NUS CORPORATION
A Halliburton Company

FIELD INVESTIGATION TEAM ACTIVITIES AT UNCONTROLLED HAZARDOUS SUBSTANCES FACILITIES — ZONE I

NUS CORPORATION
SUPERFUND DIVISION

02-9008-40-SI
REV. NO. 0

FINAL DRAFT
SITE INSPECTION REPORT
SERVO CORPORATION
HICKSVILLE, NEW YORK
VOLUME 2 OF 2

PREPARED UNDER

TECHNICAL DIRECTIVE DOCUMENT NO. 02-9008-40
CONTRACT NO. 68-01-7346

FOR THE

ENVIRONMENTAL SERVICES DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

JUNE 28, 1991

HALLIBURTON NUS ENVIRONMENTAL CORPORATION
SUPERFUND DIVISION

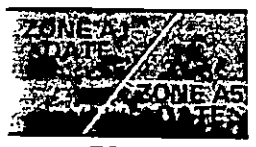
REFERENCE NO. 30

KEY TO MAP

500-Year Flood Boundary ——— ZONE B

100-Year Flood Boundary ———

Zone Designations* With Date of Identification e.g., 12/2/74



100-Year Flood Boundary ———

500-Year Flood Boundary ——— ZONE B

Base Flood Elevation Line ——— 513 ———

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

TOWN OF
OYSTER BAY,
NEW YORK
NASSAU COUNTY

MAP INDEX

PANELS PRINTED: 8, 9, 22, 24, 25, 26, 27, 28, 29, 36, 37, 38, 39, 63

COMMUNITY-PANEL NUMBERS
360483 0001 0065

MAP REVISED:
MARCH 16, 1983

Federal Emergency Management Agency

REFERENCE NO. 31

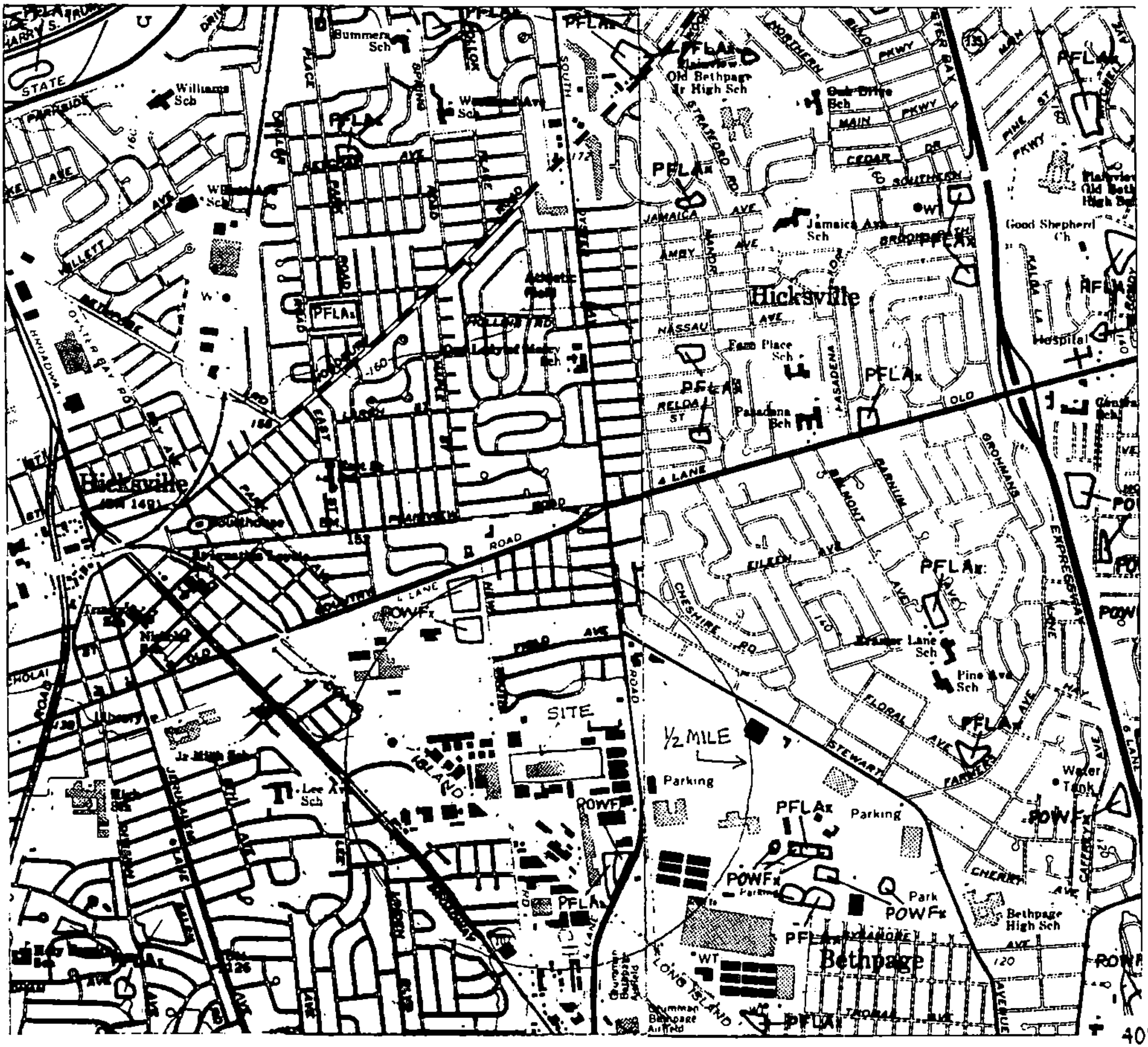
NATIONAL WETLANDS INVENTORY

UNITED STATES DEPARTMENT OF THE INTERIOR

U.S. DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE

Prepared by Office of Biological Services
for the National Wetlands Inventory



HICKSVILLE, N.Y. 73° 30 HUNTINGTON, N.Y. 40°4

SCALE 1:24 000

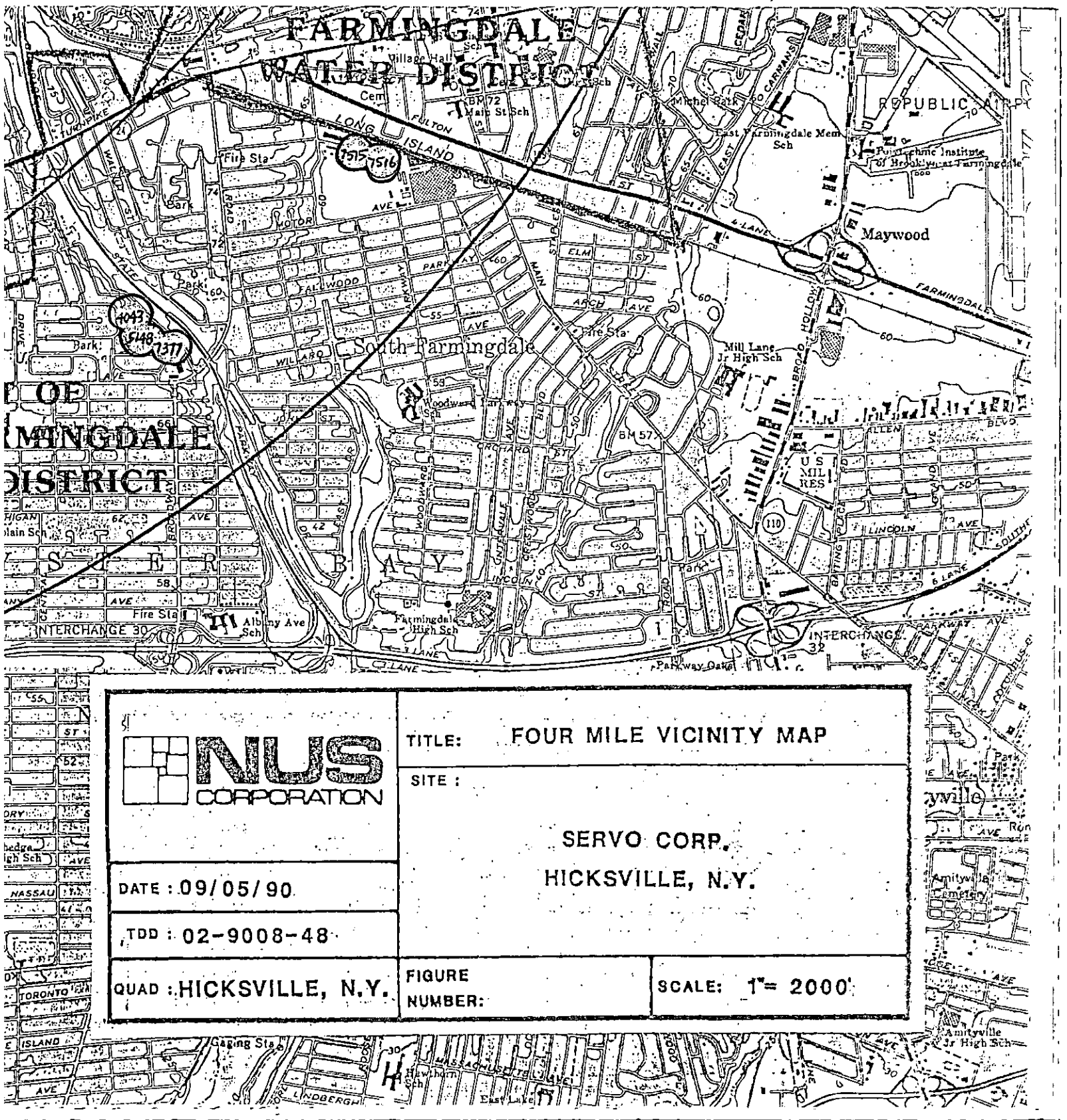
REFERENCE NO. 32

SERVO CORPORATION OF AMERICA
HICKSVILLE, NEW YORK

SCA PLOT PLAN
LOCATING EMISSION POINTS

DATE			
DATE	10.31.73		
JCH	10.31.73		
SIZE	CODE IDENT. NO.	DRWG NO.	
D	92110	PF-102	
SCALE: 1"=40'		SHEET OF	

REFERENCE NO. 33



NUS CORPORATION	TITLE: FOUR MILE VICINITY MAP	
	SITE : SERVO CORP. HICKSVILLE, N.Y.	
DATE : 09/05/90		
TDD : 02-9008-48		
QUAD : HICKSVILLE, N.Y.	FIGURE NUMBER:	SCALE: 1"= 2000'

REFERENCE NO. 34

CO43IN
02-9008-40

NUS CORPORATION
SUPERFUND DIVISION

PROJECT NOTES

TO: SERVO CORP FILE DATE: 3/14/91

FROM: TIMOTHY BEAUREGARD COPIES:

SUBJECT: SUMMARY OF WATER DISTRICTS AND CORRESPONDING POPULATION

REFERENCE: 02-9008-40

DISTRICT	TOTAL POPULATION	
JERICHO WATER DISTRICT	64,500	(C)
WESTBURY WATER DISTRICT	24,000	(D)
HICKSVILLE WATER DISTRICT	57,000	(C)
PLAINVIEW WATER DISTRICT	40,000	(C)
BOWLING GREEN ESTATES WATER DISTRICT	12,000	(B)
LEVITTOWN WATER DISTRICT	50,000	(A)
BETHPAGE WATER DISTRICT	33,650	(C)
EAST MEADOW WATER DISTRICT	50,000	(A)
NEW YORK WATER SERVICE	171,090	(A)
FARMINGDALE WATER DISTRICT	8,316	(C)
SOUTH FARMINGDALE WATER DISTRICT	45,550	(C)

INFORMATION OBTAINED FROM:

(A) KU, H.F.H., AND D.J. SULAM, U.S. GEOLOGICAL SURVEY, HYDROLOGIC AND WATER QUALITY APPRAISAL OF SOUTHEAST NASSAU COUNTY LONG ISLAND, NEW YORK, 1979. p47

(B) LETTER FROM HAROLD V. MORGAN, ADMINISTRATIVE ASSISTANT HEMPSTEAD WATER DEPARTMENT, TO ED LEONARD, NUS CORPORATION, APRIL 6, 1988.

(C) LETTER FROM DONALD HMYOTT, CHIEF, OFFICE OF GROUNDWATER MANAGEMENT, BUREAU OF PUBLIC WATER SUPPLY, TO DAVID GRUPP, NUS CORPORATION, JUNE 1, 1987.

(D) LETTER FROM ITALO J. VACCHIO, SUPERINTENDENT, WESTBURY WATER DISTRICT, TO ED LEONARD, NUS CORPORATION, MARCH 21, 1988.

NUS 443A 58 1182

REFERENCE NO. 35

NUS CORPORATION
SUPERFUND DIVISION

PROJECT NOTES

TO: SERVO CORP FILE

DATE: 4/16/91

FROM: TIMOTHY BEAUREGARD

COPIES: (1) of (2)

SUBJECT: SUMMARY OF PEOPLE / WELL FOR EACH WATER DISTRICT

REFERENCE: 02-9008-40

DISTRICT	TOTAL POPULATION IN DISTRICT (A)	TOTAL WELLS IN DISTRICT	PEOPLE / WELL (F)
JERICHO WATER DISTRICT	64 500	20 (B)	3,225
PLAINVIEW WATER DISTRICT	40,000	11 (B)	3,636
HICKSVILLE WATER DISTRICT	57000	19 (B)	3,000
WESTBURY WATER DISTRICT	24,000	11 (B)	2,182
BOWLING GREEN ESTATES WATER DISTRICT	12,000	2 (D)	6,000
BETHPAGE WATER DISTRICT	33,650	9 (D)	3739
FARMINGDALE WATER DISTRICT	8316	3 (D)	2,772
SOUTH FARMINGDALE WATER DISTRICT	45,550	11 (B)	4,141
NEW YORK WATER SERVICE	171,000	18 (E)	9504
LEVITTOWN WATER DISTRICT	50,000	14 (B)	3571
EAST MEADOW WATER DISTRICT	50,000	11 (B)	4545

SEE NOTES ON PAGE (2) of (2)

NUS CORPORATION
SUPERFUND DIVISION

PROJECT NOTES

TO: SEMO CORP. FILE DATE: 4/16/91

FROM: TIMOTHY BEAUREGARD COPIES: (2) of (2)

SUBJECT: SUMMARY OF PEOPLE/WELL FOR EACH WATER DISTRICT

REFERENCE: 02-9008-40

INFORMATION OBTAINED FROM:

(A) PROJECT NOTE TO SEMO CORP. FILE FROM TIMOTHY BEAUREGARD, SUMMARY OF WATER DISTRICTS AND CORRESPONDING POPULATION 3/14/91.

(B) LETTER FROM DONALD H. MYOTT, CHIEF OFFICE OF GROUNDWATER MANAGEMENT, BUREAU OF PUBLIC WATER SUPPLY, TO DAVID GROPP, NUS CORPORATION JUNE 1, 1987.

(C) LETTER FROM ITALO J. VACCHIO, SUPERINTENDENT, WESTBURY WATER DISTRICT, TO ED. LEONARD, NUS CORPORATION MARCH 21, 1988.

(D) LETTER FROM HAROLD V. MORGAN, ADMINISTRATIVE ASSISTANT HEMPSTEAD WATER DEPARTMENT, TO ED LEONARD, NUS CORPORATION, APRIL 6, 1988.

(E) TELEFON NOTE: CONVERSATION BETWEEN ANN NOMECK, NASSAU COUNTY HEALTH DEPARTMENT BUREAU OF PUBLIC WATER, AND TIM BEAUREGARD, NUS CORPORATION, April 16, 1991.

(F) PEOPLE/WELL WAS CALCULATED BY DIVIDING TOTAL POPULATION IN DISTRICT BY THE TOTAL WELLS IN THE DISTRICT.

REFERENCE NO. 36

NUS CORPORATION
SUPERFUND DIVISION

PROJECT NOTES

TO: SERVO CORP. FILE DATE: 4/16/91

FROM: TIMOTHY BEAUREGARD COPIES: (1) OF (5)

SUBJECT: SUMMARY OF WELLS IN EACH MILE RADIUS (REVISED)

REFERENCE: 02-9008-40

0-1/4 MILE

NO WELLS

1/4-1/2 MILE

3 WELLS

3 - HICKSVILLE WATER DISTRICT (3000 PEOPLE/WELL) 9,000

- N-10208, 8778, 8779

9,000

1/2-1 MILE

3 WELLS

3 - HICKSVILLE WATER DISTRICT (3000 PEOPLE/WELL) 9,000

- N-6192, 6193, 9180

9,000

NUS CORPORATION
SUPERFUND DIVISION

PROJECT NOTES

TO: SERVO CORP. FILE DATE: 4/16/91

FROM: TIMOTHY BEAUREGARD COPIES: (2) OF (5)

SUBJECT: SUMMARY OF WELLS IN EACH MILE RADIUS

REFERENCE: 02-9008-40

1-2 MILE

19 WELLS

9 - HICKSVILLE WATER DISTRICT (3000 PEOPLE/WELL) 27,000
- N-6190 6191 7562, 8249
9488 9463, 8526 5336 8525

2 LEVITTOWN WATER DISTRICT (3571 PEOPLE/WELL) 7,142
- N-5301 4451

4 - BETHPAGE WATER DISTRICT (3739 PEOPLE/WELL) 14,956
- N-3767 6078 3768, 9591

4 - PLAINVIEW WATER DISTRICT (3636 PEOPLE/WELL) 14,544
- N-4097 4580, 6076, 6077

63,642

NUS CORPORATION
SUPERFUND DIVISION

PROJECT NOTES

TO: SERVO CORP. FILE DATE: 5/16/91

FROM: TIMOTHY BEAUREGARD COPIES: (3) OF (5)

SUBJECT: SUMMARY OF WELLS IN EACH MILE RADIUS

REFERENCE: 02-9008-40

2-3 MILE

31 WELLS

2 - JERICHO WATER DISTRICT (3225 PEOPLE/WELL) 6450

N - 4245 7030

4 - HICKSVILLE WATER DISTRICT (3000 PEOPLE/WELL) 12000

- N = 953, 3878, 7561 9212

2 - WESTBURY WATER DISTRICT (2182 PEOPLE/WELL) 4364

N- 5655 6819

2 - BOWLING GREEN ESTATES W.D. (6000 PEOPLE/WELL) 12000

- N - 8956 8957

9 - LEVITTOWN WATER DISTRICT (3571) 32139

N - 8321, 2902, 7076, 3618, 3194,
4450, 2580, 7523, 8279

5 - BETHPAGE WATER DISTRICT (3739 PEOPLE/WELL) 18695

- N - 3876, 8941, 8004, 6915, 6916

7 - PLAINVIEW WATER DISTRICT (3636 PEOPLE/WELL) 25452

- N-7526, 4095, 4096 7421, 6956, 8054, 8595

111,100

NUS CORPORATION
SUPERFUND DIVISION

PROJECT NOTES

TO: SERVO CORP. FILE DATE: 4/16/91

FROM: TIMOTHY BEAUREGARD COPIES: (4) OF (5)

SUBJECT: SUMMARY OF WELLS IN EACH MILE RADIUS

REFERENCE: 02-9008-40

3-4 MILE

32 WELLS

4 - JERICHO WATER DISTRICT (3225 PEOPLE/WELL) 12,900
- N-8043, 8355, 7781, 6651

3 - WESTBURY WATER DISTRICT (2182 PEOPLE/WELL) 6546
- N-5007, 7353, 8497

8 - EAST MEADOW WATER DISTRICT (4545 PEOPLE/WELL) 36,360
- N-3456, 3457, 3465, 4447, 4448, 7797, 5321, 5322

3 - LEVITTOWN WATER DISTRICT (3571 PEOPLE/WELL) 10,713
- N-5302, 5303, 5304

3 - NEW YORK WATER SERVICE (9504 PEOPLE/WELL) 28,512
- N-3893, 8480, 9338

8 - SOUTH FARMINGDALE WATER DISTRICT (4141 PEOPLE/WELL) 33,128
- N-6150, 8664, 8665, 4043, 5148, 7377, 7515, 7516

3 - FARMINGDALE WATER DISTRICT (2772 PEOPLE/WELL) 8316
- N-1937, 6644, 7852

136,475

NUS CORPORATION
SUPERFUND DIVISION

PROJECT NOTES

TO: SERVO CORP. FILE DATE: 4/16/91

FROM: TIMOTHY BEAUREGARD COPIES: (5) OF (5)

SUBJECT: SUMMARY OF WELLS IN EACH MILE RADIUS (REVISED)

REFERENCE: 02-9008-40

INFORMATION OBTAINED FROM:

FOUR MILE VICINITY MAP BASED ON U.S. DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY TOPOGRAPHIC MAPS, 7.5 MINUTE SERIES, "HICKSVILLE, N.Y." QUADRANGLE, 1967 (PHOTOREVISED 1979), "HUNTINGTON, N.Y." QUADRANGLE 1967 (PHOTOREVISED 1979), "AMITYVILLE N.Y." QUADRANGLE, 1969 (PHOTOREVISED 1979), "FREEPORT N.Y." QUADRANGLE, 1969 (PHOTO REVISED 1979).

PROJECT NOTE: TO SERVO CORPORATION FILE FROM TIM BEAUREGARD, SUBJECT: SUMMARY OF PEOPLE/WELL FOR EACH WATER DISTRICT, APRIL 16 1991.

NUS 443A 58 1182

REFERENCE NO. 37

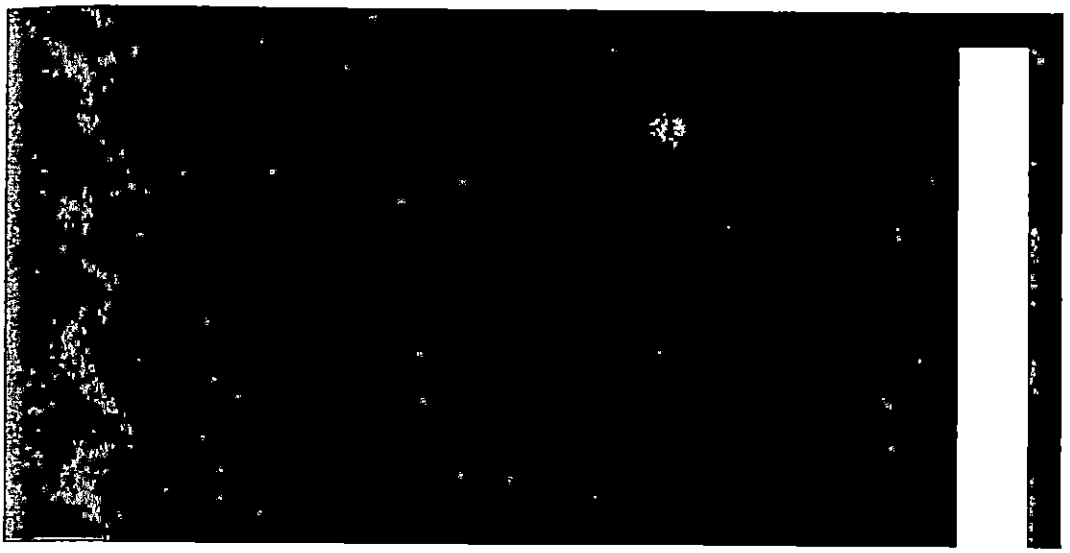


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Table 2.2 Range of Values of Hydraulic Conductivity and Permeability

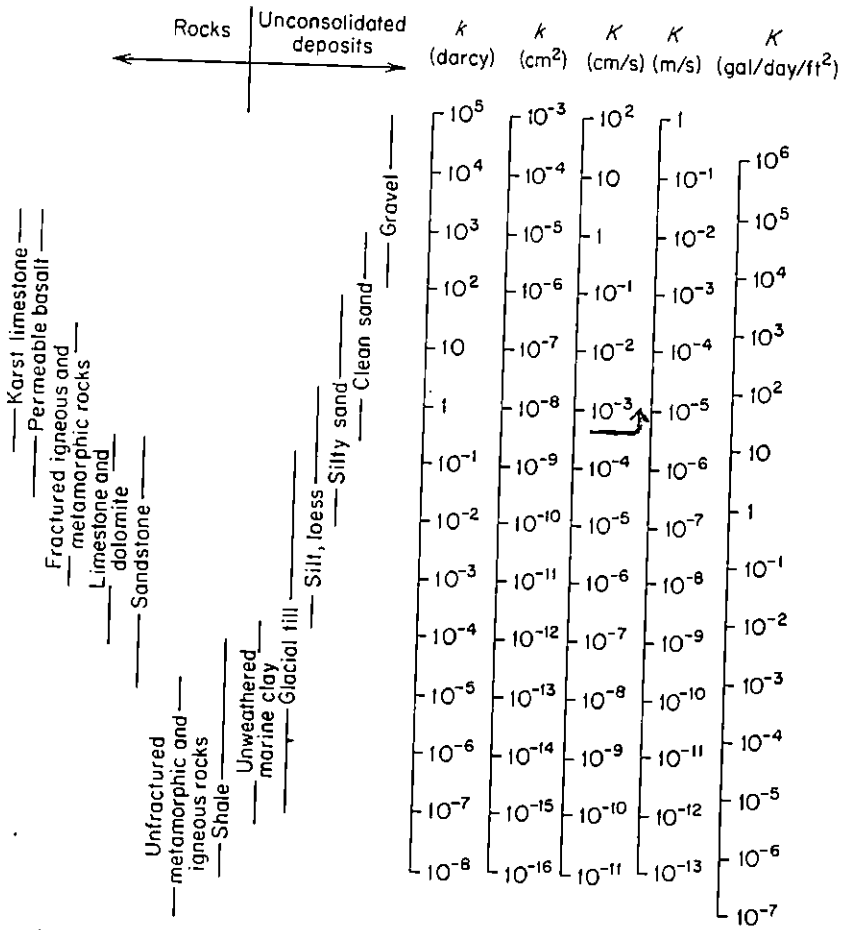

Table 2.3 Conversion Factors for Permeability and Hydraulic Conductivity Units

	Permeability, k*			Hydraulic conductivity, K		
	cm^2	ft^2	darcy	m/s	ft/s	U.S. gal/day/ft^2
cm^2	1	1.08×10^{-3}	1.01×10^{8}	9.80×10^{2}	3.22×10^{3}	1.85×10^{9}
ft^2	9.29×10^{2}	1	9.42×10^{10}	9.11×10^{5}	2.99×10^{6}	1.71×10^{12}
darcy	9.87×10^{-9}	1.06×10^{-11}	1	9.66×10^{-6}	3.17×10^{-5}	1.82×10^{1}
m/s	1.02×10^{-3}	1.10×10^{-6}	1.04×10^{5}	1	3.28	2.12×10^{6}
ft/s	3.11×10^{-4}	3.35×10^{-7}	3.15×10^{4}	3.05×10^{-1}	1	6.46×10^{5}
U.S. gal/day/ft^2	5.42×10^{-10}	5.83×10^{-13}	5.49×10^{-2}	4.72×10^{-7}	1.55×10^{-6}	1

*To obtain k in ft^2, multiply k in cm^2 by 1.08×10^{-3}.

REFERENCE NO. 38

GEOHYDROLOGY OF THE BETHPAGE-HICKSVILLE-LEVITTOWN AREA, LONG ISLAND, NEW YORK

by Douglas A. Smolensky and Steven M. Feldman

U.S. GEOLOGICAL SURVEY

Water-Resources Investigations
Report 88-4135

Prepared in cooperation with

NASSAU COUNTY DEPARTMENT OF HEALTH

DEPARTMENT OF THE INTERIOR

MANUEL LUJAN, JR., Secretary

U.S. GEOLOGICAL SURVEY

Dallas L. Peck, Director

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Syosset, NY 11791

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U.S. Geological Survey
Box 25425
Denver, CO 80225
(303) 236-7476

CONTENTS

ILLUSTRATIONS

ILLUSTRATIONS (Continued)

PLATE
(in pocket)

TABLE

CONVERSION FACTORS AND ABBREVIATIONS

For the convenience of readers who may prefer to use metric (International System) units rather than the inch-pound units used in this report, values may be converted by using the following factors:

Multiply inch-pound unit	By	To obtain metric unit
	Length	
foot (ft)	0.3048	meter (m)
mile (mi)	1.609	kilometer (km)
	Volume	
gallon (gal)	3.785	liter (L)
	Flow	
foot per day (ft/d)	0.3048	meter per day (m/d)
million gallons per day (Mgal/d)	0.04381	cubic meters per second (m^3/s)

Sea level: In this report "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)--a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called "sea level datum of 1929."

GEOHYDROLOGY OF THE BETHPAGE-HICKSVILLE-LEVITTOWN AREA, LONG ISLAND, NEW YORK

by Douglas A. Smolensky and Steven M. Feldman

ABSTRACT

A study of ground-water levels and flow in east-central Nassau County, N.Y., began in October 1985. The 11.4 square-mile area encompasses parts of Bethpage, Hicksville, Levittown, Plainview, Plainedge, and Farmingdale.

Approximately 1,200 feet of unconsolidated Cretaceous deposits and 50 to 100 feet of Pleistocene deposits overlie bedrock throughout the area. The unconsolidated deposits consist mostly of sand, gravel, silt, and clay and have good water-transmitting properties except where clay forms continuous layers that can impede ground-water flow.

The area is mostly residential and industrial. Pumpage for public supply exceeds 10 million gallons per day, most of which eventually discharges from the ground-water system to tidewater as sewage outflow. Industrial pumpage during summer exceeds 10 million gallons per day, but most of the water is returned to the system through recharge basins. Ground-water levels in this area fluctuate seasonally in response to natural recharge, pumping, and use of recharge basins.

INTRODUCTION

Ground water is the sole source of fresh water for Nassau and Suffolk Counties on Long Island (fig. 1); therefore, conservation and protection of this resource is a vital concern for local water managers and planners. Proper management requires a thorough knowledge of the hydrologic and geologic environment, directions and rates of ground-water movement, and the long- and short-term effects of natural and human-induced stresses on the ground-water system.

The demand for ground water in east-central Nassau County, a highly developed area that includes parts of Bethpage, Hicksville, Levittown, Plainview, Plainedge, and Farmingdale (fig. 2), has placed an increasing stress upon the underlying aquifers that is reflected as changes in regional and local ground-water flow patterns. Also, large-scale industrial and residential development has increased the potential for contamination of the ground-water system. Ground water in some areas has already been contaminated, and the upper glacial aquifer is no longer a suitable source for public supply in these areas. Isolated occurrences of contamination of the underlying Magothy aquifer also have been documented.

The area studied is an 11.4-square-mile (mi^2) rectangle (7,296 acres) that measures 3.8 miles from north to south and 3.0 miles from east to west. The

northern and southeastern sections are in the Town of Oyster Bay and include parts of Hicksville, Plainview, Bethpage, Plainedge, and Farmingdale; the southwestern corner is in the Town of Hempstead and includes part of Levittown (fig. 2). The area is herein referred to as the Bethpage-Hicksville-Levittown area for brevity.

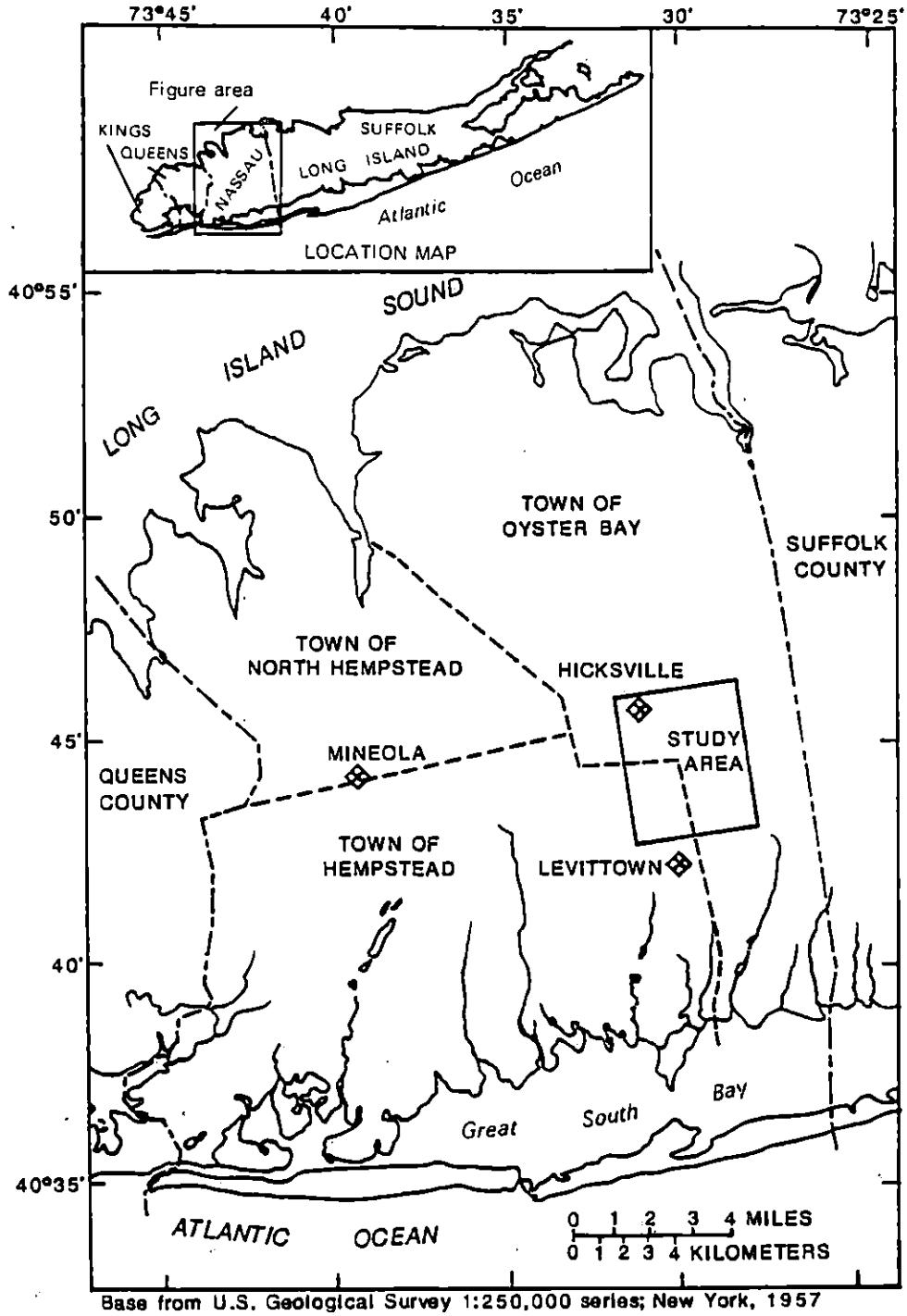


Figure 1. Location and major geographic features of study area.

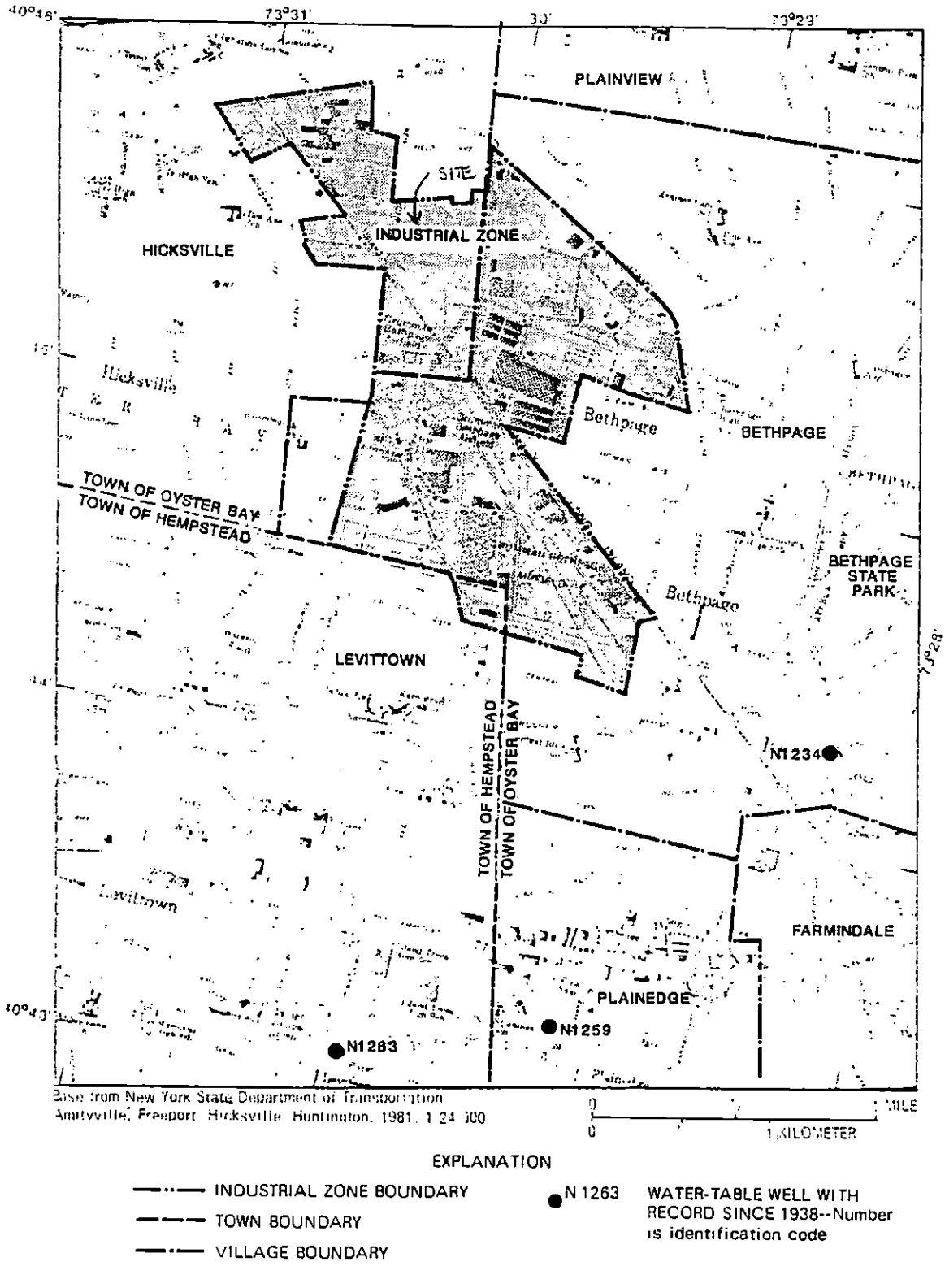


Figure 2.--Town and village boundaries and location of industrial zone in study area.

The Bethpage-Hicksville-Levittown area is typical of Nassau County in that it is highly developed; it contains residential housing, commercial and industrial development, transporation corridors, and parks (fig. 2).

Most of the area is used for housing; commercial establishments occupy much of the land adjacent to the major roadways. Bethpage State Park (in the far eastern part of the area; see fig. 2) contains the only undeveloped area. Much of the northern half of the area is zoned industrial/commercial (fig. 2), and most of this area is occupied by an aerospace manufacturing firm. The facilities include large office buildings, recreational playing fields, various manufacturing or industrial buildings, storage areas and warehouses, and an airstrip.

The U.S. Geological Survey and the Nassau County Department of Health began a cooperative program in October 1985 to determine the geologic framework and ground-water conditions and movement in the study area.

Purpose and Scope

This report describes the geohydrologic units and ground-water levels in the upper glacial aquifer and underlying Magothy aquifer in the area of investigation. It includes maps of the water table in April and August 1986, the potentiometric surface of the Magothy aquifer in April 1986, structure-contour maps of the hydrogeologic units, and three hydrogeologic sections. It also includes graphs of pumpage, precipitation, and ground-water levels, and describes local water use.

Acknowledgments

Thanks are extended to Mark Shemet of the Nassau County Department of Health for his help in the water-quality sampling and test-well drilling programs.

GEOHYDROLOGY

Stratigraphy

Long Island is underlain by unconsolidated deposits of clay, silt, sand, and gravel that overlie southward-sloping consolidated bedrock. In Nassau County, these deposits are thinnest in the northwest part of the county (about 200 ft) and attain a maximum thickness of about 1,800 ft on the barrier islands in the southeastern part. The unconsolidated deposits range in age from early Cretaceous through Pleistocene; some recent deposits are present near shores and streams. The geologic units in Nassau County are differentiated primarily by age, method of deposition, and lithology. Hydrogeologic units are differentiated by their water-transmitting properties (table 1). In many areas the hydrogeologic units closely correspond to the geologic units.

Records of wells drilled over the past 60 years in the Bethpage-Hicksville-Levittown area are available. Many of the older wells have been abandoned or sealed, but the hydrogeologic information gathered from them

Table 1.--Hydrogeologic units and their water-bearing properties in the Bethpage-Hicksville-Levittown area, Nassau County, N.Y.

[Modified from Smolensky and others, in press]

System	Series	Geologic unit	Hydrogeologic unit	Approximate maximum thickness (ft)	Character of deposits	Water-bearing properties
Quaternary	Holocene	Recent deposits and fill	Recent deposits	10	Sand, gravel, clay, silt, organic mud, loam, and fill.	Constitutes soil zone and fill areas and is hydraulically connected to underlying upper glacial aquifer.
	Pleistocene	Upper Pleistocene deposits	Upper glacial aquifer	75	Sand, fine to coarse, gravel, glacial outwash deposits, commonly brown or tan but may be yellow or orange. Some thin local lenses of clay or silty zones.	Outwash deposits are moderately to highly permeable. Average horizontal hydraulic conductivity is approximately 270 ft/d; anisotropy is approximately 10:1.
		unconformity				
Cretaceous	Upper Cretaceous	Magothy Formation-Matawan Group, undifferentiated	Magothy aquifer	650	Sand, fine to medium, clayey in part; interbedded with lenses and layers of coarse sand and sandy and solid clay. Gravel is common in basal zone. Sand and gravel are quartzose. Lignite, pyrite, and iron oxide concretions are common. Colors are gray, white, red, brown, and yellow.	Most layers are poorly to moderately permeable; some are highly permeable locally. Water is unconfined in uppermost parts, elsewhere confined. Principal aquifer for public supply. Average horizontal hydraulic conductivity is 50 ft/d; anisotropy is approximately 100:1.
		unconformity				
		Raritan Formation: Unnamed clay member	Raritan confining unit	175	Clay, solid and silty; few lenses and layers of sand. Lignite and pyrite are common. Colors are gray, red, and white, commonly variegated.	Low to very low permeability; constitutes confining layer above Lloyd aquifer. Average vertical hydraulic conductivity is approximately 0.001 ft/d.
		Raritan Formation: Lloyd Sand Member	Lloyd aquifer	300	Sand, fine to coarse, and gravel, commonly with clayey matrix; some lenses and layers of solid and silty clay; locally contains thin lignite layers. Sand and most of gravel are quartzose. Colors are yellow, gray, and white; clay is red locally.	Permeability low to moderate. Water is confined by overlying Raritan clay. Average horizontal hydraulic conductivity is 40 ft/d; anisotropy is approximately 10:1.
		unconformity				
Paleozoic and Precambrian	- - -	Bedrock	Bedrock	- -	Crystalline metamorphic and (or) igneous rocks; muscovite-biotite schist, gneiss, and granite. Contains a soft, clayey weathered zone more than 50 ft thick locally.	Poorly permeable to relatively impermeable; lower boundary of ground-water system. Some hard fresh water is contained in joints and fractures but is impractical to develop at most places.

remains useful. These records, used in conjunction with hydrogeologic maps (Smolensky and others, in press) and records from wells drilled recently by the Geological Survey, were used to define the geometry of the hydrogeologic system in the area.

Bedrock

The altitude of the bedrock surface in the Bethpage-Hicksville-Levittown area was inferred from an islandwide bedrock-configuration map by Smolensky and others (in press), which is based on data from wells that penetrate the bedrock at several points near the study area (fig. 3).

The bedrock is probably of Precambrian and Paleozoic age and consists primarily of schist and gneiss with igneous intrusions. Its southward-sloping surface is defined as a peneplain (Suter and others, 1949). It is relatively impermeable and therefore is considered to be the lower boundary of the ground-water system. Well cuttings and cores taken from boreholes that contacted bedrock elsewhere in Nassau County commonly indicate an upper zone of weathered bedrock up to a few tens of feet thick. This weathered zone, which is clayey with many decomposing rock fragments, probably extends beneath the Bethpage-Hicksville-Levittown area.

Cretaceous Deposits

Overlying bedrock is a sequence of Cretaceous sands, silts, gravels, and clays. These sediments are of terrestrial origin and probably were deposited by prograding shores and coalescing deltas. No deposits that are older than Cretaceous are seen in the geologic record in Nassau County. Whether pre-Cretaceous deposition never occurred or was removed by erosion is uncertain.

Raritan Formation.--Unconformably overlying the bedrock surface is the Raritan Formation, which is divided into the lower Lloyd Sand Member (Lloyd aquifer) and an overlying unnamed clay member (Raritan confining unit). No wells in the Bethpage-Hicksville-Levittown area penetrate the Lloyd aquifer, but its surface is inferred from islandwide maps to slope gently southward from approximately 680 ft (feet) to 840 ft below sea level in the northwestern and southeastern parts of the study area, respectively (fig. 3) (Smolensky and others, in press). The Lloyd aquifer is approximately 300 ft thick and gradually thickens southeastward. It consists primarily of sand and has moderate water-transmitting properties, but has not been used as a producing aquifer in this part of Nassau County.

Conformably overlying the Lloyd Sand Member is the unnamed clay member of the Raritan Formation (Raritan confining unit), which consists of clay and silt and sandy clay with a few thin zones of fine sand. The clay member may be red, gray, yellow, or white.

The top surface of the clay member (confining unit) has approximately the same southeastward dip as the Lloyd sand. Altitudes of the top of the unit range from less than 500 ft to about 650 ft below sea level in the northwestern and southeastern corners of the study area, respectively (fig. 4).

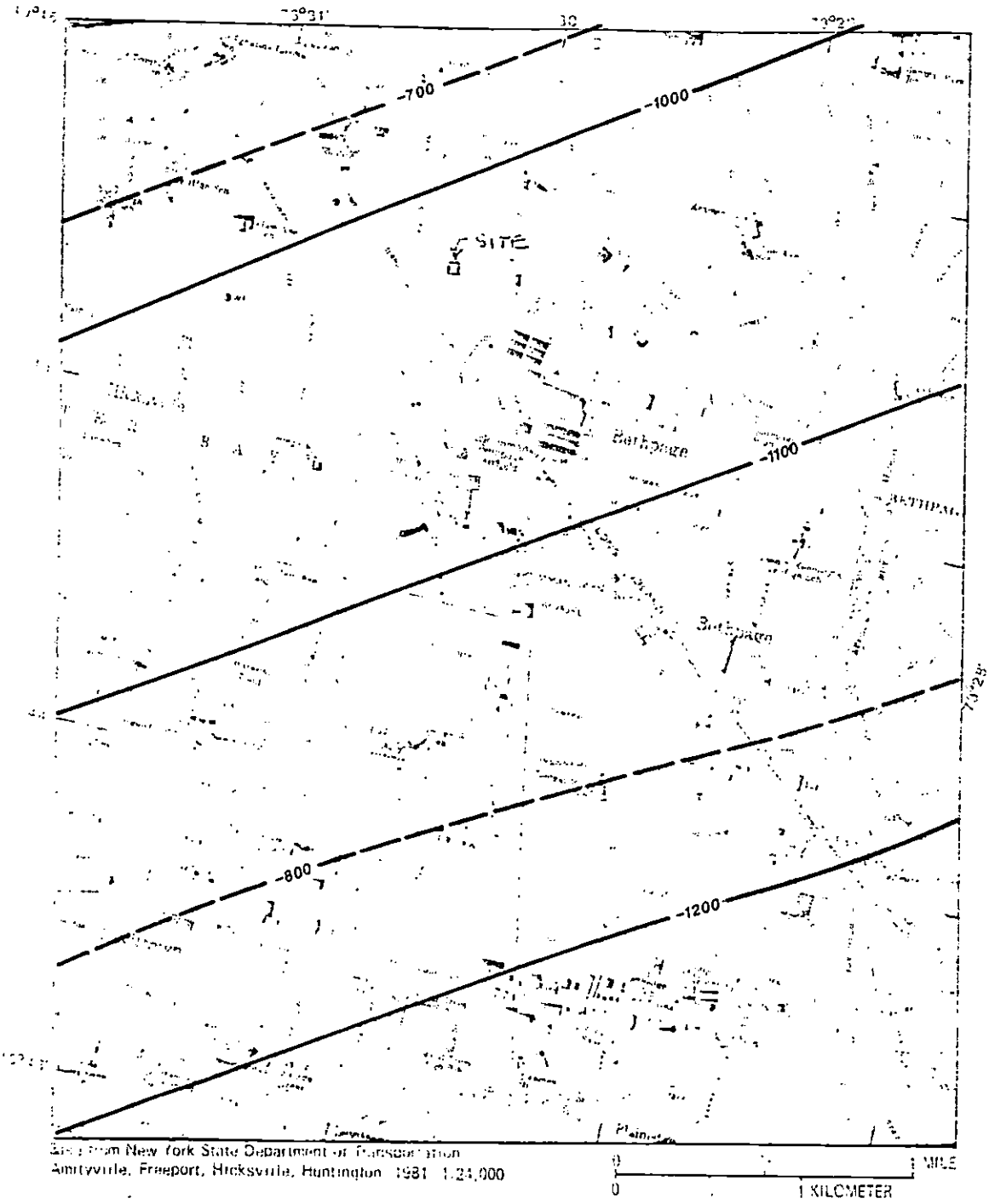
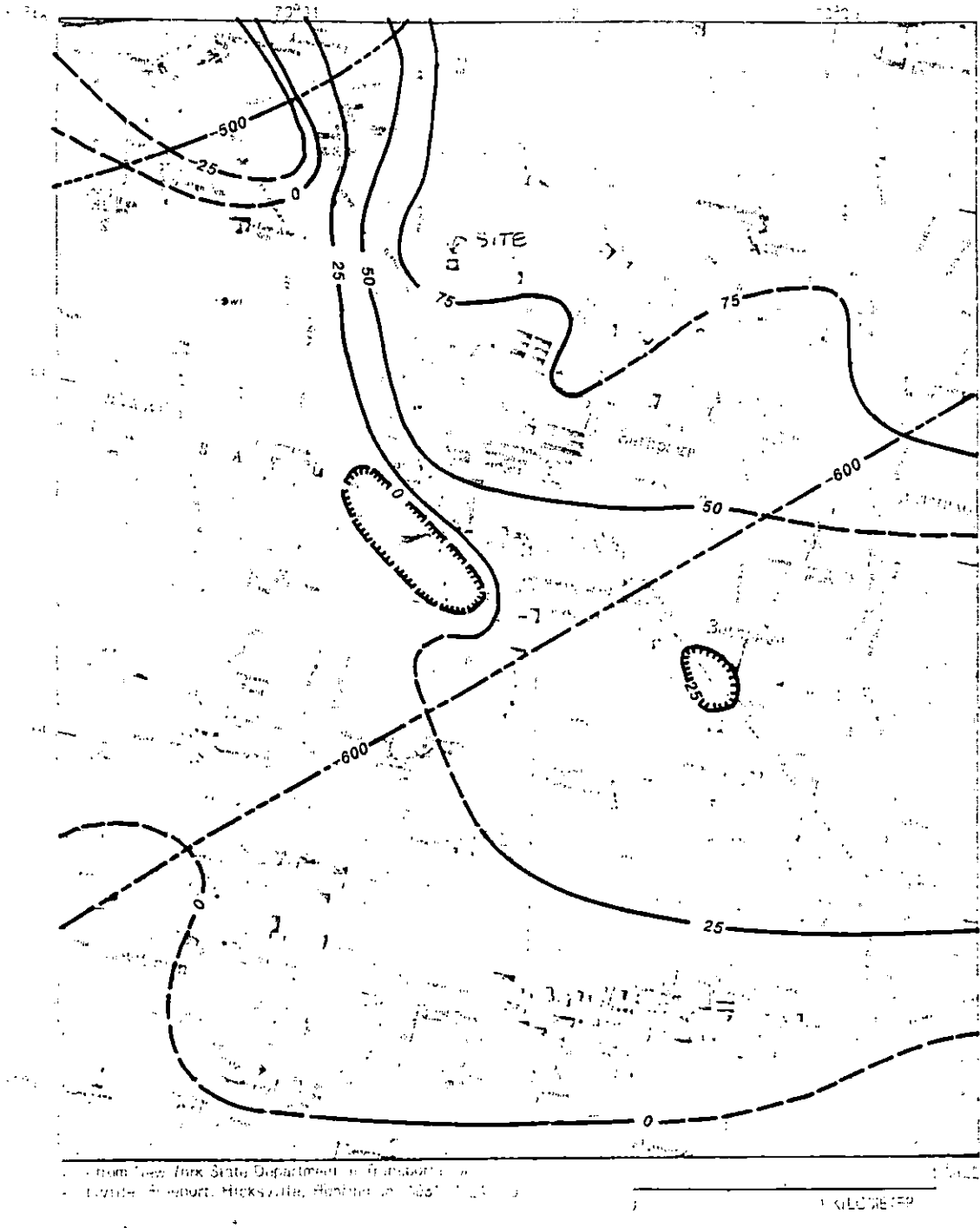


Figure 3.--Inferred altitude of tops of bedrock and of the Lloyd aquifer of the Raritan Formation in Bethpage-Hicksville-Levittown area. (Modified from Smolensky and others, in press.)



EXPLANATION

-600 STRUCTURE CONTOUR--Shows altitude of top of Raritan confining unit. Contour interval 100 feet. Datum is sea level

25 STRUCTURE CONTOUR--Shows altitude of top of Magothy aquifer. Contour interval 25 feet. Hachures indicate depression. Datum is sea level

Figure 4.--Inferred altitude of tops of the Raritan confining unit of the Raritan Formation (dashed line) and the Magothy aquifer of the Magothy Formation-Matawan Group, undifferentiated.

The lateral continuity of the clay within this unit severely retards vertical ground-water movement. Vertical hydraulic conductivity has been estimated to be about 0.001 ft/d (foot per day) (Franke and Cohen, 1972). The low conductivity of this unit, which averages 175 ft thick, helps in part to maintain the head difference between the underlying Lloyd and the overlying Magothy aquifer. Potentiometric-surface maps for March 1979 (Donaldson and Koszalka, 1983a, b) indicate this vertical head difference to be approximately 58 ft at the northern boundary of the Bethpage-Hicksville-Levittown area and gradually decreasing to about 35 ft at the southern boundary.

Magothy Formation-Matawan Group, undifferentiated.--The Magothy Formation-Matawan Group, undifferentiated (Magothy aquifer), is the youngest Cretaceous deposit in the Bethpage-Hicksville-Levittown area. A distinct unconformity separates its coarse basal zone from the underlying fine-grained clay member of the Raritan Formation.

At least 110 wells have been drilled into the Magothy aquifer in the Bethpage-Hicksville-Levittown area. The well data and geologic correlations indicate the highest surface altitude of the Magothy aquifer in the area to be almost 100 ft above sea level (fig. 4) in the northeastern corner. The top of the Magothy slopes in two places, between the northeastern and northwestern corner of the study area to its lowest altitude of more than 25 ft below sea level; from the northwest corner to the southern boundary, it remains near or above sea level at altitudes of 0 to 25 ft above sea level. Maximum thickness is approximately 650 ft.

The Magothy aquifer consists of fine- to medium-grained, gray to white sand and clayey sand, although multicolored deposits are common. Geologists' logs from wells that penetrate the Magothy Formation also indicate zones of solid clay; geologic correlations show these zones to be discontinuous and of variable thickness (fig. 5, pl. 1). The clay lenses are only local but cause a high degree of anisotropy in the aquifer. Lignite is common and is abundant locally.

The upper surface of the Magothy was exposed to extensive erosion during the Pleistocene. Glacial scouring and shoving associated with direct ice contact probably occurred only in an area slightly north of the study area that coincides with the position of the glacial moraine, but the glaciofluvial erosion associated with episodes of advancing and retreating ice fronts had a marked effect on the entire surface configuration of the Magothy Formation within the study area (fig. 4). The estimated average horizontal hydraulic conductivity of the Magothy aquifer is 50 ft/d (feet per day), and anisotropy (ratio of horizontal to vertical hydraulic conductivity) is approximately 100:1 (Franke and Cohen, 1972).

Pleistocene Deposits

Overlying the Magothy aquifer are glacial deposits of Pleistocene age that form the upper glacial aquifer. Except where overlain by recent deposits (soil zone, streambed material), the glacial deposits extend to land surface throughout the Bethpage-Hicksville-Levittown area. These deposits are

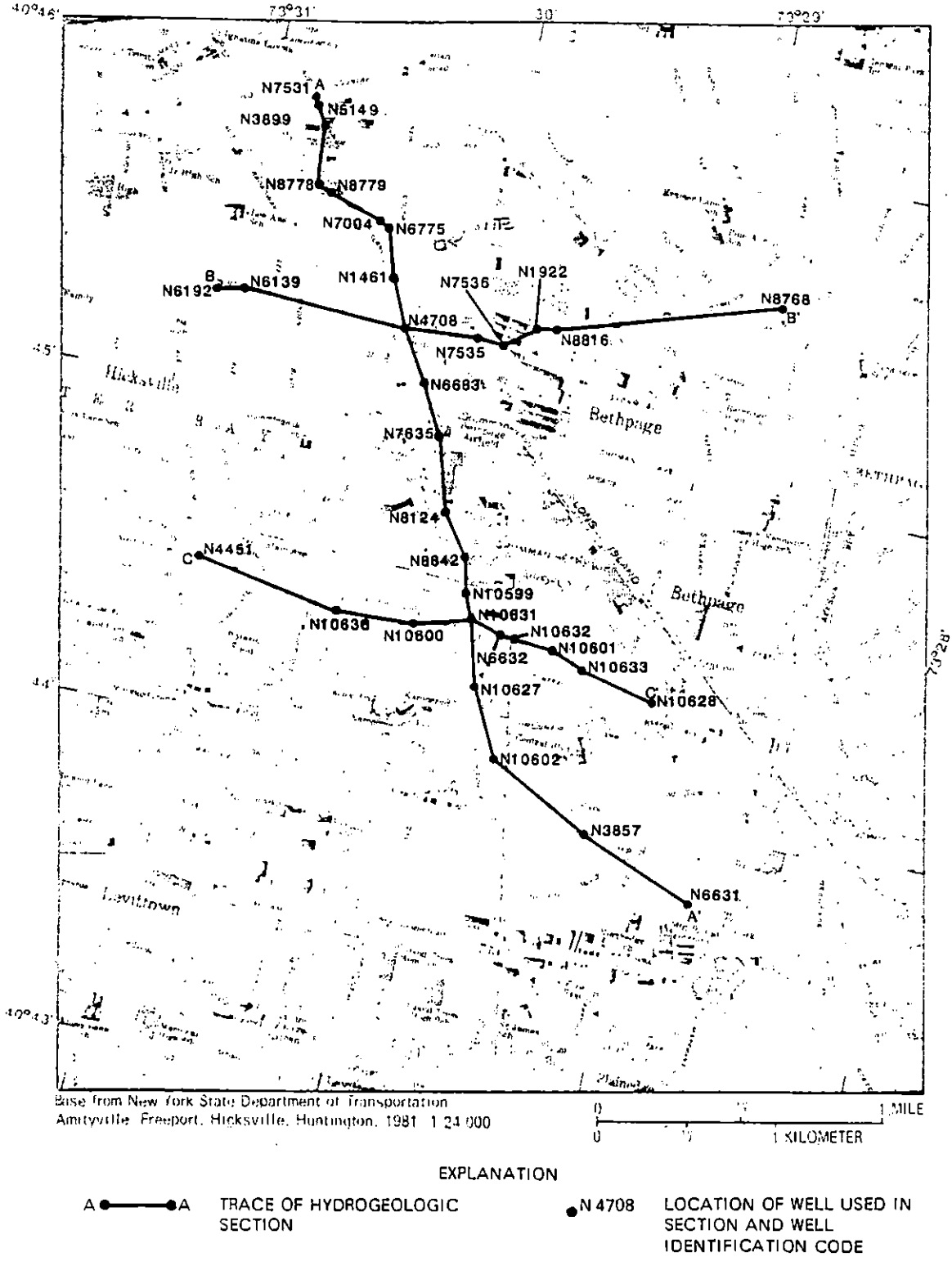


Figure 5.--Locations of hydrogeologic sections A-A', B-B', and C-C'. (Sections are shown on pl. 1.)

characterized as outwash and are a product of the Pleistocene ice advances, particularly the last advance during Wisconsin glaciation. The till and moraine deposits typically associated with glaciation occur only north of the study area. The deposition of the outwash and erosion of both Cretaceous and some earlier outwash during the Wisconsin was not a product of ice contact but rather glaciofluvial action (controlled by glacial meltwater).

The glacial deposits consist of medium-to-coarse sand and gravel. Some fine-grained sand and silt and local clay lenses also are present. Average horizontal hydraulic conductivity is approximately 270 ft/d, and anisotropy is approximately 10:1 (Franke and Cohen, 1972).

Ground Water

Water from precipitation infiltrates the land surface and percolates through the zone of aeration to the water table. The water table is the upper boundary of the system, and its fluctuations in altitude reflect changes in recharge to and discharge from the system.

Directions of Flow

Near the island's ground-water divide, which runs east-west along the north-central part of the island, water entering the system flows vertically downward, and then horizontally seaward (fig. 6).

Ground water flows along hydraulic gradients through and between aquifers and confining units. Ground water north of the divide eventually discharges into Long Island Sound, and ground water south of the divide discharges into Great South Bay and the Atlantic Ocean. These subsea-discharge areas, which flank the north and south shores of the island, form the lateral boundaries of the fresh ground-water system. Ground water also discharges from the system at stream channels that intersect the water table and at nearshore marshes and wetlands.

The movement, use, and disposal of water in the Bethpage-Hicksville-Levittown area is depicted as a flow diagram in figure 7 (p. 13). The period represented is the early 1980's (before sewering) except where noted as "after sewering," which represents the mid-1980's. To simplify the diagram, small losses and gains such as through leaky supply lines have been omitted.

The following three sections further explain the boundaries, recharge, and discharge from the ground-water system in the Bethpage-Hicksville-Levittown area as shown in figure 7.

Boundaries

The natural movement, flow patterns, and levels of ground water in the Bethpage-Hicksville-Levittown area are, in general, a reflection of those in the surrounding area. The location and size of the study area are such that

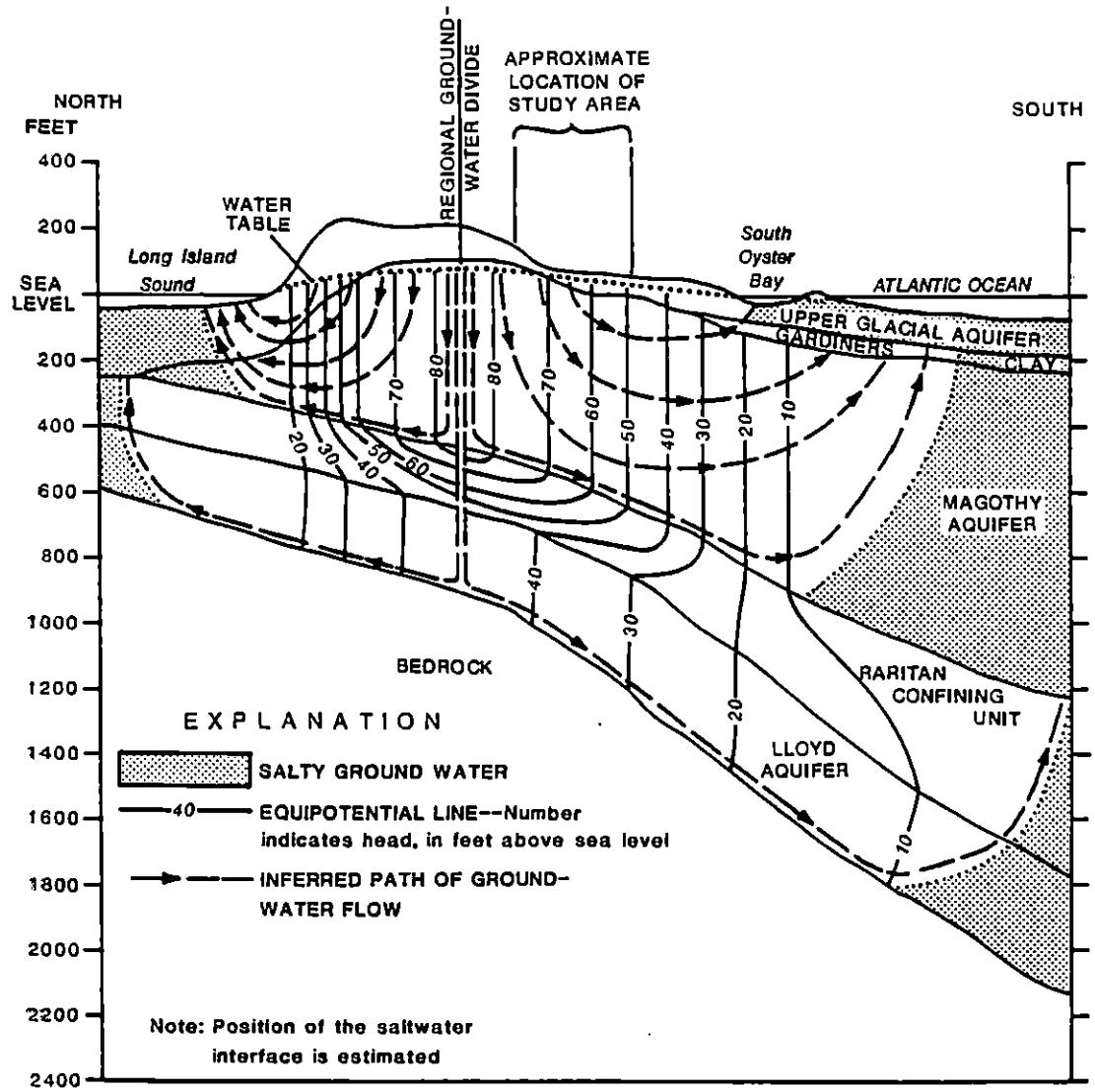


Figure 6.--Generalized north-south section through study area showing directions of ground-water flow. (Modified from Franke and Cohen, 1972.)

regional ground-water conditions strongly influence local conditions. The boundaries assigned in this local investigation do not represent true hydrologic-system boundaries but were selected to outline a part of the larger system. Thus, a regional ground-water stress, whether natural or man induced, that originates outside the study area has the potential to affect ground-water conditions within the study area.

In general, ground water in southeastern Nassau County flows from the island's ground-water divide southward toward the shore. The Bethpage-Hicksville-Levittown study area is part of this regional flow pattern. Approximately one-fifth of the ground water in the study area comes from the surrounding system, in which water flows along regional flow lines and gradients. At the northern boundary of the study area, ground water enters

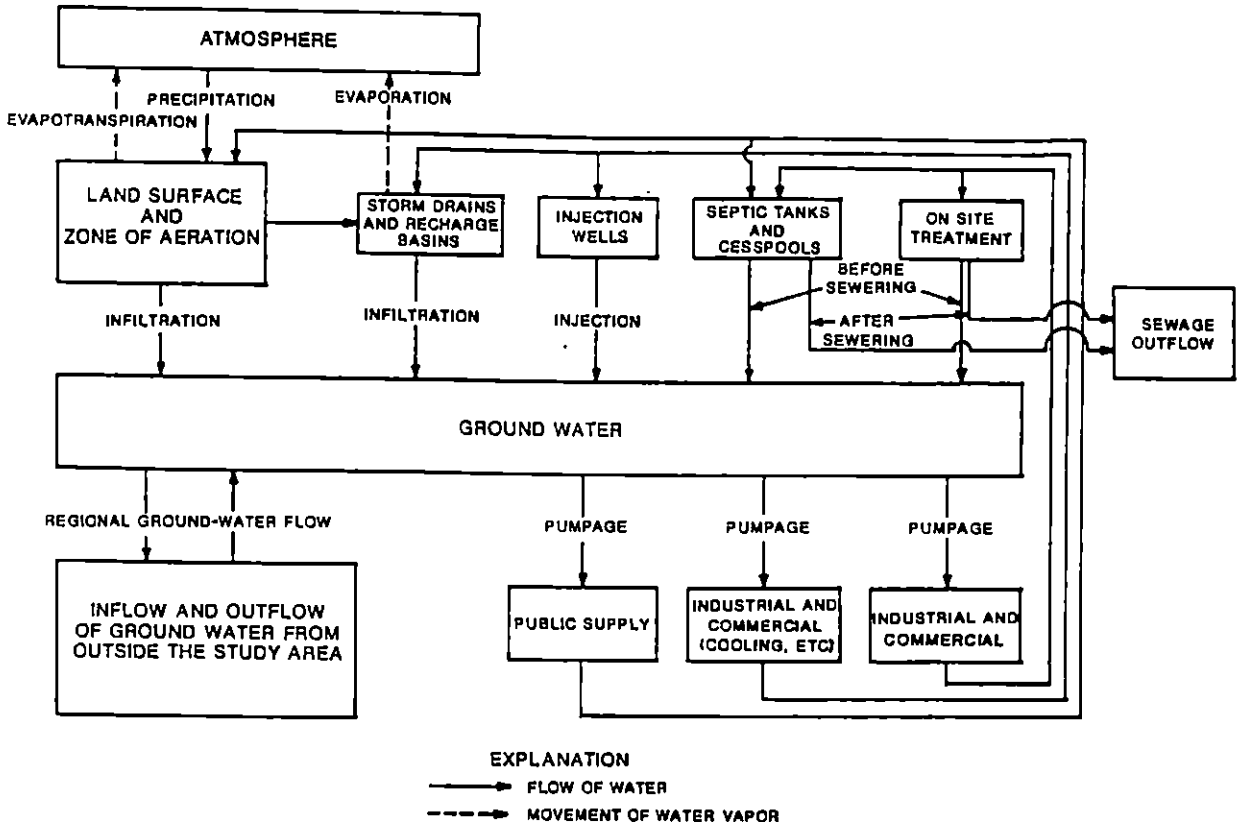


Figure 7.--Generalized flow diagram of water movement, use, and disposal in the Bethpage-Hicksville-Levittown area.

all three aquifers as part of the regional flow pattern. The quantity of water flowing into the study area across the northern boundary and out of the area across the southern boundary is determined by the hydraulic gradient and the water-transmitting properties and geometry of each aquifer.

The eastern and western boundaries may be both recharge or discharge boundaries. Hydraulic gradients across these boundaries are relatively small; therefore, fluctuations in recharge or in ground-water stresses could produce changes in both direction and (or) magnitude of these gradients. The quantity of water flowing across the eastern and western boundaries is substantially less than that at the northern and southern boundaries.

Recharge

Precipitation.--Precipitation is the only natural source of water that enters the ground-water system at land surface on Long Island. Under predevelopment conditions, about 50 percent of the precipitation percolated to the water table to become ground water; the rest either returned to the atmosphere through evapotranspiration or flowed to streams and from there to the sea. In developed areas, much of the overland flow is diverted through a system of storm drains to recharge basins from which it infiltrates to the ground-water system (fig. 7).

Mean annual precipitation in the Bethpage-Hicksville-Levittown area was 41.5 to 43 inches during 1951-65 (Miller and Frederick, 1969). More precipitation falls in the northern part of the study area than in the south. Precipitation falls in roughly the same amount during the cool season as during the warm season.

Records from three precipitation stations in and near the study area (fig. 1) reflect the seasonal and long-term precipitation patterns of the area. The record from the station at Hicksville (1959-77) is indicative of precipitation in the northern part of the area; that from Levittown (1968-73) represents patterns in the southern part. Data from the Mineola station, approximately 7 mi to the west (1939-86), although slightly higher than those in the study area, constitute the best available long-term record of the general precipitation regime. Annual precipitation at the three stations (1959-77) is plotted in figure 8A; that at Mineola in figure 8B.

The annual precipitation recorded at Mineola during 1939-86 ranged from 64.49 inches in 1983 to 23.67 inches in 1965 (fig. 8B). The long-term average annual precipitation for that period was 44.58 inches; 1962-66 were drought years, whereas the 1970's were fairly wet.

Cesspools and sewers.--Residential and commercial development in Nassau County was accompanied by the installation of thousands of onsite sewage-disposal systems; most large buildings and all homes were equipped with cesspool systems or septic tanks. Several industrial establishments had onsite treatment plants. These systems were considered to be a substantial source of recharge because they returned much of the water used for domestic purposes back into the aquifer system. They also discharged contaminants to the ground water, however, and thereby contributed to the overall degradation of water quality.

To curtail the degradation of water quality, Nassau County installed a sanitary sewer system that carries wastewater out of the study area to a centralized treatment plant. The system services both residential and commercial establishments. Since 1980, this sewer system has transported much of the pumped water that previously would have gone to cesspools to treatment plants, from which it is eventually discharged to the sea. Before sewering, 85 percent of the water pumped by the water districts was returned to the system through cesspools, but since completion of the sewer system, only about 20 percent is returned (H. T. Buxton, U.S. Geological Survey, written commun., 1986).

Recharge basins and injection wells.--The Bethpage-Hicksville-Levittown area makes extensive use of recharge basins. The basins differ greatly in size and capacity, but each is designed for only one of two purposes. The first is to dispose of stormwater runoff from residential and industrial areas and highways. The routing of storm runoff into recharge basins, where the runoff subsequently percolates to the ground-water system, is an alternative to the direct discharge of runoff to streams or tidewater, thereby avoiding a loss of recharge to the system. The study area contains about 80 such recharge basins.

The second type of basin is designed for the disposal of water used for cooling by local industry. This water is pumped from onsite, company-owned wells and, after being used at the facility, is routed to onsite basins where it infiltrates back into the ground-water system. Approximately 12 Mgal/d (million gallons per day) is returned to the aquifer system during summer from such basins.

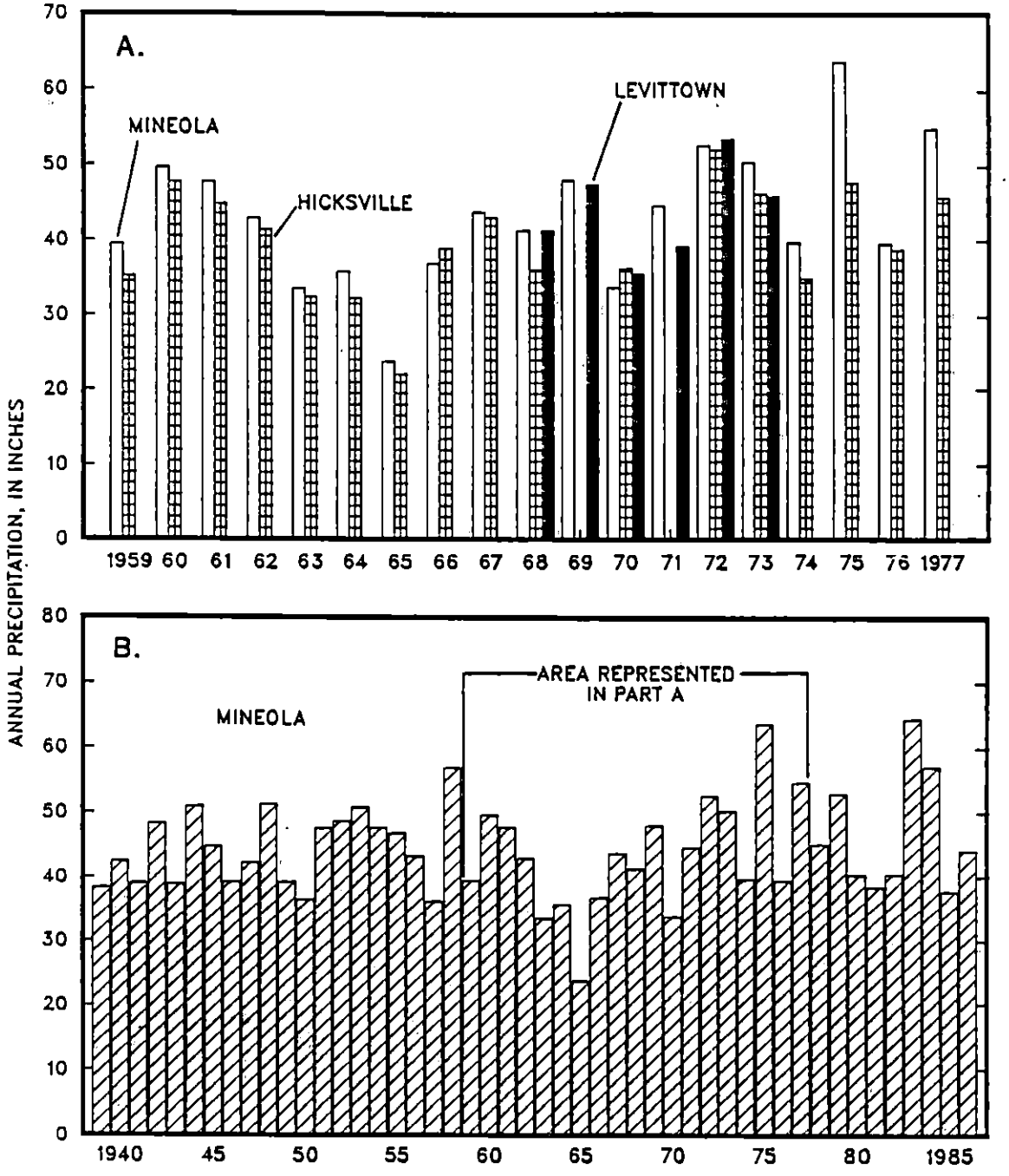


Figure 8.--Annual precipitation: A. At Mineola, Hicksville, and Levittown, 1959-77. B. At Mineola, 1939-86. (Location of stations shown in fig. 1).

Several commercial establishments in the area use an alternative method to dispose of cooling water. After the water pumped from onsite wells is used, it is injected into the aquifer at approximately the same depth from which it was originally removed. Because little water is lost in this process, this type of water use and disposal has little effect on flow patterns or water budgets.

Discharge

Ground water in the Bethpage-Hicksville-Levittown area is used for industrial processes as well as for public supply. Industrial wells obtain water from both the upper glacial aquifer and the underlying Magothy aquifer; public-supply water is derived solely from the Magothy aquifer. No wells in the Bethpage-Hicksville-Levittown area pump water from the Lloyd aquifer.

Public-supply withdrawals.--Public-supply withdrawals for the residential areas are controlled by the local water districts. Most industries in the area use public-supply water for drinking and other domestic purposes, even though many have their own wells. Before public-supply water enters the distribution system, it must meet all water-quality standards set forth by governing agencies.

In 1985, public-supply wells in the study area pumped a total of 10.2 Mgal/d of ground water. The Hicksville and Bethpage Water Districts accounted for about 74 percent of that total, the Town of Hempstead Department of Water accounted for 20 percent, and the Plainview Water District, in the northeast corner of the study area, accounted for the remaining 6 percent.

The Bethpage-Hicksville-Levittown area has experienced increased development along with the rest of Nassau County, and this trend has been accompanied by an increased water demand. During 1980-85, the combined pumpage of these four water districts increased over that of the previous 5-year period, and each individual water district reflects this trend (fig. 9). These plots do not reflect an increase in total pumpage for each water district, but only for district-owned wells that are within or are close to the study area. Public-supply pumpage is highest during summer months (fig. 10).

Another cause for concern is the gradual deterioration of ground-water quality in the upper part of the Magothy aquifer, which has resulted in the shutdown of several wells. Since 1966, seven public-supply wells have been abandoned. Six of these pumped water that had nitrate concentrations above allowable levels of 10 milligrams per liter of NO_3 as N, and one well was restricted because it had trichloroethylene (TCE) in concentrations that intermittently exceeded the New York State guideline of 50 micrograms per liter. These wells range in depth from 84 to 386 ft. The 18 wells that currently are in use range in depth from 256 to 770 ft and have an average depth of 564 ft.

Industrial supply withdrawals.--The only large industrial pumpage in the Bethpage-Hicksville-Levittown area at present is at the aerospace manufacturing firm, where 14 wells pumped a total of 7.6 Mgal/d in 1985 for cooling purposes. This pumpage has been roughly constant since 1975. Other industrial users of ground water in the area have only a minor influence on the ground-water budget relative to the quantities pumped by the water districts and the aerospace firm.

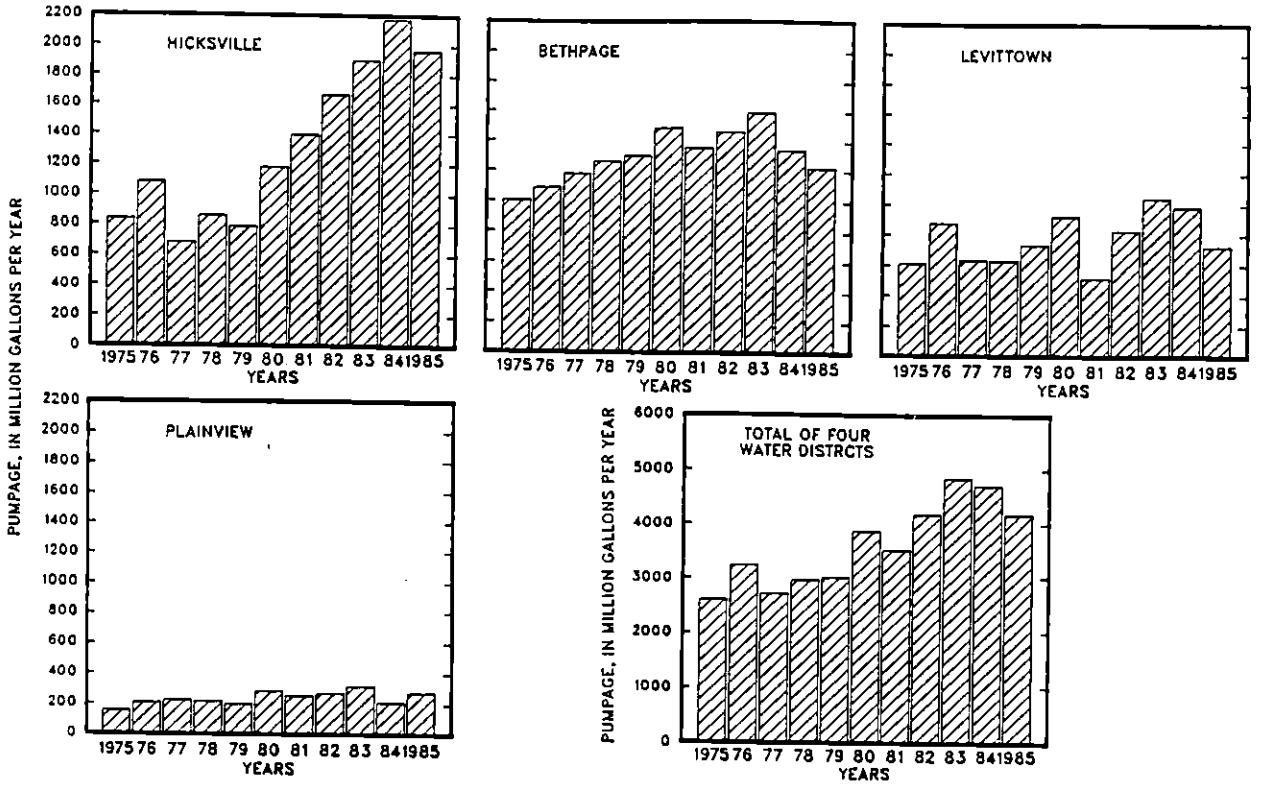


Figure 9.--Annual pumpage for public supply by the four water districts and their combined annual totals, 1975-85.

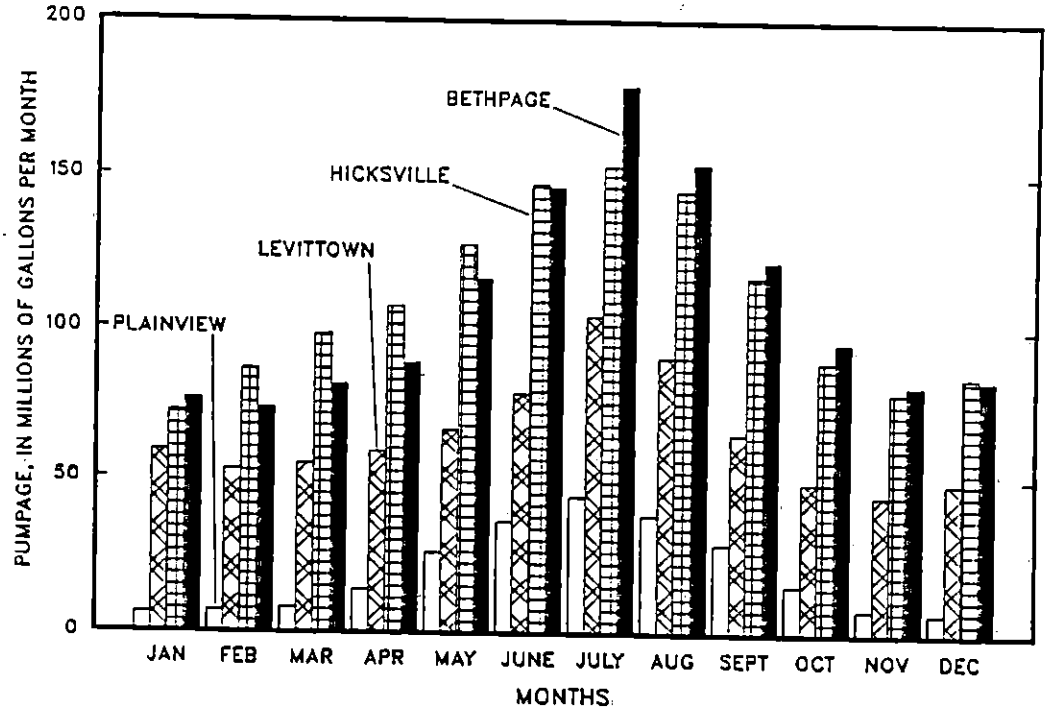


Figure 10.--Average monthly pumpage from the four water districts, 1975-85.

Water Levels

Water levels in the upper glacial and Magothy aquifers in the Bethpage-Hicksville-Levittown area reflect the short and long-term effects of both natural and man-induced stresses on the ground-water system. Water levels in wells screened near the top of the saturated deposits indicate the altitude of the water table at the well location.

Continuous water-level records have been collected at three water-table wells, N1263, N1259, and N1234 (fig. 2) since 1938 (fig. 11). The seasonal and long-term changes in water levels reflect several factors. Water levels are high during the cool season, when evapotranspiration is minimal and recharge from precipitation is greatest (Miller and Frederick, 1969), and are low during the growing season, when evapotranspiration is greatest.

As the demand for water increases during the warm season, local water companies increase their public-supply pumpage. Monthly pumpage is normally at its maximum in July, then is reduced gradually into the winter (fig. 10). This pumping stress, together with the natural decline in recharge during the growing season, are the two main causes of the seasonal fluctuation of water levels. Long-term fluctuations result from several years of above-normal or below-normal recharge; for example, a long-term decline in water levels during 1961-67 is evident from the hydrographs in figure 11; this reflects the prolonged drought that affected the northeastern United States at that time. In contrast, the late 1970's were a relatively wet period, as evidenced by higher water levels.

High and low annual precipitation during 1978-86, combined with the effects of additional sewer hookups and increased pumpage, have made each factor's influence on water levels difficult to isolate. Except for an increase in water levels in 1983 and 1984, which coincided with unusually high precipitation, water levels declined from 1978 through 1986. This 9-year period was one of approximately average precipitation. The increase in pumpage may partially explain this decline.

In the fall of 1986, water levels in the southern part of the study area declined to their lowest recorded levels to date, even below the drought levels of 1965-66 (fig. 11, wells 1263 and 1259). A possible explanation for this trend is the decrease in the amount of water reentering the system from disposal systems as these are abandoned in favor of sewer hookups. If annual amounts of precipitation remain close to the long-term average, and if pumpage remains constant, water levels throughout the area can be expected to decrease slowly in response to the reduced recharge rates that result from the diversion of wastewater to sanitary sewers. The decrease would continue until new equilibrium conditions are reached or stresses placed on the ground-water system change.

Water table in April 1986.--Water levels measured at 20 wells screened in the water-table aquifer in April 1986 ranged from 78.86 to 47.19 ft above sea level in the northern and southern parts of the study area, respectively. These measurements were used to plot the configuration of the water table shown in figure 12. Equipotential lines are oriented east-west, which indicates that ground-water flow in the upper glacial aquifer in this area is

primarily southward, as is regional flow from the ground-water divide to the southern shore.

Estimates of regional horizontal hydraulic conductivity (270 ft/d) and porosity (0.3) of the upper glacial aquifer were used to calculate regional horizontal ground-water velocities. A north-south gradient of 33 ft of head per 20,000 ft across the study area yields a velocity of 1.5 ft/d. This velocity is only an approximation, though, because it assumes that the hydraulic gradient is constant across the area, and does not account for local hydrogeologic variations or stresses such as pumping and recharge.

The water-table configuration in the Bethpage-Hicksville-Levittown area may be affected by several factors:

1. Small mounds in the water table probably have formed beneath recharge basins at the aerospace facility. Although no measurements have been made to confirm their presence, several recharge basins are used almost continuously. The inferred mounding is indicated in figure 12.

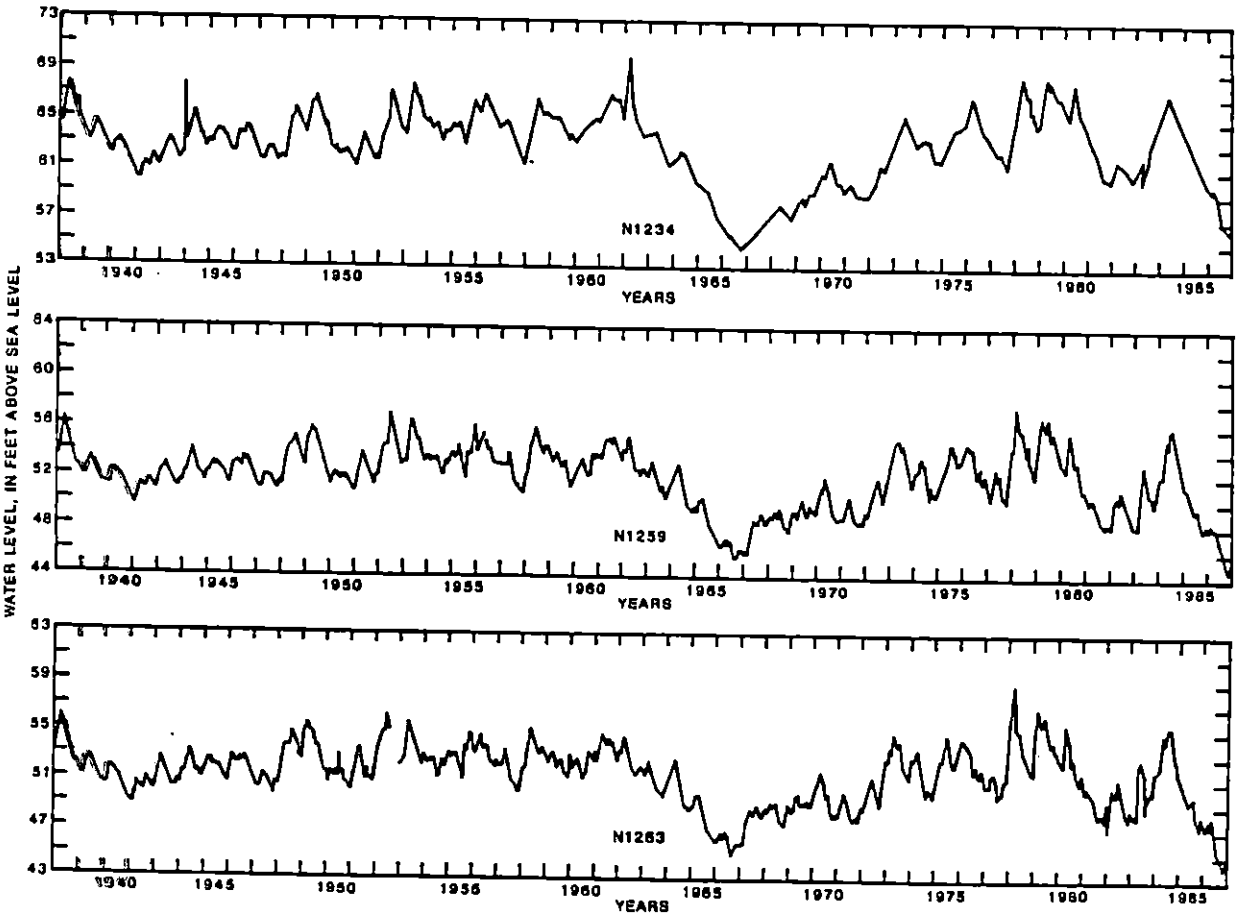
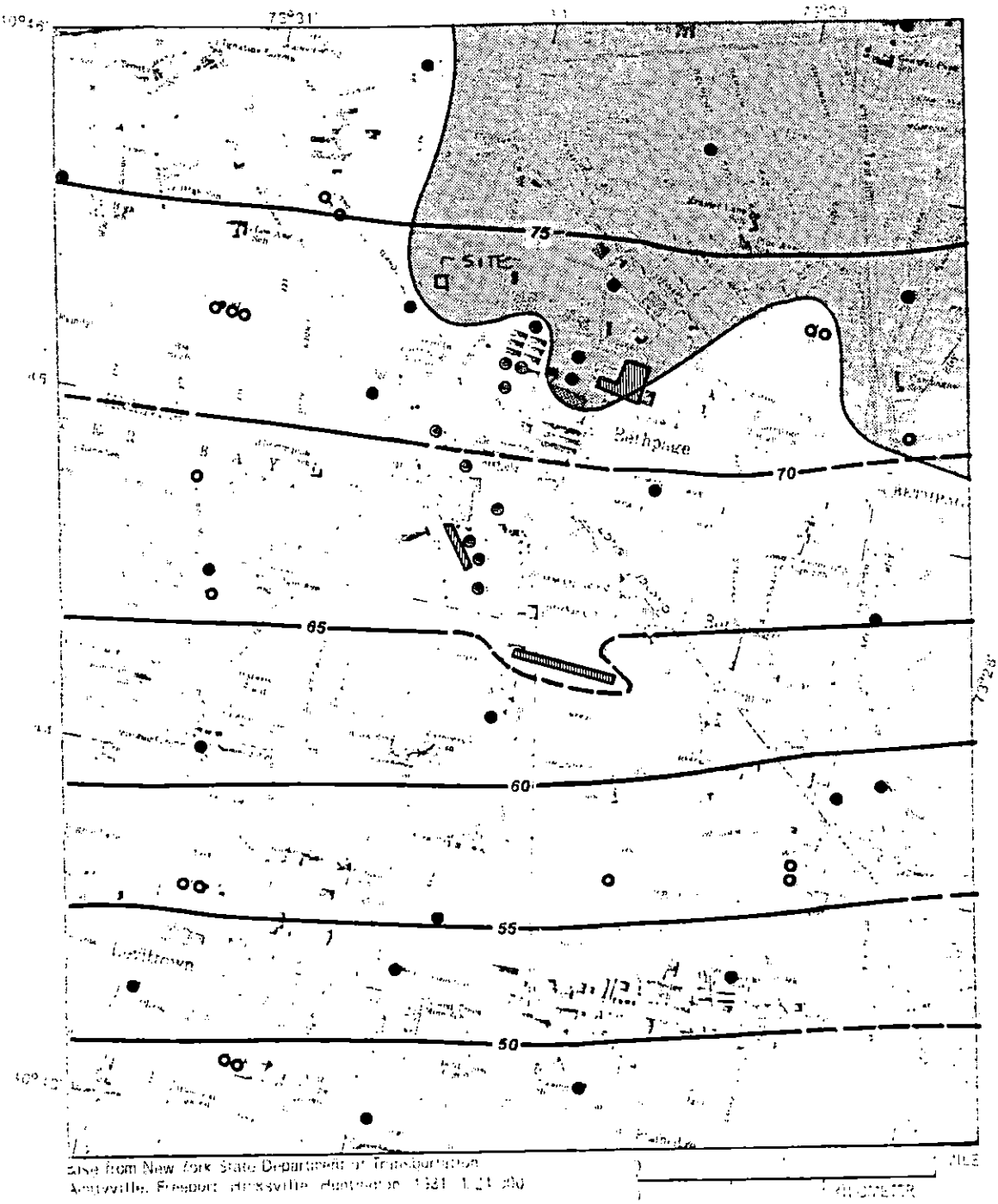


Figure 11.--Water levels in wells N1234, N1259, and N1263, during 1938-86. (Well locations are shown in fig. 2).



EXPLANATION

ACTIVE INDUSTRIAL RECHARGE BASIN

APPROXIMATE AREA WHERE WATER TABLE IS WITHIN THE MAGOTHY AQUIFER

60 WATER-TABLE CONTOUR--Shows altitude of water table. Contour interval is 5 feet. Dashed where approximately located. Datum is sea level

PUBLIC-SUPPLY WELL

INDUSTRIAL WELL

OBSERVATION WELL SCREENED AT WATER TABLE

Figure 12.--Water-table altitude in the Bethpage-Hicksville-Levittown area, April 1986.

2. Wells that pump large volumes of water may cause local depressions in the water table. Although the water pumped by public-supply and major industrial wells is drawn from deep in the Magothy aquifer, this withdrawal may cause a drawdown in the overlying upper glacial aquifer. The inferred drawdowns at such wells are not indicated in figure 12, however, because specific information is lacking.

3. The type of material that makes up the water-table aquifer can affect the shape of the water table--that is, a local change in the hydraulic properties of the aquifer may be reflected in the configuration of the water table. For example, the upper surface of the Magothy aquifer is higher than the water table in the northeastern part of the study area, and the Pleistocene deposits are unsaturated; thus, the Magothy is the water-table aquifer in this area. Elsewhere in the study area the water table is in the upper glacial aquifer. The difference between horizontal hydraulic conductivity of the upper glacial aquifer (270 ft/d) and that of the Magothy aquifer (50 ft/d) probably affects the water-table configuration, but no data are available to verify this.

Potentiometric surface of the Magothy aquifer in April 1986.--The configuration of the potentiometric surface of the Magothy aquifer (fig. 13) is similar to that of the water table. Water levels measured at 15 public-supply wells screened in the lower half of the Magothy aquifer ranged from 75.4 to 47.1 ft above sea level in the northern and southern parts of the study area, respectively. Two additional wells beyond the northern boundary were measured but are not shown in figure 13. Accurate water-level measurements were difficult to obtain from these wells because many of them had been pumped just before the measurements were made and (or) are part of a well field in which nearby wells are being pumped.

Comparison of the water-table map (fig. 12) with the potentiometric-surface map (fig. 13) indicates a small vertical head gradient toward the Magothy aquifer.

Water table in August 1986.--In the summer of 1986, 20 additional observation wells were installed in the upper glacial aquifer to further delineate the water-table configuration in the study area. Comparison of April water levels (fig. 12) with those of August (fig. 14) indicates two major differences. The first is that the water table was 1.5 to 3 ft lower in August as a result of the seasonal loss of recharge and the increased pumpage at this time of year; this decline is within the range of fluctuation for an average annual cycle. The second difference is that water-table mounding at the aerospace facility was greater in August than in April. The demand for water for cooling and air conditioning at this facility is met by pumping water from depths between 360 and 570 ft below land surface (Magothy aquifer) and later discharging the water to recharge basins at land surface. Water levels near the basins in August were as much as 7 ft above the ambient level and may have been even higher at locations closer to the basins. Three basin groups are used for most of the recharge (fig. 14).

Water pumped from the Magothy aquifer at the aerospace facility is discharged onsite; thus, pumpage volumes are representative of recharge volumes less small amounts used onsite and evaporation at basins. Average monthly pumpage (and thus recharge) for 1968-85 has been greatest in August (fig. 15).

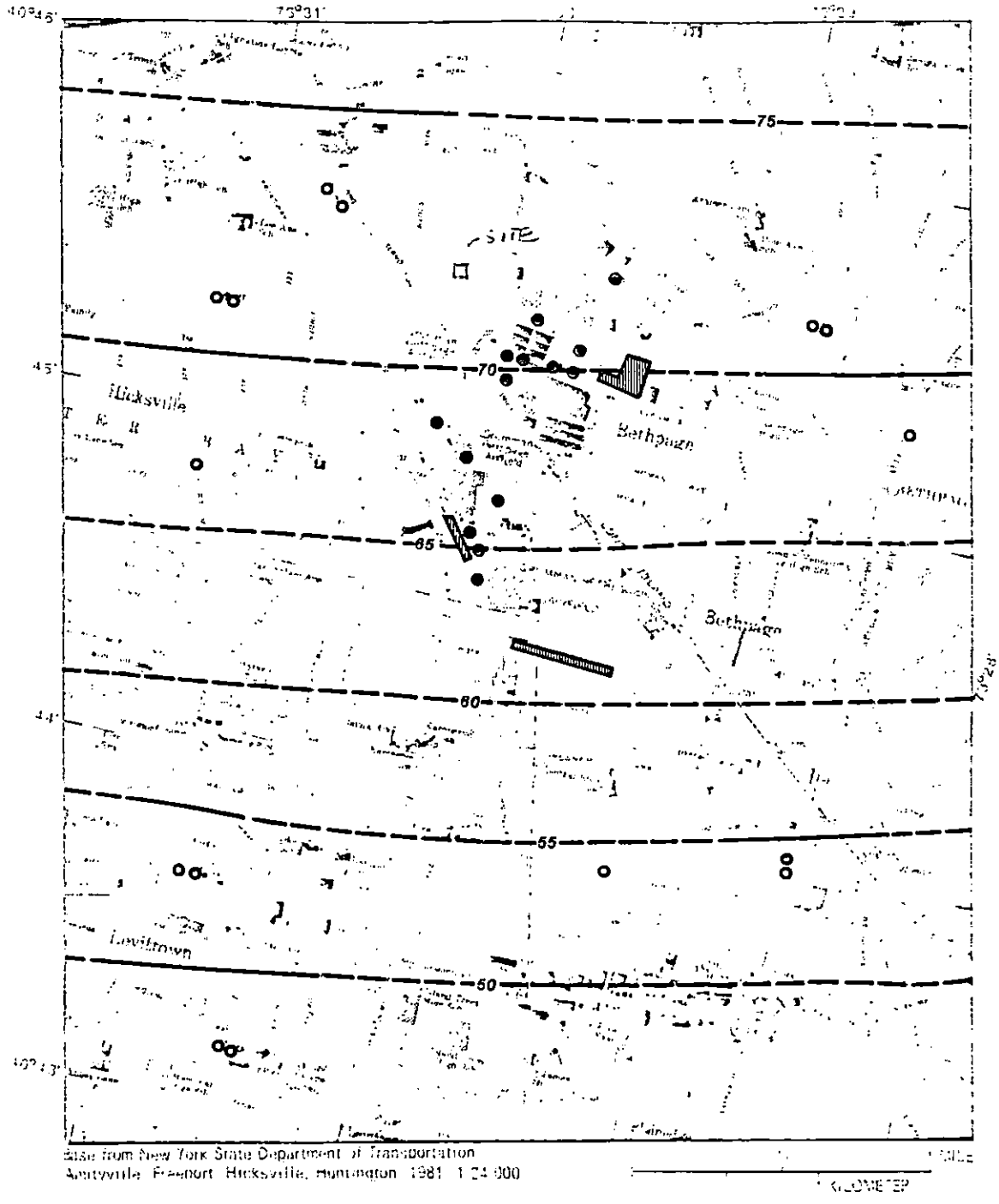
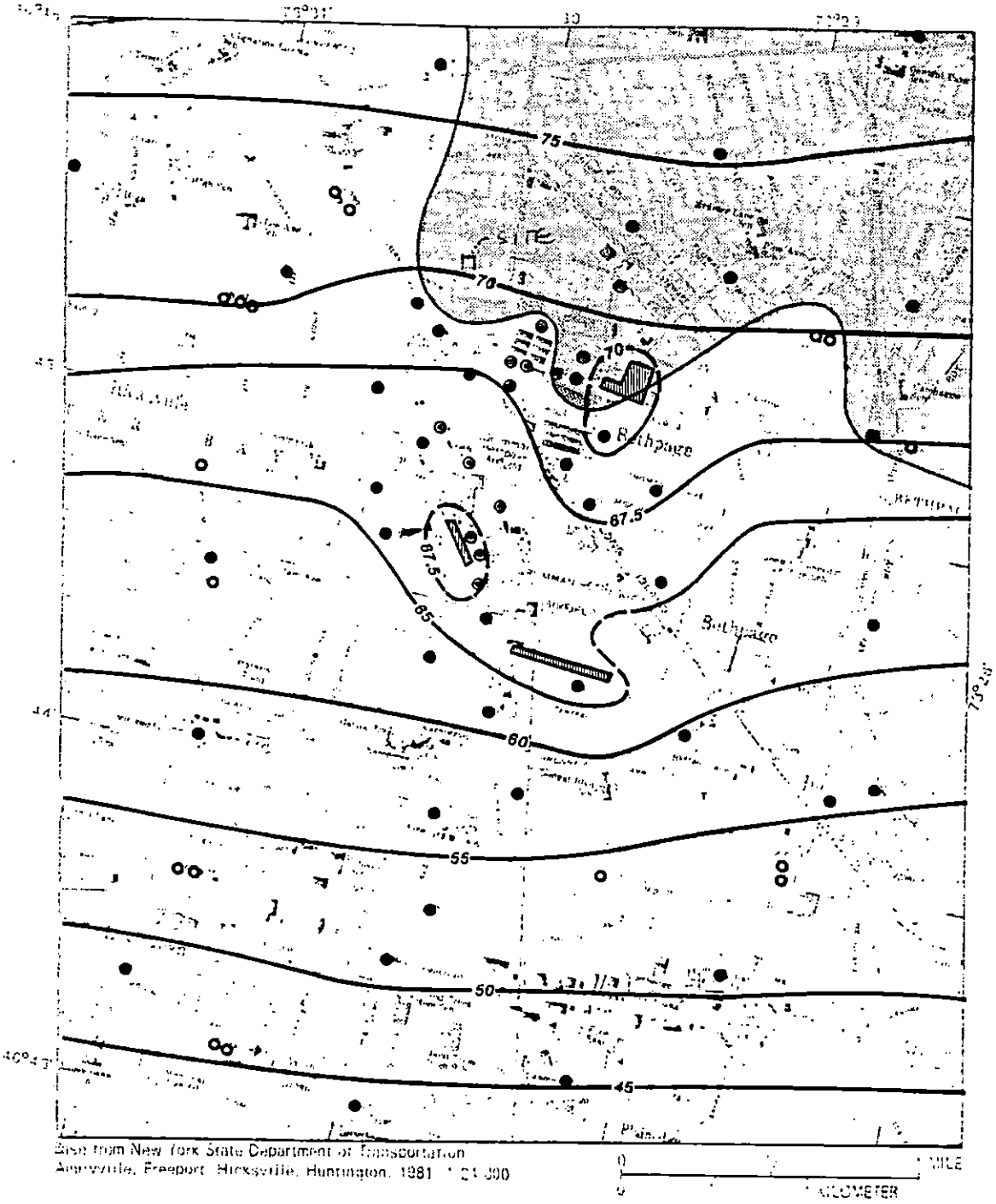


Figure 13.--Potentiometric-surface altitude of the Magothy aquifer in the Bethpage-Hicksville-Levittown area, April 1986.



EXPLANATION

ACTIVE INDUSTRIAL RECHARGE BASIN

APPROXIMATE AREA WHERE WATER TABLE IS WITHIN THE MAGOTHY AQUIFER

45 WATER-TABLE CONTOUR--Shows altitude of water table. Contour interval is 5 feet. Dashed where approximately located. Datum is sea level

PUBLIC-SUPPLY WELL

INDUSTRIAL WELL

OBSERVATION WELL SCREENED AT WATER TABLE

Figure 14.--Water-table altitude in the Bethpage-Hicksville-Levittown area in August 1986.

The highest mounding should occur during periods of large withdrawals. The practice of pumping at depth in virtually the same location as the recharge site has a substantial effect on three-dimensional flow patterns. Under natural conditions, the vertical gradient between the water table and the basal Magothy is 1 to 4 ft. The hydraulic conductivity and anisotropy of the aquifers would indicate the vertical movement of water to be relatively slow. Deep pumping and surface recharge decrease the hydraulic head at depth, however, and increase the head at the water table, which greatly increases the vertical gradient and the rate of vertical ground-water flow.

The horizontal hydraulic gradient near the recharge mounds also is affected. The horizontal velocity of ground water is greatest near the point of recharge and decreases toward the edges of the mound.

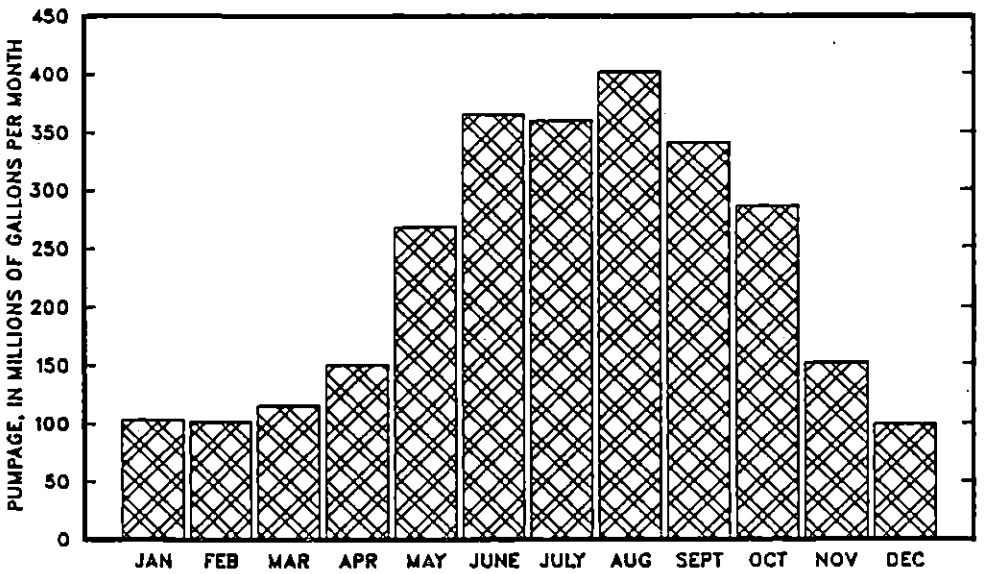


Figure 15.--Average monthly pumpage of aerospace facility wells, 1968-85. (Data from New York State Department of Environmental Conservation. Location shown in figs. 12, 13, and 14.)

SUMMARY AND CONCLUSIONS

The Bethpage-Hicksville-Levittown area is in a highly developed urban-residential and industrial-commercial part of east-central Nassau County. The demand for water by industrial and residential users places a major stress on the ground-water system. Aquifers are the only source of water for these users, and proper management of the resource requires extensive data on water levels, aquifer properties, and flow patterns in the area.

The area is underlain by four hydrogeologic units that are, in descending order, the upper glacial aquifer, Magothy aquifer, Raritan confining unit, and the Lloyd aquifer. The Lloyd aquifer has not been used as a water supply, and the upper glacial aquifer, which has become contaminated, is pumped only for minor industrial use. All of the public-supply water and most of the water used by industry is pumped from the Magothy aquifer.

The Magothy aquifer represents about half the total thickness (1,200 ft) of the four hydrogeologic units. The Magothy and upper glacial aquifers both have good water-transmitting properties but contain many clay lenses that produce a high degree of anisotropy and locally may inhibit vertical flow.

The water table slopes southward with a relatively constant gradient across most of the area. Water levels fluctuate as much as 3 ft seasonally between April and August. Industrial recharge basins, used extensively during summer, produce ground-water mounding at the water table. Industrial pumping at depth in the vicinity of the recharge basins creates large local changes in the vertical hydraulic gradient.

REFERENCES CITED

Donaldson, C. D., and Koszalka, E. J., 1983a, Potentiometric surface of the Magothy aquifer, Long Island, New York, in March 1979: U.S. Geological Survey Open-File Report 82-160, 2 sheets, 1:125,000.

_____1983b, Potentiometric surface of the Lloyd aquifer, Long Island, New York, in January 1979: U.S. Geological Survey Open-File Report 82-162, 2 sheets, 1:125,000.

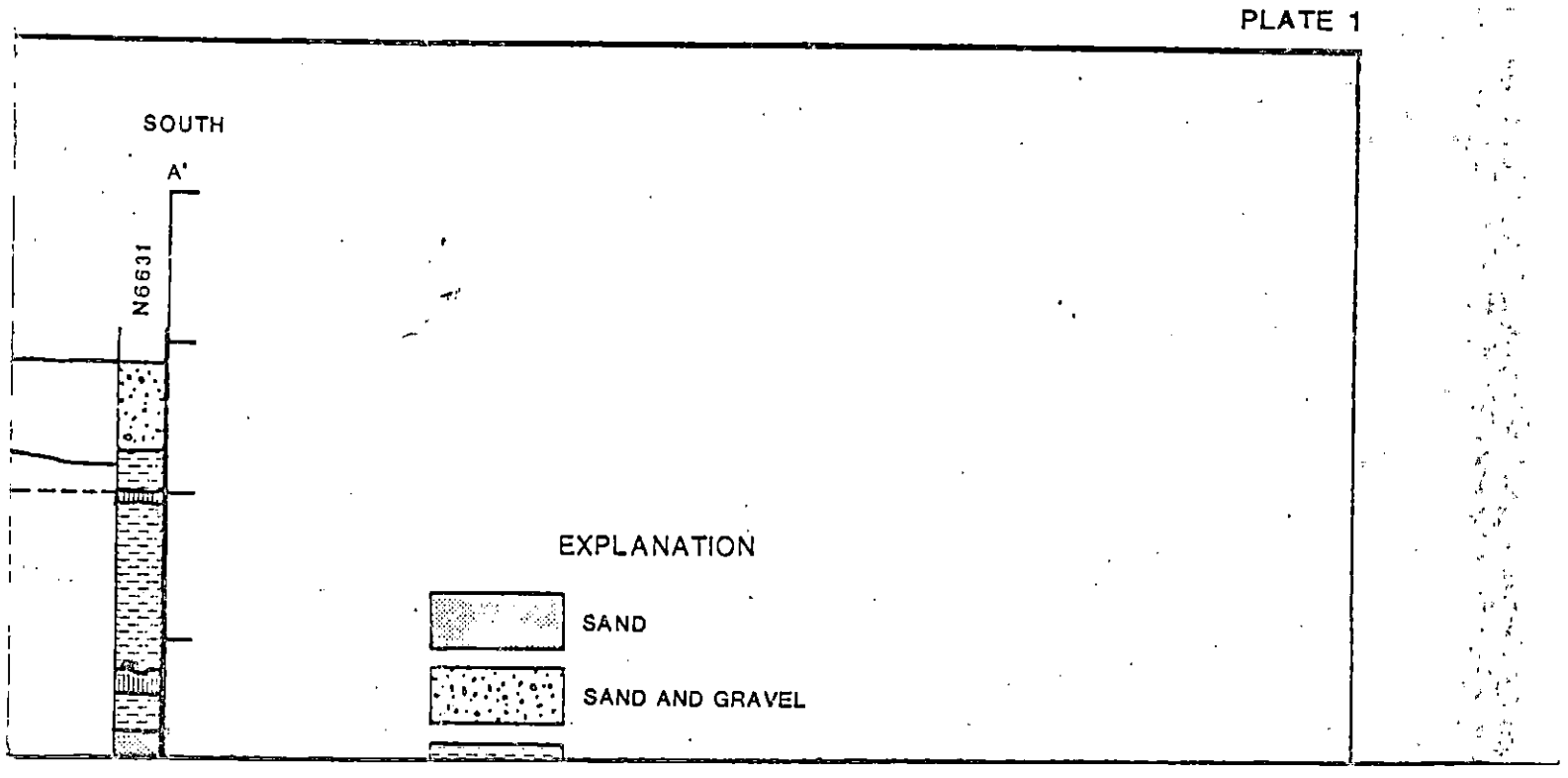
Franke, O. L., and Cohen, Philip, 1972, Regional rates of ground-water movement on Long Island, New York: U.S. Geological Survey Professional Paper 800-C, p. C271-C277.

Miller, J. F., and Frederick, R. H., 1969, The precipitation regime of Long Island, New York: U.S. Geological Survey Professional Paper 627-A, 21 p.

Smolensky, D. A., Buxton, H. T., and Shernoff, P. K., Hydrogeologic framework of Long Island, New York: U.S. Geological Survey Hydrologic Investigations Atlas HA-709, 3 sheets, 1:250,000 (in press).

Suter, Russell, deLaguna, Wallace, and Perlmutter, N. M., 1949, Mapping of geologic formations and aquifers of Long Island, New York: New York State Water Power and Control Commission Bulletin GW-18, 212 p.

☆ U.S. GOVERNMENT PRINTING OFFICE:713-216


SOUTH
A'
N6631
EXPLANATION
SAND
SAND AND GRAVEL

UNIT

EAST

B'

N8768

WEST

FEET

C

200

100

SEA LEVEL

100

200

300

400

500

600

700

N4451

N10636

N10600

N10631

N5532

N10632

N10601

N10633

N10628

EAST

C'

UPPER GLACIAL AQUIFER

MAGOTHY AQUIFER

RARITAN CONFINING UNIT

0 .5 1 MILE

0 .5 1 KILOMETER

E BETHPAGE-HICKSVILLE-LEVITTOWN AREA, LONG ISLAND, NEW YORK (LOCATIONS ARE SHOWN IN FIGURE 5)

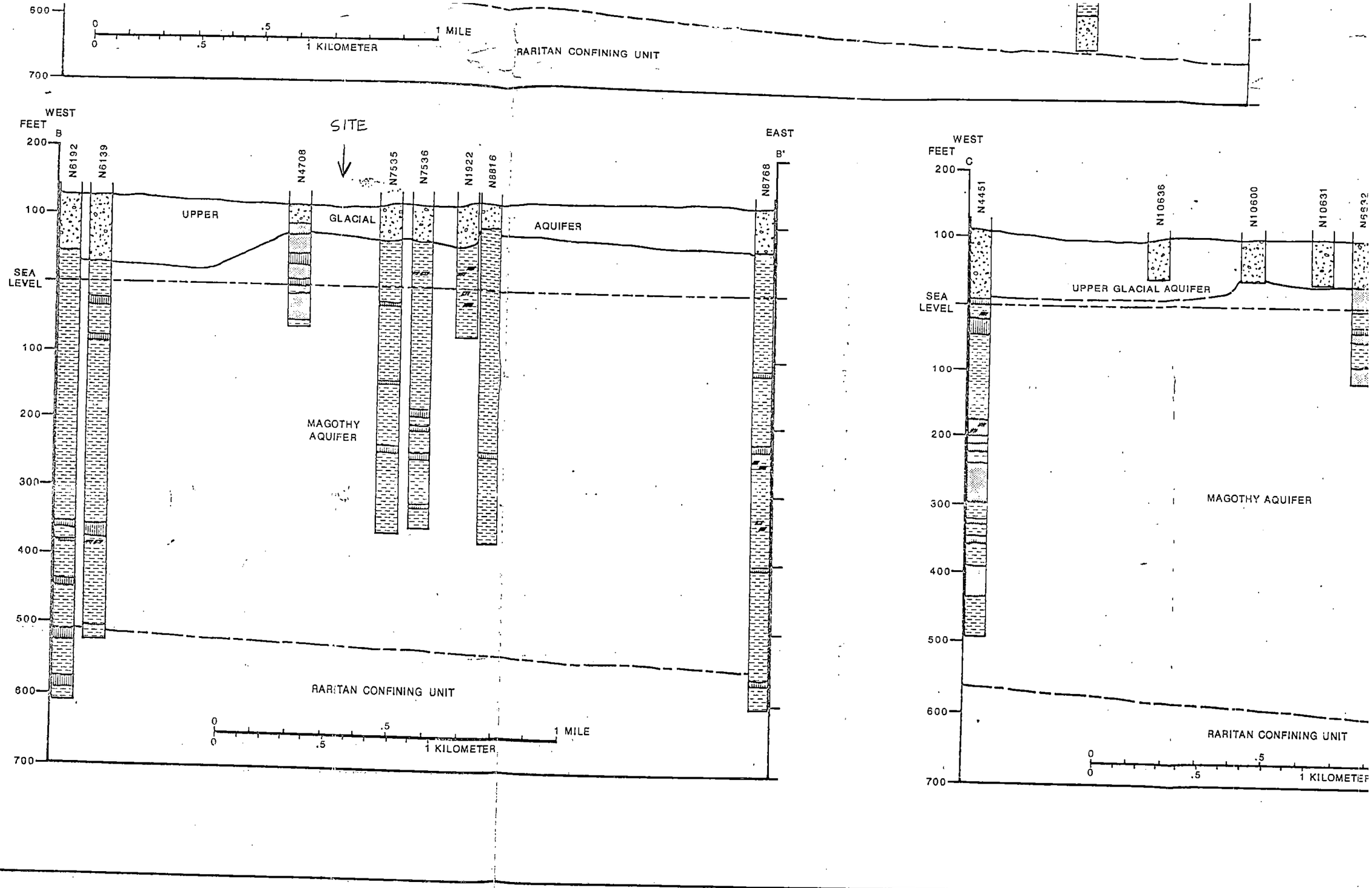


PLATE 1.--HYDROGEOLOGIC SECTIONS A-A', B-B', AND C-C' IN THE BETHPAGE-HICKSVILLE-LEVITTOWN AREA, LONG ISLAND, NEW YORK (LOCATIO

REFERENCE NO. 39

LONG ISLAND WATER RESOURCES
BULLETIN 13

HYDROLOGIC AND WATER-QUALITY APPRAISAL OF SOUTHEAST NASSAU COUNTY, LONG ISLAND, NEW YORK

Prepared by the
U.S. GEOLOGICAL SURVEY
[illegible]
[illegible] AUTHORS & AFFILIATIONS
[illegible]
Published by
NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS
[illegible]
[illegible]

LONG ISLAND WATER RESOURCES
BULLETIN 13

HYDROLOGIC AND WATER-QUALITY APPRAISAL OF SOUTHEAST NASSAU COUNTY, LONG ISLAND, NEW YORK

By
Henry F. H. Ku and Dennis J. Sulam

U.S. Department of the Interior
Geological Survey

Prepared by the
U.S. GEOLOGICAL SURVEY

in cooperation with the
NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS

Published by
NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS

1979

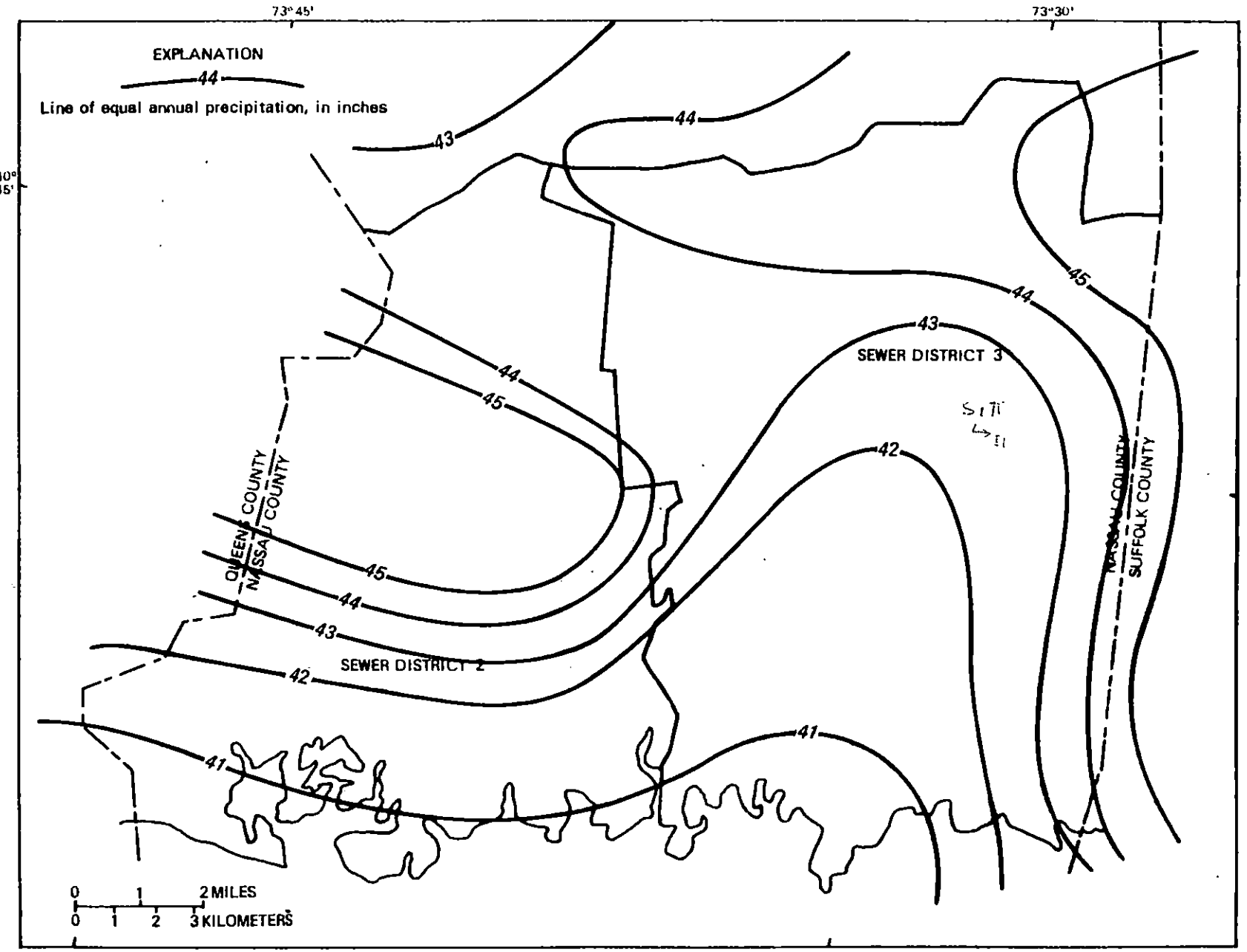


Figure 7.--Mean annual precipitation in Nassau County, 1951-65. (Modified from Miller and Frederick, 1969.)

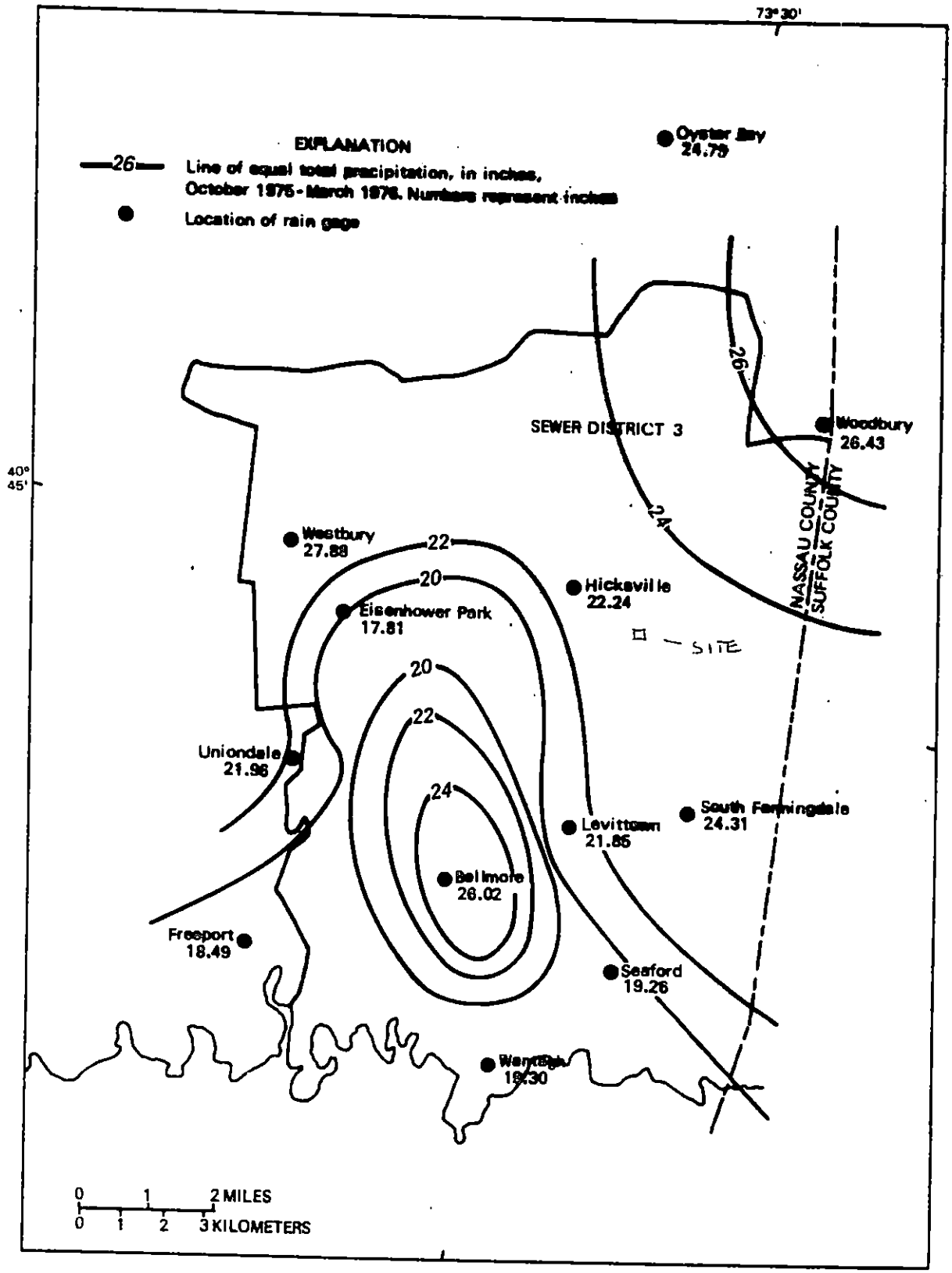


Figure 8A.--Areal distribution of total precipitation in Sewer District 3 during cool season, October 1975 to March 1976.

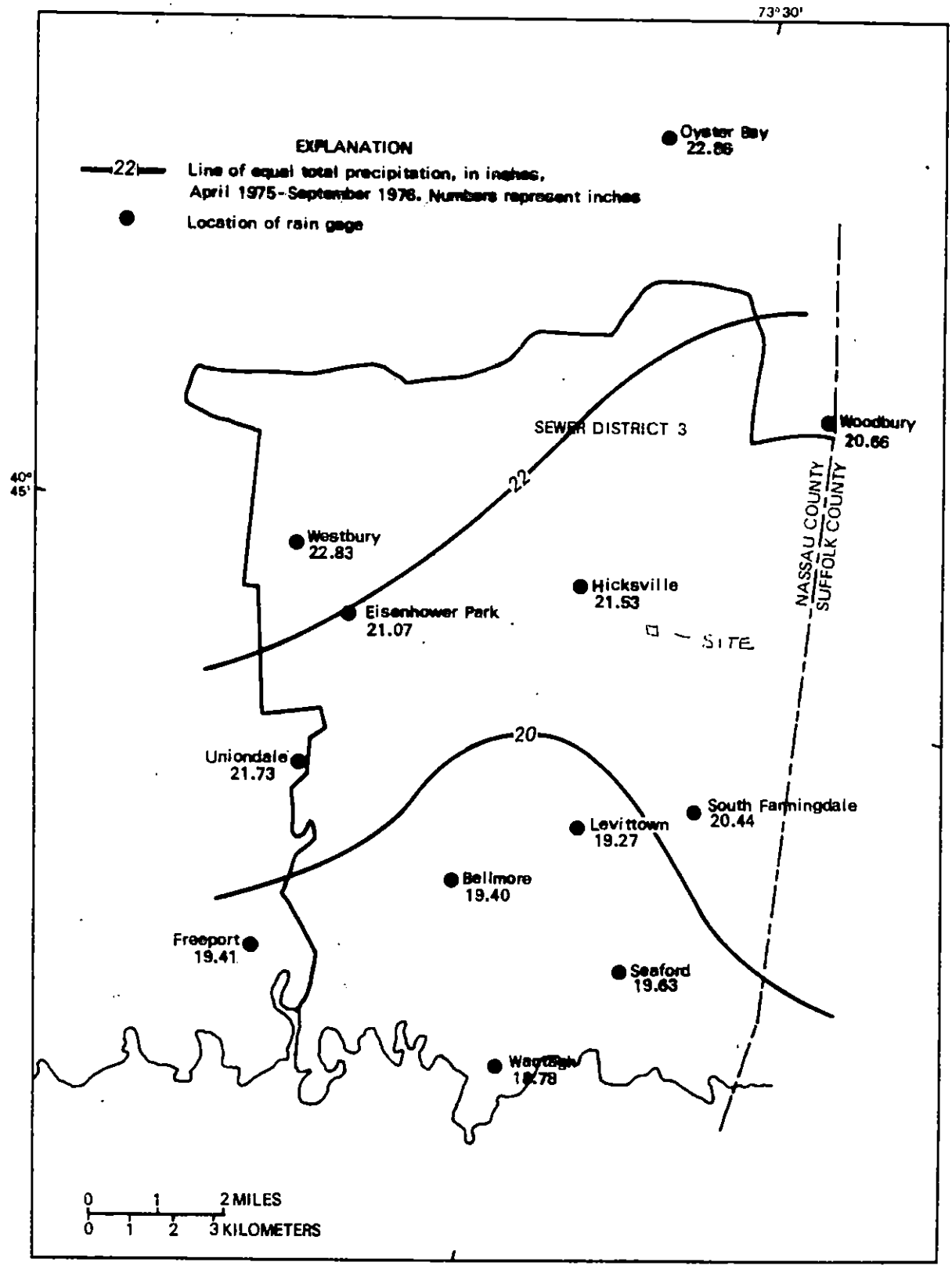


Figure 8B.--Areal distribution of total precipitation in Sewer District 3 during warm season, April to September 1976.

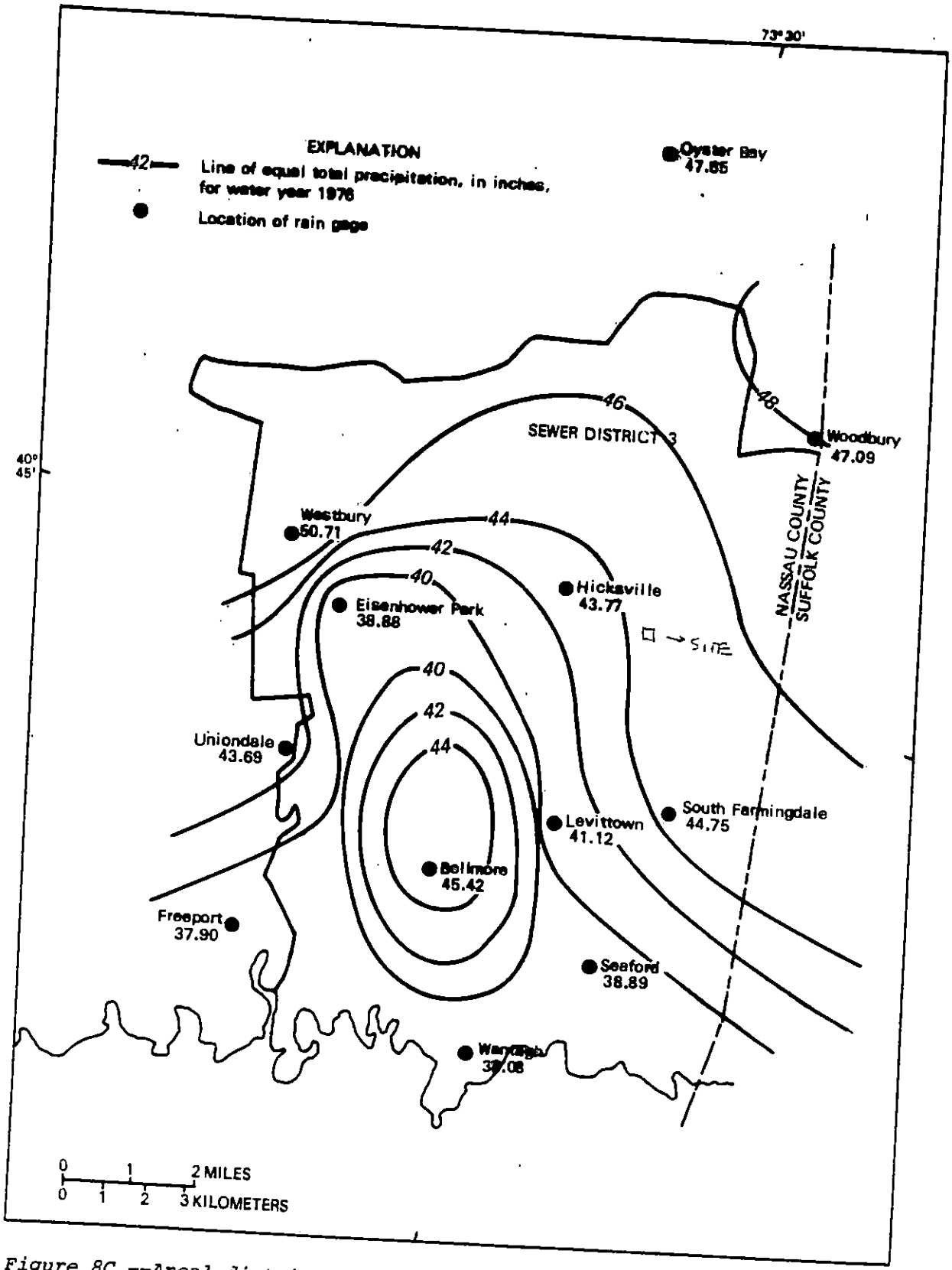


Figure 8C.--Areal distribution of total precipitation in Sewer District 3 during water year 1976.

Public-Supply Wells

Pumpage

Pumpage from public-supply wells in Nassau County during 1975 was 170 Mgal/d; total pumpage that year in Sewer District 3 was approximately 53 Mgal/d. Table 6 summarizes pumpage in the water districts of Sewer District 3 by aquifer; figure 23 shows the distribution of public-supply pumpage in Sewer District 3 during 1975.

The increase in pumpage from public-supply wells by water districts in Sewer District 3 during 1950-76 is summarized in table 7. The pattern of the increases in ground-water withdrawals is illustrated by pumpage totals of

Table 6.--Summary of pumpage by aquifer from public-supply wells in Sewer District 3, Nassau County, 1975

[Locations of water districts are shown in figure 23]

Water District	Population	Pumpage (in thousands of gallons)			
		Upper glacial	Magothy	Lloyd	Total
New York Water Service	171,080	0	4,495,808	0	4,495,808
Massapequa	51,000	0	1,598,496	0	1,598,496
Farmingdale	9,925	0	347,644	0	347,644
South Farmingdale	55,000	152,603	1,159,589	0	1,312,192
East Meadow	50,000	0	1,694,502	0	1,694,502
Levittown	50,000	0	1,330,975	0	1,330,975
Bethpage	32,950	0	1,033,280	0	1,033,280
Hicksville	60,000	0	2,022,257	0	2,022,257
Plainview	46,000	0	1,553,144	0	1,553,144
Jericho	58,100	0	2,754,043	0	2,754,043
Westbury	18,000	0	758,172	93,345	851,517
Carle Place	10,000	0	438,283	0	438,283
TOTAL					19,432,141 (53.2 Mgal/d)

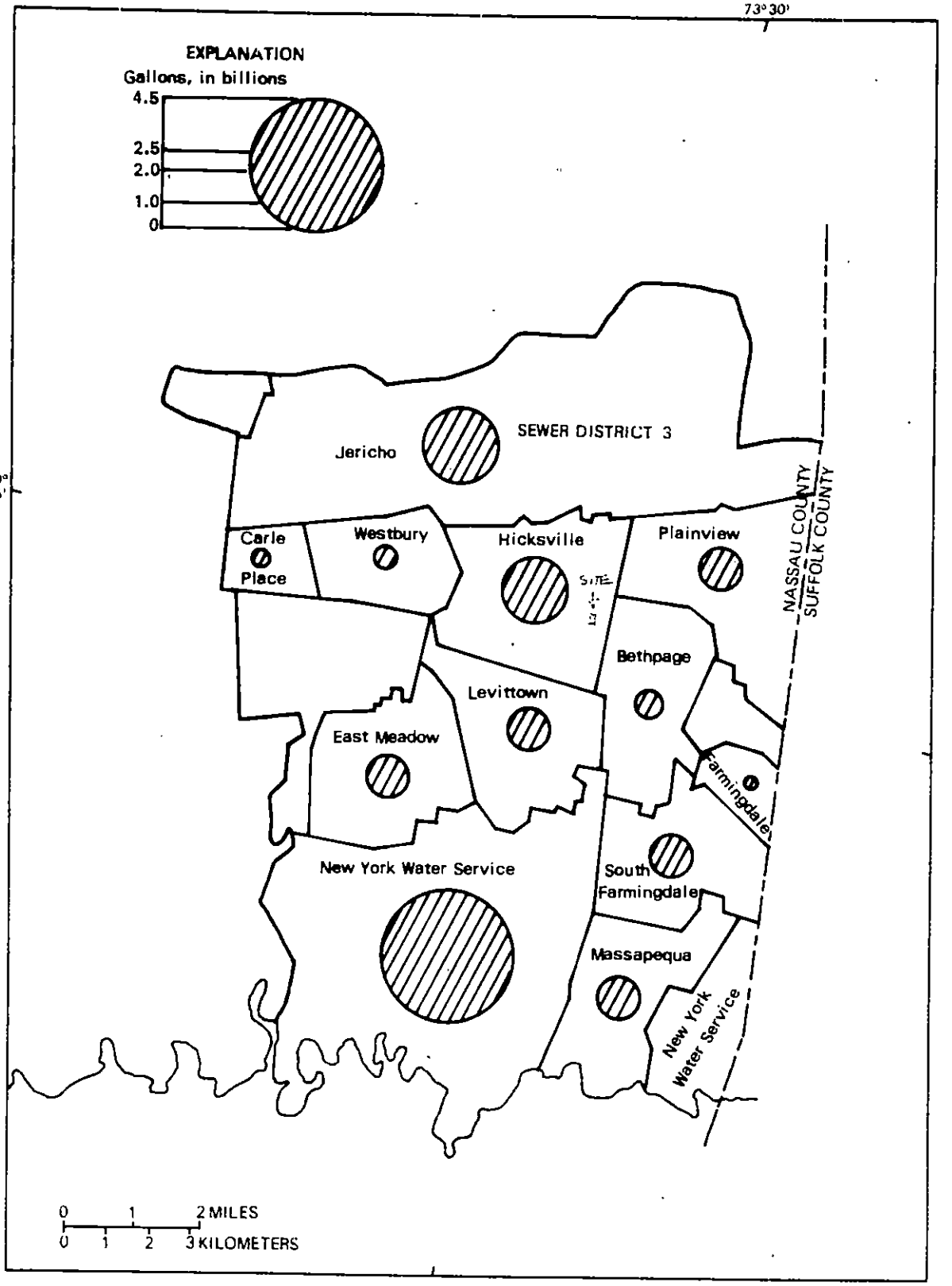


Figure 23.--Water districts in Sewer District 3 and pumpage from each during 1975.

Table 7.--Pumpage from public-supply wells in water districts, southeast Nassau County

[in million gallons per day]

Year	Water District											
	N.Y. Water Service	Massapequa	Farmingdale	So. Farmingdale	East Meadow	Levittown	Bethpage	Hicksville	Plainview	Jericho	Westbury	Carle Place
1950	2.55	-	0.44	-	0.11	2.99	-	1.32	-	1.24	0.86	0.49
1951	3.57	-	.50	-	.60	3.33	1.05	2.31	-	1.77	1.30	.59
1952	4.61	-	.60	-	1.33	3.54	1.40	2.54	-	1.94	1.33	.61
1953	6.15	-	.87	-	1.90	3.72	1.49	3.29	-	2.76	1.69	.71
1954	6.83	0.07	.50	1.10	2.10	3.73	1.48	3.61	0.44	3.02	1.86	.77
1955	7.88	.30	.59	1.43	2.65	5.24	1.81	4.32	1.25	3.41	2.29	.86
1956	7.05	.60	.54	1.66	2.58	4.31	1.74	4.12	1.52	3.22	2.15	.75
1957	8.39	1.17	.64	2.52	3.13	5.73	2.24	5.05	2.08	4.78	2.91	.97
1958	7.71	.87	.62	2.21	2.88	4.16	1.93	4.45	2.00	4.07	2.50	.76
1959	8.77	1.85	.74	2.96	3.36	4.73	2.22	5.41	2.53	5.00	3.07	.90
1960	8.48	1.74	.79	2.97	3.25	4.35	2.19	5.40	2.69	4.97	3.18	.87
1961	7.97	2.44	.85	3.11	3.48	3.90	2.35	5.35	2.93	5.49	2.37	.91
1962	9.14	3.44	.84	3.56	3.77	4.47	2.66	6.09	3.38	6.58	2.52	1.04
1963	9.56	3.64	.76	3.63	3.97	4.92	2.72	6.00	3.72	6.67	3.83	1.12
1964	10.31	3.86	.84	3.89	4.25	5.23	3.04	6.29	4.21	7.70	1.84	1.23
1965	10.56	3.91	.90	3.72	4.22	5.30	3.02	6.58	4.34	9.10	4.48	1.24
1966	11.18	4.00	.93	3.89	4.36	5.55	3.07	6.49	4.40	9.00	4.60	1.27
1967	9.94	3.27	.80	3.36	3.93	4.33	2.60	5.14	3.65	7.55	4.23	1.06
1968	11.25	4.10	.86	3.86	4.36	5.05	2.96	6.20	4.40	8.74	4.40	1.16
1969	11.50	4.19	.80	3.72	4.25	4.75	2.86	6.44	4.19	8.24	3.09	1.17
1970	12.34	4.40	.87	3.93	4.96	4.96	3.13	6.37	4.47	8.52	4.10	1.24
1971	12.63	4.25	.92	4.05	4.84	5.13	3.32	6.63	4.45	9.04	4.14	1.23
1972	12.08	3.58	.96	3.81	4.27	3.89	3.03	5.92	4.41	8.55	3.91	1.29
1973	12.26	4.26	1.02	3.92	3.98	3.84	3.00	6.21	4.59	8.62	4.18	1.34
1974	12.81	4.59	1.11	3.94	4.19	3.95	3.13	5.44	4.56	8.42	3.87	1.37
1975	12.32	4.38	.95	3.60	4.64	3.65	2.83	5.54	4.26	7.55	2.33	1.20
1976	13.46	5.28	.96	3.85	4.48	4.10	2.96	6.05	4.80	8.85	2.52	1.46

New York Water Service (fig. 23), which is the largest supplier in the study area. Between 1950 and 1960, pumpage increased by 5.93 Mgal/d; pumpage between 1960 and 1970 increased by 3.86 Mgal/d; but pumpage since 1970 has increased by only 1.12 Mgal/d. Throughout Sewer District 3, pumpage increased from 10 Mgal/d in 1950 to 53 Mgal/d in 1975, about a fivefold increase.

In 1975, water use ranged from 0.21 (Mgal/d)/mi^2 in the Jericho Water District to 0.91 (Mgal/d)/mi^2 in the Carle Place Water District. Average water use among the districts was 0.5 (Mgal/d)/mi^2. When sewer installations are completed, most of the water use will be consumptive because approximately 85 percent of the pumped water will be routed to sewer lines. The rest will be used for lawn sprinkling and other outdoor use, and part of it will infiltrate back to the water table. By 1985, water use in Sewer District 3 is expected to range from 0.21 (Mgal/d)/mi^2 in the Jericho Water District to 1.69 (Mgal/d)/mi^2 in the Westbury Water District. These estimates are derived from pumpage figures given in Kimmel and others (1977). Average water use by 1985 is expected to be 0.94 (Mgal/d)/mi^2.

Water Loss

Greeley and Hansen (1971, p. 84) estimated water loss (including sewage disposal, evapotranspiration from sprinkling, and consumptive losses) in each water district for 1990. If specific yield of 20 percent is assumed for the water-table aquifer in Sewer District 3, the average water-level decline in response to the estimated hydrologic losses would range from 3.1 ft to 17 ft. Water-level declines in response to losses from storage are predicted to be slightly greater than the 3-ft to 16-ft decline predicted by the analog-model studies of Ku and others (1977), which take into account subsurface outflow from district to district, streamflow decreases, and lower population predictions.

Water Quality

The quality of the public-water supply of Nassau County is monitored by the Nassau County Department of Health, as well as by the various water suppliers. Records for 11 public-supply wells in the area having extensive water-quality data and suitable areal distribution were used to compute the trend of nitrate, chloride, and total solids with time. Trend lines were fitted through data points by the least-square method of analysis. Figure 24 shows that concentrations of nitrate (as N), chloride, and total solids increased from the 1950's to 1973 at the 11 selected wells. Smith and Baier (1969) state that water from 24 percent of the public-supply wells in Nassau County had increasing nitrate trends in 1969 and that the nitrate (as N) concentration of water from 16 percent of the public-supply well will exceed the drinking-water limit of 10 mg/L within 50 years. Effluent from cesspools is cited as the primary source of nitrate in the Nassau County Water Supply.

Sections showing vertical distribution of nitrate, chloride, and total-solids concentrations indicate that these constituents have moved downward into the aquifers in a range from tens of feet to a few hundred feet from the 1950's to 1976 (Ku and Sulam, 1976).

Perlmutter and Koch (1972) have shown that most Magothy aquifer wells whose water has a significantly increasing nitrate concentration lie in a central band running east-west across Nassau County. This is because under natural conditions the vertical (downward) movement of water in the vicinity of the major ground-water divide is more rapid than in other parts of the study area. As a result, elevated concentrations of nitrate and other constituents of ground water tend to lie at greater depths near the divide than elsewhere.

The rate of vertical movement of water near the ground-water divide is estimated to be 5 to 25 ft per year and to average 10 ft per year (Perlmutter and Koch, 1972). At this rate, water would move 500 ft from the water table to the base of the Magothy aquifer in about 50 years. Using a steady-state electric-analog model, Franke and Cohen (1972) estimated that it would take 100 years for water to move from the water table to the base of the Magothy aquifer (500 ft) along the Nassau-Suffolk County boundary at the ground-water divide. However, the rates of vertical movement would be accelerated by pumping.

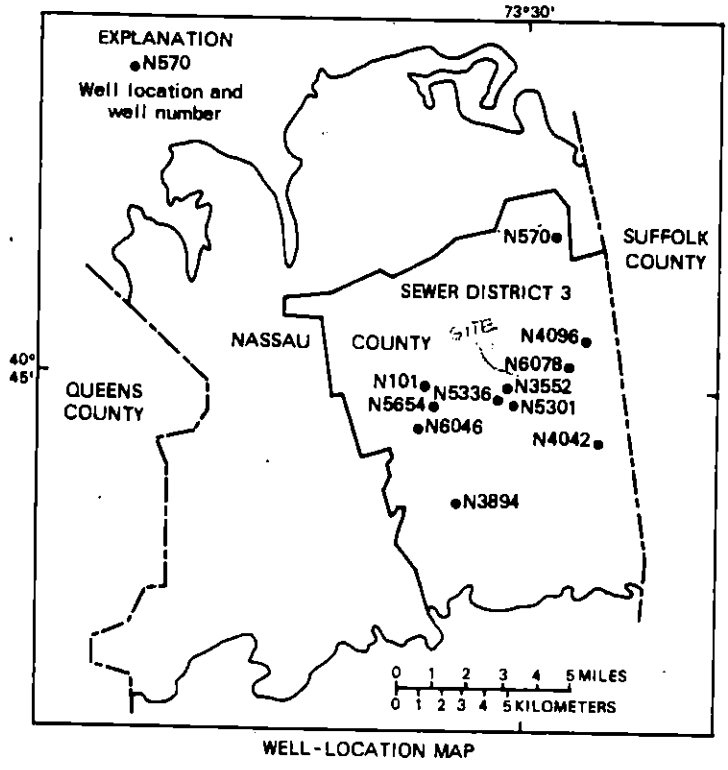
In areas of Hicksville and Levittown, large-scale farming and associated use of fertilizers since 1920 (Perlmutter and Koch, 1972) has undoubtedly contributed nitrate to the ground-water system. More recently, fertilizers applied to lawns and gardens have become sources of nitrate in ground water.

The lowest concentrations of nitrate, chloride, and total solids in the Magothy aquifer are south of a line running from North Merrick to South Farmingdale (fig. 1).

Median nitrate (as N) concentrations of untreated water from all public-supply wells in the water districts and villages in Sewer District 3 ranged from 0.02 mg/L to 4.0 mg/L (table 8). The pH of untreated public-supply water ranged from 5.1 to 6.7. Specific conductance ranged from 35 to 120 µmho/cm, which indicates that the water has a low mineral content.

Iron and manganese enter ground water as a result of bacterial action or the solvent action of water on minerals or manmade products containing these elements. Iron is ubiquitous in ground water on Long Island. However, manganese in ground water is usually attributed to bacterial action at shallow depths. Manganese was virtually absent in public-supply wells in Sewer District 3 (table 8), whereas iron concentrations ranged from 0 to 0.49 mg/L. Pluhowski and Kantrowitz (1964) found that iron in excess of 0.3 mg/L with an absence of manganese can occur in all aquifers underlying Long Island and is probably the result of the solution of iron-bearing minerals or iron oxide within the aquifer.

Median hardness of water (as $CaCO_3$) differs greatly from well to well and ranged from 6 to 32 mg/L during the 3-year study. In water districts where hardness (as $CaCO_3$) was less than 10 mg/L, ion exchange resulting from water percolating through clay lenses in the aquifer was the most likely contributing factor (Pluhowski and Kantrowitz, 1964, p. 56).



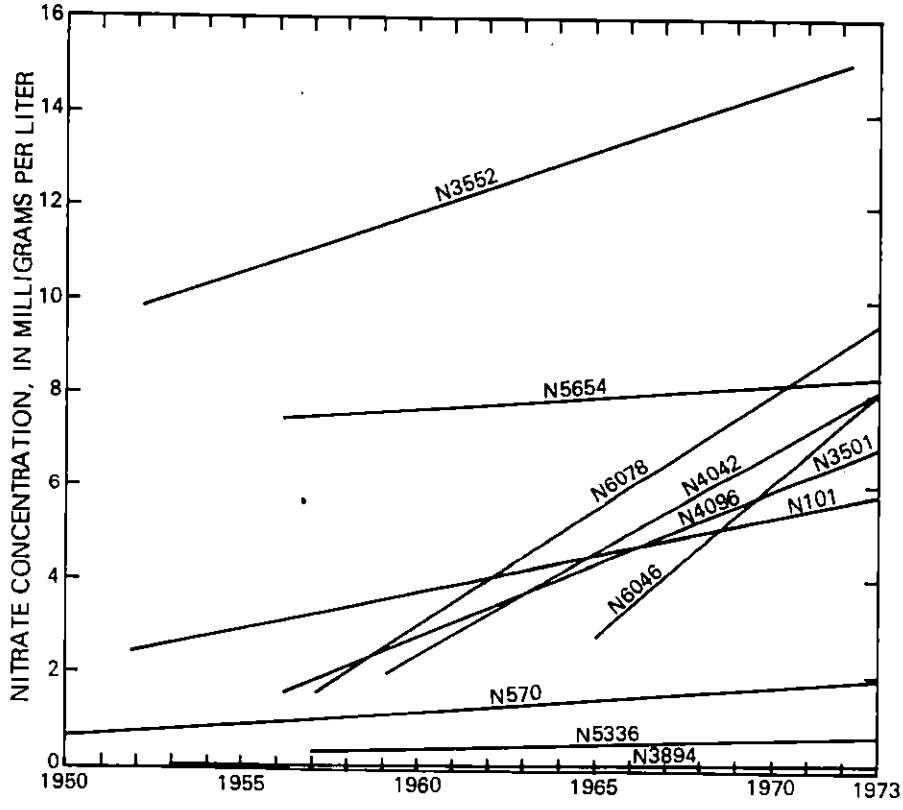


Figure 24.--Trend of nitrate in well water in Sewer District 3, 1950's through 1973. (From Ku and Sulam, 1976.)

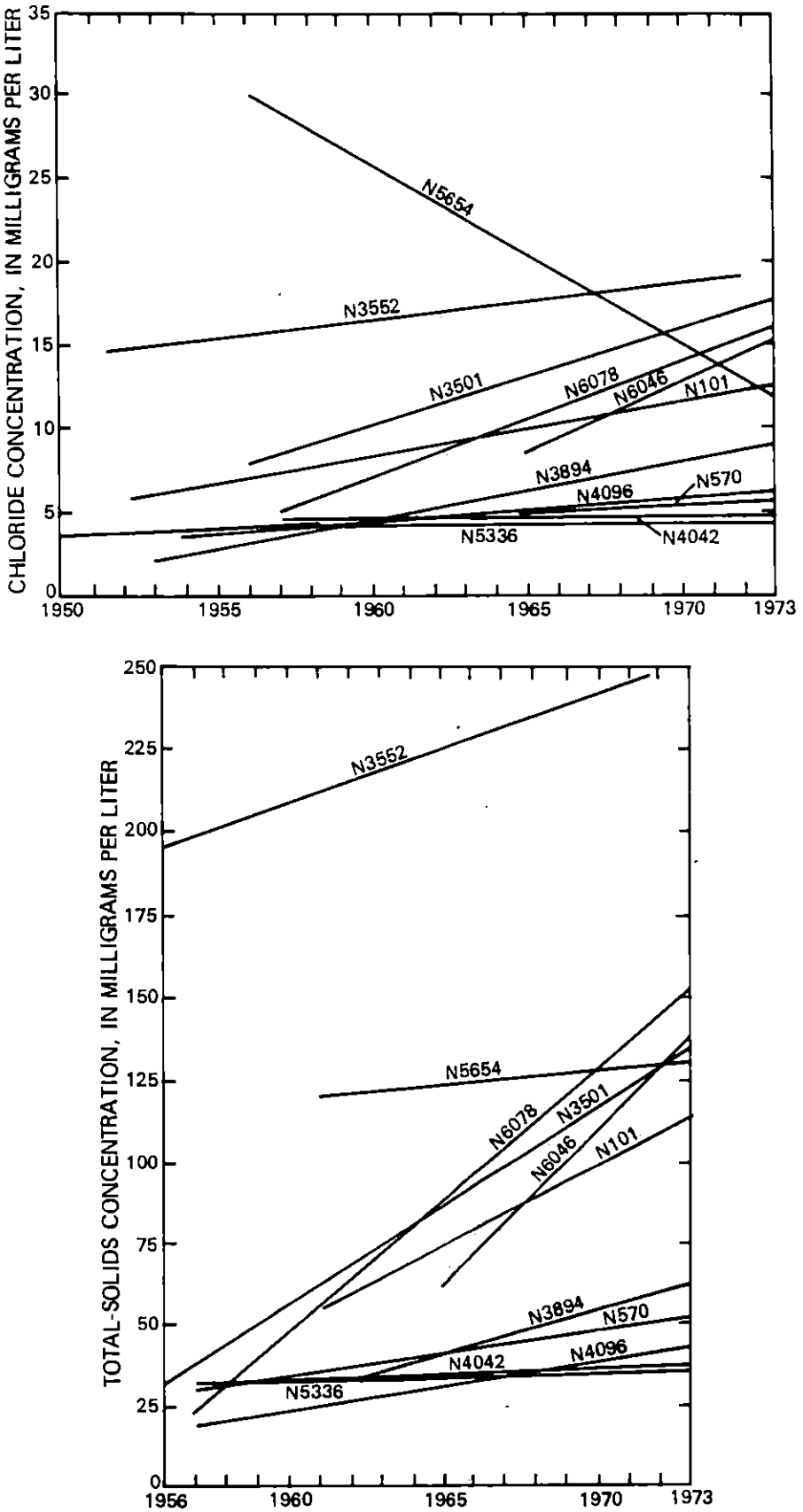


Figure 24 (continued).--Trends of chloride and total-solids concentration in well water in Sewer District 3, 1950's through 1973. (From Ku and Sulam, 1976.)

REFERENCE NO. 40

0035-C
02-5802-07

Town of Hempstead
Department of Water

1995 PROSPECT AVENUE, EAST MEADOW, N.Y. 11554
(516) 794-8300

April 6, 1988

Mr. Edward L. Leonard
NUS Corporation
1090 King Georges Post Road
Suite 1103
Edison, NJ 08837

Dear Mr. Leonard:

Below is the information requested in your letter of March 30, 1988. There are two wells located on Iris Place in the Bowling Green Estates Water District. Both wells are located in the magothy range and serves a population of approximately 12,000. Well #1, N-8956 is 535 feet deep; Well #2, N-8957 is 598 feet deep.

I am returning your map with the locations of the above wells marked in red.

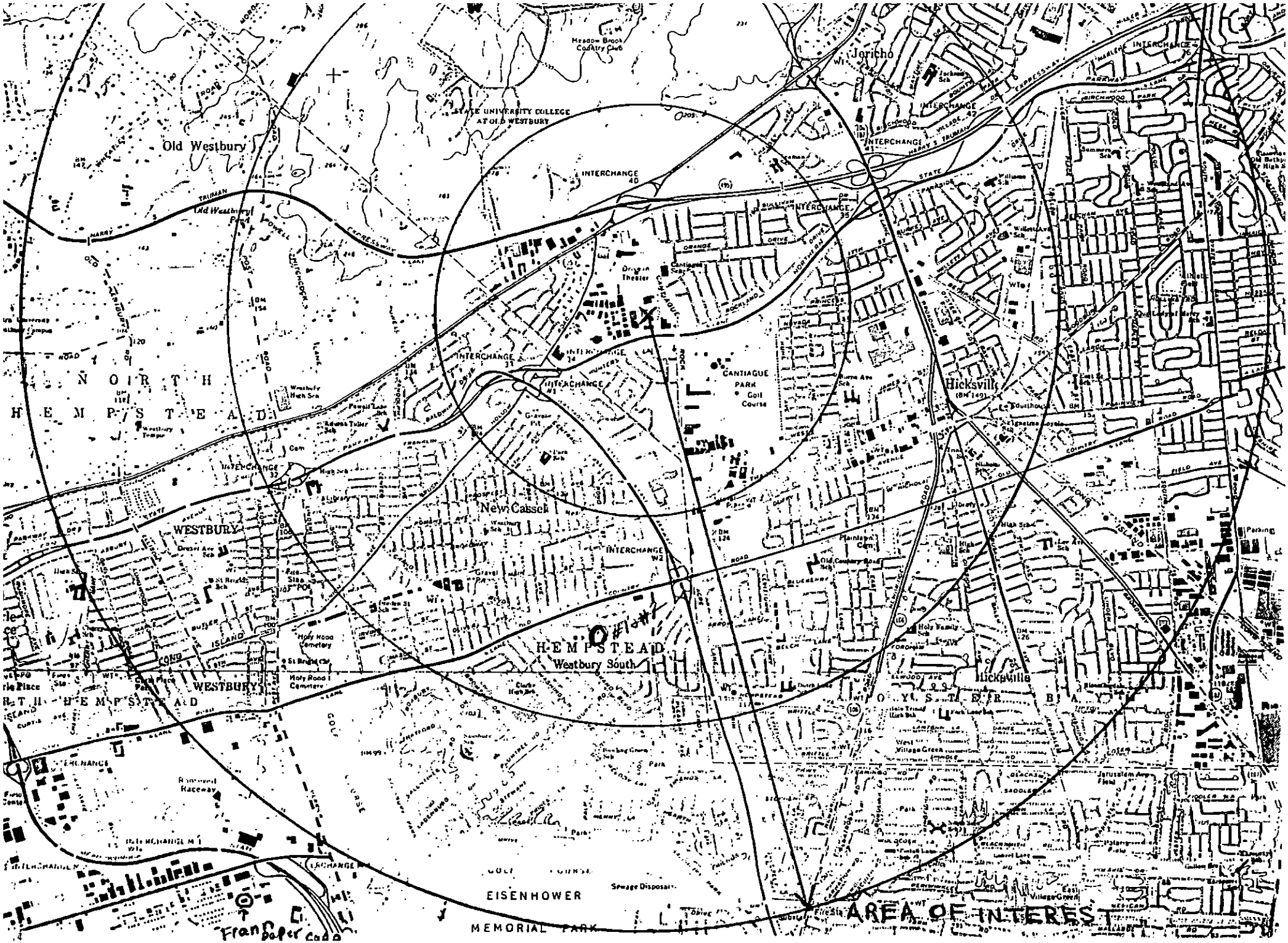
If you should require any further assistance, please do not hesitate to contact me at (516) 794-8300, Ext. 204.

Very truly yours,

Harold V. Morgan
Administrative Assistant

HVM:th

enc. (2)


Old Westbury
STATE UNIVERSITY COLLEGE AT OLD WESTBURY
Meadow Brook Country Club
Jericho
INTERCHANGE 40
INTERCHANGE 35
INTERCHANGE 38
INTERCHANGE 34
INTERCHANGE 33
INTERCHANGE W1
INTERCHANGE W2
Old Westbury Park
Drive-in Theater
CANTIAGUE PARK Golf Course
Hicksville
NORTH HEMPSTEAD
WESTBURY
New Cassel
HEMPSTEAD
Westbury South
Hicksville
Roosevelt Raceway
EISENHOWER
MEMORIAL PARK
Sewage Disposal
AREA OF INTEREST

REFERENCE NO. 41

NUS CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
02-9008-40	3-6-91	9:45

DISTRIBUTION: SERVO CORP.

BETWEEN:	OF:	PHONE:
MR. MEYER (meyir?)	NASSAU COUNTY HEALTH DEPT. - PUBLIC WATER SUPPLY	(516) 535-3323

AND: Timothy Beaneyard of NUS

DISCUSSION:

I ASKED MR. MEYER, IF THERE WERE ANY WELL HEAD PROTECTION AREAS IN NASSAU COUNTY. HE SAID AT PRESENT THERE ARE NONE. THEY WOULD LIKE TO ESTABLISH THE WHOLE COUNTY AS A WELLHEAD PROTECTION AREA BUT NO WORK HAS BEEN DONE ON IT SO FAR. ARTICLE 6 ENTITLED PUBLIC DRINKING WATER SUPPLY (PUBLISHED 1 1/2 YEARS AGO) IN SECTION 5 D STATES THAT WELL HEAD PROTECTION AREAS SHALL TAKE PRESEDENCE OVER ALL OTHER ORDINANCES. I ALSO ASKED HIM TO CHECK IF WELLS 10208, 8778, 8779 WERE STILL IN OPERATION. HE SAID THEY WERE STILL OPERATING.

ACTION ITEMS:

NUS 067 REVISED 0685

REFERENCE NO. 42

NUS CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

CONTROL NO.:	DATE:	TIME:
02-5008-40	10-2-90	1:30

DISTRIBUTION: SERVO CORP.

BETWEEN:	OF:	PHONE:
MR. WOODWELL (SUPT.)	HICKSVILLE WATER DISTRICT	(516) 931-0184

AND: Tim Beauregard of NUS (NUS)

DISCUSSION:

ASKED - WELLS 10208, 8778, 8779 STILL IN OPERATION? - ALL 19 STILL IN OPERATION? - NEW WELL 11-1? - POPULATION SERVED? - WATER MIXED THROUGHOUT SYSTEM?

HE SAID ALL 19 NOT IN OPERATION. THE FOLLOWING WELLS ARE IN OPERATION (COUNTY NUMBERS) 7562, 8249, 9488, 8525, 8526, 7561, 9212, 3953, 3878, 6190, 6192, 9180, 8778, 8779, 10208, 9463, 10555. OUT OF OPERATION FOR VARIOUS REASONS INCLUDING NITRATES AND ORGANICS PULUTION ARE 5336, 6191, 6193. NEW WELL CONSTRUCTED IN EARLY 1989 IS WELL 10555 WHICH IS APPROX 700 FT DEEP AND IS IN THE MAGOTHY AQUIFER. THE NUMBER OF SERVICES IS 15,385. WATER IS NOT ALL MIXED BUT SEPARATE AND KEPT IN VARIOUS STORAGE OR HOLDING TANKS. HE RECOMMENDS SENDING HIM A LETTER REQUESTING WELL INFORMATION.

ACTION ITEMS:

NUS 067 REVISED 0685

REFERENCE NO. 43

HOMAS S. GULOTTA
COUNTY EXECUTIVE

NASSAU COUNTY
DEPARTMENT OF HEALTH
240 OLD COUNTRY ROAD
MINEOLA, NEW YORK 11501

JOHN J. DOWLING, M.D., M.P.H.
COMMISSIONER

FRANCIS V. PADAR, P.E., M.C.E.
DEPUTY COMMISSIONER
DIVISION OF ENVIRONMENTAL HEALTH

June 1, 1987

Mr. Dave Grupp
NUS Corp.
1090 King George Post Rd.
Suite 1103
Edison, N.J. 08837

Re: Water Supply Information

Dear Mr. Grupp:

Enclosed are listings of all public supply wells located in Nassau County in water supplies within a three mile radius of Route 110 and Melville Rd., Farmingdale. A map showing well location is also enclosed.

If you have any questions regarding this information, do not hesitate to contact me.

Very truly yours,

Donald H. Myott

Donald H. Myott, P.E.
Chief, Office of
Groundwater Management
Bureau of Public Water Supply

DHM:da
Enc.

JERICHO WATER DISTRICT (19) WA1-5280 TOB

125 Convent Road
Syosset,NY 11791

Official: Edward P. Bracken,Jr. Consult: Sidney Bowne and Son
Chairman,Bd. of Commissioners

Superintendent: Len Martling Lab: NYtest

Population: 64,500 (1981)

Treatment: Chlorination(E),Caustic Soda

WELLS(20)

Address	Village	Local Num	N-Num	Depth (Ft)	Strata	Capacity (GPM)
N/S Convent La	Syosset	3	198	617	M	1150
	Syosset	4	199	600	M	1120
	Syosset	5	570	600	M	1200
N/S Wheatley Rd	Brookville	6	3474	512	M	1200
	Brookville	7	3475	482	M	1200
	Brookvillek	16	7446	493	M	1200
W/S Motts Cove Rd	Roslyn Harbor	11	5201	504	L	1200
W/S Cypress Dr	Woodbury	12	6092	631	M	1200
	Woodbury	13	6093	606	M	1200
N/S Tobie La	Jericho	14	6651	610	M	1200
S/S Jericho Tpk	Jericho	9	4245	565	M	1200
Cantiague Rock	Jericho	15	7030	530	M	1200
Cold Spring Rd	Laurel Hollow	17	7593	468	M	1200
W/S Split Rock Rd	Syosset	18	7772	563	M	1200
	Syosset	19	7773	560	M	1200
		20	10149		M	

JERICHO WATER DISTRICT (Continued)

WELLS (Continued)

Address	Village	Local Num	N-Num	Depth (Ft)	Strata	Capacity (GPM)
East Norwich Rd	Jericho	22	7781	454	M	1200
Waldemar Rd	Woodbury	23	8043	688	M	1200
Kirby La	Muttontown	25	8355	590	M	1400
N/S Simonson Rd	O. Brookville	27	8713	372	M	1400

STORAGE TANKS(6)

Address	Village	Capacity (MG)	Type
Kirby La	Muttontown	3.0	Ground
Wheatley Rd	Brookville	1.0	Elevated
Convent La	Syosset	1.5	Elevated
Jericho Tpke	Jericho	1.5	Elevated
Orchard Dr	Woodbury	2.0	Stand Pipe
Split Rock Rd	Syosset	3.4	Stand Pipe

PLAINVIEW WATER DISTRICT (32) WE1-6469 TOB

10 Manetto Hill Road
Plainview,NY 11803

Official: John Edwards,Chairman Bd. of Commissioners
Consult: H2M

Superintendent: Samuel Panciroli
Lab: H2M

Population: 40,000 (1981)

Treatment: Chlorination,Polyphosphate,Lime

WELLS(11)

Address	Village	Local Num	N-num	Depth (Ft)	Strata	Capacity (GPM)
W/S Manetto Hill Rd	Plainview	1-1	4095	490	M	1200
	Plainview	1-2	4096	494	M	1200
S/S Donna Dr	Plainview	2-1	7526	688	M	1400
E/S Orchard St	Plainview	3-1	4097	463	M	1200
	Plainview	3-2	6580	596	M	1200
Southern Pkwy	Plainview	4-1	6076	358	M	1200
	Plainview	4-2	6077	460	M	1200
S/S Winding Rd	Plainview	5-1	6956	597	M	1400
	Plainview	5-2	7421	559	M	1400
	Plainview	5-3	8054	580	M	1400
	Plainview	5-4	8595	610	M	1350

STORAGE TANKS(3)

Address	Village	Capacity (MG)	Type
S/S Donna Dr	Plainview	1.25	Elevated
Southern Pkwy	Plainview	1.5	Ground
Winding Rd	Plainview	2.0	Ground

HICKSVILLE WATER DISTRICT (17) 931-0184 TOB

4 Dean Street
Hicksville,NY 11802

Official: Nicholas Bricandi,Chairman Consult: H2M
Bd. of Commissioners

Superintendent: Richard Woodwell Lab: H2M

Population: 57,000 (1981)

Treatment: Chlorination(E),Polyphosphate,Lime,Caustic Soda,
OR(Packed Tower Aeration)(#1-5)

WELLS(19)

Address	Village	Local Num	N-Num	Depth (Ft)	Strata	Capacity (GPM)
E/S Bethpage Rd	Hicksville	1-4	7562	545	M	1400
	Hicksville	1-5	8249	490	M	1400
	Hicksville	1-6	9488	575	M	1380
W/S Newbridge Rd	Hicksville	2-2	5336	523	M	1200
Jerusalem Ave	Hicksville	3-2	8525	503	M	1400
W/S Newbridge Rd	Hicksville	4-2	8526	601	M	1400
N/S Stewart Ave	Hicksville	5-2	7561	550	M	1400
	Hicksville	5-3	9212	604	M	1400
W/S Kuhl Ave	Hicksville	6-1	3953	419	M	1200
	Hicksville	6-2	3678	428	M	1200
E/S Miller Pl	Hicksville	7-1	6190	600	M	1200
	Hicksville	7-2	6191	550	M	1200
Dean St	Hicksville	8-1	6192	626	M	1400
	Hicksville	8-2	6193	467	M	1400
	Hicksville	8-3	9180	630	M	1400
Alicia St	Hicksville	9-1	8778	590	M	1400
	Hicksville	9-2	8779	585	M	1400
	Hicksville	9-3	10208		M	
Barclay St	Hicksville	10-1	9463	638	M	1380

HICKSVILLE WATER DISTRICT (Continued)

STORAGE TANKS(5)

Address	Village	Capacity (MG)	Type
Bethpage Rd	Hicksville	1.25	Elevated
Dean St	Hicksville	1.5	Ground
Stewart Ave	Hicksville	2.0	Ground
Newbridge Rd and Barter La	Hicksville	0.5	Elevated
Newbridge Rd	Hicksville	2.0	Ground

BETHPAGE WATER DISTRICT (03) WE1-0093 TOB

25 Adams Avenue
Bethpage,NY 11714

Official: Sal Greco,Jr,Chairman Bd. of Commissioners
Consult: H2M

Superintendent: Ron Krumholz
Lab: H2M

Population: 33,650 (1981)

Treatment: Chlorination(E),Polyphosphate,Lime,Caustic Soda(#BDG-1)

WELLS(9)

Address	Village	Local Num	N-Num	Depth (Ft)	Strata	Capacity (GPM)
E/S Broadway	Bethpage	5-1	8004	740	M	1400
N/S Park La	Bethpage	6-1	3876	386	M	1400
	Bethpage	6-2	8941	770	M	1400
E/S Adams Avenue	Bethpage	7A	8767	640	M	1400
	Bethpage	8A	8768	678	M	1400
	Bethpage	9	6078	275	M	1400
Sophia St	Bethpage	10	6915	608	M	1400
	Bethpage	11	6916	611	M	1400
Broadway	Bethpage	BDG-1	9591	682	M	1380

STORAGE TANKS(2)

Address	Village	Capacity (MG)	Type
Adams Avenue	Bethpage	1.25	Elevated
Sophia Street	Bethpage	1.50	Ground

FARMINGDALE VILLAGE (09) CH9-0053 TOB

36 Main Street
Farmingdale,NY 11735

Official: Willis Carman
Mayor

Consult: H2M

Superintendent: Rocco Posillico

Lab: HCP

Population: 8,316 (1981)

Treatment: Caustic Soda(#2-2),Lime(#2-1),Polyphosphate,
Chlorination(E)

WELLS(3)

Address	Village	Local Num	N-Num	Depth (Ft)	Strata	Capacity (GPM)
N/S Eastern Pwy	Farmingdale	1-3	7852	450	M	1200
N/S Ridge Rd	Farmingdale	2-1	1937	146	M	800
	Farmingdale	2-2	6644	222	M	1400

STORAGE TANKS(2)

Address	Village	Capacity (MG)	Type
Ridge Rd	Farmingdale	0.4	Ground
N/S Eastern Pwy	Farmingdale	0.5	Elevated

SOUTH FARMINGDALE WATER DISTRICT (40) CH9-3330 TOB

Langdon Road
South Farmingdale,NY 11735

Official: Roger C. Bell,Chairman Bd. of Commissioners

Consult: Holzmacher,McLendon and Murrell,P.C.

Superintendent: George Weber

Lab: H2M Laboratory

Population: 45,550 (1981)

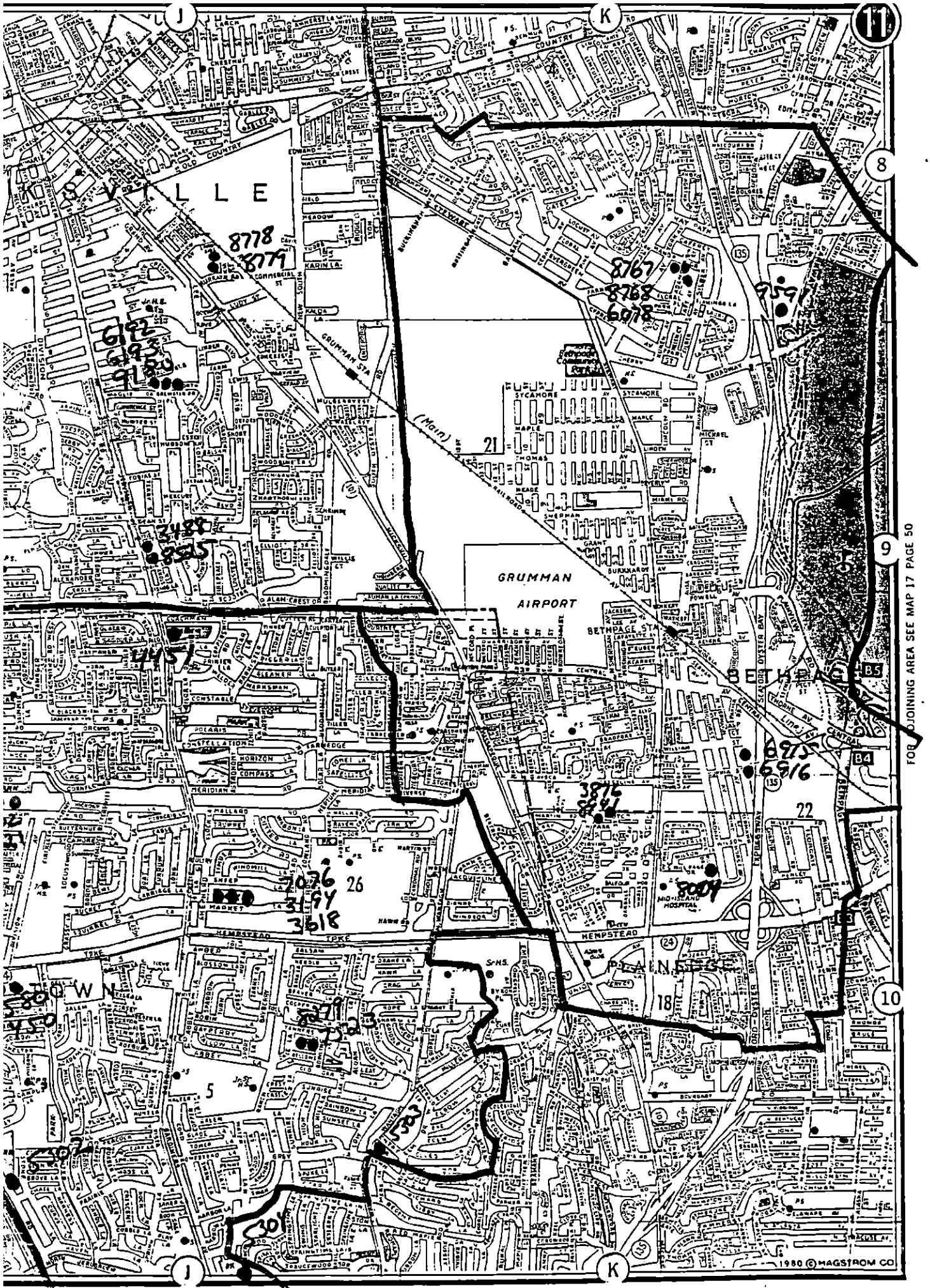
Treatment: Chlorination,Aqua-Mag,Lime,IR(Filtration),Aeration

WELLS(11)

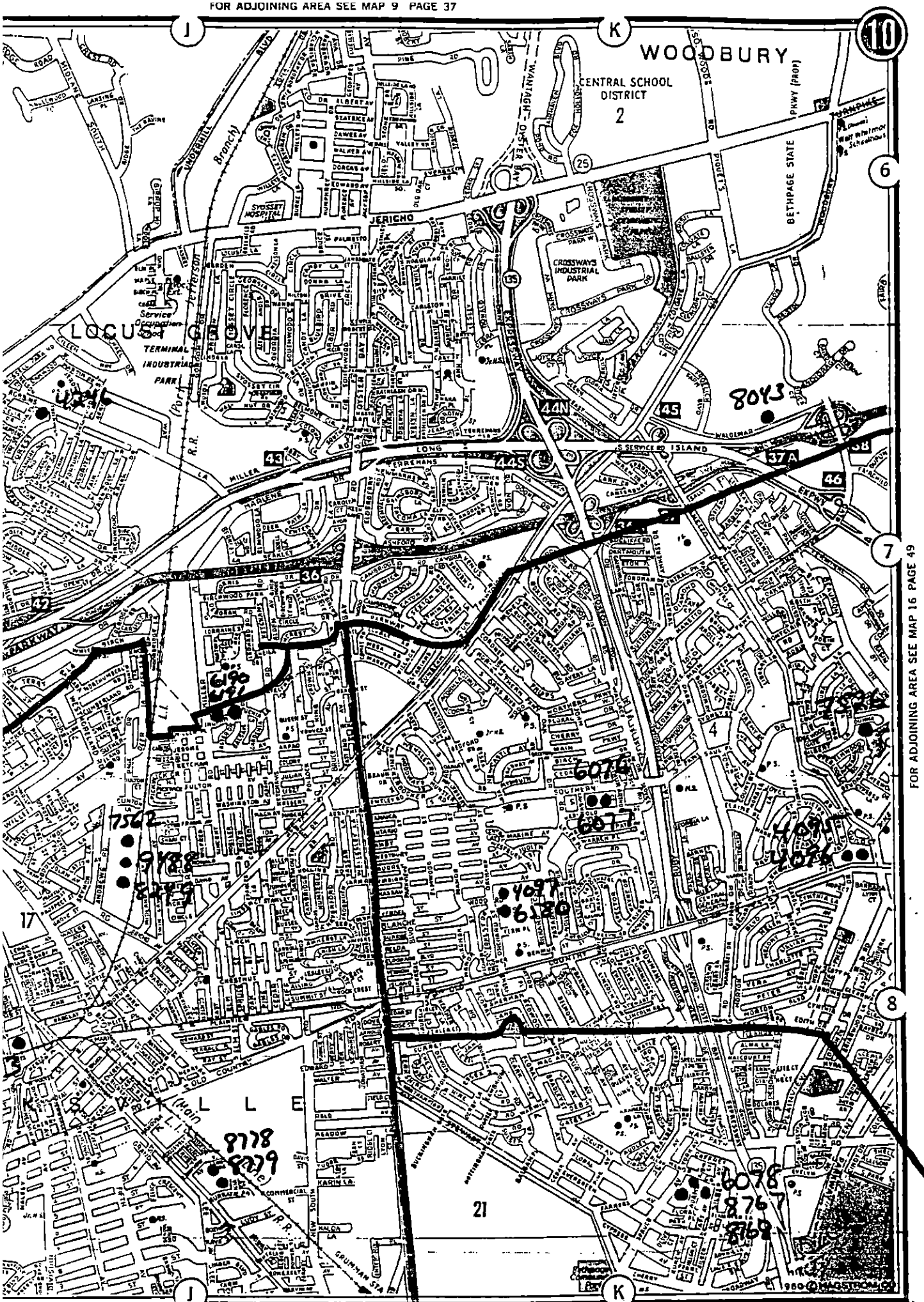
Address	Community	Local Num	N-num	Depth (Ft)	Strata	Capacity (GPM)
W/S Langdon Rd	Plainedge	1-2	4043	374	M	1200
	Plainedge	1-3	5148	369	M	1200
	Plainedge	1-4	7377	758	M	1400
N/S Lourae Dr	Massapequa	2-1	5147	219	M	1200
	Massapequa	2-2	6149	640	M	1200
Hicksville Rd	N. Massapequa	3-1	6150	612	M	1400
N/S Linden St	N. Massapequa	4-1	6148	561	M	1200
E/S Heisser La	S Farmingdale	5-1	7515	347	M	1400
	S Farmingdale	5-2	7516	584	M	1400
N/S Marginal Rd So State Pkwy	N. Massapequa	6-1	8664	610	M	1400
	N. Massapequa	6-2	8665	560	M	1400

STORAGE TANKS(4)

Address	Community	Capacity (MG)	Type
W/S Langdon Rd	Plainedge	1.0	Elevated
N/S Lourae Dr	Massapequa	1.0	Ground
Hicksville Rd	N. Massapequa	0.6	Ground
N/S Linden St	N. Massapequa	0.6	Ground

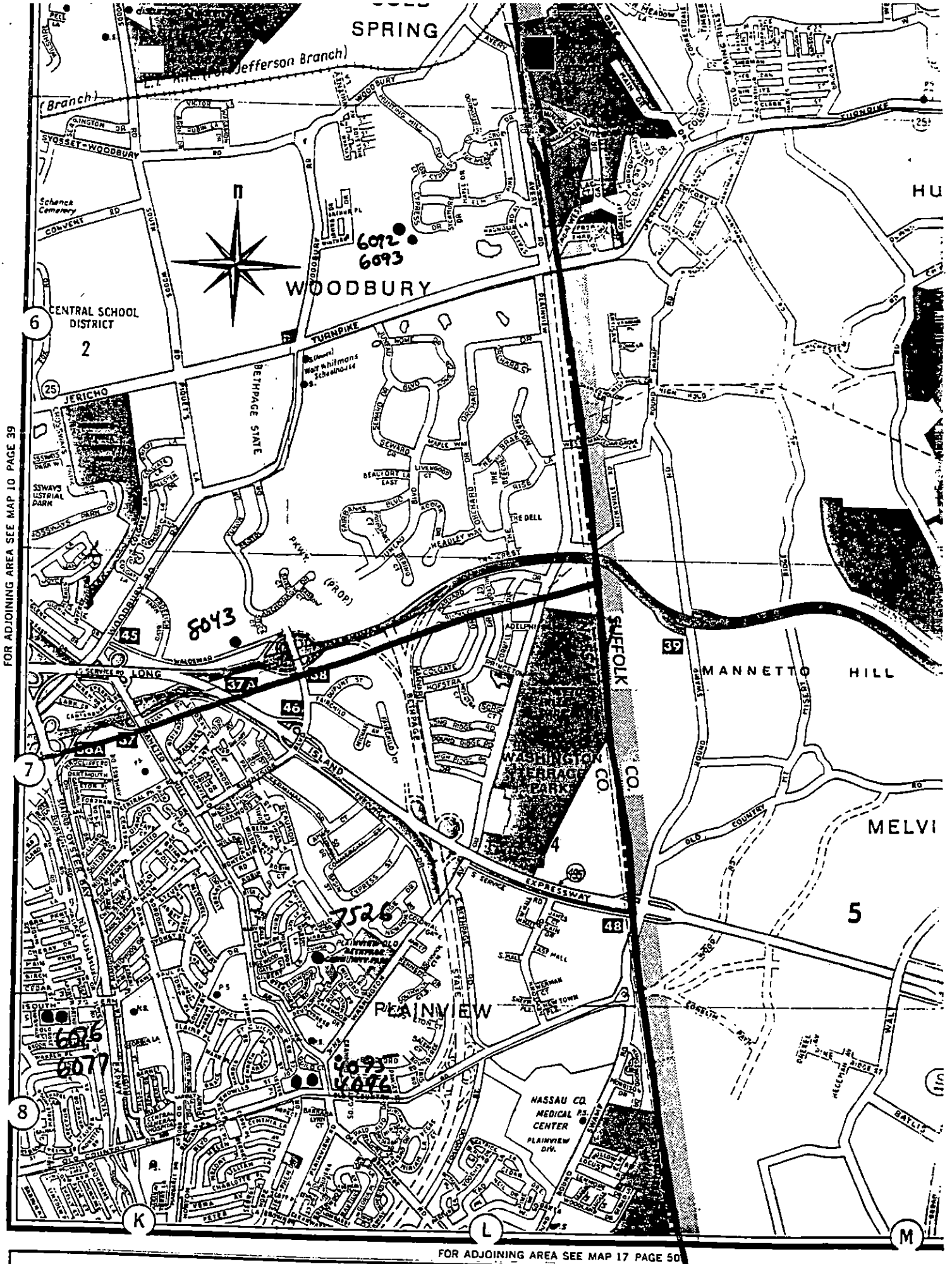

J
K
11
8
9
10
GRUMMAN
AIRPORT
(Main)
RAILROAD
BETHPAGE
HEMPSTEAD TPKE
21
22
26
18
5
FOR ADJOINING AREA SEE MAP 17 PAGE 50
FOR ADJOINING AREA SEE MAP 12 PAGE 43
1980 © MAGSTROM CO

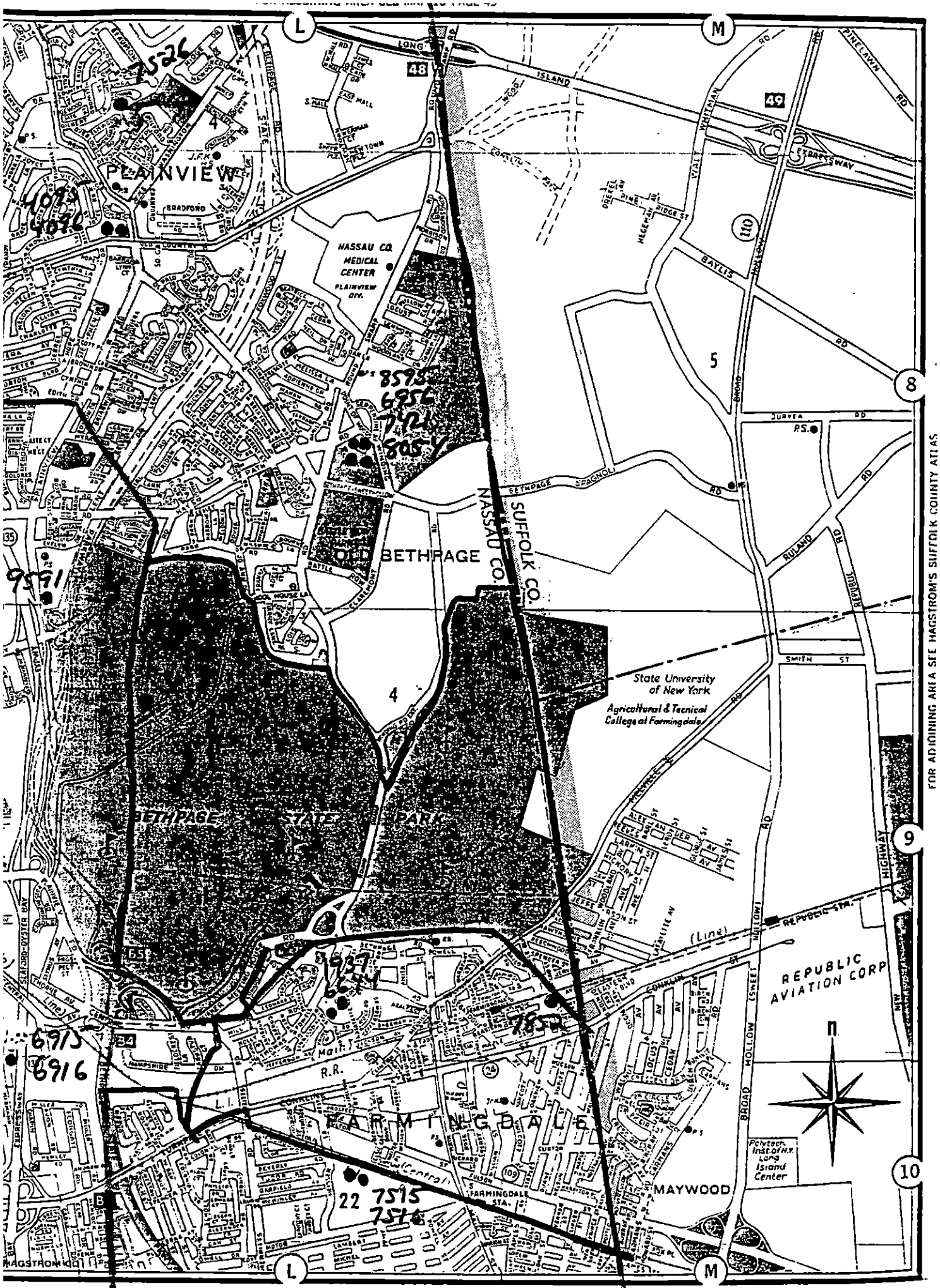
FOR ADJOINING AREA SEE MAP 9 PAGE 37



FOR ADJOINING AREA SEE MAP 16 PAGE 49

FOR ADJOINING AREA SEE MAP 11 PAGE 41




PLAINVIEW
OLD BETHPAGE
NASSAU CO.
SUFFOLK CO.
NASSAU CO. MEDICAL CENTER PLAINVIEW DIV.
State University of New York Agricultural & Tecnical College at Farmingdale
BETHPAGE STATE PARK
FARMINGDALE
REPUBLIC AVIATION CORP
MAYWOOD
Polytech. Inst. of N.Y. Long Island Center
L.I. R.R.
Main
(Line)
SUNKEN MEADOW PKWY
LONG ISLAND EXPRESSWAY
SEAFORD-OYSTER BAY EXPRESSWAY
NORTHERN STATE PARKWAY
BETHPAGE SPAGNOLI RD
OLD COUNTRY RD
SOUTH OYSTER BAY RD
RUTLAND RD
REPUBLIC RD
SMITH ST
BROAD HOLLOW RD
HIGHWAY
WALT WHITMAN RD
PINELAWN RD
BAYLIS RD
JURVEN RD
P.S.
FARMINGDALE STA.
REPUBLIC STA.
7526
4029
4030
8595
6956
7921
8057
9591
6915
6916
8937
6954
7655
7515
7514
FOR ADJOINING AREA SEE MAP 18 PAGE 51
FOR ADJOINING AREA SEE HAGSTROM'S SUFFOLK COUNTY ATLAS
HAGSTROM CO.

OLD BETHPAGE
NASSAU CO.
SUFFOLK CO.
FARMINGDALE
MAYWOOD
BROAD HOLLOW (SWEET HOLLOW) RD
LAFAYETTE AV
(Line)
4
5

REFERENCE NO. 44

US CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

CONTROL NO.:	DATE:	TIME:
02-9008-40	3/7/91	1320

DISTRIBUTION: SERVO CORP.

BETWEEN:	OF:	PHONE:
Mr. MYOTT	NCHD PUBLIC WATER SUPPLY	(516) 535-3323

RE: Timothy Beauregard (NUS)

DISCUSSION:

I spoke with Mr. Myotts about the water district and well location maps that he had sent us previously. I asked him to send me maps for the Levittown, Westbury, East Meadow, and New York Water Service (North of the Southern State Parkway). He took my name and address and said he would send it right out.

I also asked if there was any way to get a population value for each well. He said that it was impossible because of seasonal shutdowns. He said it is easier to assume all wells are interconnected & the individual districts would give me the same response.

ACTION ITEMS:

REFERENCE NO. 45

OMAS S. GULOTTA
:OUNTY EXECUTIVE

GEORGE PICKETT, M.D., M.P.H.
COMMISSIONER

NASSAU COUNTY
DEPARTMENT OF HEALTH
240 OLD COUNTRY ROAD
MINEOLA, N.Y. 11501-4250

March 11, 1991

r. Tim Beauregard
JS Corporation
)90 King George Post Road
ıite 1103
lison, New Jersey 08837

ar Mr. Beauregard:

closed please find the maps you requested for the Levittown, Westbury, East adow and New York Water Service Water Systems. Note that the well locations ve been marked on each of the maps.

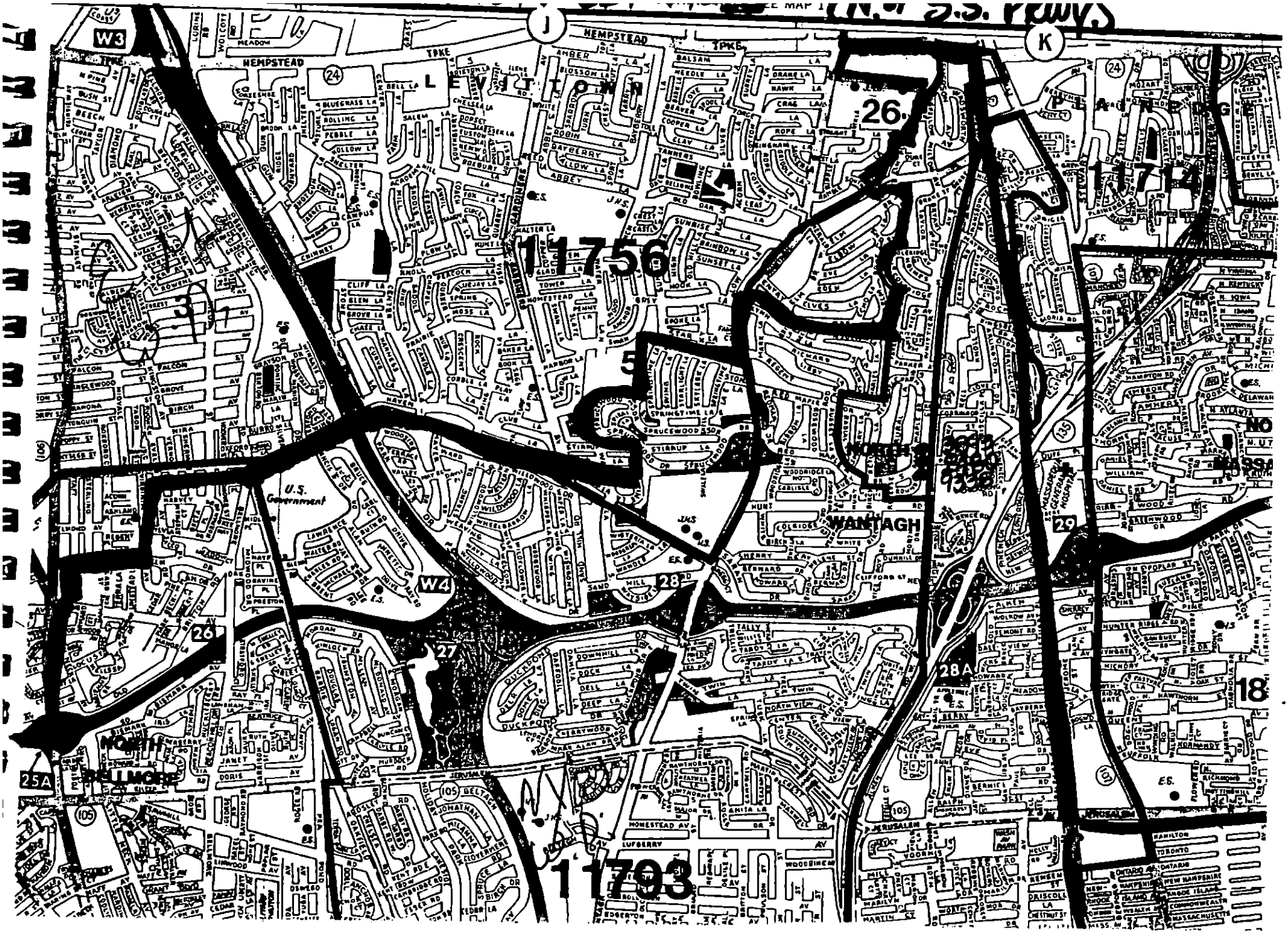
you have any questions, do not hesitate to contact me at (516) 535-2573.

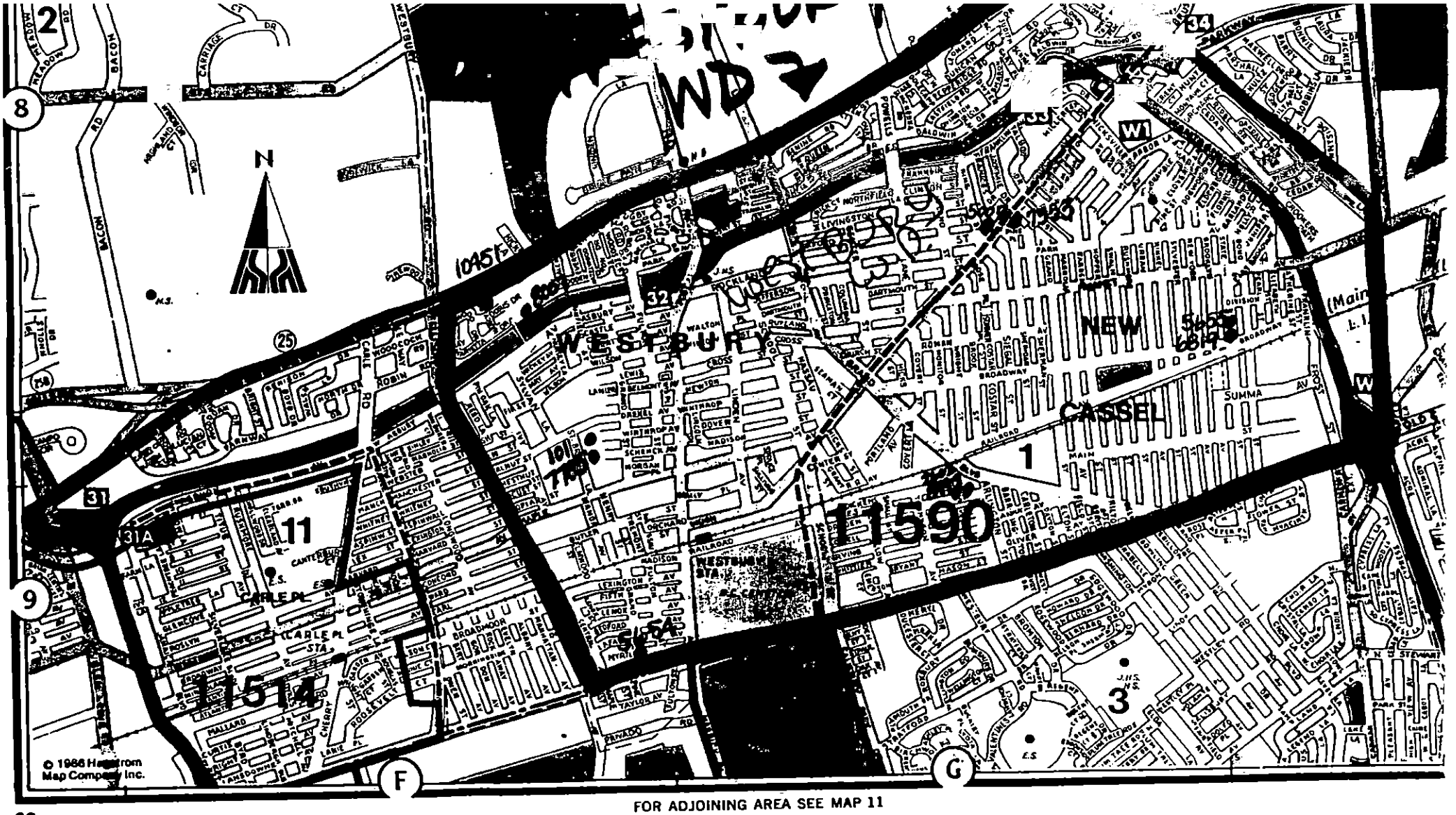
RECEIVED
MAR 1 - REC'D
NUS CORPORATION
REGION II
SENT TO _____

Sincerely,

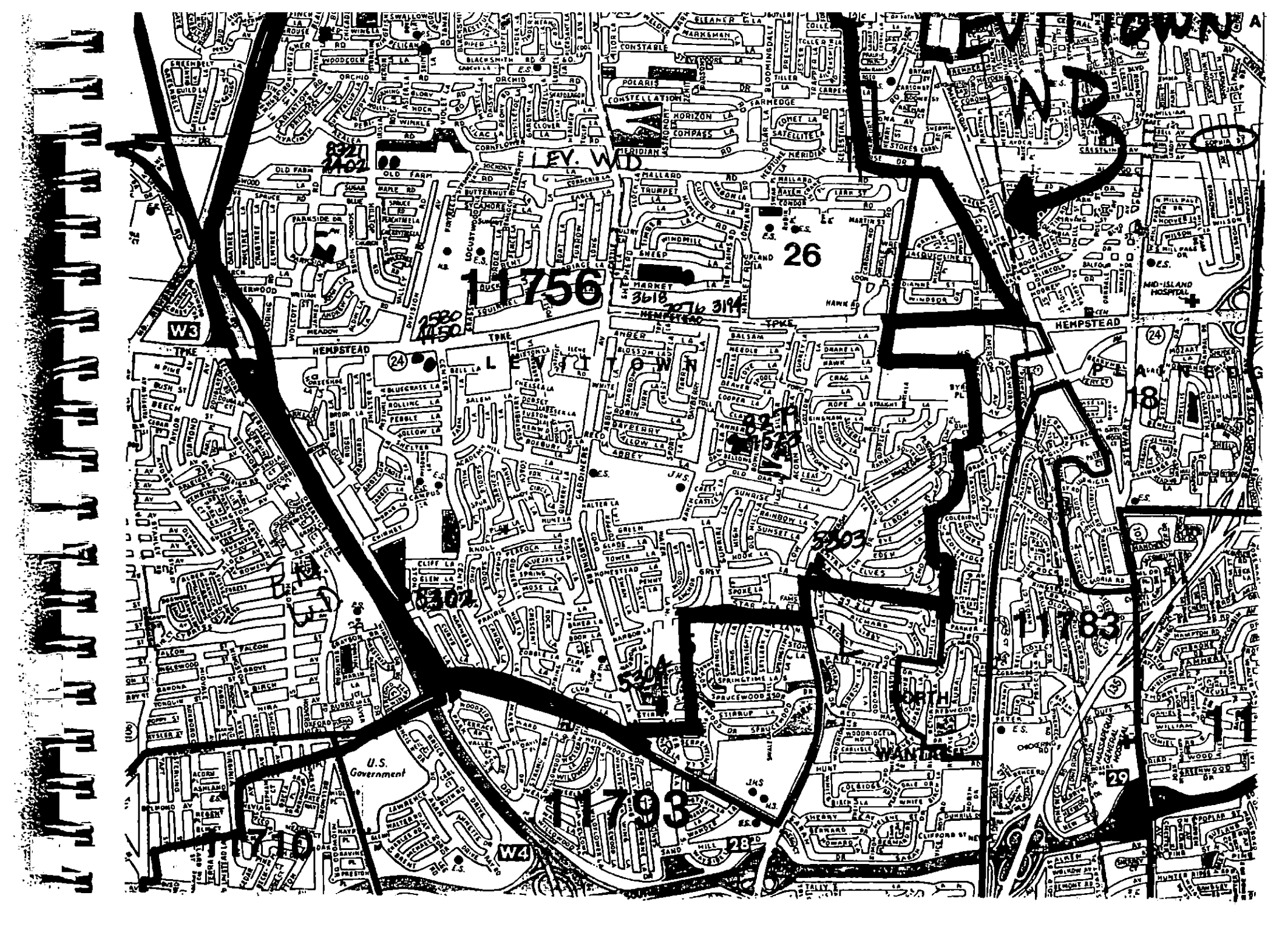
Ann L. Nemeck
Public Health Sanitarian
Bureau of Public Water Supply

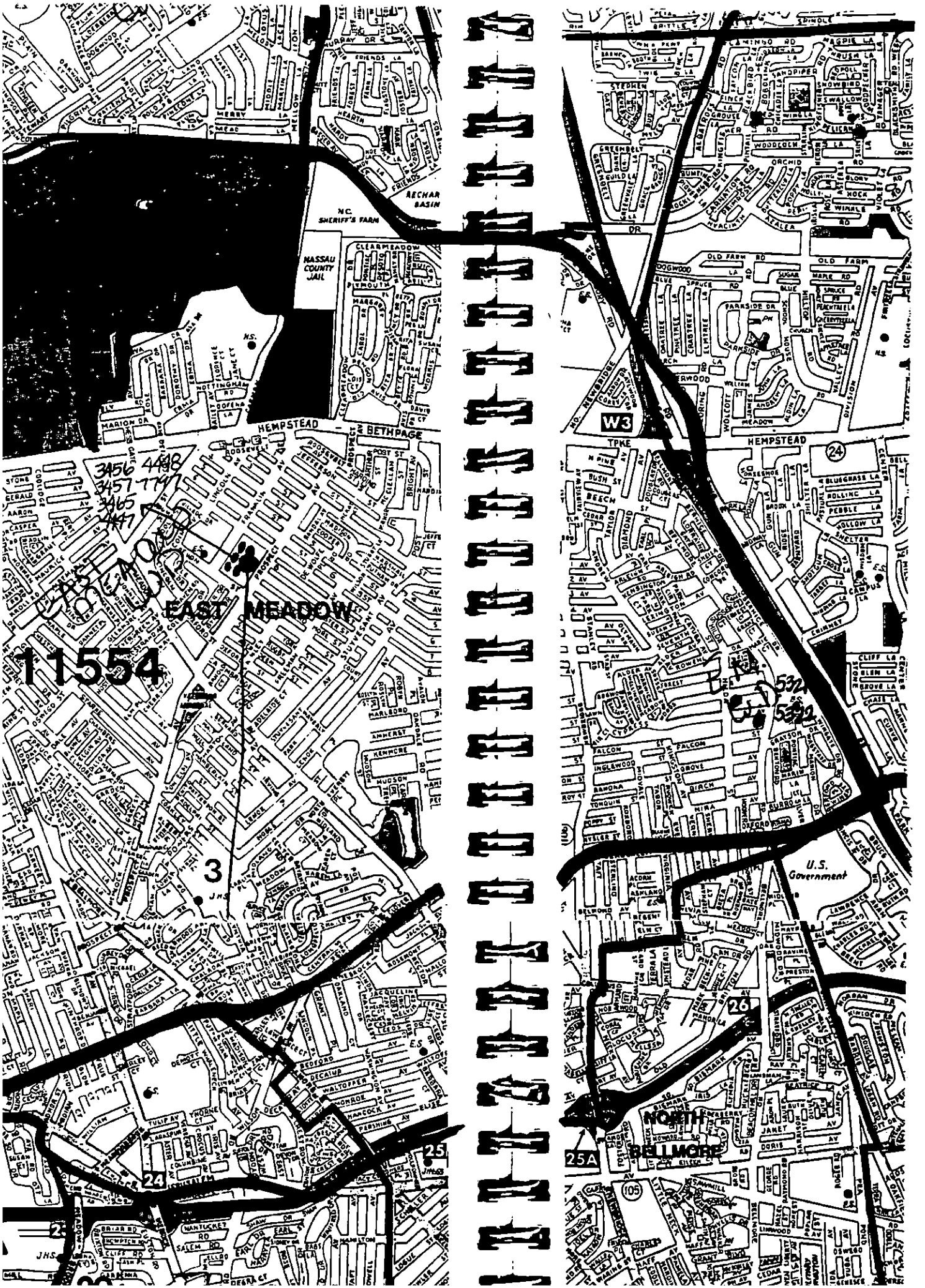
0971K


J
K
W3
W4
NEMPSTEAD
TPKE
L E V I T T O W N
WANTAGH
NORTH BELLMORE
11756
11793
11714
26
27
28
28A
29
25A
24
105
135
U.S. Government



FOR ADJOINING AREA SEE MAP 11


LEVITTOWN
LEV. WD
11756
26
HEMPSTEAD
TPKE
L E V I T T O W N
PLAINEDGE
18
11783
11793
U.S. Government
W3
W4
710
MID-ISLAND HOSPITAL
MASSAPEQUA GENERAL HOSPITAL
JHS
ES


EAST MEADOW
NORTH BELLMORE
HEMPSTEAD
BETHPAGE
NASSAU COUNTY JAIL
N.C. SHERIFF'S FARM
RECHAR BASIN
HEMPSTEAD TPKE
W3
U.S. Government
11554

REFERENCE NO. 46

HICKSVILLE WATER DISTRICT

4 DEAN STREET
HICKSVILLE, N. Y. 11802

PHONE
(516) 931-0184

RECEIVED March 22, 1988

NUS Corporation
1090 King Georges Post Road
Suite 1103
Edison, New Jersey

Att: Mr. E.L. Leonard

Dear Mr. Leonard:

Enclosing please find the list you requested containing well numbers, depth and aquifers used by the nineteen (19) wells operated by the Hicksville Water District.

If I may be of any further assistance please feel free to contact me at the above number.

Very truly yours,

HICKSVILLE WATER DISTRICT

John J. McGrosson
Assistant Superintendent

Enc

JJM/jps

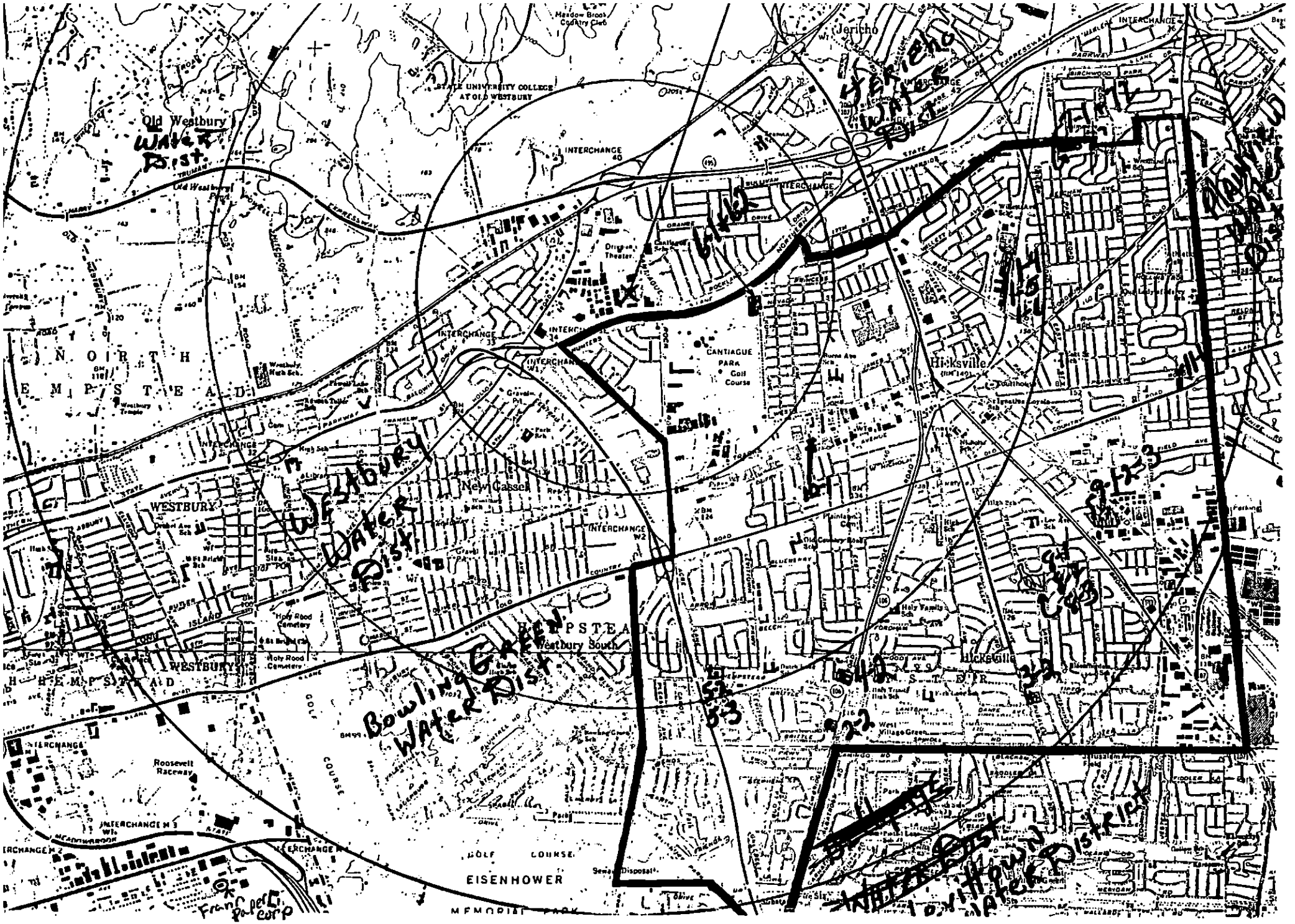
HICKSVILLE WATER DISTRICT

4 DEAN STREET
HICKSVILLE, N. Y. 11802

PHONE
(516) 931-0184

March 22, 1988

H.W.D. WELL #	COUNTY WELL #	DEPTH	AQUIFER
1-4	N-7562	545 feet	Magthoy
1-5	N-8249	495 feet	Magthoy
1-6	N-9488	583 feet	Magthoy
→ 2-2	N-5336	545 feet	Magthoy
3-2	N-8525	505 feet	Magthoy
4-2	N-8526	601 feet	Magthoy
→ 5-2	N-7561	551 feet	Magthoy
→ 5-3	N-9212	610 feet	Magthoy
6-1	N-3953	419 feet	Magthoy
6-2	N-3878	428 feet	Magthoy
7-1	N-6190	605 feet	Magthoy
7-2	N-6191	555 feet	Magthoy
8-1	N-6192	632 feet	Magthoy
8-2	N-6193	472 feet	Magthoy
8-3	N-9180	637 feet	Magthoy
9-1	N-8778	590 feet	Magthoy
9-2	N-8779	585 feet	Magthoy
9-3	N-10208	600 feet	Magthoy
10-1	N-9463	625 feet	Magthoy
**11-1	Under construction will not be in operation until early 1989.		


Old Westbury
Water Dist.
Jericho
Water Dist.
Meadow Brook Country Club
STATE UNIVERSITY COLLEGE AT OLD WESTBURY
INTERCHANGE 40
INTERCHANGE 35
INTERCHANGE 33
INTERCHANGE 34
INTERCHANGE W1
INTERCHANGE W2
INTERCHANGE 32
INTERCHANGE N 3
INTERCHANGE N 2
NORTH EMPSTEAD
WESTBURY
New Cassel
Westbury South
HEMPSTEAD
Hicksville
CANTIAGUE PARK Golf Course
Drive-in Theater
Holy Rood Cemetery
Roosevelt Raceway
GOLF COURSE
EISENHOWER
MEMORIAL PARK
Sewage Disposal
Westbury Water Dist
Bowling Green Water Dist
Hicksville Water Dist
Town of Hempstead Water District
Franchise Corp

REFERENCE NO. 47

0053-C
02-5892-07

Westbury Water District

160 Drexel Avenue Westbury, L.I., N.Y. 11590
516-333-0427

March 21, 1988

NUS Corporation
1090 King Georges Post Road
Suite 1103
Edison, New Jersey 08837

Attention: E. L. Leonard

Dear Mr. Leonard:

In response to your letter of March 17, 1988, (copy attached), please find below the requested information:

1. See attached map.

2.

STATE WELL NO.	W.W.D. WELL NO.	DEPTH	AQUIFERS
N-101	6	341'	Magothy
N-7785	7	400'	Magothy
N-2602	9	805'	Lloyd
N-5007	10	560'	Magothy
N-5654	11	561'	Magothy
N-5655	12	260'	Magothy
N-6819	12A	270'	Magothy
N-7353	14	390'	Magothy
N-8007	15	564'	Magothy
N-8497	16	544'	Magothy
N-104510	17	600'	Magothy

4. Population estimated to be 24,000. All wells are interconnected.

5. None known.

6. 1. Carle Place Water District
   2. Town of Hempstead Water District
   3. Inc. Village of Old Westbury
   4. Hicksville Water District
   5. Jericho Water District

Westbury Water District

Should you require any other information, please contact me at the above address.

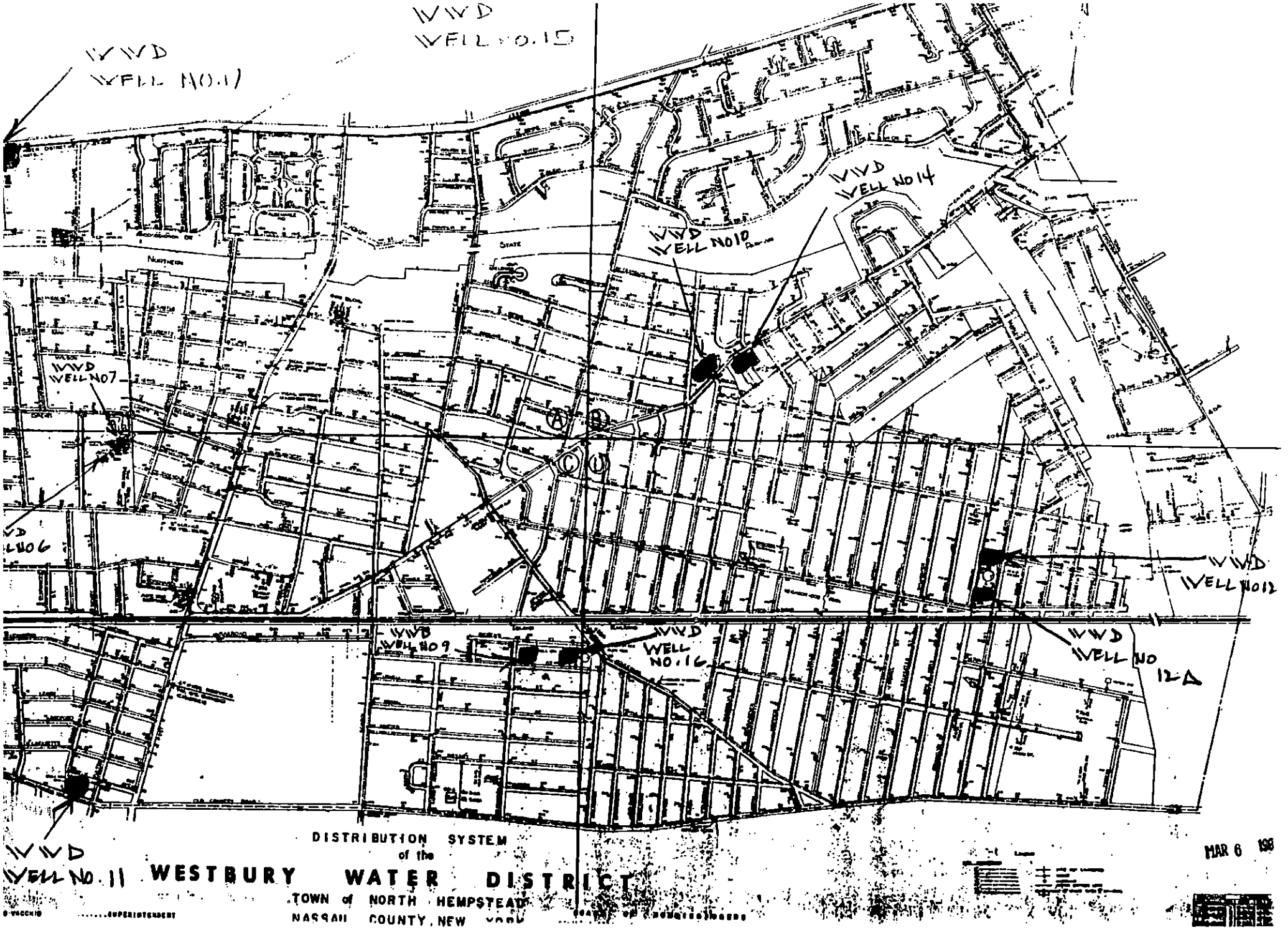
Very truly yours,

WESTBURY WATER DISTRICT

Italo Vacchio

Italo J. Vacchio
Superintendent

IJV/mh
Enc.


WWD
WELL NO.15
WWD
WELL NO.1
WWD
WELL NO 14
WWD
WELL NO10
WWD
WELL NO7
WWD
WELL NO12
WWB
WELL NO9
WWD
WELL
NO.16
WWD
WELL NO
12A
WWD
WELL NO.11
DISTRIBUTION SYSTEM
of the
WESTBURY WATER DISTRICT
TOWN of NORTH HEMPSTEAD
NASSAU COUNTY, NEW YORK
MAR 6

REFERENCE NO. 48

IUS CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

ONTROL NO:	DATE:	TIME:
02-9008-40	4-16-91	2:25

ISTRIBUTION: SERVO CORPORATION

ETWEEN:	OF:	PHONE:
Ann Nemeck	NCHD BUREA PUBLIC WATER	(516) 535-2573

ND: TIMOTHY BEAUREGARD of NUS

ISCUSSION:

I CALLED TO FIND OUT THE TOTAL WELLS IN THE NEW YORK WATER SERVICE AND THE EAST MEADOW WATER DISTRICT.

SHE TOLD ME NEW YORK HAD 32 WELLS, 14 OF WHICH WERE ABANDONED. SO 18 WELLS WERE WORKING.

EAST MEADOW HAD 15 WELLS 4 OF WHICH WERE ABANDONED. SO IT WAS 11 WELLS. ABANDONED MEANS THAT THE WELLS HAVE BEEN CLOSED.

Timothy Beauregard

ACTION ITEMS:

REFERENCE NO. 49

FILE ART XI

Field Investigation
Article XI Facility
Nassau County Department of Health

☐ Tank Test ☐ Retest
☒ Tank Removal ☐ Compliant
☐ Installation

~~11/4~~ ~~11/5~~ ~~11/6~~ 11/9

Date of Job 10/30 Time ____
Date Received 10/30 Time 1120
Contractor Rice Tank Cleaning
Telephone # ____

Facility ID# 00327
Spill No. ____
303H87R05

Establishment Name Servo Corp America
Address 111 New South St.
Town Hicksville Telephone # ____
Cross Street: ____
No. of Tanks 2 Type of Test ____

Tank #							
System Test							
Tank Test							
Size							
Product							
Leak Rate							
Pass/Fail							
Fee							
Fee Paid							
Retest Needed							

Tank Removal 550 10,000

Tank #							
Visible Hole	NO	NO					
# Holes	—	—					
Size	550	10,000					
Location	—	—					
Photo	NO	NO					

Excavation: ☒ Clean ☐ Contanimated Soil ☐ Free floating oil

Soil Removed (Y/N) Amount

Installation: Tank size ____ Approved plans ☐ Yes ☐ No

Notes: ~~Monday~~ Thursday

-Both TANKS were cut + cleaned by RICE TANK CLEANING
There was no contaminated soil. FACility converted to GAS.

Inspector P. Pfeffle Supervisor ____

Employee Number 178 Date 11/9/87 ☐ Continued on Reverse Side

Land Resources.

#4564H

REFERENCE NO. 50

New York State Department of Environmental Conservation
Building 40—SUNY, Stony Brook, New York 11794
(516)-751-7900

Thomas C. Jorling
Commissioner

March 31, 1988

Ms. B. Kramer
Asst. Vice President
EAB Bank
EAB Plaza
New York, NY 11555-2705

RE: SERVO CORP OF AMERICA

Dear Ms. Kramer:

As requested, this letter is to confirm the fact that the above subject site has been delisted from the "New York Registry of Inactive Hazardous Waste Disposal Sites."

Very truly yours,

Anthony Candela, P.E.
Senior Engineer

AC:cp

REFERENCE NO. 51

ATORY REPORT
AL EXAMINATION OF INDUSTRIAL
AZARDOUS WASTES
of Laboratories and Research
County Department of Health

1-1

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. 13376 **B**

Field No. VN 186

Information (Please Print)

Servo
111 New South Rd
Hicksville
Outfall 001

	Month	Day	Year
Date Collected	12	Y	85
Date Received	DEC	4 1985	8
Date Reported			8

Collection Time 2:20pm

Collected By: V. Nigro

Comments:

Bureau:
1 ☑ Land Resources Management
9 ☐ Other (specify)

Sample Type:
A ☑ Water
B ☐ Soil
C ☐ Sludge
D ☐ Waste Solvent
E ☐ Oil
F ☐ Other

CHEMICAL EXAMINATION

Metals		Result	Check	Non-Metals		Result
minum	mg/l	<0.5	15	Chloride	mg/l	
enic	mg/l		16	Cyanide	mg/l	
lum	mg/l		17	Fluoride	mg/l	
lmium	mg/l		18	MBAS	mg/l	
omium, Total	mg/l	<0.01	19	pH		
per	mg/l	0.08	20	Phenols	mg/l	
, Total	mg/l	<0.05	21	Solids, Suspended	mg/l	
d	mg/l	<0.01	22	Solids, Total Diss.	mg/l	
ganese	mg/l		23	Sulfate	mg/l	
cury	mg/l		24	Ammonia nitrogen	mg/l	
kel	mg/l		25	Kjeldahl nitrogen	mg/l	
nium	mg/l		26	Nitrite nitrogen	mg/l	
er	mg/l		27	Nitrate nitrogen	mg/l	
c	mg/l		28	Total Phos.	mg/l	

SPECIAL ANALYSIS

Check	Constituent	Result
29	Chromium hex. mg/l	
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		

's Comments

TORY WORKSHEET

H

AL EXAMINATION FOR TRACE ORGANIC
UENTS IN WATER, HAZARDOUS WASTES
ID WASTES

f Laboratories and Research

unty Department of Health

1 ☑ Routine
2 ☐ Resample
3 ☐ Special
4 ☐ Complaint
5 ☐ Other

Lab. No. 503367

Field No. VN-186

N No. (Public Water Supply Only)

formation (Please Print)

Servo
111 New South Rd
Hicksville

Point Outfall 001 Well No.

	Month	Day	Year
Date Collected	12	4	85
Date Received	12	4	85
Date Reported	12	27	85
Collection Time	2 : 20pm		
Collected By:	V. Nigro		

Comments:

mple on ice

Bureau

1 ☑ Land Resources Management
2 ☐ Public Water Supply
3 ☐ Water Pollution Control
4 ☐ Environmental Sanitation
9 ☐ Other (specify)

SAMPLE TYPE

AQUEOUS			NON-AQUEOUS	
Community Well	6	Surface Water	1	Soil
Non-Community Well	7	Waste Water	2	Sludge
Private Well	8	Industrial Effluent	3	Waste Solvent
Monitoring Well	9	Raw Supply Water	4	Oil
Drinking Water	10	Distribution Water	5	Other (specify)

ANALYSIS TYPE

Purgeable halogenated hydrocarbons	I	Phthalates	
Purgeable halogenated hydrocarbons - gases	J	Herbicides	
Purgeable nonhalogenated hydrocarbons	K	Nitrosamines	
Halogenated pesticides	L	Benzidines	
Polychlorinated biphenyls	M	Nitroaromatic hydrocarbons	
Polycyclic aromatic hydrocarbons	N	Haloethers	
Aldehydes + ketones	O	Chlorinated hydrocarbons	
Phenols	P	Other (specify)	

's Comments:

NASSAU COUNTY DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH LABORATORIES

TRACE ORGANICS

Access Number: 503367
Source: SERVO, 111 NEW SOUTH RD., HICKSILLE
Matrix: WATER
Site: OUTFALL 001
Date Sampled: 12/4/85
Date of Report: 12/23/85

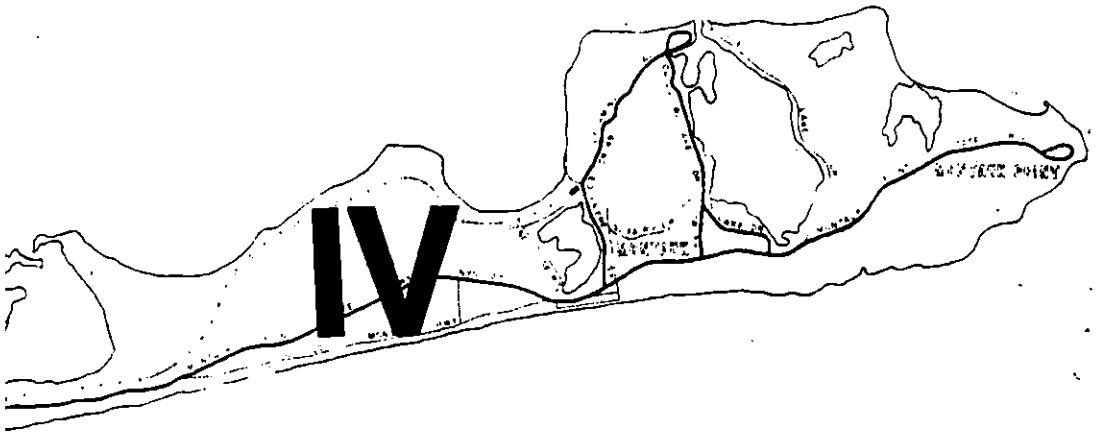
VOLATILE HALOGENATED	MRC (ug/l)	RESULT (ug/l)
TRICHLOROFLUOROMETHANE	NA	NA
METHYLENE CHLORIDE	8	< 8
1,1,2-TRICHLOROTRIFLUOROETHANE		
1,1-DICHLOROETHYLENE		
c & t-1,2-DICHLOROETHYLENE	13	< 13
1,1-DICHLOROETHANE	16	< 16
CHLOROFORM	1	< 1
1,1,1-TRICHLOROETHANE	1	< 1
CARBON TETRACHLORIDE	1	< 1
TRICHLOROETHYLENE	1	< 1
BROMODICHLOROMETHANE	1	< 1
c-1,3-DICHLOROPROPENE		
DIBROMOCHLOROMETHANE	1	< 1
1,1,2-TRICHLOROETHANE	1	< 1
1,2-DIBROMOETHANE	NA	NA
TETRACHLOROETHYLENE	1	< 1
BROMOFORM	2	< 2

VOLATILE AROMATICS	MRC (ug/l)	RESULT (ug/l)
BENZENE	4	< 4
TOLUENE	4	< 4
CHLOROBENZENE	6	< 6
ETHYLBENZENE	6	< 6
XYLENE (o,m,p)	12	< 12
DICHLOROBENZENE (o,m,p)	10	< 10

MRC - MINIMUM REPORTABLE CONCENTRATION NA - NOT ANALYZED
NR - NO RESULT DUE TO TECHNICAL REASONS - RESAMPLE SUGGESTED
PPB: AIR - nl/l WATER - ug/l SOIL - ng/g

DEC 30 1985

REFERENCE NO. 52



LEGEND

GROUNDWATER MANAGEMENT ZONES

DEEP RECHARGE AREAS ARE ZONES I , II , III, & V (SECT. 703 D. & 706) –
INCLUDES ALL PROPERTIES THAT FRONT ON THE BOUNDARY

WATER SUPPLY SENSITIVE AREAS
(SECT. 703 W. & 706)

AREAS SEPARATED FROM A LARGER REGIONAL GROUNDWATER SYSTEM
(INCLUDES: FIRE ISLAND, SHELTER ISLAND, FISHERS ISLAND, GILGO / OAK BEACH)

WATER BUDGET AREA OF THE NORTH FORK

WELLFIELD OUTSIDE OF DEEP RECHARGE AREA OR OTHER
WATER SUPPLY SENSITIVE AREA

WELLFIELD WITH UPPER GLACIAL WELL(S)
RESTRICTED AREA – 1500 FEET UPGRADIENT
500 FEET DOWNGRADIENT

SCALE: 1" = 2 MILES

FFOLK COUNTY SANITARY CODE – ARTICLE 7
GROUNDWATER MANAGEMENT ZONES
&
WATER SUPPLY SENSITIVE AREAS

TJK 5/22/85

NASSAU COUNTY
SUFFOLK COUNTY
VII
II
I
SITE
GRAND BLVD
SAGTIKOS PKWY
HUNTINGTON

REFERENCE NO. 53

2 copies

INSPECTION FORM

Region:
LAND BASED TSDF
COMMERCIAL TSDF
OTHER TSDF
LDR GENERATOR
OTHER GENERATOR
SUBSTITUTION

NEW YORK STATE INDUSTRIAL HAZARDOUS WASTE MANAGEMENT ACT
(Chapter 639, Laws of 1978)

Prepared for:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Thomas C. Jorling, Commissioner

Send to: Division of Hazardous Substances Regulation
Compliance Inspection Section
50 Wolf Road - Room 208
Albany, New York 12233-7252

EPA I.D. NUMBER: NYD002418911

*HANDLER'S NAME (Corporate): Servo Corp.
(Division): _____

*HANDLER'S MAILING ADDRESS: 111 New South Rd

City & State Hicksville NY Zip Code 11802

*HANDLER'S LOCATION ADDRESS: _____

(if different than mailing) _____

City & State _____, NY Zip Code _____

*HANDLER'S TELEPHONE NUMBER: (516) 938-9700 Extension _____

*FULL NAME OF HANDLER'S CONTACT: (Mr.) (Ms.) Willenbrock

*TITLE OF HANDLER'S CONTACT: _____

INSPECTION DATE: 8/25/1989 TIME OF INSPECTION: 10 (a.m.) ___ (p.m.)
COUNTY: _____

INSPECTOR'S NAME: Agne Grena
TITLE: asst. Engr
NAME: _____
TITLE: _____

CHECK ONE: Copy of THIS report (___ has) (X has not) been given to the Handler.

REPORT PREPARED BY: _____ DATE: 8/25/89
REPORT APPROVED BY: _____ DATE: 8/29/89

TABLE OF CONTENTS

APPENDICES

(Need Not Attach If Not Required - Circle Attached Appendices)

*For the purpose of this Inspection Report - HANDLER means a hazardous waste Generator, Transporter, Treatment, Storage or Disposal Facility (TSDF).

PART I

General Information and Classification of Facility

1. Identification of Hazardous Waste - 371 — Yes / No

A. Is there reason to believe the facility has hazardous waste on-site? If yes, what leads you to believe it is hazardous waste? Check appropriate box/boxes and attach any applicable correspondence with DEC or EPA: X / ___

(1) ___ Company recognizes that its waste is hazardous during the inspection.

(2) ___ Company admitted the waste is hazardous in its RCRA notification and/or Part A permit application.

(3) ___ Testing has shown characteristics of:

(X) Ignitability - 371.3(b);
(X) Corrosivity - 371.3(c);
(X) Reactivity - 371.3(d);
(X) EP Toxicity - 371.3(e).

___ Has revealed hazardous constituents (please attach analysis report) 371.4(a)(2), Appendix 22, Appendix 23

(4) X The material is listed in the regulations as a hazardous waste from non-specific sources 371.4(b).

(5) ___ The waste is listed in the regulations as a hazardous waste from specific sources. 371.4(c).

(6) ___ The material or product is listed in the regulations as discarded commercial chemical products, off-specification species, container residues and spill residues thereof. 371.4(d).

(7) ___ Company is unsure, but has reason to believe that waste materials are hazardous. (Explain) _____

_____

_____

_____

5/89

B. Is there reason, other than those above, for you to believe that there is hazardous waste on site? (Explain) _____

NO

C. What other environmental permits are held by the company, relative to hazardous waste management?

X SPDES Permit Number cooling water ___ Air Permit Number

___ Part 364 Industrial Waste Transporter Permit (indicate this company's permit number if any)

Please describe other relative (if any) permits and give the name, address, Part 364 Permit Number and EPA I.D. Number of transporter(s) used by company.

Hazinal NJD002454544

Safety Kleen NJD002182897

D. If the facility is a treatment, storage or disposal facility, have they:

___ Submitted a Part A application.

___ Have changes been made that are not reflected in the Part A application?

___ Should the Part A be modified by the Company? If so, explain.

___ Been granted a Part B application.

___ Submitted a Part 373 permit application.

___ Been granted a Part 373 permit.

If so, when does it expire: _____

Please attach or explain any special conditions or variances - 373-1.1(e)

If so, also complete Appendix M.

E. Describe the activities that result in the generation of hazardous waste. Include the company's manufacturing processes.

Manufacturing electronic components
Wastes from cleaning + painting

F. Identify the hazardous wastes that are on-site, the quantity of each, and the storage method (use the identification numbers referred to in Part 371).

1 drum waste oil - non hazardous
1 freon - F001 — solvent contaminated
1 111 trichloroethane - F001
1 paint thinner - F003
1 sonic solvent F001 (no rags + solvent not all full)

G. The handler notified EPA as a:

gen

Has EPA or DEC officially modified the handlers status? If so, attach correspondence.

no

2. Status Identification:

This handler should be inspected as a (check each appropriate category after considering exemptions).

A. ___ Transporter - complete Appendix B

B. Generator Status Identification 372.1

1. ___ Category 1 - Small Quantity Generator - Conditionally Exempt - generates less than 100 kg/mo and stores less than 100 kg. - 372.1(e)(1)(vii)(a) Complete Part II, 1A.

2. ___ Category 2 - Small Quantity Generator - generates less than 100 kg/mo and stores more than 100 kg but less than 1,000 kg. - 372.2(a)(8)(vi) - Complete Part II, 1B.

3. X Category 3 - Small Quantity Generator - subject to reduced generator requirements -generates more than 100 kg/mo but less than 1,000 kg/mo and stores less than 1,000 kg. - 372.2(a)(8)(iii) - Complete Part II, 1C.

4. ___ Category 4 - Generator - generates and/or stores 1,000 kilograms or more per month or generated acute hazardous waste in quantities greater than those specified in Part 372.1(e)(1)(v). Complete Part II, Questions 2-7. (Generators over sole source aquifers also complete Appendix A.)

C. Treatment, Storage or Disposal Facility Status

1. Hazardous waste is generated and stored on-site. If so:

(a) No Has hazardous waste been stored on-site longer than 90 days? 373-1.1(d)(1)(iii) - If yes, complete Appendix A.

(b) No Has more than 8,800 gallons of hazardous waste been stored in containers? 373-1.1(d)(1)(iii)(a) - If yes, complete Appendix A.

(c) No Has more than 20,000 gallons of hazardous waste been stored in tanks? 373-1.1(d)(1)(iii)(b) - If yes, complete Appendix A.

2. No Hazardous waste is received from off-site and not beneficially used, reused or legitimately recycled or stored. If yes, complete Appendix A.

3. ___ Hazardous waste is treated on-site. If yes, complete appropriate portion of this report.

4. ___ Hazardous waste is disposed on on-site. If yes, complete appropriate portion of this report.

3. Exemptions

A. Generator Exemptions

(1) ___ Not a regulated handler (be sure to indicate why in Part I 1F and 1G and/or in appropriate exemption below - for example the company notified for precautionary reasons or the waste generated is not hazardous as specified in 371.1(e)(2).

(2) ___ Delisted hazardous waste. IDENTIFY the waste that was delisted: (If the company is in the delisting process they are still regulated until their delisting petition is favorably approved). Complete appropriate parts depending on company status.

_____

_____

(3) ___ Exemption for used engine lubricating oil. 372.1(e)(8)

(4) ___ Exemption for publicly owned treatment works. 372.1(e)(4)

(5) ___ Samples collected for testing. 372.1(e)(5)

(6) ___ Residues of hazardous waste in empty containers. 372.1(e)(6)

(7) ___ A hazardous waste which is generated in a product or raw material storage tank, a product or raw material transport vehicle or vessel, a product or raw material pipeline, or in a manufacturing process unit or an associated non-waste treatment manufacturing unit is not subject to regulation until it exits the unit in which it was generated, unless the unit is a surface impoundment, or unless the hazardous waste remains in the unit more than 90 days after the unit ceases to be operated for manufacturing, or for storage or transportation of product or raw materials. 372.1(e)(7).

B. TSD Exemptions

1. TSD exemptions - 373-1.1(d)(1) (for facilities and operations that manage hazardous waste other than waste oil).

(a) ___ Storage and recycling or recyclable materials specified in Part 373-1.1(d)(1)(vi).

(b) ___ Storage of hazardous wastes specified in 373-1.1(d)(1)(vii). Must meet Part 374 requirements.

(c) ___ Recycling of Hazardous Wastes 373-1.1(d)(1)(viii). Parts 373-2.2(c), 372.4(b), 372.4(d)(1) must be complied with (Storage of wastes prior to recycling is not exempt under this subparagraph)

- This exemption does not apply to commercial facilities which recycle listed hazardous wastes or hazardous waste sludges received from off-site or burn these wastes for energy recovery;

- Commercial facilities that reclaim precious metals from hazardous wastes do qualify;

- This exemption does not apply to boiler and industrial furnaces that burn hazardous wastes for energy recovery if the waste stream has a heat value of less than 8,000 BTU/lb.

(d) ___ Totally enclosed treatment facility - 373-1.1(d)(1)(xi).

(e) ___ Elementary neutralization units or wastewater treatment units other than units located at commercial facilities. Units utilized only to neutralize or treat hazardous waste from recycling characteristic hazardous wastes or for precious metal recovery at commercial facilities are exempt. Must meet 373-3.2, 373-3.3, 373-3.4 and storage requirements of 373-3.9, 373-3.10(k) and (l). Containers and tanks must be marked with the words "Hazardous Waste" and dated where applicable. - 373-1.1(d)(1)(xii) (Complete Appendix Q).

(f) ___ The addition of absorbent material with the purpose of preparing the waste for incineration or to fill void spaces in containers intended for land disposal. If yes, complete Part II 3.D.3, 3.D.4, 3.D.9. - 373-1.1(d)(1)(xvii).

2. TSD exemptions - 373-1.1(d)(2) (for facilities and operations that manage waste oils).

(a) ___ Storage or treatment of waste oil generated on-site prior to its beneficial use or reuse or legitimate recycling or reclamation if the waste oil is not a listed hazardous waste, and the waste oil is not a hazardous sludge. 373-1.1(d)(2)(ii). If yes, complete Part II: 2D, 2E, 3C, 3D, 5, 6, 7, Appendix O (if required).

(b) ___ Exemptions for storage of waste oil at an energy recovery facility prior to its on-site combustion of such waste oils are not listed hazardous wastes, waste oils are not hazardous sludges, and the facility stored less than 80,000 gallons of waste oil. 373-1.1(d)(2)(iii). If yes, complete Part II: 2D, 2E, 3C, 3C, 5, 6, 7.

(c) ___ Combustion units that recover energy from waste oil, other than listed hazardous waste and sludges and the related treatment on-site of such combustion units. 373-1.1(d)(2)(iv).

3. TSD exemptions - (for facilities and operations that manage hazardous waste or waste oils).

(a) ___ Storage of hazardous waste generated and stored on-site for 90 days or less and 8,800 gallons or less is stored in containers or 20,000 gallons or less is stored in tanks. The facility can not be located in a geographical area overlying a sole source aquifer. If yes, complete Part II, 2B, 3. 373-1.1(d)(1)(iii).

(b) ___ Storage and treatment of hazardous waste on-site of generation if generated less than 100 kilograms and stored less than 1,000 kilograms of hazardous waste in each calendar month and not generate or store acute hazardous waste as described in 373-1.1(d)(1)(i)(b). 373-1.1(d)(1)(v).

(c) ___ Treatment or containment activities during an immediate response 373-1.1(d)(1)(xiii).

(d) ___ Accumulation areas. If yes, complete Part II: 3A. 373-1.1(d)(1)(xiv).

(e) ___ Storage of manifested shipments of hazardous waste in containers or vehicles by a transporter at its own transfer facility for 5 days or less. If yes, complete Appendix B. 373-1.1(d)(1)(xv).

Part II

Generator Inspection Section

Indicate:

X Violations

Indicate:

X Satisfactory
NA Not Applicable

1. Requirements Exempt and Small Quantity Generator (Category 1-3 Generators):

   A. Category 1 - The conditionally exempt generator has:

      1. ___ made a hazardous waste determination - 372.1(e)(1)(vii)(a). ___

      2. ___ accumulated no more than 100 kg of hazardous waste on-site - 372.1(e)(1)(vii)(b). ___

      3. ___ disposed of hazardous waste in an authorized, permitted or licensed on-site or off-site facility - 372.1(e)(1)(vii)(c). ___

      4. ___ ensured delivery to an off-site facility by a transporter authorized under Part 364 or by the generator himself - 372.1(e)(1)(vii)(d). ___

   B. Category 2 - The generator who generates less than 100 kg/month and stores between 100-1000 kg has complied with the following:

      General Requirement - Items 2A-E (pg. II-5)
      Manifest & Reporting - Item 4A-N (pgs. II-9, 10)

      1. ___ use tanks that are properly sheltered and protected to prevent spillage, seepage or any discharge - 372.2(a)(8)(vi)(a). ___

      2. ___ keep containers and tanks holding hazardous waste closed during storage except to add or remove wastes. Containers and tanks must not be opened, handled or stored in a manner which may rupture the tank or containers or cause them to leak. Tanks and containers must be inspected at least quarterly for leaks or damage - 372.2(a)(8)(vi)(b). ___

      3. ___ use tanks that are designed, constructed or operated in accordance with whichever of the following requirements are in effect in the municipality where the facility is located: 372.2(a)(8)(vi)(c). ___

Indicate:		Indicate:
X	Violations	X Satisfactory NA Not Applicable

(a) ___ the State Uniform Fire Protection and Building Code Title 9 (B) NYCRR, Subchapter C, including the National Fire Protection Association Flammable and Combustible Liquids Code (NFPA-30) - 372.2(a)(8)(vi)(c)(1), or ___

(b) ___ the applicable local building and fire codes - 372.(a)(8)(vi)(c)(2). ___

4. ___ the quantity of waste accumulated on-site must never exceed 1,000 kilograms - 372.2(a)(8)(vi)(d). ___

C. Category 3 - The generator subject to reduced requirements has complied with the following:

General Requirements - Complete Items 2A-E (pg. II-5) ✓
Manifest & Reporting - Complete Items 4A-N (pgs. II-9, 10) ✓
Container Requirements - Complete Item 3C, ✓
Item 3D, questions 1-9 [except for Question 8(a)] (pgs. II-5, 6) X
Preparedness & Prevention - Complete Items 6A-F (pgs. II-12, 13) ✓

1. ___ quantity of waste on-site never exceeds 1000 kg and may be stored for up to 180 days unless the disposal facility is 200 miles or more away. Storage up to 270 days then is allowed. - 372.2(a)(8)(iii)(a). X

2. ___ at all times there must be at least one employee on-site or on call with the responsibility for coordinating emergency measures - 372.2(a)(8)(iii)(e)(1). X

3. ___ the name and phone number of the emergency coordinator must be posted next to the telephone - 372.2(a)(8)(iii)(e)(2)(i). X

4. ___ location of fire extinguishers and spill control material and, if present, fire alarm must be posted next to the telephone - 372.(a)(8)(iii)(e)(2)(ii). X

5. ___ telephone number of the fire department must be posted next to the phone unless the facility has a direct alarm - 372.2(a)(8)(iii)(e)(2)(iii). X

6. ___ ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures - 372.2(a)(8)(iii)(e)(3). X

7. ___ the emergency coordinator or a designee have responded applicably to any emergencies that have arisen - 372-2(a)(8)(iii)(e)(4). N/A

[for storage in tanks complete the following section - 373-3.10(1)]

Indicate: X Violations	Indicate: X Satisfactory NA Not Applicable	
8. ___ the owner or operator must take precautions to prevent accidental ignition of ignitable or reactive wastes. "No Smoking" signs must be placed wherever there is a hazard from either waste - 373-3.2(h)(1).		X
9. ___ the treatment, storage or disposal of ignitable or reactive waste, and the mixture or commingling of incompatible waste must be conducted so that it does not:		X
(a) ___ generate extreme heat or pressure, fire or explosions or violent reactions - 373-3.2(h)(2)(i).		X
(b) ___ produce uncontrolled toxic mists, fumes, dusts or gases in sufficient quantities to threaten human health - 373-3.2(h)(2)(ii).		X
(c) ___ produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosion - 373-3.2(h)(2)(iii).		X
(d) ___ damage the structural integrity of the device or facility containing the waste - 373-3.2(h)(2)(iv).		X
(e) ___ through other like means threaten human health or the environment - 373-3.2(h)(2)(v).		X
10. ___ hazardous wastes or treatment reagents must not be placed in a tank if they could cause the tank or its inner liner to fail - 373-3.10(1)(2)(ii).		NA
11. ___ uncovered tanks must be operated to ensure at least 60 centimeters (2 feet) of freeboard, unless there is adequate containment - 373-3.10(1)(2)(iii).		
12. ___ where hazardous waste is continuously fed into a tank, the tank must be equipped with a means to stop this inflow - 373-3.10(1)(2)(iv).		
13. ___ the owner or operator must mark all tanks with the words "Hazardous Waste" and with other words that identify the contents of the tanks. For underground tanks, the markings must be placed on a sign in the area above the tank - 373-3.10(1)(2)(v).		
Tank(s) are inspected each operating day for:		NA
14. ___ discharge control equipment (e.g. waste feed cutoff systems, bypass systems and drainage systems) - 373-3.10(1)(3)(i)		
15. ___ monitoring equipment (e.g. pressure and temperature gauges) - 373-3.10(1)(3)(ii)		

Indicate:		Indicate:
X	Violations	X Satisfactory NA Not Applicable

16. ___ level of waste in tank to ensure proper freeboard - 373-3.10(1)(3)(iii). ___

Tank(s) are inspected weekly for: NA

17. ___ corrosion or leaking of fixtures or seams - 373-3.10(1)(3)(iv). ___

18. ___ erosion or obvious signs of leakage (e.g. wet spots or dead vegetation) of the construction materials of, and the area immediately surrounding discharge confinement structures (e.g. dikes) - 373-3.10(1)(3)(iv). ___

19. ___ at closure all hazardous waste must be removed from tanks, discharge control equipment and discharge confinement structures - 373-3.10(1)(4). ___

Special requirements for ignitable or reactive waste: NA

20. ___ Ignitable or reactive waste is placed in a tank and the waste is stored, treated, rendered or mixed before or immediately after placement in the tank so that the resulting wastes, mixture or dissolution of material is no longer ignitable or reactive - 373-3.10(1)(5)(i)(a)(1). ___

21. ___ Section 373-3.2(h) is complied with - 373-3.10(1)(5)(i)(a)(2). ___

22. ___ the waste is stored or treated in such a way that it is protected from any material or conditions that may cause the waste to ignite or react - 373-3.10(1)(5)(i)(b). ___

23. ___ the tank is used solely for emergencies - 373-3.10(1)(5)(i)(c). ___

24. ___ storage of ignitable or reactive waste in covered tanks complies with the National Fire Protection Association's (NFPA's) buffer zone requirements for tanks, contained in Tables 2-1 thru 2-6 of the "Flammable and Combustible Liquids Codes." - 373-3.10(1)(5)(ii). ___

Incompatible Wastes - 373-3.10(1)(5)(ii): NA

25. ___ Incompatible wastes, or incompatible wastes and materials must not be placed in the same tank unless 373-3.2(h)(2) is complied with - 373-3.10(1)(6)(i). ___

26. ___ Hazardous waste must not be placed in an unwashed tank which previously held an incompatible waste or material, unless section 373-3.2(h) of the Subpart is complied with - 373-3.10(1)(6)(ii). ___

Indicate:	Indicate:
X Violations	X Satisfactory NA Not Applicable

For Category 4 generators of Hazardous Waste - complete remainder of Part II.

2. General Requirements

A. ___ The generator has made a determination as to whether or not his solid waste is a hazardous waste - 372.2(a)(2). X

B. ___ The generator has obtained an EPA identification number - 372.2(a)(3). X

C. ___ The generator has packaged the waste in accordance with the applicable USDOT regulations - 372.(a)(4). X

D. ___ The generator has labeled each package of waste in accordance with the applicable USDOT regulations - 372.2(a)(5). X

E. ___ The generator has marked each container or package of waste properly - 372.2(a)(6). X

3. On-site Accumulation of Hazardous Waste Prior to Shipment

A. ___ Accumulation areas - 372.2(a)(8)(i)(a).

___ 1. The generator complies with section 373-3.9(b)-(d) [Complete Part II 3.D.3-6.] ___

___ 2. The containers are marked with the words "Hazardous Waste" or with other words that identify the contents 372.2(a)(8)(i)(a)(2). ___

B. ___ All such wastes are shipped off-site to an authorized treatment, storage or disposal (TSD) facility in 90 days or less - 372.2(a)(8)(ii). ___

C. ___ The date upon which each period of accumulation begins is clearly marked and visible for inspection on each container or tank - 372.2(a)(8)(ii): 373-1.1(d)(1)(iii)(c)(2), 373-1.1(d)(1)(iv)(d). ___

D. Standards for management of containers - 372.2(a)(8)(ii); 373-3.9 (This section will also be completed for TSD's as referred to from Appendix A.)

Indicate:

X Violations

Indicate:

X Satisfactory
NA Not Applicable

1. What type of containers are used for accumulation? Describe the size, type. (e.g., 12 fifty-five gallon drums of waste acetone).

55gal. steel drums

2. ___ Each container is marked with the word "Hazardous Waste." 372.2(a)(8): 373-1.1(d)(1)(iii) (c)(3), 373-1.1(d)(1)(iv)(d). X

3. ___ The containers appear to be in good condition and are not in danger of leaking. (If containers are leaking, describe the type, condition and number that are leaking or corroded. Be detailed and specific) - 373-3.9(b). X

4. ___ Hazardous waste is stored in containers made of compatible materials - 373-3.9(c). (If not, please explain). X

5. ___ All containers except those in use are closed - 373-3.9(d)(1). X

6. ___ Containers holding hazardous waste must not be opened, handled or stored in a manner which may rupture the container or cause it to leak - 373-3.9(d)(2). X

7. ___ The storage area is inspected at least weekly - 373-3.9(e). X

8. The generator complies with the following special requirements related to storage of ignitable or reactive wastes. 373-3.9(f):

Indicate:

X Violations

Indicate:

X Satisfactory
NA Not Applicable

(a) ___ Containers holding ignitable or reactive waste are located at least 15 meters (50 feet) from the facility property line - 373-3.9(f). X

(b) ___ Generator has taken precautions to prevent accidental ignition or reaction of ignitable or reactive waste - 373-3.2(h)(1). X

(c) ___ Generator has placed "No Smoking" signs conspicuously wherever there is a hazard from ignitable or reactive waste - 373-3.2(h)(1). X

9. The generator complies with the following special requirements related to incompatible wastes: 373-3.9(g). NA

(a) The treatment, storage or disposal of ignitable or reactive wastes, and the mixture or commingling of incompatible wastes, or incompatible wastes and materials, is conducted to prevent: 373-3.2(h)(2).

(1) ___ the generation of extreme heat or pressure, fire or explosion, or violent reaction - 373-3.2(h)(2)(i). ___

(2) ___ production of uncontrolled toxic mists, fumes, dusts or gases in sufficient quantities to pose a risk of fire or explosions - 373-3.2(h)(2)(ii). ___

(3) ___ production of uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions - 373-3.2(h)(2)(iii). ___

(4) ___ damage to the structural integrity of the device or facility containing the waste - 373-3.2(h)(2)(iv). ___

(5) ___ a threat to human health or the environment - 373-3.2(h)(2)(v). ___

(b) ___ Incompatible wastes, or incompatible wastes and materials, are not placed in the same container - 373-3.9(g)(1). ___

(c) ___ Hazardous waste must not be placed in an unwashed container that previously held an incompatible waste or material - 373-3.9(g)(2). ___

(d) ___ Hazardous waste in containers stored nearby incompatible waste or material is separated from the incompatible waste by a dike, berm, wall or other device - 373-3.9(g)(3). ___

Indicate:

X Violations

Indicate:

X Satisfactory
NA Not Applicable

10. Special requirements for generators over sole source aquifers: 373-1.1(d)(1)(iv)

(a) ___ the facility submits written notification to the regional office that they qualify for the exemption under 373-1.1(d)(1)(iv) and submit a TSD annual report - 373-1.1(d)(1)(iv)(c). ___

(b) ___ the facility complies with the requirements of ECL Article 17 - 373-1.1(d)(1)(iv)(e). ___

(c) ___ The container storage areas are within a secondary containment system designed and and operated in accordance with the following: 373-1.1(d)(1)(iv)(f). ___

(1) ___ the base under the containers must be free of cracks or gaps and sufficiently impervious to contain collected material until it is removed - 373-2.9(f)(1)(i). ___

(2) ___ the base must be sloped or the containment system otherwise designed and operated to drain and remove liquid unless the containers are elevated or protected from contact with accumulated liquids - 373-2.9(f)(1)(ii). ___

(3) ___ the containment system must have sufficient capacity to contain 10 percent of the volume of containers or the volume of the largest container, whichever is greater. Containers that do not contain free liquids are not considered in this determination - 373-2.9(f)(1)(iii). ___

(4) ___ Run-on is prevented unless the system has sufficient excess capacity to that required in (3) - 373-2.9(f)(1)(iv). ___

(5) ___ Accumulated waste and precipitation must be removed as necessary to prevent overflow 373-2.9(f)(1)(v). ___

Indicate:

X Violations

Indicate:

X Satisfactory
NA Not Applicable

(d) Storage areas that have containers with no free liquid do not need a containment system provided either of the following is met: 373-2.9(f)(2)

(1) ___ the storage area is sloped or designed to drain and remove accumulated liquid - 373-2.9(f)(2)(i). ___

(2) ___ the containers are elevated or protected from contact with accumulated liquid - 373-2.9(f)(2)(ii). ___

(e) ___ Storage areas that contain F020-F027 with no free liquid must have a containment system as described in (c) 373-2.9(f)(3). ___

E. Standards for management of tanks: 373-3.10

1. ___ Generators complete Appendix O except for Section 373-3.10(h)(3); Items 7C1-5 (pages O-14 to O-15). [In addition, sections 373-3.7 and 3.8 which are cross-referenced do not apply except for section 373-3.7(b) and (e)].

2. ___ Generators over sole-source aquifers complete Appendix O except for Section 373-3.10(h)(3), Items 7C1-5 (pages O-14 to O-15). [Requirements of section 373-3.8 do not apply.]

4. Manifest Records and Reporting: 372.2(b)

A. ___ It appears, from the available information, that there is manifest copy available for each hazardous waste shipment off-site that has been made - 372.2(b)(5)(i). X

If "violation" checked or "don't know," please elaborate.

B. Describe the approximate size of an average shipment made and how many shipments per month? X

1 drum/M

C. ___ The transporter has a valid Part 364 permit or is otherwise authorized to transport the waste to the designated facility - 372.2(b)(5)(ii). X

D. Each manifest (a representative sample) has the following information: 372.2(b)(1); Appendix 30.

Indicate:

X Violations

Indicate:

X Satisfactory
NA Not Applicable

		Generator	Transporter 1	Transporter 2	TSDF	
1.	___ Name of	X	X	X	X	X
2.	___ EPA ID No. of	X	X	X	X	X
3.	___ Mailing Address of	X	X	X	X	X
4.	___ Telephone No. of	X	X	X	X	X
5.	___ Manifest Document #					X
6.	___ The proper USDOT description.					X
7.	___ The appropriate: X quantity, X container number, ___ container type, and X waste type by units of weight or volume.					X
8.	___ Signed certification that the materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation under regulations of the USDOT and NYSDEC - 372.2(a)(4) and 372.2(a)(5) and 372.2(a)(6).					X
9.	___ Signed copies of the manifest records have been retained at the facility for at least three years - 372.2(c)(1)(i).					X

E. ___ The generator must distribute copies of the manifest as specified on the manifest form - 372.2(b)(3). X

F. ___ The generator has received signed copies (from the TSD facility) of all manifests for wastes shipped off-site more than 20 days ago: X

___ If not, exception reports have been submitted covering these shipments - 372.2(c)(3) NA

G. ___ A generator annual report has been prepared and sent to the Department - 372.2(c)(2). ___

H. For international shipments the generator has done the following: 372.5. NA

1. ___ EPA and the Department have been notified 60 days prior to shipment of hazardous waste destined for treatment, storage or disposal outside the United States - 372.5(c)(1).

2. ___ Delivery of the wastes has been confirmed by the consignee within 90 days of acceptance by initial transporter - 372.5(e)(2).

Indicate:		Indicate:
X	Violations	X Satisfactory NA Not Applicable

3. ___ Primary exporters of hazardous waste must file with the Administrator and the Department no later than March 1 of each year, a report summarizing the types, quantities, frequency, and ultimate destination of all hazardous waste exported during the previous calendar year - 372.5(b)(1). — NA

I. ___ Has complied with interstate shipments - 372.6 —

J. ___ Has complied with shipments by rail or water (bulk) - 372.7 —

K. ___ Copies of all records have been kept for at least three years (e.g., annual reports, manifests, exception reports, sampling data) - 372.2(c)(1)(i),(ii), and (iii). — X

L. ___ All records required under this subdivision were furnished upon request, or made available at a reasonable time for inspection - 372.2(c)(1)(iv). — X

M. ___ There is written communication that the designated treatment, storage or disposal facility is an authorized treatment, storage or disposal facility for the particular wastes being offered for shipment and has capacity to accept the hazardous waste set forth on the manifest and will assure the ultimate disposal method is followed - 372.2(b)(2)(i). — X

N. ___ There is written communication that the designated transporter is authorized to deliver the waste to the facility on the manifest - 372.2(b)(2)(ii). — X

5. Personnel Training - 372.2(a)(8)(ii) and 373-3.2(g)

A. There is a:

1. ___ written description of the job title for each position at the facility related to hazardous waste management and name of the employee filling each job - 373-3.2(g)(4)(i) —

2. ___ written job description for each position - 373-3.2(g)(4)(ii) —

3. ___ written description of the type and amount of both introductory and continuing training that will be given to each person related to hazardous waste management - 373-3.2(g)(4)(iii) —

4. ___ records that document the training or job experience required has been given to and completed by facility personnel - 373-3.2(g)(4)(iv). —

Indicate:		Indicate:
X	Violations	X Satisfactory NA Not Applicable

B. ___ The training program is directed by a person trained in hazardous waste management procedures and must include instruction which teaches facility personnel hazardous waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed. 373-3.2(g)(1)(i),(ii) and (iii). The components are: ___

1. ___ Procedures for using, inspecting, repairing and replacing facility emergency and monitoring equipment; ___
2. ___ Key parameters for automated waste feed cutoff systems; ___
3. ___ Communications or alarm systems; ___
4. ___ Response to fires and explosions; ___
5. ___ Response to groundwater contamination incidents; and ___
6. ___ Shutdown of operations. ___

C. ___ Facility personnel have successfully completed the program by the effective date of these regulations or six months after the date of their employment. 373-3.2(g)(2). ___

D. ___ Facility personnel have taken part in an annual review of the initial training required - 373-3.2(g)(3). ___

E. ___ Training records on current personnel have been kept permanently at the facility (until closure) - 373-3.2(g)(5). ___

F. ___ Training records on former employees have been kept for at least three years from the date the employee last worked at a facility - 373-3.2(g)(5). ___

6. Preparedness and Prevention - 372.2(a)(8)(ii); 373-3.3

A. ___ The facility is maintained and operated to minimize the possibility of a fire or explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil or surface water - 373-3.3(b). X

B. The facility must be equipped with the following (Check missing equipment if needed in this facility's particular operations.) - 373-3.3(c):

Indicate:		Indicate:
X	Violations	X Satisfactory NA Not Applicable

1. ___ An internal communication or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel; X

2. ___ A device, such as a telephone or a hand-held, two-way radio capable of summoning emergency assistance from local police departments, fire departments or state or local emergency response teams; X

3. ___ Portable fire extinguishers, fire control equipment; X

4. ___ Water at adequate volume and pressure to supply water hose streams, or foam-producing equipment, or automatic sprinklers, or water spray systems. X

C. ___ Facility communications or alarm systems, fire protection equipment, and spill control equipment are tested and maintained as necessary to assure their proper operation in time of emergency - 373-3.3(d). X

D. ___ Personnel involved in hazardous waste operations have immediate access to an internal alarm or emergency communication device - 373-3.3(e). X

E. ___ The facility has the required aisle space - 373-3.3(f) (Inspections should be able to be made of each drum and space should be sufficient to fight a fire). X

F. The facility owner or operator has made an attempt in good faith to make the following arrangements with local authorities, as appropriate for the type of waste handled at the facility and the potential need for the services of these organizations - 373-3.3(g)(1):

1. ___ Arrangements to familiarize police, fire departments and emergency response teams with the functions and layout of the facility; X

2. ___ Where more than one police and fire department might respond to an emergency, an agreement designating primary emergency authority to a specific police and a specific fire department, and agreements with any others to provide support to primary emergency authority; NA

3. ___ Agreements with government emergency response teams, emergency response contractors, and equipment suppliers; X

Indicate: X Violations	Indicate: X Satisfactory NA Not Applicable	
4. ___ Arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and the types of injuries or illness which could result from fires, explosions or releases at the facility; and		X
5. ___ Where state or local authorities decline to enter into such arrangements, the owner or operator has documented the refusal in the operating record.		NA

7. Contingency Plan and Emergency Procedures - 372.2(a)(8)(ii); 373-3.4

A. ___ The facility has a contingency plan or some other emergency plan which incorporates hazardous waste management.		___
B. The following are included in the contingency plan - 373-3.4(c):		
1. ___ A description of actions facility personnel must take in response to fires, explosions or any unplanned sudden or non-sudden releases of hazardous waste or hazardous waste constituents to air, soil or surface water;		___
2. ___ A description of arrangements agreed to by local police departments, fire departments, hospitals, contractors, and state and local emergency response teams to coordinate emergency services;		___
3. ___ Names, addresses and phone numbers of all persons qualified to act as emergency coordinator;		___
4. ___ A list of all emergency equipment at the facility, and decontamination equipment, where this equipment is required;		___
5. ___ The location and the physical description of each item on the list, and a brief outline of its capabilities;		___

Indicate:

X Violations

Indicate:

X Satisfactory
NA Not Applicable

6. ___ An evacuation plan for facility personnel, where there is a possibility that evacuation could be necessary. ___

C. ___ Copies of the contingency plan are maintained at the facility. 373-3.4(d)(1) ___

D. ___ Copies of the contingency plan have been submitted to all local police departments, fire departments, hospitals, and state and local emergency response teams that may be called upon to provide emergency services. 373-3.4(d)(2) ___

E. ___ The contingency plan has been amended. 373-3.4(e) ___

F. ___ There was at least one employee either on the facility premises or on call with the responsibility for coordinating all emergency response measures - 373-3.4(f) ___

G. ___ During a past emergency situation the emergency coordinator (or his designee when the emergency coordinator is not on call) immediately activated emergency procedures - 373-3.4(g). ___

The following was done:

1. ___ Activated internal facility alarms or communication systems; ___

2. ___ Notified appropriate state or local agencies; ___

3. ___ Immediately identified the character, exact source, amount and a real extent of any released materials; ___

4. ___ The emergency coordinator assessed possible hazards to human health and the environment; ___

5. ___ The emergency coordinator, after determining that that facility had a release, fire or explosion which could threaten human health or the environment outside the facility, reported his findings; ___

6. ___ During the emergency, the emergency coordinator took all reasonable measures necessary to ensure that fire, explosions and releases do not occur, recur or spread to other hazardous waste; ___

Indicate:		Indicate:
X	Violations	X Satisfactory NA Not Applicable

7.	___	The emergency coordinator monitored for leaks, pressure buildup, gas generation or ruptures in valves, pipes or other equipment, where appropriate during the facility's response to the emergency;	___
8.	___	The emergency coordinator provided for treating, storing or disposing of recovered waste, contaminated soil or surface water, or any other material that resulted from a release, fire or explosion at the facility;	___
9.	___	The emergency coordinator ensured that in the affected area no waste that may be incompatible with the released material was treated, stored or disposed of prior to cleanup procedures being completed;	___
10.	___	The emergency coordinator ensured that all emergency equipment listed in the contingency plan was cleaned and fitted for its intended use before operations were resumed;	___
11.	___	The owner or operator notified the Commissioner that the facility is in compliance with Part 373-3.4(g)(8) before operations were resumed in the affected areas of the facility;	___
12.	___	The owner or operator noted in the operating record the time, date and details of the incident that required implementation of the contingency plan;	___
13.	___	The owner or operator submitted a complete written report on the incident within 15 days after the incident occurred.	___

NOT FOR RELEASE TO COMPANY, PROTECTED INFORMATION

PART III

Comments, Conclusions and Recommendations Section

Facility Name Servo Corp.

EPA I.D. No. WYD002418911

Date of Inspection 8/25/89

General Comments and Conclusions (cite appropriate State regulations in violation and attach additional sheets and other information as required)

No violations. Company has gone to small q. gen. from generator because of waste minimization.

5/89

NOT FOR RELEASE TO COMPANY, PROTECTED INFORMATION

Recommendations EPA I.D. No. NYD002418911

___ Formal confidentiality is being requested.

X No follow-up necessary.

___ Do you recommend that the central office wait a maximum of two weeks for you to review supplemental documents prior to determining if a warning letter should be issued?

___ A soft warning letter should be issued.

___ A strong warning letter should be issued.

___ A complaint letter should be issued and a fine levied.

___ DO NOT PROCESS, THIS COMPANY HAS BEEN REFERRED TO THE BUREAU OF ENVIRONMENTAL CONSERVATION INVESTIGATION (BECI) ON _____ (Date).

X Facility representative would like a copy of report (inspector submit two copies to C.O. and C.O. will send with reply)

___ Facility representative has been given a copy of report on _____ (Date) (inspector submit one copy to C.O.)

___ Other (please explain)

_____

_____

_____

_____

___ Sample(s) have been taken.

Comments on sample results: _____

_____

_____

RCRA LAND DISPOSAL RESTRICTION INSPECTION

Facility: Servo Corp.

U.S. EPA I.D. No.: NYD 002 418 911

Street: 111 New South Rd

City: Hicksville State: NY Zip Code: 11802

Telephone: 516 - 938 - 9700

Operator: _____

Street: _____

City: _____ State: _____ Zip Code: _____

Telephone: _____

Owner: _____

Street: _____

City: _____ State: _____ Zip Code: _____

Telephone: _____

Inspection Date: 8/25/89 Time: 10-am Weather Conditions: _____

	Name	Affiliation	Telephone
Inspectors:		A. Gara	
		and! Jan·ey.	
Facility Representatives:		J. Willenbrock env. eng.	

	RCRA Status	LDR Status F-Solvent	LDR Status California List
Generator	X	X	
Transporter			
Treater			
Storer			
Disposer			

Revised 11-03-87

INSPECTION SUMMARY

No violations found.

INSPECTION SUMMARY

No violations found.

APP

RCRA LAND DISPOSAL RESTRICTION INSPECTION

APPLICABILITY CHECKLIST

Does the facility handle the following wastes?

		Gen.	Treat	Store	Disp.	Trans.
A.	F-Solvent Wastes					
1.	F001	X		X		
2.	F002					
3.	F003					
4.	F004					
5.	F005	X		X		

Note: Use Appendix A to determine whether the facility is misclassifying any of its wastes.

B. California List Wastes

1. Liquid hazardous waste (including free liquids associated with any solid or sludge) that contains the following metals at concentrations greater than or equal to those specified

		Gen.	Treat	Store	Disp.	Trans.
Arsenic	500 mg/L					
Cadmium	100 mg/L					
Chromium VI	500 mg/L					
Lead	500 mg/L					
Mercury	20 mg/L					
Nickel	134 mg/L					
Selenium	100 mg/L					
Thallium	130 mg/L					

2. Liquid hazardous waste (including free liquids associated with any solid or sludge) that contains free cyanides at concentrations greater than or equal to 1,000 mg/L

Gen.	Treat	Store	Disp.	Trans.
____	____	____	____	____

3. Liquid hazardous waste that has a pH of less than or equal to 2.0

____	____	____	____	____

4. Liquid hazardous waste that contains PCBs at concentrations greater than or equal to

50 ppm	____	____	____	____	____
500 ppm	____	____	____	____	____

Does the facility mix liquid hazardous waste that contains PCBs with other types of wastes?

____ Yes ___X___ No ____ NA

If yes, state reasons for mixing:

_____

_____

5. Liquid hazardous waste that is primarily water and that contains HOCs greater than or equal to 1,000 mg/L (dilute HOC wastewater) and less than 10,000 mg/L

____	____	____	____	____

Note: The prohibitions of 268.32(a)(3) and (e) do not apply if the HOC waste is also subject to the solvent restrictions of 268 Subpart C or a specific HOC.

RCRA LAND DISPOSAL RESTRICTION INSPECTION

GENERATOR CHECKLIST

GENERATOR REQUIREMENTS

A. BDAT Treatability Group - Treatment Standards Identification

1. F-Solvent Wastes: Does the generator correctly determine the appropriate treatability group of the waste?

X Yes ___ No ___ NA

If yes, check the appropriate treatability group.

___ Wastewaters containing solvents (less than or equal to 1% TOC by weight)
___ Pharmaceutical wastewater containing spent methylene chloride
X All other spent solvent wastes

2. California List Wastes: Does the generator correctly determine the appropriate treatment standard of the waste?

a. For liquid hazardous waste that contains PCBs at concentrations greater than or equal to 50 but less 500 ppm, is the treatment in accordance with existing TSCA thermal treatment regulations for burning in high efficiency boilers (40 CFR 761.60) or incineration (40 CFR 761.70)?

___ Yes X No ___ NA

If yes, specify the method: _____

b. For liquid hazardous waste that contains PCBs at concentrations greater than or equal to 500 ppm, is the waste incinerated or disposed of by other approved alternate methods (40 CFR 761. 60 (e))?

___ Yes ___ No ___ NA

If yes, specify the method and state whether the facility has submitted a written request to the Regional Administrator or Assistant Administrator for an exemption from the incineration requirement

_____

_____

_____

D. Waste Analysis

1. F-Solvent Wastes

a. Does the generator determine whether the F-solvent waste exceeds treatment standards?

___ Yes ___X___ No ___ NA

How was this determination made?

- Knowledge of waste

___ Yes ___ No

If yes, note how this is adequate: _____

- TCLP

___ Yes ___ No

If yes, provide the date of last test, the frequency of testing, and note any problems. Attach test results. _____

b. Does the F-solvent waste exceed applicable treatability group treatment standards upon generation [268.7(a)(2)]?

___ Yes ___ No ___ NA

If yes, specify the waste stream: _____

c. Does the generator dilute the F-solvent waste as a substitute for adequate treatment [268.3]?

___ Yes ___ No ___ NA

d. How does the generator test F-solvent waste when a process or waste stream changes? _____

2. California List Wastes

a. Does the generator determine whether the waste is a liquid according to the Paint Filter Liquids Test (PFLT method 9095) as described by SW-846?

___ Yes ___ No ___ NA

C. Management

1. On-Site Management

Is waste that exceeds the treatment standards treated, stored, or disposed on-site?

____ Yes ____ No

If yes, the TSD Checklist must be completed.

2. Off-Site Management

a. Does the generator ship any waste that exceeds the treatment standards to an off-site treatment or storage facility?

X Yes ____ No

If yes, does the generator provide notification to the treatment or storage facility [268.7(a)(1)]?

X Yes ____ No

If yes, does notification contain the following?

EPA Hazardous waste number(s)	X Yes	____ No
Applicable treatment standards	____ Yes	X No
Manifest number	X Yes	____ No
Waste analysis data, if available	X Yes	____ No

Identify off-site treatment or storage facilities:

Magnel NJD002414544

Safety Kleen NJD002182897

b. Does the generator ship any waste that meets the treatment standards to an off-site disposal facility?

____ Yes ____ No

If yes, does the generator provide notification and certification to the disposal facility [268.7(a)(2)]?

____ Yes ____ No

If yes, does notification contain the following?

EPA Hazardous waste number(s) ___ Yes ___ No

Applicable treatment standards ___ Yes ___ No

Manifest number ___ Yes ___ No

Waste analysis data, if available ___ Yes ___ No

Certification that the waste meets treatment standards ___ Yes ___ No

Identify off-site land disposal facilities: _____

c. If the waste is subject to a nationwide variance (e.g., solvent-water mixtures less than 1%), extension (268.5), or petition (268.6), does the generator provide notification to the off-site disposal facility that the waste is exempt from land disposal restrictions [268.7(a)(5)]?

___ Yes ___ No ___ NA

D. Treatment Using RCRA 264/265 Exempt Units or Processes (i.e., boilers, furnaces, distillation units, wastewater treatment tanks, elementary neutralization, etc.)

Are treatment residuals generated from units or processes exempt under RCRA 264/265? X Yes ___ No

If yes, list types of waste treatment units and processes: Degreaser

APPENDIX A

SOLVENT IDENTIFICATION CHECKLIST

1. Does the handler generate any of the following F001 constituents (i.e., spent halogenated solvents used in degreasing) as a result of being used in the process either in pure form or commercial grade?

tetrachloroethylene	___Yes	___No
trichloroethylene	___Yes	___No
methylene chloride	___Yes	___No
1,1,1-trichloroethane	___Yes	___No
carbon tetrachloride	___Yes	___No
chlorinated fluorocarbons	___Yes	___No

2. Does the handler generate any of the following F002 constituents (i.e., spent halogenated solvents) as a result of being used in the process either in pure form or commercial grade?

tetrachloroethylene	___Yes	___No
trichloroethylene	___Yes	___No
methylene chloride	___Yes	___No
1,1,1-trichloroethane	___Yes	___No
chlorobenzene	___Yes	___No
trichlorofluoromethane	___Yes	___No
1,1,2-trichloro-1,2,2-trifluoroethane	___Yes	___No
ortho-dichlorobenzene	___Yes	___No

3. Does the handler generate any of the following F003 constituents (i.e., spent nonhalogenated solvents) as a result of being used in the process either in pure form or commercial grade?

xylene	___Yes	___No
acetone	___Yes	___No
ethyl acetate	___Yes	___No
ethyl benzene	___Yes	___No
ethyl ether	___Yes	___No
methyl isobutyl ketone	___Yes	___No
n-butyl alcohol	___Yes	___No
cyclohexanone	___Yes	___No
methanol	___Yes	___No

If the F003 waste stream has been mixed with a solid waste, does the resultant mixture exhibit the ignitability characteristic?

___Yes ___No

If yes, list the constituents.

_____

_____

(e) Are the constituents used for fabric scouring?
___Yes ___No

If yes, list the constituents.

_____

_____

(f) Are the constituents used as reaction and synthesis media?
___Yes ___No

If yes, list the constituents.

_____

_____

If the responses to questions 1 through 6 led the inspector to believe that the waste may be an F-solvent, answer question 7.

7. Are any of the above constituents spent solvents? (A solvent is considered "spent" when it has been used and is no longer usable without being regenerated, reclaimed, or otherwise reprocessed.) X Yes ___No

8. If the waste is a mixture of constituents as determined in questions 1 through 6, give the concentration before use of all the constituents in the solvent mixture/blend. For example:

5%	methylene chloride
2%	trichloroethylene
25%	1,1,1-trichloroethane
68%	mineral spirits
100%	

If the waste stream is a mixture containing a total of 10% or more (by volume) of one or more of the F001, F002, F004, or F005 listed constituents before use, it is a listed waste.

With respect to the F003 solvent wastes, if, before use, the waste stream is mixed and contains only F003 constituents, it is a listed waste. For example:

33%	acetone
16%	methanol
51%	ethyl ether
100%	

REFERENCE NO. 54

- COPY OF CLP DATA

(REDLINED AND MARKED)

- COMPUTER QA'd PRINTOUT

SITE NAME: Serro Corp.

CASE# AND/OR SAS#: 15795

BRICS#: NYMZ

TDD#: 02-9008-4C

SAMPLING TRIP REPORT

SITE NAME: Servo Corp.

TDD NO.: 02-9008-40

SAMPLING DATE: January 30, 1991

EPA CASE NO.: 15795

1. Site Location: Refer to Figure 1

2. Sampling Locations: Refer to Figure 2

3. Sample Descriptions: Refer to Table 1

4. Laboratories Receiving Samples:

Sample Type	Name and Address of Laboratory
Organic	Ceimic Corp. 100 Dean Knauss Dr. So. Terry Industrial Park Narragansett, RI 02882
Inorganic	Betz Laboratories, Inc. 4636 Somerton Rd. Trevose, PA 19047

5. Sample Dispatch Data:

A total of six aqueous and six soil/sediment samples for organic analysis were shipped by FIT 2 personnel via Federal Express under Airbill No. 9130260882 to Ceimic Corp., on January 30, 1991 at approximately 1520 hours.

A total of five aqueous and six soil/sediment samples for inorganic analysis were shipped by FIT 2 personnel via Federal Express under Airbill No. 9130260871 to Betz Laboratories Inc., on January 30, 1991 at approximately 1520 hours.

6. Sampling Personnel:

Name	Organization	Duties on Site
Timothy Beauregard	NUS Corporation, FIT 2	Site Manager, Written and Photographic Documentation
John Rieckhoff	NUS Corporation, FIT 2	Site Safety Officer
Jennifer Leahy	NUS Corporation, FIT 2	Sample Management Officer
Robert Cantagallo	NUS Corporation, FIT 2	Sampler
Josephine Brown	NUS Corporation, FIT 2	Sampler
John Willenbrock	Servo Corporation	Manager Plant Engineering
Dorothy Seims	Servo Corporation	Safety Coordinator

7. Weather Conditions:

Temperature approximately 45° F, overcast, foggy, and humid.

8. Additional Comments:

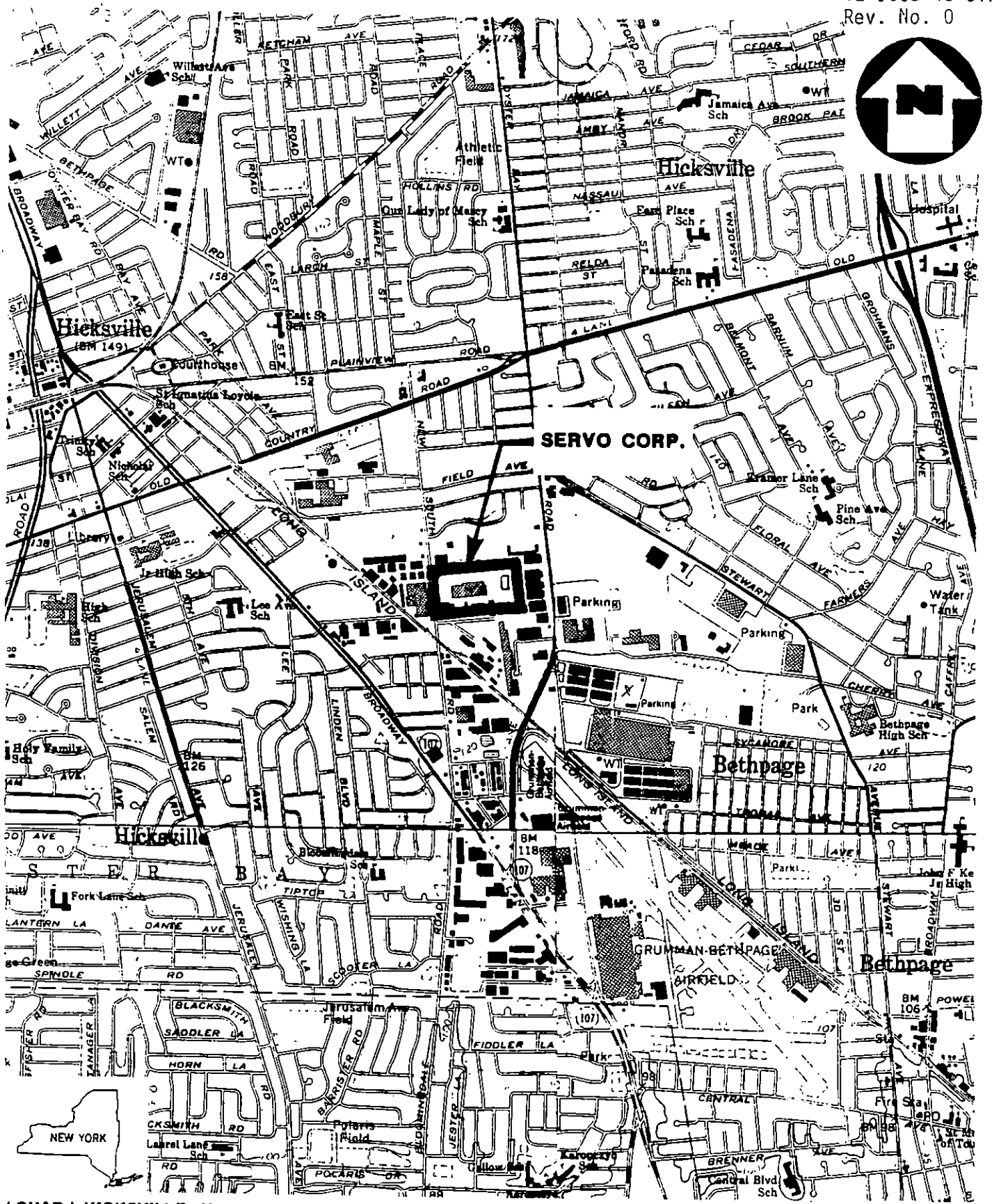
A total of six soil samples (three surface, two subsurface, and one sediment sample) and two surface water samples were collected.

All samples except for the trip blank will be analyzed for Target Compound List (TCL) organic and inorganic compounds, excluding cyanide. The trip blank will be analyzed for volatile organic compounds only.

During the site inspection, John Willenbrock, Manager of Plant Engineering, and Dorothy Seims, Safety Coordinator, both of Servo Corporation, accompanied NUS personnel around the site. Split samples were given to Servo Corporation for all samples excluding rinsates. There were no readings above background on the Organic Vapor Analyzer (OVA), HNu photoionization detector, and Radiation Mini-Alert at any of the sample locations.

9. Report Prepared By: Timothy Beauregard Date: February 4, 1991

10. Approved By: R M Kamar Date: 2/7/91



(QUAD) HICKSVILLE, N.Y.

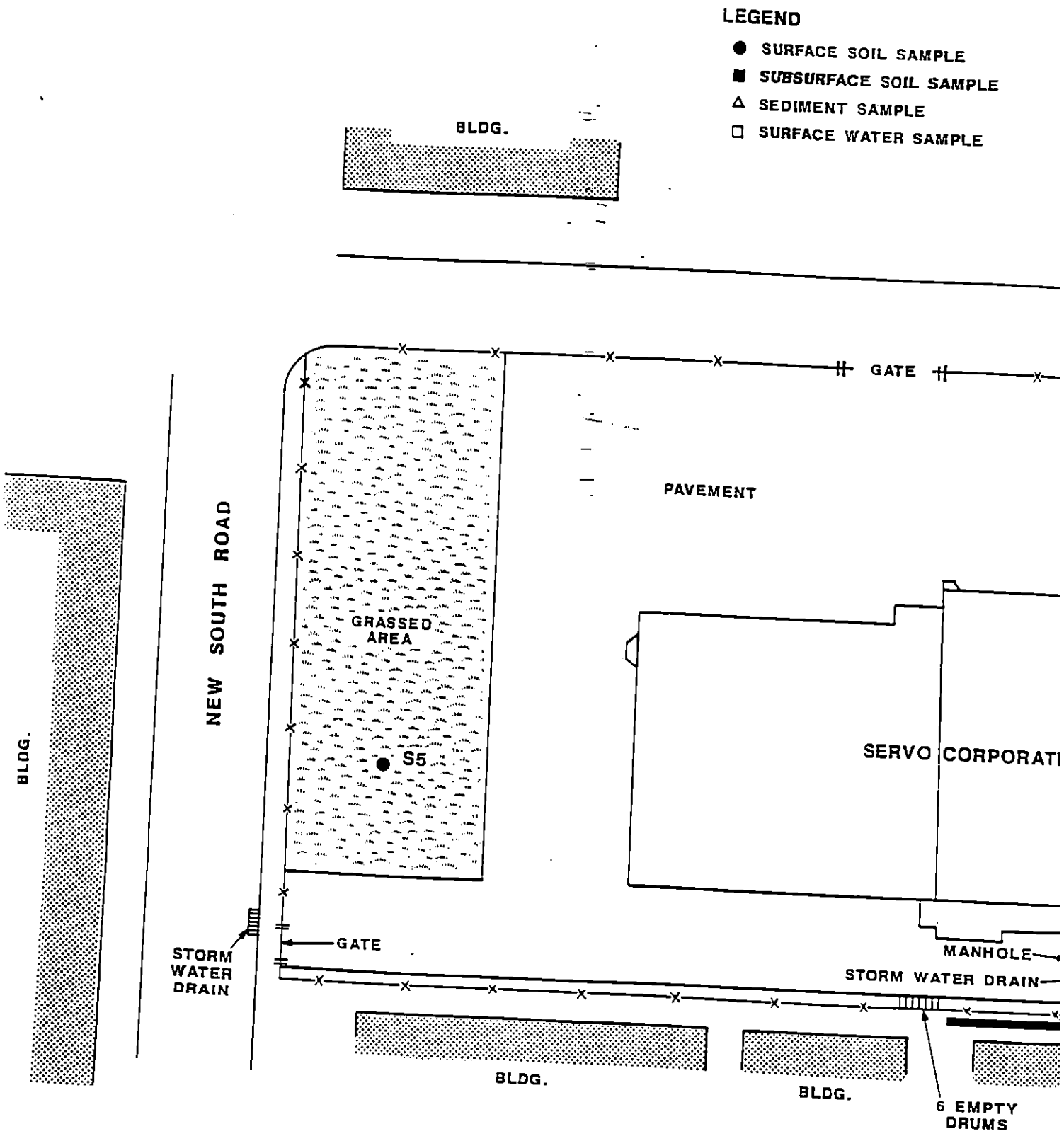
FIGURE 1

SITE LOCATION MAP

SERVO CORP., HICKSVILLE, N.Y.

SCALE : 1"=2000'

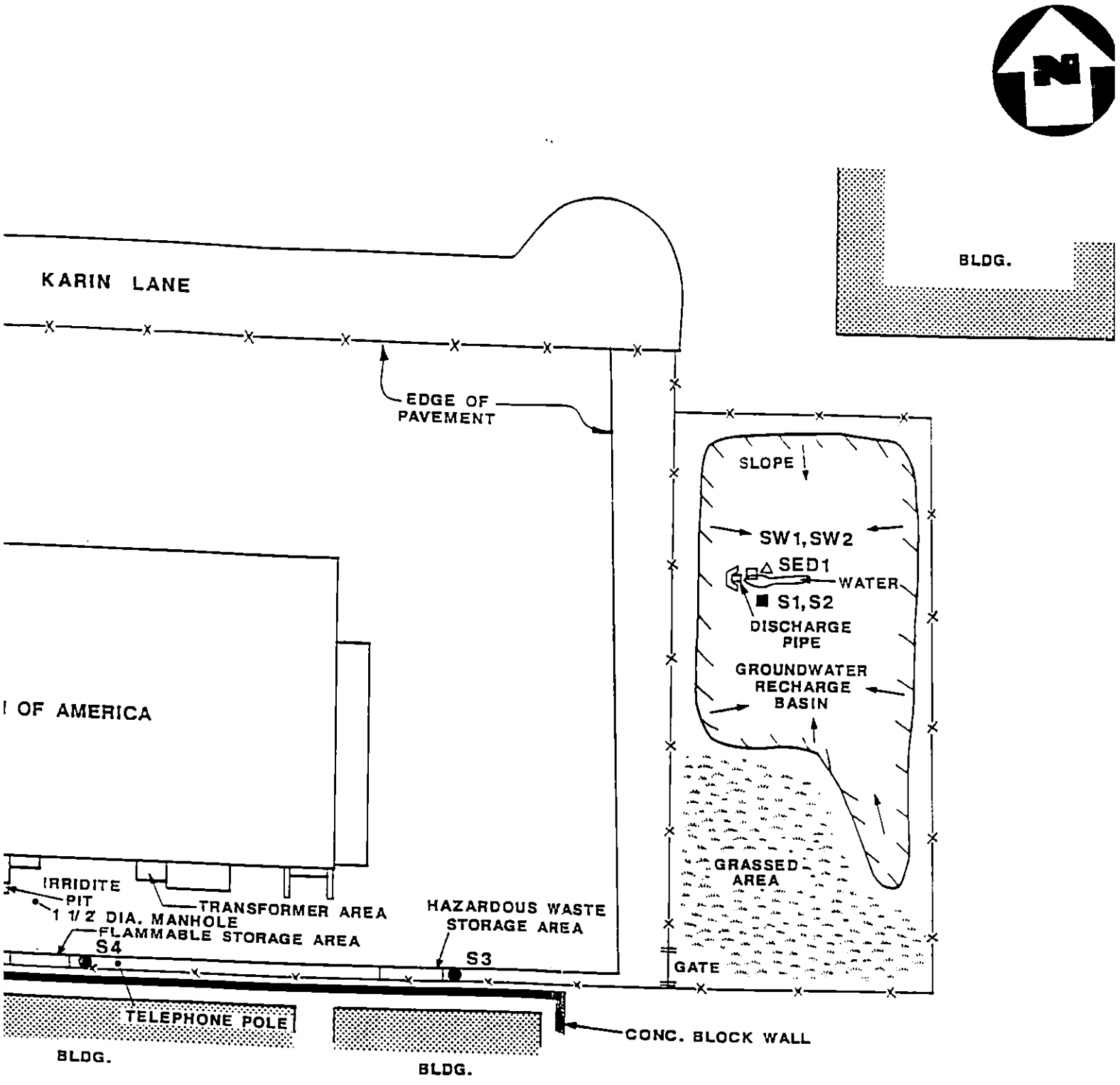
NUS CORPORATION



SAMPLE LOCATIO

SERVO CORPORATION, HIC

NOT TO SCALE



MAP

SVILLE. N.Y.

FIGURE 2

NUS CORPORATION

TABLE 1
SAMPLE DESCRIPTIONS
SERVO CORPORATION
HICKSVILLE, NEW YORK
CASE NO. 15795

NUS Sample ID Number	CLP Organic Sample Number	CLP Inorganic Sample Number	Collection Time	Sample Type	Sample Location
NYMZ-S1	BFW26	MBEB83	1350	Soil	A subsurface soil sample collected from the drainage basin at a point south of the stream of water and 10 feet east of the culvert. Sample was composited from soil collected at 0 to 2 feet.
NYMZ-S2**	BFW27	MBEB84	1350	Soil	Duplicate soil sample collected at the same depth and location as NYMZ-S1.
NYMZ-S3*	BFW28	MBEB85	1125	Soil	A surface soil sample (0-6 inches) located directly under the discharge pipe from the hazardous waste storage area and 2 feet from the south side fence.
NYMZ-S4	BFW29	MBEB86	1105	Soil	A surface soil sample (0-6 inches) located directly under the discharge pipe from the flammable storage area and 3 feet west of a telephone pole.
NYMZ-S5	BFW30	MBEB87	1035	Soil	A surface soil sample (0-6 inches) located 62 feet from front fence at a bearing of 160° from corner of fence at New South Road and Karin Lane and a bearing of 30° from corner of fence at Servo gate and New South Road.
NYMZ-SED1	BFW31	MBEB88	1330	Sediment	A sediment sample collected at the mouth of the discharge pipe to the recharge basin.

Note:

** Duplicate - Indicates that a sample was designated as an environmental duplicate sample.

* MS/MSD - Indicates that additional sample volume was collected and shipped to the laboratory for matrix spike (MS) and matrix spike duplicate (MSD) analysis.

TABLE I (CONT'D)
SAMPLE DESCRIPTIONS
SERVO CORPORATION
HICKSVILLE, NEW YORK
CASE NO. 15795

NUS Sample ID Number	CLP Organic Sample Number	CLP Inorganic Sample Number	Collection Time	Sample Type	Sample Location
NYMZ-SW1*	BFW32	MBEB89	1250	Surface Water	A surface water sample collected at the mouth of the discharge pipe to the recharge basin.
YMZ-SW2**	BFW33	MBEB90	1253	Surface Water	Duplicate surface water sample collected at the same location as NYMZ-SW1.
YMZ-RIN1	BFW34	MBEM91	950	Aqueous Rinsate Blank	Auger rinsate collected in the field.
YMZ-RIN2	BFW35	MBEM92	1020	Aqueous Rinsate Blank	Trowel rinsate collected in the field.
YMZ-RIN3	BFW36	MBEM93	1050	Aqueous Rinsate Blank	Bowl rinsate collected in the field.
YMZ-TBLK	BFW38	---	---	Trip Blank	Trip blank; demonstrated analyte-free water obtained from NUS Region 2 FIT, Edison, NJ.

ote:

MS/MSD - Indicates that additional sample volume was collected and shipped to the laboratory for matrix spike (MS) and matrix spike duplicate (MSD) analysis.

* Duplicate - Indicates that a sample was designated as an environmental duplicate sample.

ATTACHMENT 1
SOP NO. HW-6

TOTAL REVIEW PAGE __OF__

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organics Analysis

Case No. 15795 SDG No. BFW26 LABORATORY Ceimic SITE Servicorp

DATA ASSESSMENT:

The current functional guidelines (1988) for evaluating organic data have been applied.

All data are valid and acceptable except those analytes which have been qualified with a "J" (estimated), "U" (non-detects), "R" (unusable),or "JN" (presumptive evidence for the presence of the material at an estimated value). All action is detailed on the attached sheets.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant QC problems the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

Reviewer's Signature: Josephine Brown Date: 3/6/1991

Verified By: Susan Lenczyk Date: 3/22/1991

DATA ASSESSMENT:

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.

DATA ASSESSMENT:

2. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip field, rinse and water blanks are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field blanks measure cross- contamination of samples during field operations. If the concentration of the analyte is less than 5 times the blank contaminant level (10 times for the common contaminants), the analytes are qualified as non- detects, "U". The following analytes in the samples shown were qualified with "U" for these reasons:

A) Method blank contamination

TIC (RT = 11.37) was rejected in BFW 33

Various TIC compounds were rejected in BFW 26-31

B) Field or rinse blank contamination ("water blanks" or "distilled water blanks" are validated like any other sample)

Methylene Chloride was flagged 'U' undetected in BFW 26

bis(2-ethylhexyl) phthalate was flagged 'U' undetected in BFW 26,27

C) Trip blank contamination

Chloromethane was flagged 'U' undetected in BFW 30,31,32,33

DATA ASSESSMENT:

3. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds, and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is bromofluorobenzene (BFB) and for semi-volatiles is decafluorotriphenyl- phosphine (DFTPP).

If the mass calibration is in error, all associated data will be classified as unusable, "R".

DATA ASSESSMENT:

4. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) RESPONSE FACTOR:

The response factor measures the instrument's response to specific chemical compounds. The response factor for the Target Compound List (TCL) must be $\geq$ 0.05 in both the initial and continuing calibrations. A value < 0.05 indicates a serious detection and quantitation problem (poor sensitivity). Analytes detected in the sample will be qualified as estimated, "J". All non-detects for that compound will be rejected ("R").

2-Butanone was flagged 'R' rejected in BJW35, 36 due to RRF < 0.05 in CCC

DATA ASSESSMENT:

5. CALIBRATION:

A) PERCENT RELATIVE STANDARD DEVIATION (%RSD) AND PERCENT DIFFERENCE (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be <30% and %D must be <25%. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ" (if %D or RSD >50%). If there is a gross deviation of %RSD and %D, the non-detects may be rejected ("R").

For the PCB/PESTICIDE fraction, %RSD for aldrin, endrin, DDT, and dibutylchlorendate must not exceed 10%. Percent D must be within 15% on the quantitation column and 20% on the confirmation column.

Indeno (1,2,3-cd) Pyrene was flagged estimated 'J' in BJW 26, 29 due to %D>25

Benzo (g,h,i) Perylene was flagged estimated 'J' in BJW29 due to %D>25.

2,4 Dinitrophenol was flagged estimated 'J' in BJW 30 due to %D>50

4-Nitroaniline was flagged estimated 'J' in BJW 32, 33, 34, 35 due to %D>50.

KB DB

DATA ASSESSMENT:

6. SURROGATES:

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.

DATA ASSESSMENT:

7. INTERNAL STANDARDS PERFORMANCE:

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must not vary by more than a factor of 2 (-50% to +100%) from the associated continuing calibration standard. The retention time of the internal standard must not vary more than ±30 seconds from the associated continuing calibration standard. If the area count is outside the (-50% to +100%) range of the associated standard, all of the positive results for compounds quantitated using that IS are qualified as estimated, "J", and all non-detects as "UJ", or "R" if there is a severe loss of sensitivity.

If an internal standard retention time varies by more than 30 seconds, the reviewer will use professional judgment to determine either partial or total rejection of the data for that sample fraction.

DATA ASSESSMENT:

8. COMPOUND IDENTIFICATION:

A) VOLATILE AND SEMI-VOLATILE FRACTIONS:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound and have an ion spectra which has a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

B) PESTICIDE FRACTION:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10 ng/ml in the final sample extract.

DATA ASSESSMENT:

9. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for some additional qualification of the data.

ATTACHMENT 1
SOP NO. HW-6

PAGE__OF__

DATA ASSESSMENT:

10. OTHER QC DATA OUT OF SPECIFICATION:
Many TIC compounds were qualified B; however, these TIC compounds were not found in the corresponding method blank. Therefore, the 'B' flags was crossed out.
B Calibration factor for DDT exceeded 20%; due to professional judgement (value was 20.2%), the values for 4,4-DDT were not qualified in the samples.

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT (continued on next page if necessary):

12. CONTRACT PROBLEMS____NON-COMPLIANCE:

13. This package contains re-extraction, re-analysis or dilution. Upon reviewing the QA results, the following form I(s) are identified to be used.

DATA ASSESSMENT:

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT (continued):

Reviewer's Initials: JB

Lab Name: Vista

Number of Samples: 12

Analytes Rejected Due to Exceeding Review Criteria:

	Surrogates	Holding Time	Calibration	Contamination	ID	Other	Total # Samples	Total # Rejected/ Total # in all Samples
Acids (15)							12	0 /180
B/N (50)				2/2			12	2 98/600
VOA (35)			2/2	field 5/5			12	7 /420
PEST (20)							12	0 /300
PCB (7)							12	0 /84
TCDD (1)							0	

Analytes Estimated Due to Exceeding Review Criteria for:

Acids (15)			1/1				12	1 /180
B/N (50)			7/6				12	7 /600
VOA (35)							12	0 /420
PEST (20)							12	0 /300
PCB (7)							12	0 /84
TCDD (1)							0	

Region

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

SE NO. 15795 LABORATORY Centec

3 NO. B7W26 DATA USER EIT 2

W REVIEW COMPLETION DATE 3/6/90

. OF SAMPLES 6 WATER 6 SOIL 0 OTHER

VIEWER [ ] ESD [ ] ESAT [X] OTHER, CONTRACT/CONTRACTOR EIT 2

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES	O	O	O	
2. GC-MS TUNE/ GC PERFORMANCE	O	O	O	
3. INITIAL CALIBRATIONS	O	O	O	
4. CONTINUING CALIBRATIONS	X	X	O	
5. FIELD BLANKS ("F" = not applicable)	X	X or BB	O	
6. LABORATORY BLANKS	O	O	O	
7. SURROGATES	O	O	O	
8. MATRIX SPIKE/DUPLICATES	O	O	O	
9. REGIONAL QC ("F" = not applicable)	F	F	F	
10. INTERNAL STANDARDS	O	O	O	
11. COMPOUND IDENTIFICATION	O	O	O	
12. COMPOUND QUANTITATION	O	O	O	
13. SYSTEM PERFORMANCE	X	X	O	
14. OVERALL ASSESSMENT	X	X	O	

O = No problems or minor problems that do not affect data usability.
X = No more than *about* 5% of the data points are qualified as either estimated or unusable.
M = More than *about* 5% of the data points are qualified as estimated.
Z = More than *about* 5% of the data points are qualified as unusable.

ACTION ITEMS:

LS OF CONCERN:

ATTACHMENT 1
SOP NO. HW-6

DATA ASSESSMENT:

8. COMPOUND IDENTIFICATION:

A) VOLATILE AND SEMI-VOLATILE FRACTIONS:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound and have an ion spectra which has a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

B) PESTICIDE FRACTION:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10 ng/ml in the final sample extract.

The confirmation of 4,4'DDT in soil samples BFW26,27 + 28 is questionable because of interference The amount calculated on the quantitation column is at least 6x's greater when calculation on the confirmation column. This analyte was therefore flagged estimated, presumptive evidence "JN" in BFW26,27+ 28

CASE NARRATIVE

The enclosed data package is in response to EPA Case #15795 (SDG# BFW26). Under this SDG, there are 16 VOA, 15 SVOA and 15 Pest analyses for 6 water and 6 soil samples which originated from USEPA Region II and received at CEIMIC on January 31, 1991 via Federal Expres

This data package included the analysis of samples for SDG BFW26:

EPA ID	ANALYSIS
BFW26	VOA, SV, Pest
BFW27	VOA, SV, Pest
BFW28	VOA, SV, Pest
BFW28MS	VOA, SV, Pest
BFW28MSD	VOA, SV, Pest
BFW29	VOA, SV, Pest
BFW30	VOA, SV, Pest
BFW31	VOA, SV, Pest
BFW32	VOA, SV, Pest
BFW32MS	VOA, SV, Pest
BFW32MSD	VOA, SV, Pest
BFW33	VOA, SV, Pest
BFW34	VOA, SV, Pest
BFW35	VOA, SV, Pest
BFW36	VOA, SV, Pest
BFW38 --- last sample	VOA

The submitted data covers the analysis of the volatile (VOA), Semivolatile (SV) and Pesticides/PCB (Pest) fractions and their associated blanks and QA/QC. CEIMIC would like to highlight the following points pertaining to the analyses performed for this case:

(1) INSTRUMENTATION AND COLUMN IDENTIFICATION

The following instruments are used for the analyses:

GC/MS ANALYSIS

a. VOA

MS5 : HP 5970B GC/MS using 6' x 2 mm ID SP-1000 glass packed column

MS2 : HP 5970B GC/MS using 30 m x 0.53 mm ID DB-624 megabore column

MS3 : HP 5970B GC/MS using 30 m x 0.53 mm ID DB-624 megabore column

b. SV

MS4 : HP 5970B GC/MS using 30 m x 0.25 mm ID DB-5 fused silica capillary column

MS1 : HP 5970B GC/MS using 30 m x 0.25 mm ID DB-5 fused silica capillary column

GC ANALYSIS

GC6 : HP 5890 GC with ECD

Column :

DB-1701	30 m x 0.53 mm ID DB-1701 megabore column
DB-5	30 m x 0.53 mm ID DB-5 megabore column

(2) SAMPLE INFORMATION

Additional qualifier: "x"

An "x" qualifier is flagged by Formaster software whenever the data is manually edited.

A. VOA

Due to Formaster roundoff, the %D for vinyl chloride in VSTD050 analyzed on MS5 on 2/10/91 @1038 (E2886) appeared to be > 25 %. Without the roundoff error, the %D is < 25% as documented by the Hewlett Packard Aquarius output in Appendix I.

Megabore columns are used in MS2 and MS3. Trans-1,2-dichloroethene is used to quantitate the cis isomer if the latter is detected.

The VOA reconstructed ion chromatograms are labelled as:

IS1	Bromochloromethane	IS
IS2	Difluorobenzene	IS
IS3	Chlorobenzene-d5	IS
SS1	Dichloroethane-d4	SS
SS2	Toluene-d8	SS
SS3	Bromofluorobenzene	SS

B. SVOA Fraction

The entire base-neutral and acid fractions were combined and concentrated to a final extract volume of 1 mL prior to GC/MS analysis. The sample concentrations in FORM 1B are therefore correct and do not have to be divided by 2.

The matrix spikes were analyzed at 1:10 dilution and the matrix spike recovery could not be accurately determined.

- The SV reconstructed ion chromatograms are labeled as :

S-1	2-Fluorophenol	SS
S-2	Phenol-d5	SS
IS-1	1,4-Dichlorobenzene-d4	IS
S-3	Nitrobenzene-d5	SS
IS-2	Naphthalene-d8	IS
S-4	2-Fluorobiphenyl	SS
IS-3	Acenaphthene-d10	IS
S-5	Tribromophenol	SS
IS-4	Phenanthrene-d10	IS
S-6	Terphenyl-d14	SS
IS-5	Chrysene-d12	IS
IS-6	Perylene-d12	IS

IS = Internal standard
SS = Surrogate standard

C. PEST Fraction

The recovery of DBC was determined using the calibration factor from EVALA.

The calibration factor of DDT exceeded the 20% limit for the INDA analyzed on GC6, DB-1701 column on 2/18/91 @ 1153.

DEVIATIONS FROM THE SOW

None other than those mentioned above.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Kin S. Chiu
Project Manager
February 22, 1991

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW26

e: CEIMIC CORP Contract: 68D90056

e: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

(soil/water) SOIL Lab Sample ID: 910055-01

wt/vol: 5.0 (g/mL) G Lab File ID: B8996

(low/med) LOW Date Received: 01/31/91

ure: not dec. 20 Date Analyzed: 02/09/91

(pack/cap) CAP Dilution Factor: 1.0

CAS NO. COMPOUND CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	1	J
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	6	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	6	U
75-27-4	Bromodichloromethane	12	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	6	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	3	J
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	1	J
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Total Xylenes	6	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW27

e: CEIMIC CORP Contract: 68D90056

e: CEIMIC Case No.: 15795 SAS No.: SDG No.: BFW26

(soil/water) SOIL Lab Sample ID: 910055-02

ɹt/vol: 5.0 (g/mL) G Lab File ID: B8997

(low/med) LOW Date Received: 01/31/91

ɹre: not dec. 28 Date Analyzed: 02/09/91

(pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	14	U
74-83-9	Bromomethane	14	U
75-01-4	Vinyl Chloride	14	U
75-00-3	Chloroethane	14	U
75-09-2	Methylene Chloride	7	U
67-64-1	Acetone	14	U
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-34-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene (total)	7	U
67-66-3	Chloroform	7	U
107-06-2	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	14	U
71-55-6	1,1,1-Trichloroethane	7	U
56-23-5	Carbon Tetrachloride	7	U
108-05-4	Vinyl Acetate	14	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
10061-02-6	Trans-1,3-Dichloropropene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-Pentanone	14	U
591-78-6	2-Hexanone	14	U
127-18-4	Tetrachloroethene	2	J
79-34-5	1,1,2,2-Tetrachloroethane	7	U
108-88-3	Toluene	7	U
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
1330-20-7	Total Xylenes	7	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BFW27

me: CEIMIC CORP Contract: 68D90056

de: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

: (soil/water) SOIL Lab Sample ID: 910055-02

wt/vol: 5.0 (g/mL) G Lab File ID: B8997

(low/med) LOW Date Received: 01/31/91

ture: not dec. 28 Date Analyzed: 02/09/91

(pack/cap) CAP Dilution Factor: 1.0

TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
000000	C10H16 isomer	20.12	9.7	BJ N

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW28

e: CEIMIC CORP Contract: 68D90056

e: CEIMIC Case No.: 15795 SAS No.: SDG No.: BFW26

(soil/water) SOIL Lab Sample ID: 910055-03

vt/vol: 5.0 (g/mL) G Lab File ID: B8998

(low/med) LOW Date Received: 01/31/91

ure: not dec. 18 Date Analyzed: 02/09/91

(pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	1	J
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	1	J
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Total Xylenes	6	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW29

: CEIMIC CORP Contract: 68D90056

: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

(soil/water) SOIL Lab Sample ID: 910055-04

:/vol: 5.0 (g/mL) G Lab File ID: B8984

(low/med) LOW Date Received: 01/31/91

'e: not dec. 15 Date Analyzed: 02/08/91

(pack/cap) CAP Dilution Factor: 1.0

iS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
-87-3	Chloromethane	12	U
-83-9	Bromomethane	12	U
-01-4	Vinyl Chloride	12	U
-00-3	Chloroethane	12	U
-09-2	Methylene Chloride	6	U
-64-1	Acetone	12	U
-15-0	Carbon Disulfide	6	U
-35-4	1,1-Dichloroethene	6	U
-34-3	1,1-Dichloroethane	6	U
0-59-0	1,2-Dichloroethene (total)	6	U
-66-3	Chloroform	6	U
7-06-2	1,2-Dichloroethane	6	U
-93-3	2-Butanone	12	U
-55-6	1,1,1-Trichloroethane	6	U
-23-5	Carbon Tetrachloride	6	U
3-05-4	Vinyl Acetate	12	U
-27-4	Bromodichloromethane	6	U
-87-5	1,2-Dichloropropane	6	U
)61-01-5	cis-1,3-Dichloropropene	6	U
-01-6	Trichloroethene	6	U
4-48-1	Dibromochloromethane	6	U
-00-5	1,1,2-Trichloroethane	6	U
-43-2	Benzene	6	U
)61-02-6	Trans-1,3-Dichloropropene	6	U
-25-2	Bromoform	6	U
3-10-1	4-Methyl-2-Pentanone	12	U
.-78-6	2-Hexanone	12	U
'-18-4	Tetrachloroethene	6	U
-34-5	1,1,2,2-Tetrachloroethane	6	U
)-88-3	Toluene	6	U
)-90-7	Chlorobenzene	6	U
)-41-4	Ethylbenzene	6	U
)-42-5	Styrene	6	U
10-20-7	Total Xylenes	6	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW30

le: CEIMIC CORP Contract: 68D90056

le: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

(soil/water) SOIL Lab Sample ID: 910055-05

wt/vol: 5.0 (g/mL) G Lab File ID: B8985

(low/med) LOW Date Received: 01/31/91

ure: not dec. 19 Date Analyzed: 02/08/91

(pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Total Xylenes	6	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW31

ne: CEIMIC CORP Contract: 68D90056

de: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

: (soil/water) SOIL Lab Sample ID: 910055-06

wt/vol: 5.0 (g/mL) G Lab File ID: B8986

(low/med) LOW Date Received: 01/31/91

ture: not dec. 30 Date Analyzed: 02/08/91

: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	14	U
74-83-9	Bromomethane	14	U
75-01-4	Vinyl Chloride	14	U
75-00-3	Chloroethane	7	U
75-09-2	Methylene Chloride	14	U
67-64-1	Acetone	7	U
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-34-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene (total)	7	U
67-66-3	Chloroform	7	U
107-06-2	1,2-Dichloroethane	14	U
78-93-3	2-Butanone	7	U
71-55-6	1,1,1-Trichloroethane	7	U
56-23-5	Carbon Tetrachloride	14	U
108-05-4	Vinyl Acetate	7	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
10061-02-6	Trans-1,3-Dichloropropene	7	U
75-25-2	Bromoform	14	U
108-10-1	4-Methyl-2-Pentanone	14	U
591-78-6	2-Hexanone	4	J
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	7	U
108-88-3	Toluene	7	U
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
1330-20-7	Total Xylenes		

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BFW31

Name: CEIMIC CORP Contract: 68D90056

Code: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

Matrix: (soil/water) SOIL Lab Sample ID: 910055-06

Sample wt/vol: 5.0 (g/mL) G Lab File ID: B8986

Level: (low/med) LOW Date Received: 01/31/91

% Moisture: not dec. 30 Date Analyzed: 02/08/91

Column: (pack/cap) CAP Dilution Factor: 1.0

TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
100527	Benzaldehyde	20.97	8.6	J N

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW32

e: CEIMIC CORP Contract: 68D90056

e: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

(soil/water) WATER Lab Sample ID: 910055-07

t/vol: 5.0 (g/mL) ML Lab File ID: E2877

(low/med) LOW Date Received: 01/31/91

re: not dec. _____ Date Analyzed: 02/09/91

(pack/cap) PACK Dilution Factor: 1.0

AS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
4-87-3	Chloromethane	10 ~~6~~	JU
4-83-9	Bromomethane	10	U
5-01-4	Vinyl Chloride	10	U
5-00-3	Chloroethane	10	U
5-09-2	Methylene Chloride	5	U
7-64-1	Acetone	10	U
5-15-0	Carbon Disulfide	5	U
5-35-4	1,1-Dichloroethene	5	U
5-34-3	1,1-Dichloroethane	5	U
0-59-0	1,2-Dichloroethene (total)	5	U
7-66-3	Chloroform	5	U
07-06-2	1,2-Dichloroethane	5	U
3-93-3	2-Butanone	10	U
-55-6	1,1,1-Trichloroethane	5	U
5-23-5	Carbon Tetrachloride	5	U
08-05-4	Vinyl Acetate	10	U
5-27-4	Bromodichloromethane	5	U
1-87-5	1,2-Dichloropropane	5	U
0061-01-5	cis-1,3-Dichloropropene	5	U
1-01-6	Trichloroethene	5	U
24-48-1	Dibromochloromethane	5	U
-00-5	1,1,2-Trichloroethane	5	U
-43-2	Benzene	5	U
0061-02-6	Trans-1,3-Dichloropropene	5	U
-25-2	Bromoform	5	U
8-10-1	4-Methyl-2-Pentanone	10	U
1-78-6	2-Hexanone	10	U
7-18-4	Tetrachloroethene	1	J
-34-5	1,1,2,2-Tetrachloroethane	5	U
8-88-3	Toluene	5	U
8-90-7	Chlorobenzene	5	U
0-41-4	Ethylbenzene	5	U
0-42-5	Styrene	5	U
330-20-7	Total Xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BFW32

Contract: 68D90056

Lab: CEIMIC CORP

Case No.: 15795 SAS No.: _____ SDG No.: BFW26

Code: CEIMIC

Lab Sample ID: 910055-07

Matrix: (soil/water) WATER

Lab File ID: E2877

Sample wt/vol: 5.0 (g/mL) ML

Date Received: 01/31/91

Level: (low/med) LOW

Date Analyzed: 02/09/91

% Moisture: not dec. ____

Dilution Factor: 1.0

(pack/cap) PACK

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

TICs found: 1

NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
000000	Unknown	11.40	6.0	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW33

CEIMIC CORP Contract: 68D90056

CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

oil/water) WATER Lab Sample ID: 910055-08

vol: 5.0 (g/mL) ML Lab File ID: E2880

(low/med) LOW Date Received: 01/31/91

: not dec. ____ Date Analyzed: 02/09/91

pack/cap) PACK Dilution Factor: 1.0

NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
37-3	Chloromethane	10	U
83-9	Bromomethane	10	U
01-4	Vinyl Chloride	10	U
00-3	Chloroethane	10	U
09-2	Methylene Chloride	5	U
64-1	Acetone	10	U
15-0	Carbon Disulfide	5	U
35-4	1,1-Dichloroethene	5	U
34-3	1,1-Dichloroethane	5	U
-59-0	1,2-Dichloroethene (total)	5	U
66-3	Chloroform	5	U
-06-2	1,2-Dichloroethane	5	U
93-3	2-Butanone	10	U
55-6	1,1,1-Trichloroethane	5	U
23-5	Carbon Tetrachloride	5	U
-05-4	Vinyl Acetate	10	U
27-4	Bromodichloromethane	5	U
87-5	1,2-Dichloropropane	5	U
61-01-5	cis-1,3-Dichloropropene	5	U
01-6	Trichloroethene	5	U
-48-1	Dibromochloromethane	5	U
00-5	1,1,2-Trichloroethane	5	U
43-2	Benzene	5	U
61-02-6	Trans-1,3-Dichloropropene	5	U
25-2	Bromoform	5	U
-10-1	4-Methyl-2-Pentanone	10	U
-78-6	2-Hexanone	10	U
-18-4	Tetrachloroethene	2	J
34-5	1,1,2,2-Tetrachloroethane	5	U
-88-3	Toluene	5	U
-90-7	Chlorobenzene	5	U
-41-4	Ethylbenzene	5	U
-42-5	Styrene	5	U
0-20-7	Total Xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BFW33

Name: CEIMIC CORP Contract: 68D90056

Code: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

ix: (soil/water) WATER Lab Sample ID: 910055-08

e wt/vol: 5.0 (g/mL) ML Lab File ID: E2880

: (low/med) LOW Date Received: 01/31/91

sture: not dec. _____ Date Analyzed: 02/09/91

: (pack/cap) PACK Dilution Factor: 1.0

TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
6131	1,1,2-Trichloro-1,2,2-triflu	11.37	6.0	~~BJ~~ R

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW34

e: CEIMIC CORP Contract: 68D90056

e: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

(soil/water) WATER Lab Sample ID: 910055-09

ut/vol: 5.0 (g/mL) ML Lab File ID: E2881

(low/med) LOW Date Received: 01/31/91

ure: not dec. _____ Date Analyzed: 02/09/91

(pack/cap) PACK Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	4	J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BFW34

b Name: CEIMIC CORP Contract: 68D90056

, Code: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

rix: (soil/water) WATER Lab Sample ID: 910055-09

ple wt/vol: 5.0 (g/mL) ML Lab File ID: E2881

el: (low/med) LOW Date Received: 01/31/91

oisture: not dec. _____ Date Analyzed: 02/09/91

lmn (pack/cap) PACK Dilution Factor: 1.0

er TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

AS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
. 76131	1,1,2-Trichloro-1,2,2-triflu	11.37	7.0	BJ

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW35

ame: CEIMIC CORP Contract: 68D90056

ode: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

: (soil/water) WATER Lab Sample ID: 910055-10

wt/vol: 5.0 (g/mL) ML Lab File ID: C6909

(low/med) LOW Date Received: 01/31/91

ture: not dec. _____ Date Analyzed: 02/09/91

: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	2	J
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	12	B
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	5	U
71-55-6	1,1,1-Trichloroethane	10	U R
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	5	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	5	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U
		5	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BFW35

Name: CEIMIC CORP Contract: 68D90056

Code: CEIMIC Case No.: 15735 SAS No.: _____ SDG No.: BFW26

ix: (soil/water) WATER Lab Sample ID: 910055-10

e wt/vol: 5.0 (g/mL) ML Lab File ID: C6909

: (low/med) LOW Date Received: 01/31/91

sture: not dec. _____ Date Analyzed: 02/09/91

n (pack/cap) CAP Dilution Factor: 1.0

TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
76131	1,1,2-Trichloro-1,2,2-triflu	4.02	8.0	BJ

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Blank 20-31

EPA SAMPLE NO.

BFW36

ame: CEIMIC CORP Contract: 68D90056

ode: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

x: (soil/water) WATER Lab Sample ID: 910055-11

e wt/vol: 5.0 (g/mL) ML Lab File ID: C6910

: (low/med) LOW Date Received: 01/31/91

sture: not dec. _____ Date Analyzed: 02/09/91

n: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	9	J
74-83-9	Bromomethane	1	BJ
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	1	J
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	~~UR~~
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW38

Name: CEIMIC CORP Contract: 68D90056

Code: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

Matrix: (soil/water) WATER Lab Sample ID: 910055-12

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: E2888

Level: (low/med) LOW Date Received: 01/31/91

% Moisture: not dec. ____ Date Analyzed: 02/10/91

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	6	J
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW26

ame: CEIMIC CORP Contract: 68D90056

ode: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

x: (soil/water) SOIL Lab Sample ID: 910055-01

e wt/vol: 30.2 (g/mL) G Lab File ID: D4735

(low/med) LOW Date Received: 01/31/91

isture: not dec. 28 dec. ____ Date Extracted: 02/06/91

ction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/11/91

Cleanup: (Y/N) N pH: 8.3 Dilution Factor: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1800	U
111-44-4	bis(2-Chloroethyl)Ether	1800	U
95-57-8	2-Chlorophenol	1800	U
541-73-1	1,3-Dichlorobenzene	1800	U
106-46-7	1,4-Dichlorobenzene	1800	U
100-51-6	Benzyl Alcohol	1800	U
95-50-1	1,2-Dichlorobenzene	1800	U
95-48-7	2-Methylphenol	1800	U
108-60-1	bis(2-Chloroisopropyl)Ether	1800	U
106-44-5	4-Methylphenol	1800	U
621-64-7	N-Nitroso-Di-n-Propylamine	1800	U
67-72-1	Hexachloroethane	1800	U
98-95-3	Nitrobenzene	1800	U
78-59-1	Isophorone	1800	U
88-75-5	2-Nitrophenol	1800	U
105-67-9	2,4-Dimethylphenol	1800	U
65-85-0	Benzoic Acid	8900	U
111-91-1	bis(2-Chloroethoxy)Methane	1800	U
120-83-2	2,4-Dichlorophenol	1800	U
120-82-1	1,2,4-Trichlorobenzene	1800	U
91-20-3	Naphthalene	1800	U
106-47-8	4-Chloroaniline	1800	U
87-68-3	Hexachlorobutadiene	1800	U
59-50-7	4-Chloro-3-Methylphenol	1800	U
91-57-6	2-Methylnaphthalene	1800	U
77-47-4	Hexachlorocyclopentadiene	1800	U
88-06-2	2,4,6-Trichlorophenol	1800	U
95-95-4	2,4,5-Trichlorophenol	8900	U
91-58-7	2-Chloronaphthalene	1800	U
88-74-4	2-Nitroaniline	8900	U
131-11-3	Dimethyl Phthalate	1800	U
208-96-8	Acenaphthylene	1800	U
606-20-2	2,6-Dinitrotoluene	1800	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW26

ame: CEIMIC CORP Contract: 68D90056

ode: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

x: (soil/water) SOIL Lab Sample ID: 910055-01

e wt/vol: 30.2 (g/mL) G Lab File ID: D4795

: (low/med) LOW Date Received: 01/31/91

sture: not dec. 28 dec. ____ Date Extracted: 02/06/91

:tion: (SepF/Cont/Sonc) SONC Date Analyzed: 02/11/91

eanup: (Y/N) N pH: 8.3 Dilution Factor: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	8900	U
83-32-9	Acenaphthene	600	J
51-28-5	2,4-Dinitrophenol	8900	U
100-02-7	4-Nitrophenol	8900	U
132-64-9	Dibenzofuran	440	J
121-14-2	2,4-Dinitrotoluene	1800	U
84-66-2	Diethylphthalate	1800	U
7005-72-3	4-Chlorophenyl-phenylether	1800	U
86-73-7	Fluorene	950	J
100-01-6	4-Nitroaniline	8900	U
534-52-1	4,6-Dinitro-2-Methylphenol	8900	U
86-30-6	N-Nitrosodiphenylamine (1)	1800	U
101-55-3	4-Bromophenyl-phenylether	1800	U
118-74-1	Hexachlorobenzene	1800	U
87-86-5	Pentachlorophenol	8900	U
85-01-8	Phenanthrene	9400	
120-12-7	Anthracene	2000	
84-74-2	Di-n-Butylphthalate	1800	U
206-44-0	Fluoranthene	12000	
129-00-0	Pyrene	13000	
85-68-7	Butylbenzylphthalate	690	J
91-94-1	3,3'-Dichlorobenzidine	3700	U
56-55-3	Benzo(a)Anthracene	5400	
218-01-9	Chrysene	6900	
117-81-7	bis(2-Ethylhexyl)Phthalate	2400	U
117-84-0	Di-n-Octyl Phthalate	1800	U
205-99-2	Benzo(b)Fluoranthene	6700	
207-08-9	Benzo(k)Fluoranthene	6200	
50-32-8	Benzo(a)Pyrene	5300	
193-39-5	Indeno(1,2,3-cd)Pyrene	2300	J
53-70-3	Dibenz(a,h)Anthracene	480	J
191-24-2	Benzo(g,h,i)Perylene	1700	J

) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BFW26

ıme: CEIMIC CORP Contract: 68D90056

ıde: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

: (soil/water) SOIL Lab Sample ID: 910055-01

wt/vol: 30.2 (g/mL) G Lab File ID: D4795

(low/med) LOW Date Received: 01/31/91

ture: not dec. 28 dec. ____ Date Extracted: 02/06/91

:ion: (SepF/Cont/Sonc) SONC Date Analyzed: 02/11/91

anup: (Y/N) N pH: 8.3 Dilution Factor: 4.0

TICs found: 18

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
00000	C7H12O isomer	5.13	2400	BJN
00000	Unknown	5.52	4600	BJ
23422	4-Hydroxy-4-methyl-2-pentano	6.22	64000	ABJ
00000	Unknown	7.87	2600	BJ
86259	Fluorenone	23.30	920	JN
5748	Carbazole	24.65	920	JN
00000	C15H12 isomer	25.51	1300	BJ
00000	C15H12 isomer	25.59	1300	BJ
03645	4H-Cyclopenta[def]phenanthre	25.84	2400	JN
7103	Hexadecanoic acid	26.07	1300	JN
4651	Anthracenedione	26.49	3100	JN
00000	C17H12 isomer	29.51	1800	BJ
00000	C17H12 isomer	29.71	1100	BJ
00000	C18H10 isomer	31.54	920	BJ
00000	C20H12 isomer	36.34	5500	BJ
00000	Unknown	36.92	7500	BJ
00000	Unknown	38.79	8600	BJ
00000	Unknown	40.46	1300	BJ

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW27

CEIMIC CORP Contract: 68D90056

CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

soil/water) SOIL Lab Sample ID: 910055-02

/vol: 30.1 (g/mL) G Lab File ID: A6833

(low/med) LOW Date Received: 01/31/91

e: not dec. 27 dec. ____ Date Extracted: 02/06/91

n: (SepF/Cont/Sonc) SONC Date Analyzed: 02/15/91

up: (Y/N) N pH: 7.8 Dilution Factor: 4.0

S NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
8-95-2	Phenol	1800	U
1-44-4	bis(2-Chloroethyl)Ether	1800	U
-57-8	2-Chlorophenol	1800	U
1-73-1	1,3-Dichlorobenzene	1800	U
6-46-7	1,4-Dichlorobenzene	1800	U
0-51-6	Benzyl Alcohol	1800	U
-50-1	1,2-Dichlorobenzene	1800	U
-48-7	2-Methylphenol	1800	U
8-60-1	bis(2-Chloroisopropyl)Ether	1800	U
6-44-5	4-Methylphenol	1800	U
1-64-7	N-Nitroso-Di-n-Propylamine	1800	U
-72-1	Hexachloroethane	1800	U
-95-3	Nitrobenzene	1800	U
-59-1	Isophorone	1800	U
-75-5	2-Nitrophenol	1800	U
5-67-9	2,4-Dimethylphenol	1800	U
-85-0	Benzoic Acid	8800	U
1-91-1	bis(2-Chloroethoxy)Methane	1800	U
0-83-2	2,4-Dichlorophenol	1800	U
0-82-1	1,2,4-Trichlorobenzene	1800	U
-20-3	Naphthalene	1800	U
6-47-8	4-Chloroaniline	1800	U
-68-3	Hexachlorobutadiene	1800	U
-50-7	4-Chloro-3-Methylphenol	1800	U
-57-6	2-Methylnaphthalene	1800	U
-47-4	Hexachlorocyclopentadiene	1800	U
-06-2	2,4,6-Trichlorophenol	1800	U
-95-4	2,4,5-Trichlorophenol	8800	U
-58-7	2-Chloronaphthalene	1800	U
-74-4	2-Nitroaniline	8800	U
1-11-3	Dimethyl Phthalate	1800	U
8-96-8	Acenaphthylene	1800	U
6-20-2	2,6-Dinitrotoluene	1800	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW27

: CEIMIC CORP Contract: 68D90056

: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

(soil/water) SOIL Lab Sample ID: 910055-02

t/vol: 30.1 (g/mL) G Lab File ID: A6833

(low/med) LOW Date Received: 01/31/91

re: not dec. 27 dec. _____ Date Extracted: 02/06/91

on: (SepF/Cont/Sonc) SONC Date Analyzed: 02/15/91

nup: (Y/N) N pH: 7.8 Dilution Factor: 4.0

AS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
9-09-2	3-Nitroaniline	8800	U
3-32-9	Acenaphthene	490	J
1-28-5	2,4-Dinitrophenol	8800	U
00-02-7	4-Nitrophenol	8800	U
32-64-9	Dibenzofuran	320	J
21-14-2	2,4-Dinitrotoluene	1800	U
4-66-2	Diethylphthalate	230	J
005-72-3	4-Chlorophenyl-phenylether	1800	U
6-73-7	Fluorene	670	J
00-01-6	4-Nitroaniline	8800	U
34-52-1	4,6-Dinitro-2-Methylphenol	8800	U
6-30-6	N-Nitrosodiphenylamine (1)	1800	U
01-55-3	4-Bromophenyl-phenylether	1800	U
18-74-1	Hexachlorobenzene	1800	U
7-86-5	Pentachlorophenol	8800	U
5-01-8	Phenanthrene	7400	
20-12-7	Anthracene	1400	J
4-74-2	Di-n-Butylphthalate	1800	U
206-44-0	Fluoranthene	12000	
129-00-0	Pyrene	11000	
5-68-7	Butylbenzylphthalate	440	J
91-94-1	3,3'-Dichlorobenzidine	3600	U
56-55-3	Benzo(a)Anthracene	5000	
218-01-9	Chrysene	6300	
117-81-7	bis(2-Ethylhexyl)Phthalate	1800 ~~1200~~	~~J~~ U
117-84-0	Di-n-Octyl Phthalate	670	J
205-99-2	Benzo(b)Fluoranthene	6800	
207-08-9	Benzo(k)Fluoranthene	14000	
50-32-8	Benzo(a)Pyrene	5600	
193-39-5	Indeno(1,2,3-cd)Pyrene	2700	
53-70-3	Dibenz(a,h)Anthracene	190	J
191-24-2	Benzo(g,h,i)Perylene	2100	

) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BFW27

e: CEIMIC CORP Contract: 68D90056

e: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

(soil/water) SOIL Lab Sample ID: 910055-02

vt/vol: 30.1 (g/mL) G Lab File ID: A6833

(low/med) LOW Date Received: 01/31/91

ire: not dec. 27 dec. ____ Date Extracted: 02/06/91

on: (SepF/Cont/Sonc) SONC Date Analyzed: 02/15/91

nup: (Y/N) N pH: 7.8 Dilution Factor: 4.0

ICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

UMBER	COMPOUND NAME	RT	EST. CONC.	Q
3422	4-Hydroxy-4-methyl-2-pentano	5.33	7300	ABJ
2650	Dibenzothiophene	22.35	910	JN
748	Carbazole	23.52	910	JN
0000	Unknown	23.75	910	BJ
0000	C15H12 isomer	24.32	910	BJ
0000	C15H12 isomer	24.39	1100	BJ
3645	4H-Cyclopenta[def]phenanthre	24.64	1600	JN
551	Anthracendione	25.32	2700	JN
0000	Phthalate	28.09	910	BJ
0000	C17H12 isomer	28.27	1800	BJ
0000	C17H12 isomer	28.47	910	BJ
0000	Phthalate	28.62	1300	BJ
0000	C17H100 isomer	29.87	910	BJ
0000	Unknown	30.27	1100	BJ
0000	Phthalate	31.72	60000	BJ
0000	Phthalate	32.12	910	BJ
0000	Phthalate	34.39	2400	BJ
0000	C20H12 isomer	34.84	6000	BJ
0000	Unknown	37.07	3500	BJ
0000	Unknown	38.19	3100	BJ

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW28

ne: CEIMIC CORP Contract: 68D90056

de: CEIMIC Case No.: 15795 SAS No.: SDG No.: BFW26

: (soil/water) SOIL Lab Sample ID: 910055-03

wt/vol: 30.5 (g/mL) G Lab File ID: A6834

(low/med) LOW Date Received: 01/31/91

:ure: not dec. 18 dec. Date Extracted: 02/06/91

:ion: (SepF/Cont/Sonc) SONC Date Analyzed: 02/15/91

:anup: (Y/N) N pH: 7.6 Dilution Factor: 10

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	4000	U
111-44-4	bis(2-Chloroethyl)Ether	4000	U
95-57-8	2-Chlorophenol	4000	U
541-73-1	1,3-Dichlorobenzene	4000	U
106-46-7	1,4-Dichlorobenzene	4000	U
100-51-6	Benzyl Alcohol	4000	U
95-50-1	1,2-Dichlorobenzene	4000	U
95-48-7	2-Methylphenol	410	J
108-60-1	bis(2-Chloroisopropyl)Ether	4000	U
106-44-5	4-Methylphenol	4000	U
621-64-7	N-Nitroso-Di-n-Propylamine	4000	U
67-72-1	Hexachloroethane	4000	U
98-95-3	Nitrobenzene	4000	U
78-59-1	Isophorone	4000	U
88-75-5	2-Nitrophenol	4000	U
105-67-9	2,4-Dimethylphenol	4000	U
65-85-0	Benzoic Acid	20000	U
111-91-1	bis(2-Chloroethoxy)Methane	4000	U
120-83-2	2,4-Dichlorophenol	4000	U
120-82-1	1,2,4-Trichlorobenzene	4000	U
91-20-3	Naphthalene	4000	U
106-47-8	4-Chloroaniline	4000	U
87-68-3	Hexachlorobutadiene	4000	U
59-50-7	4-Chloro-3-Methylphenol	4000	U
91-57-6	2-Methylnaphthalene	4000	U
77-47-4	Hexachlorocyclopentadiene	4000	U
88-06-2	2,4,6-Trichlorophenol	4000	U
95-95-4	2,4,5-Trichlorophenol	20000	U
91-58-7	2-Chloronaphthalene	4000	U
88-74-4	2-Nitroaniline	20000	U
131-11-3	Dimethyl Phthalate	4000	U
208-96-8	Acenaphthylene	4000	U
606-20-2	2,6-Dinitrotoluene	4000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW28

me: CEIMIC CORP Contract: 68D90056

de: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

: (soil/water) SOIL Lab Sample ID: 910055-03

wt/vol: 30.5 (g/mL) G Lab File ID: A6834

(low/med) LOW Date Received: 01/31/91

ure: not dec. 18 dec. ____ Date Extracted: 02/06/91

ion: (SepF/Cont/Sonc) SONC Date Analyzed: 02/15/91

anup: (Y/N) N pH: 7.6 Dilution Factor: 10

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	20000	U
83-32-9	Acenaphthene	16000	
51-28-5	2,4-Dinitrophenol	20000	U
00-02-7	4-Nitrophenol	20000	U
32-64-9	Dibenzofuran	13000	
21-14-2	2,4-Dinitrotoluene	4000	U
4-66-2	Diethylphthalate	4000	U
005-72-3	4-Chlorophenyl-phenylether	4000	U
6-73-7	Fluorene	11000	
00-01-6	4-Nitroaniline	20000	U
34-52-1	4,6-Dinitro-2-Methylphenol	20000	U
5-30-6	N-Nitrosodiphenylamine (1)	4000	U
01-55-3	4-Bromophenyl-phenylether	4000	U
18-74-1	Hexachlorobenzene	4000	U
7-86-5	Pentachlorophenol	20000	U
5-01-8	Phenanthrene	19000	
20-12-7	Anthracene	4600	
1-74-2	Di-n-Butylphthalate	4000	U
06-44-0	Fluoranthene	36000	
9-00-0	Pyrene	36000	
1-68-7	Butylbenzylphthalate	4000	U
-94-1	3,3'-Dichlorobenzidine	8100	U
-55-3	Benzo(a)Anthracene	19000	
8-01-9	Chrysene	17000	
7-81-7	bis(2-Ethylhexyl)Phthalate	860	J
7-84-0	Di-n-Octyl Phthalate	5000	
5-99-2	Benzo(b)Fluoranthene	22000	
7-08-9	Benzo(k)Fluoranthene	10000	
-32-8	Benzo(a)Pyrene	16000	
3-39-5	Indeno(1,2,3-cd)Pyrene	6500	
-70-3	Dibenz(a,h)Anthracene	610	J
1-24-2	Benzo(g,h,i)Perylene	4800	

- Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BFW28

me: CEIMIC CORP Contract: 68D90056

le: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

(soil/water) SOIL Lab Sample ID: 910055-03

wt/vol: 30.5 (g/mL) G Lab File ID: A6834

(low/med) LOW Date Received: 01/31/91

ure: not dec. 18 dec. ____ Date Extracted: 02/06/91

ion: (SepF/Cont/Sonc) SONC Date Analyzed: 02/15/91

inup: (Y/N) N pH: 7.6 Dilution Factor: 10

TICs found: 19

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

UMBER	COMPOUND NAME	RT	EST. CONC.	Q
3422	4-Hydroxy-4-methyl-2-pentano	5.27	36000	~~ABJ~~ R
0000	C10H14O isomer	14.97	40000	BJ
0000	Unknown	23.29	3200	BJ
748	Carbazole	23.52	3200	JN
3645	4H-Cyclopenta[def]phenanthre	24.62	4000	JN
551	Anthracenedione	25.32	4000	JN
0000	Unknown	27.64	4800	~~BJ~~ R
0000	Unknown	27.72	5200	BJ
0000	C17H12 isomer	28.27	4000	BJ
0000	C17H12 isomer	28.46	2400	BJ
0000	C17H10O isomer	29.84	2000	~~BJ~~ N
0000	Unknown	30.27	8800	BJN
0000	Unknown	30.69	5200	BJ
0000	C18H12 isomer	31.26	2000	BJ
0000	C19H14 isomer	32.19	2400	BJ
0000	Unknown	32.89	40000	BJ
0000	C20H12 isomer	34.39	4400	BJ
0000	Unknown	34.82	10000	BJ
0000	Unknown	39.19	5200	BJ

1B

EMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW29

EIMIC CORP Contract: 68D90056

EIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

il/water) SOIL Lab Sample ID: 910055-04

ol: 30.4 (g/mL) G Lab File ID: D4794

low/med) LOW Date Received: 01/31/91

not dec. 10 dec. ____ Date Extracted: 02/06/91

(SepF/Cont/Sonc) SONC Date Analyzed: 02/11/91

): (Y/N) N pH: 7.6 Dilution Factor: 4.0

NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
-95-2	Phenol	1500	U
-44-4	bis(2-Chloroethyl)Ether	1500	U
57-8	2-Chlorophenol	1500	U
-73-1	1,3-Dichlorobenzene	1500	U
-46-7	1,4-Dichlorobenzene	1500	U
-51-6	Benzyl Alcohol	1500	U
50-1	1,2-Dichlorobenzene	1500	U
48-7	2-Methylphenol	1500	U
-60-1	bis(2-Chloroisopropyl)Ether	1500	U
-44-5	4-Methylphenol	1500	U
-64-7	N-Nitroso-Di-n-Propylamine	1500	U
72-1	Hexachloroethane	1500	U
95-3	Nitrobenzene	1500	U
59-1	Isophorone	1500	U
75-5	2-Nitrophenol	1500	U
5-67-9	2,4-Dimethylphenol	1500	U
85-0	Benzoic Acid	7100	U
1-91-1	bis(2-Chloroethoxy)Methane	1500	U
)-83-2	2,4-Dichlorophenol	1500	U
)-82-1	1,2,4-Trichlorobenzene	1500	U
-20-3	Naphthalene	170	J
5-47-8	4-Chloroaniline	1500	U
-68-3	Hexachlorobutadiene	1500	U
-50-7	4-Chloro-3-Methylphenol	1500	U
-57-6	2-Methylnaphthalene	1500	U
-47-4	Hexachlorocyclopentadiene	1500	U
-06-2	2,4,6-Trichlorophenol	1500	U
-95-4	2,4,5-Trichlorophenol	7100	U
-58-7	2-Chloronaphthalene	1500	U
-74-4	2-Nitroaniline	7100	U
1-11-3	Dimethyl Phthalate	1500	U
8-96-8	Acenaphthylene	1500	U
6-20-2	2,6-Dinitrotoluene	1500	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW29

e: CEIMIC CORP Contract: 68D90056

de: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

: (soil/water) SOIL Lab Sample ID: 910055-04

wt/vol: 30.4 (g/mL) G Lab File ID: D4794

(low/med) LOW Date Received: 01/31/91

ture: not dec. 10 dec. ____ Date Extracted: 02/06/91

:ion: (SepF/Cont/Sonc) SONC Date Analyzed: 02/11/91

anup: (Y/N) N pH: 7.6 Dilution Factor: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	7100	U
83-32-9	Acenaphthene	1100	J
51-28-5	2,4-Dinitrophenol	7100	U
100-02-7	4-Nitrophenol	7100	U
132-64-9	Dibenzofuran	880	J
121-14-2	2,4-Dinitrotoluene	1500	U
84-66-2	Diethylphthalate	1500	U
7005-72-3	4-Chlorophenyl-phenylether	1500	U
86-73-7	Fluorene	1600	
100-01-6	4-Nitroaniline	7100	U
534-52-1	4,6-Dinitro-2-Methylphenol	7100	U
86-30-6	N-Nitrosodiphenylamine (1)	1500	U
101-55-3	4-Bromophenyl-phenylether	1500	U
118-74-1	Hexachlorobenzene	1500	U
87-86-5	Pentachlorophenol	7100	U
85-01-8	Phenanthrene	14000	
120-12-7	Anthracene	2400	
84-74-2	Di-n-Butylphthalate	260	J
206-44-0	Fluoranthene	16000	
129-00-0	Pyrene	15000	
85-68-7	Butylbenzylphthalate	210	J
91-94-1	3,3'-Dichlorobenzidine	2900	U
56-55-3	Benzo(a)Anthracene	7000	
218-01-9	Chrysene	8100	
117-81-7	bis(2-Ethylhexyl)Phthalate	1400	J
117-84-0	Di-n-Octyl Phthalate	1500	U
205-99-2	Benzo(b)Fluoranthene	8300	
207-08-9	Benzo(k)Fluoranthene	7100	
50-32-8	Benzo(a)Pyrene	6600	
193-39-5	Indeno(1,2,3-cd)Pyrene	2900	
53-70-3	Dibenz(a,h)Anthracene	250	J
191-24-2	Benzo(g,h,i)Perylene	2200	

) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BFW29

Lab Name: CEIMIC CORP Contract: 68D90056

Lab Code: CEIMIC Case No.: 15795 SAS No.: ____ SDG No.: BFW26

Matrix: (soil/water) SOIL Lab Sample ID: 910055-04

Sample wt/vol: 30.4 (g/mL) G Lab File ID: D4794

Level: (low/med) LOW Date Received: 01/31/91

% Moisture: not dec. 10 dec. ____ Date Extracted: 02/06/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/11/91

GPC Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 4.0

Number TICs found: 21 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
000000	C8H16 isomer	5.13	3100	BJ
000000	Unknown	5.52	3700	BJ
123422	4-Hydroxy-4-methyl-2-pentano	6.22	53000	ABJ
86748	Carbazole	24.65	1600	JN
000000	C15H12 isomer	25.52	1300	BJ
000000	C15H12 isomer	25.59	1800	BJ
203645	4H-Cyclopenta[def]phenanthre	25.84	2800	JN
84651	Anthracendione	26.52	4100	JN
000000	C15H9N isomer	28.87	590	BJ
000000	C17H12 isomer	29.17	730	BJ
000000	C17H12 isomer	29.72	1800	BJ
000000	C17H12 isomer	29.72	1000	BJ
00000	C17H10O isomer	31.11	730	BJ
00000	C16H10S isomer	31.42	590	BJ
00000	C18H10 isomer	31.54	1000	BJ
00000	C18H12 isomer	32.56	880	BJ
00000	C19H14 isomer	33.49	730	BJ
00000	C20H12 isomer	35.77	1600	BJ
00000	Aliphatic hydrocarbon	36.19	1900	BJ
00000	C20H12 isomer	36.34	4800	BJ
	Aliphatic hydrocarbon	38.82	1900	BJ

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW30

ame: CEIMIC CORP Contract: 68D90056

ode: CEIMIC Case No.: 15795 SAS No.: SDG No.: BFW26

x: (soil/water) SOIL Lab Sample ID: 910055-05

e wt/vol: 30.5 (g/mL) G Lab File ID: D4778

: (low/med) LOW Date Received: 01/31/91

sture: not dec. 17 dec. Date Extracted: 02/06/91

ction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/09/91

leanup: (Y/N) N pH: 7.5 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl Alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	bis(2-Chloroisopropyl)Ether	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitroso-Di-n-Propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic Acid	1900	U
111-91-1	bis(2-Chloroethoxy)Methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-Methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethyl Phthalate	400	U
208-96-8	Acenaphthylene	55	J
606-20-2	2,6-Dinitrotoluene	400	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW30

ame: CEIMIC CORP Contract: 68D90056

ode: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

x: (soil/water) SOIL Lab Sample ID: 910055-05

e wt/vol: 30.5 (g/mL) G Lab File ID: D4778

(low/med) LOW Date Received: 01/31/91

ture: not dec. 17 dec. ____ Date Extracted: 02/06/91

tion: (SepF/Cont/Sonc) SONC Date Analyzed: 02/09/91

eanup: (Y/N) N pH: 7.5 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	1900	UJ
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl-phenylether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-Methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	400	U
101-55-3	4-Bromophenyl-phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	200	J
120-12-7	Anthracene	51	J
84-74-2	Di-n-Butylphthalate	130	J
206-44-0	Fluoranthene	440	
129-00-0	Pyrene	440	
85-68-7	Butylbenzylphthalate	3100	
91-94-1	3,3'-Dichlorobenzidine	800	U
56-55-3	Benzo(a)Anthracene	230	J
218-01-9	Chrysene	280	J
117-81-7	bis(2-Ethylhexyl)Phthalate	160	J
117-84-0	Di-n-Octyl Phthalate	400	U
205-99-2	Benzo(b)Fluoranthene	290	J
207-08-9	Benzo(k)Fluoranthene	260	J
50-32-8	Benzo(a)Pyrene	260	J
193-39-5	Indeno(1,2,3-cd)Pyrene	110	J
53-70-3	Dibenz(a,h)Anthracene	400	U
191-24-2	Benzo(g,h,i)Perylene	90	J

) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BFW30

Name: CEIMIC CORP Contract: 68D90056

Code: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

ix: (soil/water) SOIL Lab Sample ID: 910055-05

.e wt/vol: 30.5 (g/mL) G Lab File ID: D4778

: (low/med) LOW Date Received: 01/31/91

sture: not dec. 17 dec. ____ Date Extracted: 02/06/91

ction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/09/91

leanup: (Y/N) N pH: 7.5 Dilution Factor: 1.0

TICs found: 16 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
000000	Unknown	4.80	750	~~BJ~~
000000	Unknown	5.08	1100	~~BJ~~
000000	Unknown	5.58	1700	~~BJ~~
123422	4-Hydroxy-4-methyl-2-pentano	6.33	21000	~~ABJ~~ R
000000	Unknown	7.88	950	~~BJ~~ R
000000	Aliphatic hydrocarbon	34.16	200	BJ
000000	Unknown	34.32	160	BJ
000000	Aliphatic hydrocarbon	35.11	160	BJ
000000	Unknown	35.54	1100	BJ
000000	Aliphatic hydrocarbon	36.19	830	BJ
000000	Unknown	36.34	510	BJ
000000	Unknown	38.01	160	BJ
000000	Aliphatic hydrocarbon	38.84	1600	BJ
000000	Aliphatic hydrocarbon	42.53	590	BJ
000000	Unknown	42.81	550	BJ
000000	Unknown	43.99	200	BJ

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW31

CEIMIC CORP Contract: 68D90056

CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

soil/water) SOIL Lab Sample ID: 910055-06

:/vol: 30.2 (g/mL) G Lab File ID: A6832

(low/med) LOW Date Received: 01/31/91

e: not dec. 21 dec. ____ Date Extracted: 02/06/91

on: (SepF/Cont/Sonc) SONC Date Analyzed: 02/15/91

nup: (Y/N) N pH: 7.4 Dilution Factor: 3.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
108-95-2	Phenol	1300	U
111-44-4	bis(2-Chloroethyl)Ether	1300	U
95-57-8	2-Chlorophenol	1300	U
541-73-1	1,3-Dichlorobenzene	1300	U
106-46-7	1,4-Dichlorobenzene	1300	U
100-51-6	Benzyl Alcohol	1300	U
95-50-1	1,2-Dichlorobenzene	1300	U
95-48-7	2-Methylphenol	1300	U
108-60-1	bis(2-Chloroisopropyl)Ether	1300	U
106-44-5	4-Methylphenol	1300	U
621-64-7	N-Nitroso-Di-n-Propylamine	1300	U
67-72-1	Hexachloroethane	1300	U
98-95-3	Nitrobenzene	1300	U
78-59-1	Isophorone	1300	U
88-75-5	2-Nitrophenol	1300	U
105-67-9	2,4-Dimethylphenol	1300	U
65-85-0	Benzoic Acid	6100	U
111-91-1	bis(2-Chloroethoxy)Methane	1300	U
120-83-2	2,4-Dichlorophenol	1300	U
120-82-1	1,2,4-Trichlorobenzene	1300	U
91-20-3	Naphthalene	1300	U
106-47-8	4-Chloroaniline	1300	U
87-68-3	Hexachlorobutadiene	1300	U
59-50-7	4-Chloro-3-Methylphenol	1300	U
91-57-6	2-Methylnaphthalene	1300	U
77-47-4	Hexachlorocyclopentadiene	1300	U
88-06-2	2,4,6-Trichlorophenol	6100	U
95-95-4	2,4,5-Trichlorophenol	1300	U
91-58-7	2-Chloronaphthalene	6100	U
88-74-4	2-Nitroaniline	1300	U
131-11-3	Dimethyl Phthalate	1300	U
208-96-8	Acenaphthylene	1300	U
606-20-2	2,6-Dinitrotoluene	1300	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW31

e: CEIMIC CORP Contract: 68D90056

e: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

(soil/water) SOIL Lab Sample ID: 910055-06

ıt/vol: 30.2 (g/mL) G Lab File ID: A6832

(low/med) LOW Date Received: 01/31/91

re: not dec. 21 dec. ____ Date Extracted: 02/06/91

on: (SepF/Cont/Sonc) SONC Date Analyzed: 02/15/91

nup: (Y/N) N pH: 7.4 Dilution Factor: 3.0

AS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
9-09-2	3-Nitroaniline	6100	U
3-32-9	Acenaphthene	1500	
1-28-5	2,4-Dinitrophenol	6100	U
00-02-7	4-Nitrophenol	6100	U
32-64-9	Dibenzofuran	940	J
21-14-2	2,4-Dinitrotoluene	1300	U
1-66-2	Diethylphthalate	1300	U
005-72-3	4-Chlorophenyl-phenylether	1300	U
1-73-7	Fluorene	2100	
00-01-6	4-Nitroaniline	6100	U
34-52-1	4,6-Dinitro-2-Methylphenol	6100	U
1-30-6	N-Nitrosodiphenylamine (1)	1300	U
01-55-3	4-Bromophenyl-phenylether	1300	U
8-74-1	Hexachlorobenzene	1300	U
1-86-5	Pentachlorophenol	6100	U
1-01-8	Phenanthrene	15000	
0-12-7	Anthracene	4300	
1-74-2	Di-n-Butylphthalate	1300	U
6-44-0	Fluoranthene	17000	
9-00-0	Pyrene	15000	
1-68-7	Butylbenzylphthalate	300	J
1-94-1	3,3'-Dichlorobenzidine	2500	U
1-55-3	Benzo(a)Anthracene	8600	
8-01-9	Chrysene	8100	
7-81-7	bis(2-Ethylhexyl)Phthalate	760	J
7-84-0	Di-n-Octyl Phthalate	1300	U
5-99-2	Benzo(b)Fluoranthene	8800	
7-08-9	Benzo(k)Fluoranthene	3700	
1-32-8	Benzo(a)Pyrene	6400	
3-39-5	Indeno(1,2,3-cd)Pyrene	3000	
1-70-3	Dibenz(a,h)Anthracene	280	J
1-24-2	Benzo(g,h,i)Perylene	2200	

- Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BFW31

e: CEIMIC CORP Contract: 68D90056

e: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

(soil/water) SOIL Lab Sample ID: 910055-06

ıt/vol: 30.2 (g/mL) G Lab File ID: A6832

(low/med) LOW Date Received: 01/31/91

ıre: not dec. 21 dec. ____ Date Extracted: 02/06/91

.on: (SepF/Cont/Sonc) SONC Date Analyzed: 02/15/91

ınup: (Y/N) N pH: 7.4 Dilution Factor: 3.0

'ICs found: 21 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

UMBER	COMPOUND NAME	RT	EST. CONC.	Q
0000	Unknown	4.68	3300	BJ
3422	4-Hydroxy-4-methyl-2-pentano	5.38	48000	~~ABJ~~
2650	Dibenzothoiphene	22.37	1500	JN
748	Carbazole	23.52	1500	JN
0000	C16H12 isomer	23.80	1100	BJ
0000	C15H12 isomer	24.32	1900	BJ
0000	C15H12 isomer	24.40	2100	BJ
3645	4H-Cyclopenta[def]phenanthre	24.64	3600	JN
651	Anthracenedione	25.34	3300	JN
0000	C16H10O isomer	27.59	630	BJ
0000	C17H12 isomer	28.29	1900	BJ
0000	C17H12 isomer	28.47	1100	BJ
0000	C17H12 isomer	28.57	630	BJ
0000	Unknown	28.66	630	BJ
0000	C17H10O isomer	29.87	630	BJ
0000	C16H10S isomer	30.16	500	BJ
0000	C18H10 isomer	30.27	1000	BJ
0000	C18H12 isomer	31.27	880	BJ
0000	C19H14 isomer	32.22	750	BJ
0000	C20H12 isomer	34.36	2000	BJ
0000	C20H12 isomer	34.82	5000	BJ

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW32

me: CEIMIC CORP Contract: 68D90056

de: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

: (soil/water) WATER Lab Sample ID: 910055-07

wt/vol: 1000 (g/mL) ML Lab File ID: D4763

(low/med) LOW Date Received: 01/31/91

ture: not dec. ____ dec. ____ Date Extracted: 02/05/91

:ion: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/08/91

anup: (Y/N) N pH: 9.1 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
77-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	10	U
91-58-7	2-Chloronaphthalene	50	U
88-74-4	2-Nitroaniline	10	U
131-11-3	Dimethyl Phthalate	50	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW32

lame: CEIMIC CORP Contract: 68D90056

:ode: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

x: (soil/water) WATER Lab Sample ID: 910055-07

e wt/vol: 1000 (g/mL) ML Lab File ID: D4763

: (low/med) LOW Date Received: 01/31/91

.sture: not dec. _____ dec. _____ Date Extracted: 02/05/91

ıction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/08/91

:leanup: (Y/N) N pH: 9.1 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	4	J
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BFW32

ame: CEIMIC CORP Contract: 68D90056

ode: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

x: (soil/water) WATER Lab Sample ID: 910055-07

e wt/vol: 1000 (g/mL) ML Lab File ID: D4763

: (low/med) LOW Date Received: 01/31/91

sture: not dec. ____ dec. ____ Date Extracted: 02/05/91

ction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/08/91

leanup: (Y/N) N pH: 9.1 Dilution Factor: 1.0

r TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

S NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
000000	Halogenated unknown	11.32	8.0	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW33

Lab Name: CEIMIC CORP Contract: 68D90056

Lab Code: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

Matrix: (soil/water) WATER Lab Sample ID: 910055-08

Sample wt/vol: 1000 (g/mL) ML Lab File ID: D4764

Level: (low/med) LOW Date Received: 01/31/91

% Moisture: not dec. _____ dec. _____ Date Extracted: 02/05/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/08/91

GPC Cleanup: (Y/N) N pH: 8.7 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl Alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)Ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic Acid	50	U
111-91-1	bis(2-Chloroethoxy)Methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW33

lame: CEIMIC CORP Contract: 68D90056

ode: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

x: (soil/water) WATER Lab Sample ID: 910055-08

e wt/vol: 1000 (g/mL) ML Lab File ID: D4764

: (low/med) LOW Date Received: 01/31/91

sture: not dec. _____ dec. _____ Date Extracted: 02/05/91

:tion: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/08/91

eanup: (Y/N) N pH: 8.7 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	4	J
117-84-0	Di-n-Octyl Phthalate	1	J
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

) - Cannot be separated from Diphenylamine

1F

EMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BFW33

EIMIC CORP Contract: 68D90056

EIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

il/water) WATER Lab Sample ID: 910055-08

ol: 1000 (g/mL) ML Lab File ID: D4764

low/med) LOW Date Received: 01/31/91

not dec. ____ dec. ____ Date Extracted: 02/05/91

(SepF/Cont/Sonc) SEPF Date Analyzed: 02/08/91

: (Y/N) N pH: 8.7 Dilution Factor: 1.0

found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

ER	COMPOUND NAME	RT	EST. CONC.	Q

Number 26, 27

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW34

: CEIMIC CORP Contract: 68D90056

: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

(soil/water) WATER Lab Sample ID: 910055-09

t/vol: 1000 (g/mL) ML Lab File ID: D4765

(low/med) LOW Date Received: 01/31/91

re: not dec. _____ dec. _____ Date Extracted: 02/05/91

on: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/08/91

nup: (Y/N) N pH: 8.3 Dilution Factor: 1.0

CONCENTRATION UNITS:

AS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

08-95-2	Phenol	10	U
11-44-4	bis(2-Chloroethyl)Ether	10	U
5-57-8	2-Chlorophenol	10	U
41-73-1	1,3-Dichlorobenzene	10	U
06-46-7	1,4-Dichlorobenzene	10	U
00-51-6	Benzyl Alcohol	10	U
5-50-1	1,2-Dichlorobenzene	10	U
5-48-7	2-Methylphenol	10	U
08-60-1	bis(2-Chloroisopropyl)Ether	10	U
06-44-5	4-Methylphenol	10	U
21-64-7	N-Nitroso-Di-n-Propylamine	10	U
7-72-1	Hexachloroethane	10	U
8-95-3	Nitrobenzene	10	U
8-59-1	Isophorone	10	U
8-75-5	2-Nitrophenol	10	U
05-67-9	2,4-Dimethylphenol	10	U
5-85-0	Benzoic Acid	50	U
11-91-1	bis(2-Chloroethoxy)Methane	10	U
20-83-2	2,4-Dichlorophenol	10	U
20-82-1	1,2,4-Trichlorobenzene	10	U
1-20-3	Naphthalene	10	U
06-47-8	4-Chloroaniline	10	U
7-68-3	Hexachlorobutadiene	10	U
9-50-7	4-Chloro-3-Methylphenol	10	U
1-57-6	2-Methylnaphthalene	10	U
7-47-4	Hexachlorocyclopentadiene	10	U
8-06-2	2,4,6-Trichlorophenol	10	U
5-95-4	2,4,5-Trichlorophenol	50	U
1-58-7	2-Chloronaphthalene	10	U
8-74-4	2-Nitroaniline	50	U
31-11-3	Dimethyl Phthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C

/OLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW34

IC CORP Contract: 68D90056

IC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

vater) WATER Lab Sample ID: 910055-09

1000 (g/mL) ML Lab File ID: D4765

/med) LOW Date Received: 01/31/91

: dec. ____ dec. ____ Date Extracted: 02/05/91

(SepF/Cont/Sonc) SEPF Date Analyzed: 02/08/91

(Y/N) N pH: 8.3 Dilution Factor: 1.0

COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
---------3-Nitroaniline	50	U
---------Acenaphthene	10	U
---------2,4-Dinitrophenol	50	U
7--------4-Nitrophenol	50	U
3--------Dibenzofuran	10	U
2--------2,4-Dinitrotoluene	10	U
---------Diethylphthalate	10	U
-3-------4-Chlorophenyl-phenylether	10	U
---------Fluorene	10	U
6--------4-Nitroaniline	50	U J
1--------4,6-Dinitro-2-Methylphenol	50	U
---------N-Nitrosodiphenylamine (1)	10	U
3--------4-Bromophenyl-phenylether	10	U
1--------Hexachlorobenzene	10	U
---------Pentachlorophenol	50	U
---------Phenanthrene	10	U
7--------Anthracene	10	U
---------Di-n-Butylphthalate	10	U
0--------Fluoranthene	10	U
0--------Pyrene	10	U
---------Butylbenzylphthalate	10	U
---------3,3'-Dichlorobenzidine	20	U
---------Benzo(a)Anthracene	10	U
9--------Chrysene	10	U
7--------bis(2-Ethylhexyl)Phthalate	4	J
0--------Di-n-Octyl Phthalate	10	U
2--------Benzo(b)Fluoranthene	10	U
9--------Benzo(k)Fluoranthene	10	U
---------Benzo(a)Pyrene	10	U
5--------Indeno(1,2,3-cd)Pyrene	10	U
---------Dibenz(a,h)Anthracene	10	U
2--------Benzo(g,h,i)Perylene	10	U

not be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BFW34

CEIMIC CORP Contract: 68D90056

CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

soil/water) WATER Lab Sample ID: 910055-09

/vol: 1000 (g/mL) ML Lab File ID: D4765

(low/med) LOW Date Received: 01/31/91

e: not dec. _____ dec. _____ Date Extracted: 02/05/91

n: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/08/91

ıp: (Y/N) N pH: 8.3 Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Cs found: 2

MBER	COMPOUND NAME	RT	EST. CONC.	Q
000	Aliphatic hydrocarbon	36.19	5.0	JN
000	Aliphatic hydrocarbon	38.82	17	JN

1B

EMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW35

EIMIC CORP Contract: 68D90056

EIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

il/water) WATER Lab Sample ID: 910055-10

ol: 1000 (g/mL) ML Lab File ID: D4766

low/med) LOW Date Received: 01/31/91

not dec. ____ dec. ____ Date Extracted: 02/05/91

(SepF/Cont/Sonc) SEPF Date Analyzed: 02/08/91

: (Y/N) N pH: 6.6 Dilution Factor: 1.0

NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
95-2--------	Phenol	10	U
44-4--------	bis(2-Chloroethyl)Ether	10	U
7-8---------	2-Chlorophenol	10	U
73-1--------	1,3-Dichlorobenzene	10	U
46-7--------	1,4-Dichlorobenzene	10	U
51-6--------	Benzyl Alcohol	10	U
0-1---------	1,2-Dichlorobenzene	10	U
8-7---------	2-Methylphenol	10	U
60-1--------	bis(2-Chloroisopropyl)Ether	10	U
44-5--------	4-Methylphenol	10	U
64-7--------	N-Nitroso-Di-n-Propylamine	10	U
72-1---------	Hexachloroethane	10	U
5-3---------	Nitrobenzene	10	U
59-1---------	Isophorone	10	U
75-5---------	2-Nitrophenol	10	U
67-9--------	2,4-Dimethylphenol	10	U
5-0---------	Benzoic Acid	50	U
91-1--------	bis(2-Chloroethoxy)Methane	10	U
83-2--------	2,4-Dichlorophenol	10	U
82-1--------	1,2,4-Trichlorobenzene	10	U
20-3---------	Naphthalene	10	U
47-8--------	4-Chloroaniline	10	U
68-3---------	Hexachlorobutadiene	10	U
50-7---------	4-Chloro-3-Methylphenol	10	U
57-6---------	2-Methylnaphthalene	10	U
47-4---------	Hexachlorocyclopentadiene	10	U
06-2---------	2,4,6-Trichlorophenol	10	U
95-4---------	2,4,5-Trichlorophenol	50	U
58-7---------	2-Chloronaphthalene	10	U
74-4---------	2-Nitroaniline	50	U
-11-3--------	Dimethyl Phthalate	10	U
-96-8--------	Acenaphthylene	10	U
-20-2--------	2,6-Dinitrotoluene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW35

: CEIMIC CORP Contract: 68D90056

: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

soil/water) WATER Lab Sample ID: 910055-10

/vol: 1000 (g/mL) ML Lab File ID: D4766

(low/med) LOW Date Received: 01/31/91

e: not dec. ____ dec. ____ Date Extracted: 02/05/91

n: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/08/91

up: (Y/N) N pH: 6.6 Dilution Factor: 1.0

B NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
-09-2	3-Nitroaniline	50	U
-32-9	Acenaphthene	10	U
-28-5	2,4-Dinitrophenol	50	U
)-02-7	4-Nitrophenol	50	U
?-64-9	Dibenzofuran	10	U
.-14-2	2,4-Dinitrotoluene	10	U
-66-2	Diethylphthalate	10	U
)5-72-3	4-Chlorophenyl-phenylether	10	U
-73-7	Fluorene	10	U
)-01-6	4-Nitroaniline	10	U
-52-1	4,6-Dinitro-2-Methylphenol	50	UJ
30-6	N-Nitrosodiphenylamine (1)	50	U
-55-3	4-Bromophenyl-phenylether	10	U
-74-1	Hexachlorobenzene	10	U
86-5	Pentachlorophenol	10	U
01-8	Phenanthrene	50	U
-12-7	Anthracene	10	U
74-2	Di-n-Butylphthalate	10	U
-44-0	Fluoranthene	10	U
-00-0	Pyrene	10	U
58-7	Butylbenzylphthalate	10	U
94-1	3,3'-Dichlorobenzidine	10	U
55-3	Benzo(a)Anthracene	20	U
-01-9	Chrysene	10	U
-81-7	bis(2-Ethylhexyl)Phthalate	10	U
-84-0	Di-n-Octyl Phthalate	10	U
-99-2	Benzo(b)Fluoranthene	10	U
-08-9	Benzo(k)Fluoranthene	10	U
32-8	Benzo(a)Pyrene	10	U
-39-5	Indeno(1,2,3-cd)Pyrene	10	U
'0-3	Dibenz(a,h)Anthracene	10	U
-24-2	Benzo(g,h,i)Perylene	10	U

Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW36

CEIMIC CORP Contract: 68D90056

CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

soil/water) WATER Lab Sample ID: 910055-11

/vol: 1000 (g/mL) ML Lab File ID: D4791

(low/med) LOW Date Received: 01/31/91

: not dec. _____ dec. _____ Date Extracted: 02/05/91

: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/11/91

p: (Y/N) N pH: 7.0 Dilution Factor: 1.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

NO.	COMPOUND		Q
-95-2	Phenol	10	U
-44-4	bis(2-Chloroethyl)Ether	10	U
57-8	2-Chlorophenol	10	U
-73-1	1,3-Dichlorobenzene	10	U
-46-7	1,4-Dichlorobenzene	10	U
-51-6	Benzyl Alcohol	10	U
50-1	1,2-Dichlorobenzene	10	U
48-7	2-Methylphenol	10	U
-60-1	bis(2-Chloroisopropyl)Ether	10	U
-44-5	4-Methylphenol	10	U
-64-7	N-Nitroso-Di-n-Propylamine	10	U
72-1	Hexachloroethane	10	U
95-3	Nitrobenzene	10	U
59-1	Isophorone	10	U
75-5	2-Nitrophenol	10	U
-67-9	2,4-Dimethylphenol	10	U
85-0	Benzoic Acid	50	U
-91-1	bis(2-Chloroethoxy)Methane	10	U
-83-2	2,4-Dichlorophenol	10	U
-82-1	1,2,4-Trichlorobenzene	10	U
20-3	Naphthalene	10	U
-47-8	4-Chloroaniline	10	U
68-3	Hexachlorobutadiene	10	U
50-7	4-Chloro-3-Methylphenol	10	U
57-6	2-Methylnaphthalene	10	U
47-4	Hexachlorocyclopentadiene	10	U
06-2	2,4,6-Trichlorophenol	10	U
95-4	2,4,5-Trichlorophenol	50	U
58-7	2-Chloronaphthalene	10	U
74-4	2-Nitroaniline	50	U
-11-3	Dimethyl Phthalate	10	U
-96-8	Acenaphthylene	10	U
-20-2	2,6-Dinitrotoluene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW36

ne: CEIMIC CORP Contract: 68D90056

de: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

(soil/water) WATER Lab Sample ID: 910055-11

wt/vol: 1000 (g/mL) ML Lab File ID: D4791

(low/med) LOW Date Received: 01/31/91

ure: not dec. ____ dec. ____ Date Extracted: 02/05/91

ion: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/11/91

anup: (Y/N) N pH: 7.0 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-Methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)Phthalate	10	U
117-84-0	Di-n-Octyl Phthalate	10	U
205-99-2	Benzo(b)Fluoranthene	10	U
207-08-9	Benzo(k)Fluoranthene	10	U
50-32-8	Benzo(a)Pyrene	10	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10	U
53-70-3	Dibenz(a,h)Anthracene	10	U
191-24-2	Benzo(g,h,i)Perylene	10	U

(1) - Cannot be separated from Diphenylamine

ID

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW28

GEOMIC CORP Contract: 68D90056

GEOMIC Case No.: 15795 SAS No.: SDG No.: BFW28

Soil/water SOIL % Lab Sample ID: 910055-02

Vol.: 30.0 g/mL) g Lab File ID:

Low/med) LOW Date Received: 01/31/91

% moist dec. 18 dec. Date Extracted: 02.08/91

Extr: (SepF/Cont/Sonc) SONC Date Analyzed: 02/16/91

GPC: (Y/N) N pH: 7.6 Dilution Factor: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	49	U
319-85-7	beta-BHC	49	U
319-86-8	delta-BHC	49	U
58-89-9	gamma-BHC (Lindane)	49	U
76-44-8	Heptachlor	49	U
309-00-2	Aldrin	49	U
1024-57-3	Heptachlor epoxide	49	U
959-98-8	Endosulfan I	49	U
60-57-1	Dieldrin	98	U
72-55-9	4,4'-DDE	98	U
72-20-8	Endrin	98	U
33213-65-9	Endosulfan II	98	U
72-54-8	4,4'-DDD	98	U
1031-07-8	Endosulfan sulfate	98	U
50-29-3	4,4'-DDT	110	
72-43-5	Methoxychlor	490	U
53494-70-5	Endrin ketone	98	U
5103-71-9	alpha-Chlordane	490	U
5103-74-2	gamma-Chlordane	490	U
8001-35-2	Toxaphene	980	U
12674-11-2	Aroclor-1016	490	U
11104-28-2	Aroclor-1221	490	U
11141-16-5	Aroclor-1232	490	U
53469-21-9	Aroclor-1242	490	U
12672-29-6	Aroclor-1248	490	U
11097-69-1	Aroclor-1254	9500	
11096-82-5	Aroclor-1260	980	U

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SFW29

ame: SEIMIC CORP Contract: 68D90058

ode: CSEIMIC Case No.: 15795 SAS No.: SDG No.: SFW29

x: (Soil/Water) SOIL Lab Sample ID: 910958-01

e Wt (g): 30.0 (g/mL) G Lab File ID:

Low/Med) LOW Date Received: 01/31/91

ture: not dec. 28 dec. Date Extracted: 02/06/91

tion: (SepF/Cont/Sonc) SONC Date Analyzed: 02/16/91

eanup: (Y/N) N pH: 8.3 Dilution Factor: 2.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	22	U
319-85-7	beta-BHC	22	U
319-86-8	delta-BHC	22	U
58-89-9	gamma-BHC (Lindane)	22	U
76-44-8	Heptachlor	22	U
309-00-2	Aldrin	22	U
1024-57-3	Heptachlor epoxide	22	U
959-98-8	Endosulfan I	22	U
60-57-1	Dieldrin	22	U
72-55-9	4,4'-DDE	44	U
72-20-8	Endrin	44	U
33213-65-9	Endosulfan II	44	U
72-54-8	4,4'-DDD	44	U
1031-07-8	Endosulfan sulfate	44	U
50-29-3	4,4'-DDT	44	U
72-43-5	Methoxychlor	94	J N
53494-70-5	Endrin ketone	220	U
5103-71-9	alpha-Chlordane	44	U
5103-74-2	gamma-Chlordane	220	U
8001-35-2	Toxaphene	220	U
12674-11-2	Aroclor-1016	440	U
11104-28-2	Aroclor-1221	220	U
11141-16-5	Aroclor-1232	220	U
53469-21-9	Aroclor-1242	220	U
12672-29-6	Aroclor-1248	220	U
11097-69-1	Aroclor-1254	220	U
11096-82-5	Aroclor-1260	440	U
		440	U

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW27

Name: CEIMIC CORP Contract: 68D90056

Code: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

Matrix (soil/water): SOIL Lab Sample ID: 910055-02

% Solids: 30.3 (g/mL) G Lab File ID: _____

Level (low/med): LOW Date Received: 01/31/91

Are GPC Performed? NO Date Extracted: 02/06/91

Sonication (SepF/Cont/Sonc): SONC Date Analyzed: 02/16/91

GPC Cleanup: (Y/N) N pH: 7.8 Dilution Factor: 3.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	33	U
319-85-7	beta-BHC	33	U
319-86-8	delta-BHC	33	U
58-89-9	gamma-BHC (Lindane)	33	U
76-44-8	Heptachlor	33	U
309-00-2	Aldrin	33	U
1024-57-3	Heptachlor epoxide	33	J
959-98-8	Endosulfan I	33	U
60-57-1	Dieldrin	65	U
72-55-9	4,4'-DDE	65	U
72-20-8	Endrin	65	U
33213-65-9	Endosulfan II	65	U
72-54-8	4,4'-DDD	65	U
1031-07-8	Endosulfan sulfate	65	U
50-29-3	4,4'-DDT	140	(J)
72-43-5	Methoxychlor	330	U
53494-70-5	Endrin ketone	65	U
5103-71-9	alpha-Chlordane	330	U
5103-74-2	gamma-Chlordane	330	U
8001-35-2	Toxaphene	650	U
12674-11-2	Aroclor-1016	330	U
11104-28-2	Aroclor-1221	330	U
11141-16-5	Aroclor-1232	330	U
53469-21-9	Aroclor-1242	330	U
12672-29-6	Aroclor-1248	330	U
11097-69-1	Aroclor-1254	650	U
11096-82-5	Aroclor-1260	650	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW29

b Name: CEIMIC CORP Contract: 68D90058

b Code: CEIMIC Case No.: 15795 SAS No.: SDG No.: BFW26

trix: (soil/water) SOIL Lab Sample ID: 910055-04

mple wt/vol: 30.2 (g/mL) G Lab File ID:

vel: (low/med) LOW Date Received: 01/31/91

Moisture: not dec. 10 dec. Date Extracted: 02/06/91

traction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/20/91

C Cleanup: (Y/N) N pH: 7.6 Dilution Factor: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	44	U
319-85-7	beta-BHC	44	U
319-86-8	delta-BHC	44	U
58-89-9	gamma-BHC (Lindane)	44	U
76-44-8	Heptachlor	44	U
309-00-2	Aldrin	44	U
1024-57-3	Heptachlor epoxide	44	U
959-98-8	Endosulfan I	44	U
60-57-1	Dieldrin	88	U
72-55-9	4,4'-DDE	88	U
72-20-8	Endrin	88	U
33213-65-9	Endosulfan II	88	U
72-54-8	4,4'-DDD	88	U
1031-07-8	Endosulfan sulfate	88	U
50-29-3	4,4'-DDT	88	U
72-43-5	Methoxychlor	440	U
53494-70-5	Endrin ketone	88	U
5103-71-9	alpha-Chlordane	440	U
5103-74-2	gamma-Chlordane	440	U
8001-35-2	Toxaphene	880	U
12674-11-2	Aroclor-1016	440	U
11104-28-2	Aroclor-1221	440	U
11141-16-5	Aroclor-1232	440	U
53469-21-9	Aroclor-1242	440	U
12672-29-6	Aroclor-1248	440	U
11097-69-1	Aroclor-1254	880	U
11096-82-5	Aroclor-1260	880	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW30

Name: CEIMIC CORP Contract: 68D90055

Code: CEIMIC Case No.: 15735 SAS No.: _____ SDG No.: BFW26

Matrix: (soil/water) SOIL Lab Sample ID: 910055-05

Sample wt/vol: 30.3 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 01/21/91

Moisture: not dec. 17 dec. _____ Date Extracted: 02/06/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 02/19/91

Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	9.5	U
319-85-7	beta-BHC	9.5	U
319-86-8	delta-BHC	9.5	U
58-89-9	gamma-BHC (Lindane)	9.5	U
76-44-8	Heptachlor	9.5	U
309-00-2	Aldrin	9.5	U
1024-57-3	Heptachlor epoxide	9.5	U
959-98-8	Endosulfan I	9.5	U
60-57-1	Dieldrin	19	U
72-55-9	4,4'-DDE	19	U
72-20-8	Endrin	19	U
33213-65-9	Endosulfan II	19	U
72-54-8	4,4'-DDD	19	U
1031-07-8	Endosulfan sulfate	19	U
50-29-3	4,4'-DDT	19	U
72-43-5	Methoxychlor	95	U
53494-70-5	Endrin ketone	19	U
5103-71-9	alpha-Chlordane	95	U
5103-74-2	gamma-Chlordane	95	U
8001-35-2	Toxaphene	190	U
12674-11-2	Aroclor-1016	95	U
11104-28-2	Aroclor-1221	95	U
11141-16-5	Aroclor-1232	95	U
53469-21-9	Aroclor-1242	95	U
12672-29-6	Aroclor-1248	95	U
11097-69-1	Aroclor-1254	190	U
11096-82-5	Aroclor-1260	190	U

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TICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW31

IC CORP Contract: 68D90056

IC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

vater) SOIL Lab Sample ID: 910055-06

30.4 (g/mL) G Lab File ID: _____

(med) LOW Date Received: 01/31/91

; dec. 21 dec. ____ Date Extracted: 02/06/91

(SepF/Cont/Sonc) SONC Date Analyzed: 02/20/91

(Y/N) N pH: 7.4 Dilution Factor: 3.0

COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
-------alpha-BHC	30	U
-------beta-BHC	30	U
-------delta-BHC	30	U
-------gamma-BHC (Lindane)	30	U
-------Heptachlor	30	U
-------Aldrin	30	U
3------Heptachlor epoxide	30	U
-------Endosulfan I	30	U
-------Dieldrin	60	U
-------4,4'-DDE	60	U
-------Endrin	60	U
-9-----Endosulfan II	60	U
-------4,4'-DDD	60	U
8------Endosulfan sulfate	60	U
-------4,4'-DDT	60	U
-------Methoxychlor	300	U
-5-----Endrin ketone	60	U
9------alpha-Chlordane	300	U
2------gamma-Chlordane	300	U
2-------Toxaphene	600	U
-2-----Aroclor-1016	300	U
-2-----Aroclor-1221	300	U
-5-----Aroclor-1232	300	U
-9-----Aroclor-1242	300	U
-6-----Aroclor-1248	300	U
-1-----Aroclor-1254	600	U
-5-----Aroclor-1260	600	U

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IDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW32

CORP _____ Contract: 68D90056

Case No.: 15795 SAS No.: _____ SDG No.: BFW26

ar) WATER Lab Sample ID: 910055-07

1000 (g/mL) ML Lab File ID: _____

d) LOW Date Received: 01/31/91

ec. ____ dec. ____ Date Extracted: 02/05/91

oF/Cont/Sonc) SEPF Date Analyzed: 02/19/91

/N) N pH: 9.1 Dilution Factor: 1

COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
------alpha-BHC	0.050	U
------beta-BHC	0.050	U
------delta-BHC	0.050	U
------gamma-BHC (Lindane)	0.050	U
------Heptachlor	0.050	U
------Aldrin	0.050	U
------Heptachlor epoxide	0.050	U
------Endosulfan I	0.050	U
------Dieldrin	0.10	U
------4,4'-DDE	0.10	U
------Endrin	0.10	U
------Endosulfan II	0.10	U
------4,4'-DDD	0.10	U
------Endosulfan sulfate	0.10	U
------4,4'-DDT	0.10	U
------Methoxychlor	0.50	U
------Endrin ketone	0.10	U
------alpha-Chlordane	0.50	U
------gamma-Chlordane	0.50	U
------Toxaphene	1.0	U
------Aroclor-1016	0.50	U
------Aroclor-1221	0.50	U
------Aroclor-1232	0.50	U
------Aroclor-1242	0.50	U
------Aroclor-1248	0.50	U
------Aroclor-1254	1.0	U
------Aroclor-1260	1.0	U

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ESTICIDE CRGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW33

: CEIMIC CORP Contract: 68D90056

: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

(soil/water) WATER Lab Samole ID: 91055-08

t/vol: 1000 (g/mL) ML Lab File ID: _____

(low/med) LOW Date Received: 01/31/91

re: not dec. _____ dec. _____ Date Extracted: 02/05/91

on: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/19/91

nup: (Y/N) N pH: 8.7 Dilution Factor: 1

AS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
19-84-6	alpha-BHC	0.050	U
19-85-7	beta-BHC	0.050	U
19-86-8	delta-BHC	0.050	U
3-89-9	gamma-BHC (Lindane)	0.050	U
5-44-8	Heptachlor	0.050	U
09-00-2	Aldrin	0.050	U
024-57-3	Heptachlor epoxide	0.050	U
59-98-8	Endosulfan I	0.050	U
)-57-1	Dieldrin	0.10	U
2-55-9	4,4'-DDE	0.10	U
2-20-8	Endrin	0.10	U
3213-65-9	Endosulfan II	0.10	U
2-54-8	4,4'-DDD	0.10	U
031-07-8	Endosulfan sulfate	0.10	U
)-29-3	4,4'-DDT	0.10	U
2-43-5	Methoxychlor	0.50	U
7494-70-5	Endrin ketone	0.10	U
03-71-9	alpha-Chlordane	0.50	U
03-74-2	gamma-Chlordane	0.50	U
001-35-2	Toxaphene	1.0	U
674-11-2	Aroclor-1016	0.50	U
104-28-2	Aroclor-1221	0.50	U
141-16-5	Aroclor-1232	0.50	U
7469-21-9	Aroclor-1242	0.50	U
672-29-6	Aroclor-1248	0.50	U
097-69-1	Aroclor-1254	1.0	U
096-82-5	Aroclor-1260	1.0	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW34

Name: CEIMIC CORP Contract: 68D90056

Code: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

ix: (soil/water) WATER Lab Sample ID: 910055-09

le wt/vol: 1000 (g/mL) ML Lab File ID: _____

l: (low/med) LOW Date Received: 01/31/91

isture: not dec. _____ dec. _____ Date Extracted: 02/05/91

action: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/19/91

Cleanup: (Y/N) N pH: 8.3 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW35

Name: CEIMIC CORP Contract: 68D90056

Code: CEIMIC Case No.: 15795 SAS No.: SDG No.: BFW26

Matrix: (soil/water) WATER Lab Sample ID: 910055-10

Sample wt/vol: 1000 (g/mL) ML Lab File ID:

Level: (low/med) LOW Date Received: 01/31/91

% Moisture: not dec. dec. Date Extracted: 02/05/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/19/91

GPC Cleanup: (Y/N) N pH: 6.6 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BFW36

: CEIMIC CORP Contract: 68D90056

: CEIMIC Case No.: 15795 SAS No.: _____ SDG No.: BFW26

(soil/water) WATER Lab Sample ID: 910055-11

:/vol: 1000 (g/mL) ML Lab File ID: _____

(low/med) LOW Date Received: 01/31/91

:e: not dec. _____ dec. _____ Date Extracted: 02/05/91

on: (SepF/Cont/Sonc) SEPF Date Analyzed: 02/19/91

uo: (Y/N) N pH: 7.0 Dilution Factor: 1

CONCENTRATION UNITS:

AS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

9-84-6	alpha-BHC	0.050 U
9-85-7	beta-BHC	0.050 U
9-86-8	delta-BHC	0.050 U
)-89-9	gamma-BHC (Lindane)	0.050 U
-44-8	Heptachlor	0.050 U
9-00-2	Aldrin	0.050 U
024-57-3	Heptachlor epoxide	0.050 U
9-98-8	Endosulfan I	0.050 U
-57-1	Dieldrin	0.10 U
-55-9	4,4'-DDE	0.10 U
-20-8	Endrin	0.10 U
3213-65-9	Endosulfan II	0.10 U
-54-8	4,4'-DDD	0.10 U
31-07-8	Endosulfan sulfate	0.10 U
-29-3	4,4'-DDT	0.10 U
-43-5	Methoxychlor	0.50 U
494-70-5	Endrin ketone	0.10 U
03-71-9	alpha-Chlordane	0.50 U
03-74-2	gamma-Chlordane	0.50 U
01-35-2	Toxaphene	1.0 U
674-11-2	Aroclor-1016	0.50 U
104-28-2	Aroclor-1221	0.50 U
141-16-5	Aroclor-1232	0.50 U
469-21-9	Aroclor-1242	0.50 U
572-29-6	Aroclor-1248	0.50 U
097-69-1	Aroclor-1254	1.0 U
096-82-5	Aroclor-1260	1.0 U

15795 Site Servo Corp Matrix: Soil 6

MDEB-87 Lab IEEPA Water 5

ractor NUS-FIT 2 Reviewer C. Agnew Other

l The case description and exceptions, if any, are noted below with reason(s) for rejection or qualification as estimated value(s) J.

① The CL used a non-linear method to derive sample concentrations. The lab included in the raw data representative graphs which appear acceptable for a calibration curve. Validation based upon coefficient of correlation is not applicable case. ~~A ±10% of true value was applied + therefore Pb was flagged estimated "J" on MDEB 89 Group 92 due to the 40 calibration standard being outside criteria.~~

② CRDL Standards -

Se was rejected in sample MDEB 87 because its concentration was about FDL while its associated CRA was greater than 150%.

Reject → Se → MDEB-87

Tracking Form 1 - Revalidation of Case # : 15795
0

Type : Inorganic

R : FIT REVIEWER : C. Agnew / V. Smith

ERROR (Crit,Signif,Trans) : Field duplicates - soil

ION : Field duplicate results for Hg were in 2x CRDL difference criteria.

malize Form I values : ICP ug/L = mg/kg x 5 x %solids (decimal form)
Hg " " x 2 "
CN " " x 20 "

Please correct data assessment narrative summary form. Please prepare a new Form 6 soils.

ERROR (Crit,Signif,Trans) : GFAA calibration

ION : All calibration standards were analyzed absorbance mode, therefore ±10 percent criteria not apply.

Please remove "J" flags from Pb results; remove statement from data assessment ative.

. error= a significant error which effects 2 or more samples
:ant error= categories identified on the Functional Guidelines
.ption error = can also be considered as major or minor

RORS - # CRIT : _____ # SIGNIF : _____ # TRANS : ____ Thank you.

/IEWER : Karen Taylor DATE : 6/14/91

1 | 91

A.2.1 (continuation)

(3) Matrix Spike

Sb, Zn, and Se were qualified as estimated in samples MBEB 83 through 88 because their %R recoveries in the associated Matrix Spike sample (Soil) was between 10 and 74%. (MBEB-87 - Se - was previously rejected per statement 2). Cu and Mn were qualified as estimated in samples MBEB 83 through MBEB 88 because their concentrations were were above EDL while the associated Soil matrix Spike sample %R Recovery was between 126% - 200% for both analytes.

estimated → J → Sb, Zn → MBEB 83-88

estimated → J → Se, ~~Sb, Zn~~ (5) MBEB 83 → 86, 88

estimated → J → Cu, Mn, ~~Zn~~, ~~Sb~~ · MBEB 83 → 88.
(positive values) (5)

(4) ~~Field Duplicates~~

~~In sample MBEB 83, and 84, Hg has been qualified as estimated because the absolute~~ absolute difference between the duplicates is greater than ~~2 X EDL~~.

(A 6/26/91

~~estimated → J → Hg → MBEB 83, 84~~

A.2.1 (continuation)

⑤ ICP Serial Dilutions

N/a was rejected in samples MBEB83, 85 because their concentrations were greater than 10 X EDL while its % Difference was greater than 100% in the associated Serial Dilution Sample.

Rejected → N2 → MBEB 83, 85

⑥ Sodium was flagged estimated "J" in MBEB84, 86, 87, 88, 89, 90, 91, 92 & 93, due to it being a false positive result found in the ICS solution.

2.2 Contract-Problems/Non-Compliance

① Contract lab failed to note dilutions on form IS for As - MBEB 85 - 100X and MBEB 86 - 5X.

② Lab failed to flag values outside lab Duplicate Control Limits with "*" on the associated form IS and VI for Mercury. Soil samples MBEB 83 through 88 should have been flagged. This was corrected in the late resubmittals

MB Reviewer: _____ Date: _____
Signature

ntractor Reviewer: _____ Date: 5-15-91
Signature

Verified by: _____ Date: 5-23-91

CONTRACT NON-COMPLIANCE (SMO REPORT)

Regional Review of Uncontrolled Hazardous Waste Site Contract Laboratory Data Package

CASE NO. _____

The hardcopied (laboratory name) _____ Inorganic data package received at Region II has been reviewed and the quality assurance a performance data summarized. The data reviewed included:

SMO Sample No.: _____

Conc. & Matrix: _____

Contract No. WA87-K025,K026,K027(SOW787) requires that specific analytical work be done and that associated reports be provided by the contractor to the Regions, EMSL-LV, and SMO. Th general criteria used to determine the performance were based on an examination of:

- Data Completeness
- Matrix Spike Results
- Calibration Standards Results
- Duplicate Analysis Results
- Blank Analysis Results
- MSA Results

Items of non-compliance with the above contract are described below.

Comments: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____ _____

Reviewer's Initial Date

CLP DATA ASSESSMENT SUMMARY FORM (INORGANICS)

INORGANIC Date: 6/26/91 Case #: 15795

CRUD Corp Lab Name: BETZ PA

la: CA Number of Samples: 11

Analytes Rejected Due to Exceeding Review Criteria:*

ag e	CRDL STD Calibration	Prep Blank	Field Blank	Inter-ferences	Spike-Recovery	Duplicates Lab	Duplicates Field	Detection Limits	LCS	Serial Dilution	MSA	Total Analytes	Rejectio
										2		2	
	1											1	
	1									2		3	

Analytes Flagged as Estimated (J) Due to Exceeding Criteria For:*

				9	24					9		33	
					7							7	
				9	31							40	

*Indicates additional exceedances of review criteria.

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 15795 Region 2

SITE Servo Corp

LABORATORY BirLAB

NO. OF SAMPLES/
MATRIX 6 Water 5 Hzo

SDG# MBE3-83

REVIEWER (IF NOT ESD) Non Fed

SOW# 7/88

REVIEWER'S NAME C. Ahn

DPO: ACTION _____ FYI _____

COMPLETION DATE 5-15-91

DATA ASSESSMENT SUMMARY

		ICP	AA	Hg	CYANIDE
1.	HOLDING TIMES	O	O	O	
2.	CALIBRATIONS	O	O	O	
3.	BLANKS	O	O	O	
4.	ICS	O			
5.	LCS	O			
6.	DUPLICATE ANALYSIS	O	O	O	
7.	MATRIX SPIKE	O	O	O	
8.	MSA		O		
9.	SERIAL DILUTION	O			
10.	SAMPLE VERIFICATION	O	O	O	
11.	OTHER QC	O	O	O	
12.	OVERALL ASSESSMENT				

O = Data has no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems, but do not affect data.

ACTION ITEMS: _____

AREAS OF CONCERN: _____

NOTABLE PERFORMANCE: _____

ORGANICS QUALITY CONTROL DATA

RY: BETZ PA CASE NO. 15795 SOW NO. 7/88 SAMPLE TYPE/SDG: Soil MBEB 83

DY DESCRIPTION: Seiad Gold SF SAMPLE NOS: MBEB 83 → 88

DUP. #'S: MBEB 83-84 LAB DUP. #'S: MBEB 85D Field Blank MBEB-91,92,93

DILUTION SAMPLE NO. MBEB 85L COMPLETION DATE: 5/5/91 REVIEWERS INITIALS: LA

MATRIX SPIKE #: MBEB85S

XI	I	IIA	IIB	III	IV	V	VI	VII	IX

ection mits G/L		Field Blank	Calib. Ver. %R				CRDL Std Ver. % R		Calibration Blanks				PB RL EA PN	ICP ICS % R		MS tr x	Sp ik	Lab Dup RPD Diff	LCS % R	Ser Dil % D	Meth
L	IDL		Init	Continued 1	2	3	Init	Fin	Init	Continued 1	2	3		Init	Fin						
0	27.0	U	92.8	101.1	102.4	102.9			U	U	U	U									
0	15.0	U	103.5	100.5	102.3	102.9	99.6	101.9	U	U	U	U	U	95.8	97.4			5.8	88.7	2.7	P
0	1.0	U	104.6	99.6	103.2	101.4	114.0		U	U	U	U	U				61.8	U	110.9		P
0	2.0	U	100.3	102.5	102.9	104.0			U	U	U	U	U				-1144.7	1.33	87.9		F
5	1.0	U	98.5	99.3	101.0	101.6	103.1	105.5	U	U	U	U	U	93.0	94.9	101.0	13.1	106.2	1.7	P
5	2.0	U	102.2	100.9	103.6	103.6	100.6	115.7	U	U	U	U	U	96.4	98.5	93.3	5.2	91.8	100.0	P
0	41.0	B	100.1	101.5	103.9	103.9			U	U	U	U	U	102.6	105.4	76.1	U	88.5		P
0	6.0	U	98.0	100.2	102.5	102.6	99.8	101.8	U	U	U	U	B	98.9	101.3		1.5	99.7	3.0	P
0	3.0	U	96.7	100.1	102.3	102.6	100.9	103.6	U	U	U	U	U	91.6	93.3	91.5	13.0	92.3	3.7	P
	3.0	U	95.8	100.7	101.2	101.4	101.0	99.6	U	U	U	U	U	90.3	92.2	96.4	7.9	95.0	7.0	P
	26.0	B	97.3	100.7	103.1	103.5			U	U	U	U	U	94.4	95.7	137.5	5.3	100.3	1.9	P
	17.0	4.10	99.0	98.6	101.3	101.6	101.9	96.7	90.8	U	U	U	U	100.3	102.6		8.0	99.2	1.5	P
	42.0	U	99.3	101.5	102.5	102.2			U	U	U	U	U	93.0	95.1	88.3	6.0	88.8	5.1	P
	2.0	U	96.8	100.8	103.0	103.4	98.4	102.1	U	U	U	U	U	93.8	95.2		2.3	98.7	2.8	P
	0.2	U	102.0	99.6	102.6	100.8	135.0		U	U	U	U	U	93.4	96.5	153.5	12.4	93.4	2.1	P
	9.0	U	97.6	100.1	102.8	102.8	103.7	105.2	U	U	U	U	U			97.6	45.8	96.1		CV
	47.4	U	97.1	99.7	99.5	100.5			U	U	U	U	U	88.9	92.0	91.6	9.9	86.2	21.8	P
	1.0	U	106.7	94.5	101.5	102.8	114.0		U	U	U	U	U				3.4	0.0	100.0	P
	4.0	U	101.6	103.2	103.0	103.1	101.0	110.2	U	U	U	U	U			59.2	28.5	84.4		F
	38.0	B	99.6	100.8	102.5	103.1			B	U	U	U	U	95.9	97.6	110.3	14.4	88.3	10.9	P
	1.0	U	97.3	102.4	101.5	102.4	94.0		U	U	U	U	B				10.2	133.6	18.6	P
	3.0	U	97.6	105.3	100.2	98.2	99.7	101.8	U	U	U	U	U			100.4	14.8	93.6		F
	3.0	B	98.7	100.6	102.3	102.8	103.2	106.8	U	U	U	U	U	86.1	88.2	92.5	6.7	93.0	0.1	P
				99.7	101.6	101.9							B	97.7	99.5	28.3	6.0	90.9	6.5	P
																					N/A

SUMMARY OF INORGANICS QUALITY CONTROL DATA

LABORATORY: _____ CASE NO. 15795 SOW NO. 7/89 SAMPLE TYPE/SDG: Waters MBEB3

SITE/STUDY DESCRIPTION: Seruu SAMPLE NOS: MBEB 89, 90

FIELD DUP. #'S: MBEB 89-90 LAB DUP. #'S: MBEB-89 Field Blank _____

SERIAL DILUTION SAMPLE NO. MBEB-89L MATRIX SPIKE #: MBEB-89S

COMPLETION DATE: 5/5/91 REVIEWERS INITIALS: CA

	XI	I	IIA				IIB		III				IV		V	VI		VII	IX	
	Detection Limits UG/L		Field Blank	Calib. Ver. %R			CRDL Std Ver. % R		Calibration Blanks				PBRLEAPN	ICP ICS % R		MS Mtrix	Lab Dup RPD Diff.	LCS % R	Ser Dil % D	Meth
Analyte	CRDL	IDL		Init	1 Continued	2 Continued	Init	Fin	Init	1 Continued	2 Continued	3 Continued		Init	Fin					
Al	200	87.0		92.8	100.4	101.1			27.0 U	U										
Sb	60	15.0		103.5	100.3	100.5	99.6	101.9	15.0 U	U			U	95.8	97.4	95.0	10.7	89.6	100.0 U	P
As	10	1.0		95.1	93.2	95.4	101.0		1.0 U	U	1.6 B	U	U			89.9	200.0	98.4	1000 U	P
Ba	200	2.0		100.3	101.5	102.3			2.0 U	U			U			81.8	200.0	94.3	—	F
Be	5	1.0		98.5	99.0	99.8	103.1	105.5	1.0 U	U			U	93.0	94.4	97.4	8.3	96.9	—	P
Cd	5	2.0		102.2	101.0	100.9	100.6	115.7	2.0 U	U			U	96.4	98.5	94.1	—	94.8	—	P
Ca	5000	41.0		100.1	101.5	101.5			41.0 U	U			U	102.6	105.4	91.2	—	98.8	—	P
Cr	10	6.0		98.0	100.3	100.2	99.8	101.8	6.0 U	U			149.2 B	98.9	101.3	NR	1.1	96.8	—	P
Co	50	3.0		96.7	100.2	100.1	100.9	103.6	3.0 U	U			U	94.6	93.3	95.5	—	94.6	—	P
Cu	25	3.0		95.8	99.4	100.7	101.0	99.6	3.0 U	U			U	90.3	92.2	96.3	—	93.3	—	P
Fe	100	26.0		97.3	101.2	100.7			26.0 U	U			U	94.4	95.7	93.5	2.4	92.5	—	P
Pb	3	1.0		104.0	101.5	106.0	96.7	—	1.0 U	U	U	U	31.8 B	100.3	102.6	94.8	3.2	95.1	—	P
		2.0			106.2	100.5	103.8			U	U	U								
Mg	5000	42.0		99.3	101.0	101.5			42.0 U	U						102.0	6.2	115.3	—	F
Mn	15	2.0		96.8	100.2	100.8	98.4	102.1	2.0 U	U			U	93.8	95.2	NR	0.2	96.0	—	P
Hg	0.2	0.2		98.2	97.0	100.6	100.0		0.2 U	U	U		U	93.4	96.5	95.2	0.0	93.3	—	P
Ni	40	9.0		97.6	100.0	100.1	103.7	106.2	9.0 U	U			U			103.9	—	—	—	CV
K	5000	474		97.1	99.4	99.7			474 U	U			U	88.9	92.0	96.3	—	96.0	—	P
Se	5	1.0		106.7	99.5	101.5	102.8	164.0	10 U	U	U		U			NR	36.4	94.2	—	P
Ag	10	4.0		104.6	100.7	100.8							U			118.0	—	88.4	—	F
Na	5000	38.0		94.6	101.1	102.4	101.0	110.2	40 U	U			U	95.9	97.6	97.4	—	98.6	—	P
Tl	10	1.0		97.3	97.2	104.0	104.2	94.0	4048 U	U	U	U	B			NR	2.2	96.9	0.6	P
					103.2	105.2			10 U	U	U		U			111.8	—	107.0	—	F
V	50	3.0		97.6	100.4	100.6	99.7	106.8	3.0 U	U			U	86.1	88.2	94.5	—	93.9	—	P
Zn	20	3.0		98.7	99.6	99.7	103.2	106.8	3.0 U	U			U	97.7	99.5	96.2	2.9	95.3	6.7	P
	10																			

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

MBEB83

ne: BETZ LABORATORIES TREVOSE Contract: 68-D9-0082

de: BETZPA Case No.: 15795 SAS No.: SDG No.: MBEB83

(soil/water): SOIL Lab Sample ID: MBEB83

(low/med): LOW Date Received: 1/31/91

ds: 60.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1930.00			P
7440-36-0	Antimony	4.80	U	N J	P
7440-38-2	Arsenic	11.10			F
7440-39-3	Barium	17.30	B		P
7440-41-7	Beryllium	.32	U		P
7440-43-9	Cadmium	1.30	B		P
7440-70-2	Calcium	6350.00			P
7440-47-3	Chromium	24.90			P
7440-48-4	Cobalt	3.10	B		P
7440-50-8	Copper	103.00		N J	P
7439-89-6	Iron	7320.00			P
7439-92-1	Lead	134.00			P
7439-95-4	Magnesium	3430.00			P
7439-96-5	Manganese	41.80		N J	P
7439-97-6	Mercury	.13	U	* J	CV
7440-02-0	Nickel	8.10	B		P
7440-09-7	Potassium	253.00	B		P
7782-49-2	Selenium	.32	U	N J	F
7440-22-4	Silver	1.30	U		P
7440-23-5	Sodium	~~159.00~~	~~B~~		~~P~~
7440-28-0	Thallium	.32	U		F
7440-62-2	Vanadium	12.40	B		P
7440-66-6	Zinc	270.00		N J	P
	Cyanide				NR

Before: GREY Clarity Before: Texture: MEDIUM

After: YELLOW Clarity After: Artifacts: YES

nts:
. ROOTS AND ROCKS

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBEB83

Name: BETZ LABORATORIES TREVOSE Contract: 68-D9-0082

Code: BETZPA Case No.: 15795 SAS No.: SDG No.: MBEB83

ix (soil/water): SOIL Lab Sample ID: MBEB83

l (low/med): LOW Date Received: 1/31/91

lids: 60.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1930.00			P
7440-36-0	Antimony	4.80	U	N J	P
7440-38-2	Arsenic	11.10			F
7440-39-3	Barium	17.30	B		P
7440-41-7	Beryllium	.32	U		P
7440-43-9	Cadmium	1.30	B		P
7440-70-2	Calcium	6350.00			P
7440-47-3	Chromium	24.90			P
7440-48-4	Cobalt	3.10	B		P
7440-50-8	Copper	103.00		N J	P
7439-89-6	Iron	7320.00			P
7439-92-1	Lead	134.00			P
7439-95-4	Magnesium	3430.00			P
7439-96-5	Manganese	41.80		N J	P
7439-97-6	Mercury	.13	U	X J	CV
7440-02-0	Nickel	8.10	B		P
7440-09-7	Potassium	253.00	B		P
7782-49-2	Selenium	.32	U	N J	F
7440-22-4	Silver	1.30	U		P
7440-23-5	Sodium	159.00	B		P
7440-28-0	Thallium	.32	U		F
7440-62-2	Vanadium	12.40	B		P
7440-66-6	Zinc	270.00		N J	P
	Cyanide				NR

or Before: GREY Clarity Before: Texture: MEDIUM

or After: YELLOW Clarity After: Artifacts: YES

ments:
LL ROOTS AND ROCKS

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

MBEB84

e: BETZ LABORATORIES TREVOSE Contract: 68-D9-0082

e: BETZPA Case No.: 15795 SAS No.: SDG No.: MBEB83

(soil/water): SOIL Lab Sample ID: MBEB84

low/med): LOW Date Received: 1/31/91

s: 58.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2080.00			P
7440-36-0	Antimony	5.10	U	N J	P
7440-38-2	Arsenic	7.80			F
7440-39-3	Barium	18.30	B		P
7440-41-7	Beryllium	.34	U		P
7440-43-9	Cadmium	1.20	B		P
7440-70-2	Calcium	5580.00			P
7440-47-3	Chromium	23.70			P
7440-48-4	Cobalt	2.80	B		P
7440-50-8	Copper	109.00		N J	P
7439-89-6	Iron	6050.00			P
7439-92-1	Lead	150.00			P
7439-95-4	Magnesium	3200.00			P
7439-96-5	Manganese	36.90		N J	P
7439-97-6	Mercury	.24		* J	CV
7440-02-0	Nickel	7.00	B		P
7440-09-7	Potassium	161.00	U		P
7782-49-2	Selenium	.34	U	N J	F
7440-22-4	Silver	1.40	U		P
7440-23-5	Sodium	124.00	B	J	P
7440-28-0	Thallium	.34	U		F
7440-62-2	Vanadium	10.70	B		P
7440-66-6	Zinc	226.00		N J	P
	Cyanide				NR

Before: GREY Clarity Before: Texture: MEDIUM

After: YELLOW Clarity After: Artifacts: YES

ts:
ROOTS AND ROCKS

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBEB84

ame: BETZ LABORATORIES TREVOSE Contract: 68-D9-0082

ode: BETZPA Case No.: 15795 SAS No.: SDG No.: MBEB83

x (soil/water): SOIL Lab Sample ID: MBEB84

(low/med): LOW Date Received: 1/31/91

.ds: 58.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2080.00			P
7440-36-0	Antimony	5.10	U	N	P
7440-38-2	Arsenic	7.80			F
7440-39-3	Barium	18.30	B		P
7440-41-7	Beryllium	.34	U		P
7440-43-9	Cadmium	1.20	B		P
7440-70-2	Calcium	5580.00			P
7440-47-3	Chromium	23.70			P
7440-48-4	Cobalt	2.80	B		P
7440-50-8	Copper	109.00		N	P
7439-89-6	Iron	6050.00			P
7439-92-1	Lead	150.00			P
7439-95-4	Magnesium	3200.00			P
7439-96-5	Manganese	36.90		N	P
7439-97-6	Mercury	.24			CV
7440-02-0	Nickel	7.00	B		P
7440-09-7	Potassium	161.00	U		P
7782-49-2	Selenium	.34	U	N	F
7440-22-4	Silver	1.40	U		P
7440-23-5	Sodium	124.00	B		P
7440-28-0	Thallium	.34	U		F
7440-62-2	Vanadium	10.70	B		P
7440-66-6	Zinc	226.00		N	P
	Cyanide				NR

r Before: GREY Clarity Before: Texture: MEDIUM

r After: YELLOW Clarity After: Artifacts: YES

nts:
ROOTS AND ROCKS

U.S. EPA - CLP

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET | MBEB85

ΓΖ LABORATORIES TREVOSE Contract: 68-D9-0082

ΓΖPA Case No.: 15795 SAS No.: SDG No.: MBEB83

water): SOIL Lab Sample ID: MBEB85

ed): LOW Date Received: 1/31/91

86.5

ncentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11500.00			P
7440-36-0	Antimony	3.40	U	N J	P
7440-38-2	Arsenic	814.00			F
7440-39-3	Barium	107.00			P
7440-41-7	Beryllium	.27	B		P
7440-43-9	Cadmium	.45	U		P
7440-70-2	Calcium	4740.00			P
7440-47-3	Chromium	21.50			P
7440-48-4	Cobalt	4.50	B		P
7440-50-8	Copper	30.10		N J	P
7439-89-6	Iron	14600.00			P
7439-92-1	Lead	106.00			P
7439-95-4	Magnesium	2720.00			P
7439-96-5	Manganese	151.00		N J	P
7439-97-6	Mercury	.18		*	CV
7440-02-0	Nickel	13.20			P
7440-09-7	Potassium	625.00	B		P
7782-49-2	Selenium	3.50		SN J	F
7440-22-4	Silver	4.40			P
7440-23-5	Sodium	~~88.20~~	~~B~~		~~P~~
7440-28-0	Thallium	1.80	B		F
7440-62-2	Vanadium	29.00			P
7440-66-6	Zinc	354.00		N J	P
	Cyanide				NR

e: GREY Clarity Before: Texture: MEDIUM

: YELLOW Clarity After: Artifacts: YES

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBEB85

ıe: BETZ LABORATORIES TREVOSE Contract: 68-D9-0082

le: BETZPA Case No.: 15795 SAS No.: SDG No.: MBEB83

(soil/water): SOIL Lab Sample ID: MBEB85

low/med): LOW Date Received: 1/31/91

ls: 86.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11500.00			P
7440-36-0	Antimony	3.40	U	N	P
7440-38-2	Arsenic	-814.00			F
7440-39-3	Barium	107.00			P
7440-41-7	Beryllium	.27	B		P
7440-43-9	Cadmium	.45	U		P
7440-70-2	Calcium	4740.00			P
7440-47-3	Chromium	21.50			P
7440-48-4	Cobalt	4.50	B		P
7440-50-8	Copper	30.10		N	P
7439-89-6	Iron	14600.00			P
7439-92-1	Lead	106.00			P
7439-95-4	Magnesium	2720.00			P
7439-96-5	Manganese	151.00		N	P
7439-97-6	Mercury	.18			CV
7440-02-0	Nickel	13.20			P
7440-09-7	Potassium	625.00	B		P
7782-49-2	Selenium	-3.50		SN	F
7440-22-4	Silver	4.40			P
~~7440-23-5~~	~~Sodium~~	~~88.20~~	~~B~~		~~P~~
7440-28-0	Thallium	1.80	B		F
7440-62-2	Vanadium	29.00			P
7440-66-6	Zinc	354.00		N	P
	Cyanide				NR

Before: GREY Clarity Before: Texture: MEDIUM

After: YELLOW Clarity After: Artifacts: YES

nts:
ROCKS

FORM I - IN 7/88

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBEB86

e: BETZ LABORATORIES TREVOSE Contract: 68-D9-0082

e: BETZPA Case No.: 15795 SAS No.: SDG No.: MBEB83

(soil/water): SOIL Lab Sample ID: MBEB86

low/med): LOW Date Received: 1/31/91

s: 88.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4760.00			P
7440-36-0	Antimony	3.30	U	N J	P
7440-38-2	Arsenic	24.30			F
7440-39-3	Barium	125.00			P
7440-41-7	Beryllium	.22	U		P
7440-43-9	Cadmium	1.20			P
7440-70-2	Calcium	12400.00			P
7440-47-3	Chromium	33.30			P
7440-48-4	Cobalt	5.20	B		P
7440-50-8	Copper	120.00		N J	P
7439-89-6	Iron	21000.00			P
7439-92-1	Lead	97.40			P
7439-95-4	Magnesium	6030.00			P
7439-96-5	Manganese	148.00		N J	P
7439-97-6	Mercury	.24		*	CV
7440-02-0	Nickel	11.00			P
7440-09-7	Potassium	335.00	B		P
7782-49-2	Selenium	.23	U	WN J	F
7440-22-4	Silver	6.20			P
7440-23-5	Sodium	76.90	B	J	P
7440-28-0	Thallium	.23	U		F
7440-62-2	Vanadium	17.80			P
7440-66-6	Zinc	435.00		N J	P
	Cyanide				NR

Before: GREY Clarity Before: Texture: MEDIUM

After: YELLOW Clarity After: Artifacts: YES

ts:
ROCKS

U.S. EPA - CLP

EPA SAMPLE NO.

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INORGANIC ANALYSIS DATA SHEET

MBEB86

ame: BETZ LABORATORIES TREVOSE Contract: 68-D9-0082

ode: BETZPA Case No.: 15795 SAS No.: SDG No.: MBEB83

x (soil/water): SOIL Lab Sample ID: MBEB86

(low/med): LOW Date Received: 1/31/91

ids: 88.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4760.00			P
7440-36-0	Antimony	3.30	U	N	P
7440-38-2	Arsenic	-24.30			F
7440-39-3	Barium	125.00			P
7440-41-7	Beryllium	.22	U		P
7440-43-9	Cadmium	1.20			P
7440-70-2	Calcium	12400.00			P
7440-47-3	Chromium	33.30			P
7440-48-4	Cobalt	5.20	B		P
7440-50-8	Copper	120.00		N	P
7439-89-6	Iron	21000.00			P
7439-92-1	Lead	97.40			P
7439-95-4	Magnesium	6030.00			P
7439-96-5	Manganese	148.00		N	P
7439-97-6	Mercury	.24			CV
7440-02-0	Nickel	11.00			P
7440-09-7	Potassium	335.00	B		P
7782-49-2	Selenium	.23	U	WN	F
7440-22-4	Silver	6.20			P
7440-23-5	Sodium	76.90	B		P
7440-28-0	Thallium	.23	U		F
7440-62-2	Vanadium	17.80			P
7440-66-6	Zinc	435.00		N	P
	Cyanide				NR

or Before: GREY Clarity Before: Texture: MEDIUM

or After: YELLOW Clarity After: Artifacts: YES

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBEB87

BETZ LABORATORIES TREVOSE Contract: 68-D9-0082

BETZPA Case No.: 15795 SAS No.: SDG No.: MBEB83

oil/water): SOIL Lab Sample ID: MBEB87

w/med): LOW Date Received: 1/31/91

84.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9380.00			P
7440-36-0	Antimony	3.50	U	N	P
7440-38-2	Arsenic	6.10			F
7440-39-3	Barium	27.90	B		P
7440-41-7	Beryllium	.24	B		P
7440-43-9	Cadmium	.47	U		P
7440-70-2	Calcium	661.00	B		P
7440-47-3	Chromium	10.80			P
7440-48-4	Cobalt	3.20	B		P
7440-50-8	Copper	11.90		N	P
7439-89-6	Iron	11100.00			P
7439-92-1	Lead	50.90			P
7439-95-4	Magnesium	1160.00	B		P
7439-96-5	Manganese	154.00		N	P
7439-97-6	Mercury	.12		*	CV
7440-02-0	Nickel	7.40	B		P
7440-09-7	Potassium	435.00	B		P
7782-49-2	Selenium	.48	B	WN	F
7440-22-4	Silver	.94	U		P
7440-23-5	Sodium	74.50	B	J	P
7440-28-0	Thallium	.23	U		F
7440-62-2	Vanadium	17.60			P
7440-66-6	Zinc	41.40		N	P
	Cyanide				NR

fore: GREY Clarity Before: Texture: MEDIUM

ter: YELLOW Clarity After: Artifacts: YES

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBEB87

e: BETZ LABORATORIES TREVOSE Contract: 68-D9-0082

e: BETZPA Case No.: 15795 SAS No.: SDG No.: MBEB83

(soil/water): SOIL Lab Sample ID: MBEB87

.ow/med): LOW Date Received: 1/31/91

s: 84.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9380.00			P
7440-36-0	Antimony	3.50	U	N J	P
7440-38-2	Arsenic	6.10			F
7440-39-3	Barium	27.90	B		P
7440-41-7	Beryllium	.24	B		P
7440-43-9	Cadmium	.47	U		P
7440-70-2	Calcium	661.00	B		P
7440-47-3	Chromium	10.80			P
7440-48-4	Cobalt	3.20	B		P
7440-50-8	Copper	11.90		N J	P
7439-89-6	Iron	11100.00			P
7439-92-1	Lead	50.90			P
7439-95-4	Magnesium	1160.00	B		P
7439-96-5	Manganese	154.00		N J	P
7439-97-6	Mercury	.12		* J	CV
7440-02-0	Nickel	7.40	B		P
7440-09-7	Potassium	435.00	B		P
~~7782-49-2~~	~~Selenium~~	~~.48~~	~~B~~	~~WN~~	~~F~~
7440-22-4	Silver	.94	U		P
7440-23-5	Sodium	74.50	B		P
7440-28-0	Thallium	.23	U		F
7440-62-2	Vanadium	17.60			P
7440-66-6	Zinc	41.40		N J	P
	Cyanide				NR

Before: GREY Clarity Before: Texture: MEDIUM

After: YELLOW Clarity After: Artifacts: YES

ts:
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EPA SAMPLE NO.

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ANALYSIS DATA SHEET

MBEB88

DSE Contract: 68-D9-0082

795 SAS No.: SDG No.: MBEB83

Lab Sample ID: MBEB88

Date Received: 1/31/91

g/L or mg/kg dry weight): MG/KG

	Concentration	C	Q	M
	866.00			P
	3.90	U	N J	P
	7.40			F
	6.50	B		P
m	.26	U		P
	.51	U		P
	17500.00			P
	15.30			P
	1.30	B		P
	54.70		N J	P
	8790.00			P
	76.10			P
m	10000.00			P
e	39.00		N J	P
	.32		*	CV
	4.10	B		P
m	122.00	U		P
	.26	U	WN J	F
	1.00	U		P
	94.60	B	J	P
	.26	U		F
	5.40	B		P
	177.00		N J	P
				NR

rity Before: Texture: MEDIUM

rity After: Artifacts: YES

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBEB88

TORIES TREVOSE Contract: 68-D9-0082

ase No.: 15795 SAS No.: SDG No.: MBEB83

SOIL Lab Sample ID: MBEB88

LOW Date Received: 1/31/91

75.6

on Units (ug/L or mg/kg dry weight): MG/KG

	Analyte	Concentration	C	Q	M
5	Aluminum	866.00			P
0	Antimony	3.90	U	N J	P
2	Arsenic	7.40			F
8	Barium	6.50	B		P
7	Beryllium	.26	U		P
9	Cadmium	.51	U		P
2	Calcium	17500.00			P
3	Chromium	15.30			P
4	Cobalt	1.30	B		P
8	Copper	54.70		N J	P
5	Iron	8790.00			P
1	Lead	76.10			P
4	Magnesium	10000.00			P
5	Manganese	39.00		N J	P
6	Mercury	.32		★	CV
0	Nickel	4.10	B		P
7	Potassium	122.00	U		P
2	Selenium	.26	U	WN J	F
4	Silver	1.00	U		P
5	Sodium	94.60	B		P
0	Thallium	.26	U		F
2	Vanadium	5.40	B		P
6	Zinc	177.00		N J	P
	Cyanide				NR

Clarity Before: Texture: MEDIUM

Clarity After: Artifacts: YES

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBEB89

ABORATORIES TREVOSE Contract: 68-D9-0082

Case No.: 15795 SAS No.: SDG No.: MBEB83

:r): WATER Lab Sample ID: MBEB89

LOW Date Received: 1/31/91

0.0

:ration Units (ug/L or mg/kg dry weight): UG/L

AS No.	Analyte	Concentration	C	Q	M
)-90-5	Aluminum	39.60	B		P
)-36-0	Antimony	15.30	B		P
)-38-2	Arsenic	1.20	B	W	F
)-39-3	Barium	5.60	B		P
)-41-7	Beryllium	1.00	U		P
)-43-9	Cadmium	2.00	U		P
)-70-2	Calcium	3600.00	B		P
)-47-3	Chromium	6.00	U		P
)-48-4	Cobalt	3.00	U		P
)-50-8	Copper	14.60	B		P
)-89-6	Iron	79.40	B		P
)-92-1	Lead	4.70		W J	F
)-95-4	Magnesium	1400.00	B		P
)-96-5	Manganese	2.60	B		P
)-97-6	Mercury	.20	U		CV
)-02-0	Nickel	9.00	U		P
)-09-7	Potassium	868.00	B		P
!-49-2	Selenium	1.00	U	W	F
)-22-4	Silver	4.00	U		P
)-23-5	Sodium	8990.00		J	P
)-28-0	Thallium	1.00	U		F
)-62-2	Vanadium	3.00	U		P
)-66-6	Zinc	23.10			P
	Cyanide				NR

)LORLESS Clarity Before: CLEAR Texture:

)LORLESS Clarity After: CLEAR Artifacts:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBEB89

ne: BETZ LABORATORIES TREVOSE Contract: 68-D9-0082

ie: BETZPA Case No.: 15795 SAS No.: SDG No.: MBEB83

(soil/water): WATER Lab Sample ID: MBEB89

(low/med): LOW Date Received: 1/31/91

is: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	39.60	B		P
7440-36-0	Antimony	15.30	B		P
7440-38-2	Arsenic	1.20	B	W	F
7440-39-3	Barium	5.60	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	2.00	U		P
7440-70-2	Calcium	3600.00	B		P
7440-47-3	Chromium	6.00	U		P
7440-48-4	Cobalt	3.00	U		P
7440-50-8	Copper	14.60	B		P
7439-89-6	Iron	79.40	B		P
7439-92-1	Lead	4.70		W	F
7439-95-4	Magnesium	1400.00	B		P
7439-96-5	Manganese	2.60	B		P
7439-97-6	Mercury	.20	U		CV
7440-02-0	Nickel	9.00	U		P
7440-09-7	Potassium	868.00	B		P
7782-49-2	Selenium	1.00	U	W	F
7440-22-4	Silver	4.00	U		P
7440-23-5	Sodium	8990.00		J	P
7440-28-0	Thallium	1.00	U		F
7440-62-2	Vanadium	3.00	U		P
7440-66-6	Zinc	23.10			P
	Cyanide				NR

Before: COLORLESS Clarity Before: CLEAR Texture:

After: COLORLESS Clarity After: CLEAR Artifacts:

ıts:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBEB90

me: BETZ LABORATORIES TREVOSE Contract: 68-D9-0082

de: BETZPA Case No.: 15795 SAS No.: SDG No.: MBEB83

(soil/water): WATER Lab Sample ID: MBEB90

(low/med): LOW Date Received: 1/31/91

ds: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	46.40	B		P
7440-36-0	Antimony	15.00	U		P
7440-38-2	Arsenic	-1.00	U	W	F
7440-39-3	Barium	5.60	B		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	2.00	U		P
7440-70-2	Calcium	3650.00	B		P
7440-47-3	Chromium	6.00	U		P
7440-48-4	Cobalt	3.00	U		P
7440-50-8	Copper	14.90	B		P
7439-89-6	Iron	94.40	B		P
7439-92-1	Lead	-3.30		W	F
7439-95-4	Magnesium	1450.00	B		P
7439-96-5	Manganese	2.60	B		P
7439-97-6	Mercury	.20	U		CV
7440-02-0	Nickel	9.00	U		P
7440-09-7	Potassium	610.00	B		P
7782-49-2	Selenium	-1.00	U	W	F
7440-22-4	Silver	4.00	U		P
7440-23-5	Sodium	9380.00		J	P
7440-28-0	Thallium	1.00	U		F
7440-62-2	Vanadium	3.00	U		P
7440-66-6	Zinc	22.40			P
	Cyanide				NR

Before: COLORLESS Clarity Before: CLEAR Texture:

After: COLORLESS Clarity After: CLEAR Artifacts:

nts:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBEB91

Lab Name: BETZ LABORATORIES TREVOSE Contract: 68-D9-0082

Lab Code: BETZPA Case No.: 15795 SAS No.: SDG No.: MBEB83

Matrix (soil/water): WATER Lab Sample ID: MBEB91

Level (low/med): LOW Date Received: 1/31/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	27.00	U		P
7440-36-0	Antimony	15.00	U		P
7440-38-2	Arsenic	1.00	U	W	F
7440-39-3	Barium	2.00	U		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	2.00	U		P
7440-70-2	Calcium	125.00	B		P
7440-47-3	Chromium	6.00	U		P
7440-48-4	Cobalt	3.00	U		P
7440-50-8	Copper	3.00	U		P
7439-89-6	Iron	30.80	B		P
7439-92-1	Lead	1.00	U	W	F
7439-95-4	Magnesium	42.00	U		P
7439-96-5	Manganese	2.00	U		P
7439-97-6	Mercury	.20	U		CV
7440-02-0	Nickel	9.00	U		P
7440-09-7	Potassium	474.00	U		P
7782-49-2	Selenium	1.00	U	W	F
7440-22-4	Silver	4.00	U		P
7440-23-5	Sodium	313.00	B	J	P
7440-28-0	Thallium	1.00	U		F
7440-62-2	Vanadium	3.00	U		P
7440-66-6	Zinc	4.00	B		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBEB92

Lab Name: BETZ LABORATORIES TREVOSE Contract: 68-D9-0082

Lab Code: BETZPA Case No.: 15795 SAS No.: SDG No.: MBEB83

Matrix (soil/water): WATER Lab Sample ID: MBEB92

Level (low/med): LOW Date Received: 1/31/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	27.00	U		P
7440-36-0	Antimony	15.00	U		P
7440-38-2	Arsenic	1.00	U		F
7440-39-3	Barium	2.00	U		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	2.00	U		P
7440-70-2	Calcium	113.00	B		P
7440-47-3	Chromium	6.00	U		P
7440-48-4	Cobalt	3.00	U		P
7440-50-8	Copper	3.00	U		P
7439-89-6	Iron	29.90	B		P
7439-92-1	Lead	4.10		W	F
7439-95-4	Magnesium	42.00	U		P
7439-96-5	Manganese	2.00	U		P
7439-97-6	Mercury	.20	U		CV
7440-02-0	Nickel	9.00	U		P
7440-09-7	Potassium	474.00	U		P
7782-49-2	Selenium	1.00	U		F
7440-22-4	Silver	4.00	U		P
7440-23-5	Sodium	344.00	B	J	P
7440-28-0	Thallium	1.00	U		F
7440-62-2	Vanadium	3.00	U		P
7440-66-6	Zinc	3.00	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MBEB93

) Name: BETZ LABORATORIES TREVOSE Contract: 68-D9-0082

) Code: BETZPA Case No.: 15795 SAS No.: SDG No.: MBEB83

rix (soil/water): WATER Lab Sample ID: MBEB93

el (low/med): LOW Date Received: 1/31/91

olids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	27.00	U		P
7440-36-0	Antimony	15.00	U		P
7440-38-2	Arsenic	-1.00	U		F
7440-39-3	Barium	2.00	U		P
7440-41-7	Beryllium	1.00	U		P
7440-43-9	Cadmium	2.00	U		P
7440-70-2	Calcium	114.00	B		P
7440-47-3	Chromium	6.00	U		P
7440-48-4	Cobalt	3.00	U		P
7440-50-8	Copper	3.00	U		P
7439-89-6	Iron	34.80	B		P
7439-92-1	Lead	-1.00	U	W	F
7439-95-4	Magnesium	42.00	U		P
7439-96-5	Manganese	2.00	U		P
7439-97-6	Mercury	.20	U		CV
7440-02-0	Nickel	9.00	U		P
7440-09-7	Potassium	474.00	U		P
7782-49-2	Selenium	-1.00	U		F
7440-22-4	Silver	4.00	U		P
7440-23-5	Sodium	393.00	B		P
7440-28-0	Thallium	1.00	U		F
7440-62-2	Vanadium	3.00	U		P
7440-66-6	Zinc	5.20	B		P
	Cyanide				NR

lor Before: COLORLESS Clarity Before: CLEAR Texture:

lor After: COLORLESS Clarity After: CLEAR Artifacts:

mments: