Manganese	512	P 1.5U
3.	Arsenic	16	F 1U	15.	Mercury	0.22*	CV 0.1U
4.	Barium	55	P 20U	16.	Nickel	20	P 4U
5.	Beryllium		P (5)	17.	Potassium	1100*	P 500U
6.	Cadmium	[0.18]	R F 0.5U	18.	Selenium		R F (0.5U)
7.	Calcium	24400*	P 500U	19.	Silver		R P (1U)
8.	Chromium	13	P 1U	20.	Sodium	527	P (500) 500
9.	Cobalt	[3.5]	P 5U	21.	Thallium		R F (1U)
10.	Copper	28*	RP 2.5U	22.	Tin	14*	F 4U
11.	Iron	23300*	P* 10U	23.	Vanadium	22	P 5U
12.	Lead	5.9*	P 0.5U	24.	Zinc	98*	RP 2U

Cyanide (1U) Percent solids (%) 81.2 DATE: 12-27-85

Footnotes For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definitions of such flags must be explicit and contained on Cover Page, however.

COMMENTS: _____

LAB MANAGER: John Shindle

APPENDIX F

GROUND-WATER ANALYTICAL DATA SHEETS

Environmental
CS LABORATORY
(315) 457-6711
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088

To: NIAGARA MOHAWK - EAST UTICA
CALOCERINOS & SPINA
LIVERPOOL, NY 13088

Date: Jan 14 1986

Attention: THOMAS BARBA

SAMPLE #7616

LABORATORY ANALYSIS REPORT

SAMPLE SUMMARY

CLIENT : NIAGARA MOHAWK - EAST UTICA
JOB # : 465.007.00
LOCATION : MW1
PRICE CODE : STANDARD

DATE RECEIVED : 11/14/85
DATE COLLECTED : 11/13/85
TIME COLLECTED : 1400
METHOD : GRAB

PARAMETER	RESULTS	UNITS
CYANIDE-T-SOL	<0.004	mg/l
ALUMINUM-SOL	<0.2	mg/l
ANTIMONY-SOL	<0.060	mg/l
ARSENIC-SOL	<0.010	mg/l
BARIUM-SOL	0.4	mg/l
BERYLLIUM-SOL	<0.005	mg/l
CADMIUM-SOL	<0.005	mg/l
CALCIUM-SOL	70.	mg/l
CHROMIUM-T-SOL	<0.010	mg/l
COBALT-SOL	<0.050	mg/l
COPPER-SOL	<0.02	mg/l
IRON-SOL	0.06	mg/l
LEAD-SOL	<0.005	mg/l
MAGNESIUM-SOL	14.	mg/l
MANGANESE-SOL	1.1	mg/l

Environmental
LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

SAMPLE #7616

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
MERCURY-SOL	<0.0005	mg/l
NICKEL-SOL	<0.02	mg/l
POTASSIUM-SOL	1.8	mg/l
SELENIUM-SOL	<0.005	mg/l
SILVER-SOL	<0.010	mg/l
SODIUM-SOL	15.	mg/l
THALLIUM-SOL	<0.010	mg/l
TIN-SOL	<0.040	mg/l
VANADIUM-SOL	<0.050	mg/l
ZINC-SOL	0.04	mg/l

All analyses were conducted in accordance with operating conditions as set forth in current EPA, ASTM and/or Standard Methods unless otherwise specified.

APPROVED BY: _____ DATE: JAN 14 1986

Environmental
LABORATORY
(315) 457-6711
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088

To: NIAGARA MOHAWK - EAST UTICA
CALOCERINOS & SPINA
LIVERPOOL, NY 13088

Date: Jan 14 1986

Attention: THOMAS BARBA

SAMPLE #7617

LABORATORY ANALYSIS REPORT

SAMPLE SUMMARY

CLIENT	: NIAGARA MOHAWK - EAST UTICA	DATE RECEIVED	: 11/14/85
JOB #	: 465.007.00	DATE COLLECTED	: 11/13/85
LOCATION	: MW2	TIME COLLECTED	: 1030
PRICE CODE	: STANDARD	METHOD	: GRAB

PARAMETER	RESULTS	UNITS
CYANIDE-T-SOL	<0.004	mg/l
ALUMINUM-SOL	<0.2	mg/l
ANTIMONY-SOL	<0.060	mg/l
ARSENIC-SOL	<0.010	mg/l
BARIUM-SOL	0.5	mg/l
BERYLLIUM-SOL	<0.005	mg/l
CADMIUM-SOL	<0.005	mg/l
CALCIUM-SOL	120.	mg/l
CHROMIUM-T-SOL	<0.010	mg/l
COBALT-SOL	<0.050	mg/l
COPPER-SOL	<0.02	mg/l
IRON-SOL	0.07	mg/l
LEAD-SOL	<0.005	mg/l
MAGNESIUM-SOL	29.	mg/l
MANGANESE-SOL	0.4	mg/l

Environmental
CS LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

SAMPLE #7617

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
MERCURY-SOL	<0.0005	mg/l
NICKEL-SOL	<0.02	mg/l
POTASSIUM-SOL	1.8	mg/l
SELENIUM-SOL	<0.005	mg/l
SILVER-SOL	<0.010	mg/l
SODIUM-SOL	20.	mg/l
THALLIUM-SOL	<0.010	mg/l
TIN-SOL	<0.040	mg/l
VANADIUM-SOL	<0.050	mg/l
ZINC-SOL	0.06	mg/l

All analyses were conducted in accordance with operating conditions as set forth in current EPA, ASTM and/or Standard Methods unless otherwise specified.

APPROVED BY: _____ DATE: JAN 14 1988

Environmental
LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

To: NIAGARA MOHAWK - EAST UTICA
CALOCERINOS & SPINA
LIVERPOOL, NY 13088

Date: Jan 14 1986

Attention: THOMAS BARBA

SAMPLE #7618

LABORATORY ANALYSIS REPORT

SAMPLE SUMMARY

CLIENT : NIAGARA MOHAWK - EAST UTICA
JOB # : 465.007.00
LOCATION : MW3
PRICE CODE : STANDARD

DATE RECEIVED : 11/14/85
DATE COLLECTED : 11/13/85
TIME COLLECTED : 1730
METHOD : GRAB

PARAMETER	RESULTS	UNITS
CYANIDE-T-SOL	<0.004	mg/l
ALUMINUM-SOL	<0.2	mg/l
ANTIMONY-SOL	<0.060	mg/l
ARSENIC-SOL	<0.010	mg/l
BARIUM-SOL	0.5	mg/l
BERYLLIUM-SOL	<0.005	mg/l
CADMIUM-SOL	<0.005	mg/l
CALCIUM-SOL	70.	mg/l
CHROMIUM-T-SOL	0.010	mg/l
COBALT-SOL	<0.050	mg/l
COPPER-SOL	<0.02	mg/l
IRON-SOL	0.07	mg/l
LEAD-SOL	<0.005	mg/l
MAGNESIUM-SOL	16.	mg/l
MANGANESE-SOL	2.0	mg/l

Environmental
CS LABORATORY
Division of Caloceninos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

SAMPLE #7618

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
MERCURY-SOL	<0.0005	mg/l
NICKEL-SOL	0.05	mg/l
POTASSIUM-SOL	3.2	mg/l
SELENIUM-SOL	<0.005	mg/l
SILVER-SOL	<0.010	mg/l
SODIUM-SOL	17.	mg/l
THALLIUM-SOL	<0.010	mg/l
TIN-SOL	<0.040	mg/l
VANADIUM-SOL	<0.050	mg/l
ZINC-SOL	0.04	mg/l

All analyses were conducted in accordance with operating conditions as set forth in current EPA, ASTM and/or Standard Methods unless otherwise specified.

APPROVED BY: _____ DATE: JAN 14 1988

Environmental
LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

To: NIAGARA MOHAWK - EAST UTICA
CALOCERINOS & SPINA
LIVERPOOL, NY 13088

Date: Jan 14 1986

Attention: THOMAS BARBA

SAMPLE #7619

LABORATORY ANALYSIS REPORT

SAMPLE SUMMARY

CLIENT	: NIAGARA MOHAWK - EAST UTICA	DATE RECEIVED	: 11/14/85
JOB #	: 465.007.00	DATE COLLECTED	: 11/13/85
LOCATION	: MW4	TIME COLLECTED	: 1350
PRICE CODE	: STANDARD	METHOD	: GRAB

PARAMETER	RESULTS	UNITS
CYANIDE-T-SOL	<0.004	mg/l
ALUMINUM-SOL	<0.2	mg/l
ANTIMONY-SOL	<0.060	mg/l
ARSENIC-SOL	<0.010	mg/l
BARIUM-SOL	0.5	mg/l
BERYLLIUM-SOL	<0.005	mg/l
CADMIUM-SOL	<0.005	mg/l
CALCIUM-SOL	80.	mg/l
CHROMIUM-T-SOL	<0.010	mg/l
COBALT-SOL	<0.050	mg/l
COPPER-SOL	<0.02	mg/l
IRON-SOL	0.10	mg/l
LEAD-SOL	<0.005	mg/l
MAGNESIUM-SOL	16.	mg/l
MANGANESE-SOL	6.4	mg/l

Environmental
CS LABORATORY
Division of Caloceirinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

SAMPLE #7619

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
MERCURY-SOL	<0.0005	mg/l
NICKEL-SOL	0.02	mg/l
POTASSIUM-SOL	7.1	mg/l
SELENIUM-SOL	<0.005	mg/l
SILVER-SOL	<0.010	mg/l
SODIUM-SOL	38.	mg/l
THALLIUM-SOL	<0.010	mg/l
TIN-SOL	<0.040	mg/l
VANADIUM-SOL	<0.050	mg/l
ZINC-SOL	0.07	mg/l

All analyses were conducted in accordance with operating conditions as set forth in current EPA, ASTM and/or Standard Methods unless otherwise specified.

APPROVED BY: _____ DATE: JAN 14 19[illegible]

Environmental Protection Agency, CLP Sample Management Office
P.O. Box 818, Alexandria, VA 22313 703/557-2490

Sample Number
7616-MW1

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: ConcuChem
Lab Sample ID No: CN067971A11
Sample matrix: liquid
Data Release Authorized By: MRK

Case: C & S
QC Report No: _____
Contract No: PLATINUM
Date Sample Received: 11-15-85

Volatile Compounds
Concentration: low
Date extracted/prepared: 11-21-85
Date analyzed: 11-21-85
Conc/Dil Factor: 1.00
Percent moisture: N/A
Percent moisture (decanted):
pH: N/A

CAS Number		ug/l		CAS Number		ug/l	
74-87-3	Chloromethane	10.	U	76-87-5	1,2-Dichloropropane	5.0	U
74-83-9	Bromomethane	10.	U	10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-01-4	Vinyl Chloride	10.	U	79-01-6	Trichloroethene	5.0	U
75-00-3	Chloroethane	10.	U	124-48-1	Dibromochloromethane	5.0	U
75-09-2	Methylene Chloride	1.0	J	79-00-5	1,1,2-Trichloroethane	5.0	U
67-64-1	Acetone	11.		71-43-2	Benzene	5.0	U
75-15-0	Carbon Disulfide	5.0	U	10061-01-5	cis-1,3-Dichloropropene	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U	110-75-8	2-Chloroethyl Vinyl Ether	10.	U
75-34-3	1,1-Dichloroethane	5.0	U	75-25-2	Bromoform	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U	591-78-6	2-Hexanone	10.	U
67-66-3	Chloroform	1.2	J	108-10-1	4-Methyl-2-pentanone	10.	U
107-06-2	1,2-Dichloroethane	5.0	U	127-18-4	Tetrachloroethene	5.0	U
78-93-3	2-Butanone	10.	U	108-88-3	Toluene	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U	108-90-7	Chlorobenzene	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U	100-41-4	Ethyl Benzene	5.0	U
108-05-4	Vinyl Acetate	10.	U	100-42-5	Styrene	5.0	U
75-27-4	Bromodichloromethane	5.0	U		Total Xylenes	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	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 >/= 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 2)

Laboratory Name: ComputChem

Semivolatile Compounds

Concentration: low
Date extracted/prepared: 11-18-85
Date analyzed: 11-21-85
Conc/Dil Factor: 2.00

CAS Number		ug/l		CAS Number		ug/l	
62-75-9	N-Nitrosodimethylamine	20.	U	99-09-2	3-Nitroaniline	100	U
108-95-2	Phenol	20.	U	83-32-9	Acenaphthene	20.	U
62-53-3	Aniline	20.	U	51-28-5	2,4-Dinitrophenol	100	U
111-44-4	bis(2-Chloroethyl) ether	20.	U	100-02-7	4-Nitrophenol	100	U
95-57-8	2-Chlorophenol	20.	U	132-64-9	Dibenzofuran	20.	U
541-73-1	1,3-Dichlorobenzene	20.	U	121-14-2	2,4-Dinitrotoluene	20.	U
106-46-7	1,4-Dichlorobenzene	20.	U	606-20-2	2,6-Dinitrotoluene	20.	U
100-51-6	Benzyl Alcohol	20.	U	84-66-2	Diethylphthalate	20.	U
95-50-1	1,2-Dichlorobenzene	20.	U	7005-72-3	4-Chlorophenyl Phenyl ether	20.	U
95-48-7	2-Methylphenol	20.	U	86-73-7	Fluorene	20.	U
39638-32-9	bis(2-Chloroisopropyl) ether	20.	U	100-01-6	4-Nitroaniline	100	U
106-44-5	4-Methylphenol	20.	U	534-52-1	4,6-Dinitro-2-methylphenol	100	U
621-64-7	N-Nitroso-Dipropylamine	20.	U	86-30-6	N-nitrosodiphenylamine (1)	20.	U
67-72-1	Hexachloroethane	20.	U	101-55-3	4-Bromophenyl Phenyl ether	20.	U
98-95-3	Nitrobenzene	20.	U	118-74-1	Hexachlorobenzene	20.	U
78-59-1	Isophorone	20.	U	87-86-5	Pentachlorophenol	4.2	J
88-75-5	2-Nitrophenol	20.	U	85-01-8	Phenanthrene	20.	U
105-67-9	2,4-Dimethylphenol	20.	U	120-12-7	Anthracene	20.	U
65-85-0	Benzoic Acid	100	U	84-74-2	Di-n-butylphthalate	20.	U
111-91-1	bis(2-Chloroethoxy) methane	20.	U	206-44-0	Fluoranthene	20.	U
120-83-2	2,4-Dichlorophenol	20.	U	92-87-5	Benzidine	100	U
120-82-1	1,2,4-Trichlorobenzene	20.	U	129-00-0	Pyrene	20.	U
91-20-3	Naphthalene	20.	U	85-68-7	Butyl Benzyl Phthalate	20.	U
106-47-8	4-Chloroaniline	20.	U	91-94-1	3,3'-Dichlorobenzidine	40.	U
87-68-3	Hexachlorobutadiene	20.	U	56-55-3	Benzo(a)anthracene	20.	U
59-50-7	4-Chloro-3-methylphenol	20.	U	117-81-7	bis(2-ethylhexyl)phthalate	6.8	J
91-57-6	2-Methylnaphthalene	20.	U	218-01-9	Chrysene	20.	U
77-47-4	Hexachlorocyclopentadiene	20.	U	117-84-0	Di-n-octyl Phthalate	20.	U
88-06-2	2,4,6-Trichlorophenol	20.	U	205-99-2	Benzo(b)fluoranthene	20.	U
95-95-4	2,4,5-Trichlorophenol	100	U	207-08-9	Benzo(k)fluoranthene	20.	U
91-58-7	2-Chloronaphthalene	20.	U	50-32-8	Benzo(a)pyrene	20.	U
88-74-4	2-Nitroaniline	100	U	193-39-5	Indeno(1,2,3-cd)pyrene	20.	U
131-11-3	Dimethyl Phthalate	20.	U	53-70-3	Dibenz(a,h)anthracene	20.	U
208-96-8	Acenaphthylene	20.	U	191-24-2	Benzo(g,h,i)perylene	20.	U

(1) Cannot be separated from diphenylamine

Sample Number
7616-MW1

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: [Low] Medium (Circle One)
Date Extracted/Prepared: 11-20-85
Data Analyzed: 11/21/85
Conc/Dil Factor: 1.00

CAS Number		[ug/l] or ug/Kg (Circle One)	
319-84-6	Alpha - BHC	.05	U
319-85-7	Beta - BHC	.05	U
319-86-8	Delta - BHC	.05	U
58-89-9	Gamma - BHC(Lindane)	.05	U
76-44-8	Heptachlor	.05	U
309-00-2	Aldrin	.05	U
1024-57-3	Heptachlor Epoxide	.05	U
959-98-8	Endosulfan I	.05	U
60-57-1	Dieldrin	.10	U
72-55-9	4-4' - DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4-4' - DDD	.10	U
7421-93-4	Endrin Aldehyde	.10	U
1031-07-8	Endosulfan Sulfate	.10	U
50-29-3	4-4' - DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin Ketone	.10	U
57-74-9	Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor - 1016	.50	U
11104-28-2	Aroclor - 1221	.50	U
11141-16-5	Aroclor - 1232	.50	U
53469-21-9	Aroclor - 1242	.50	U
12672-29-6	Aroclor - 1248	.50	U
11097-69-1	Aroclor - 1254	1.0	U
11096-82-5	Aroclor - 1260	1.0	U

V(i) = Volume of extract injected (ul)
V(s) = Volume of water extracted (ml)
W(s) = Weight of sample extracted (g)
V(t) = Volume of total extract (ul)

V(s) 1000.00 or W(s) _____ V(t) 10000.00 V(i) 1.0

Environmental Protection Agency, CLP Sample Management Office,
P. O. Box 818 Alexandria, Virginia 22313 703/557-2490

Sample Number
7616-mw1

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.		NO VOA COMPOUNDS FOUND			
2.					
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Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818. Alexandria Virginia 22313 703/557-2490

Sample Number
7616-mw1

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.		NO SV COMPOUNDS FOUND			
2.					
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Environmental Protection Agency, CLP Sample Management Office
P.O. Box 818, Alexandria, VA 22313 703/557-2490

Sample Number
7617-MWC

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: ComouChem
Lab Sample ID No: CN067959C11
Sample matrix: liquid
Data Release
Authorized By: NRF

Case: C & S
QC Report No: _____
Contract No:
Date Sample
Received: 11-15-85

Volatile Compounds
Concentration: low
Date extracted/prepared: 11-21-85
Date analyzed: 11-21-85
Conc/Dil Factor: 1.00 pH: N/A
Percent moisture: N/A
Percent moisture (decanted):

CAS Number		ug/l		CAS Number		ug/l	
74-87-3	Chloromethane	10.	U	78-87-5	1,2-Dichloropropane	5.0	U
74-83-9	Bromomethane	10.	U	10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-01-4	Vinyl Chloride	10.	U	79-01-6	Trichloroethene	5.0	U
75-00-3	Chloroethane	10.	U	124-48-1	Dibromochloromethane	5.0	U
75-09-2	Methylene Chloride	5.0	U	79-00-5	1,1,2-Trichloroethane	5.0	U
67-64-1	Acetone	10.	U	71-43-2	Benzene	5.0	U
75-15-0	Carbon Disulfide	5.0	U	10061-01-5	cis-1,3-Dichloropropene	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U	110-75-8	2-Chloroethyl Vinyl Ether	10.	U
75-34-3	1,1-Dichloroethane	5.0	U	75-25-2	Bromoform	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U	591-78-6	2-Hexanone	10.	U
67-66-3	Chloroform	5.0	U	108-10-1	4-Methyl-2-pentanone	10.	U
107-06-2	1,2-Dichloroethane	5.0	U	127-18-4	Tetrachloroethene	5.0	U
78-93-3	2-Butanone	10.	U	108-88-3	Toluene	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U	108-90-7	Chlorobenzene	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U	100-41-4	Ethyl Benzene	5.0	U
108-05-4	Vinyl Acetate	10.	U	100-42-5	Styrene	5.0	U
75-27-4	Bromodichloromethane	5.0	U		Total Xylenes	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	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 >/= 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 2)
Semivolatile Compounds

Laboratory Name: CompuChem

Concentration: low
Date extracted/prepared: 11-18-85
Date analyzed: 11-21-85
Conc/Dil Factor: 2.00

CAS Number		ug/l		CAS Number		ug/l	
62-75-9	N-Nitrosodimethylamine	20.	U	99-09-2	3-Nitroaniline	100	U
108-95-2	Phenol	20.	U	83-32-9	Acenaphthene	20.	U
62-53-3	Aniline	20.	U	51-28-5	2,4-Dinitrophenol	100	U
111-44-4	bis(2-Chloroethyl) ether	20.	U	100-02-7	4-Nitrophenol	100	U
95-57-8	2-Chlorophenol	20.	U	132-64-9	Dibenzofuran	20.	U
541-73-1	1,3-Dichlorobenzene	20.	U	121-14-2	2,4-Dinitrotoluene	20.	U
106-46-7	1,4-Dichlorobenzene	20.	U	606-20-2	2,6-Dinitrotoluene	20.	U
100-51-6	Benzyl Alcohol	20.	U	84-66-2	Diethylphthalate	20.	U
95-50-1	1,2-Dichlorobenzene	20.	U	7005-72-3	4-Chlorophenyl Phenyl ether	20.	U
95-48-7	2-Methylphenol	20.	U	86-73-7	Fluorene	20.	U
39638-32-9	bis(2-Chloroisopropyl) ether	20.	U	100-01-6	4-Nitroaniline	100	U
106-44-5	4-Methylphenol	20.	U	534-52-1	4,6-Dinitro-2-methylphenol	100	U
621-64-7	N-Nitroso-Dipropylamine	20.	U	86-30-6	N-nitrosodiphenylamine (1)	20.	U
67-72-1	Hexachloroethane	20.	U	101-55-3	4-Bromophenyl Phenyl ether	20.	U
98-95-3	Nitrobenzene	20.	U	118-74-1	Hexachlorobenzene	20.	U
78-59-1	Isophorone	20.	U	87-86-5	Pentachlorophenol	100	U
88-75-5	2-Nitrophenol	20.	U	85-01-8	Phenanthrene	20.	U
105-67-9	2,4-Dimethylphenol	20.	U	120-12-7	Anthracene	20.	U
65-85-0	Benzoic Acid	100	U	84-74-2	Di-n-butylphthalate	20.	U
111-91-1	bis(2-Chloroethoxy) methane	20.	U	206-44-0	Fluoranthene	20.	U
120-83-2	2,4-Dichlorophenol	20.	U	92-87-5	Benzidine	100	U
120-82-1	1,2,4-Trichlorobenzene	20.	U	129-00-0	Pyrene	20.	U
91-20-3	Naphthalene	20.	U	85-68-7	Butyl Benzyl Phthalate	20.	U
106-47-8	4-Chloroaniline	20.	U	91-94-1	3,3'-Dichlorobenzidine	40.	U
87-68-3	Hexachlorobutadiene	20.	U	56-55-3	Benzo(a)anthracene	20.	U
59-50-7	4-Chloro-3-methylphenol	20.	U	117-81-7	bis(2-ethylhexyl)phthalate	20.	U
91-57-6	2-Methylnaphthalene	20.	U	218-01-9	Chrysene	20.	U
77-47-4	Hexachlorocyclopentadiene	20.	U	117-84-0	Di-n-octyl Phthalate	20.	U
88-06-2	2,4,6-Trichlorophenol	20.	U	205-99-2	Benzo(b)fluoranthene	20.	U
95-95-4	2,4,5-Trichlorophenol	100	U	207-08-9	Benzo(k)fluoranthene	20.	U
91-58-7	2-Chloronaphthalene	20.	U	50-32-8	Benzo(a)pyrene	20.	U
88-74-4	2-Nitroaniline	100	U	193-39-5	Indeno(1,2,3-cd)pyrene	20.	U
131-11-3	Dimethyl Phthalate	20.	U	53-70-3	Dibenz(a,h)anthracene	20.	U
208-96-8	Acenaphthylene	20.	U	191-24-2	Benzo(g,h,i)perylene	20.	U

(1) Cannot be separated from diphenylamine

Sample Number
7617-MW2

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: [Low] Medium (Circle One)
Date Extracted/Prepared: 11-20-85
Data Analyzed: 11/21/85
Conc/Dil Factor: 1.00

CAS Number		[ug/l] or ug/Kg (Circle One)
319-84-6	Alpha - BHC	.05 U
319-85-7	Beta - BHC	.05 U
319-86-8	Delta - BHC	.05 U
58-89-9	Gamma - BHC(Lindane)	.05 U
76-44-8	Heptachlor	.05 U
309-00-2	Aldrin	.05 U
1024-57-3	Heptachlor Epoxide	.05 U
959-98-8	Endosulfan I	.05 U
60-57-1	Dieldrin	.10 U
72-55-9	4-4' - DDE	.10 U
72-20-8	Endrin	.10 U
33213-65-9	Endosulfan II	.10 U
72-54-8	4-4' - DDD	.10 U
7421-93-4	Endrin Aldehyde	.10 U
1031-07-8	Endosulfan Sulfate	.10 U
50-29-3	4-4' - DDT	.10 U
72-43-5	Methoxychlor	.50 U
53494-70-5	Endrin Ketone	.10 U
57-74-9	Chlordane	.50 U
8001-35-2	Toxaphene	1.0 U
12674-11-2	Aroclor - 1016	.50 U
11104-28-2	Aroclor - 1221	.50 U
11141-16-5	Aroclor - 1232	.50 U
53469-21-9	Aroclor - 1242	.50 U
12672-29-6	Aroclor - 1248	.50 U
11097-69-1	Aroclor - 1254	1.0 U
11096-82-5	Aroclor - 1260	1.0 U

V(i) = Volume of extract injected (ul)
V(s) = Volume of water extracted (ml)
W(s) = Weight of sample extracted (g)
V(t) = Volume of total extract (ul)

V(s) 1000.00 or W(s) _____ V(t) 10000.00 V(i) 1.0

Form 1

Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818 Alexandria, Virginia 22313 703/557-2490

Sample Number
7617-MW2

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.		NO VOA COMPOUNDS FOUND			
2.					
3.					
4.					
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Environmental Protection Agency · CLP Sample Management Office
P. O. Box 818 · Alexandria, Virginia 22313 · 703/557-2490

Sample Number
7617-MW2

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.		NO SV COMPOUNDS FOUND			
2.					
3.					
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Environmental Protection Agency, CLP Sample Management Office
P.O. Box 818, Alexandria, VA 22313 703/557-2490

Sample Number
7618-MW3

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: ComuChem
Lab Sample ID No: C2Ko7772A11
Sample matrix: liquid
Data Release Authorized By: NKE

Case: C & S
QC Report No: _____
Contract No: PLATINUM
Date Sample Received: 11-15-85

Volatile Compounds
Concentration: low
Date extracted/prepared: 11-21-85
Date analyzed: 11-21-85
Conc/Dil Factor: 5.00
Percent moisture: N/A
Percent moisture (decanted):
pH: N/A

CAS Number		ug/l		CAS Number		ug/l	
74-87-3	Chloromethane	50.	U	78-87-5	1,2-Dichloropropane	25.	U
74-83-9	Bromomethane	50.	U	10061-02-6	trans-1,3-Dichloropropene	25.	U
75-01-4	Vinyl Chloride	50.	U	79-01-6	Trichloroethene	25.	U
75-00-3	Chloroethane	50.	U	124-48-1	Dibromochloromethane	25.	U
75-09-2	Methylene Chloride	25.	U	79-00-5	1,1,2-Trichloroethane	25.	U
67-64-1	Acetone	1100		71-43-2	Benzene	25.	U
75-15-0	Carbon Disulfide	25.	U	10061-01-5	cis-1,3-Dichloropropene	25.	U
75-35-4	1,1-Dichloroethene	25.	U	110-75-8	2-Chloroethyl Vinyl Ether	50.	U
75-34-3	1,1-Dichloroethane	25.	U	75-25-2	Bromoform	25.	U
156-60-5	trans-1,2-Dichloroethene	25.	U	591-78-6	2-Hexanone	50.	U
67-66-3	Chloroform	25.	U	108-10-1	4-Methyl-2-pentanone	50.	U
107-06-2	1,2-Dichloroethane	25.	U	127-18-4	Tetrachloroethene	25.	U
78-93-3	2-Butanone	50.	U	108-88-3	Toluene	25.	U
71-55-6	1,1,1-Trichloroethane	25.	U	108-90-7	Chlorobenzene	25.	U
56-23-5	Carbon Tetrachloride	25.	U	100-41-4	Ethyl Benzene	25.	U
108-05-4	Vinyl Acetate	50.	U	100-42-5	Styrene	25.	U
75-27-4	Bromodichloromethane	25.	U		Total Xylenes	25.	U
79-34-5	1,1,2,2-Tetrachloroethane	25.	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 >/= 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 2)

Laboratory Name: CompuChem

Semivolatile Compounds

Concentration: low
Date extracted/prepared: 11-18-85
Date analyzed: 11-21-85
Conc/Dil Factor: 2.00

CAS Number		ug/l		CAS Number		ug/l	
62-75-9	N-Nitrosodimethylamine	20.	U	99-09-2	3-Nitroaniline	100	U
108-95-2	Phenol	20.	U	83-32-9	Acenaphthene	20.	U
62-53-3	Aniline	20.	U	51-28-5	2,4-Dinitrophenol	100	U
111-44-4	bis(2-Chloroethyl) ether	20.	U	100-02-7	4-Nitrophenol	100	U
95-57-8	2-Chlorophenol	20.	U	132-64-9	Dibenzofuran	20.	U
541-73-1	1,3-Dichlorobenzene	20.	U	121-14-2	2,4-Dinitrotoluene	20.	U
106-46-7	1,4-Dichlorobenzene	20.	U	606-20-2	2,6-Dinitrotoluene	20.	U
100-51-6	Benzyl Alcohol	20.	U	84-66-2	Diethylphthalate	20.	U
95-50-1	1,2-Dichlorobenzene	20.	U	7005-72-3	4-Chlorophenyl Phenyl ether	20.	U
95-48-7	2-Methylphenol	20.	U	86-73-7	Fluorene	20.	U
39638-32-9	bis(2-Chloroisopropyl) ether	20.	U	100-01-6	4-Nitroaniline	100	U
106-44-5	4-Methylphenol	20.	U	534-52-1	4,6-Dinitro-2-methylphenol	100	U
621-64-7	N-Nitroso-Dipropylamine	20.	U	86-30-6	N-nitrosodiphenylamine (1)	20.	U
67-72-1	Hexachloroethane	20.	U	101-55-3	4-Bromophenyl Phenyl ether	20.	U
98-95-3	Nitrobenzene	20.	U	118-74-1	Hexachlorobenzene	20.	U
78-59-1	Isophorone	20.	U	87-86-5	Pentachlorophenol	100	U
88-75-5	2-Nitrophenol	20.	U	85-01-8	Phenanthrene	20.	U
105-67-9	2,4-Dimethylphenol	20.	U	120-12-7	Anthracene	20.	U
65-85-0	Benzoic Acid	100	U	84-74-2	Di-n-butylphthalate	20.	U
111-91-1	bis(2-Chloroethoxy) methane	20.	U	206-44-0	Fluoranthene	20.	U
120-83-2	2,4-Dichlorophenol	20.	U	92-87-5	Benzidine	100	U
120-82-1	1,2,4-Trichlorobenzene	20.	U	129-00-0	Pyrene	20.	U
91-20-3	Naphthalene	20.	U	85-68-7	Butyl Benzyl Phthalate	20.	U
106-47-8	4-Chloroaniline	20.	U	91-94-1	3,3'-Dichlorobenzidine	40.	U
87-68-3	Hexachlorobutadiene	20.	U	56-55-3	Benzo(a)anthracene	20.	U
59-50-7	4-Chloro-3-methylphenol	20.	U	117-81-7	bis(2-ethylhexyl)phthalate	20.	U
91-57-6	2-Methylnaphthalene	20.	U	218-01-9	Chrysene	20.	U
77-47-4	Hexachlorocyclopentadiene	20.	U	117-84-0	Di-n-octyl Phthalate	20.	U
88-06-2	2,4,6-Trichlorophenol	20.	U	205-99-2	Benzo(b)fluoranthene	20.	U
95-95-4	2,4,5-Trichlorophenol	100	U	207-08-9	Benzo(k)fluoranthene	20.	U
91-58-7	2-Chloronaphthalene	20.	U	50-32-8	Benzo(a)pyrene	20.	U
88-74-4	2-Nitroaniline	100	U	193-39-5	Indeno(1,2,3-cd)pyrene	20.	U
131-11-3	Dimethyl Phthalate	20.	U	53-70-3	Dibenz(a,h)anthracene	20.	U
208-96-8	Acenaphthylene	20.	U	191-24-2	Benzo(g,h,i)perylene	20.	U

(1) Cannot be separated from diphenylamine

Sample Number
7618-MW3

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: [Low] Medium (Circle One)
Date Extracted/Prepared: 11-20-85
Data Analyzed: 11/21/85
Conc/Dil Factor: 1 1.00

CAS Number		[ug/l] or ug/Kg (Circle One)	
319-84-6	Alpha - BHC	.05	U
319-85-7	Beta - BHC	.05	U
319-86-8	Delta - BHC	.05	U
58-89-9	Gamma - BHC(Lindane)	.05	U
76-44-8	Heptachlor	.05	U
309-00-2	Aldrin	.05	U
1024-57-3	Heptachlor Epoxide	.05	U
959-98-8	Endosulfan I	.05	U
60-57-1	Dieldrin	.10	U
72-55-9	4-4' - DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4-4' - DDD	.10	U
7421-93-4	Endrin Aldehyde	.10	U
1031-07-8	Endosulfan Sulfate	.10	U
50-29-3	4-4' - DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin Ketone	.10	U
57-74-9	Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor - 1016	.50	U
11104-28-2	Aroclor - 1221	.50	U
11141-16-5	Aroclor - 1232	.50	U
53469-21-9	Aroclor - 1242	.50	U
12672-29-6	Aroclor - 1248	.50	U
11097-69-1	Aroclor - 1254	1.0	U
11096-82-5	Aroclor - 1260	1.0	U

V(i) = Volume of extract injected (ul)
V(s) = Volume of water extracted (ml)
W(s) = Weight of sample extracted (g)
V(t) = Volume of total extract (ul)

V(s) 1000.00 or W(s) _____ V(t) 10000.00 V(i) 1.0

, Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818 Alexandria Virginia 22313 703/557-2490

Sample Number
7618-MW3

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.		NO VOA COMPOUNDS FOUND			
2.					
3.					
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Environmental Protection Agency - CLP Sample Management Office
P. O. Box 818 Alexandria Virginia 22313 703/557-2490

Sample Number
7618-mW3

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.		NO SV COMPOUNDS FOUND			
2.					
3.					
4.					
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Environmental Protection Agency, CLP Sample Management Office
P.O. Box 818, Alexandria, VA 22313 703/557-2490

Sample Number
7619-MW4

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: CompuChem
Lab Sample ID No: CN067970A11
Sample matrix: liquid
Data Release Authorized By: NRF

Case: C & S
QC Report No: _____
Contract No: PLATINUM
Date Sample Received: 11-15-85

Volatile Compounds
Concentration: low
Date extracted/prepared: 11-21-85
Date analyzed: 11-21-85
Conc/Dil Factor: 1.00 pH: N/A
Percent moisture: N/A
Percent moisture (decanted):

CAS Number		ug/l		CAS Number		ug/l	
74-87-3	Chloromethane	10.	U	78-87-5	1,2-Dichloropropane	5.0	U
74-83-9	Bromomethane	10.	U	10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-01-4	Vinyl Chloride	10.	U	79-01-6	Trichloroethene	5.0	U
75-00-3	Chloroethane	10.	U	124-48-1	Dibromochloromethane	5.0	U
75-09-2	Methylene Chloride	5.0	U	79-00-5	1,1,2-Trichloroethane	5.0	U
67-64-1	Acetone	6.3	J	71-43-2	Benzene	5.0	U
75-15-0	Carbon Disulfide	5.0	U	10061-01-5	cis-1,3-Dichloropropene	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U	110-75-8	2-Chloroethyl Vinyl Ether	10.	U
75-34-3	1,1-Dichloroethane	5.0	U	75-25-2	Bromoform	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U	591-78-6	2-Hexanone	10.	U
67-66-3	Chloroform	1.3	J	108-10-1	4-Methyl-2-pentanone	10.	U
107-06-2	1,2-Dichloroethane	5.0	U	127-18-4	Tetrachloroethene	5.0	U
78-93-3	2-Butanone	10.	U	108-88-3	Toluene	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U	108-90-7	Chlorobenzene	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U	100-41-4	Ethyl Benzene	5.0	U
108-05-4	Vinyl Acetate	10.	U	100-42-5	Styrene	5.0	U
75-27-4	Bromodichloromethane	5.0	U		Total Xylenes	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	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 >/= 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 2)

Laboratory Name: Compuchem

Semivolatile Compounds

Concentration: low
Date extracted/prepared: 11-18-85
Date analyzed: 11-21-85
Conc/Dil Factor: 2.00

CAS Number		ug/l		CAS Number		ug/l	
62-75-9	N-Nitrosodimethylamine	20.	U	99-09-2	3-Nitroaniline	100	U
108-95-2	Phenol	20.	U	83-32-9	Acenaphthene	20.	U
62-53-3	Aniline	20.	U	51-28-5	2,4-Dinitrophenol	100	U
111-44-4	bis(2-Chloroethyl) ether	20.	U	100-02-7	4-Nitrophenol	100	U
95-57-8	2-Chlorophenol	20.	U	132-64-9	Dibenzofuran	20.	U
541-73-1	1,3-Dichlorobenzene	20.	U	121-14-2	2,4-Dinitrotoluene	20.	U
106-46-7	1,4-Dichlorobenzene	20.	U	606-20-2	2,6-Dinitrotoluene	20.	U
100-51-6	Benzyl Alcohol	20.	U	84-66-2	Diethylphthalate	20.	U
95-50-1	1,2-Dichlorobenzene	20.	U	7005-72-3	4-Chlorophenyl Phenyl ether	20.	U
95-48-7	2-Methylphenol	20.	U	86-73-7	Fluorene	20.	U
39638-32-9	bis(2-Chloroisopropyl) ether	20.	U	100-01-6	4-Nitroaniline	100	U
106-44-5	4-Methylphenol	20.	U	534-52-1	4,6-Dinitro-2-methylphenol	100	U
621-64-7	N-Nitroso-Dipropylamine	20.	U	86-30-6	N-nitrosodiphenylamine (1)	20.	U
67-72-1	Hexachloroethane	20.	U	101-55-3	4-Bromophenyl Phenyl ether	20.	U
98-95-3	Nitrobenzene	20.	U	118-74-1	Hexachlorobenzene	20.	U
78-59-1	Isophorone	20.	U	87-86-5	Pentachlorophenol	100	U
88-75-5	2-Nitrophenol	20.	U	85-01-8	Phenanthrene	20.	U
105-67-9	2,4-Dimethylphenol	20.	U	120-12-7	Anthracene	20.	U
65-85-0	Benzoic Acid	100	U	84-74-2	Di-n-butylphthalate	20.	U
111-91-1	bis(2-Chloroethoxy) methane	20.	U	206-44-0	Fluoranthene	20.	U
120-83-2	2,4-Dichlorophenol	20.	U	92-87-5	Benzidine	100	U
120-82-1	1,2,4-Trichlorobenzene	20.	U	129-00-0	Pyrene	20.	U
91-20-3	Naphthalene	20.	U	85-68-7	Butyl Benzyl Phthalate	20.	U
106-47-8	4-Chloroaniline	20.	U	91-94-1	3,3'-Dichlorobenzidine	40.	U
87-68-3	Hexachlorobutadiene	20.	U	56-55-3	Benzo(a)anthracene	20.	U
59-50-7	4-Chloro-3-methylphenol	20.	U	117-81-7	bis(2-ethylhexyl)phthalate	20.	U
91-57-6	2-Methylnaphthalene	20.	U	218-01-9	Chrysene	20.	U
77-47-4	Hexachlorocyclopentadiene	20.	U	117-84-0	Di-n-octyl Phthalate	20.	U
88-06-2	2,4,6-Trichlorophenol	20.	U	205-99-2	Benzo(b)fluoranthene	20.	U
95-95-4	2,4,5-Trichlorophenol	100	U	207-08-9	Benzo(k)fluoranthene	20.	U
91-58-7	2-Chloronaphthalene	20.	U	50-32-8	Benzo(a)pyrene	20.	U
88-74-4	2-Nitroaniline	100	U	193-39-5	Indeno(1,2,3-cd)pyrene	20.	U
131-11-3	Dimethyl Phthalate	20.	U	53-70-3	Dibenz(a,h)anthracene	20.	U
208-96-8	Acenaphthylene	20.	U	191-24-2	Benzo(g,h,i)perylene	20.	U

(1) Cannot be separated from diphenylamine

Sample Number
7619-MW4

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: [Low] Medium (Circle One)
Date Extracted/Prepared: 11-20-85
Data Analyzed: 11/21/85
Conc/Dil Factor: 1.00

CAS Number		[ug/l] or ug/Kg (Circle One)	
319-84-6	Alpha - BHC	.05	U
319-85-7	Beta - BHC	.05	U
319-86-8	Delta - BHC	.05	U
58-89-9	Gamma - BHC(Lindane)	.05	U
76-44-8	Heptachlor	.05	U
309-00-2	Aldrin	.05	U
1024-57-3	Heptachlor Epoxide	.05	U
959-98-8	Endosulfan I	.05	U
60-57-1	Dieldrin	.10	U
72-55-9	4-4' - DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4-4' - DDD	.10	U
7421-93-4	Endrin Aldehyde	.10	U
1031-07-8	Endosulfan Sulfate	.10	U
50-29-3	4-4' - DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin Ketone	.10	U
57-74-9	Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor - 1016	.50	U
11104-28-2	Aroclor - 1221	.50	U
11141-16-5	Aroclor - 1232	.50	U
53469-21-9	Aroclor - 1242	.50	U
12672-29-6	Aroclor - 1248	.50	U
11097-69-1	Aroclor - 1254	1.0	U
11096-82-5	Aroclor - 1260	1.0	U

V(i) = Volume of extract injected (ul)
V(s) = Volume of water extracted (ml)
W(s) = Weight of sample extracted (g)
V(t) = Volume of total extract (ul)

V(s) 1000.00 or W(s) _____ V(t) 10000.00 V(i) 1.0

Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
7619-MW4

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.		NO VOA COMPOUNDS FOUND			
2.					
3.					
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Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818. Alexandria, Virginia 22313 703/557-2490

Sample Number
7619-MW4

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.		NO SV COMPOUNDS FOUND			
2.					
3.					
4.					
5.					
6.					
7.					
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APPENDIX G

SURFACE WATER ANALYTICAL DATA SHEETS

Environmental Protection Agency, CLP Sample Management Office
P.O. Box 818, Alexandria, VA 22313 703/557-2490

Sample Number
SW-38

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: CompuChem
Lab Sample ID No: CN062816B06
Sample matrix: liquid
Data Release
Authorized By: _____

Case: C&S
QC Report No: _____
Contract No:
Date Sample
Received: 10-04-85

Volatile Compounds
Concentration: low
Date extracted/prepared: 10-09-85
Date analyzed: 10-09-85
Conc/Dil Factor: 1.00 pH: N/A
Percent moisture: N/A
Percent moisture (decanted):

CAS Number		ug/l		CAS Number		ug/l	
74-87-3	Chloromethane	10.	U	78-87-5	1,2-Dichloropropane	5.0	U
74-83-9	Bromomethane	10.	U	10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-01-4	Vinyl Chloride	10.	U	79-01-6	Trichloroethene	19.	
75-00-3	Chloroethane	10.	U	124-48-1	Dibromochloromethane	5.0	U
75-09-2	Methylene Chloride	4.9	J	79-00-5	1,1,2-Trichloroethane	5.0	U
67-64-1	Acetone	10.	U	71-43-2	Benzene	5.0	U
75-15-0	Carbon Disulfide	5.0	U	10061-01-5	cis-1,3-Dichloropropene	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U	110-75-8	2-Chloroethyl Vinyl Ether	10.	U
75-34-3	1,1-Dichloroethane	5.0	U	75-25-2	Bromoform	5.0	U
156-60-5	trans-1,2-Dichloroethene	8.7		591-78-6	2-Hexanone	10.	U
67-66-3	Chloroform	5.0	U	108-10-1	4-Methyl-2-pentanone	10.	U
107-06-2	1,2-Dichloroethane	5.0	U	127-18-4	Tetrachloroethene	5.0	U
78-93-3	2-Butanone	10.	U	108-88-3	Toluene	5.0	U
71-55-6	1,1,1-Trichloroethane	2.8	J	108-90-7	Chlorobenzene	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U	100-41-4	Ethyl Benzene	5.0	U
108-05-4	Vinyl Acetate	10.	U	100-42-5	Styrene	5.0	U
75-27-4	Bromodichloromethane	5.0	U		Total Xylenes	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	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 >/= 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 2)
Semivolatile Compounds

Laboratory Name: CompuChem

Concentration: low
Date extracted/prepared: 10-04-85
Date analyzed: 10-08-85
Conc/Dil Factor: 2.00

CAS Number		ug/l		CAS Number		ug/l	
62-75-9	N-Nitrosodimethylamine	20.	U	99-09-2	3-Nitroaniline	100	U
108-95-2	Phenol	20.	U	83-32-9	Acenaphthene	20.	U
62-53-3	Aniline	20.	U	51-28-5	2,4-Dinitrophenol	100	U
111-44-4	bis(2-Chloroethyl) ether	20.	U	100-02-7	4-Nitrophenol	100	U
95-57-8	2-Chlorophenol	20.	U	132-64-9	Dibenzofuran	20.	U
541-73-1	1,3-Dichlorobenzene	20.	U	121-14-2	2,4-Dinitrotoluene	20.	U
106-46-7	1,4-Dichlorobenzene	20.	U	606-20-2	2,6-Dinitrotoluene	20.	U
100-51-6	Benzyl Alcohol	20.	U	84-66-2	Diethylphthalate	20.	U
95-50-1	1,2-Dichlorobenzene	20.	U	7005-72-3	4-Chlorophenyl Phenyl ether	20.	U
95-48-7	2-Methylphenol	20.	U	86-73-7	Fluorene	20.	U
39638-32-9	bis(2-Chloroisopropyl) ether	20.	U	100-01-6	4-Nitroaniline	100	U
106-44-5	4-Methylphenol	20.	U	534-52-1	4,6-Dinitro-2-methylphenol	100	U
621-64-7	N-Nitroso-Dipropylamine	20.	U	86-30-6	N-nitrosodiphenylamine (1)	20.	U
67-72-1	Hexachloroethane	20.	U	101-55-3	4-Bromophenyl Phenyl ether	20.	U
98-95-3	Nitrobenzene	20.	U	118-74-1	Hexachlorobenzene	20.	U
78-59-1	Isophorone	20.	U	87-86-5	Pentachlorophenol	100	U
88-75-5	2-Nitrophenol	20.	U	85-01-8	Phenanthrene	20.	U
105-67-9	2,4-Dimethylphenol	20.	U	120-12-7	Anthracene	20.	U
65-85-0	Benzoic Acid	100	U	84-74-2	Di-n-butylphthalate	20.	U
111-91-1	bis(2-Chloroethoxy) methane	20.	U	206-44-0	Fluoranthene	20.	U
120-83-2	2,4-Dichlorophenol	20.	U	92-87-5	Benzidine	100	U
120-82-1	1,2,4-Trichlorobenzene	20.	U	129-00-0	Pyrene	20.	U
91-20-3	Naphthalene	20.	U	85-68-7	Butyl Benzyl Phthalate	20.	U
106-47-8	4-Chloroaniline	20.	U	91-94-1	3,3'-Dichlorobenzidine	40.	U
87-68-3	Hexachlorobutadiene	20.	U	56-55-3	Benzo(a)anthracene	20.	U
59-50-7	4-Chloro-3-methylphenol	20.	U	117-81-7	bis(2-ethylhexyl)phthalate	20.	U
91-57-6	2-Methylnaphthalene	20.	U	218-01-9	Chrysene	20.	U
77-47-4	Hexachlorocyclopentadiene	20.	U	117-84-0	Di-n-octyl Phthalate	20.	U
88-06-2	2,4,6-Trichlorophenol	20.	U	205-99-2	Benzo(b)fluoranthene	20.	U
95-95-4	2,4,5-Trichlorophenol	100	U	207-08-9	Benzo(k)fluoranthene	20.	U
91-58-7	2-Chloronaphthalene	20.	U	50-32-8	Benzo(a)pyrene	20.	U
88-74-4	2-Nitroaniline	100	U	193-39-5	Indeno(1,2,3-cd)pyrene	20.	U
131-11-3	Dimethyl Phthalate	20.	U	53-70-3	Dibenz(a,h)anthracene	20.	U
208-96-8	Acenaphthylene	20.	U	191-24-2	Benzo(g,h,i)perylene	20.	U

(1) Cannot be separated from diphenylamine

Sample Number
SW-3B

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: [Low] Medium (Circle One)
Date Extracted/Prepared: 10-7-85
Data Analyzed: 10/ 8/85
Conc/Dil Factor: 1.00

CAS Number		[ug/l] or ug/Kg (Circle One)	
319-84-6	Alpha - BHC	.05	U
319-85-7	Beta - BHC	.05	U
319-86-8	Delta - BHC	.05	U
58-89-9	Gamma - BHC(Lindane)	.05	U
76-44-8	Heptachlor	.05	U
309-00-2	Aldrin	.05	U
1024-57-3	Heptachlor Epoxide	.05	U
959-98-8	Endosulfan I	.05	U
60-57-1	Dieldrin	.10	U
72-55-9	4-4' - DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4-4' - DDD	.10	U
7421-93-4	Endrin Aldehyde	.10	U
1031-07-8	Endosulfan Sulfate	.10	U
50-29-3	4-4' - DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin Ketone	.10	U
57-74-9	Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor - 1016	.50	U
11104-28-2	Aroclor - 1221	.50	U
11141-16-5	Aroclor - 1232	.50	U
53469-21-9	Aroclor - 1242	.50	U
12672-29-6	Aroclor - 1248	.50	U
11097-69-1	Aroclor - 1254	1.0	U
11096-82-5	Aroclor - 1260	1.0	U

V(i) = Volume of extract injected (ul)
V(s) = Volume of water extracted (ml)
W(s) = Weight of sample extracted (g)
V(t) = Volume of total extract (ul)

V(s) 1000.00 or W(s) _____ V(t) 10000.00 V(i) 5.0

P O Box 818 Alexandria Virginia 22313 703/557-2490

Sample Number
SW-3B

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.		NO VOA COMPOUNDS FOUND			
2.					
3.					
4.					
5.					
6.					
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SAMPLE NUMBER SW3B

ORGANICS ANALYSIS DATA SHEET (PAGE 4)

COMPUCHEM FILE GJ062816C15

TENTATIVELY IDENTIFIED COMPOUNDS

	CAS NUMBER	COMPOUND NAME	FRACTION	SCAN NUMBER	ESTIMATED CONC. (UG/L OR UG/KG)	
(1)	108-87-2	cyclic alkane CYCLOHEXANE, METHYL-	SEMI1	213	18.	JB
2	13189-13-4	3-2,4-dinitrophenyl ~~1H-IMIDAZOLE-4-CARBOXAMIDE, N-PHENYL-~~	SEMI1	727	26.	J

2.000 40.00

SPECTROSCOPIST L H

DATE 10-8-86

Environmental Protection Agency, CLP Sample Management Office
P.O. Box 818, Alexandria, VA 22313 703/557-2490

Sample Number
5940

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: CompuChem
Lab Sample ID No: CN062066C12
Sample matrix: liquid
Data Release Authorized By: NRF

Case: C & S
QC Report No: _____
Contract No: 101501-PLATINUM
Date Sample Received: 09-26-85

Volatile Compounds
Concentration: low
Date extracted/prepared: 10-02-85
Date analyzed: 10-02-85
Conc/Dil Factor: 1.00
Percent moisture: N/A
Percent moisture (decanted):
pH: N/A

CAS Number		ug/l		CAS Number		ug/l	
74-87-3	Chloroethane	10.	U	78-87-5	1,2-Dichloropropane	5.0	U
74-83-9	Bromomethane	10.	U	10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-01-4	Vinyl Chloride	10.	U	79-01-6	Trichloroethene	70.	
75-00-3	Chloroethane	10.	U	124-48-1	Dibromochloromethane	5.0	U
75-09-2	Methylene Chloride	5.0	U	79-00-5	1,1,2-Trichloroethane	5.0	U
67-64-1	Acetone	10.	U	71-43-2	Benzene	5.0	U
75-15-0	Carbon Disulfide	5.0	U	10061-01-5	cis-1,3-Dichloropropene	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U	110-75-8	2-Chloroethyl Vinyl Ether	10.	U
75-35-3	1,1-Dichloroethane	5.0	U	75-25-2	Bromoform	5.0	U
156-60-5	trans-1,2-Dichloroethene	56.		591-78-6	2-Hexanone	10.	U
67-66-3	Chloroform	2.8	J	108-10-1	4-Methyl-2-pentanone	10.	U
107-06-2	1,2-Dichloroethane	5.0	U	127-18-4	Tetrachloroethene	3.8	J
78-93-3	2-Butanone	10.	U	108-88-3	Toluene	5.0	U
71-55-6	1,1,1-Trichloroethane	13.		108-90-7	Chlorobenzene	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U	100-41-4	Ethyl Benzene	5.0	U
108-05-4	Vinyl Acetate	10.	U	100-42-5	Styrene	5.0	U
75-27-4	Bromodichloromethane	5.0	U		Total Xylenes	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	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 >/= 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.

Environmental Protection Agency, CLP Sample Management Office
P.O. Box 818, Alexandria, VA 22313 703/557-2490

Sample Number
5940

Laboratory Name: CompuChem

Organics Analysis Data Sheet
(Page 2)
Semivolatile Compounds

Concentration: low
Date extracted/prepared: 09-26-85
Date analyzed: 09-29-85
Conc/Dil Factor: 2.00

CAS Number		ug/l		CAS Number		ug/l	
62-75-9	N-Nitrosodimethylamine	20.	U	99-09-2	3-Nitroaniline	100	U
108-95-2	Phenol	20.	U	83-32-9	Acenaphthene	20.	U
62-53-3	Aniline	20.	U	51-28-5	2,4-Dinitrophenol	100	U
111-44-4	bis(2-Chloroethyl) ether	20.	U	100-02-7	4-Nitrophenol	100	U
95-57-8	2-Chlorophenol	20.	U	132-64-9	Dibenzofuran	20.	U
541-73-1	1,3-Dichlorobenzene	20.	U	121-14-2	2,4-Dinitrotoluene	20.	U
106-46-7	1,4-Dichlorobenzene	20.	U	606-20-2	2,6-Dinitrotoluene	20.	U
100-51-6	Benzyl Alcohol	20.	U	84-66-2	Diethylphthalate	20.	U
95-50-1	1,2-Dichlorobenzene	20.	U	7005-72-3	4-Chlorophenyl Phenyl ether	20.	U
95-48-7	2-Methylphenol	20.	U	86-73-7	Fluorene	20.	U
39638-32-9	bis(2-Chloroisopropyl) ether	20.	U	100-01-6	4-Nitroaniline	100	U
106-44-5	4-Methylphenol	20.	U	534-52-1	4,6-Dinitro-2-methylphenol	100	U
621-64-7	N-Nitroso-Di-propylamine	20.	U	86-30-6	N-nitrosodiphenylamine (1)	20.	U
67-72-1	Hexachloroethane	20.	U	101-55-3	4-Bromophenyl Phenyl ether	20.	U
98-95-3	Nitrobenzene	20.	U	118-74-1	Hexachlorobenzene	20.	U
78-59-1	Isophorone	20.	U	87-86-5	Pentachlorophenol	100	U
88-75-5	2-Nitrophenol	20.	U	85-01-8	Phenanthrene	20.	U
105-67-9	2,4-Dimethylphenol	20.	U	120-12-7	Anthracene	20.	U
65-85-0	Benzoic Acid	100	U	84-74-2	Di-n-butylphthalate	20.	U
111-91-1	bis(2-Chloroethoxy) methane	20.	U	206-44-0	Fluoranthene	20.	U
120-83-2	2,4-Dichlorophenol	20.	U	92-87-5	Benzidine	100	U
120-82-1	1,2,4-Trichlorobenzene	20.	U	129-00-0	Pyrene	20.	U
91-20-3	Naphthalene	20.	U	85-68-7	Butyl Benzyl Phthalate	20.	U
106-47-8	4-Chloroaniline	20.	U	91-94-1	3,3'-Dichlorobenzidine	40.	U
87-68-3	Hexachlorobutadiene	20.	U	56-55-3	Benzo(a)anthracene	20.	U
59-50-7	4-Chloro-3-methylphenol	20.	U	117-81-7	bis(2-ethylhexyl)phthalate	20.	U
91-57-6	2-Methylnaphthalene	20.	U	218-01-9	Chrysene	20.	U
77-47-4	Hexachlorocyclopentadiene	20.	U	117-84-0	Di-n-octyl Phthalate	20.	U
88-06-2	2,4,6-Trichlorophenol	20.	U	205-99-2	Benzo(b)fluoranthene	20.	U
95-95-4	2,4,5-Trichlorophenol	100	U	207-08-9	Benzo(k)fluoranthene	20.	U
91-58-7	2-Chloronaphthalene	20.	U	50-32-8	Benzo(a)pyrene	20.	U
88-74-4	2-Nitroaniline	100	U	193-39-5	Indeno(1,2,3-cd)pyrene	20.	U
131-11-3	Dimethyl Phthalate	20.	U	53-70-3	Dibenz(a,h)anthracene	20.	U
208-96-8	Acenaphthylene	20.	U	191-24-2	Benzo(g,h,i)perylene	20.	U

(1) Cannot be separated from diphenylamine

| Sample Number |
| C&S5940 |

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: [Low] Medium (Circle One)
Date Extracted/Prepared: 10-1-85
Data Analyzed: 10/ 2/85
Conc/Dil Factor: 1.00

CAS Number		[ug/l] or ug/Kg (Circle One)	
319-84-6	Alpha - BHC	.05	U
319-85-7	Beta - BHC	.05	U
319-86-8	Delta - BHC	.05	U
58-89-9	Gamma - BHC(Lindane)	.05	U
76-44-8	Heptachlor	.05	U
309-00-2	Aldrin	.05	U
1024-57-3	Heptachlor Epoxide	.05	U
959-98-8	Endosulfan I	.05	U
60-57-1	Dieldrin	.10	U
72-55-9	4-4' - DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4-4' - DDD	.10	U
7421-93-4	Endrin Aldehyde	.10	U
1031-07-8	Endosulfan Sulfate	.10	U
50-29-3	4-4' - DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin Ketone	.10	U
57 74 9	Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674 11 2	Aroclor - 1016	.50	U
11104-28-2	Aroclor - 1221	.50	U
11141 16 5	Aroclor - 1232	.50	U
53469-21-9	Aroclor - 1242	.50	U
12672 29 6	Aroclor - 1248	.50	U
11097-69-1	Aroclor 1254	1.0	U
11096 82 5	Aroclor - 1260	1.0	U

V(i) = Volume of extract injected (ul)
V(s) = Volume of water extracted (ml)
W(s) = Weight of sample extracted (g)
V(t) = Volume of total extract (ul)

V(s) 1000.00 or W(s) _____ V(t) 10000.00 V(i) 5.0

Alexandria, Virginia 22313 703/557-2490

Sample Number
5948

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	NO VOA COMPOUNDS FOUND			
2.				
3.				
4.				
5.				
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Environmental Protection Agency, CLP Sample Management Office
P. O. Box 818, Alexandria Virginia 22313 703/557-2490

Sample Number
5940

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.		NO SV COMPOUNDS FOUND			
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
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Environmental Protection Agency, CLP Sample Management Office
P.O. Box 818, Alexandria, VA 22313 703/557-2490

Sample Number
5941

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: CompuChem
Lab Sample ID No: CN062055C12
Sample matrix: liquid
Data Release Authorized By: NRF

Case: C&S
QC Report No: _____
Contract No: 101501-PLATINUM
Date Sample Received: 09-26-85

Volatile Compounds
Concentration: low
Date extracted/prepared: 10-02-85
Date analyzed: 10-02-85
Conc/Dil Factor: 1.00
Percent moisture: N/A
Percent moisture (decanted):
pH: N/A

CAS Number		ug/l		CAS Number		ug/l	
74-87-3	Chloromethane	10.	U	78-87-5	1,2-Dichloropropane	5.0	U
74-83-9	Bromomethane	10.	U	10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-01-4	Vinyl Chloride	10.	U	79-01-6	Trichloroethene	8.5	
75-00-3	Chloroethane	10.	U	124-48-1	Dibromochloromethane	5.0	U
75-09-2	Methylene Chloride	5.0	U	79-00-5	1,1,2-Trichloroethane	5.0	U
67-64-1	Acetone	10.	U	71-43-2	Benzene	5.0	U
75-15-0	Carbon Disulfide	5.0	U	10061-01-5	cis-1,3-Dichloropropene	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U	110-75-8	2-Chloroethyl Vinyl Ether	10.	U
75-34-3	1,1-Dichloroethane	5.0	U	75-25-2	Bromoform	5.0	U
156-60-5	trans-1,2-Dichloroethene	6.2		591-78-6	2-Hexanone	10.	U
67-66-3	Chloroform	5.0	U	108-10-1	4-Methyl-2-pentanone	10.	U
107-06-2	1,2-Dichloroethane	5.0	U	127-18-4	Tetrachloroethene	5.0	U
78-93-3	2-Butanone	10.	U	108-88-3	Toluene	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U	108-90-7	Chlorobenzene	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U	100-41-4	Ethyl Benzene	5.0	U
108-05-4	Vinyl Acetate	10.	U	100-42-5	Styrene	5.0	U
75-27-4	Bromodichloromethane	5.0	U		Total Xylenes	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	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 >/= 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 2)

Laboratory Name: CompuChem

Semivolatile Compounds

Concentration: low
Date extracted/prepared: 09-26-85
Date analyzed: 09-29-85
Conc/Dil Factor: 2.00

CAS Number		ug/l		CAS Number		ug/l	
62-75-9	N-Nitrosodimethylamine	20.	U	99-09-2	3-Nitroaniline	100	U
108-95-2	Phenol	20.	U	83-32-9	Acenaphthene	20.	U
62-53-3	Aniline	20.	U	51-28-5	2,4-Dinitrophenol	100	U
111-44-4	bis(2-Chloroethyl) ether	20.	U	100-02-7	4-Nitrophenol	100	U
95-57-8	2-Chlorophenol	20.	U	132-64-9	Dibenzofuran	20.	U
541-73-1	1,3-Dichlorobenzene	20.	U	121-14-2	2,4-Dinitrotoluene	20.	U
106-46-7	1,4-Dichlorobenzene	20.	U	606-20-2	2,6-Dinitrotoluene	20.	U
100-51-6	Benzyl Alcohol	20.	U	84-66-2	Diethylphthalate	20.	U
95-50-1	1,2-Dichlorobenzene	20.	U	7005-72-3	4-Chlorophenyl Phenyl ether	20.	U
95-48-7	2-Methylphenol	20.	U	86-73-7	Fluorene	20.	U
39638-32-9	bis(2-Chloroisopropyl) ether	20.	U	100-01-6	4-Nitroaniline	100	U
106-44-5	4-Methylphenol	20.	U	534-52-1	4,6-Dinitro-2-methylphenol	100	U
621-64-7	N-Nitroso-Dipropylamine	20.	U	86-30-6	N-nitrosodiphenylamine (1)	20.	U
67-72-1	Hexachloroethane	20.	U	101-55-3	4-Bromophenyl Phenyl ether	20.	U
98-95-3	Nitrobenzene	20.	U	118-74-1	Hexachlorobenzene	20.	U
78-59-1	Isophorone	20.	U	87-86-5	Pentachlorophenol	100	U
88-75-5	2-Nitrophenol	20.	U	85-01-8	Phenanthrene	20.	U
105-67-9	2,4-Dimethylphenol	20.	U	120-12-7	Anthracene	20.	U
65-85-0	Benzoic Acid	100	U	84-74-2	Di-n-butylphthalate	20.	U
111-91-1	bis(2-Chloroethoxy) methane	20.	U	206-44-0	Fluoranthene	20.	U
120-83-2	2,4-Dichlorophenol	20.	U	92-87-5	Benzidine	100	U
120-82-1	1,2,4-Trichlorobenzene	20.	U	129-00-0	Pyrene	20.	U
91-20-3	Naphthalene	20.	U	85-68-7	Butyl Benzyl Phthalate	20.	U
106-47-8	4-Chloroaniline	20.	U	91-94-1	3,3'-Dichlorobenzidine	40.	U
87-68-3	Hexachlorobutadiene	20.	U	56-55-3	Benzo(a)anthracene	20.	U
59-50-7	4-Chloro-3-methylphenol	20.	U	117-81-7	bis(2-ethylhexyl)phthalate	20.	U
91-57-6	2-Methylnaphthalene	20.	U	218-01-9	Chrysene	20.	U
77-47-4	Hexachlorocyclopentadiene	20.	U	117-84-0	Di-n-octyl Phthalate	20.	U
88-06-2	2,4,6-Trichlorophenol	20.	U	205-99-2	Benzo(b)fluoranthene	20.	U
95-95-4	2,4,5-Trichlorophenol	100	U	207-08-9	Benzo(k)fluoranthene	20.	U
91-58-7	2-Chloronaphthalene	20.	U	50-32-8	Benzo(a)pyrene	20.	U
88-74-4	2-Nitroaniline	100	U	193-39-5	Indeno(1,2,3-cd)pyrene	20.	U
131-11-3	Dimethyl Phthalate	20.	U	53-70-3	Dibenz(a,h)anthracene	20.	U
208-96-8	Acenaphthylene	20.	U	191-24-2	Benzo(g,h,i)perylene	20.	U

(1) Cannot be separated from diphenylamine

Sample Number
C&S5941

Organics Analysis Data Sheet
(Page 5)

Pesticide/PCBs

Concentration: [Low] Medium (Circle One)
Date Extracted/Prepared: 10-(-8)-
Data Analyzed: 10/ 5/85
Conc/Dil Factor: 1.00

CAS Number		[ug/l] or ug/Kg (Circle One)	
319-84-6	Alpha - BHC	.05	U
319-85-7	Beta - BHC	.05	U
319-86-8	Delta - BHC	.05	U
58-89-9	Gamma - BHC(Lindane)	.05	U
76-44-8	Heptachlor	.05	U
309-00-2	Aldrin	.05	U
1024-57-3	Heptachlor Epoxide	.05	U
959-98-8	Endosulfan I	.05	U
60-57-1	Dieldrin	.10	U
72-55-9	4-4' - DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4-4' - DDD	.10	U
7421-93-4	Endrin Aldehyde	.10	U
1031-07-8	Endosulfan Sulfate	.10	U
50-29-3	4-4' - DDT	.11	
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin Ketone	.10	U
57-74-9	Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor - 1016	.50	U
11104-28-2	Aroclor - 1221	.50	U
11141-16-5	Aroclor - 1232	.50	U
53469-21-9	Aroclor - 1242	.50	U
12672-29-6	Aroclor - 1248	.50	U
11097-69-1	Aroclor - 1254	1.0	U
11096-82-5	Aroclor - 1260	1.0	U

V(i) = Volume of extract injected (ul)
V(s) = Volume of water extracted (ml)
W(s) = Weight of sample extracted (g)
V(t) = Volume of total extract (ul)

V(s) 1000.00 or W(s) _____ V(t) 10000.00 V(i) 1.0

... Virginia 22313 703/557-2490

5941

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.		NO VOA COMPOUNDS FOUND			
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
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Environmental Protection Agency, CLP Sample Management Office
P.O. Box 818, Alexandria, VA 22313 703/557-2490

Sample Number
5942

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: CompuChem
Lab Sample ID No: CN062067C12
Sample matrix: liquid
Data Release Authorized By: NRF

Case: C&S
GC Report No: _____
Contract No: 101501-PLATINUM
Date Sample Received: 09-26-85

Volatile Compounds
Concentration: low
Date extracted/prepared: 10-02-85
Date analyzed: 10-02-85
Conc/Dil Factor: 1.00
Percent moisture: N/A
Percent moisture (decanted):
pH: N/A

CAS Number		ug/l		CAS Number		ug/l	
74-87-3	Chloromethane	10.	U	78-87-5	1,2-Dichloropropane	5.0	U
74-83-9	Bromomethane	10.	U	10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-01-4	Vinyl Chloride	10.	U	79-01-6	Trichloroethene	5.0	U
75-00-3	Chloroethane	10.	U	124-48-1	Dibromochloromethane	5.0	U
75-09-2	Methylene Chloride	5.0	U	79-00-5	1,1,2-Trichloroethane	5.0	U
67-64-1	Acetone	10.	U	71-43-2	Benzene	5.0	U
75-15-0	Carbon Disulfide	5.0	U	10061-01-5	cis-1,3-Dichloropropene	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U	110-75-8	2-Chloroethyl Vinyl Ether	10.	U
75-34-3	1,1-Dichloroethane	5.0	U	75-25-2	Bromoform	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U	591-78-6	2-Hexanone	10.	U
67-66-3	Chloroform	5.0	U	108-10-1	4-Methyl-2-pentanone	10.	U
107-06-2	1,2-Dichloroethane	5.0	U	127-18-4	Tetrachloroethene	5.0	U
78-93-3	2-Butanone	10.	U	108-88-3	Toluene	5.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U	108-90-7	Chlorobenzene	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U	100-41-4	Ethyl Benzene	5.0	U
108-05-4	Vinyl Acetate	10.	U	100-42-5	Styrene	5.0	U
75-27-4	Bromodichloromethane	5.0	U		Total Xylenes	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	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 >/= 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 2)

Laboratory Name: CompuChem

Semivolatile Compounds

Concentration: low
Date extracted/prepared: 09-26-85
Date analyzed: 09-29-85
Conc/Dil Factor: 2.00

CAS Number		ug/l		CAS Number		ug/l	
62-75-9	N-Nitrosodimethylamine	20.	U	99-09-2	3-Nitroaniline	100	U
108-95-2	Phenol	20.	U	83-32-9	Acenaphthene	20.	U
62-53-3	Aniline	20.	U	51-28-5	2,4-Dinitrophenol	100	U
111-44-4	bis(2-Chloroethyl) ether	20.	U	100-02-7	4-Nitrophenol	100	U
95-57-8	2-Chlorophenol	20.	U	132-64-9	Dibenzofuran	20.	U
541-73-1	1,3-Dichlorobenzene	20.	U	121-14-2	2,4-Dinitrotoluene	20.	U
106-46-7	1,4-Dichlorobenzene	20.	U	606-20-2	2,6-Dinitrotoluene	20.	U
100-51-6	Benzyl Alcohol	20.	U	84-66-2	Diethylphthalate	20.	U
95-50-1	1,2-Dichlorobenzene	20.	U	7005-72-3	4-Chlorophenyl Phenyl ether	20.	U
95-48-7	2-Methylphenol	20.	U	86-73-7	Fluorene	20.	U
39638-32-9	bis(2-Chloroisopropyl) ether	20.	U	100-01-6	4-Nitroaniline	100	U
106-44-5	4-Methylphenol	20.	U	534-52-1	4,6-Dinitro-2-methylphenol	100	U
621-64-7	N-Nitroso-Dipropylamine	20.	U	86-30-6	N-nitrosodiphenylamine (1)	20.	U
67-72-1	Hexachloroethane	20.	U	101-55-3	4-Bromophenyl Phenyl ether	20.	U
98-95-3	Nitrobenzene	20.	U	118-74-1	Hexachlorobenzene	20.	U
78-59-1	Isophorone	20.	U	87-86-5	Pentachlorophenol	100	U
88-75-5	2-Nitrophenol	20.	U	85-01-8	Phenanthrene	20.	U
105-67-9	2,4-Dimethylphenol	20.	U	120-12-7	Anthracene	20.	U
65-85-0	Benzoic Acid	100	U	84-74-2	Di-n-butylphthalate	20.	U
111-91-1	bis(2-Chloroethoxy) methane	20.	U	206-44-0	Fluoranthene	20.	U
120-83-2	2,4-Dichlorophenol	20.	U	92-87-5	Benzidine	100	U
120-82-1	1,2,4-Trichlorobenzene	20.	U	129-00-0	Pyrene	20.	U
91-20-3	Naphthalene	20.	U	85-68-7	Butyl Benzyl Phthalate	20.	U
106-47-8	4-Chloroaniline	20.	U	91-94-1	3,3'-Dichlorobenzidine	40.	U
87-68-3	Hexachlorobutadiene	20.	U	56-55-3	Benzo(a)anthracene	20.	U
59-50-7	4-Chloro-3-methylphenol	20.	U	117-81-7	bis(2-ethylhexyl)phthalate	20.	U
91-57-6	2-Methylnaphthalene	20.	U	218-01-9	Chrysene	20.	U
77-47-4	Hexachlorocyclopentadiene	20.	U	117-84-0	Di-n-octyl Phthalate	20.	U
88-06-2	2,4,6-Trichlorophenol	20.	U	205-99-2	Benzo(b)fluoranthene	20.	U
95-95-4	2,4,5-Trichlorophenol	100	U	207-08-9	Benzo(k)fluoranthene	20.	U
91-58-7	2-Chloronaphthalene	20.	U	50-32-8	Benzo(a)pyrene	20.	U
88-74-4	2-Nitroaniline	100	U	193-39-5	Indeno(1,2,3-cd)pyrene	20.	U
131-11-3	Dimethyl Phthalate	20.	U	53-70-3	Dibenz(a,h)anthracene	20.	U
208-96-8	Acenaphthylene	20.	U	191-24-2	Benzo(g,h,i)perylene	20.	U

(1) Cannot be separated from diphenylamine

Sample Number
CAS 5942

Organics Analysis Data Sheet
(Page 3)

Pesticide/PCBs

Concentration: [Low] Medium (Circle One)
Date Extracted/Prepared: 10-(-85)
Data Analyzed: 10/ 2/85
Conc/Dil Factor: 1.00

CAS Number		[ug/l] or ug/Kg (Circle One)	
319-84-6	Alpha - BHC	.05	U
319-85-7	Beta - BHC	.05	U
319-86-8	Delta - BHC	.05	U
58-89-9	Gamma - BHC(Lindane)	.05	U
76-44-8	Heptachlor	.05	U
309-00-2	Aldrin	.05	U
1024-57-3	Heptachlor Epoxide	.05	U
959-98-8	Endosulfan I	.05	U
60-57-1	Dieldrin	.10	U
72-55-9	4-4' - DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4-4' - DDD	.10	U
7421-93-4	Endrin Aldehyde	.10	U
1031 07-8	Endosulfan Sulfate	.10	U
50-29-3	4-4' - DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin Ketone	.10	U
57-74-9	Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor - 1016	.50	U
11104-28-2	Aroclor - 1221	.50	U
11141-16-5	Aroclor - 1232	.50	U
53469-21-9	Aroclor - 1242	.50	U
12672-29-6	Aroclor - 1248	.50	U
11097-69-1	Aroclor - 1254	1.0	U
11096-82-5	Aroclor - 1260	1.0	U

V(i) = Volume of extract injected (ul)
V(s) = Volume of water extracted (ml)
W(s) = Weight of sample extracted (g)
V(t) = Volume of total extract (ul)

V(s) 1000.00 or W(s) _____ V(t) 10000.00 V(i) 5.0

Virginia 22313 703/557-2490

5942

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg
1.		NO VOA COMPOUNDS FOUND			
2.					
3.					
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Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818. Alexandria Virginia 22313 703/557-2490

Sample Number
5942

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	NO SV COMPOUNDS FOUND			
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Environmental Protection Agency, CLP Sample Management Office
P.O. Box 818, Alexandria, VA 22313 703/557-2490

Sample Number
5943

Organics Analysis Data Sheet
(Page 1)

Laboratory Name: CompuChem
Lab Sample ID No: CW062068A12
Sample matrix: liquid
Data Release Authorized By: NRF

Case: CAS
QC Report No: _____
Contract No:
Date Sample Received: 09-26-85

Volatile Compounds
Concentration: low
Date extracted/prepared: 10-02-85
Date analyzed: 10-02-85
Conc/Dil Factor: 1.00
Percent moisture: N/A
Percent moisture (decanted):
pH: N/A

CAS Number		ug/l		CAS Number		ug/l	
74-87-3	Chloromethane	10.	U	78-87-5	1,2-Dichloropropane	5.0	U
74-83-9	Bromomethane	10.	U	10061-02-6	trans-1,3-Dichloropropene	5.0	U
75-01-4	Vinyl Chloride	10.	U	79-01-6	Trichloroethene	25.	
75-00-3	Chloroethane	10.	U	124-48-1	Dibromochloromethane	5.0	U
75-09-2	Methylene Chloride	5.0	U	79-00-5	1,1,2-Trichloroethane	5.0	U
67-64-1	Acetone	10.	U	71-43-2	Benzene	5.0	U
75-15-0	Carbon Disulfide	5.0	U	10061-01-5	cis-1,3-Dichloropropene	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U	110-75-8	2-Chloroethyl Vinyl Ether	10.	U
75-34-3	1,1-Dichloroethane	5.0	U	75-25-2	Bromoform	5.0	U
156-60-5	trans-1,2-Dichloroethene	30.		591-78-6	2-Hexanone	10.	U
67-66-3	Chloroform	4.8	J	108-10-1	4-Methyl-2-pentanone	10.	U
107-06-2	1,2-Dichloroethane	5.0	U	127-18-4	Tetrachloroethene	7.8	
78-93-3	2-Butanone	10.	U	108-88-3	Toluene	5.0	U
71-55-6	1,1,1-Trichloroethane	3.6	J	108-90-7	Chlorobenzene	5.0	U
56-23-5	Carbon Tetrachloride	5.0	U	100-41-4	Ethyl Benzene	5.0	U
108-05-4	Vinyl Acetate	10.	U	100-42-5	Styrene	5.0	U
75-27-4	Bromodichloromethane	5.0	U		Total Xylenes	5.0	U
79-34-5	1,1,2,2-Tetrachloroethane	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.

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C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides >/= 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 2)
Semivolatile Compounds

Laboratory Name: CompuChem

Concentration: low
Date extracted/prepared: 09-26-85
Date analyzed: 09-29-85
Conc/Dil Factor: 2.00

CAS Number		ug/l		CAS Number		ug/l	
62-75-9	N-Nitrosodimethylamine	20.	U	99-09-2	3-Nitroaniline	100	U
108-95-2	Phenol	20.	U	83-32-9	Acenaphthene	20.	U
62-53-3	Aniline	20.	U	51-28-5	2,4-Dinitrophenol	100	U
111-44-4	bis(2-Chloroethyl) ether	20.	U	100-02-7	4-Nitrophenol	100	U
95-57-8	2-Chlorophenol	20.	U	132-64-9	Dibenzofuran	20.	U
541-73-1	1,3-Dichlorobenzene	20.	U	121-14-2	2,4-Dinitrotoluene	20.	U
106-46-7	1,4-Dichlorobenzene	20.	U	606-20-2	2,6-Dinitrotoluene	20.	U
100-51-6	Benzyl Alcohol	20.	U	84-66-2	Diethylphthalate	20.	U
95-50-1	1,2-Dichlorobenzene	20.	U	7005-72-3	4-Chlorophenyl Phenyl ether	20.	U
95-48-7	2-Methylphenol	20.	U	86-73-7	Fluorene	20.	U
39638-32-9	bis(2-Chloroisopropyl) ether	20.	U	100-01-6	4-Nitroaniline	100	U
106-44-5	4-Methylphenol	20.	U	534-52-1	4,6-Dinitro-2-methylphenol	100	U
621-64-7	N-Nitroso-Dipropylamine	20.	U	86-30-6	N-nitrosodiphenylamine (1)	20.	U
67-72-1	Hexachloroethane	20.	U	101-55-3	4-Bromophenyl Phenyl ether	20.	U
98-95-3	Nitrobenzene	20.	U	118-74-1	Hexachlorobenzene	20.	U
78-59-1	Isophorone	20.	U	87-86-5	Pentachlorophenol	100	U
88-75-5	2-Nitrophenol	20.	U	85-01-8	Phenanthrene	20.	U
105-67-9	2,4-Dimethylphenol	20.	U	120-12-7	Anthracene	20.	U
65-85-0	Benzoic Acid	100	U	84-74-2	Di-n-butylphthalate	20.	U
111-91-1	bis(2-Chloroethoxy) methane	20.	U	206-44-0	Fluoranthene	20.	U
120-83-2	2,4-Dichlorophenol	20.	U	92-87-5	Benzidine	100	U
120-82-1	1,2,4-Trichlorobenzene	20.	U	129-00-0	Pyrene	20.	U
91-20-3	Naphthalene	20.	U	85-68-7	Butyl Benzyl Phthalate	20.	U
106-47-8	4-Chloroaniline	20.	U	91-94-1	3,3'-Dichlorobenzidine	40.	U
87-68-3	Hexachlorobutadiene	20.	U	56-55-3	Benzo(a)anthracene	20.	U
59-50-7	4-Chloro-3-methylphenol	20.	U	117-81-7	bis(2-ethylhexyl)phthalate	20.	U
91-57-6	2-Methylnaphthalene	20.	U	218-01-9	Chrysene	20.	U
77-47-4	Hexachlorocyclopentadiene	20.	U	117-84-0	Di-n-octyl Phthalate	20.	U
88-06-2	2,4,6-Trichlorophenol	20.	U	205-99-2	Benzo(b)fluoranthene	20.	U
95-95-4	2,4,5-Trichlorophenol	100	U	207-08-9	Benzo(k)fluoranthene	20.	U
91-58-7	2-Chloronaphthalene	20.	U	50-32-8	Benzo(a)pyrene	20.	U
88-74-4	2-Nitroaniline	100	U	193-39-5	Indeno(1,2,3-cd)pyrene	20.	U
131-11-3	Dimethyl Phthalate	20.	U	53-70-3	Dibenz(a,h)anthracene	20.	U
208-96-8	Acenaphthylene	20.	U	191-24-2	Benzo(g,h,i)perylene	20.	U

(1) Cannot be separated from diphenylamine

Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818, Alexandria Virginia 22313 703/557-2490

Sample Number
5942

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	NO SV COMPOUNDS FOUND			
2.				
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Environmental Protection Agency. CLP Sample Management Office.
P. O. Box 818 Alexandria, Virginia 22313 703/557-2490

Sample Number
5943

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.		NO VOA COMPOUNDS FOUND			
2.					
3.					
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Sample Number
C&S5943

Organics Analysis Data Sheet (Page 3)

Pesticide/PCBs

Concentration: [Low] Medium (Circle One)
Date Extracted/Prepared: 10-1-85
Data Analyzed: 10/ 2/85
Conc/Dil Factor: 1.00

CAS Number		[ug/l] or ug/Kg (Circle One)	
319-84-6	Alpha - BHC	.05	U
319-85-7	Beta - BHC	.05	U
319-86-8	Delta - BHC	.05	U
58-89-9	Gamma - BHC(Lindane)	.05	U
76-44-8	Heptachlor	.05	U
309-00-2	Aldrin	.05	U
1024-57-3	Heptachlor Epoxide	.05	U
959-98-8	Endosulfan I	.05	U
60-57-1	Dieldrin	.10	U
72-55-9	4-4' - DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4-4' - DDD	.10	U
7421-93-4	Endrin Aldehyde	.10	U
1031-07-8	Endosulfan Sulfate	.10	U
50-29-3	4-4' - DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin Ketone	.10	U
57-74-9	Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor - 1016	.50	U
11104-28-2	Aroclor - 1221	.50	U
11141-16-5	Aroclor - 1232	.50	U
53469-21-9	Aroclor - 1242	.50	U
12672-29-6	Aroclor - 1248	.50	U
11097-69-1	Aroclor - 1254	1.0	U
11096-82-5	Aroclor - 1260	1.0	U

V(i) = Volume of extract injected (ul)
V(s) = Volume of water extracted (ml)
W(s) = Weight of sample extracted (g)
V(t) = Volume of total extract (ul)

V(s) 1000.00 or W(s) _____ V(t) 10000.00 V(i) 5.0

Environmental
LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

To: NIAGARA MOHAWK - EAST UTICA
CALOCERINOS & SPINA
LIVERPOOL, NY 13088

Date: Jan 14 1986

Attention: THOMAS BARBA

SAMPLE #5940

LABORATORY ANALYSIS REPORT

SAMPLE SUMMARY

CLIENT	: NIAGARA MOHAWK - EAST UTICA	DATE RECEIVED	: 09/23/85
JOB #	: 465.007.00	DATE COLLECTED	: 09/23/85
LOCATION	: SW - 1	TIME COLLECTED	: 1030
PRICE CODE	: STANDARD	METHOD	: GRAB

PARAMETER	RESULTS	UNITS
CYANIDE-T	<0.004	mg/l
ALUMINUM	0.3	mg/l
ANTIMONY	<0.060	mg/l
ARSENIC	<0.010	mg/l
BARIUM	<0.2	mg/l
BERYLLIUM	<0.005	mg/l
CADMIUM	<0.005	mg/l
CALCIUM	<10.	mg/l
CHROMIUM-T	0.011	mg/l
COBALT	<0.050	mg/l
COPPER	0.05	mg/l
IRON	0.69	mg/l
LEAD	0.017	mg/l
MAGNESIUM	10.	mg/l
MANGANESE	0.14	mg/l

Environmental
LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

SAMPLE #5940

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
MERCURY	<0.0005	mg/l
NICKEL	<0.02	mg/l
POTASSIUM	2.8	mg/l
SELENIUM	<0.005	mg/l
SILVER	<0.010	mg/l
SODIUM	29.	mg/l
THALLIUM	<0.010	mg/l
TIN	<0.040	mg/l
VANADIUM	<0.050	mg/l
ZINC	0.03	mg/l

All analyses were conducted in accordance with operating conditions as set forth in current EPA, ASTM and/or Standard Methods unless otherwise specified.

APPROVED BY: _____ DATE: JAN 14 1986

Environmental
LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

To: NIAGARA MOHAWK - EAST UTICA
CALOCERINOS & SPINA
LIVERPOOL, NY 13088

Date: Jan 14 1986

Attention: THOMAS BARBA

SAMPLE #5941

LABORATORY ANALYSIS REPORT

SAMPLE SUMMARY

CLIENT	: NIAGARA MOHAWK - EAST UTICA	DATE RECEIVED	: 09/23/85
JOB #	: 465.007.00	DATE COLLECTED	: 09/23/85
LOCATION	: SW - 2	TIME COLLECTED	: 1055
PRICE CODE	: STANDARD	METHOD	: GRAB

PARAMETER	RESULTS	UNITS
CYANIDE-T	<0.004	mg/l
ALUMINUM	0.4	mg/l
ANTIMONY	<0.060	mg/l
ARSENIC	<0.0010	mg/l
BARIUM	<0.2	mg/l
BERYLLIUM	<0.005	mg/l
CADMIUM	<0.005	mg/l
CALCIUM	46.	mg/l
CHROMIUM-T	0.044	mg/l
COBALT	<0.050	mg/l
COPPER	0.11	mg/l
IRON	0.93	mg/l
LEAD	0.033	mg/l
MAGNESIUM	9.	mg/l
MANGANESE	0.11	mg/l

Environmental
CS LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

SAMPLE #5941

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
MERCURY	<0.0005	mg/l
NICKEL	<0.02	mg/l
POTASSIUM	2.6	mg/l
SELENIUM	<0.005	mg/l
SILVER	<0.010	mg/l
SODIUM	25.	mg/l
THALLIUM	<0.010	mg/l
TIN	<0.040	mg/l
VANADIUM	<0.050	mg/l
ZINC	0.02	mg/l

All analyses were conducted in accordance with operating conditions as set forth in current EPA, ASTM and/or Standard Methods unless otherwise specified.

APPROVED BY: _____ DATE: JAN 14 1988

Environmental
LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

To: NIAGARA MOHAWK - EAST UTICA
CALOCERINOS & SPINA
LIVERPOOL, NY 13088

Date: Jan 14 1986

Attention: THOMAS BARBA

****

SAMPLE #5942

LABORATORY ANALYSIS REPORT

****

SAMPLE SUMMARY

CLIENT	: NIAGARA MOHAWK - EAST UTICA	DATE RECEIVED	: 09/23/85
JOB #	: 465.007.00	DATE COLLECTED	: 09/23/85
LOCATION	: SW - 3	TIME COLLECTED	: 1230
PRICE CODE	: STANDARD	METHOD	: GRAB

PARAMETER	RESULTS	UNITS
CYANIDE-T	<0.004	mg/l
ALUMINUM	0.7	mg/l
ANTIMONY	<0.060	mg/l
ARSENIC	<0.010	mg/l
BARIUM	<0.02	mg/l
BERYLLIUM	<0.005	mg/l
CADMIUM	<0.005	mg/l
CALCIUM	51.	mg/l
CHROMIUM-T	0.050	mg/l
COBALT	<0.050	mg/l
COPPER	0.11	mg/l
IRON	1.1	mg/l
LEAD	0.024	mg/l
MAGNESIUM	10.	mg/l
MANGANESE	0.14	mg/l

Environmental
LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

SAMPLE #5942

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
MERCURY	<0.0005	mg/l
NICKEL	0.04	mg/l
POTASSIUM	2.5	mg/l
SELENIUM	<0.005	mg/l
SILVER	<0.010	mg/l
SODIUM	19.	mg/l
THALLIUM	<0.010	mg/l
TIN	<0.040	mg/l
VANADIUM	<0.050	mg/l
ZINC	0.18	mg/l

All analyses were conducted in accordance with operating conditions as set forth in current EPA, ASTM and/or Standard Methods unless otherwise specified.

APPROVED BY: _____ DATE: JAN 14 1988

Environmental
CS LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

To: NIAGARA MOHAWK - EAST UTICA
CALOCERINOS & SPINA
LIVERPOOL, NY 13088

Date: Jan 14 1986

Attention: THOMAS BARBA

SAMPLE #6240

LABORATORY ANALYSIS REPORT

SAMPLE SUMMARY

CLIENT	: NIAGARA MOHAWK - EAST UTICA	DATE RECEIVED	: 10/03/85
JOB #	: 465.007.00	DATE COLLECTED	: 10/03/85
LOCATION	: SW - 3B	TIME COLLECTED	: 1230
PRICE CODE	: STANDARD	METHOD	: GRAB

PARAMETER	RESULTS	UNITS
CYANIDE-T	0.006	mg/l
ALUMINUM	0.3	mg/l
ANTIMONY	<0.060	mg/l
ARSENIC	<0.010	mg/l
BARIUM	<0.2	mg/l
BERYLLIUM	0.006	mg/l
CADMIUM	<0.005	mg/l
CALCIUM	76.	mg/l
CHROMIUM-T	0.021	mg/l
COBALT	<0.050	mg/l
COPPER	0.06	mg/l
IRON	0.95	mg/l
LEAD	0.014	mg/l
MAGNESIUM	14.	mg/l
MANGANESE	0.12	mg/l

Environmental
CS LABORATORY
Division of Caloccrinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

SAMPLE #6240

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
MERCURY	<0.0005	mg/l
NICKEL	0.03	mg/l
POTASSIUM	3.5	mg/l
SELENIUM	<0.005	mg/l
SILVER	<0.010	mg/l
SODIUM	14.	mg/l
THALLIUM	<0.010	mg/l
TIN	<0.040	mg/l
VANADIUM	<0.050	mg/l
ZINC	0.03	mg/l

All analyses were conducted in accordance with operating conditions as set forth in current EPA, ASTM and/or Standard Methods unless otherwise specified.

APPROVED BY: _____ DATE: JAN 14 1986

Environmental LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

To: NIAGARA MOHAWK - EAST UTICA
CALOCERINOS & SPINA
LIVERPOOL, NY 13088

Date: Jan 14 1986

Attention: THOMAS BARBA

SAMPLE #5943

LABORATORY ANALYSIS REPORT

SAMPLE SUMMARY

CLIENT	: NIAGARA MOHAWK - EAST UTICA	DATE RECEIVED	: 09/23/85
JOB #	: 465.007.00	DATE COLLECTED	: 09/23/85
LOCATION	: SW - 4	TIME COLLECTED	: 1300
PRICE CODE	: STANDARD	METHOD	: GRAB

PARAMETER	RESULTS	UNITS
CYANIDE-T	<0.004	mg/l
ALUMINUM	0.3	mg/l
ANTIMONY	<0.060	mg/l
ARSENIC	<0.010	mg/l
BARIUM	<0.2	mg/l
BERYLLIUM	<0.005	mg/l
CADMIUM	<0.005	mg/l
CALCIUM	47.	mg/l
CHROMIUM-T	<0.010	mg/l
COBALT	<0.050	mg/l
COPPER	0.02	mg/l
IRON	0.68	mg/l
LEAD	0.026	mg/l
MAGNESIUM	9.	mg/l
MANGANESE	0.16	mg/l

Environmental
CS LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

SAMPLE #5943

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
MERCURY	<0.0005	mg/l
NICKEL	<0.02	mg/l
POTASSIUM	2.7	mg/l
SELENIUM	<0.005	mg/l
SILVER	<0.010	mg/l
SODIUM	24.	mg/l
THALLIUM	<0.010	mg/l
TIN	<0.040	mg/l
VANADIUM	<0.050	mg/l
ZINC	0.05	mg/l

All analyses were conducted in accordance with operating conditions as set forth in current EPA, ASTM and/or Standard Methods unless otherwise specified.

APPROVED BY: _____ DATE: JAN 14 1986

APPENDIX H

HRS WORKSHEETS AND DOCUMENTATION RECORDS

Facility name: Niagara Mohawk

Location: Old Erie Canal, Frankfort, New York

EPA Region: II

Person(s) in charge of the facility:

Name of Reviewer: T.A. Barba, M.S. Cullen Date: July 31, 1986

General description of the facility:

(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

The site is an abandoned section of the Old Erie Canal which has been used in the past for wastewater disposal by industries along its banks. Contaminants are currently tied up in sediment in the canal. Testing has shown that ground water in a monitoring well downgradient of the site was not contaminated.

Scores: S_M = 24.66 (S_{gw} = 40.68 S_{sw} = 12.87 S_a = 0.00)

S_{FE} = 0.00

S_{DC} = 0.00

HRS COVER SHEET

	S	S^2
Groundwater Route Score (S_{gw})	40.68	1,654.86
Surface Water Route Score (S_{sw})	12.87	165.64
Air Route Score (S_a)	0.00	0.00
$S_{gw}^2 + S_{sw}^2 + S_a^2$		1,820.50
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		42.67
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} \,/\, 1.73 = S_M =$		24.66

WORKSHEET FOR COMPUTING S_M

Ground Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	(0) 45	1	0	45	3.1
If observed release is given a score of 45, proceed to line 4. If observed release is given a score of 0, proceed to line 2.					
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	2	3	
Physical State	0 1 2 (3)	1	3	3	
Total Route Characteristics Score			13	15	
3 Containment	0 1 2 (3)	1	3	3	3.3
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	5	8	
Total Waste Characteristics Score			23	26	
5 Targets					3.5
Ground Water Use	0 1 (2) 3	3	6	9	
Distance to Nearest Well/Population Served	0 4 8 8 10 / 12 16 18 (20) / 24 30 32 35 40	1	20	40	
Total Targets Score			26	49	
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			23,322	57.330	
7 Divide line 6 by 57.330 and multiply by 100		S_{gw} =	40.68		

GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 (45)	1	45	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		3	
1-yr. 24-hr. Rainfall	0 1 2 3	1		3	
Distance to Nearest Surface Water	0 1 2 3	2		6	
Physical State	0 1 2 3	1		3	
Total Route Characteristics Score				15	
3 Containment	0 1 2 3	1		3	4.3
4 Waste Characteristics					4.4
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	5	8	
Total Waste Characteristics Score			23	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			8,280	64,350	
7 Divide line 6 by 64,350 and multiply by 100		S_{gw} =	12.87		

SURFACE WATER ROUTE WORK SHEET

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

AIR ROUTE WORK SHEET

Fire and Explosion Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Containment	1 3	1	0	3	7.1
2 Waste Characteristics					7.2
Direct Evidence	0 3	1		3	
Ignitability	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1		5	
Distance to Nearest Building	0 1 2 3	1		3	
Distance to Sensitive Environment	0 1 2 3	1		3	
Land Use	0 1 2 3	1		3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Total Targets Score				24	
4 Multiply 1 x 2 x 3				1,440	
5 Divide line 4 by 1,440 and multiply by 100		S_{FE} =	0.00		

FIRE AND EXPLOSION WORK SHEET

Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Incident	(0) 45	1	0	45	8.1
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2					
2 Accessibility	0 1 2 3	1		3	8.2
3 Containment	0 15	1		15	8.3
4 Waste Characteristics Toxicity	0 1 2 3	5		15	8.4
5 Targets					8.5
Population Within a 1-Mile Radius	0 1 2 3 4 5	4		20	
Distance to a Critical Habitat	0 1 2 3	4		12	
Total Targets Score				32	
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				21,600	
7 Divide line 6 by 21,600 and multiply by 100	S_{DC} = 0.00				

DIRECT CONTACT WORK SHEET

OOCUMENTATION 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: Niagara Mohawk

LOCATION: Old Erie Canal

GROUND WATER ROUTE

1. OBSERVED RELEASE

Contaminants detected (5 maximum):
No significant increase between upgradient (background) and downgradient wells (Ground-Water Monitoring C&S, 1985)

Rationale for attributing the contaminants to the facility:

Not Applicable

* * *

2. ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifers(s) of concern:

Shallow ground water table

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

Approximately 2.5 feet
(Test Borings; C&S, 1985)

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

Approximately 5 feet to canal bottom

(Field Log; C&S, 1985)

Net Precipitation

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

38"

(Climatic Atlas of the United States)

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

26"

(Climatic Atlas of the United States)

Net precipitation (subtract the above figures):

12"

(Climatic Atlas of the United States)

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

clay, silty, very fine sand, some fill

(Boring Logs; C&S, 1985

Permeability associated with soil type:

10^{-3} to 10^{-5} cm/sec

(Boring Logs; C&S, 1985)

Physical State

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

Liquid, sludge

* * *

3. CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Surface impoundment with no liner

Method with highest score:

As above

4. WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

PCB's, PAH's, Heavy Metals (Chromium, Lead)

(Sediment Analyses; C&S, 1985)

Compound with highest score:

PCB's

Hazardous Waste Quantity

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 substances are in the sediment in the canal. The estimated quantity of sediment is 15,500 cu. yd. The hazardous substances are 3.4% of the sediment (on a weight to weight/dry weight basis). This results in approximately 527 cu. yds. of hazardous substances

Basis of estimating and/or computing waste quantity:

Canal area is approximately 210,000 sq. ft.
Sediment depth averages 2 ft.
Sediment quantity is approximately 15,500 cubic yards.
Average sediment concentrations of organic and inorganic hazardous substances was approximately 34,000 mg/kg dry weight basis.

* * *

5. TARGETS

Ground Water Use

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

Some private wells used for drinking water.

(New York State Department of Health - Utica Office)
(New York State Department of Environmental Conservation)

Distance to Nearest Well

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

Residences on Taft Avenue, drawing from 25' deep well.

(New York State Oepartment of Health, Memorandum of May 10, 1983)

Distance to above well or building:

750 ft.

(U.S.G.S. Map, Utica East Quad)

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:

101-1,000 people. Ground water flows north from the site to the Mohawk River. The river acts as a discontinuity, beyond which contaminants can not migrate. Therefore, the only wells of concern are those located on the south side of the river. Approximately 75 private wells present. No community supply wells. (See attached map)
(NYSDEC Memorandums, July 12, 1984 and July 6, 1984)
(New York State Atlas of Community Water System Sources, 1982)

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):

Not Applicable

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

101-1,000
(see above)

3 Mile Radius

SCALE 1:24000

1 0 1 MILE

LEGEND

- Municipal Water System
- Area Beyond Discontinuity
- Area Wells Included in HRS Score

HRS DOCUMENTATION MAP

SURFACE WATER ROUTE

1. OBSERVED RELEASE

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

lead	trichlorethene
DDT	t-1,2-dichloroethene
	2,4-dinitrohpenol

Canal water eventually reaches the Mohawk River via artificial and natural conduits.

(Surface Water Analysis; C&S, 1985)

Rationale for attributing the contaminants to the facility:

Sampling and analysis of canal water

(C&S, 1985)

* * *

2. ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

0-1%

Name/description of nearest downslope surface water:

Ferguson Creek

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

0-1%

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

Yes - Site is an abandoned canal.

Is the facility completely surrounded by areas of higher elevation?

Yes

1-Year 24-Hour Rainfall in Inches

Not Applicable

Distance to Nearest Downslope Surface Water

Old Erie Canal flows through outlet pipe into Mohawk River.

Physical State of Waste

Originally discharged as wastewater. Currently sediment.

* * *

3. CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Not Applicable

Method with highest score:

Not Applicable

4. WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

Lead
2,4-dinitrophenol
DDT

Compound with highest score:

Lead
DDT

Hazardous Waste Quantity

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):

527 cuy

See ground-water route notes.

Basis of estimating and/or computing waste quantity:

See ground-water route notes.

* * *

5. TARGETS

Surface Water Use

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

Commercial, industrial, recreation on Mohawk River.

Is there tidal influence?

No

Distance to a Sensitive Environment

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

Not Applicable

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

0.5 Miles
(Site Inspection; Ecological Analysts, 1983)

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

None known

Population Served by Surface Water

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:

None
(Phase I Investigation; Ecological Analysts, 1983)

AIR ROUTE

1. OBSERVED RELEASE

Contaminants detected:

Not Applicable

Date and location of detection of contaminants:

Not Applicable

Methods used to detect the contaminants:

Not Applicable

Rationale for attributing the contaminants to the site:

Not Applicable

* * *

2. WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

Not Applicable

Most incompatible pair of compounds:

Not Applicable

Toxicity

Most toxic compound:

Not Applicable

Hazardous Waste Quantity

Total quantity of hazardous waste:

Not Applicable

Basis of estimating and/or computing waste quantity:

Not Applicable

* * *

3. TARGETS

Population Within 4-Mile Radius

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

0 to 4 mi 0 to 1 mi 0 to ½ mi 0 to ¼ mi

Not Applicable

Distance to a Sensitive Environment

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

Not Applicable

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

Not Applicable

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

Not Applicable

Land Use

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

Not Applicable

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

Not Applicable

Distance to residential area, if 2 miles or less:

Not Applicable

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

Not Applicable

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

Not Applicable

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

Not Applicable

EPA

Potential Hazardous Waste Site

Site Inspection Report

Site Inspection Report

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

EPA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980768758

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Old Erie Canal	Turner Street				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
Frankfort	NY	13340	Oneida/Herkimer		

09 COORDINATES		10 TYPE OF OWNERSHIP (Check one)
LATITUDE	LONGITUDE	☐ A. PRIVATE ☐ B. FEDERAL _____ ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER _____ ☐ G. UNKNOWN
43 05 20.0	075 10 00.0	

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION
2 / 6 / 86 (MONTH DAY YEAR)	☐ ACTIVE ☑ INACTIVE	pre 1950 (BEGINNING YEAR) / 1981 (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 _____ (Name of firm) ☑ G. OTHER Calocerinos & Spina, Engineers (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Richard Klippel	Industrial Waste Manager	Calocerinos & Spina	(315) 457-6711
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO.**
Thomas Barba	Project Chemist	Calocerinos & Spina	(315) 457-6711
Martha Cullen	Environmental Scientist	Calocerinos & Spina	(315) 457-6711
Mark Wilder	Geologist	Calocerinos & Spina	(315) 457-6711
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
All information based on Phase			( )
II Investigation			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☐ PERMISSION ☐ WARRANT		

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Richard Klippel	Calocerinos & Spina	(315) 457-6711

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Richard Klippel	see above			2 / 6 / 86 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D90768758

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: 527
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	15500	cuy	sediment at canal bottom
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
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
OCC	Arochlor 1254	11097-69-1	SI with outlet	3100	mg/kg
OCC	Fluoranthene	206-44-0	SI with outlet	2300	mg/kg
OCC	Phenanthrene	85-01-8	SI with outlet	1600	mg/kg
OCC	Other PAH's	999	SI with outlet	variable	mg/kg
MES	Lead	7439-92-1	SI with outlet	4100	mg/kg
MES	Copper	7440-50-8	SI with outlet	6800	mg/kg
MES	Zinc	7440-66-6	SI with outlet	890	mg/kg
MES	Other Metals	999	SI with outlet	variable	
IOC	Cyanide		SI with outlet	27	

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)

Sample Analysis; C&S, 1985

EPA

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

I. IDENTIFICATION	
01 STATE: NY	02 SITE NUMBER: D980768758

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 101-1,000 — 04 NARRATIVE DESCRIPTION

Samples showed no significant increase of contamination between upgradient and downgradient wells. However, there are some private wells downgradient of the site. (C&S, 1985)

01 ☒ B. SURFACE WATER CONTAMINATION — 02 ☒ OBSERVED (DATE: 9/85) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION

Some contaminants found in canal water samples. (C&S, 1985)

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

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

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

01 ☒ F. CONTAMINATION OF SOIL — 02 ☒ OBSERVED (DATE: 9/85) — ☐ POTENTIAL — ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: less than 1 (Acres) — 04 NARRATIVE DESCRIPTION

Some contaminants found in subsurface soil samples. (C&S, 1985)

01 ☒ G. DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 101-1,000 — 04 NARRATIVE DESCRIPTION

Some private wells downgradient of site, samples taken showed no contamination (Department of Health, 1983)

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
NY	D980768758

II. HAZARDOUS CONDITIONS AND INCIDENTS *(Continued)*

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

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

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

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

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

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

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

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)*

Phase I and II Investigation Analytical Reports.

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980768758

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)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☒ A. SURFACE IMPOUNDMENT	15500	cuy
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☐ F. LANDFILL		
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER * (Specify)	with outlet	

04 TREATMENT (Check all that apply)

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

05 OTHER

- XX ☐ A. BUILDINGS ON SITE

06 AREA OF SITE

5 (Acres)

07 COMMENTS

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.

The canal is bermed, but under severe conditions it could be breached.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☒ YES ☐ NO

02 COMMENTS

Although not fenced, the canal is located between private property and a major highway. Very few people are likely to access the site.

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

Phase II Site Investigation (C&S, 1985).

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980768758

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

A. 15 (mi)
B. 0.1 (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 101-1,000

03 DISTANCE TO NEAREST DRINKING WATER WELL _____ (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
2-8 (ft)	North	5 (ft)	na (gpd)	☐ YES ☒ NO

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

10 RECHARGE AREA		11 DISCHARGE AREA	
☒ YES ☐ NO	COMMENTS	☒ 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
Mohawk River	☐	0.4 (mi)
	☐	(mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. _____ NO. OF PERSONS	B. _____ NO. OF PERSONS	C. _____ NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION

0.1 (mi)

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

_____

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)

Industrial, residential area

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980768758

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

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	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH	
_____ (ft)	_____ (ft)	_____	

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
12 (in)	2 (in)	Basin %	North	3-5 %

09 FLOOD POTENTIAL

SITE IS IN unknown YEAR FLOODPLAIN

10

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

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE	OTHER
A. _____ (mi)	B. 0.5 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

_____ (mi)

ENDANGERED SPECIES: none known

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AG LAND
A. LT 0.1 (mi)	B. 0.1 (mi)	C. _____ (mi)	D. _____ (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Site is a basin, however, overall there is a gentle northward slope.

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

Phase II Site Investigation Test Borings, etc. (C&S, 1985).

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980768758

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	4	C&S, CompuChem	12/85
SURFACE WATER	4	C&S, CompuChem	12/85
WASTE sediment	13	C&S, CompuChem	12/85
AIR			
RUNOFF			
SPILL			
SOIL	3	C&S, CompuChem	12/85
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
Air-HNU	Zero concentration upwind and downwind of site

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☐ GROUND ☐ AERIAL

02 IN CUSTODY OF _____ (Name of organization or individual)

03 MAPS ☐ YES ☐ NO

04 LOCATION OF MAPS _____

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

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

Phase II Site Investigation (C&S, 1985).

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980768758

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
Niagara Mohawk		300 Erie Blvd., West	4911	Syracuse	NY	13202

PARENT COMPANY (If applicable)

08 NAME	09 D+B NUMBER	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE	12 CITY	13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first)

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

IV. REALTY OWNER(S) (If applicable; list most recent first)

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

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

Tax Records.

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	D980768758

II. CURRENT OPERATOR *(Provide 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

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

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

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

10 NAME	11 D+B NUMBER

12 STREET ADDRESS *(P.O. Box, RFD #, etc.)*	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

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

EPA FORM 2070-13 (7-81)

EPA

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

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D980768758

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

No waste currently being generated.

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
Savage Arms Co		Sperry Univac	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
Turner St	3471	Turner St	3471

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
Utica	NY		Syracuse	NY	

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
Empire Circuits	3471	Chicago Pneumatic	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
Turner St	3679	Turner St	3471

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
Utica	NY		Syracuse	NY	

IV. TRANSPORTER(S)

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	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)

DEC Files.

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	D980768758

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ H. ON SITE BURIAL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ L. ENCAPSULATION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ N. CUTOFF WALLS — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

EPA

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

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: D980768758

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

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: NY	02 SITE NUMBER: D980768758

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)*

4840 Old Erie Canal Oneida Co.

7.3-1

1 of 2

~~D~~ File

Ronald Tramontano - Bureau of Public Water Supply - 2nd Floor, [illegible] 5372

Jack Marsch - Syracuse Area Office

May 10, 1983

Old Erie Canal and Dyke Road
Herkimer County

On May 9, 1983, I collected samples for 601, 503.1, metals and physical chemical analysis from the following locations:

*Old Erie Canal (sketch attached)

1. John Longeretta - 25 foot well, 18" tile casing, well in basement, water level 6' below basement floor, no taste and odor problems reported, ground water seepage noted, lived in house two years.

2. Jeanette Duffy - trailer, no information on well, sulfur smell noted, lived in house ten years.

*No answers in area, others homes in area served by Utica Board of Water Supply System.

**Dyke Road Lite (sketch attached)

1. Shirley Curtis - drilled well, 60' deep, no reported problems with water.

2. Bill Curtis - drilled well.

3. Kenneth Schmidt - drilled well, 60' deep, sulfur smell noted.

**No sewers in area, no public water supply system in area, three homes no one home.

If you have any questions, please call (315) 798-5064.

Attachment

cc: Dr. Mohanka
Mr. Meade

N
TURNER
BROAD ST.
LANIER
EMPIRE
FLORED
ELM
VENTURE
BRICK IN
CANAL WALL
(REPAINED)
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TE OF NEW YORK
ARTMENT OF HEALTH OFFICE OF PUBLIC HEALTH

SE AREA OFFICE • 351 SOUTH WARREN STREET • SYRACUSE, N.Y. 13202-2036

D AXELROD, M.D.
Commissioner

GLENN E. HAGGIE, M.D.
Director

June 17, 1983

Mrs. Jeanette Duffy
422 Taft Ave
Frankfort, NY 13340

Dear Mrs. Duffy:

Enclosed is the Laboratory report for the analysis of your drinking water from samples collected May 9, 1983.

The first set of results show that the water was free of contamination for the compounds included. I would like to explain some of the terminology used so that the report is more understandable to you. The units used to quantify each compound is MCG/L (micrograms per liter or parts per billion). The notation "<" means "less than". Each compound had a detection limit as noted in the result column. The detection limit is the lowest level that the instruments used in the lab can respond to. Different compounds respond differently and this gives rise to different detection limits.

Using chloromethane as an example, you will note that the result is "<1. MCG/L." This means that chloromethane was not present in your drinking water at a detection limit of 1.0 microgram per liter.

Copies of other sample analysis will be forwarded to you when completed.

If you have any questions, please call me at (315) 798-5064.

Very truly yours,

Alvin J. Marsch

Alvin J. Marsch, P.E.
Regional Water Supply Engineer

Enc.

cc: Mr. Tramontano
Mr. Meade
Dr. Monanka

NEW YORK STATE DEPARTMENT OF HEALTH
CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT

2 of 3

SAMPLE ID: 31164 SAMPLE RECEIVED:83/05/10/12
PROGRAM: 10b:BUREAU OF TOXIC SUBSTANCES ASSESSMENT
SOURCE ID: DRAINAGE BASIN:00 GAZETTEER CODE:2153
POLITICAL SUBDIVISION:FRANKFORT COUNTY:HERKIMER
ALTITUDE:00 00 00.00 LONGITUDE:00 00 00.00 Z DIRECTION:
LOCATION: FRANKFORT
DESCRIPTION:SAMPLE #5 JEANETTE DUFFY RES.
REPORTING LAB: FOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: VOC2:EPA METHOD 503.1 & F.R.METHOD 501
SAMPLE TYPE: 120:WATER FROM DRILLED WELL
TIME OF SAMPLING: 00/00/00 00:00 TO 83/05/09 17:00 DATE PRINTED:83/05/09

	PARAMETER	RESULT
52009	CHLOROETHANE	< 1. MCG/L
61809	BROMOMETHANE	< 1. MCG/L
41009	VINYL CHLORIDE	< 1. MCG/L
77209	DICHLORODIFLUOROMETHANE	< 1. MCG/L
51909	CHLOROETHANE	< 1. MCG/L
61709	TRICHLOROFLUOROMETHANE	< 1. MCG/L
23409	DICHLOROMETHANE	< 1. MCG/L
50909	1,1-DICHLOROETHENE	< 1. MCG/L
51909	1,1-DICHLOROETHANE	< 1. MCG/L
61209	TRANS-1,2-DICHLOROETHENE	< 1. MCG/L
32009	CHLOROFORM	< 1. MCG/L
50809	1,2-DICHLOROETHANE	< 1. MCG/L
23509	1,1,1-TRICHLOROETHANE	< 1. MCG/L
35509	CARBON TETRACHLORIDE	< 1. MCG/L
32809	BROMODICHLOROMETHANE	< 1. MCG/L
61309	1,2-DICHLOROPROPANE	< 1. MCG/L
61609	TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L
41109	TRICHLOROETHYLENE	< 1. MCG/L
24409	DIBROMOCHLOROMETHANE	< 1. MCG/L
61409	CIS-1,3-DICHLOROPROPENE	< 1. MCG/L
51709	1,1,2-TRICHLOROETHANE	< 1. MCG/L
61109	2-CHLOROETHYLVINYL ETHER	< 1. MCG/L
32109	BROMOFORM	< 1. MCG/L
51509	1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L
11209	TETRACHLOROETHENE	< 1. MCG/L
40909	CHLOROBENZENE	< 1. MCG/L
49709	1,3-DICHLOROBENZENE	< 1. MCG/L
44109	1,2-DICHLOROBENZENE	< 1. MCG/L
44209	1,4-DICHLOROBENZENE	< 1. MCG/L
34409	BENZENE	< 1. MCG/L
39209	TOLUENE	< 1. MCG/L
51009	ETHYLBENZENE	< 1. MCG/L
85209	1-CHLOROCYCLOHEXENE-1	< 1. MCG/L

**** CONTINUED ON NEXT PAGE ****

COPIES SENT TO: CO(1), RO(2), LPHE(2), FED( ), INFO-P( ), INFO-L( )

REGIONAL DIRECTOR OF EH ENGINEERING
NEW YORK STATE DEPARTMENT OF HEALTH
351 SOUTH WARREN ST.
SYRACUSE,N.Y. 13202

SUBMITTED BY:MARSCH

STATE OF NEW YORK
DEPARTMENT OF HEALTH OFFICE OF PUBLIC HEALTH

SYRACUSE AREA OFFICE • 331 SOUTH WARREN STREET • SYRACUSE, N.Y 13202-2056

DAVID AXELROD, M.D.
Commissioner

GLENN E. HAUGHIE, M.D.
Director

June 17, 1983

Mr. John Longeretta
Box 132, R.D. #2
Frankfort, NY 13340

Dear Mr. Longeretta;

Enclosed is the Laboratory report for the analysis of your drinking water from samples collected May 9, 1983.

The first set of results show that the water was free of contamination for the compounds included. I would like to explain some of the terminology used so that the report is more understandable to you. The units used to quantify each compound is MCG/L (micrograms per liter or parts per billion). The notation "<" means "less than". Each compound had a detection limit as noted in the result column. The detection limit is the lowest level that the instruments used in the lab can respond to. Different compounds respond differently and this gives rise to different detection limits.

Using chloromethane as an example, you will note that the result is "<1. MCG/L." This means that chloromethane was not present in your drinking water at a detection limit of 1.0 microgram per liter.

Copies of other sample analysis will be forwarded to you when completed.

If you have any questions, please call me at (315) 798-5064.

Very truly yours,

Alvin J. Marsch

Alvin J. Marsch, P.E.
Regional Water Supply Engineer

Enc.

cc: Mr. Tramontano
Mr. Meade
Dr. Mohanka

0637 NEW YORK STATE DEPARTMENT OF HEALTH
CENTER FOR LABORATORIES AND RESEARCH

PAGE 1 RESULTS OF EXAMINATION FINAL REPORT

SAMPLE ID: 81153 SAMPLE RECEIVED:83/05/10/12
PROGRAM: 106:BUR BUREAU OF TOXIC SUBSTANCES MANAGEMENT
SOURCE ID:XXXXXXXX DRAINAGE BASIN:00 GAZETTEER CODE:2153
LATITUDE:00000000 LONGITUDE:00000000 & DIRECTION:
LOCATION: FRANKFORT
DESCRIPTION:SAMPLE #4 JOHN LONGERICH RES.
REPORTING LAB: TOX:LAB FOR ORGANIC ANALYTICAL CHEMISTRY
TEST PATTERN: VOL2:EPA METHOD 503.1 & F.R.METHOD 601
SAMPLE TYPE: 120:WATER FROM DRILLED WELL
TIME OF SAMPLING: 83/05/09 17:00 DATE PRINTED:83/05/27

	PARAMETER	RESULT
T62009	CHLOROMETHANE	< 1. MCG/L
T51909	BROMOMETHANE	< 1. MCG/L
T41009	VINYL CHLORIDE	< 1. MCG/L
T70209	DICHLORODIFLUOROMETHANE	< 1. MCG/L
T61909	CHLOROETHANE	< 1. MCG/L
T51709	TRICHLOROFLUOROMETHANE	< 1. MCG/L
T23809	DICHLOROETHANE	< 1. MCG/L
T50909	1,1-DICHLOROETHENE	< 1. MCG/L
T51909	1,1-DICHLOROETHANE	< 1. MCG/L
T61209	TRANS-1,2-DICHLOROETHENE	< 1. MCG/L
T39009	CHLOROFORM	< 1. MCG/L
T50809	1,2-DICHLOROETHANE	< 1. MCG/L
T23609	1,1,1-TRICHLOROETHANE	< 1. MCG/L
T35909	CARBON TETRACHLORIDE	< 1. MCG/L
T38909	BROMODICHLOROMETHANE	< 1. MCG/L
T61309	1,2-DICHLOROPROPANE	< 1. MCG/L
T61509	TRANS-1,3-DICHLOROPROPENE	< 1. MCG/L
T41109	TRICHLOROETHYLENE	< 1. MCG/L
T44909	DIBROMOCHLOROMETHANE	< 1. MCG/L
T61409	CIS-1,3-DICHLOROPROPENE	< 1. MCG/L
T51709	1,1,2-TRICHLOROETHANE	< 1. MCG/L
T61109	2-CHLOROETHYLVINYL ETHER	< 1. MCG/L
T42109	BROMOFORM	< 1. MCG/L
T51609	1,1,2,2-TETRACHLOROETHANE	< 1. MCG/L
T41209	TETRACHLOROETHENE	< 1. MCG/L
T40909	CHLOROBENZENE	< 1. MCG/L
T49709	1,3-DICHLOROBENZENE	< 1. MCG/L
T44109	1,2-DICHLOROBENZENE	< 1. MCG/L
T44209	1,4-DICHLOROBENZENE	< 1. MCG/L
T31409	BENZENE	< 1. MCG/L
T39209	TOLUENE	< 1. MCG/L
T51009	ETHYLBENZENE	< 1. MCG/L
T35209	1-CHLOROCYCLOHEXENE-1	< 1. MCG/L
T70409	PARA-XYLENE	< 1. MCG/L

**** CONTINUED ON NEXT PAGE ****

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REGIONAL DIRECTOR OF DH ENGINEERING
NEW YORK STATE DEPARTMENT OF HEALTH
351 SOUTH WARREN ST.
SYRACUSE, N.Y. 13202

SUBMITTED BY:MARSCH

SAMPLE ID: 31163 SAMPLE RECEIVED:83/05/10/12
LOCATION: FRANKFORT
TIME OF SAMPLING: 83/05/09 17:00 DATE PRINTED:83/05/27

	PARAMETER	RESULT
I70309	META-XYLENE	< 1. MCG/L
I51409	ORTHO-XYLENE	< 1. MCG/L
I85309	CUMENE	< 1. MCG/L
I85409	STYRENE	< 1. MCG/L
I85509	P-BROMOFLUOROBENZENE	< 1. MCG/L
I51109	N-PROPYLBENZENE	< 1. MCG/L
I85609	TERT-BUTYLBENZENE	< 1. MCG/L
I85709	O/P-CHLOROTOLUENE	< 1. MCG/L
I51209	BROMOBENZENE	< 1. MCG/L
I50509	META-CHLOROTOLUENE	< 1. MCG/L
I85809	1,3,5-TRIMETHYLBENZENE	< 1. MCG/L
I85909	1,2,4-TRIMETHYLBENZENE	< 1. MCG/L
I95009	P-CYMENE	< 1. MCG/L
I96109	CYCLOPROPYLBENZENE	< 1. MCG/L
I86209	SEC-BUTYLBENZENE	< 1. MCG/L
I86309	N-BUTYLBENZENE	< 1. MCG/L
I85409	2,3-BENZOFURAN	< 1. MCG/L
I52509	HEXACHLOROBUTADIENE (C-46)	< 5. MCG/L
I44009	1,2,4-TRICHLOROBENZENE	< 5. MCG/L
I65609	NAPHTHALENE	< 5. MCG/L
I43909	1,2,3-TRICHLOROBENZENE	< 5. MCG/L

**** END OF REPORT ****

NEW YORK STATE DEPARTMENT OF HEALTH
CENTER FOR LABORATORIES AND RESEARCH

2 RESULTS OF EXAMINATION FINAL REPORT

3 of 3

LE ID: 31164 SAMPLE RECEIVED:83/05/10/12
TICAL SUBDIVISION:FRANKFORT COUNTY:HERKIMER
DIV: FRANKFORT
E OF SAMPLING: 00/00/00 00:00 TO 83/05/09 17:00 DATE PRINTED:83/05/09

	PARAMETER	RESULT
T70409	PARA-XYLENE	< 1. UG/L
T70309	META-XYLENE	< 1. UG/L
T51409	ORTHO-XYLENE	< 1. UG/L
T85309	CUMENE	< 1. UG/L
T85409	STYRENE	< 1. UG/L
T85509	P-BROMOFLUOROBENZENE	< 1. UG/L
T51109	N-PROPYLBENZENE	< 1. UG/L
T85509	TERT-BUTYLBENZENE	< 1. UG/L
T85709	O/P-CHLOROTOLUENE	< 1. UG/L
T51209	BROMOBENZENE	< 1. UG/L
T50509	META-CHLOROTOLUENE	< 1. UG/L
T85809	1,3,5-TRIMETHYLBENZENE	< 1. UG/L
T85909	1,2,4-TRIMETHYLBENZENE	< 1. UG/L
T85009	P-CYMENE	< 1. UG/L
T85109	CYCLOPROPYLBENZENE	< 1. UG/L
T85209	SEC-BUTYLBENZENE	< 1. UG/L
T85309	N-BUTYLBENZENE	< 1. UG/L
T85409	2,3-BENZOFURAN	< 1. UG/L
T52509	HEXACHLOROBUTADIENE (C-45)	< 5. UG/L
T44009	1,2,4-TRICHLOROBENZENE	< 5. UG/L
T55509	NAPHTHALENE	< 5. UG/L
T43909	1,2,3-TRICHLOROBENZENE	< 5. UG/L

**** END OF REPORT ****