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FINAL DRAFT
SITE INSPECTION REPORT
CRESCENT LIGHTING, INC.
BARRINGTON, NEW JERSEY

PREPARED UNDER

TECHNICAL DIRECTIVE DOCUMENT NO. 02-9011-24
CONTRACT NO. 68-01-7346

FOR THE

ENVIRONMENTAL SERVICES DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

SEPTEMBER 30, 1991

HALLIBURTON NUS ENVIRONMENTAL CORPORATION
SUPERFUND DIVISION

SUBMITTED BY:

DAVE GRUPP
PROJECT MANAGER

LOIS PERLSTEIN
SITE MANAGER

REVIEWED/APPROVED BY:

RONALD M. NAMAN
FIT OFFICE MANAGER

193434

SITE SUMMARY AND RECOMMENDATIONS

The Crescent Lighting, Inc. Site is located at 120 East Gloucester Pike, Barrington, Camden County, New Jersey. Crescent Lighting, Inc. has been actively assembling and painting fluorescent lighting fixtures since purchasing its 11 acre property from a private owner in 1983. There are no known operations involving hazardous substances at this property prior to 1983. The property is bordered to the south by the NJ Turnpike and a railroad; to the west by Weyerhaueser Corp. and to the east by the Penn Central Railroad. The surrounding area is densely populated and industrialized. The Delaware River is located approximately 5 miles west and the City of Philadelphia approximately 5-6 miles northwest. Figures 1 and 2 provide a Site Location Map and Site Map, respectively.

In 1985 the New Jersey Department of Environmental Protection (NJDEP) cited Crescent Lighting for violations of poor housekeeping practices that resulted in stained soil. The source of the stained soil was reported as a floor scrubbing sweeper that discharged contaminated wastewater composed of oils, solvents, metal shavings and detergent. It is reported that groundwater contamination may have resulted from past spills; however, no groundwater sampling has been conducted.

In 1985 the Environmental Cleanup and Responsibility Act (ECRA) Division of the NJDEP requested and approved a clean up plan that focused on the 23-foot by 32-foot stained soil area. By May of 1986, a total volume of 32 cubic yards of contaminated soil was excavated and the clean-up was reported to be complete. However, there were no post remediation analytical data to evaluate the adequacy of the clean up.

Cresent Lighting generates waste described as lubricating oil, excess paint chips, waste solvents and metal shavings. These wastes are drummed in 55-gallon containers and shipped by a permitted hazardous waste hauler. Chemicals stored on site include a 250 gallon vanishing oil tank and an unknown amount of paint located within the facility.

The floor scrubbing machine now discharges directly to the municipal sewer. (Ref. Nos. 10, 11) There are no drinking water wells on site. Two municipal wells are located approximately 0.5 mile south of the site and are screened in the Potamac-Raritan-Magothy (PRM) aquifer system. The Merchantville Formation and Woodbury Clay form a major confining layer above the PRM. The groundwater flow in Camden County is in an east to southeasterly direction. Groundwater is the only source of potable water and there are approximately 30 to 40 municipal wells within a 4 mile radius of the site. The surface drainage from the Crescent Lighting property is greatly restricted due to the presence of the NJ Turnpike located at the south end of the Crescent property, and the sandy nature of the soil at the site. There are no residences, schools or day care centers within 200 feet of the site boundaries, and the site is secured by a 6-foot high fence which restricts public access to the site. Crescent Lighting has approximately 200 employees on site.

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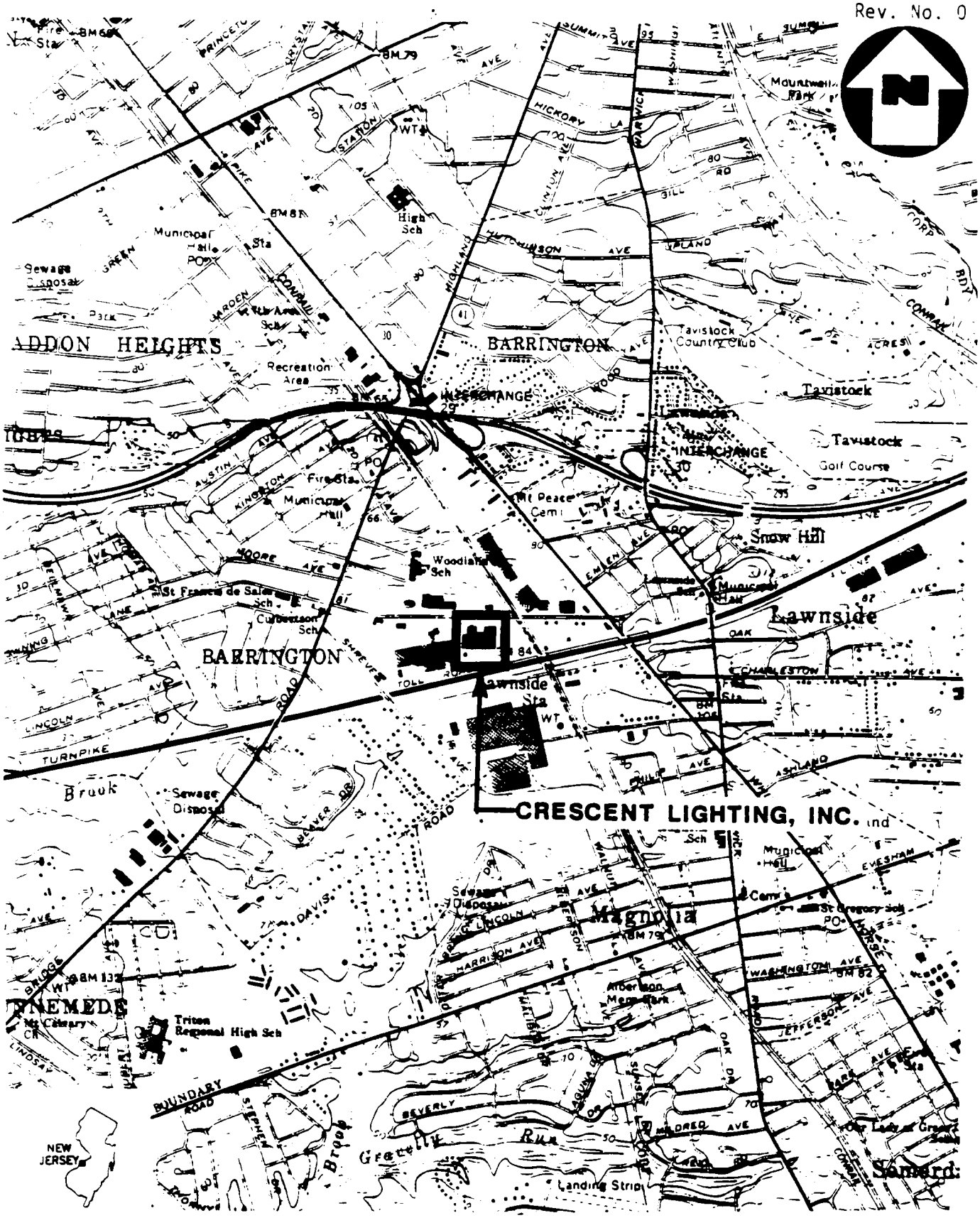
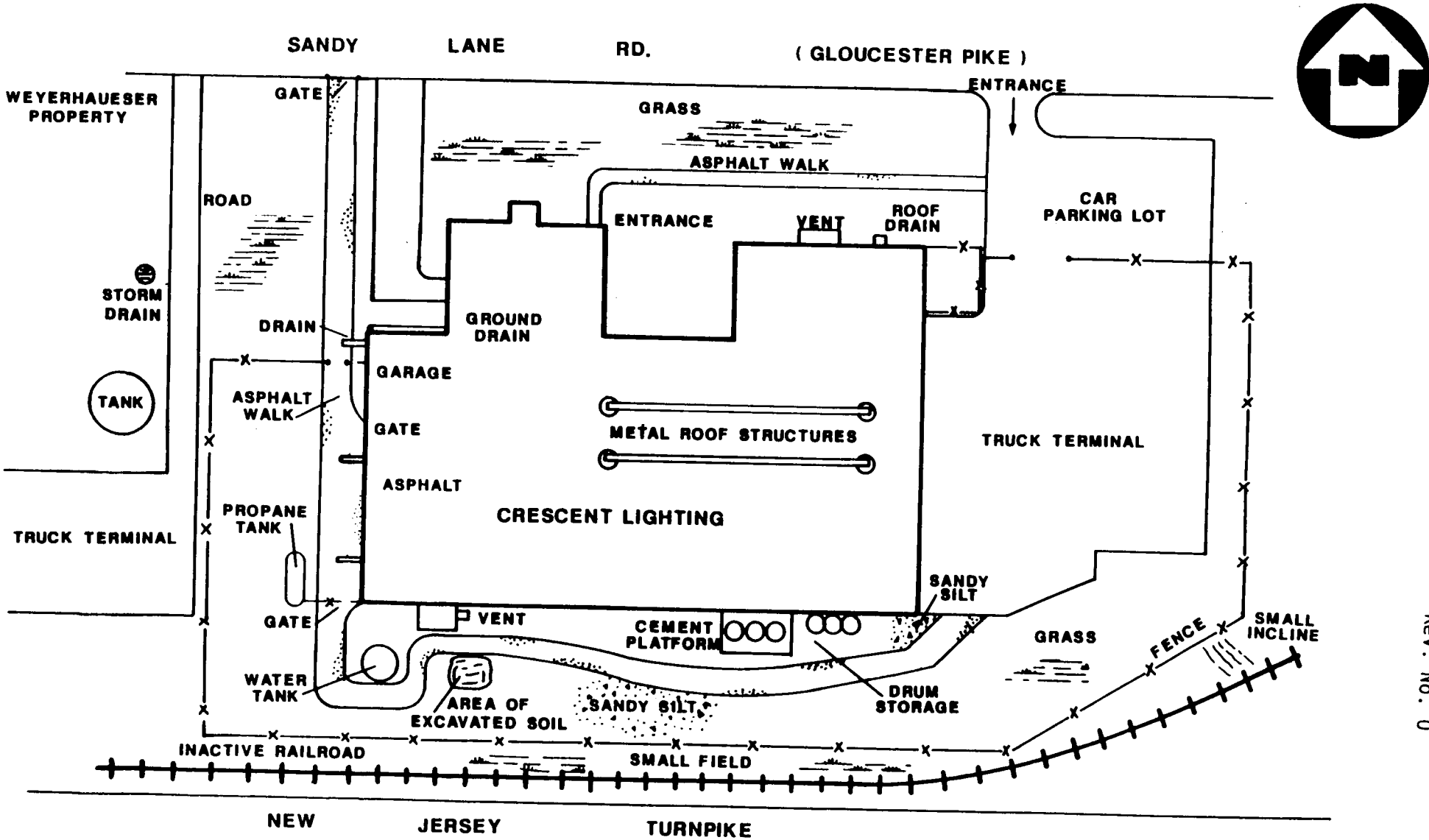


(QUAD) RUNNEMEDE, N.J.

FIGURE 1

SITE LOCATION MAP
CRESCENT LIGHTING, INC.,
BARRINGTON, N.J.

NUS CORPORATION



SITE MAP

CRESCENT LIGHTING, INC., BARRINGTON, N.J.

NOT TO SCALE

FIGURE 2

NUS CORPORATION

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SITE SUMMARY AND RECOMMENDATIONS (CONT'D)

On May 31, 1991, Halliburton NUS Environmental Corp. (formerly NUS Corp.) Region 2 FIT personnel conducted a site inspection at the Crescent Lighting, Inc. Site. A total of seven environmental samples including five surface soil and two subsurface soil samples were collected. Analytical results indicate the presence of the following compounds and maximum concentrations: polyaromatic hydrocarbons (PAHs) 20,000 micrograms per kilogram (ug/kg), di-n-butylphthalate 880 ug/kg, bis(2-ethylhexyl)phthalate 4,000 ug/kg, aroclor-1254 530 ug/kg and pesticides as high as 51 ug/kg.

NO FURTHER REMEDIAL ACTION PLANNED is recommended for the Crescent Lighting, Inc. Site, in Barrington, New Jersey. Based on analytical results, a release to shallow groundwater is suspected. Although groundwater in the vicinity of the site is the only source of drinking water a major confining layer prevents contamination from reaching the aquifer of concern.

SITE ASSESSMENT REPORT: SITE INSPECTION

PART I: SITE INFORMATION

1. Site Name/Alias Crescent Lighting, Inc.

   Street 120 E. Gloucester Pike

   City Barrington State NJ Zip 08007

2. County Camden County Code 007 Cong. Dist. 1

3 EPA ID No. NJD980774467

4. Block No. 0013 Lot No. 00001-C

5. Latitude 39° 51' 58" N Longitude 75° 02' 48" W

   USGS Quad. Runnemede, NJ

6. Owner Genlyte Group, Inc Tel. No. (908) 964-7000

   Street 2345 Vauxhall Road

   City Union State New Jersey Zip 07083

7. Operator Genlyte Group, Inc. Tel. No. (908) 964-7000

   Street 2345 Vauxhall Road

   City Union State New Jersey Zip 07083

8. Type of Ownership

   ☒ Private ☐ Federal ☐ State
   ☐ County ☐ Municipal ☐ Unknown ☐ Other _____

9. Owner/Operator Notification on File

   ☐ RCRA 3001 Date _____ ☐ CERCLA 103c Date _____
   ☐ None ☒ Unknown

10. Permit Information

Permit	Permit No.	Date Issued	Expiration Date	Comments
None				

11. Site Status

    ☒ Active ☐ Inactive

12. Years of Operation 1983 to Present

13. **Identify the types of waste sources (e.g., landfill, surface impoundment, piles, stained soil, above- or below-ground tanks or containers, land treatment, etc.) on site. Initiate as many waste unit numbers as needed to identify all waste sources on site.**

(a) **Waste Sources**

Waste Unit No.	Waste Source Type	Facility Name for Unit
1	Contaminated Soil	Stained Soil
2	Drums	Drum storage area
etc.		

(b) **Other Areas of Concern**

Identify any miscellaneous spills, dumping, etc. on site; describe the materials and identify their locations on site.

None.

Ref. Nos. 1, 3, 5, 6, 7, 19, 31, 34, 45, 47

14. **Information available from**

Contact Amy Brochu **Agency** U.S. EPA **Tel. No.** (908) 906-6802

Preparer Lois Perlstein **Agency** Halliburton NUS Environmental Corp. Region 2 FIT

Date September 25, 1991

PART II: WASTE SOURCE INFORMATION

For each of the waste units identified in Part I, complete the following items.

Waste Unit 1 - Contaminated Soil

Source Type

_____	Landfill	X	Contaminated Soil
_____	Surface Impoundment	_____	Pile
_____	Drums	_____	Land Treatment
_____	Tanks/Containers	_____	Other (Specify _____)

Description:

Contaminated soil from the discharge of wastewater from a floor sweeping machine that contained oils, solvents, detergents, metal shavings and paint. The soil was removed as part of a NJDEP ECRA cleanup in May 1986. The soil area that received the sweeping machine discharge is located approximately 40 feet from the southside of the Crescent building in the southwest portion of the site.

Hazardous Waste Quantity

The discharge was believed to be 50-60 gallons/day. The soil area excavated was an area approximately 23-feet by 32-feet and reportedly had a depth of 12 to 36 inches. The total volume of soil removed was reported to be 32 cubic yards.

Hazardous Substances/Physical State

Analytical results from samples collected in 1985 indicated the presence of the following hazardous substances: petroleum hydrocarbons (PHCs) up to 5,400 (parts per million) ppm, benzene up to 17 ppm, zinc up to 216 ppm, lead up to 78.8 ppm and chromium up to 24.3 ppm. These substances were all detected in soil samples collected from where the floor sweeper discharged and stained the soil. Analytical results from soil samples collected during the Halliburton NUS Environmental Corp. Region 2 FIT Site Inspection in May, 1991, indicate the following hazardous substances: polyaromatic hydrocarbons (PAHs) as high as 20,000 micrograms/kilogram (ug/kg), di-n-butylphthalate as high as 880 ug/kg, bis(2-ethylhexyl)phthalate 4,000 ug/kg, aroclor-1254 as high as 530 ug/kg, and pesticides as high as 51 ug/kg.

Ref. Nos. 1, 3, 4, 7, 8, 9, 24, 25, 34

PART II: WASTE SOURCE INFORMATION

For each of the waste units identified in Part I, complete the following items.

Waste Unit 2 - Drums

Source Type

_____	Landfill	_____	Contaminated Soil
_____	Surface Impoundment	_____	Pile
X	Drums	_____	Land Treatment
_____	Tanks/Containers	_____	Other

Description:

During the Halliburton NUS Environmental Corporation on-site reconnaissance in February 1991, approximately 44 drums were observed. These drums are stored outside the Crescent Lighting building on wooden pallets and asphalt with no spill controls. Excess paint chips, solvents, waste wash water and "speedi-dry" used for absorbing lubricating oil are reportedly stored in these drums.

Hazardous Waste Quantity

According to a 1990 NJDEP manifest report, 6,090 gallons and 3,000 pounds of hazardous wastes were transported and properly disposed of from the site.

Hazardous Substances/Physical State

In a NJDEP Quarterly generator report for 1990, Crescent Lighting reported 550 pounds of wastes classified as D001 (ignitable wastes); 110 pounds of waste classified as D008 (wastes containing lead) and 440 pounds of X725 wastes (oil spill clean-up material).

Ref. Nos. 2, 26, 31, 34, 47

PART III: SAMPLING RESULTS

EXISTING ANALYTICAL DATA

A sample of the floor sweeper discharge was collected in May 1985 and analyzed by Century Laboratories, Thorofare, New Jersey, a New Jersey certified laboratory. Analytical results indicated all metals were below limits of concern. Soil samples collected on November 1985 during the ECRA clean-up were also analyzed by Century Laboratories. These soil sample results indicated the presence of petroleum hydrocarbons at a maximum level of 5,400 ppm, benzene 17 ppm, zinc 216 ppm, lead 78.8 ppm and chromium 24.3 ppm. In April 1985, one soil sample was also analyzed to determine if asbestos, noted on the pipes on the interior of the building, had migrated outside. The sample was analyzed by Alternate Ways, Inc. Results indicate that asbestos was not present in the soil.

Ref. Nos. 4, 7, 13, 14, 15

SITE INSPECTION RESULTS

On May 31, 1991, Halliburton NUS Environmental Corp. personnel conducted a site inspection at the Crescent Lighting, Inc. Site. A total of seven environmental samples including five surface soil and two subsurface soil samples were collected. All samples were analyzed through the U.S. EPA Contract Laboratory Program (CLP) for Target Compound List (TCL) organic and inorganic compounds excluding cyanide. Soil sample location NJHZ- S6 and its duplicate NJHZ- S7 were surface soil samples collected to determine if any contamination existed from the drainage runoff coming from the drum storage area to the fill area. Samples NJHZ-S2 and -S3 were subsurface samples collected in the former area of contamination at approximate depths of 24 to 34 inches and 36 to 46 inches respectively. These depths were used to indicate how deep the fill material was and if contamination still exists. Surface samples NJHZ- S4 and NJHZ- S5 were collected just outside of the boundaries of the reported excavation. These samples were collected to determine if surface contamination presently exists beyond the area of excavated. A background surface sample NJHZ-S1 was collected from the north side of the Crescent Lighting building. Refer to Table 1 for results and Figure 3 for sample locations.

Ref. Nos. 24, 25, 47

09/19/91

TABLE 1
SITE INSPECTION SAMPLING RESULTS

SITE NAME: CRESCENT LIGHTING, INC.
TDD#: 02-9011-24
SAMPLING DATE: 5/31/91
EPA CASE NO.: 16538 LAB: PACIFIC NORTHWEST ENVIRONMENTAL LABORATORIES

VOLATILES										
Sample ID No.	NJHZ-S1	NJHZ-S2	NJHZ-S3	NJHZ-S4	NJHZ-S5(MS/MSD)	NJHZ-S6	NJHZ-S7(DUP)	NJHZ-RIN1	NJHZ-RIN2	NJHZ-RIN3
Traffic Report No.	BHF49	BHF50	BHF51	BHF52	BHF53	BHF55	BHF56	BHF57	BHF58	BHF59
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	WATER	WATER	WATER
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/L	ug/L	ug/L
Dilution Factor	1	1	1	1	1	1	1	1	1	1
Percent Moisture	8	12	11	7	7	9	8	--	--	--
Chloromethane								R		
Bromomethane								R		
Vinyl Chloride								R		
Chloroethane								R		
Methylene Chloride	J		J					R		
Acetone	130 E	J	J					R		
Carbon Disulfide								R		
1,1-Dichloroethene								R		
1,1-Dichloroethane								R		
Trans-1,2-Dichloroethene (total)								R		
Chloroform								R		
1,2-Dichloroethane								R		
2-Butanone								R		
1,1,1-Trichloroethane								R		
Carbon Tetrachloride								R		
Vinyl Acetate								R		
Bromodichloromethane								R		
1,2-Dichloropropane								R		
cis-1,3-Dichloropropene								R		
Trichloroethene								R		
Dibromochloromethane								R		
1,1,2-Trichloroethane								R		
Benzene								R		
trans-1,3-Dichloropropene								R		
Bromoform								R		
4-Methyl-2-Pentanone								R		
2-Hexanone								R		
Tetrachloroethene								R		
Toluene								R		
1,1,2,2-Tetrachloroethane								R		
Chlorobenzene								R		
Ethylbenzene								R		
Styrene								R		
Xylenes (Total)								R		

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material

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TABLE 1
SITE INSPECTION SAMPLING RESULTS
(cont'd)

08/08/91

SITE NAME: CRESCENT LIGHTING, INC.
TDDB: 02-9011-24
SAMPLING DATE: 5/31/91
EPA CASE NO.: 16538 LAB: PACIFIC NORTHWEST ENVIRONMENTAL LABORATORIES

SEMI-VOLATILES										
Sample ID No.	NJHZ-S1	NJHZ-S2	NJHZ-S3	NJHZ-S4	NJHZ-S5(MS/MSD)	NJHZ-S6	NJHZ-S7(DUP)	NJHZ-RIN1	NJHZ-RIN2	NJHZ-RIN3
Traffic Report No.	BHF49	BHF50	BHF51	BHF52	BHF53	BHF55	BHF56	BHF57	BHF58	BHF59
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	WATER	WATER	WATER
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/L	ug/L	ug/L
Dilution Factor/GPC Cleanup (Y)	1	1	1	1	1	10	1	1	1	1
Percent Moisture	8	12	11	7	7	9	8	--	--	--
Phenol										
bis(2-Chloroethyl)ether										
2-Chlorophenol										
1,3-Dichlorobenzene										
1,4-Dichlorobenzene										
Benzyl alcohol										
1,2-Dichlorobenzene										
2-Methylphenol										
bis(2-Chloroisopropyl)ether										
4-Methylphenol										
N-Nitroso-di-n-dipropylamine										
Hexachloroethane										
Nitrobenzene										
Isophorone				J	J		J			
2-Nitrophenol										
2,4-Dimethylphenol										
Benzoic acid										
bis(2-Chloroethoxy)methane										
2,4-Dichlorophenol										
1,2,4-Trichlorobenzene										
Naphthalene							J			
4-Chloroaniline										
Hexachlorobutadiene										
4-Chloro-3-Methylphenol										
2-Methylnaphthalene							J			
Hexachlorocyclopentadiene										
2,4,6-Trichlorophenol										
2,4,5-Trichlorophenol										
2-Chloronaphthalene										
2-Nitroaniline										
Dimethylphthalate					J					
Acenaphthylene	J			J			J			
2,6-Dinitrotoluene										
3-Nitroaniline										
Acenaphthene	J					J	J			
2,4-Dinitrophenol										
4-Nitrophenol										
Dibenzofuran						J	J			
2,4-Dinitrotoluene										
Diethylphthalate										
4-Chlorophenyl-phenyl ether										
Fluorene	J					4200	J			
4-Nitroaniline										
4,6-Dinitro-2-methylphenol										
N-nitrosodiphenylamine										
4-Bromophenyl-phenyl ether										

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SITE NAME: CRESCENT LIGHTING, INC.
TDD#: 02-9011-24
SAMPLING DATE: 5/31/91
EPA CASE NO.: 16538 LAB: PACIFIC NORTHWEST ENVIRONMENTAL LABORATORIES

TABLE 1
SITE INSPECTION SAMPLING RESULTS
(cont'd)

SEMI-VOLATILES	NJHZ-S1	NJHZ-S2	NJHZ-S3	NJHZ-S4	NJHZ-S5(MS/MSD)	NJHZ-S6	NJHZ-S7(DUP)	NJHZ-RIN1	NJHZ-RIN2	NJHZ-RIN3
Sample ID No.	BHF49	BHF50	BHF51	BHF52	BHF53	BHF55	BHF56	BHF57	BHF58	BHF59
Traffic Report No.	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	WATER	WATER	WATER
Matrix	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/L	ug/L	ug/L
Units										
Dilution Factor/GPC Cleanup (Y)	1	1	1	1	1	10	1	1	1	1
Percent Moisture	8	12	11	7	7	9	8	--	--	--
Pentachlorophenol										
Phenanthrene	560			J	J	18000	2800			
Anthracene	J					8800	640			
Di-n-butylphthalate	J		880	420	670	J	400			
Fluoranthene	910		J	J	J	19000	3100			
Pyrene	750		J	J	440	20000	6000 E			
Butylbenzylphthalate				J	J		J			
3,3'-Dichlorobenzidine										
Benzo(a)anthracene	450			J	J	17000	2300 E			
Chrysene	500			J	J	15000	2300 E			
bis(2-Ethylhexyl)phthalate	J	J	J	J	4000	J	R			
Di-n-octylphthalate										
Benzo(b)fluoranthene	630			J	J	17000	3900 E			
Benzo(k)fluoranthene	J			J	J	4500 E	1500 E			
Benzo(a)pyrene	400			J	J	12000	2800 E			
Indeno(1,2,3-cd)pyrene	J			J	J	6300	2300 E			
Dibenz(a,h)anthracene	J					J	690 E			
Benzo(g,h,i)perylene	J			J	J	J	1800 E			

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

08/06/91

TABLE 1
SITE INSPECTION SAMPLING RESULTS
(cont'd)

SITE NAME: CRESCENT LIGHTING, INC.
TODB: 02-9011-24
SAMPLING DATE: 5/31/91
EPA CASE NO.: 16538 LAB: PACIFIC NORTHWEST ENVIRONMENTAL LABORATORIES

PESTICIDES										
Sample ID No.	NJHZ-S1	NJHZ-S2	NJHZ-S3	NJHZ-S4	NJHZ-S5(MS/MSD)	NJHZ-S6	NJHZ-S7(DUP)	NJHZ-RIN1	NJHZ-RIN2	NJHZ-RIN3
Traffic Report No.	BHF49	BHF50	BHF51	BHF52	BHF53	BHF55	BHF56	BHF57	BHF58	BHF59
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	WATER	WATER	WATER
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/L	ug/L	ug/L
Dilution Factor/GPC Cleanup (Y)	1	1	1	1	1	1	1	1	1	1
Percent Moisture	8	12	11	7	7	9	8	--	--	--
alpha-BHC										
beta-BHC										
delta-BHC										
gamma-BHC (Lindane)										
Heptachlor										
Aldrin										
Heptachlor epoxide	J					J	J			
Endosulfan I										
Dieldrin										
4,4'-DDE	J		J	J	J	5.9	4.8 E			
Endrin						22 E	51			
Endosulfan II	J			J	J	3.9 E	4.5 E			
4,4'-DDD										
Endosulfan sulfate										
4,4'-DDT	J		J	5 E	8.5 E	24 E	21 E			
Methoxychlor										
Endrin ketone										
alpha-Chlordane	J	J	J	J	J	3.8 E	3.4 E			
gamma-Chlordane						3.5 E	3.3 E			
Toxaphene										
Aroclor-1016										
Aroclor-1221										
Aroclor-1232										
Aroclor-1242										
Aroclor-1248										
Aroclor-1254	J		61	100	190	530	490			
Aroclor-1260										

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

02-9011-24-S:
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SITE NAME: CRESCENT LIGHTING
TDD#: 02-9011-24
SAMPLING DATE: 5/31/91
EPA CASE NO.: 16538
LAB NAME: U.S. E.P.A.

TABLE 1
SITE INSPECTION SAMPLING RESULTS
(cont'd)

INORGANICS Sample ID No. Traffic Report No. Matrix Units	NJHZ-S1 097596 SOIL ug/kg	NJHZ-S2 097597 SOIL ug/kg	NJHZ-S3 097598 SOIL ug/kg	NJHZ-S4 097599 SOIL ug/kg	NJHZ-S5(RS/RSD) 097600 SOIL ug/kg	NJHZ-S6 097588 SOIL ug/kg	NJHZ-S7(DUP) 097589 SOIL ug/kg	NJHZ-RIN1 097592 WATER ug/L	NJHZ-RIN2 097593 WATER ug/L	NJHZ-RIN3 097594 WATER ug/L
Aluminum	2850	9650	6200	3340	3960	3930	4000			
Antimony		13	7	7		8	7			
Arsenic	3.3	8.3	5.0	3.9	3.9	3.1	3.1			
Barium	22				23	29	34			
Beryllium										
Cadmium	2.5	7.1	3.9	3	3.7	4.0	4.2			
Calcium						1190	19500			
Chromium	16	42	24	16	23	23	19			
Cobalt										
Copper	4		5	29	8	15	11			
Iron	6310	18000	10300	7370	8650	9930	8290			
Lead	36	6	5	37	45	79	52			
Magnesium		1110	696		552	701	9470			
Manganese	23	20	16	26	40	48	55			
Mercury						0.19	0.10			
Nickel				5		5	7			
Potassium	857	2400	1590	808	1160	917	922			
Selenium										
Silver	2.2 E	6 E	3.5 E	2.8 E	3.1 E	3.4 E	3.3 E			
Sodium										
Thallium										
Vanadium	21	52	31	22	26	23	20			
Zinc	22	18	16	17	36	80	62			

NOTES:
Blank space - compound analyzed for but not detected
E - estimated value
J - estimated value, compound present below CRDL but above IDL
R - analysis did not pass EPA QA/QC
NR - analysis not required

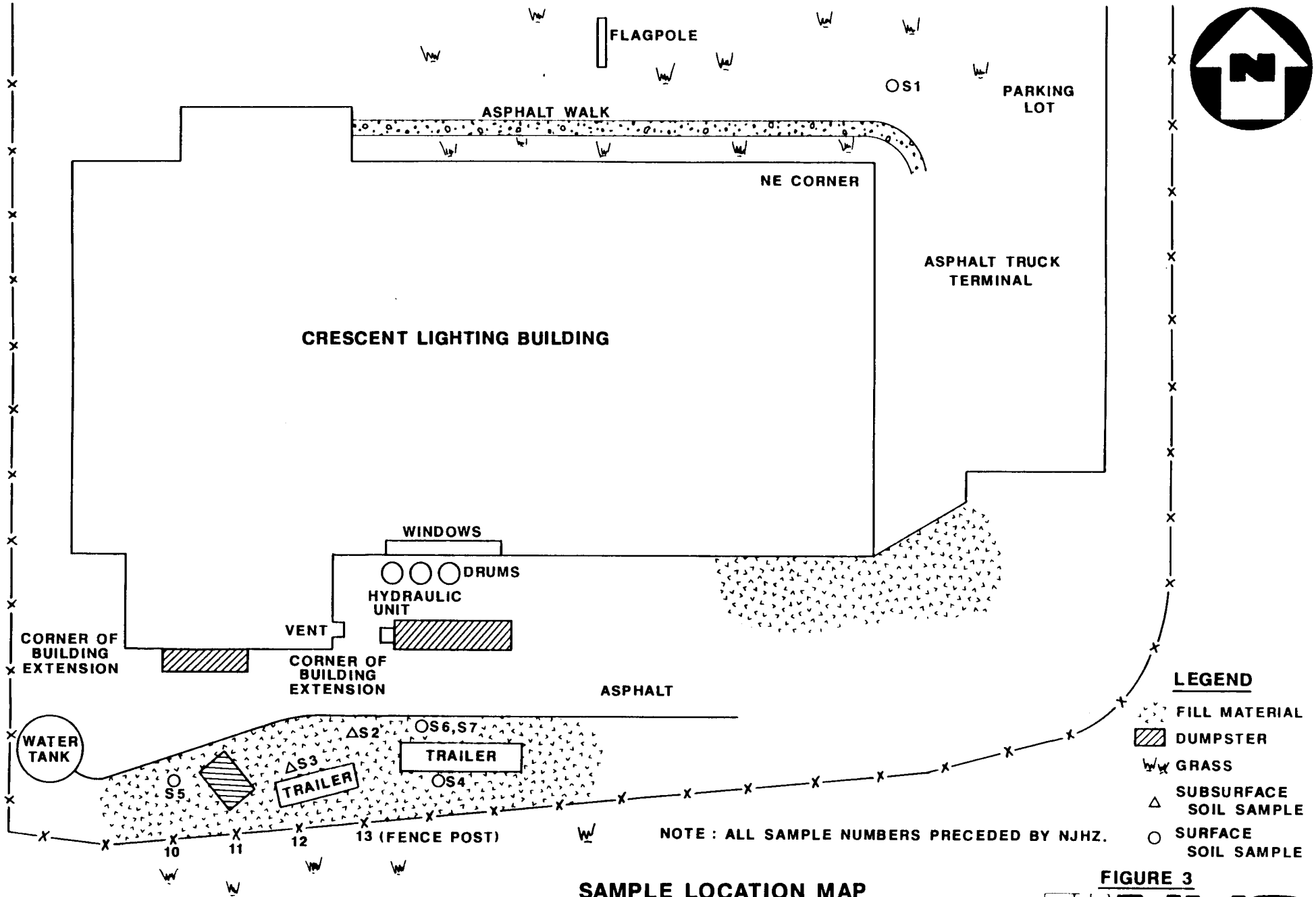


FIGURE 3

SAMPLE LOCATION MAP

CRESCENT LIGHTING, INC., BARRINGTON, N.J.

NOT TO SCALE

NUS CORPORATION

PART IV: HAZARD ASSESSMENT

GROUNDWATER ROUTE

1. **Describe the likelihood of a release of contaminant(s) to the groundwater as follows: observed release, suspected release, or none. Identify contaminants detected or suspected and provide a rationale for attributing them to the site. For observed release, define the supporting analytical evidence.**

   Based on analytical results and the sandy nature of the soil at the site a release to groundwater is suspected; however, the Merchantville Formation and Woodbury Clay prevents these contaminants from reaching the Potomac-Raritan-Magothy (PRM) aquifer system, which is the aquifer of concern. There are wells screened in the overlying Englishtown Formation and Wenonoh-Mt. Laurel Sand, which may crop out in the vicinity of the site; however, they are located 3 to 4 miles from the site and are not within the suspected boundaries of the suspected release.

   Ref. Nos. 16, 17, 18, 22, 24, 25, 28

2. **Describe the aquifer of concern; include information such as depth, thickness, geologic composition, areas of karst terrain, permeability, overlying strata, confining layers, interconnections, discontinuities, depth to water table, groundwater flow direction.**

   Camden County is in the Atlantic Coastal Plain Physiographic Province. The aquifer of concern is the PRM system. It is the most widely used aquifer in the Coastal Plain and it supplies 95 percent of the water pumped to local public systems. These formations are considered as a single hydrological unit since they are generally lithologically undistinguishable from each other. Wells tapping the PRM in this area range in depth from approximately 150 feet to over 1,000 feet.

   The PRM system, is composed of Cretaceous aged sediments of alternating layers of clay, silt, sand and gravel. The thickness of the PRM reaches a maximum of 850 feet in Camden County. Its permeability value is approximately 10^{-3} cm/sec. The actual geology below the site is unknown; however, in the vicinity of the site it is believed the PRM is overlain by the Merchantville Formation and Woodbury Clay which forms a major confining unit above the PRM. The general geological information for the area also indicates that this confining layer is overlain by the Englishtown and the Wenonah-Mount Laurel Sand formations respectively, within 3 or 4 miles southeast of the site. These two formations may crop out in the vicinity of the site. They are both composed of sand and silt, with an estimated permeability of 10^{-5} cm/sec.

   The majority of public supply wells in Camden County and the vicinity of the site draw water from the PRM; however, there are four public supply wells drawing from the Wenonah-Mt. Laurel Sand aquifer and two wells drawing from the Englishtown Formation approximately 3.5 to 4 miles southeast of the site.

   Ref. Nos. 12, 16, 17, 18, 22

3. **Is a designated well head protection area within 4 miles of the site?**

   There are no well head protection areas designated in New Jersey. The State of New Jersey has submitted a draft well head protection program to the EPA and is awaiting approval.

   Ref. No. 46

4. **What is the depth from the lowest point of waste disposal/storage to the highest seasonal level of the saturated zone of the aquifer of concern?**

The depth from the lowest point of waste disposal to the highest seasonal level of saturated zone of the aquifer is 138 feet. The highest seasonal level of the saturated zone of the aquifer of concern is the reported water level of 141 feet in the nearest well. The depth of the lowest point of waste disposal is 36 inches. This is the deepest soil depth at which samples were collected and to which contamination was found.

Ref. Nos. 4, 7, 12, 16, p. 17; 47

5. **What is the permeability value of the least permeable continuous intervening stratum between the ground surface and the aquifer of concern?**

The Merchantville Formation and Woodbury Clay overlie the PRM, which is the aquifer of concern. The Merchantville Formation and Woodbury Clay consists of clay and fine ground quartz. The permeability value associated with this material is 10^{-7} to 10^{-8} cm/sec.

Ref. Nos. 16, 20

6. **What is the distance to and depth of the nearest well that is currently used for drinking purposes?**

The distance to the nearest well that is used for drinking is 2640 ft. south-southeast of the site and is 358 ft deep. The NJ Water Company maintains this well and identifies it as Magnolia 33.

Ref. Nos. 12, 18, 22

7. **If a release to groundwater is observed or suspected, determine the number of people that obtain drinking water from wells that are documented or suspected to be located within the contamination boundary of the release.**

A release to groundwater is suspected; however, the Merchantville Formation and Woodbury Clay prevents these contaminants from reaching the PRM. The wells screened in the Englishtown Formation and Wenonah-Mt. Laurel Sand are not located within the suspected boundaries of the suspected release.

Ref. Nos. 16, 18, 22

8. **Identify the population served by wells located within 4 miles of the site that draw from the aquifer of concern.**

Distance	Population
0 - $\frac{1}{4}$ mi	0
>$\frac{1}{4}$ - $\frac{1}{2}$ mi	0
>$\frac{1}{2}$ - 1 mi	26,179
>1 - 2 mi	64,044
>2 - 3 mi	45,525
>3 - 4 mi	112,459

The groundwater is not blended with any surface water; however, the groundwater supplies are interconnected. The population calculation was based on the total population served by the wells and the number of wells within each distance ring (Ref. No. 52).

Ref. Nos. 18, 22, 27, 30, 32, 33, 36-42

9. **Identify uses of groundwater within 4 miles of the site (i.e. private drinking source, municipal source, commercial, irrigation, unuseable).**

Uses of groundwater within 4 miles of the site are industrial, municipal, and irrigation.

Ref. Nos. 12, 16, 18, 30,

SURFACE WATER ROUTE

10. **Describe the likelihood of a release of contaminant(s) to surface water as follows: observed release, suspected release, or none. Identify contaminants detected or suspected and provide a rationale for attributing them to the site. For observed release, define the supporting analytical evidence.**

A release of contaminants to surface water is not suspected. There are no drainage paths from the site to the nearest surface water body. Surface runoff from the site will quickly infiltrate the sandy soil at the site.

Ref. Nos. 22, 31, 47

11. **Identify the nearest downslope surface water. If possible, include a description of possible surface drainage patterns from the site.**

The nearest downslope surface water is a tributary leading to Beaver Brook located 1,500 feet south of the site; however, the NJ Turnpike is located between the site and Beaver Brook and greatly restricts any drainage. Beaver Brook drains into Big Timber Creek which in turn drains into the Delaware River. The surface drainage pattern is radial but ultimately moves south to southwest then changes to north to northeast. Once the Delaware River has been reached the surface water flows to the south. It must also be considered that the majority of the Crescent Lighting Property is overlain with a "fill material". This fill material has a large percentage of sand and any surface water would easily infiltrate this soil before reaching any surface water body.

Ref. Nos. 22, 28, 47,

12. **What is the distance to the nearest downslope surface water? Measure the distance along a course that runoff can be expected to follow.**

The distance to the nearest downslope surface water is 1,500 feet. Surface runoff will infiltrate the sandy soil at the site before reaching this surface water body.

Ref. Nos. 22, 28, 47

13. **Determine the floodplain that the site is located within.**

The Crescent Lighting Site is not located within a floodplain.

Ref. No. 35

14. **Identify drinking water intakes in surface waters within 15 miles downstream of the site. For each intake identify: the distance from the point of surface water entry, population served, and stream flow at the intake location.**

Intake	Distance	Population Served	Flow (cfs)

There are no drainage paths from the site to any surface water body; therefore, no drinking water intakes will be affected.

Ref. Nos. 22, 31, 47

15. **Identify fisheries that exist within 15 miles downstream of the point of surface water entry. For each fishery specify the following information:**

Fishery	Water Body Type	Flow (cfs)

There is no surface drainage from the site to surface water; therefore, no fisheries are suspected of being impacted by the site.

Ref. Nos. 22, 31, 47

16. **Identify sensitive environments that exist within 15 miles of the point of surface water entry. For each sensitive environment specify the following:**

Environment	Water Body Type	Flow (cfs)

There are no wetlands suspected to be affected by the site since drainage from the Crescent Lighting property to a surface water body is improbable.

Ref. Nos. 22, 29, 31, 47

17. **If a release to surface water is observed or suspected, identify any intakes, fisheries, and sensitive environments from question Nos. 14-16 that are or may be located within the contamination boundary of the release.**

Intake: None

Fishery: None

Sensitive: None

Ref. Nos. 22, 29, 31, 47

SOIL EXPOSURE PATHWAY

18. **Determine the number of people that occupy residences or attend school or day care on or within 200 feet of the site property.**

There are no residences, schools, or day care centers within 200 feet of the site boundaries. Results from the Halliburton NUS Environmental Corp. FIT 2 site inspection indicate the presence of on-site soil contamination, including PAH's, pesticides, phthalates and aroclors.

Ref. Nos. 22, 24, 25

19. **Determine the number of people that work on or within 200 feet of the site property.**

There are approximately 200 employees at the Crescent facility.

Ref. No. 31

20. **Identify terrestrial sensitive environments on or within 200 feet of the site property.**

There are no terrestrial sensitive environments on or within 200 feet of the site property.

Ref. Nos. 22, 23, 29

AIR ROUTE

21. **Describe the likelihood of release of contaminants to air as follows: observed release, suspected release, or none. Identify contaminants detected or suspected and provide a rationale for attributing them to the site. For observed release define the supporting analytical evidence.**

There is no observed or suspected release of contaminants to the air.

Ref. Nos. 4, 7, 8, 31, 47

22. **Determine populations that reside within 4 miles of the site.**

Distance	Population
0 - $\frac{1}{4}$ mi	0
> $\frac{1}{4}$ - $\frac{1}{2}$ mi	1,287
> $\frac{1}{2}$ - 1 mi	10,131
> 1 - 2 mi	41,855
> 2 - 3 mi	60,566
> 3 - 4 mi	72,995

Ref. No. 21

23. **Identify sensitive environments and wetlands acreage within $\frac{1}{2}$ mile of the site.**

0 - $\frac{1}{4}$	$\frac{1}{4}$ - $\frac{1}{2}$
Sensitive Environments/Wetland Acreage	**Sensitive Environments/Wetlands Acreage**
None	Paulstrine/open water (Pond), wetland. Located less then $\frac{1}{2}$ mile north. The area of the pond is less then 1 acre.

Ref. Nos. 29

24. **If a release to air is observed or suspected, determine the number of people that reside or are suspected to reside within the area of air contamination from the release.**

A release to air was not observed or suspected.

Ref. Nos. 4, 7, 8, 31, 47

25. If a release to air is observed or suspected, identify any sensitive environments, listed in question No. 25, that are or may be located within the area of air contamination from the release.

A release to air was not observed or suspected.

Ref. No. 4, 7, 8, 31, 47

ATTACHMENT 1

CRESCENT LIGHTING, INC.
BARRINGTON, NEW JERSEY

PHOTOGRAPH LOG

EXHIBIT A: ON-SITE RECONNAISSANCE
EXHIBIT B: SITE INSPECTION

EXHIBIT A

PHOTOGRAPH LOG

CRESCENT LIGHTING, INC.
BARRINGTON, NEW JERSEY

ON-SITE RECONNAISSANCE: FEBRUARY 14, 1991

CRESCENT LIGHTING, INC.
BARRINGTON, NEW JERSEY
FEBRUARY 14, 1991

PHOTOGRAPH INDEX

ALL PHOTOGRAPHS WERE TAKEN BY LOIS PERLSTEIN

Photo Number	Description	Time
1P-1	Photograph of drum storage area on south side, facing east of building.	0945
1P-2	Photograph of drum storage area, facing northwest.	0950
1P-3	Photograph of water tank on south side of building, facing west.	1010
1P-4	Photograph of east side of building, facing south.	1012
1P-5	Photograph of north side of building, facing west.	1018
1P-6	Photograph of north side of building, facing east.	1020
1P-8	Photograph of west side of building, facing south.	1028
1P-10	Photograph of south side of building and area of floor sweeper discharge (foreground), facing northwest.	1030
1P-11	Photograph of soil in area of floor sweeper discharge on the south side of building.	1040
1P-12	Photograph of south side of Crescent Lighting property.	1045

CRESCENT LIGHTING, INC., BARRINGTON, NEW JERSEY

2P-7 May 31, 1991 1301
Photograph showing drum storage area facing west.

CRESCENT LIGHTING, INC., BARRINGTON, NEW JERSEY

2P-5 May 31, 1991 1200
R. Lynch collecting surface soil sample NJHZ-S5.

2P-6 May 31, 1991 1250
C. Jimenez collecting subsurface soil sample NJHZ-S3.

CRESCENT LIGHTING, INC., BARRINGTON, NEW JERSEY

2P-3 May 31, 1991 1105
C. Jimenez collecting surface soil sample NJHZ-S4.

2P-4 May 31, 1991 1120
C. Jimenez collecting subsurface soil sample NJHZ-S2.

CRESCENT LIGHTING, INC., BARRINGTON, NEW JERSEY

2P-2 May 31, 1991 1034

C. Jimenez collecting surface soil sample NJHZ-S6 and its duplicate NJHZ-S7.

CRESCENT LIGHTING, INC., BARRINGTON, NEW JERSEY

2P-1 May 31, 1991 1010
C. Jimenez collecting background surface soil sample NJHZ-S1.

CRESCENT LIGHTING, INC.
BARRINGTON, NEW JERSEY
MAY 31, 1991

PHOTOGRAPH INDEX

ALL PHOTOGRAPHS WERE TAKEN BY LOIS PERLSTEIN

Photo Number	Description	Time
2P-1	C. Jimenez collecting background surface soil sample NJHZ-S1.	1010
2P-2	C. Jimenez collecting surface soil sample NJHZ-S6 and its duplicate NJHZ-S7.	1034
2P-3	C. Jimenez collecting surface soil sample NJHZ-S4.	1105
2P-4	C. Jimenez collecting subsurface soil sample NJHZ-S2.	1120
2P-5	R. Lynch collecting surface soil sample NJHZ-S5.	1200
2P-6	C. Jimenez collecting subsurface soil sample NJHZ-S3.	1250
2P-7	Photograph showing drum storage area facing west.	1301

EXHIBIT B

PHOTOGRAPH LOG

CRESCENT LIGHTING, INC.
BARRINGTON, NEW JERSEY

SITE INSPECTION: MAY 31, 1991

CRESCENT LIGHTING, INC., BARRINGTON, NEW JERSEY

1P-11 February 14, 1991 1040
Photograph of soil in area of floor sweeper discharge on the south side of building.

1P-12 February 14, 1991 1045
Photograph of south side of Crescent Lighting property.

CRESCENT LIGHTING, INC., BARRINGTON, NEW JERSEY

1P-10 February 14, 1991 1030
Photograph of south side of building and area of floor sweeper discharge (foreground), facing northwest.

1P-8 February 14, 1991 1028
Photograph of west side of building, facing south.

CRESCENT LIGHTING, INC., BARRINGTON, NEW JERSEY

1P-5 February 14, 1991 1018
Photograph of north side of building, facing west.

1P-6 February 14, 1991 1020
Photograph of north side of building, facing east.

CRESCENT LIGHTING, INC., BARRINGTON, NEW JERSEY

1P-3 February 14, 1991 1010
Photograph of water tank on south side of building, facing west.

1P-4 February 14, 1991 1012
Photograph of east side of building, facing south.

CRESCENT LIGHTING, INC., BARRINGTON, NEW JERSEY

1P-1 February 14, 1991 0945
Photograph of drum storage area on south side, facing east of building.

1P-2 February 14, 1991 0950
Photograph of drum storage area, facing northwest.

ATTACHMENT 2

REFERENCES

1. U.S. Environmental Protection Agency (U.S. EPA), Potential Hazardous Waste Site, Preliminary Assessment, Crescent Lighting, Inc., prepared by New Jersey Department of Environmental Protection (NJDEP), January 23, 1986.

2. Hazardous Waste Manifests Summary, 01/01/80 to 12/31/90, prepared by the NJDEP, Division of Hazardous Waste Management, January 2, 1991.

3. NJDEP Environmental Clean-Up Responsibility Act (ECRA) Action Tracking Summary, prepared by Vince Di Gregorio, NJDEP, date unknown.

4. Letter from John Spirito, P.E. of Applied Environmental Technologies Corp., to Anthony McMahon, Chief, NJDEP, Bureau of Industrial Site Evaluations, January 15, 1986. Re: Soil Clean-Up Completion

5. Letter from Anthony J. McMahon, Chief Bureau of Industrial Site Evaluation, NJDEP to Robert Schmidt, Crescent Lighting. December 28, 1984, Re: ECRA Initial Notice General Information Submission from Crescent Lighting.

6. Congressional Districts, Election Division, New Jersey Department of State, Trenton, N.J., January 1987.

7. Crescent Lighting Soil Clean-Up Plan prepared by Applied Environmental Technologies Corporation, Quonset Point, Rhode Island, date unknown.

8. Reports of Site Inspections of Cresent Lighting, by NJDEP prepared by Vincent J. DiGregorio, Inspector, March 21, April 17, and June 19, 1985.

9. Laboratory analytical results, Century Laboratories, Thorofare, N.J., from sampling at Crescent Lighting, Corp., November and December, 1985.

10. Letter from Bonne Bullock, Construction Official for the Borough of Barrington, to James Strand, Crescent Lighting, April 23, 1985. Re: Sewer Permit

11. Letter from Charles Riebel, Municipal Engineer for the Borough of Barrington, to James Strahan III, Manager, Industrial Relations, Crescent Lighting, October 17, 1985. Re: Discharge to sewer.

12. U.S. Geological Survey Well Inventory, Camden County, February 20, 1986.

13. Laboratory analyses of sample solution taken from the Crescent Lighting street sweeper, analyzed by Century Laboratories, Thorofare, N.J., May 23, 1985.

14. Certificate of analysis for EP Toxicity test for 1 soil sample collected from Crescent Lighting, R.I. Analytical, Warwick, R.I., May 31, 1985.

15. Certificate of analysis for asbestos, analyzed by Alternative Ways Inc., Haddon Heights, N.J., for Crescent Lighting, April 26, 1985.

16. George M. Farlekas, Bronius Nemickas, and Harold R. Gill, Geology and Ground-Water Resources of Camden County, New Jersey, U.S. Geological Survey, Water-Resources Investigations 76-76, June 1976.

REFERENCES (CONT'D)

17. Gill, H.E. and Farlekas, G.M., Geohydrologic Maps of the Potomac-Raritan-Magothy Aquifer System in the New Jersey Coastal Plain, 1976,

18. Letter from Joseph Dugandzic, P.E., New Jersey-American Water Company to Lois Adams, NUS Corp., March 19, 1991.

19. Comprehensive Environmental Response Compensation and Liability Information System (CERLIS), List 4: Site Alias Location Listing, Page 57, March 6, 1991.

20. Freeze, R. A. and Cherry, J. Groundwater, Prentice-Hall Inc., Englewood Cliffs, N.J. 1979.

21. General Sciences Corporation, Graphical Exposure Modeling System (GEMS). Landover, Maryland, 1986.

22. Four Mile Vicintiy Map for Crescent Lighting, Corp., based on the U.S. Department of Interior, Geological Survey Topographical Maps, 7.5 minute series, "Runnemede Quadrangle, NJ, 1967, photorevised 1981, "Camden Quadrangle, NJ-PA.," 1967, photorevised 1984, "Moorestown, NJ, Quadrangle," 1966, photorevised 1981, "Clementron Quadrangle, NJ," 1967, photorevised 1981, "Woodbury Quadrangle NJ-PA," 1967, "Philadelphia, PA-NJ" 1967, revised 1973.

23. Atlantic Coast Ecological Inventory, Wilmington, Del-MD-NJ-PA,. U.S. Fish and Wildlife Service, 1980.

24. U.S. EPA Contract Laboratory Program, Pacific Northwest Environmental Laboratories, (organic analyses), Case No. 16538, Laboratory Analysis from NUS Region 2 FIT Site Inspection conducted on May 31, 1991.

25. U.S. EPA Region 2 Laboratory, (inorganic analyses), Project Number 055, Laboratory Analysis from NUS Region 2 FIT Site Inspection conducted on May 31, 1991.

26. New Jersey Department of Environmental Protection, Hazardous Waste Generator Annual Report, 1990, Certification Form, for Crescent Lighting, February 27, 1991.

27. Project Note: To Crescent Lighting file from L. Perlstein, Subject: Population calculation for groundwater use, August, 1991.

28. U.S. Department of Agriculture Soil Conservation Service. Soil Survey of Camden County, April 1966.

29. Atlas of National Wetlands Inventory Maps for New Jersey, United States Department of the Interior, Fish and Wildlife Service 1984.

30. New Jersey Department of Environmental Protection, Bureau of Geology and Topography Water Supply Overlay 31, August 1975, revised August 1979.

31. Field Notebook No. 0739, Crescent Lighting, Inc., TDD 02-9011-24, On-Site Reconnaissance, NUS Corp., Region 2 FIT, Edison, N.J., February 14, 1990.

32. Telecon Note: Conversation between Jerry Glear, Water Superintendent, Garden State Water Company and Lois Adams, NUS Corp., February 6th 1991. Re: Public water supply wells.

33. Telecon Note: Conversation between Edward Deak, Superintendent of Water, Deptford Twp., and Lois Adams, NUS Corp., February 6 1991. Re: Public water supply wells.

REFERENCES (CONT'D)

34. Telecon Note: Conversation between Wayne Tarken, Environmental Manager for Crescent Lighting, and Lois Adams, NUS Corp., February 20 1991.

35. Telecon Note: Conversation between Clark Gillman, Chief of Flood Plain Management, NJ DEP and Lois Adams, NUS Corp., March 5, 1991.

36. Telecon Note: Conversation between Mark Huff, Bellmawr Boro Water Dept. and Keith Billy, NUS Corp., January 3, 1991.

37. Telecon Note: Conversation between Dave Barcklow, Brooklawn Boro Water Dept. and Keith Billy, NUS Corp., January 3, 1991.

38. Telecon Note: Conversation between Keith Hastings, Collingswood Water Dept. and Keith Billy, NUS Corp., January 3, 1991.

39. Telecon Note: Conversation between Joe Keating, Haddonfield Water Dept. and Keith Billy, NUS Corp., January 3, 1991.

40. Telecon Note: Conversation between Al Boening, Haddon Township Public Works and Keith Billy, NUS Corp., January 3, 1991.

41. Telecon Note: Conversation between John Williams, Gloucester City Public Works and Keith Billy, NUS Corp., January 3, 1991.

42. Telecon Note: Conversation between Ed Knicely, Gloucester City Water Dept. and Gary Rojek, NUS Corp., February 14, 1989.

43. Telecon Note: Conversation between John Rattie, Delaware River Basin Commission and Tammy Marquart (Grillon), NUS Corp., February 14, 1989.

44. Telecon Note: Conversation between Carolyn Scott, N.J. DEP (ECRA) and Lois Adams, NUS Corp., February 8, 1991.

45. Telecon Note: Conversation between Helen Orfe, Camden County Tax Office and Lois Adams, NUS Corp., January 14, 1991.

46. NUS Corporation memorandum from Richard Feinberg to Technical Staff, Subject: Wellhead protection areas. February 6, 1991.

47. Field Notebook No. 0739, Crescent Lighting, Inc., TDD 02-9011-24, Site Inspection and Sampling, NUS Corp., Region 2 FIT, Edison, N.J., May 31, 1991.

REFERENCE NO. 1

Preliminary Assessment

CRESCENT LIGHTING
120 East Gloucester Pike/Camden County
Barrington/New Jersey

CRESCENT LIGHTING
120 East Gloucester Pike/Camden County
Barrington/New Jersey

Crescent Lighting is the site of a fluorescent light manufacturer. An ECRA inspection on March 21, 1985 noted oil stained soil resulting from sweeping machine discharge, paint stained soil and insulation asbestos in assembly department.

After soil sampling, Crescent Lighting acted to correct all deficiencies. Therefore, the site is assigned a low priority for inspection.

Submitted by:

David Van Eck
HSMS IV
NJDEP/HSMA
MSCA Project

Hours: 40

EPA

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION
01 STATE | 02 SITE NUMBER

II. SITE NAME AND LOCATION

01 SITE NAME	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Crescent Lighting, Inc.	120 E. Gloucester Pike

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Barrington	NJ	08007	Camden		

09 COORDINATES LATITUDE	LONGITUDE	
39° 51' 5 8.0"	75° 02' 48 0"	Block 13, Lot 1-C

10 DIRECTIONS TO SITE (Starting from nearest public road)

Rt. 29 South onto Rt. 206 South onto Rt. 295 South. Exit East on Rt. 30 (White Horse Pike). Turn right on Gloucester Pike. Site lies just beyond railroad on the left.

III. - Responsible Parties

01 OWNER (if known)	02 STREET (Business, mailing, residential)
Keene Corp/KCS Lighting, Inc.	(Same as above)

03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
			( )

07 OPERATOR (if known and different from owner)	08 STREET (Business, mailing, residential)

09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
			( )

13 TYPE OF OWNERSHIP (Check one)
☒ A. PRIVATE ☐ B. FEDERAL: _____ (Agency name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER: _____ (Specify) ☐ G. UNKNOWN

OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)
☐ A. RCRA 3001 DATE RECEIVED ___/___/___ (MONTH DAY YEAR) ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED ___/___/___ (MONTH DAY YEAR) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
☒ YES DATE 3/21/85 (MONTH DAY YEAR)
☐ NO

BY (Check all that apply)
☐ A. EPA ☐ B. EPA CONTRACTOR ☒ C. STATE ☐ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____ (Specify)
CONTRACTOR NAME(S): _____

02 SITE STATUS (Check one)
☒ A. ACTIVE ☐ B. INACTIVE ☐ C. UNKNOWN

03 YEARS OF OPERATION
_____ (BEGINNING YEAR) | _____ (ENDING YEAR) ☒ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

Oil, benzene, blue dye, solvents, asbestos, methylene chloride, zinc, lead, chromium

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

Soil and groundwater contamination may have resulted from past spills.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)
☐ A. HIGH (Inspection required promptly) ☐ B. MEDIUM (Inspection required) ☒ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NUMBER
Vincent DiGregorio	NJDEP/DWM/ECRA	609) 633-7141

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
David Van Eck	NJDEP	DWM/HSMA	(609) 984-3224	~~1/23/86~~ (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [X] A. SOLID
- [ ] B. POWDER, FINES
- [ ] C. SLUDGE
- [ ] D. OTHER _____ (Specify)
- [ ] E. SLURRY
- [X] F. LIQUID
- [ ] G. GAS

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

TONS _____

CUBIC YARDS _____

NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

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

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS	Attachment
SLU	SLUDGE				
OLW	OILY WASTE	5400	ppm	found in SS6 #1	E-39
SOL	SOLVENTS	5-19	drums		B-4
PSD	PESTICIDES				
OCC	OTHER ORGANIC CHEMICALS				
IOC	INORGANIC CHEMICALS				
ACD	ACIDS				
BAS	BASES				
MES	HEAVY METALS				

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

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION	Attachment
SOL	Solvents	999	in drums	5-19	drums	B-4
OLW	Oil	999	discharged on ground*	5400	ppm	E-39
SOL	Benzene	71432	in stained soil*	17	ppm	B-9, E-17
IOC	Blue Dye (metals)	999	stained soil*			E-25
			*soil removed			
IOC	Asbestos	1332214	in assembly dept	25-30%		E-1
IOC	Amosite	12172735		25-30%		E-1
IOC	Crysotile	999(asbestos)		20-25%		E-1
SOL	Methylene Chloride	75092	found in soil sample*	up to 25	ppm	E-36
MES	Zinc	7440-66-6	found in soil sample*	up to 216.	ppm	E-44
MES	Lead	7439921	found in soil sample*	up to 78.8	ppm	E-44
MES	Chromium	7440473	found in soil sample*	up to 24.3		E-29
			* soil removed			

V. FEEDSTOCKS (See Appendix for CAS Numbers)

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

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

Attachments B and E: NJDEP/DWM/ECRA File #85-015

EPA

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

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER

II. HAZARDOUS CONDITIONS AND INCIDENTS

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

Discharge from floor sweeping machine may have contaminated groundwater.
(See Attachment B-9)

01 ☐ B. SURFACE WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

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

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

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

01 ☒ F. CONTAMINATION OF SOIL — 02 ☒ OBSERVED (DATE: 3/21/85) — ☐ POTENTIAL — ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: 23'x32' (AGRES) — 04 NARRATIVE DESCRIPTION

Blue dye stained soil by assembly area door. Floor sweeper discharge contaminated 23'x32' of soil. Both stained areas were excavated and removed.
(See Attachments B-10, C, D-1, E-2-E-10, E-24)

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

01 ☒ H. WORKER EXPOSURE/INJURY — 02 ☒ OBSERVED (DATE: 3/21/85) — ☐ POTENTIAL — ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

As observed, insulation asbestos was exposed in the assembly department.
To remedy the problem, the asbestos was taped.
(Attachment B-9, E-1)

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

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

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

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

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

01 ☐ M UNSTABLE CONTAINMENT OF WASTES (Spills/runoff/standing liquids/leaking drums) — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

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

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

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

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

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

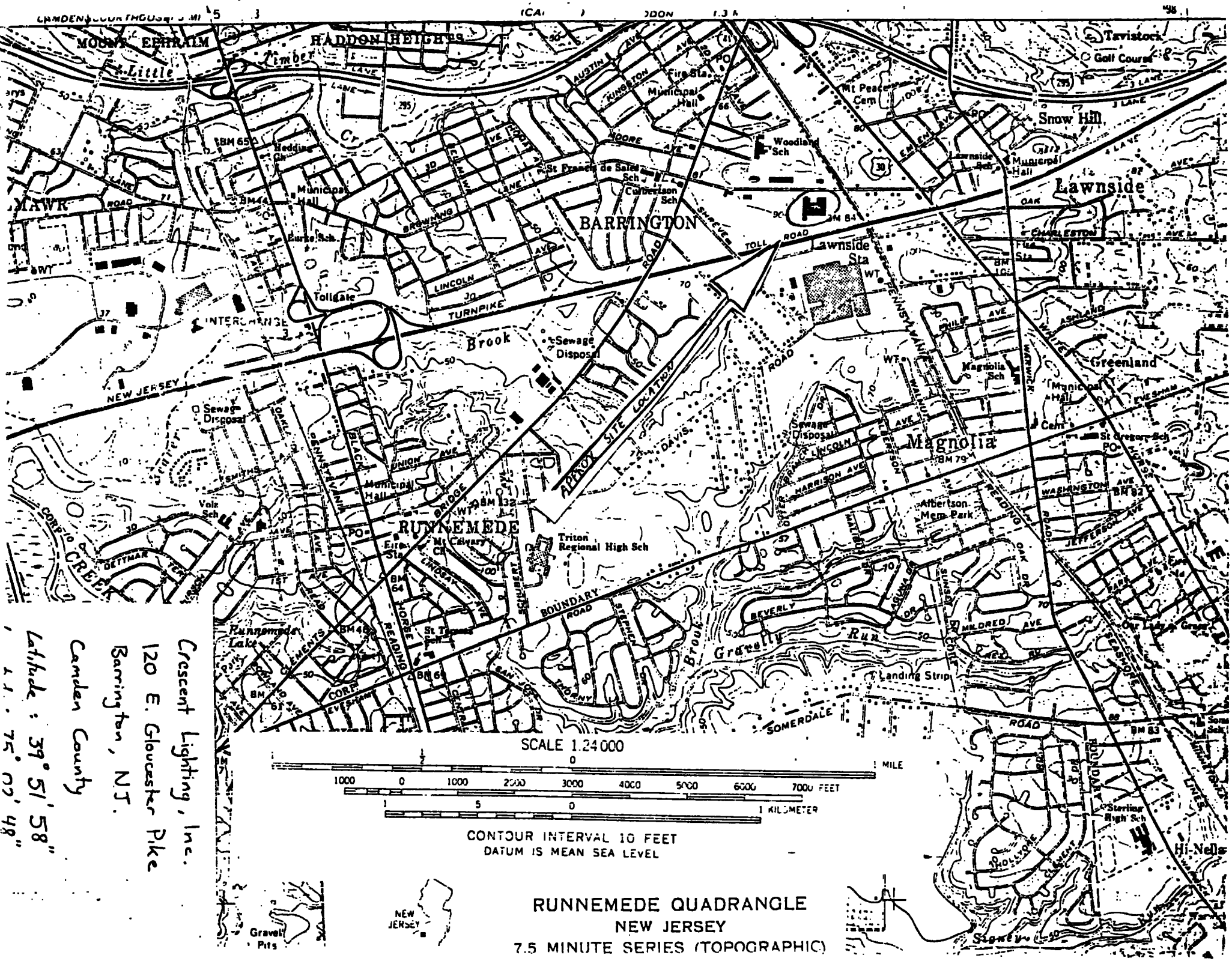
IV. COMMENTS

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

Attachments B,C,D and E; NJDEP/DWM/ECRA, File #85-015

ZE: 34" x 44"

INDEX TO MUNICIPALITIES IN CAMDEN COUNTY



Crescent Lighting, Inc.
120 E. Gloucester Pike
Barrington, NJ.
Camden County
Latitude: 39° 51' 58"
Longitude: 75° 03' 48"

GENLYTE SUPPLY DIVISION

2345 VAUXHALL ROAD, UNION, NEW JERSEY 07083 201-964-7000

November 27, 1985

Hand Deliver

Mr. Vincent J. DiGregorio, Case Manager
State of New Jersey
Department of Environmental Protection
Division of Waste Management
32 East Hanover Street
CN028
Trenton, NJ 08625

RECEIVED
DEC 2 8 49 AM '85
DIVISION OF
WASTE MANAGEMENT
HSRA SEC.

Dear Mr. DiGregorio:

This is to verify that the correct address for the Barrington facility is as follows:

Crescent Lighting
120 East Gloucester Pike
Block #13, Lot 1-C
Barrington, New Jersey 08007

Very truly yours,

Donna Ratliff

Donna Ratliff
Personnel Manager
Supply Division

DR:lb

cc: B. Lane
J. Spirito
P. Charles
B. Steinhart
J. Strahan

Attachment
A

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
POTENTIAL HAZARDOUS WASTE SITE

SEVERITY INDEX
DATA SHEET

Site Name: Crescent Lighting Inc. Site AKA: _____

EPA ID #: NJD980774467

Address: 120 E. Gloucester Pike Priority: _____

City: Barrington County: Camden

Coordinates: Latitude: 39° 51' 58" Longitude: 75° 02' 48"

WASTE CHARACTERISTICS

		Data Quality	
Toxicity/Persistence:	18	(A)	C
Waste Quantity:	1	A	(C)
Containment:	1	(A)	C

EXPOSURE POTENTIAL

Exposure Medium		Observed (Yes/No)	Quality of Observation	
Groundwater:	3	N	A	(C)
Surface water:	1	N	A	(C)
Air:			A	C
Soil:	3	Y	(A)	C
Fire/Explosion:			A	C
Direct Contact:			A	C

Population Density/ Sensitive Environment: 2

New Jersey Department of Environmental Protection
Potential Hazardous Waste Site

SEVERITY INDEX/PRIORITY ASSESSMENT
Score Sheet

Site Name: Crescent Lighting Total Score: 5.04

Address: 120 E. Gloucester Pike Priority: Low

City: Barrington County: Camden

Coordinates: Latitude: 39° 51' 58" Longitude 75° 02' 48"

Waste Characteristics

Toxicity and Persistence: 18

Waste Quantity: + 1

18 x Containment 1 = 18

Waste Characteristics Total: 18

Exposure Potential

Population Density/Sensitive Environment: 2

Exposure Medium			Observed (x 2)	
Groundwater:	2	x 2	x	= 4
Surface water:	0	x 2	x	= 0
Air:	0	x 2	x	= 0
Soil:	3	x 2	x 2	= 12
Fire/Explosion:	0	x 2	x	= 0
Direct Contact:	3	x 2	x 2	= + 12

Exposure Potential Total: 28 28

Exposure Potential 28 x Waste Characteristics 18 = 504

Total Score = 5.04 ← ÷ 100

COMMENTS: All observed deficiencies at the site have been remedied.

David Van Eck

OTHER INFORAMTION

Comments: _____

_____

_____

Timeframe

Follow-up response action should be initiated:

- ☐ Immediately
- ☐ Within one year
- ☐ Within several years but not necessarily within one year

Additional Site Information

Is this an operating facility? Y ✓ N___

Is the owner known? Y ✓ N___

Is public funding anticipated to achieve cleanup? Y___ N___

If yes: now___ future___

What program currently has the lead for this site:

PSC ___ HW Enf.___ BSE ✓ RCRA___ NJPDES___
ECRA___ SW Eng.___ Emerg. Resp.___ EPA___
Other___

If in a regulatory program, what is the status of the permit?

pre-application___
application ___
permit issued ___
other ___

Date: 10/28/86 Evaluator: L Solomon

REFERENCE NO. 2

DEP 4015

EPZDULL

J1065 A

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DEP 4015

EPZDULL

J1065 A

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NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS WASTE MANAGEMENT

WASTE MANIFESTS FROM 01/01/80 TO 12/31/86
FROM GENERATOR NJD980774467 TO SPECIFIED TSDF'S

GENERATOR	TSDF	MANIFEST	DATE SHIPPED	WASTE CODE	WASTE NAME	QUANTITY
KEENE CORP CRESCENT LIGHTING 120 E GLOUCESTER PIKE BARRINGTON , NJ NJD980774467	NARRAGANSETT IMPROVEMENT CO 223 ALLENS AVE PROVIDENCE , RI RID006907911	NJA0038087	01/10/86	X725	OIL SPILL CLEANUP MATERIAL	16 CY
		NJA0038088	01/10/86	X725	OIL SPILL CLEANUP MATERIAL	16 CY
	S & W WASTE INC 105 JACOBUS AVENUE SO KEARNY , NJ NJD991291105	NJA0157950	03/20/86	D002	CHARACTERISTIC OF CORROSIVITY	550 G
				D008	LEAD	1000 P
				D001	CHARACTERISTIC OF IGNITABILITY	55 G
				F002	SPT HAL SOLVESTLBTM OF DEGREAS	55 G
		NJA0211256	07/18/86	D001	CHARACTERISTIC OF IGNITABILITY	275 G
				D002	CHARACTERISTIC OF CORROSIVITY	495 G
		NJA0224220	08/04/86	D002	CHARACTERISTIC OF CORROSIVITY	220 G
	TECHTRONICS ECOLOGICAL CORP 501 FLUSHING AVE BROOKLYN , NY NYD000824334	[illegible]	[illegible]	[illegible]	NON HAL SOLV & STLBTM	330 G

DEP 4015

EPZDULL

J1040 A

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NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS WASTE MANAGEMENT

WASTE MANIFESTS FROM 01/01/87 TO 12/31/90
FROM GENERATOR NJD980774467 TO SPECIFIED TSDF'S

GENERATOR	TSDF	MANIFEST	DATE SHIPPED	WASTE CODE	WASTE NAME	QUANTITY
KEENE CORP CRESCENT LIGHTING 120 E GLOUCESTER PIKE BARRINGTON , NJ NJD980774467	S & W WASTE INC 105 JACOBUS AVENUE SO KEARNY , NJ NJD991291105	NJA0293816	06/30/87	D001	CHARACTERISTIC OF IGNITABILITY	220 G
				D008	LEAD	1000 P
				F005	NONHL SOLV & STLBTM	110 G
		NJA0334906	09/08/87	C154	CHROMIUM AND COMPOUNDS, N.O.S.	2800 G
		NJA0363577	01/19/88	D002	CHARACTERISTIC OF CORROSIVITY	55 G
				D008	LEAD	550 P
				D001	CHARACTERISTIC OF IGNITABILITY	110 G
		NJA0403593	05/02/88	D008	LEAD	3000 P
		NJA0403663	05/13/88	C154	CHROMIUM AND COMPOUNDS, N.O.S.	3332 G
		NJA0534948	12/09/88	C154	CHROMIUM AND COMPOUNDS, N.O.S.	4129 G
		NJA0535236	01/18/89	C154	CHROMIUM AND COMPOUNDS, N.O.S.	3177 G
		NJA0535369	09/21/88	D001	CHARACTERISTIC OF IGNITABILITY	385 G
				X725	OIL SPILL CLEANUP MATERIAL	500 P
		NJA0570940	03/13/89	D001	CHARACTERISTIC OF IGNITABILITY	275 G
		NJA0655928	09/07/89	X900	CHEMICAL PROCESS-LIQUID,NOS	1700 G
		NJA0655929	12/13/89	D001	CHARACTERISTIC OF IGNITABILITY	165 G
				X725	OIL SPILL CLEANUP MATERIAL	2400 P
		NJA0655930	02/12/90	X900	CHEMICAL PROCESS-LIQUID,NOS	2970 G
		NJA0655931	05/25/90	D001	CHARACTERISTIC OF IGNITABILITY	220 G
				X725	OIL SPILL CLEANUP MATERIAL	1800 P
				D008	LEAD	1200 P
		NJA0655933	07/10/89	D001	CHARACTERISTIC OF IGNITABILITY	110 G
				X725	OIL SPILL CLEANUP MATERIAL	700 P
				X726	OIL/MT/ WRK,TURBN,DESEL,QUENCH	110 G
		NJA0946665	08/06/90	X900	CHEMICAL PROCESS-LIQUID,NOS	2800 G

23

REFERENCE NO. 3

ECRA ACTION TRACKING SUMMARY Notice #: (85015)- Case Manager: (VJD)

Vince DiGregorio

Industrial establishment: (CRESCENT LIGHTING DIV--KEENE CORP)
a.k.a.: KCS LIGHTING, INC
Facility address: 120 E. Gloucester Pk Municipality: BARRINGTON BORO
Zip: 08007 Co: CAMDEN SIC: (3646) Block(s): 13 Lot(s): 1-C
Agent's name: Donna Ratliff Phone #: (201)964-7000
Agent's firm: Crescent-Stonco
Address: 2345 Vaux Hall Road City: Union, NJ Zip: 07083

Company tgt dates: sign agreement/option: 8/26/83 announce closing:
finalize transfer/sale: 8/31/84 terminate operations:
Transaction type: P B=bankruptcy C=cessation F=foreclosure
P=sale of property S=sale of business T=stock transfer X=condemnation
Law firm: Pat Charles
Consultant: Applied Env. Tech. Lab: Century;R.I. Anal

Initial notice: GIS received: 1/ 7/85 reviewed by: CB date: 1/12/85
SES received: 1/ 7/85 reviewed by: CB date: 1/12/85
Complete? GIS: Y (Y or N) checklist sent: 1/18/85 new data rcvd: 2/ 5/85
SES: Y (Y or N) checklist sent: 1/18/85 new data rcvd:

File rev's: 3/ 8/85 by: VJD ltr to mayor: 1/18/85 contact H.O.: 3/13/85
Other names:
Comments: no relevant files

Prelim insp by: VJD date: 3/21/85 report drafted: 3/25/85 sent: 4/ 9/85
Comments: provide info on blue dye not noted in SES;oil & paint stained soil;
poss asbestos insulation; s/p reqd

Negative Declaration: submitted: suspense: ( )
disapproved: resubmitted: approved:
Prop owner Neg Dec: submitted: suspense:
disapproved: resubmitted: approved:

Sampling Plan: rcvd: 11/ 6/85 TC: PS/ to BEERA: 11/18/85 fm BEERA: 6/14/85
to DWR: fm DWR: geologist: authorized:
DWR bureau (P or S): results rcvd: 11/20/85 reviewer: PS/
comments: 5/17/85;ng,7/16;P;11/1/85

Cleanup Plan: submitted: 11/20/85 reviewer: VJD to BEERA: 11/22/85 fm BEERA: 11/22/85
to DWR: fm DWR:
comments: excav approx 20 cy PHC-contam soil
Deferral requested: suspense: app'd: denied:
Cleanup authorized: 12/ 3/85 begun: completed:
spot checks of cleanup progress on:

Financial assurance rcvd: reviewer: apprvd: amt: $7,060 type
(B)ond, (L)etter of credit, (S)elf-bonding, (F)ully-funded released:

Final Inspection performed by: date:
Comments: C/P: excav approx 20 cy PHC- & VOS-contam soil; asbestos insu
lation taped at peril; estimated completion, 1/3/86

Codes: actions: agencies: AZ situation: D

B8

Final disposition: (C) date: 12/ 3/85 by: RJK fee: $500
(N=negative declaration C=cleanup plan E=exempt F=cleanup finished W=withdrawn) 12/ 3/85

ECRA
Environmental Concern Tracking Sheet

INDUSTRIAL ESTABLISHMENT

Name Crescent Ist

City Barrington Case Number 85015

VIOLATIONS

RCRA ___ NJPDES ___ APC ___ other ___ other ___

SOURCE

Drum Storage		Waste Pile		Seepage Pit		Tank Farm	
Discharge	✓	Monitor Well		Dumpster		Transformer	
Potable Well		Floor Drain		Bld. Decontam.		other -asbestos	✓
Roof Drain		Septic System		Asbestos	✓	other	
UGST		Lagoon		Spill		other	

POTENTIAL AREAS OF CONTAMINATION

Location of Concern	Pollutants		Outcome
Sweeping machine DISCHARGE to SOIL	OILS SOLVENTS PAINT Sodium Hydr.	Concentration 5400 ppm PHC 17ppb benzene Action Level PHC 100ppm	Removal and proper Disposal through Cleanup Plan
INSULATION asbestos in assembly Dept	ASBESTOS CHRYSOTILE amosite	Concentration 25-30% Action Level	Taped up

B9

ECRA Environmental Concern Tracking Sheet *Continued*

Case Number _____

POTENTIAL AREAS OF CONTAMINATION

Location of Concern	Pollutants		Outcome
Assembly Area door area	Blue dye (metals)	Concentration	Below action levels To be Disposed of with stained soil from other area.
		Action Level	
Discharge iron phosphate solution + paint to drain in spraybooth	Iron phosphate paint	Concentration	Sewerage Authority aware of discharge and satisfied with conditions
		Action Level	
		Concentration	
		Action Level	
		Concentration	
		Action Level	
		Concentration	
		Action Level	
		Concentration	
		Action Level	

B10

REFERENCE NO. 4

APPLIED ENVIRONMENTAL TECHNOLOGIES CORPORATION
Engineers • Geologists • Consultants

OFFICE
7 Belver Avenue, Suite 210
Quonset Point, Rhode Island 02852
Telephone: (401) 294-3391

MASSACHUSETTS
Taunton
Telephone: (617) 823-7588

CONNECTICUT
New London
Telephone: (203) 444-2012

VJD

January 15, 1986

RECEIVED JAN 21 1 55 PM '86 HAZARDOUS SITE MANAGEMENT

Mr. Anthony J. McMahon, Chief
NJ DEP
Bureau of Industrial Site Evaluations
428 East State Street
Trenton, New Jersey 08608

Re: Crescent Lighting, Barrington, New Jersey, Completion of Soil Clean-Up Report ECRA Case #85015

Dear Mr. McMahon:

As required by your office, we are hereby submitting the report of completion of soil clean-up at the above referenced site. Soil clean-up was completed on 1/10/86 in accordance with the approved clean-up plan. Documentation of compliance (attached) with the approved plan is described below.

Documentation of Compliance

1. Volume of Soil Removed (Test Results Based Upon):

Based upon the results of soil testing, the following clean-up was carried out.

a) As proposed in the approved clean-up plan (Page 18), the cross hatched area in Figure 2 was excavated to a depth of at least twelve (12) inches.

Rationale: The results submitted with the clean-up plan established that the area to be excavated was bounded by "clean" soil at test sites SS4 and SS5 and to a depth of twelve (12) inches by "clean" sites SS1 and SS2.

The limits to the west (area of SS6) was still to be established using the petroleum hydrocarbon test results [the parameter

identified as requiring additional testing to define the extent of required excavation]. Additional testing was conducted at the locations indicated in Table 1 with the indicated results. The testing confirmed (sites SS7, SS13, and SS14) that the cross hatched area was the area requiring removal.

However, the data indicated the need (per the approved plan clean-up criteria) for additional depth of soil removal in the area of SS6. This additional removal is discussed in Item (b) below.

b) Based upon the additional testing conducted and the terms of the approved plan (at sites SS6, SS7, SS13 and SS14), soil in the shaded area was removed to a depth of thirty-six (36) inches. The excavated soil was bounded by soil test results indicated in Table 1 (SS13, SS14 and SS6 #E (at 30")) all of which had petroleum hydrocarbon levels below 100 ppm. The clean-up criteria Certificates of Analysis are provided in Addendum 1.

The total volume of soil removed was calculated to be thirty-two (32) cubic yards. The soil was manifested (copy in Addendum 2) to an approved facility in the State of Rhode Island.

2. <u>Off-Site "Disposal"</u>:

The "stained" soil required to be removed under the conditions of the clean-up plan was classified as a New Jersey hazardous waste (Waste #X725). This was done to be on the conservative side. It is our belief, however, that the material was technically not a New Jersey hazardous waste since it did not exhibit any hazardous characteristics and was strictly not the result of an oil spill. However, it was transported as a New Jersey hazardous waste (listed) to a facility in Rhode Island that is licensed by the State of Rhode Island to accept and beneficially utilize the material at its asphalt production plant. Copies of the analytical data provided by the facility are included with the copy of the manifests in Addendum 2.

TABLE 1

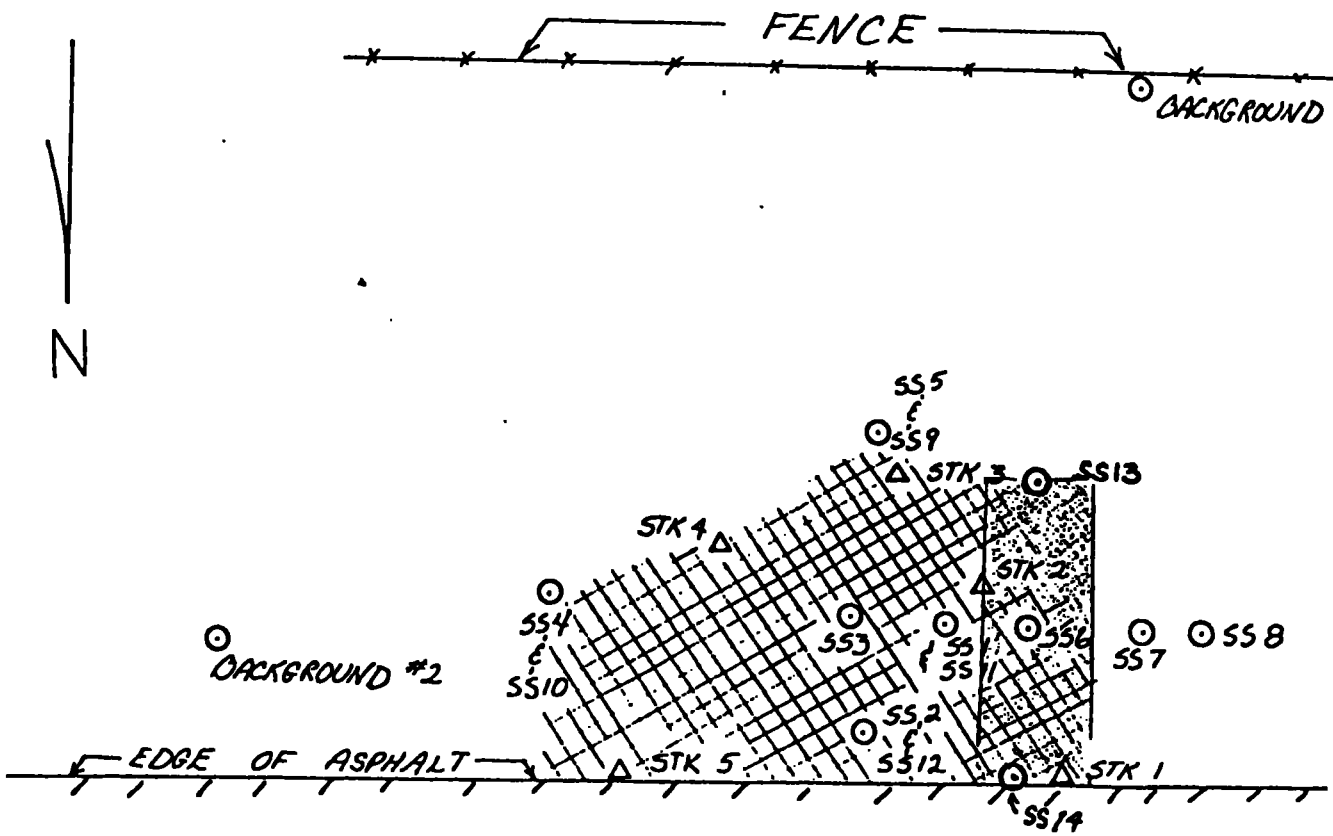
SOIL SAMPLING SITE
PETROLEUM HYDROCARBON RESULTS SUMMARY

Sample ID (1)	Sample Depth (inches)	Petroleum Hydrocarbons (2)	Date Sampled
SS1 - #3	12 - 18	< 30	11/1/85
SS2 - #3	12 - 18	< 30	11/1/85
SS4 - #1	2 - 6	< 30	11/1/85
SS5 - #1	2 - 6	< 30	11/1/85
SS6 - #1	2 - 6	5400	11/1/85
#A	12	3700	11/26/85
#C	18	700	12/5/85
#D	24	330	12/5/85
#E	30	49	12/17/85
SS7 - #1	2 - 6	< 30	11/15/85
#A	12	< 30	11/26/85
SS13 - #1	30	< 30	12/17/85
#2	36	< 30	12/17/85
SS14 - #1	30	< 30	12/17/85
#2	36	< 30	12/17/85

(1) - Location of all sites as shown on Figure 2. Figure 1 of approved clean-up plan shows location of area relative to Crescent's building.

(2) - Petroleum Hydrocarbon test results - see Certificates of Analysis in Appendix 1.

REVISED:
FIGURE 2
(FROM CLEAN-UP PLAN)



AREA OF SOIL EXCAVATED
(SEE LEGEND) ON 1/10/86.

LEGEND

⊙ SS 1 - SOIL SAMPLING SITE #1

- SOIL TO BE REMOVED (DEPTH OF 12")

△ STK 1 - WOODEN STAKE MARKERS ABOUT AREA OF VISUAL STAINING.

- SOIL REMOVED TO DEPTH OF 36"

SCALE 1" = 10'

REVISED FIGURE 2: SKETCH SHOWING THE LOCATION OF SOIL SAMPLING SITES

11/85 (REVISED 1/86)

CRESCENT LIGHTING

3. <u>Site Condition</u>:

The excavation has been left open to allow for inspection by your office.

As per the state regulations, we request that your office conduct any required site inspections as soon as possible and provide Crescent Lighting with the required certification of completion. If there are any questions and/or comments, please call (401-294-3391). Thank you.

Sincerely,

John Spirito, P.E.
Principal Engineer

JS/lmg

Enclosures: Addendum 1 & 2

cc: T. Dolce
J. Strahan
F. Metzger
C. Foster
B. Steinhart
D. Ratliff
B. Lane
G. McNally

REFERENCE NO. 5

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
HAZARDOUS SITE MITIGATION ADMINISTRATION
CN 028, Trenton, N.J. 08625

MARWAN M. SADAT, P.E.
DIRECTOR

JORGE H. BERKOWITZ, PH.D.
ADMINISTRATOR

18 JAN 1985

Robert A. Schmidt
Crescent Lighting Division
P.O. Box 99
Barrington, NJ 08007

RE: Crescent Lighting Div., aka Keene Corp/KCS Lightin, Inc.
120 E. Gloucester Pike
Barrington, Camden County, NJ
ECRA Case #85-015

Dear Mr. Schmidt:

Please be advised that the Initial Notice which was submitted on the subject Industrial Establishment to comply with the provisions of the Environmental Cleanup Responsibility Act (N.J.S.A. 13:1K-6) has been found incomplete as detailed on the attached checklist.

Checklist areas considered partially addressed are indicated by a "no" and a circle around the missing item(s).

You should also be aware that under the act and its associated regulations a Negative Declaration or Cleanup Plan must be provided to the Department sixty (60) days prior to finalization of the proposed action. Since such lead time was not provided in this case, it is entirely possible that our review will not be completed by your intended date. We recommend that you prepare appropriate contingency plans to allow for such an occurrence.

Please provide the required data at your earliest convenience since we do not wish to delay your plans unnecessarily but cannot continue our review until your Notice is complete.

Please refer to the referenced case number in all future correspondence regarding this case.

Should you have any questions regarding our requirements, please feel free to call the indicated reviewer at (609) 633-7141.

Sincerely,

Anthony J. McMahon, Chief
Bureau of Industrial Site Evaluation

HS38:dr
enclosure

Send this completed form to:

N.J. Department of Environmental Protection
Division of Waste Management
Bureau of Industrial Site Evaluation
CN 028
Trenton, New Jersey 08625

Attn: ECRA Initial Notice

crescent
LIGHTING

DIVISION OF KEENE CORPORATION

January 4, 1985

BISE-ECRA
428 E. State Street
Trenton, N.J. 08608

Attn: Mr. Anthony J. McMahon, Chief

Dear Mr. McMahon:

Enclosed are completed application forms and exhibits applying for an ECRA inspection. Keene Corporation/KCS Lighting purchased the building on August 31, 1984, and is currently using the facility as an on-going operation.

I have been in contact with Mr. Tom Kearns at your office and I believe he will recognize our case. We are requesting prompt action since this is delaying completion of funding through the NJEDA.

Very truly yours,

Robert A. Schmidt
Vice-President/General Manager

RAS:flb
CC: C. Foster

received
07 JAN 1985

P.O. BOX 99, 120 EAST GLOUCESTER PIKE, BARRINGTON, NEW JERSEY 08007 • (609) 665-3900

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
HAZARDOUS SITE MITIGATION ADMINISTRATION
BUREAU OF INDUSTRIAL SITE EVALUATION

ENVIRONMENTAL CLEANUP RESPONSIBILITY ACT
INITIAL NOTICE
GENERAL INFORMATION SUBMISSION

(This is the first part of a two-part application form. This information must be submitted within 5 days following public release of a decision to close operations or the signing of a sales agreement or option to purchase involving an Industrial Establishment as defined in N.J.S.A. 13:1K-6, the Environmental Cleanup Responsibility Act.)

Please refer to N.J.A.C. 7:1-3.7 et seq. before filling out this form. Answer all questions. Please print or type.

Date December 28, 1984

1. A. Industrial Establishment

Name Keene Corp. (Crescent Lighting Division) Telephone No. (609) 665-3900

Street Address 120 E. Gloucester Pike, P.O. Box 99

City or Town Barrington State NJ Zip Code 08007

Municipality Barrington County Camden

B. Lot number 5AA & 35 Block number 251

C. Standard Industrial Classification (SIC) Number 3646

Should be block 13 lot 1-C

D. Current Owner

Name Keene Corp./KCS Lighting, Inc. Telephone No. (same as above)

Street Address (same as above)

Municipality State Zip Code

E. If the industrial establishment discharges to a publicly-owned treatment plant, provide the name and address of that facility.

Name Barrington Sewer Authority Telephone No. (617) 547-8585

Street Address Cedar Ave. off of Clements Bridge Rd.

Municipality Barrington State NJ Zip Code 08007

FOR DEP use only
Date Received
Notice Number

F. Has an ECRA application been filed for this Industrial Establishment or location previously? Yes If so, when? 12/14/84 For what reason? Request for non-applicability determination (see Appendix #1).

Final Disposition? Request rejected-required to submit the GIS and SES.

G. How is this Industrial Establishment heated?(gas,oil,electricity) Gas or space heaters

2. Previous owner(s) and current address (es)(attach additional sheets if necessary).

Name	Current Address	Description of the Operation
John A. Hobyak	732 Camp Woods Road	(see Appendix #2)
	Villanova, PA	

3. If the transaction initiating an ECRA review is the closure of operations, fill in the date of public release of the decision to close the facility and enclose a copy of the public announcement. Not applicable

Date of the public release of the decision _____

Is the public release enclosed? _____ Yes _____ No

If you checked "no", state the reason(s) _____

4. If the transaction initiating an ECRA review is an agreement of sale or option to purchase, fill in the date of the execution of that instrument plus provide a copy of the document (see Attachment #3 for copy of option of purchase).

Name and address of the other parties to the transfer:

Name	Street Address and Municipality	Phone No.

Is a copy of the agreement of sale or option to purchase attached? X Yes ____ No

If you checked "no", state the reason(s) _____

5. Actual date ~~proposed for~~ of closure of operations or transfer of title August 31, 1984

6. Authorized agent designated to work with the Department.

Name Robert A. Schmidt, Crescent Lighting Division

Street Address 120 East Gloucester Pike, P.O. Box 99

Municipality Barrington State NJ Zip Code 08007

Telephone No. ~~(609) 665-3900~~ (609) 546-5500

7. List all federal and state environmental permits applied for and received at this facility (attach additional sheets if necessary).

_____ Check here if no permits are involved.

A. New Jersey Bureau of Air Pollution Control.

Permit Number	Date of Approval or Denial	Reason for Denial (if applicable)	Expiration Date
None	Applied For Permit For Gas Burner With Input of 1,000,000 BTU or more.		

B. New Jersey Pollutant Discharge Elimination System

Number	Discharge Activity	Date issued or Denied	Expiration Date	Body of Water Discharged into
None				

C. United States Environmental Protection Agency(EPA) Identification Number.

NJD980774467

D. All other federal, state, local environmental permits.

Agency Issuing Permit	Permit Number	Date of Approval or Denial	Expiration Date
None			

8. If applicable, identify all administrative orders, temporary or permanent injunctions, civil administrative penalties, civil penalties, or criminal actions concerning the environment issued against the facility during the last ten years.

__x__ Check here if no enforcement actions are involved

A. Date of Action _____

Section of Law or Statute violated _____

Type of Enforcement Action _____

Description of the violation _____

How was the violation resolved?

B. Date of Action _____

Section of Law or Statute violated _____

Type of Enforcement Action _____

Description of the violation _____

How was the violation resolved? _____

(Add additional pages, if necessary)

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF WASTE MANAGEMENT
HAZARDOUS SITE MITIGATION ADMINISTRATION
BUREAU OF INDUSTRIAL SITE EVALUATION

ENVIRONMENTAL CLEANUP RESPONSIBILITY ACT (ECRA)

APPLICATION FOR ECRA REVIEW

SITE EVALUATION SUBMISSION

This is the second part of a two part application submittal and must be submitted within 30 days following public release of the decision to close operations or execution of an agreement of sale or option to purchase.

DATE December 28, 1984

NAME OF APPLICANT Keene Corp. (Crescent Lighting Division)

ADDRESS 120 East Gloucester Pike, P.O. Box 99

CITY OR TOWN Barrington ZIP CODE 08007

MUNICIPALITY Barrington COUNTY Camden

SUBMIT THE FOLLOWING:

9. A scaled site map identifying all areas where hazardous substances or wastes have been or currently are generated, manufactured, refined, transported, treated, stored, handled or disposed, above or below ground.

IS THIS MAP ENCLOSED? X YES, (See Appendix # 4) ___ NO

10. A detailed description of the current operations and process at the industrial establishment organized in the form of a narrative report designed to guide the Department step-by-step through a plant evaluation, with particular emphasis on areas of the process stream where hazardous substances and wastes are generated, manufactured, refined, transported, treated, stored, handled or disposed on site, above or below ground. Please note that establishments which ceased production prior to December 31, 1983, but are subject to ECRA because of on-going storage beyond that date, must provide details on past operations.

IS THIS REPORT ENCLOSED? X YES, (See Appendix # 5) ___ NO

IF YOU HAVE CHECKED "NO," STATE THE REASON(S): _____

FOR DEP USE ONLY

DATE RECEIVED _____

NOTICE NUMBER _____

11.A. A description of the types, age, construction material, capacity, contents, and locations of storage vessels, surface impoundments, landfills, or other types of storage facilities, including drum storage, containing hazardous substances or wastes.

ARE THESE FACILITIES IDENTIFIED ON YOUR SITE MAP OR DESCRIBED IN A NARRATIVE REPORT? X YES, (See Appendix # 4) ___ NO

IF YOU HAVE CHECKED "NO," STATE THE REASON(S): _____

11.B. The Department requires that satisfactory leak tests such as the Petrotite (formerly the Kent Moore test) or the Leak Lokator LD-2000 Test or Soil Borings be performed to verify the integrity of all underground tanks and that the results of such tests be submitted to the Department.

ARE THE RESULTS OF THE LEAK DETECTION TEST OR THE SOIL BORINGS ENCLOSED? ___ YES, (See Appendix #___) X NO

IF YOU HAVE CHECKED "NO," STATE THE REASON(S): There are no known underground storage tanks.

12. A complete inventory of hazardous substances and wastes, including description and location of all hazardous substances or wastes generated, manufactured, refined, transported, treated, stored, handled or disposed on site, above and below ground, and a description of the location, types and quantities of hazardous substances and wastes that will remain on site. (Attach additional sheets if necessary.)

MATERIAL	QUANTITY	LOCATION	METHOD	TO REMAIN ON SITE (YES OR NO)
Vanishing Oil	2-8 Drums	One inside bal. outside	Drum	Yes
Aromatic 150	1-3 Drums	Paint Storage Locker	Drum	Yes
Solvent #823	1-3 Drums	Paint Storage Locker	Drum	Yes
Key Mix 10 (70% NA OH)	1-5 Drums	Strip Room	Drum	Yes

MATERIAL	QUANTITY	LOCATION	METHOD	TO REMAIN ON SITE (YES OR NO)

13. A detailed description, date and location on a scaled map of any known spill or discharge of hazardous substances or wastes that occurred during the historical operation of the site and a detailed description of any remedial actions undertaken to handle any spill or discharge of hazardous substances or wastes. (Attach additional sheets if necessary.)

IS THIS INFORMATION ENCLOSED? ___ YES, (See Appendix #___) _X_ NO

IF YOU HAVE CHECKED "NO," STATE THE REASON(S): As of September 1, 1983 the site was vacated by previous owner. Since that time there has only been our firm's operations at the facility and there have not been any known spillage or discharge of hazardous substances or wastes during our firm's operation.

ARE THE SPILLS IDENTIFIED ABOVE INDICATED ON THE SCALED SITE MAP? ___ YES _X_ NO

IF YOU HAVE CHECKED "NO," STATE THE REASON(S): Not applicable.

14. A detailed sampling or other environmental evaluation measurement plan which includes proposed soil, groundwater, surface water, surface water sediment, and air sampling determined appropriate for the site. (This sampling plan must be developed in conformance with ECRA Regulations N.J.A.C. 7:1-3.14 et seq., and Quality Assurance Guidelines as developed by DEP, copies of which are enclosed.)

IS THE SAMPLING PLAN ENCLOSED? ___ YES, (See Appendix #___) X NO

IF YOU HAVE CHECKED "NO," STATE THE REASON(S): It is believed that this plan is not needed since there are no areas which are suspected of being contaminated. All storage areas are indoors and/or on impervious surfaces (concrete). The high cost of even limited sampling is not justified by this sites history.

15. A detailed description of the procedures to be used to decontaminate and/or decommission equipment and buildings involved with the generation, manufacture, refining, transportation, treatment, storage, handling, or disposal of hazardous waste or substances including the name and location of the transporter, the ultimate disposal facility, and any other organizations involved.

IS THE DETAILED DESCRIPTION ENCLOSED? ___ YES, (See Appendix #___) X NO

IF YOU HAVE CHECKED "NO," STATE THE REASON(S): There were no changes in operation at the time of ownership transfer (August 31, 1983) - the lessee became the owner and all operations continued as before the date of transfer.

16. Copies of all soil, groundwater and surface water sampling results, including effluent quality monitoring, conducted at the site of the industrial establishment during the history of ownership by the owner or operator, including a detailed description of the location, collection, chain of custody, methodology, analyses, laboratory, quality assurance/ quality control procedures, and other factors involved in preparation of the sampling results;

ARE HISTORICAL RESULTS ENCLOSED? ___ YES, (See Appendix #___) X NO

IF YOU HAVE CHECKED "NO," STATE THE REASON(S): None of the above work has been conducted at this site, under the present or previous owner.

APPENDIX #2

DESCRIPTION OF THE OPERATIONS OF PREVIOUS OWNER (J. HOBYAK)

DATE: 12/84

COMMONWEALTH OF PENNSYLVANIA)
) SS.
COUNTY OF)

AFFIDAVIT OF NON-APPLICABILITY OF PROPERTY SALE UNDER ENVIRONMENTAL CLEAN-UP RESPONSIBILITY ACT
N.J.S.A. 13:1K6 et seq ("ECRA")

I, JOHN A. HOBYAK, being of full age, do depose and say:

1. In August 1983, I was the equitable owner of the property commonly known and designated as 120 Gloucester Pike, Barrington, New Jersey and the legal owner of the property was the New Jersey Economic Development Authority.

2. On September 1, 1983, the present owner, Keene Corporation /- KCS Lighting, Inc. took sole and complete possession of the property by virtue of a Lease.

3. Prior to September 1, 1983, all activities at the premises ceased and terminated. The building was vacant.

4. No hazardous wastes or hazardous substances as the term is defined under the New Jersey Environmental Clean-Up Responsibility Act remained on the site as of the date that Keene Corporation/KCS Lighting, Inc. took possession. This statement applies to materials and wastes in any type of storage vessel including fuel storage tanks. There were no fuel storage tanks on the site above or below the ground. The building was vacated of all equipment and tools prior to September 1, 1983, when Keene Corporation/KCS Lighting, Inc., then tenant and now owner of the property took possession.

JOHN A. HOBYAK

Sworn to and subscribed to before me this 19th day of December, 1984.

IRVING A. [illegible], Notary Public
Bristol Twp., Bucks County
My Commission Expires Aug. 6, 1988

LAW OFFICES
Pat Charles
[illegible] AND COUNSELOR AT LAW
PROFESSIONAL CORPORATION
810 HADDON AVENUE
POST OFFICE BOX [illegible]
[illegible], NEW JERSEY [illegible]
AREA CODE [illegible]

crescent
LIGHTING

DIVISION OF KEENE CORPORATION

January 29, 1985

New Jersey Department of Environmental Protection
Division of Waste Management
Hazardous Site Mitigation Administration
Bureau of Industrial Site Evaluation
CN 028
Trenton, NJ 08625

Attn: Mr. Charles Bartolone

Dear Mr. Bartolone:

In answer to your checklist regarding ECRA case #85-015, I am submitting the following information:

Item 2

The building was personally owned by Mr. John Hobyak who is also the owner of Pennco Tech, a vocational trade school, which is currently located at 3815 Otter Street, Bristol, Pennsylvania.

Please let me know if you need any further information. We hope this application process can be expedited as it is delaying funding by the New Jersey Economic Development Agency.

Very truly yours,

Robert A. Schmidt
Vice-President/General Manager

RAS:flb
CC: C. Foster

Received
05 FEB 1985

P.O. BOX 99, 120 EAST GLOUCESTER PIKE, BARRINGTON, NEW JERSEY 08007 • (609) 665-3900

The affidavit provided in Attachment #1 summarizes the dates of operation transfer and sale. There were no operations on the property by the former owner after September 1, 1983. Prior to this date (9/1/83) the former owner had taken steps to start up a vocational training center. Trucks and truck lifts were on-site for use by the planned training center. These were removed by 9/1/83.

After this date (9/1/83), Keene Corporation/KCS Lighting, Inc. took possession of the property (by virtue of a lease) and established the operations which currently exist on-site and which are described in Appendix 5.

REFERENCE NO. 6

CONGRESSIONAL DISTRICTS

DISTRICT ONE: **Part of Burlington County** (Maple Shade Twp., Palmyra Borough, Riverton Borough.), **Part of Camden County** (Audubon Park Borough, Barrington Borough, Bellmawr Borough, Berlin Borough, Berlin Twp., Brooklawn Borough, Camden City, Chesilhurst Borough, Clementon Borough, Collingswood Borough, Gibsboro Borough, Gloucester City, Gloucester Twp., Haddon Twp., Hi-Nella Borough, Laurel Springs Borough, Lawnside Borough, Lindenwold Borough, Magnolia Borough, Mount Ephraim Borough, Oaklyn Borough, Pennsauken Twp., Pine Hill Borough, Pine Valley Borough, Runnemede Borough, Somerdale Borough, Stratford Borough, Tavistock Borough, Winslow Twp. and Woodlynne Borough), and **Part of Gloucester County** (Clayton Borough, Deptford Twp., East Greenwich Twp., Greenwich Twp., Harrison Twp., Logan Twp., Monroe Twp., National Park Borough, Paulsboro Borough, Swedesboro Borough, Washington Twp., Wenonah Borough, West Deptford Twp., Westville Borough, Woodbury City, Woodbury Hts. Borough and Woolwich Twp.).

DISTRICT TWO: **Atlantic County, Cape May County, Cumberland County, Salem County** and **Part of Gloucester County** (Elk Twp., Franklin Twp., Glassboro Borough, Mantua Twp., Newfield Borough, Pitman Borough and South Harrison Twp.).

DISTRICT THREE: **Part Of Monmouth County** (Allenhurst Borough, Asbury Park City, Atlantic Highlands, Borough, Avon-by-the-Sea Borough, Belmar Borough, Bradley Beach Borough, Deal Borough, Eatontown Borough, Fair Haven Borough, Hazlet Twp., Highlands Borough, Interlaken Borough, Keansburg Borough, Keyport Borough, Little Silver Borough, Loch Arbour Village, Long Branch City, Manasquan Borough, Middletown Twp., Monmouth Beach Boro, Neptune City Borough, Neptune Twp., Oceanport Borough, Ocean Twp., Red Bank Borough, Rumson Borough, Sea Bright Borough, Sea Girt Borough, Shrewsbury Borough, Shrewsbury Twp., Spring Lake Borough, Spring Lake Heights Borough, South Belmar Borough, Tinton Falls Borough, Union Beach Borough and West Long Branch Borough) and **Part of Ocean County** (Bay Head Borough, Brick Twp., Dover Twp., Island Heights Borough, Lakewood Twp., Lavallette Borough, Mantoloking Borough, Point Pleasant Beach Borough, Point Pleasant Borough, Seaside Heights Borough and South Toms River Borough).

DISTRICT FOUR: **Part of Burlington County** (Bordentown City, Bordentown Twp., Burlington City, Burlington Twp., Chesterfield Twp., Eastampton Twp., Fieldsboro Borough, Florence Twp., Mansfield Twp., Springfield Twp. and Westampton Twp.) **Part of Mercer County** (East Windsor Twp., Ewing Twp., Hamilton Twp., Hightstown Borough, Hopewell Borough, Hopewell Twp., Lawrence Twp., Pennington Borough, Trenton City and Washington Twp.), **Part of Middlesex County** (Jamesburg Borough, Monroe Twp. and Plainsboro Twp.), **Part of Monmouth County** (Allentown Borough, Brielle Borough, Colts Neck Twp., Englishtown Borough, Farmingdale Borough, Freehold Borough, Freehold Twp., Holmdel Twp., Howell Twp., Manalapan Twp., Marlboro Twp., Millstone Twp., Roosevelt Borough, Upper Freehold Twp. and Wall Twp.), and **Part of Ocean County** (Jackson Twp.).

DISTRICT FIVE: **Part of Bergen County** (Allendale Borough, Alpine Borough, Bergenfield Borough, Closter Borough, Cresskill Borough, Demarest Borough, Dumont Borough, Emerson Borough, Glen Rock Borough, Harrington Park Borough, Haworth Borough, Hillsdale Borough, Ho-Ho-Kus Borough, Mahwah Twp., Midland Park Borough, Montvale Borough, Northvale Borough, Norwood Borough, Oakland Borough, Old Tappan Borough, Oradell Borough, Paramus Borough, Park Ridge Borough, Ramsey Borough, Ridgewood Village, River Vale Twp., Rochelle Park Twp., Rockleigh Borough, Saddle River Borough, Tenafly Borough, Upper Saddle River Borough, Waldwick Borough, Washington Twp., Westwood Borough, Woodcliff Lake Borough and Wyckoff Twp.), **Part of Passaic County** (Bloomingdale Borough, Haledon Borough, Hawthorne Borough, North Haledon Borough, Ringwood Borough, Wanaque Borough and West Milford Twp.), and **Part of Sussex County** (Andover Borough, Andover Twp., Branchville Borough, Frankford Twp., Franklin Borough, Fredon Twp., Hamburg Borough, Hardyston Twp., Hopatcong Borough, Lafayette Twp., Montague Twp., Newton Town, Ogdensburg Borough, Sandyston Twp., Sparta Twp., Stanhope Borough, Sussex Borough, Vernon Twp., Walpack Twp. and Wantage Twp.).

DISTRICT SIX: **Part of Middlesex County** (Carteret Borough, Edison Twp., Highland Park Borough, Metuchen Borough, New Brunswick City, North Brunswick Twp., Old Bridge Twp., Perth Amboy City, Sayreville Borough, South Amboy City, South River Borough and Woodbridge Twp.), **Part of Monmouth County** (Aberdeen Twp. and Matawan Borough), and **Part of Union County** (Linden City, Rahway City and Roselle Borough).

DISTRICT SEVEN: **Part of Essex County** (Millburn Twp.), **Part of Middlesex County** (Dunellen Borough and Middlesex Borough), **Part of Somerset County** (Bound Brook Borough, Bridgewater Twp., Green Brook Twp., Manville Borough, North Plainfield Borough, Warren Twp. and Watchung Borough) and **Part of Union County** (Berkeley Heights Twp., Clark Twp., Cranford Twp., Elizabeth City, Fanwood Borough, Garwood Borough, Kenilworth Borough, Mountainside Borough, New Providence Borough, Plainfield City, Roselle Park Borough, Scotch Plains Twp., Springfield Twp., Summit City, Union Twp., Westfield Town and Winfield Twp.).

DISTRICT EIGHT: **Part of Bergen County** (Franklin Lakes Borough), **Part of Essex County** (Part of Belleville Town, Bloomfield Town, Glen Ridge Borough, Montclair Town and Nutley Town), **Part of Morris County** (Riverdale Borough) and **Part of Passaic County** (Clifton City, Little Falls Twp., Passaic City, Paterson City, Pompton Lakes Borough, Prospect Park Borough, Totowa Borough, Wayne Twp. and West Paterson Borough).

DISTRICT NINE: **Part of Bergen County** (Bogota Borough, Carlstadt Borough, Cliffside Park Borough, East Rutherford Borough, Edgewater Borough, Elmwood Park Borough, Englewood City, Englewood Cliffs Borough, Fair Lawn Borough, Fairview Borough, Fort Lee Borough, Garfield City, Hackensack City, Hasbrouck Heights Borough, Leonia Borough, Little Ferry Borough, Lodi Borough, Lyndhurst Twp., Maywood Borough, Moonachie Borough, New Milford Borough, North Arlington Borough, Palisades Park Borough, Ridgefield Borough, Ridgefield Park Village, River Edge Borough, Rutherford Borough, Saddle Brook Twp., South Hackensack Twp., Teaneck Twp., Teterboro Borough, Wallington Borough and Wood-Ridge Borough) and **Part of Hudson County** (East Newark Borough, Part of Kearny Town, and Secaucus Town).

DISTRICT TEN: **Part of Essex County** (Part of Belleville Town, East Orange City, Irvington Town, Newark City and Orange City) and **Part of Union County** (Hillside Township).

DISTRICT ELEVEN: **Part of Essex County** (Caldwell Borough, Cedar Grove Twp., Essex Fells Borough, Fairfield Borough, Livingston Twp., Maplewood Twp., North Caldwell Borough, Roseland Borough, South Orange Village, Verona Borough, West Caldwell Borough and West Orange Town), **Part of Morris County** (Boonton Town, Boonton Twp., Butler Borough, Chatham Borough, Chester Borough, Chester Twp., Denville Twp., Dover Town, East Hanover Twp., Florham Park Borough, Hanover Twp., Jefferson Twp., Kinnelon Borough, Lincoln Park Borough, Madison Borough, Mendham Borough, Mendham Twp., Mine Hill Twp., Montville Twp., Mountain Lakes Borough, Mount Arlington Borough, Mount Olive Twp., Netcong Borough, Parsippany-Troy Hills Twp., Pequannock Twp., Randolph Twp., Rockaway Borough, Rockaway Twp., Roxbury Twp., Victory Gardens Borough and Wharton Borough), **Part of Sussex County** (Byram Twp. and Green Twp.) and **Part of Warren County** (Allamuchy Twp., Frelinghysen Twp., Independence Twp. and Liberty Twp.).

DISTRICT TWELVE: **Hunterdon County, Part of Mercer County** (Princeton Borough, Princeton Twp. and West Windsor Twp.) **Part of Middlesex County** (Cranbury Twp., East Brunswick Twp., Helmetta Borough, Milltown Borough, Piscataway Twp., South Brunswick Twp., South Plainfield Borough and Spotswood Borough), **Part of Morris County** (Chatham Twp., Harding Twp., Morris Plains Borough, Morristown Town, Morris Twp., Passaic Twp. and Washington Twp.), **Part of Somerset County** (Bedminster Twp., Bernards Twp., Bernardsville Borough, Branchburg Twp., Far Hills Borough, Franklin Twp., Hillsborough Twp., Millstone Borough, Montgomery Twp., Peapack-Gladstone Borough, Raritan Borough, Rocky Hill Borough, Somerville Borough and South Bound Brook Borough), **Part of Sussex County** (Hampton Twp. and Stillwater Twp.) and **Part of Warren County** (Alpha Borough, Belvidere Town, Blairstown Twp., Franklin Twp., Greenwich Twp., Hackettstown Town, Hardwick Twp., Harmony Twp., Hope Twp., Knowlton Twp., Lopatcong Twp., Manefield Twp., Oxford Twp., Pahaquarry Twp., Phillipsburg Town, Pohatcong Twp., Washington Borough, Washington Twp. and White Twp.).

DISTRICT THIRTEEN: **Part of Burlington County** (Bass River Twp., Beverly City, Cinnaminson Twp., Delanco Twp., Delran Twp., Edgewater Park Twp., Evesham Twp., Hainsport Twp., Lumberton Twp., Medford Lakes Borough, Medford Twp., Moorestown Twp., Mount Holly Twp., Mount Laurel Twp., New Hanover Twp., North Hanover Twp., Pemberton Borough, Pemberton Twp., Riverside Twp., Shamong Twp., Southampton Twp., Tabernacle Twp., Washington Twp., Willingboro Twp., Woodland Twp. and Wrightstown Borough), **Part of Camden County** (Audubon Borough, Cherry Hill Twp., Haddonfield Borough, Haddon Heights Borough, Merchantville Borough, Voorhees Twp. and Waterford Twp.) and **Part of Ocean County** (Barnegat Light Borough, Barnegat Twp., Beach Haven Borough, Beachwood Borough, Berkeley Twp., Eagleswood Twp., Harvey Cedars Borough, Lacey Twp., Lakehurst Borough, Little Egg Harbor Twp., Long Beach Twp., Manchester Twp., Ocean Gate Borough, Ocean Township, Pine Beach Borough, Plumstead Twp., Seaside Park Borough, Ship Bottom Borough, Stafford Twp., Surf City Borough and Tuckerton Borough).

DISTRICT FOURTEEN: **Part of Hudson County** (Bayonne City, Guttenberg Town, Harrison Town, Hoboken City, Jersey City, Part of Kearny Town, North Bergen Twp., Union City, Weehawken Twp. and West New York Town).

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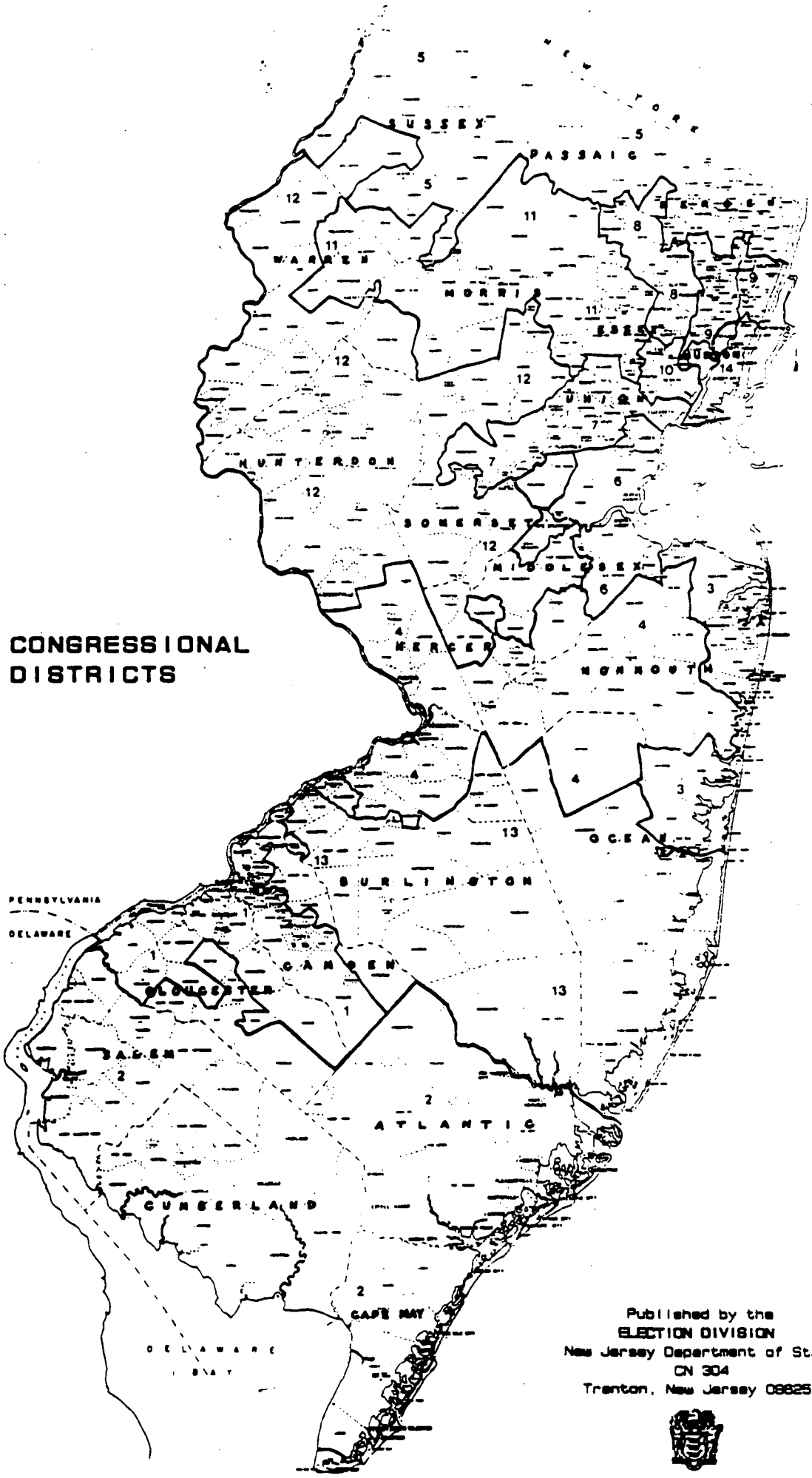
CONGRESSIONAL DISTRICTS



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New Jersey Department of State
CN 304
Trenton, New Jersey 08625

Thomas H. Kean
Governor

Jane Burgio
Secretary of State

REFERENCE NO. 7

SOIL CLEAN-UP PLAN

Crescent Lighting
120 East Gloucester Pike
Barrington, New Jersey

1.00 INTRODUCTION

The following plan was prepared to comply with New Jersey Department of Environmental Protection (NJ DEP) regulations on Clean-up Plan Criteria (7:1 - 3.12) for the clean-up of the "oil" stained soil identified during a NJ DEP inspection of Crescent Lighting on 3/21/85. The plan includes the:

1) Results of sampling and analysis of the stained soil - conducted in accordance with the approved soil sampling plan (Approved on Oct. 23, 1985);

2) Proposed soil clean-up procedures, time schedules, and cost estimates; and the

3) Proposed method of providing financial security for the clean-up.

As is noted in Section 2.00 and 3.00, it is our opinion that the results of testing indicate conditions that do not warrant clean-up. However, Crescent Lighting wishes to carry out the proposed clean-up both to tidy up the area and to ensure NJ DEP approval.

As the reviewer of this plan should be aware, the oil stained soil (an area no larger than 23 x 32 feet and to depth of less than 0.5 feet) resulted from the

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discharge of wastewater from the plant's floor cleaning machine. The machine uses a detergent cleaner to sweep up dirt and debris from the floor in the plant. Floors are cleaned routinely and about 50 or 60 gallons of wastewater are generated. It is suspected that the dirty water discharged may contain some traces of oil, soil particles, metal shavings, detergent and traces of other materials used in the plant.

The approved soil sampling plan called for sampling of both the visually oil stained soil and the unstained soil about the stained soil for a wide range of parameters. The parameters tested for and the results of that testing are reviewed in Section 2.00.

2.00 RESULTS OF SOIL SAMPLING AND ANALYSIS

The results of soil sampling and analysis of both the stained and unstained soils are reviewed in Sections 2.10 and 2.20 respectively. The required soil sampling procedures described in Section 1.22 of the approved plan were carried out to obtain all samples. All equipment was properly cleaned between samplings and proper labelling and chain of custody forms were completed (copies of chain of custody forms in Appendix B). Table A lists the sites sampled, soil description and the depths of soil sampled. The location of the stained area and the sampling sites

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OIL-
STAINED AREA AT CRESCENT LIGHTING,
CORP, BARRINGTON, NJ

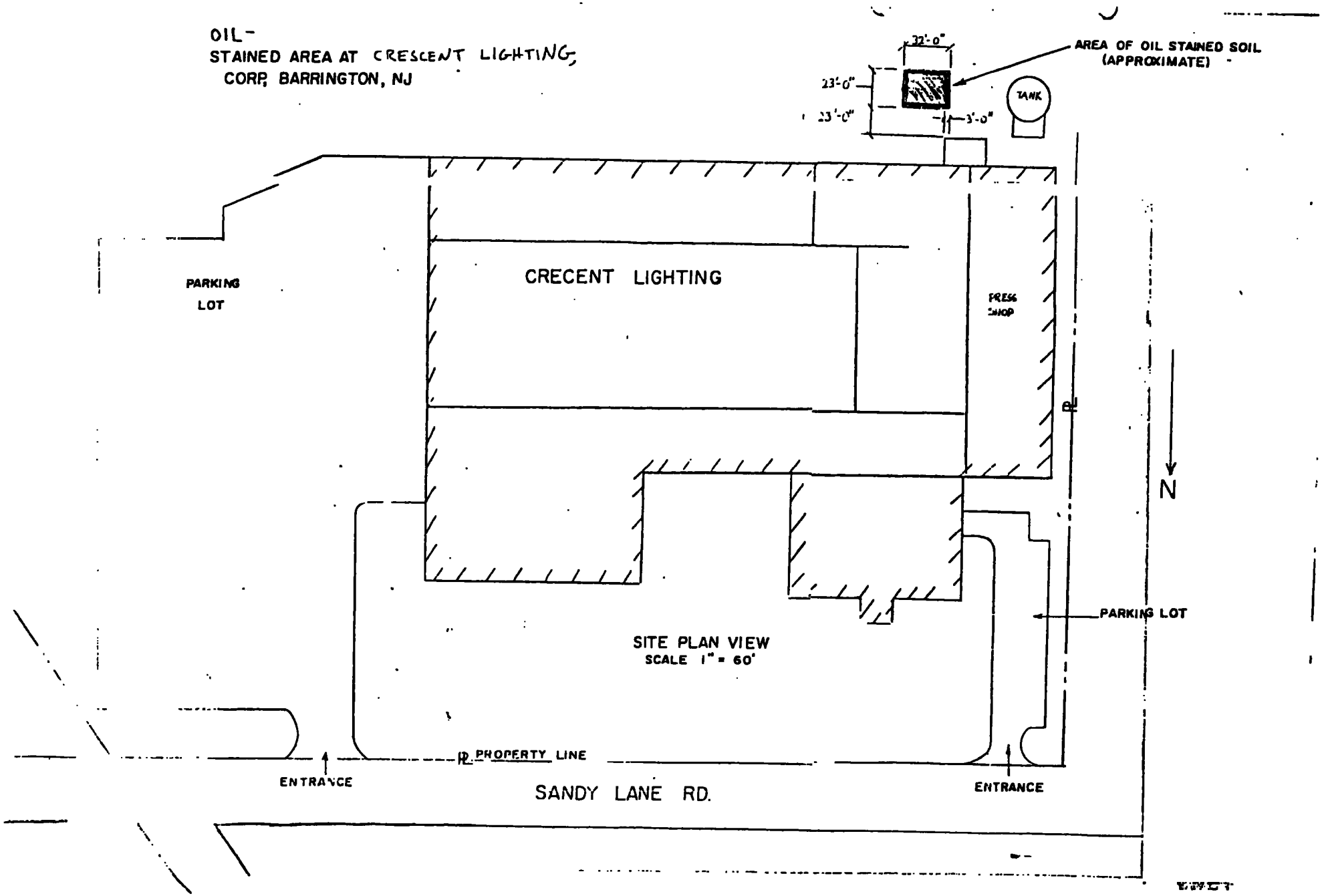

TABLE A (continued)

Sample ID. (1)	Sample Depth (inches)	Soil Description	Date Sampled
SS6-		(Outside-stained area-Figure 2)	
#1	2-6	Same as SS4 #1	11/1/85
2	10-16	Same as SS4 #2	
NOTE: Sample on the north side of the area was not needed since area is covered by asphalt.			
SS7-		(6 ft. to west of SS6)	
#1	2-6	Same as SS6 #1	11/15/85
SS8-		(9 ft. to west of SS6)	
#1	2-6	Same as SS6 #1	11/15/85
SS9-		(adjacent to SS5)	
#1	2-6		11/15/85
SS10-		(adjacent to SS4)	
#1	2-6		11/15/85
SS11-		(adjacent to SS1)	
#1	12-18		11/15/85
SS12-		(adjacent to SS2)	
#1	12-18		11/15/85

1 - Locations of all sites are shown in Figure 2. Figure 1 shows location of area relative to Crescent's Building.

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TABLE A

SAMPLING SITE DESCRIPTIONS

Sample ID. (1)	Sample Depth (inches)	Soil Description	Date Sampled
SS1-		(in stained area-see Figure 2)	
#1	0-3	M-F Sand; stained gray less than 3 inches	11/1/85
2	6-12	M Sand; no staining - tan/brown	
3	12-18	M Sand; no staining - tan/orange	
4	18-24	M Sand; no staining - tan/orange with iron cementation	
5	24-30	M Sand; no staining - tan/orange with iron cementation	
SS2-		(In stained area-see Figure 2)	
#1	0-3	Same as SS1 #1	11/1/85
2	6-12	Same as SS1 #1	
3	12-18	Same as SS1 #1	
4	18-24	M. Sand; no staining - tan/orange-no iron cementation	
5	24-30	M. Sand; no staining - tan/orange-iron cementation	
SS3-		(In stained area-see Figure 2)	
#1		M-F Sand and loam; stained soil	11/1/85
SS4-		(Outside of visually stained area - Figure 2)	
#1	2-6	F.M. Sand and loam - tan/brown - no staining or odor	11/1/85
2	8-14	M. Sand - tan/orange - no staining or odor	
SS5-			
#1	2-6	Same as SS4 #1	11/1/85
2	10-16	Same as SS4 #2	

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are shown on Figures 1 and 2 respectively. Analysis of gathered soil samples was performed in accordance with the approved test procedures (Section 1.23 of the approved plan) and by Certified New Jersey laboratory (copy of laboratory Certification is provided in Appendix C).

The results of testing are reviewed below with respect to the approved soil sampling plan criteria for soil removal presented in Section 1.24 of the approved soil plan. Briefly summarized, the criteria was:

Characteristic	Removal Standard*
1) Visual Oil Staining	Remove if stained
2) Total Petroleum Hydrocarbons (Method 418.1)	Over 100 ppm
3) Flash Point	<140 °F
4) Priority Pollutant Metals and EP Toxic Metals	o EP toxic metals over hazardous waste limits o Priority Pollutant metals if significantly over levels in background soil and only if EP toxic levels exceed EP toxic limits
5) Priority Pollutants (other than the metals)	over 1 ppm*

* Note: It was clearly indicated in the approved plan that these standards were deemed conservative criteria and that alternate standards might be submitted following analysis.

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5) Priority Pollutants (other than the metals)	over 1 ppm*

* Note: It was clearly indicated in the approved plan that these standards were deemed conservative criteria and that alternate standards might be submitted following analysis.

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2.10 STAINED SOIL - RESULTS

The laboratory data sheets are provided in Appendix A. The stained soil sample is identified as Soil Composite (SS1 #1, SS2 #1, and SS3 #1). The sample was composited in the laboratory for analysis. The results of analysis are reviewed below:

2.11 VISUAL STAINING

The area of visual staining (light gray staining) is the area in Figure A that is bounded by the stakes (stk) and the asphalt surface. Staining was less than 6 inches deep.

2.12 TOTAL PETROLEUM HYDROCARBONS

The stained soil had petroleum hydrocarbons over the 100 ppm limit. The composite sample of soil from locations SS1 #1, SS2 #1, and SS3 #1 - each from depths of 0 - 6 inches had a level of 2800 ppm of petroleum hydrocarbons. Since the level of 100 ppm of total petroleum hydrocarbons was set as the criteria for removal, the stained soil is required to be removed. The limits to be removed to be established from the total petroleum hydrocarbons tests of the surrounding unstained soil (Section 2.21).

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2.13 FLASH POINT

The stained soil sample had a flash point over 140 °F (+60 °C). Therefore, the soil is not an ignitable hazardous waste residue and tests of the unstained soil for flash point is not required.

2.14 PRIORITY POLLUTANT METALS AND EP TOXIC METALS

All of the priority pollutant metals that are also EP toxic metals had EP toxic concentrations below the regulatory limits (refer to copy of certificate of analysis in Appendix A).

what are levels?

Of the metals that are not also EP toxic metals, only Copper and Zinc had concentrations that appeared to be somewhat higher than background concentrations.

It is judged that the somewhat elevated (above measured background) levels of copper and zinc are not environmentally significant for the following reasons: Given the non-leachable form of the other metals (EP toxic), it is assumed that these metals are not in a soluble form. They are present in the natural soil. Standards for these metals in drinking water are related to undesirable aesthetic effects on drinking waters not human health concerns (EPA,

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1976 Quality Criteria for Water, Washington, D.C.). In fact, zinc is an essential and beneficial requirement in human metabolism. There are also copper intake requirements for children and humans. Therefore, the presence of these concentrations of total metals in the soil are not judged to represent a threat to human health or the environment. In addition, it is concluded that testing of the unstained soil for these metals is not necessary. Some testing was conducted to confirm this assumption. The results of unstained soil testing are reviewed in Section 2.22.

2.15 PRIORITY POLLUTANTS PLUS 40 (OTHER THAN METALS)

The results of priority pollutant analysis of the composite soil sample are provided in Appendix A. The constituents that came out over 1 ppm, the arbitrary criteria of the approved sampling plan, are summarized in Table B.

It is our opinion that the type and concentration of detected constituents (see Table B) does not represent a threat to human health or the environment and do not require further testing of unstained soil for these constituents. Concentrations are extremely low

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TABLE B

SUMMARY OF PRIORITY
POLLUTANT (not metals)
RESULTS -
STAINED SOIL[1]

Priority Pollutant Plus 40	Concentration in Soil[1] (mg/kg)
ORGANICS (Priority Pollutants)	
ACID EXTRACTABLES:	None Detected
BASE NEUTRALS:	
Bis (2-ethylhexyl) phthalate	7.0
VOLATILES:	
Ethylbenzene	3.0
PESTICIDES/PCBs:	None Detected
ORGANICS (Priority Pollutants):	
VOLATILES:	
(1 methylethyl) benzene	17
Xylene	3
Xylene	8
Propyl benzene	5
SEMI - VOLATILES:	
2-ethyl - 3-hexanethiol	1.5
Cis-1-ethinyl - 2-methyl - 1-cyclohexanole	1.9
Phenol	1.87
Asbestos	None Detected
Total Cyanides	<0.1

1 - Concentration in soil at over 1 mg per kg of soil. Results of all analysis is provided in Appendix A.

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and the priority pollutants detected are not of a nature that is unexpected from the known source (floor cleanings). It is significant that:

a) No pesticides or PCB's were detected.

b) Only fairly common industrial organic priority pollutants: ethyl benzene, phenol, and a phthalate (bis (2-ethyl hexyl)) were detected over 1 ppm. The ethyl benzene is present in gasoline and oils and may be present in solvent mixtures. Bis (2-ethyl hexyl) phthalate is a liquid used in vacuum pumps and is suspected of being present in some plastics. Phenol is probably present in some oils used at Crescent to control bacterial growth in the oil.

c) The plus 40 constituents are also believed to be associated with fairly common industrial operations that could have orginated from the floor cleanings. Xylene is a fairly common solvent. Propylbenzene is a solvent used in manufacturing plastics and in textile dyeing and printing. Cis - 1 - ethinyl - 2 - methyl - 1 - cyclohexanole is a corrosion prevention agent which may present in the oils or other materials used at Crescent. 2 - ethyl - 3 - hexanethiol is probably a normal constituent in oil - it is isolated as a fraction in crude oil distillation (1 methyl ethyl) benzene (also known as Cumene) is used in the production of acetone and phenol and styrene. Therefore, all of these constituents are expected to be present in the floor washing discharge.

d) No cyanides were detected.

e) If all of the organic priority pollutants plus 40 detected in the soil were combined - a total concentration of only 48 mg/kg results. This concentration is equivalent to less than one gallon (about 0.3 gallons) of liquid (composed of the detected constituents) absorbed in the

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stained soil. This figure assumes the area is less than 20 x 30 ft. and no more than 1 foot deep. This is an insignificant amount of contaminants.

- Available toxicity data (Oral Rat LD values) for (1-methy ethyl) benzene and propylbenzene (2,910 and 6,040 mg/kg) indicate that the levels present are well below toxic levels (1,000 times less than). The health limits and oral rat values show the detected levels to be environmentally insignificant.

f) For parameters or related parameters that have listed health advisories, the levels detected are less than about 100 times these standards (which is not an unreasonable criteria for acceptable concentrations in soil - since it is a similar rationale to the EP toxic criteria). Available health advisories times 100 and other available standards are given in Table C.

g) The stained soil sould not be considered hazardous under current NJ regulation. It does not exhibit any of the characteristics that would define it as a hazardous waste and in all probability, the petroleum hydrocarbons detected did not come from spills of waste oils, but from virgin materials and from equipment in use.

Basically, the soil has quite low, insignificant concentrations of organics - none of which appear to warrant soil removal.

2.20 UNSTAINED SOIL - RESULTS:

The location of unstained soil sampling sites are shown on Figure 2 and listed in Table A. Samples SS1 #3 and SS2 #3 were obtained on November 1, 1985 from locations SS1 and SS2 at depths of 12 to 18 inches. Soil staining ended above a depth of 6

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TABLE C

"HEALTH (HUMAN) LIMITS
FOR DETECTED OR RELATED CONSTITUENTS"

Constituent	Human Health Limits mg/l x 100 (2)	Drinking Water Health Advisory Limits (mg/l) (1)	
		10 Day	Longer Term
i) Xylene	---	140	62
ii) Benzene	---	23	7
iii) Phenol	350	---	---
iv) Phthalate esters (including: di-2-ethyl hexyl-phthalate; di-2-ethyl hexyl-phthalate; di-ethyl phthalate; ....)	over 1,500	---	---

1 - Limits obtained from MA Department of Environmental Quality Engineering and multiplied by 100.

2 - Human Health protection limit as published in the Federal Register on Friday, November 28, 1980 and multiplied by 100.

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inches. The samples SS1 #3 and SS2 #3 were obtained from below the area of stained soil. Samples SS4 #1, SS5 #1 and SS6 #1 were obtained on November 1, 1985 from outside the sides of the visually stained area [The fourth side is covered with asphalt and was therefore, not sampled] as shown in Figure A. These samples were obtained from the depth of 2 to 6 inches (only the grass layer was not sampled). Additional samples were obtained for possible future analysis.

In addition, two soil samples were obtained from areas well away from the stained area and were analyzed for priority pollutant metals. These were labelled as background #1 and #2. Locations are shown in Figure A.

Given the lack of significant concentrations of any of the priority pollutants only the following tests were immediately requested to be run on the unstained soil samples:

a) Petroleum Hydrocarbons

b) Volatile Organic Priority Pollutants

c) Priority Pollutant metals from samples from beneath the stained soil SS1 #3 and SS2 #3 and the two background samples (background #1 and #2).

Some additional testing has been requested in anticipation of possible questions from the ECRA Office - concerning our selection of what is

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significant and to resolve one important question concerning the total petroleum hydrocarbon results. These are reviewed in the following sections. Please note, it is our judgement that only the testing of samples SS7 #1 and SS8 #1 for petroleum hydrocarbons is warranted to define the area of soil to be removed.

?

what about if results

2.21 TOTAL PETROLEUM HYDROCARBONS:

All of the petroleum hydrocarbon levels came out below detection (<30 ppm) in the unstained soil samples except for the sample from location SS6 #1 which had a level of 5,400 ppm. Therefore, the area of soil defined as requiring removal is confined within the area bounded by SS4 and SS5 and the asphalt and is above the depth of 12 inches (samples SS1 #3 and SS2 #3). the extent of required soil removal, however, is not defined on the side where SS6 #1 has been taken. This area has been sampled (November 15, 1985) at locations SS7 and SS8 (see Figure A). These samples are being analyzed for total PH and results are expected by November 25, 1985. It is assumed these levels will come out below the limits [We request approval subject to the receipt of these results - with levels less than 100 ppm].

what about underneath asphalt

why not

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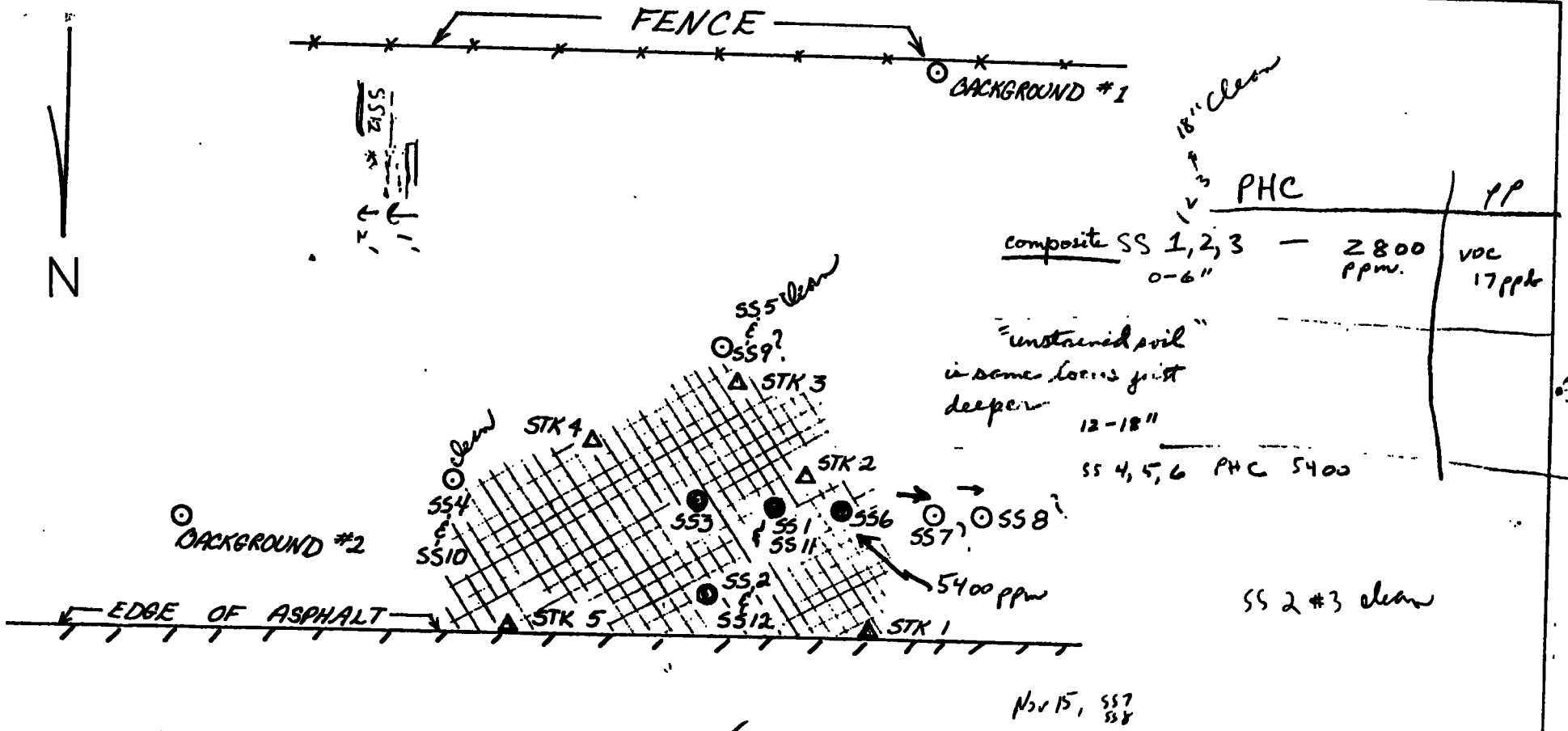

LEGEND

⊙ SS 1 - SOIL SAMPLING SITE #1

▨ - SOIL TO BE REMOVED

△ STK 1 - WOODEN STAKE MARKERS ABOUT AREA OF VISUAL STAINING.

SCALE 1" = 10'

FIGURE 2: SKETCH SHOWING THE LOCATION OF SOIL SAMPLING SITES

11/85

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2.22 METALS ANALYSIS

The metals analysis conducted on Samples SS2 #3 and SS1 #3 was not deemed necessary by the results of stained soil testing (refer to review of the results in Section 2.14). However, just in case NJDEP did not concur with our findings of no significance, we ran the tests. The results confirmed our expectations - all metals levels at the 12-18 inch depth below the stained soil were comparable to those of the background soil samples which are assumed to represent natural soil conditions. Therefore, the unstained soil area sampled is clean with respect to the metals analysis results.

where we background samples for

2.23 VOLATILE ANALYSIS

No volatile organics were detected in any of the five (5) unstained soil samples analyzed (SS1 #3, SS2 #3, SS4 #1, SS5 #1 and SS6 #1) except for a trace of methylene chloride (25 ppb) which was also detected in the lab blank. The certificate of analysis is provided in Appendix A. It is significant to note that no volatile organics were detected in sample SS6 #1 which had a concentration of 5,400 ppm total petroleum hydrocarbons.

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This data suggests that the other organic priority pollutants (acid extractables and base neutrals) will not be present or will only be present at quite low levels. In addition, it is judged that (as discussed in Section 2.15) the levels of detected organics in the stained soil do not warrant additional testing of the unstained soil for organics (with the exception of the total petroleum hydrocarbons mentioned in Section 2.21).

Therefore, the unstained soil test data includes the removal of the stained soil based on the petroleum hydrocarbon levels over 100 ppm and no other parameter.

3.00 RECOMMENDED CLEANUP PLAN

Given the results of soil testing the following cleanup is recommended:

a) The cross hatched area on Figure A is to be excavated to a depth of twelve (12) inches. This is the area bounded by "clean" soil test sites SS4 and SS5 and by the lower samples SS2 and SS1. The limits of the excavation on the side where SS6 #1 is located are to be confirmed upon receipt of the results of analysis of SS7 #1 and SS8 #1 for petroleum hydrocarbons.

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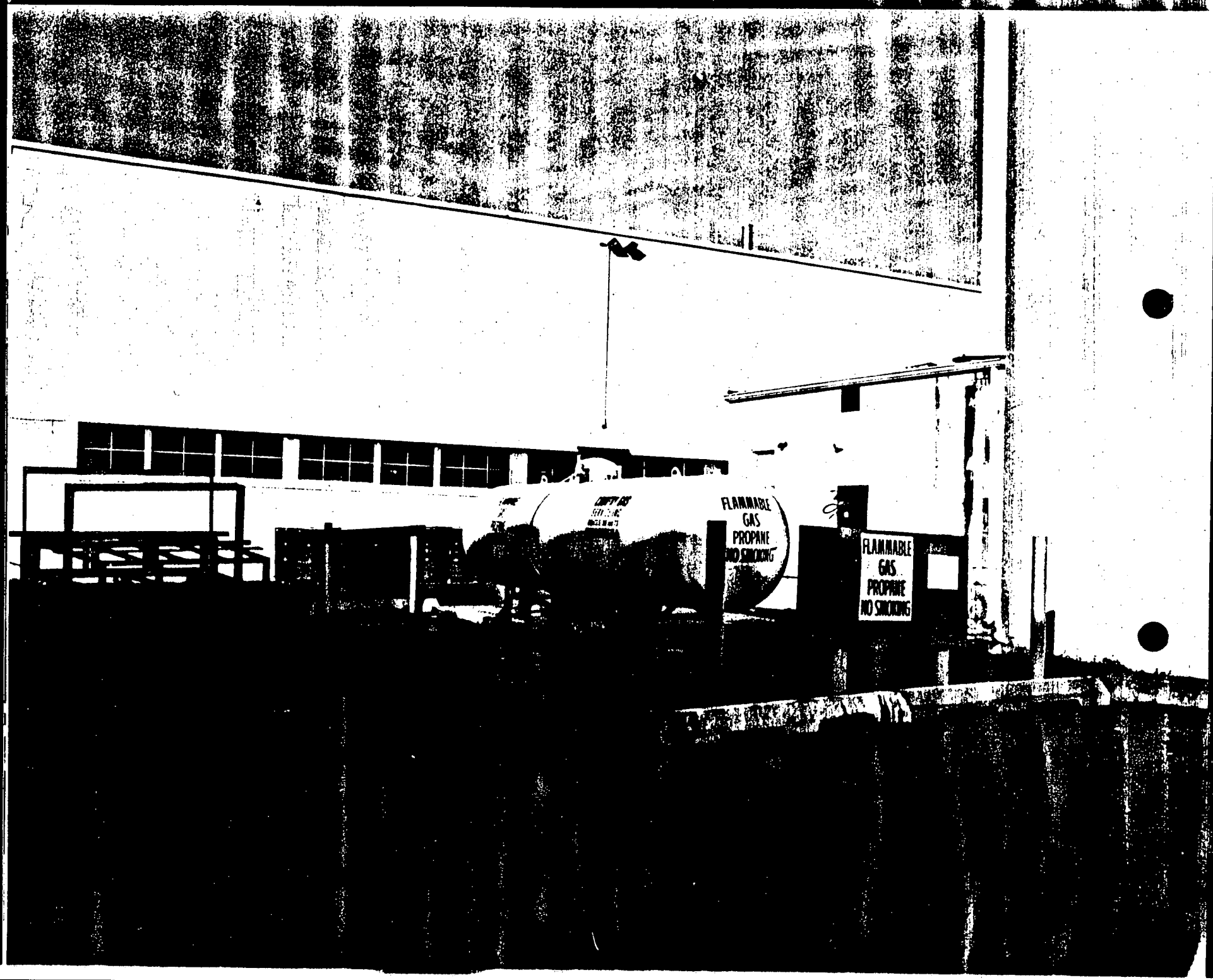
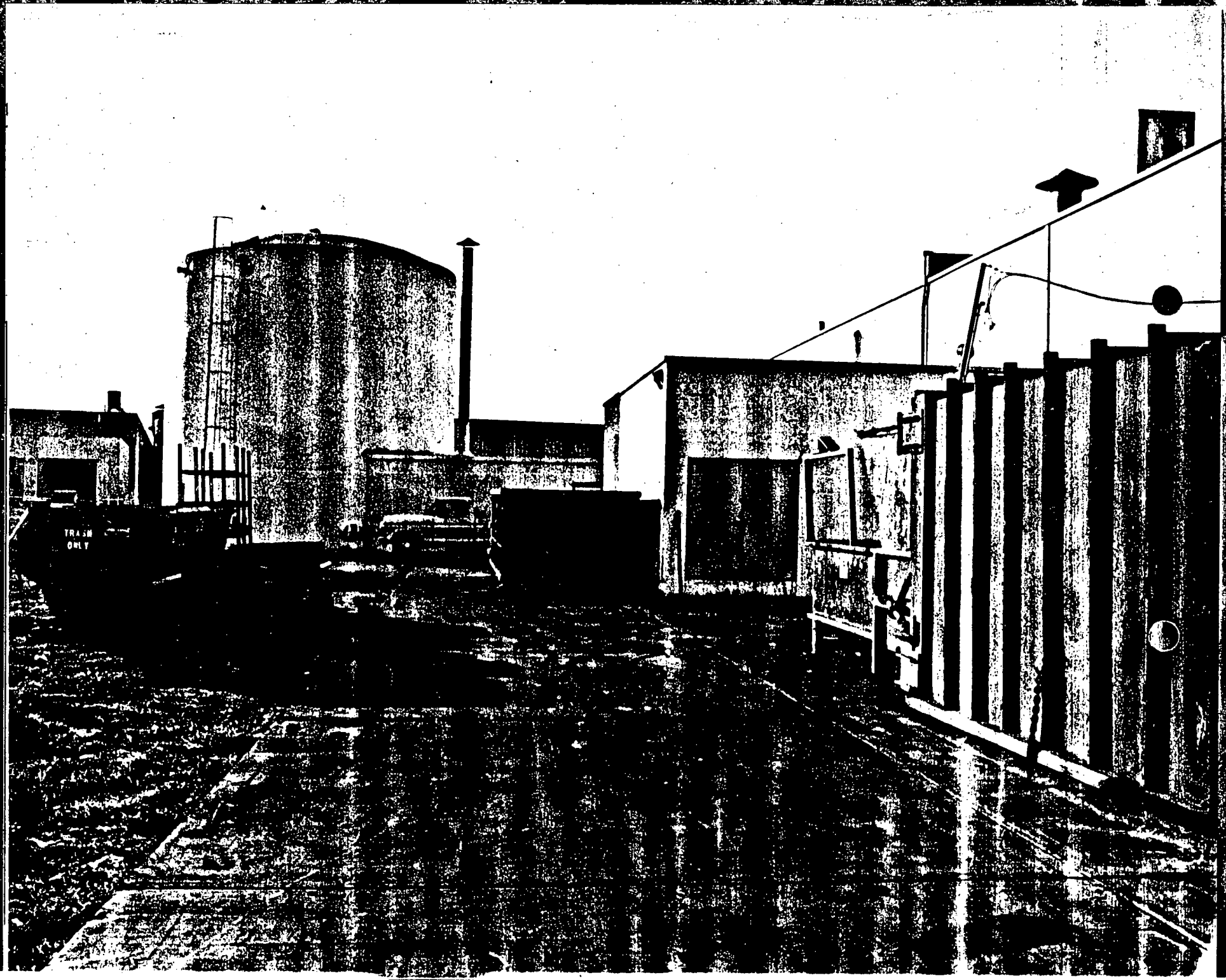
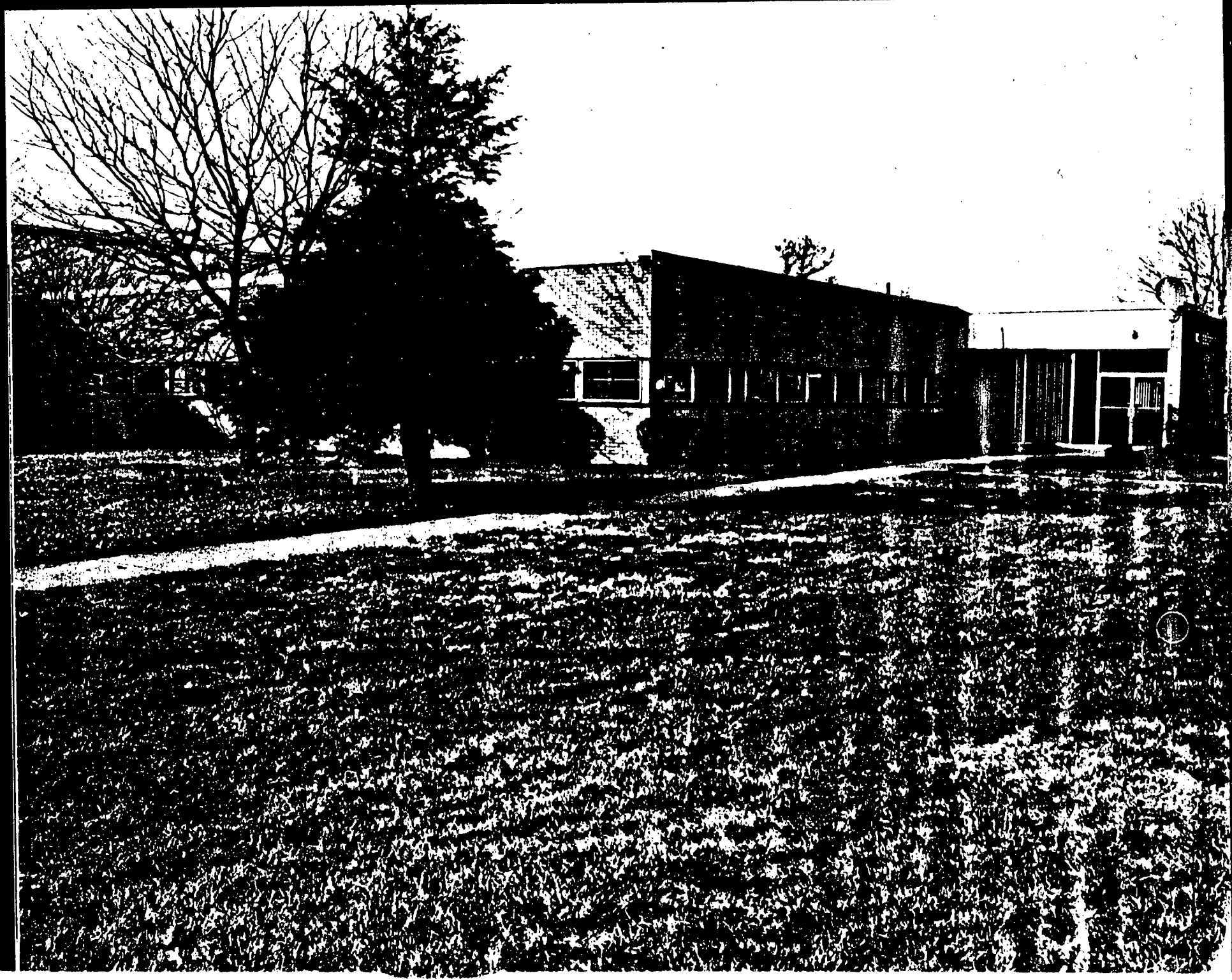
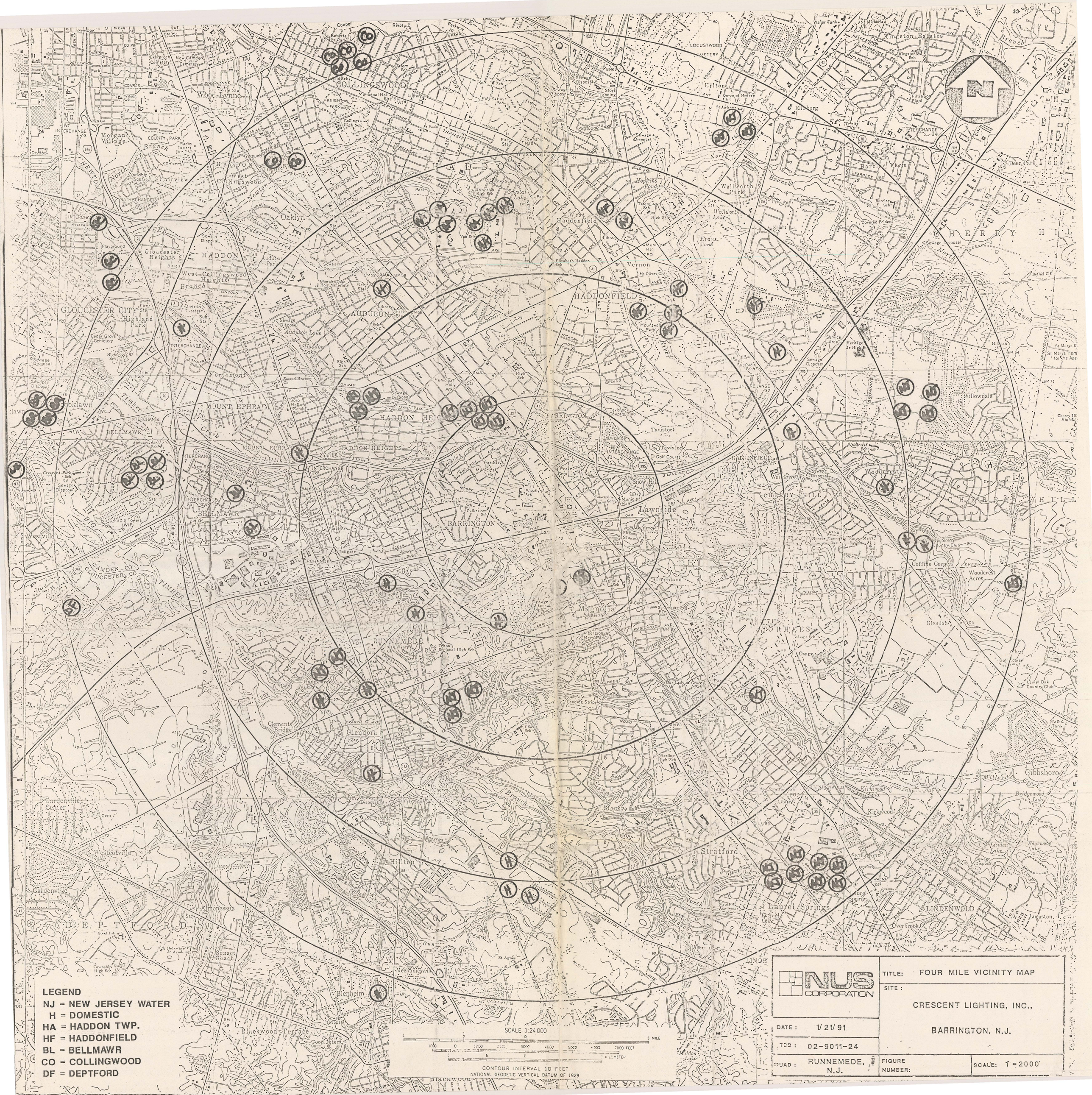

FLAMMABLE
GAS
PROPANE
NO SMOKING
FLAMMABLE
GAS
PROPANE
NO SMOKING


TRAIN
ONLY




LEGEND
NJ = NEW JERSEY WATER
H = DOMESTIC
HA = HADDON TWP.
HF = HADDONFIELD
BL = BELLMAWR
CO = COLLINGWOOD
DF = DEPTFORD
SCALE 1:24 000
CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
NUS CORPORATION
TITLE: FOUR MILE VICINITY MAP
SITE :
CRESCENT LIGHTING, INC..
BARRINGTON, N.J.
DATE : 1/21/91
TDD : 02-9011-24
QUAD : RUNNEMEDE, N.J.
FIGURE NUMBER:
SCALE: 1 = 2000'

REFERENCE NO. 8

Bureau of Industrial Site Evaluation
Environmental Cleanup Responsibility Act

Report of Inspection

ECRA Case #85-015 Date of Inspection 3-21-85
Inspection Category: Preliminary
Inspector: Vincent J. DiGregorio

Industrial Establishment: Crescent Lighting Company

Location: 120 E. Gloucester Pk.
Barrington, Camden County, NJ

Individuals Involved: H.A. George, V.P. and Plant Mgr.
Cliff Sauer, Maintenance Supervisor
James Straham, Mgr. Industrial Relations
Ann Witt, NJDEP

NARRATIVE DESCRIPTION

Arrived at site 10:00 am. and proceeded to inspect site with company representatives. This company assembles and paints light fixtures. The floor of the plant is cement as are the walls. Floor drains can be found for fire fighting water run-off. Also, a partially cement filled-in conveyer belt system is built into the floor and covered over by welded steel plates.The building uses municipal water and sewage.

Metal parts are washed in a recirculated iron phosphate solution. Painting of metal parts is performed by an electro-static disk system with some retouching by hand painting. Paint thinners and metal strippers are stored on-site and a drain is in this area. Some blue dye is stored in a tool room used for drafting.

Outside there is a paved parking area with empty transport containers.

Some oil and paint stains were found on the soil outside the storage and assembly areas respectively.

We left the site approximately at 12:30 pm.

DEFICIENCIES NOTED

1. No information supplied initially on the blue dye used in the tool shop.

2. Oil stained dirt outside storage area.

3. Paint stained dirt outside assembly room.

ACTIONS REQUIRED ON THE PART OF THE APPLICANT

1. Proof of sewage permits in regards to drains in paint booth and iron phosphate solution.

2. Testing of air conditioning and water pipe insulation for asbestos.

3. Air ducts piled along the edge of property line had loose insulation on them. Should sample for asbestos.

4. Clean up of blue stained soil outside assembly room.

5. Clean up of oil stained dirt outside storage area.

6. Provide copy of Material Safety Data Sheet for blue dyestored in tool room.

ACTIONS REQUIRED ON THE PART OF BISE

None

Inspector/Case Manager Signature Vincent D. Gregorio

Approved: _____, Assistant Chief
Bureau of Industrial Site Evaluation

Form DEP-001
2/83

NEW JE Y DEPARTMENT OF ENVIRONMENTAL PR ECTION

REPORT OF: ☒ PHONE CALL ☐ VISIT

DATE 4/17/85

TIME 1130 AM

REFERRED TO

BUREAU OR OFFICE

FILE Crescent Lt 35615

PERSON CONTACTED JIM STRAHAN

PHONE NO. 609-546-5500

AFFILIATION/ADDRESS CRESCENT LIGHTING, BARRINGTON, CAMDEN

SUBJECT OF CALL/VISIT Source of Contamination

SUMMARY OF CALL/VISIT MR. STRAHAN informed me that the source of the oil stained dirt outside the storage area was the discharge from an automatic sweeping machine which the janitor uses daily. The sweeper waste is flushed out with a hose onto the ground. It contains general floor dirt, dust, and possibly hydraulic fluids from forklifts.

I informed Mr. Strahan that the practice must halt and I suggested the waste be funneled into a container for removal. The practice has been going on for about two months and the discolored area is ~ 5x5' square.

ACTION RECOMMENDED Excavation of soil and proper disposal.

Vincent D. Gregorio
Signature

C

Form DEP-001
2/83

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

REPORT OF: ☒ PHONE CALL ☐ VISIT

DATE 6/19/85

TIME 3:30 PM

BUREAU OR OFFICE B&SE

REFERRED TO

FILE Crescent H. Barrington 85-015

PERSON CONTACTED Mr. Fiedler

PHONE NO. 609-547-0851

AFFILIATION/ADDRESS Sup. of Public Works

SUBJECT OF CALL/VISIT Crescent Lighting Co. discharge to sewers

SUMMARY OF CALL/VISIT

Mr. Fiedler informed me that he was unaware of the paint, iron phosphate discharges from this company.

Crescent Lighting has submitted a letter (4/23) that is not to the point as to if the Sewage Utility was aware of their discharge.

ACTION RECOMMENDED Await Sewer investigation results.

Vincent DiGregorio

Signature

C

REFERENCE NO. 9

CENTURY LABORATORIES, INC.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park, Thorofare, NJ 08086
Phone: (609) 848-3939 NJ 800-222-0589

CLIENT: CRESCENT LIGHTING

LRN: BB4690B

CLIENT I.D.: Soil Composite(SS1-#1,SS2-#1, SS3-#1)

DATE: 11/1/85

CERTIFICATE OF ANALYSIS
RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)

	MAL*	RESULTS
TOTAL SAMPLE ANALYSIS(mg/kg):		
Corrosiveness	N.A.	N.R.
Flash Point	N.A.	N.R.
PCB's	5.0	N.R. ?
pH	N.A.	N.R.
Reactivities:		
Cyanide		N.R.
Sulfide		N.R.
LEACHATE ANALYSIS(mg/l):		
Arsenic	5.0	< 0.002
Barium	100.0	1.3
Cadmium	1.0	<0.01
Chromium	5.0	<0.01
Lead	5.0	<0.05
Mercury	0.2	0.0185
Selenium	1.0	<0.005
Silver	5.0	<0.01
Endrin	0.02	N.R.
Lindane	0.4	N.R.
Methoxychlor	10.0	N.R.
Toxaphene	0.5	N.R.
2,4-D	10.0	N.R.
2,4,5-TP(Silvex)	1.0	N.R.

LABORATORY COMMENT:

*MAL=Maximum Allowable Level
N.A.= Not applicable
N.R.= Not Requested
N.D.= Non Detectable

Richard W Lynch
LAB DIRECTOR

N.J.D.E.P. Certification No. 08153

CENTURY LABORATORIES, INC.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park, Thorofare, NJ 08086
Phone: (609) 848-3939 NJ 800-222-0589

ANALYSIS REPORT NO. BB4693

CERTIFICATE OF ANALYSIS

CLIENT

CRESCENT LIGHTING
120 E. Gloucester Pike
Barrington, N.J.

LOG NUMBER	SAMPLE IDENTIFICATION
BB4693	SS1-13

SAMPLE RECEIVED 11/1/85

ANALYSIS COMPLETED 11/12/85

COLLECTED BY client

RESULTS (mg/L unless specified)

TEST PARAMETER				TEST PARAMETER	mg/kg		
BOD_5*				Chlorine Demand			
COD				Chlorine Residual			
TOC				Chloride (CL)			
Dissolved Oxygen				Silica			
Suspended Solids				Petroleum HYC.	< 30		
Total Solids				Hardness (as $CaCO_3$)			
Dissolved Solids							
Sett. Solids (ml/L)							
pH				Beryllium	< 0.5		
Phenols				Aluminum			
Cyanide (Total)				Antimony	< 0.5		
Fluoride				Arsenic	7.9		
Cyanide (Free)				Barium			
Surfactants (mg/L LAS)				Boron			
Oil & Grease (Freon)				Cadmium	< 0.5		
				Calcium (Ca)			
Nitrogen (KJD as N)				Chromium (Total)	16.4		
Nitrogen (Ammonia as N)				Chromium (Hexa)			
Nitrogen (Organic as N)				Copper	4.4		
Nitrite (N)				Iron			
Nitrate (N)				Lead	5.6		
Phosphate (P) Total				Magnesium (Mg)			
Phosphate (P) - Ortho				Manganese			
Sulfate (SO_4)				Mercury	< 0.1		
Sulfite (SO_3)				Nickel	4.0		
Sulfide				Potassium			
Color				Selenium	8.4		
Turbidity (NTU)				Silver	< 0.5		
Conductivity (Micromohs)				Sodium			
Alk (Total) as $CaCO_3$				Tin			
				Titanium			
Fecal Coliform				Zinc	39.6		
Total Coliform				Thallium	< 5.0		

* A minimum of 5 sample dilutions were used for this determination

** Non-detectable, below the limit of detection.

LAB COMMENT:

CENTURY LABORATORIES, INC.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park, Thorofare, NJ 08086
Phone: (609) 848-3939 NJ 800-222-0589

ANALYSIS REPORT NO. BB4694

CERTIFICATE OF ANALYSIS

CLIENT
CRESCENT LIGHTING
120 E. Gloucester Pike
Barrington, N.J.

LOG NUMBER: BB4694

SAMPLE IDENTIFICATION: SS2-#3

SAMPLE RECEIVED 11/1/85

ANALYSIS COMPLETED 11/12/85

COLLECTED BY Client

RESULTS (mg/L unless specified)

TEST PARAMETER				TEST PARAMETER	mg/kg BB4694		
BOD_5*				Chlorine Demand			
COD				Chlorine Residual			
TOC				Chloride (CL)			
Dissolved Oxygen				Silica			
Suspended Solids				Petroleum HYC.	< 30		
Total Solids				Hardness (as $CaCO_3$)			
Dissolved Solids							
Sett. Solids (ml/L)							
pH				Beryllium	< 0.5		
Phenols				Aluminum			
Cyanide (Total)				Antimony	< 0.5		
Fluoride				Arsenic	7.1		
Cyanide (Free)				Barium			
Surfactants (mg/L LAS)				Boron			
Oil & Grease (Freon)				Cadmium	< 0.5		
				Calcium (Ca)			
Nitrogen (KJD as N)				Chromium (Total)	11.0		
Nitrogen (Ammonia as N)				Chromium (Hexa)			
Nitrogen (Organic as N)				Copper	3.0		
Nitrite (N)				Iron			
Nitrate (N)				Lead	3.5		
Phosphate (P) Total				Magnesium (Mg)			
Phosphate (P) - Ortho				Manganese			
Sulfate (SO_4)				Mercury	< 0.1		
Sulfite (SO_3)				Nickel	< 2.5		
Sulfide				Potassium			
Color				Selenium	10.2		
Turbidity (NTU)				Silver	< 0.5		
Conductivity (Micromohs)				Sodium			
Alk (Total) as $CaCO_3$				Tin			
				Titanium			
Fecal Coliform				Zinc	15.5		
Total Coliform				Thallium	<5.0		

* A minimum of 5 sample dilutions were used for this determination.

** Non-detectable, below the limit of detection

LAB COMMENT:

LAB CERTIFICATION NO. 08153
N.J. DEPARTMENT OF HEALTH

Richard W. Lynch

CENTURY LABORATORIES, INC.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park, Thorofare, NJ 08086
Phone: (609) 848-3939 NJ 800-222-0589

ANALYSIS REPORT NO. BB4695

CERTIFICATE OF ANALYSIS

CLIENT

CRESCENT LIGHTING
120 E. GLOCESTER PIKE
BARRINGTON, NJ

LOG NUMBER: BB4695

SAMPLE IDENTIFICATION: SS4 #1

SAMPLE RECEIVED: 11/1/85

ANALYSIS COMPLETED:

COLLECTED BY: Client

RESULTS (mg/L unless specified)

TEST PARAMETER				TEST PARAMETER	(mg/kg) BB4695		
BOD_5*				Chlorine Demand			
COD				Chlorine Residual			
TOC				Chloride (CL)			
Dissolved Oxygen				Silica			
Suspended Solids				Petroleum HYC.	<30		
Total Solids				Hardness (as $CaCO_3$)			
Dissolved Solids							
Sett. Solids (ml/L)							
pH							
Phenols				Aluminum			
Cyanide (Total)				Antimony			
Fluoride				Arsenic			
Cyanide (Free)				Barium			
Surfactants (mg/L LAS)				Boron			
Oil & Grease (Freon)				Cadmium			
				Calcium (Ca)			
Nitrogen (KJD as N)				Chromium (Total)			
Nitrogen (Ammonia as N)				Chromium (Hexa)			
Nitrogen (Organic as N)				Copper			
Nitrite (N)				Iron			
Nitrate (N)				Lead			
Phosphate (P) Total				Magnesium (Mg)			
Phosphate (P) - Ortho				Manganese			
Sulfate (SO_4)				Mercury			
Sulfite (SO_3)				Nickel			
Sulfide				Potassium			
Color				Selenium			
Turbidity (NTU)				Silver			
Conductivity (Micromohs)				Sodium			
Alk (Total) as $CaCO_3$				Tin			
				Titanium			
Fecal Coliform				Zinc			
Total Coliform							

* A minimum of 5 sample dilutions were used for this determination

** Non-detectable, below the limit of detection

LAB COMMENT:

Richard W Lynch

LAB CERTIFICATION NO. 08153

CENTURY LABORATORIES, INC.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park, Thorofare, NJ 08086
Phone: (609) 848-3939 NJ 800-222-0589

ANALYSIS REPORT
NO. BB4696

CERTIFICATE OF ANALYSIS

CLIENT
CRESCENT LIGHTING
120 E. GLOCESTER PIKE
BARRINGTON, NJ

LOG NUMBER: BB4696

SAMPLE IDENTIFICATION: SS5 #1

SAMPLE RECEIVED 11/1/85 ANALYSIS COMPLETED

COLLECTED BY Client

RESULTS (mg/L unless specified) (mg/kg)

TEST PARAMETER				TEST PARAMETER	BB4696		
BOD_5*				Chlorine Demand			
COD				Chlorine Residual			
TOC				Chloride (CL)			
Dissolved Oxygen				Silica			
Suspended Solids				Petroleum HYC.	<30		
-Total Solids				Hardness (as $CaCO_3$)			
Dissolved Solids							
Sett. Solids (ml/L)							
pH							
Phenols				Aluminum			
Cyanide (Total)				Antimony			
Fluoride				Arsenic			
Cyanide (Free)				Barium			
Surfactants (mg/L LAS)				Boron			
Oil & Grease (Freon)				Cadmium			
				Calcium (Ca)			
Nitrogen (KJD as N)				Chromium (Total)			
Nitrogen (Ammonia as N)				Chromium (Hexa)			
Nitrogen (Organic as N)				Copper			
Nitrite (N)				Iron			
Nitrate (N)				Lead			
Phosphate (P) Total				Magnesium (Mg)			
Phosphate (P) - Ortho				Manganese			
Sulfate (SO_4)				Mercury			
Sulfite (SO_3)				Nickel			
Sulfide				Potassium			
Color				Selenium			
Turbidity (NTU)				Silver			
Conductivity (Micromohs)				Sodium			
Alk (Total) as $CaCO_3$				Tin			
				Titanium			
Fecal Coliform				Zinc			
Total Coliform							

* A minimum of 5 sample dilutions were used for this determination.
** Non-detectable, below the limit of detection.

LAB COMMENT:

Richard W. Fox

LAB CERTIFICATION NO. 08153

CENTURY LABORATORIES, INC.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park, Thorofare, NJ 08086
Phone: (609) 848-3939 NJ 800-222-0589

ANALYSIS REPORT NO. BB4696

CERTIFICATE OF ANALYSIS

CLIENT

CRESCENT LIGHTING
120 E. GLOCESTER PIKE
BARRINGTON, NJ

LOG NUMBER: BB4696

SAMPLE IDENTIFICATION: SS5 #1

SAMPLE RECEIVED 11/1/85 ANALYSIS COMPLETED

COLLECTED BY Client

RESULTS (mg/L unless specified)

TEST PARAMETER				TEST PARAMETER	(mg/kg) BB4696		
BOD_5*				Chlorine Demand			
COD				Chlorine Residual			
TOC				Chloride (CL)			
Dissolved Oxygen				Silica			
Suspended Solids				Petroleum HYC.	<30		
Total Solids				Hardness (as $CaCO_3$)			
Dissolved Solids							
Sett. Solids (ml/L)							
pH							
Phenols				Aluminum			
Cyanide (Total)				Antimony			
Fluoride				Arsenic			
Cyanide (Free)				Barium			
Surfactants (mg/L LAS)				Boron			
Oil & Grease (Freon)				Cadmium			
				Calcium (Ca)			
Nitrogen (KJD as N)				Chromium (Total)			
Nitrogen (Ammonia as N)				Chromium (Hexa)			
Nitrogen (Organic as N)				Copper			
Nitrite (N)				Iron			
Nitrate (N)				Lead			
Phosphate (P) Total				Magnesium (Mg)			
Phosphate (P) - Ortho				Manganese			
Sulfate (SO_4)				Mercury			
Sulfite (SO_3)				Nickel			
Sulfide				Potassium			
Color				Selenium			
Turbidity (NTU)				Silver			
Conductivity (Micromohs)				Sodium			
Alk (Total) as $CaCO_3$				Tin			
				Titanium			
Fecal Coliform				Zinc			
Total Coliform							

* A minimum of 5 sample dilutions were used for this determination.

** Non-detectable, below the limit of detection.

LAB COMMENT:

LAB CERTIFICATION NO 08153

Richard W Kynch

CENTORY LABORATORIES, INC.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park, Thorofare, NJ 08086
Phone: (609) 848-3939 NJ 800-222-0589

ANALYSIS REPORT
NO. BB4697

CERTIFICATE OF ANALYSIS

CLIENT
CRESCENT LIGHTING
120 E. GLOCESTER PIKE
BARRINGTON, NJ

LOG NUMBER: BB4697

SAMPLE IDENTIFICATION: SS6 #1

SAMPLE RECEIVED: 11/1/85

ANALYSIS COMPLETED:

COLLECTED BY: Client

RESULTS (mg/L unless specified) (mg/kg)

TEST PARAMETER				TEST PARAMETER	BB4697		
BOD_5*				Chlorine Demand			
COD				Chlorine Residual			
TOC				Chloride (CL)			
Dissolved Oxygen				Silica			
Suspended Solids				Petroleum HYC.	5400		
Total Solids				Hardness (as $CaCO_3$)			
Dissolved Solids							
Sett. Solids (ml/L)							
pH							
Phenols				Aluminum			
Cyanide (Total)				Antimony			
Fluoride				Arsenic			
Cyanide (Free)				Barium			
Surfactants (mg/L LAS)				Boron			
Oil & Grease (Freon)				Cadmium			
				Calcium (Ca)			
Nitrogen (KJD as N)				Chromium (Total)			
Nitrogen (Ammonia as N)				Chromium (Hexa)			
Nitrogen (Organic as N)				Copper			
Nitrite (N)				Iron			
Nitrate (N)				Lead			
Phosphate (P) Total				Magnesium (Mg)			
Phosphate (P) - Ortho				Manganese			
Sulfate (SO_4)				Mercury			
Sulfite (SO_3)				Nickel			
Sulfide				Potassium			
Color				Selenium			
Turbidity (NTU)				Silver			
Conductivity (Micromohs)				Sodium			
Alk (Total) as $CaCO_3$				Tin			
				Titanium			
Fecal Coliform				Zinc			
Total Coliform							

* A minimum of 5 sample dilutions were used for this determination.
** Non-detectable, below the limit of detection.

LAB COMMENT:

E 39

Robert W Lynch

CENTURY LABORATORIES, INC.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park, Thorofare, NJ 08086
Phone: (609) 848-3939 NJ 800-222-0589

ANALYSIS REPORT
NO. BB4697

CERTIFICATE OF ANALYSIS

CLIENT

CRESCENT LIGHTING
120 E. GLOCESTER PIKE
BARRINGTON, NJ

LOG NUMBER: BB4697

SAMPLE IDENTIFICATION: SS6 #1

SAMPLE RECEIVED: 11/1/85

ANALYSIS COMPLETED:

COLLECTED BY: Client

RESULTS (mg/L unless specified)

TEST PARAMETER				TEST PARAMETER	(mg/kg) BB4697		
BOD_5*				Chlorine Demand			
COD				Chlorine Residual			
TOC				Chloride (CL)			
Dissolved Oxygen				Silica			
Suspended Solids				Petroleum HYC.	5400		
Total Solids				Hardness (as $CaCO_3$)			
Dissolved Solids							
Sett. Solids (ml/L)							
pH							
Phenols				Aluminum			
Cyanide (Total)				Antimony			
Fluoride				Arsenic			
Cyanide (Free)				Barium			
Surfactants (mg/L LAS)				Boron			
Oil & Grease (Freon)				Cadmium			
				Calcium (Ca)			
Nitrogen (KJD as N)				Chromium (Total)			
Nitrogen (Ammonia as N)				Chromium (Hexa)			
Nitrogen (Organic as N)				Copper			
Nitrite (N)				Iron			
Nitrate (N)				Lead			
Phosphate (P) Total				Magnesium (Mg)			
Phosphate (P) - Ortho				Manganese			
Sulfate (SO_4)				Mercury			
Sulfite (SO_3)				Nickel			
Sulfide				Potassium			
Color				Selenium			
Turbidity (NTU)				Silver			
Conductivity (Micromohs)				Sodium			
Alk (Total) as $CaCO_3$				Tin			
				Titanium			
Fecal Coliform				Zinc			
Total Coliform							

* A minimum of 5 sample dilutions were used for this determination

** Non-detectable, below the limit of detection.

LAB COMMENT:

CENTURY LABORATORIES, INC.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park, Thorofare, NJ 08086
Phone: (609) 848-3939 NJ 800-222-0589

ANALYSIS REPORT
NO. BB4691

CERTIFICATE OF ANALYSIS

CLIENT
CRESCENT LIGHTING
120 E. Gloucester Pike
Barrington, N.J.

LOG NUMBER: BB4691

SAMPLE IDENTIFICATION: Background #1(soil)

SAMPLE RECEIVED: 11/1/85

ANALYSIS COMPLETED: 11/12/85

COLLECTED BY: Client

RESULTS (mg/L unless specified)

TEST PARAMETER				TEST PARAMETER	mg/kg		
BOD_5*				Chlorine Demand			
COD				Chlorine Residual			
TOC				Chloride (CL)			
Dissolved Oxygen				Silica			
Suspended Solids				Petroleum HYC.			
Total Solids				Hardness (as $CaCO_3$)			
Dissolved Solids							
Sett. Solids (ml/L)							
pH				Beryllium	<0.5		
Phenols				Aluminum			
Cyanide (Total)				Antimony	<0.5		
Fluoride				Arsenic	5.9		
Cyanide (Free)				Barium			
Surfactants (mg/L LAS)				Boron			
Oil & Grease (Freon)				Cadmium	<0.5		
				Calcium (Ca)			
Nitrogen (KJD as N)				Chromium (Total)	19.8		
Nitrogen (Ammonia as N)				Chromium (Hexa)			
Nitrogen (Organic as N)				Copper	5.4		
Nitrite (N)				Iron			
Nitrate (N)				Lead	24.8		
Phosphate (P) Total				Magnesium (Mg)			
Phosphate (P) - Ortho				Manganese			
Sulfate (SO_4)				Mercury	<0.1		
Sulfite (SO_3)				Nickel	3.2		
Sulfide				Potassium			
Color				Selenium	7.2		
Turbidity (NTU)				Silver	<0.5		
Conductivity (Micromohs)				Sodium			
Alk (Total) as $CaCO_3$				Tin			
				Titanium			
Fecal Coliform				Zinc	18.9		
Total Coliform				Thallium	<5.0		

* A minimum of 5 sample dilutions were used for this determination.

** Non-detectable, below the limit of detection.

LAB COMMENT:

Richard W. Lynch

CENTURY LABORATORIES, INC.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park, Thorofare, NJ 08086
Phone: (609) 848-3939 NJ 800-222-0589

ANALYSIS REPORT
NO. BB4692

CERTIFICATE OF ANALYSIS

CLIENT
CRESCENT LIGHTING
120 E. Gloucester Pike
Barrington, N.J.

LOG NUMBER: BB4692

SAMPLE IDENTIFICATION: Background #2

SAMPLE RECEIVED 11/1/85 ANALYSIS COMPLETED 11/12/85

COLLECTED BY client Client

RESULTS (mg/L unless specified) mg/kg

TEST PARAMETER				TEST PARAMETER			
BOD_5*				Chlorine Demand			
COD				Chlorine Residual			
TOC				Chloride (CL)			
Dissolved Oxygen				Silica			
Suspended Solids				Petroleum HYC.			
Total Solids				Hardness (as $CaCO_3$)			
Dissolved Solids							
Sett. Solids (ml/L)							
pH				Beryllium	< 0.5		
Phenols				Aluminum			
Cyanide (Total)				Antimony	< 0.5		
Fluoride				Arsenic	14.4		
Cyanide (Free)				Barium			
Surfactants (mg/L LAS)				Boron			
Oil & Grease (Freon)				Cadmium	<0.5		
				Calcium (Ca)			
Nitrogen (KJD as N)				Chromium (Total)	24.3		
Nitrogen (Ammonia as N)				Chromium (Hexa)			
Nitrogen (Organic as N)				Copper	6.3		
Nitrite (N)				Iron			
Nitrate (N)				Lead	13.5		
Phosphate (P) Total				Magnesium (Mg)			
Phosphate (P) - Ortho				Manganese			
Sulfate (SO_4)				Mercury	< 0.1		
Sulfite (SO_3)				Nickel	5.9		
Sulfide				Potassium			
Color				Selenium	9.9		
Turbidity (NTU)				Silver	< 0.5		
Conductivity (Micromohs)				Sodium			
Alk (Total) as $CaCO_3$				Tin			
				Titanium			
Fecal Coliform				Zinc	20.7		
Total Coliform				THALLIUM	< 5.0		

* A minimum of 5 sample dilutions were used for this determination.
** Non-detectable, below the limit of detection.

LAB COMMENT:

E.

Richard W. Lynch

CLIENT: CRESCENT LIGHTING

SAMPLE I.D.: BB4053

CLIENT I.D.: SS1-#3

FRN NO.: T110785-14

VOLTILE ORGANIC COMPOUNDS

U.S.E.P.A. METHOD 601/602

PARAMETER	RESULTS*
Benzene	10U
Bromodichloromethane	10U
Bromoform	10U
Bromomethane	10U
Carbon Tetrachloride	10U
Chlorobenzene	10U
Chlorodibromomethane	10U
Chloroethane	10U
2-Chloroethyl vinyl ether	10U
Chloroform	10U
Chloromethane	10U
1,2-Dichlorobenzene	10U
1,3-Dichlorobenzene	10U
1,4-Dichlorobenzene	10U
Dichlorodifluoromethane	10U
1,1-Dichloroethane	10U
1,2-Dichloroethane	10U
1,1-Dichloroethene	10U
trans-1,2-Dichloroethene	10U
1,2-Dichloropropane	10U
cis-1,3-Dichloropropene	10U
trans-1,3-Dichloropropene	10U
Ethylbenzene	10U
Fluorotrichloromethane	10U
Methylene chloride	10U
1,1,2,2-Tetrachloroethane	10U
Tetrachloroethene	10U
Toluene	10U
1,1,1-Trichloroethane	10U
1,1,2-Trichloroethane	10U
Trichloroethene	10U
Vinyl chloride	10U

*SEE NOTE PAGE

E3

CLIENT: CRESCENT L(TING

SAMPLE(D.: BB4694

CLIENT I.D.: S2-#3

FRN NO.: T110885-04

VOLTILE ORGANIC COMPOUNDS

U.S.E.P.A. METHOD 601/602

PARAMETER	RESULTS*
Benzene	10U
Bromodichloromethane	10U
Bromoform	1 0U
Bromomethane	10U
Carbon Tetrachloride	10U
Chlorobenzene	10U
Chlorodibromomethane	10U
Chloroethane	10U
2-Chloroethyl vinyl ether	10U
Chloroform	10U
Chloromethane	10U
1,2-Dichlorobenzene	10U
1,3-Dichlorobenzene	10U
1,4-Dichlorobenzene	10U
Dichlorodifluoromethane	10U
1,1-Dichloroethane	10U
1,2-Dichloroethane	10U
1,1-Dichloroethene	10U
trans-1,2-Dichloroethene	10U
1,2-Dichloropropane	10U
cis-1,3-Dichloropropene	10U
trans-1,3-Dichlorbpropene	10U
Ethylbenzene	10U
Fluorotrichloromethane	10U
Methylene chloride	110
1,1,2,2-Tetrachloroethane	10U
Tetrachloroethene	10U
Toluene	10U
1,1,1-Trichloroethane	10U
1,1,2-Trichloroethane	10U
Trichloroethene	10U
Vinyl chloride	10U

CLIENT: Crescent Lig[illegible]g

S[illegible]LL I.D.: BB4695

CLIENT I.D.: SS4 #1

CHART NO: 110885-05

VOLATILE ORGANIC COMPOUNDS

Method 601 & 602

PARAMETERS	RESULTS (ug/kg)
Benzene	10 U
Bromodichloromethane	10 U
Bromoform	10 U
Bromomethane	10 U
Carbon Tetrachloride	10 U
Chlorobenzene	10 U
Chlorodibromomethane	10 U
Chloroethane	10 U
2-Chloroethyl vinyl ether	10 U
Chloroform	10 U
Choromethane	10 U
1,2-Dichlorobenzene	10 U
1,3-Dichlorobenzene	10 U
1,4-Dichlorobenzene	10 U
Dichlorodifluoromethane	10 U
1,1-Dichloroethane	10 U
1,2-Dichloroethane	10 U
1,1-Dichloroethene	10 U
trans-1,2-Dichloroethene	10 U
1,2-Dichloropropane	10 U
cis-1,3-Dichloropropene	10 U
trans-1,3-Dichloropropene	10 U
Ethylbenzene	10 U
Fluorotrichloromethane	10 U
Methylene Chloride	10 U
1,1,2,2-Tetrachloroethane	10 U
Tetrachloroethene	10 U
1,1,1-Trichloroethane	10 U
1,1,2-Trichloroethane	10 U
Trichloroethene	10 U
Toluene	10 U
Vinyl Chloride	10 U

E

CLIENT: CRESCENT [illegible]TING

SAMPLE I.D.: BB4696

CLIENT I.D.: SS5 #1

CHART NO: T110885-06

VOLATILE ORGANIC COMPOUNDS

Method 601 & 602

PARAMETERS	RESULTS (ug/kg)
Benzene	10 U
Bromodichloromethane	10 U
Bromoform	10 U
Bromomethane	10 U
Carbon Tetrachloride	10 U
Chlorobenzene	10 U
Chlorodibromomethane	10 U
Chloroethane	10 U
2-Chloroethyl vinyl ether	10 U
Chloroform	10 U
Choromethane	10 U
1,2-Dichlorobenzene	10 U
1,3-Dichlorobenzene	10 U
1,4-Dichlorobenzene	10 U
Dichlorodifluoromethane	10 U
1,1-Dichloroethane	10 U
1,2-Dichloroethane	10 U
1,1-Dichloroethene	10 U
trans-1,2-Dichloroethene	10 U
1,2-Dichloropropane	10 U
cis-1,3-Dichloropropene	10 U
trans-1,3-Dichloropropene	10 U
Ethylbenzene	10 U
Fluorotrichloromethane	10 U
Methylene Chloride = methane dichloride	25 B
1,1,2,2-Tetrachloroethane	10 U
Tetrachloroethene	10 U
1,1,1-Trichloroethane	10 U
1,1,2-Trichloroethane	10 U
Trichloroethene	10 U
Toluene	10 U
Vinyl Chloride	10 U

CLIENT: CRESCENT [illegible]HTING

SAMPLE I.D.: BB4697

CLIENT I.D.: SS6 #1

CHART NO: T110885-07

VOLATILE ORGANIC COMPOUNDS

Method 601 & 602

PARAMETERS	RESULTS (ug/kg)
Benzene	10 U
Bromodichloromethane	10 U
Bromoform	10 U
Bromomethane	10 U
Carbon Tetrachloride	10 U
Chlorobenzene	10 U
Chlorodibromomethane	10 U
Chloroethane	10 U
2-Chloroethyl vinyl ether	10 U
Chloroform	10 U
Choromethane	10 U
1,2-Dichlorobenzene	10 U
1,3-Dichlorobenzene	10 U
1,4-Dichlorobenzene	10 U
Dichlorodifluoromethane	10 U
1,1-Dichloroethane	10 U
1,2-Dichloroethane	10 U
1,1-Dichloroethene	10 U
trans-1,2-Dichloroethene	10 U
1,2-Dichloropropane	10 U
cis-1,3-Dichloropropene	10 U
trans-1,3-Dichloropropene	10 U
Ethylbenzene	10 U
Fluorotrichloromethane	10 U
Methylene Chloride	10 U
1,1,2,2-Tetrachloroethane	10 U
Tetrachloroethene	10 U
1,1,1-Trichloroethane	10 U
1,1,2-Trichloroethane	10 U
Trichloroethene	10 U
Toluene	10 U
Vinyl Chloride	10 U

Table 1: Quality Assurance Data
Surrogate Performance/Recovery
Soil Matrix - GC/MS Data

CLIENT: CRESCENT LIGHTING

CENTURY SAMPLE NO: BB4690A

PROJECT:

CLIENT I.D.: SoilComposite(SS1-#1,SS2-#1,SS3-#1)

Compound Surrogate	Amt Added ng	Amt Recovered ng	% Recovery	Control Limits % * Lower	Upper
Volatile Fraction					
Toluene- d8	150	138	92	50	160
Bromofluorobenzene	150	106	71	50	160
1,2-dichloroethane-d4	150	132	88	50	160
Acid Fraction					
Phenol-d5	100	73	73	20	140
2-Fluorophenol	100	66	66	20	140
2,4,6-Tribromophenol	100	122	122	10	140
Base Neutral Fraction					
Nitrobenzene-d5	100	68	68	20	140
2-Fluorobiphenyl	100	81	81	20	140
Terphenyl-d14	100	47	47	20	150

* USEPA Control Limits

COMMENTS:

Table 1: Quality Assurance Data
Surrogate Performance/Recovery
Soil Matrix - GC/MS Data

CLIENT: CRESCENT LIGHTING

CENTURY SAMPLE NO: BB4690A

PROJECT:

CLIENT I.D.: SoilComposite(SS1-#1,SS2-#1, SS3-#1)

Compound Surrogate	Amt Added ng	Amt Recovered ng	% Recovery	Control Limits % * Lower	Control Limits % * Upper
Volatile Fraction					
Toluene- d8	150	138	92	50	160
Bromofluorobenzene	150	106	71	50	160
1,2-dichloroethane-d4	150	132	88	50	160
Acid Fraction					
Phenol-d5	100	73	73	20	140
2-Fluorophenol	100	66	66	20	140
2,4,6-Tribromophenol	100	122	122	10	140
Base Neutral Fraction					
Nitrobenzene-d5	100	68	68	20	140
2-Fluorobiphenyl	100	81	81	20	140
Terphenyl-d14	100	47	47	20	150

* USEPA Control Limits

COMMENTS:

CLIENT: CRESCENT LI[illegible] SAMPLE ID: BR4690A

CLIENT I.D.: Soil Comp(SS1-#1,SS2-#1,SS3-#1) FRN NO.: B0991

PARAMETER	RESULTS
ACID EXTRACTABLES	
2-Chlorophenol	0.5U
4-Chloro-3-methylphenol	0.5U
2,4-Dichlorophenol	0.5U
2,4-Dimethylphenol	0.5U
2,4-Dinitrophenol	5.0U
4,6-Dinitro-2-methylphenol	5.0U
2-Nitrophenol	0.5U
4-Nitrophenol	0.5U
Pentachlorophenol	0.5U
Phenol	0.5U
2,4,6-Trichlorophenol	0.5U
BASE/NEUTRAL FRACTION	
Acenaphthene	0.2U
Acenaphthylene	0.2U
Anthracene **	0.2U
Benzidine	1.0U
Benz(a)anthracene ***	0.5
Benzo(b)fluoranthene	0.8
Benzo(k)fluoranthene	0.2U
Benzo(g,h,i)perylene	0.8U
Benzo(a)pyrene	1.0
Benzyl butyl phthalate	0.2U
4-Bromophenyl phenyl ether	0.2U
bis(2-Chloroethyl)ether	0.2U
bis(2-Chloroethoxy)ether	0.2U
bis(2-Chloroisopropyl)ether	0.2U
2-Chloronaphthalene	0.2U
4-Chlorophenyl phenyl ether	0.2U
Chrysene ****	0.2U
Dibenzo(a,h)anthracene	0.8U
Di-n-butyl phthalate	0.2U
1,2-Dichlorobenzene	0.2U
1,3-Dichlorobenzene	0.2U
1,4-Dichlorobenzene	0.2U
3,3'-Dichlorobenzidine	0.5U
Diethyl phthalate	0.2U
Dimethyl phthalate	0.2U
2,4-Dinitrotoluene	0.2U
2,6-Dinitrotoluene	0.2U
Di-n-octyl phthalate	0.2U
1,2-Diphenylhydrazine	0.2U
bis(2-ethylhexyl)phthalate	7.0
Fluoranthene	0.4
Fluorene	0.2U

PARAMETER	RESULTS
BASE/NEUTRAL FRACTION	
Hexachlorobenzene	0.2U
Hexachlorobutadiene	0.2U
Hexachlorocyclopentadiene	1.0U
Hexachloroethane	0.2U
Indeno(1,2,3-c,d)pyrene	0.8U
Isophorone	0.2U
Naphthalene	0.2D
Nitrobenzene	0.2U
N-Nitrosodimethylamine	0.2U
N-Nitrosodiphenylamine	0.2U
N-Nitrosodipropylamine	0.2U
Phenanthrene	0.2
Pyrene	1.0
1,2,3-Trichlorobenzene	0.2U
VOLATILE FRACTION	
Benzene	0.1U
Bromodichloromethane	0.1U
Bromoform	0.1U
Bromomethane	0.2U
Carbon tetrachloride	0.1U
Chlorobenzene	0.1U
Chlorodibromomethane	0.1U
Chloroethane	0.2U
2-Chloroethyl vinyl ether	0.1U
Chloroform	0.1U
Chloromethane	0.2U
1,1-Dichloroethane	0.1U
1,2-Dichloroethane	0.1U
1,1-Dichloroethene	0.1U
trans-1,2-Dichloroethene	0.1U
1,2-Dichloropropane	0.1U
cis-1,3-Dichloropropene	0.1U
trans-1,3-Dichloropropene	0.1U
Ethylbenzene	3.0
Fluorotrichloromethane	0.6B
Methylene Chloride	0.1U
1,1,2,2-Tetrachloroethane	0.1U
Tetrachloroethene	0.1U
Toluene	0.5
1,1,1-Trichloroethane	0.1U
1,1,2-Trichloroethane	0.1U
Trichloroethene	0.1U
Vinyl Chloride	0.2U

CLIENT: CRESCENT LI[illegible] SAMPLE ID: BB4690A

CLIENT I.D.: Soil Comp(SS1-#1,SS2-#1,SS3-#1) FRN NO.: B0991

PARAMETER		RESULTS
ACID EXTRACTABLES		
2-Chlorophenol		0.5U
4-Chloro-3-methylphenol		0.5U
2,4-Dichlorophenol		0.5U
2,4-Dimethylphenol		0.5U
2,4-Dinitrophenol		5.0U
4,6-Dinitro-2-methylphenol		5.0U
2-Nitrophenol		0.5U
4-Nitrophenol		0.5U
Pentachlorophenol		0.5U
Phenol		0.5U
2,4,6-Trichlorophenol		0.5U
BASE/NEUTRAL FRACTION		
Acenaphthene		0.2U
Acenaphthylene		0.2U
Anthracene	**	0.2U
Benzidine		1.0U
Benz(a)anthracene	***	0.5
Benzo(b)fluoranthene		0.8
Benzo(k)fluoranthene		0.2U
Benzo(g,h,i)perylene		0.8U
Benzo(a)pyrene		1.0
Benzyl butyl phthalate		0.2U
4-Bromophenyl phenyl ether		0.2U
bis(2-Chloroethyl)ether		0.2U
bis(2-Chloroethoxy)ether		0.2U
bis(2-Chloroisopropyl)ether		0.2U
2-Chloronaphthalene		0.2U
4-Chlorophenyl phenyl ether		0.2U
Chrysene	****	0.2U
Dibenzo(a,h)anthracene		0.8U
Di-n-butyl phthalate		0.2U
1,2-Dichlorobenzene		0.2U
1,3-Dichlorobenzene		0.2U
1,4-Dichlorobenzene		0.2U
3,3'-Dichlorobenzidine		0.5U
Diethyl phthalate		0.2U
Dimethyl phthalate		0.2U
2,4-Dinitrotoluene		0.2U
2,6-Dinitrotoluene		0.2U
Di-n-octyl phthalate		0.2U
1,2-Diphenylhydrazine		0.2U
bis(2-ethylhexyl)phthalate		7.0
Fluoranthene		0.4
Fluorene		0.2U

PARAMETER	RESULTS
BASE/NEUTRAL FRACTION	
Hexachlorobenzene	0.2U
Hexachlorobutadiene	0.2U
Hexachlorocyclopentadiene	1.0U
Hexachloroethane	0.2U
Indeno(1,2,3-c,d)pyrene	0.8U
Isophorone	0.2U
Naphthalene	0.2D
Nitrobenzene	0.2U
N-Nitrosodimethylamine	0.2U
N-Nitrosodiphenylamine	0.2U
N-Nitrosodipropylamine	0.2U
Phenanthrene	0.2
Pyrene	1.0
1,2,3-Trichlorobenzene	0.2U
VOLATILE FRACTION	
Benzene	0.1U
Bromodichloromethane	0.1U
Bromoform	0.1U
Bromomethane	0.2U
Carbon tetrachloride	0.1U
Chlorobenzene	0.1U
Chlorodibromomethane	0.1U
Chloroethane	0.2U
2-Chloroethyl vinyl ether	0.1U
Chloroform	0.1U
Chloromethane	0.2U
1,1-Dichloroethane	0.1U
1,2-Dichloroethane	0.1U
1,1-Dichloroethene	0.1U
trans-1,2-Dichloroethene	0.1U
1,2-Dichloropropane	0.1U
cis-1,3-Dichloropropene	0.1U
trans-1,3-Dichloropropene	0.1U
Ethylbenzene	3.0
Fluorotrichloromethane	0.6B
Methylene Chloride	0.1U
1,1,2,2-Tetrachloroethane	0.1U
Tetrachloroethene	0.1U
Toluene	0.5
1,1,1-Trichloroethane	0.1U
1,1,2-Trichloroethane	0.1U
Trichloroethene	0.1U
Vinyl Chloride	0.2U

CLIENT: CRESCENT LIGHTING

SAMPLE I.D.: BB4690A

CLIENT I.D.: Soil Comp(SS1-#1,SS2-#1, SS3-#1)

FRN-NO.: B0991-

PARAMETER	RESULTS
PESTICIDE/PCB FRACTION	
Aldrin	0.2U
a-BHC	0.2U
b-BHC	0.2U
d-BHC	0.2U
g-BHC	0.2U
Chlordane	1.0U
4,4'-DDD	0.2U
4,4'-DDE	0.2U
4,4'-DDT	0.2U
Dieldrin	0.2U
a-Endosulfan	0.2U
b-Endosulfan	0.2U
Endosulfan sulfate	0.2U

PARAMETER	RESULTS
PESTICIDE/PCB FRACTION	
Endrin	0.2U
Endrin aldehyde	0.2U
Heptachlor	0.2U
Heptachlor epoxide	0.2U
Toxaphene	1.0U
PCB-1242	1.0U
PCB-1254	1.0U
PCB-1221	1.0U
PCB-1232	1.0U
PCB-1248	1.0U
PCB-1260	1.0U
PCB-1016	1.0U

UNKNOWN BROAD SCAN ANALYSIS

SEMI-VOLATILE FRACTION

SCAN NO.	RETENTION TIME (minutes)	COMPOUND	APPROXIMATE CONCENTRATION[a]
631	21.43	Nonahexacontanoic acid	0.2
646	21.85	1-methyl-2-Beta-hydroxymethyl-3-cyclopentane	
655	22.11	cis-1-ethinyl-2-nethyl-1-cyclohexanole	0.3
691	23.13	1,14-Docosanediol	0.7
1001	31.94	cis-1-ethinyl-2-methyl-1-cyclohexanole	1.9
1030	32.76	cis-1-ethinyl-2-methyl-1-cyclohexanole	0.8

a) Concnetrations are based on using relative response factor equal to 1

b) Identification of compounds is tentative, based on both choice of NBS/Wiley Mass Spectral Data Base Search.

c) Unknown; no data base entries with probability > 50%.

NOTES AND COMMENTS:

Value - If the result is a value greater than or equal to the detection limit, report the value.

U - Compound was analyzed for but Not Detected. The number is the minimum attainable detection limit for the sample.

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

D - Compound was detected but less than the minimum detection limit.

** Anthracene coelutes with Phenanthrene and is quantitated as all Phenanthrene.

*** Benzo(b)fluoranthene and Benzo(k)fluoroanthene coelute and are quantitated as all Benzo(k)fluoranthene.

**** Chrysene coelutes with Benzo(a)anthracene and is quantitated as all Benzo(a)anthracene.

Cis-1,2-Dichloroethene (a non-targetted compound) coelutes with trans-1,2-Dichloroethene and the MS cannot distinguish one from the other.

Richard W. Lynch
Laboratory Director

DEP CERTIFICATION NO. 08153

CENTURY
LABORATORIES, INC.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park, Thorofare, NJ 08086
Phone: (609) 848-3939 NJ 800-222-0589

December 20, 1985

Crescent Lighting
P.O. Box 99
Barrington, N.J. 08007

SAMPLES REC'D: 12/17/85

CERTIFICATE OF ANALYSIS

ANALYSIS NO.	SAMPLE I.D.	PETROLEUM HYDROCARBONS (mg/kg)
BB7025	SS13#1	<30
BB7026	SS13#2	< 30
BB7027	SS14#1	<30
BB7028	SS14#2	<30

Richard W. Lynch
Laboaratory Director

DEP CERTIFICATION NO. 08153

CENTURY
LABORATORIES, INC.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park, Thorofare, NJ 08086
Phone: (609) 848-3939 NJ 800-222-0589

ANALYSIS REPORT
NO. BB7023

CERTIFICATE OF ANALYSIS

CLIENT
Crescent Lighting
P.O. Box 99
Barrington, N.J. 08007

LOG NUMBER	SAMPLE IDENTIFICATION
BB7023	SS6#E Inside Stained area @ 30"

SAMPLE RECEIVED 12/17/85 ANALYSIS COMPLETED 12/20/85

COLLECTED BY client

RESULTS (mg/L unless specified)

TEST PARAMETER				TEST PARAMETER	mg/kg BB7023		
BOD_5*				Chlorine Demand			
COD				Chlorine Residual			
TOC				Chloride (CL)			
Dissolved Oxygen				Silica			
Suspended Solids				Petroleum HYC.	49		
Total Solids				Hardness (as $CaCO_3$)			
Dissolved Solids							
Sett. Solids (ml/L)							
pH							
Phenols				Aluminum			
Cyanide (Total)				Antimony			
Fluoride				Arsenic			
Cyanide (Free)				Barium			
Surfactants (mg/L LAS)				Boron			
Oil & Grease (Freon)				Cadmium			
				Calcium (Ca)			
Nitrogen (KJD as N)				Chromium (Total)			
Nitrogen (Ammonia as N)				Chromium (Hexa)			
Nitrogen (Organic as N)				Copper			
Nitrite (N)				Iron			
Nitrate (N)				Lead			
Phosphate (P) Total				Magnesium (Mg)			
Phosphate (P) - Ortho				Manganese			
Sulfate (SO_4)				Mercury			
Sulfite (SO_3)				Nickel			
Sulfide				Potassium			
Color				Selenium			
Turbidity (NTU)				Silver			
Conductivity (Micromohs)				Sodium			
Alk (Total) as $CaCO_3$				Tin			
				Titanium			
Fecal Coliform				Zinc			
Total Coliform							

* A minimum of 5 sample dilutions were used for this determination.

** Non-detectable, below the limit of detection.

LAB COMMENT:

Richard Smith

CENTURY
LABORATORIES, INC.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park, Thorofare, NJ 08086
Phone: (609) 848-3939 NJ 800-222-0589

CRESCENT LIGHTING
P.O. BOX 99
LARRINGTON, NJ 08007

SAMPLES RECEIVED: 12/5/85

CERTIFICATE OF ANALYSIS

Analysis No	Sample I.D.	Petroleum Hydrocarbons (mg/kg)
BB6307	SS6#B Inside Stained Area @12"	Analysis Canceled
BB6308	SS6#C Inside Stained Area @18"	700
BB6309	SS6#D Inside Stained Area @24"	330
BB5861 (Retest)		3300

Richard W Ryan
LAB DIRECTOR

DEP CERTIFICATION NO: 08153

CENTURY
LABORATORIES, INC.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park, Thorofare, NJ 08086
Phone: (609) 848-3939 NJ 800-222-0589

ANALYSIS REPORT
NO. BB5861-BB5862

CERTIFICATE OF ANALYSIS

CLIENT

CRESCENT LIGHTING
P.O. BOX 99
BARRINGTON, N.J. 08007

LOG NUMBER	SAMPLE IDENTIFICATION
BB5861	SS6 #A (INSIDE STAINED AREA) 12" BELOW SOIL LEVEL
BB5862	SS7 #A (OUTSIDE STAINED AREA) 12" BELOW SOIL LEVEL
	(6' FROM SS6 #A)

SAMPLE RECEIVED 11/26/85 ANALYSIS COMPLETED

COLLECTED BY CLIENT

RESULTS (mg/L unless specified)

TEST PARAMETER				TEST PARAMETER	mg/kg BB5861	mg/kg BB5862	
BOD_5*				Chlorine Demand			
COD				Chlorine Residual			
TOC				Chloride (CL)			
Dissolved Oxygen				Silica			
Suspended Solids				Petroleum HYC.	3700	< 30	
Total Solids				Hardness (as $CaCO_3$)			
Dissolved Solids							
Sett. Solids (ml/L)							
pH							
Phenols				Aluminum			
Cyanide (Total)				Antimony			
Fluoride				Arsenic			
Cyanide (Free)				Barium			
Surfactants (mg/L LAS)				Boron			
Oil & Grease (Freon)				Cadmium			
				Calcium (Ca)			
Nitrogen (KJD as N)				Chromium (Total)			
Nitrogen (Ammonia as N)				Chromium (Hexa)			
Nitrogen (Organic as N)				Copper			
Nitrite (N)				Iron			
Nitrate (N)				Lead			
Phosphate (P) Total				Magnesium (Mg)			
Phosphate (P) - Ortho				Manganese			
Sulfate (SO_4)				Mercury			
Sulfite (SO_3)				Nickel			
Sulfide				Potassium			
Color				Selenium			
Turbidity (NTU)				Silver			
Conductivity (Micromohs)				Sodium			
Alk (Total) as $CaCO_3$				Tin			
				Titanium			
Fecal Coliform				Zinc			
Total Coliform							

* A minimum of 5 sample dilutions were used for this determination.

** Non-detectable, below the limit of detection.

LAB COMMENT:

Richard W. Franklin

crescent
LIGHTING

November 25, 1985

RECEIVED
Nov 26 1 18 PM '85
DIVISION OF
WASTE MANAGEMENT
HSMA-SISE

Mr. Anthony J. McMahon, Chief
Bureau of Industrial Site Evaluation
Division of Waste Management, NJDEP
32 E. Hanover Street
CN 028
Trenton, NJ 08625

Re: Soil Clean-up Plan For Crescent Lighting, Barrington, NJ
ECRA Case # 85015

Dear Mr. McMahon:

Attached are the results of total hydrocarbon testing of the soil samples obtained from outside of the area of the soil staining (SS7#1, SS8#1) - please refer to page 7 in the clean-up plan for location.

As you can see by the results, both locations were free of petroleum hydrocarbons (<30 ppm's). It is our assumption that, based on these results, our testing is completed.

Also enclosed is the $500 fee required for review of our plan. Vince DiGregorio advised us that this payment was due prior to approval of the plan.

We await word of your approval of our plan.

Sincerely,

James T. Strahan III
Manager, Industrial Relations

JTS:flb
CC: B. Lane
D. Ratliff
J. Spirito
P. Charles
B. Steinhart

P.O. BOX 99, 120 EAST GLOUCESTER PIKE, BARRINGTON, NEW JERSEY 08007 • (609) 546-5500

CENTUR
LABORATORIES, INC.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park, Thorofare, NJ 08086
Phone: (609) 848-3939 NJ 800-222-0589

ANALYSIS REPORT
NO. BB5370, BB5371

CERTIFICATE OF ANALYSIS

Crescent Lighting Co.
120 E. Gloucester Pike
P.O. Box 99
Barrington, N.J. 08007

LOG NUMBER	SAMPLE IDENTIFICATION
BB5370	SS7-#1
BB5371	SS8-#1

SAMPLE RECEIVED 11/15/85 ANALYSIS COMPLETED 11/22/85

COLLECTED BY

RESULTS (mg/L unless specified)

TEST PARAMETER				TEST PARAMETER	BB5370	BB5371	
BOD_5*				Chlorine Demand			
COD				Chlorine Residual			
TOC				Chloride (CL)			
Dissolved Oxygen				Silica			
Suspended Solids				Petroleum HYC. mg/kg	<30	<30	
Total Solids				Hardness (as $CaCO_3$)			
Dissolved Solids							
Sett. Solids (ml/L)	–			–			
pH							
Phenols				Aluminum			
Cyanide (Total)				Antimony			
Fluoride				Arsenic			
Cyanide (Free)				Barium			
Surfactants (mg/L LAS)				Boron			
Oil & Grease (Freon)				Cadmium			
				Calcium (Ca)			
Nitrogen (KJD as N)				Chromium (Total)			
Nitrogen (Ammonia as N)				Chromium (Hexa)			
Nitrogen (Organic as N)				Copper			
Nitrite (N)				Iron			
Nitrate (N)				Lead			
Phosphate (P) Total				Magnesium (Mg)			
Phosphate (P) - Ortho				Manganese			
Sulfate (SO_4)				Mercury			
Sulfite (SO_3)				Nickel			
Sulfide				Potassium			
Color				Selenium			
Turbidity (NTU)				Silver			
Conductivity (Micromohs)				Sodium			
Alk (Total) as $CaCO_3$				Tin			
				Titanium			
Fecal Coliform				Zinc			
Total Coliform							

* A minimum of 5 sample dilutions were used for this determination.
** Non-detectable, below the limit of detection.

LAB COMMENT:

E40

Richard W. Signick

LAB CERTIFICATION NO. 08153
N.J. DEPARTMENT OF HEALTH

CENTURY
LABORATORIES, INC.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park, Thorofare, NJ 08086
Phone: (609) 848-3939 NJ 800-222-0589

ANALYSIS REPORT
NO. BB5370

CERTIFICATE OF ANALYSIS

CLIENT
Crescent Lighting Co.
120 E. Gloucester Pike
P.O. Box 99
Barrington, N.J. 08007

LOG NUMBER	SAMPLE IDENTIFICATION
BB5370	SS7-#1

SAMPLE RECEIVED 11/15/85 ANALYSIS COMPLETED 11/22/85
COLLECTED BY

RESULTS (mg/L unless specified)

TEST PARAMETER	mg/kg BB5370			TEST PARAMETER	mg/kg BB5370		
BOD_5*				Chlorine Demand			
COD				Chlorine Residual			
TOC				Chloride (CL)			
Dissolved Oxygen				Silica			
Suspended Solids				Petroleum HYC.	< 30		
Total Solids				Hardness (as $CaCO_3$)			
Dissolved Solids							
Sett. Solids (ml/L)							
pH							
Phenols				Aluminum			
Cyanide (Total)				Antimony			
Fluoride				Arsenic			
Cyanide (Free)				Barium			
Surfactants (mg/L LAS)				Boron			
Oil & Grease (Freon)				Cadmium			
				Calcium (Ca)			
Nitrogen (KJD as N)				Chromium (Total)			
Nitrogen (Ammonia as N)				Chromium (Hexa)			
Nitrogen (Organic as N)				Copper			
Nitrite (N)				Iron			
Nitrate (N)				Lead			
Phosphate (P) Total				Magnesium (Mg)			
Phosphate (P) - Ortho				Manganese			
Sulfate (SO_4)				Mercury			
Sulfite (SO_3)				Nickel			
Sulfide				Potassium			
Color				Selenium			
Turbidity (NTU)				Silver			
Conductivity (Micromohs)				Sodium			
Alk (Total) as $CaCO_3$				Tin			
				Titanium			
Fecal Coliform				Zinc			
Total Coliform							

* A minimum of 5 sample dilutions were used for this determination.
** Non-detectable, below the limit of detection.

LAB COMMENT:

CENTURY LABORATORIES, INC.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park, Thorofare, NJ 08086
Phone: (609) 848-3939 NJ 800-222-0589

INORGANICS ANALYSIS DATA SHEET

CLIENT CRESCENT LIGHTING ANALYSIS DATE 11/12/85

LAB SAMPLE I.D. NO. BB4690A CASE NO. Composite(SS1-#1, SS2-#1, SS3-#1) Soil

PART I. (Elements to be Identified and Measured)

		mg/kg			mg/kg
1.	ANTIMONY	< 0.5	8.	MERCURY	0.33
2.	ARSENIC	7.2	9.	NICKEL	8.2
3.	BERYLLIUM	< 0.5	10.	SELENIUM	7.0
4.	CADMIUM	5.8	11.	SILVER	< 0.5
5.	CHROMIUM (Total)	23.6	12.	THALLIUM	< 5.0
6.	COPPER	32.2	13.	ZINC	216
7.	LEAD	78.8			

PART II. (Elements to be Identified and Measured)

		mg/kg	
1.	PHENOLS, (Total)		1.87 gf (verbal)
2.	CYANIDE		<0.1 gf (verbal)
3.	ASBESTOS	N.R.*	[None Detected at different Lab. gf]

PART III. (Additional Parameters Requested)

		mg/kg		
1.	PETROLEUM HYDROCARBONS	2800	6.	
2.			7.	
3.			8.	
4.			9.	
5.			10.	

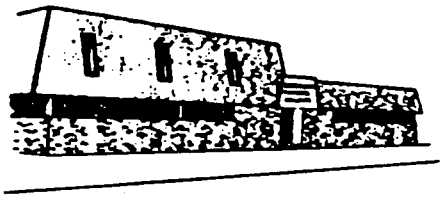
COMMENTS:

*N.R.=Not Requested

REFERENCE NO. 10

Borough of Barrington
Municipal Building

Trenton Avenue at Clements-Bridge Road
Barrington, New Jersey 08007
609-547-0706



April 23, 1985

Crescent Lighting
Division of Keene Corporation
Gloucester Pike
Barrington, New Jersey 08007

Attention: Mr. James Strand

Gentlemen:

As per your inquiry of a sewer permit for Crescent Lighting, a sewer permit was not needed, because the building and sewer was existing at the time of occupancy.

If I can be of any further help to you, please call me at 547-8585.

Sincerely,

Boone Bullock

Boone Bullock
Construction Official

BB:sb

Not good enough!
Clearly wrong.

REFERENCE NO. 11

BOROUGH OF BARRINGTON
MUNICIPAL BUILDING
BARRINGTON, N. J. 08007

October 17, 1985

Crescent Lighting
Post Office Box 99
120 East Gloucester Pike
Barrington, New Jersey 08007

ATTN: Mr. James T. Strahan III, Manager, Industrial Relations

RE: Sewer Connection (KEI #72BR1773)

Dear Mr. Strahan:

This letter is to verify that the Crescent Lighting Building at 120 East Gloucester Pike, Borough of Barrington, New Jersey is connected to the Barrington Sewage Collection System and Sewage Treatment Plant and that all floor drains, restroom, and all other sanitary waste discharges of that building flow into the municipal sewage collection and treatment system. I also hereby certify that the Barrington Governing Body and Sewer Department Committee which controls the Barrington Sewage Collection and Treatment System are fully knowledgeable of the industrial waste being discharged from the Crescent Lighting Industrial Plant into the Barrington Sewage Collection and Treatment System and periodically monitor those discharges.

Please contact me if you have any questions, comments or need any additional information in this regard.

Very truly yours,

Charles J. Riebel, P.E., P.P.
Municipal Engineer

CJR:mns

cc: Mayor and Council
Councilman William Patton, Chairman of the Sewer Department Committee
Mr. Thomas Redanauer, Borough Clerk

REFERENCE NO. 12

USGS WELL INVENTORY

(WELLS > 75 gpm)

CAMDEN COUNTY

Label: PRT[illegible]

Pathname: [illegible] CAMDEN.FAC[illegible]
File last [illegible]

Spec[illegible]
Start[illegible]

U.S. [illegible] NEW JERSEY

GROUND-WATER SITE DATA

DATA RELIABILITY (C3): G L M U
(field checked, poor location, minimal data, unchecked)

SITE TYPE (C2): C D H I M O P T W X
(collector, drain, excavation, sink-hole, connector well, multiple wells, quarry, pond, tunnel, well, test hole)

DATE OF CONSTRUCTION (C21): month – day – 19 year

USE OF SITE (C23): A C D E G H M O P R S T U W X Z
(anode, standby, emer. supply, drain, geothermal, seismic, heat reservoir, mine, observation, oil or gas, recharge, repressurize, test, unused, withdrawal, waste, destroyed)

SECONDARY USE OF SITE (C301) (SEE USE OF SITE)

TERTIARY USE OF SITE (C302) (SEE USE OF SITE)

USE OF WATER (C24): A B C D E F H I J K M N P Q R S T U Y Z
(air cond., bottling, commercial, dewater, power, fire, domestic, irrigation, industrial (cooling), mining, medicinal, industrial, public supply, aquaculture, recreation, stock, institutional, unused, desalination, other)

SECONDARY USE OF WATER (C25) (SEE USE OF WATER)

TERTIARY USE OF WATER (C26) (SEE USE OF WATER)

AQUIFER TYPE (C713): U N C M X
(unconfined, single; unconfined, multiple; confined, single; confined, multiple; mixed)

PRIMARY AQUIFER (C714)

HOLE DEPTH (C27) .

WELL DEPTH (C28) .

SOURCE OF DEPTH DATA (C29): A D G L M O R S Z
(other gov't., driller, geologist, logs, memory, owner, other reported, reporting agency, other)

WATER LEVEL (C30) .

DATE WATER LEVEL MEASURED (C31) (Mandatory if C30, water level, has a value): month – day – 19 year

METHOD OF WATER-LEVEL MEASUREMENT (C34): A B C E G H L M N R S T V Z
(airline, analog, calibrated airline, estimated, pressure gage, calibrated press. gage, geophysical logs, manometer, non-rec. gage, reported, steel tape, electric tape, calibrated elec. tape, other)

SITE STATUS FOR WATER LEVEL (C37): D E F G H I J N O P R S T V W X Z
(dry, recently flowing, flowing, nearby flowing, nearby recently flowing, injector site, injector site monitor, measurement discon., obstruction, pumping, recently pumped, nearby pumping, nearby recently pumped, foreign substance, well destroyed, surface water effects, other)

SOURCE OF WATER-LEVEL DATA (C33): A D G L M O R S Z
(other gov't., driller, geologist, logs, memory, owner, other reported, reporting agency, other)

CONSTRUCTION DATA

RECORD TYPE (C754): CONS

RECORD SEQUENCE NO. (C723)

DATE OF CONSTRUCTION (C60): month – day – 19 year

NAME OF CONTRACTOR (C63)

SOURCE OF DATA (C64): A D G L M O R S Z
(other gov't., driller, geologist, logs, memory, owner, other reported, reporting agency, other)

METHOD OF CONSTRUCTION (C65): A B C D H J P R T V W Z
(air-rotary, bored or augered, cable tool, dug, hydraulic rotary, jetted, air percussion, reverse rotary, trenching, driven, drive wash, other)

TYPE OF FINISH (C66): C F G H O P S T W X Z
(porous concrete, gravel w/perf., gravel screen, horiz. gallery, open end, perf. or slotted, screen, sand point, walled, open hole, other)

TYPE OF SEAL (C67): B C G N Z
(bentonite, clay, cement grout, none, other)

BOTTOM OF SEAL (C68)

METHOD OF DEVELOPMENT (C69): A B C J N P S Z
(air-lift pump, bailed, compressed air, jetted, none, pumped, surged, other)

HOURS OF DEVELOPMENT (C70)

SPECIAL TREATMENT (C71): C D E F H M Z
(chemicals, dry ice, explosives, deflocculant, hydrofracturing, mechanical, other)

SELECTED INFORMATION OF WELLS FROM THE GROUND WATER SITE INVENTORY DATABASE
CAMDEN COUNTY

UNIQUE ID	SITE ID	LATITU	LONGTU	MUNICIPALITY	SITE OWNER	LOCAL IDENTIFIER	DATE COMPLETED	USE OF SITE	ORIG WATER USE	CURR WATER USE	LAT LON ACC
070001	[illegible]	195326	750358	AUDUBON BORO	CORVELLI, D	1949	09/06/1949	W	H	H	H
070002	[illegible]	[illegible]	750524	AUDUBON BORO	PUBLIC SERV E-G	PSEGC 1	01/01/1953	W	N	N	S
070003	[illegible]	[illegible]	750254	BARRINGTON BORO	OWENS CORNING	CORNING 1	01/01/1956	W	N	N	S
070004	[illegible]	[illegible]	750252	BARRINGTON BORO	WEYERHAEUSER CO	1	07/28/1969	W	N	N	S
070005	[illegible]	195224	750303	BARRINGTON BORO	NJ WATER CO	TEST WELL T 1	03/28/1968	Z	U	U	S
070006	[illegible]	195224	750303	BARRINGTON BORO	NJ WATER CO	TEST WELL T 2	03/27/1968	Z	U	U	S
070007	[illegible]	[illegible]	750311	BARRINGTON BORO	NJ WATER CO	BARRINGTON 5	10/01/1925	W	P	P	F
070008	[illegible]	195146	750542	BELLMAWR BORO	BELLMAWR B W D	BBWD 4	08/08/1966	W	P	P	F
070009	[illegible]	[illegible]	750533	BELLMAWR BORO	BELLMAWR B W D	BBWD TES 1	04/20/1965	T	U	U	F
070010	[illegible]	[illegible]	750414	BELLMAWR BORO	PASSERO,SALVATR	1-1953	01/01/1953	W	H	H	
070011	[illegible]	[illegible]	750638	BELLMAWR BORO	BELLMAWR B W D	BBWD 2	01/01/1942	Z	P	U	
070012	[illegible]	195221	750637	BELLMAWR BORO	BELLMAWR B W D	BBWD 3	08/02/1956	W	P	P	F
070013	[illegible]	195221	750635	BELLMAWR BORO	BELLMAWR B W D	BBWD 1	06/15/1942	W	P	P	F
070014	[illegible]	394444	745539	BERLIN BORO	PORRAL, GREGORY	1954	03/10/1954	W	N	N	S
070015	[illegible]	394648	745622	BERLIN BORO	BERLIN WATER D	BWD 11	07/11/1972	W	P	P	S
070016	[illegible]	394653	745543	BERLIN BORO	CHILLENNI, D	1951	01/01/1951	W	H	H	S
070017	[illegible]	394705	745444	BERLIN BORO	OWENS CO[illegible]	1	06/04/1951	W	N	N	S
070018	[illegible]	394738	745614	BERLIN BORO	BERLIN W[illegible]	BWD 9	07/15/1955	W	P	P	F
070019	[illegible]	394738	745614	BERLIN BORO	BERLIN W[illegible]	BWD 10	01/01/1967	W	P	P	S
070020	[illegible]	394738	745614	BERLIN BORO	BERLIN WATER D	BWD 1	01/01/1923	W	P	P	S
070021	[illegible]	394738	745614	BERLIN BORO	BERLIN WATER D	BWD 5	01/01/1950	Z	P	U	S
070022	[illegible]	394738	745614	BERLIN BORO	BERLIN WATER D	BWD 8	06/05/1952	U	U	U	S
070023	[illegible]	394738	745614	BERLIN BORO	BERLIN WATER D	BWD 6	02/20/1941	Z	P	U	S
070024	[illegible]	394819	745512	BERLIN TWP	TILLER, ARTHUR	1952	09/20/1952	W	H	H	S
070025	[illegible]	195244	750727	BROOKLAWN BORO	BROOKLAWN B W D	LEGION	01/01/1942	Z	P	U	S
070026	[illegible]	[illegible]	750714	BROOKLAWN BORO	PUBLIC SERV E-G	PSEG-1958	06/12/1958				S
070027	[illegible]	195427	750606	CAMDEN CITY	CAMDEN CITY W D	WATER WORKS T1	01/01/1940	T	U	U	F
070028	[illegible]	195435	750720	CAMDEN CITY	SO JRSY PORT CM	NY SHIP PW 1	01/01/1935	W	N	N	F
070029	[illegible]	195435	750720	CAMDEN CITY	NY SHIPBUILDING	9	09/30/1959	W	N	N	F
070030	[illegible]	195447	750711	CAMDEN CITY	SO JRSY PORT CM	NY SHIP 5A	08/17/1940	D	U	U	F
070031	[illegible]	195447	750711	CAMDEN CITY	NY SHIPBUILDING	4	01/13/1939	W	N	N	F
070032	[illegible]	195447	750711	CAMDEN CITY	NY SHIPBUILDING	5	01/01/1940	W	N	N	F
070033	[illegible]	195447	750711	CAMDEN CITY	NY SHIPBUILDING	8	05/24/1944				F
070034	[illegible]	195449	750715	CAMDEN CITY	SO JRSY PORT CM	NY SHIP 6	11/15/1940	W	N	N	S
070035	[illegible]	195449	750716	CAMDEN CITY	NY SHIPBUILDING	1	08/20/1939	W	N	N	F
070036	[illegible]	195445	750714	CAMDEN CITY	NY SHIPBUILDING	2	10/10/1930	W	N	N	F
070037	[illegible]	195445	750716	CAMDEN CITY	NY SHIPBUILDING	3	01/01/1925	W	N	N	F
070038	[illegible]	[illegible]	[illegible]	CAMDEN CITY	SO JRSY PORT CM	NY SHIP 7	12/03/1942	U	U	U	S
070039	[illegible]	[illegible]	750641	CAMDEN CITY	CAMDEN CITY W D	CITY 7N	06/02/1986	W	P	P	S
070040	[illegible]	[illegible]	750641	CAMDEN CITY	CAMDEN CITY W D	CITY 7	01/01/1945	Z	P	U	S
070041	[illegible]	195502	750655	CAMDEN CITY	CAMDEN CITY W D	CITY 7-1928	09/10/1928	W	P	U	S
070042	[illegible]	195507	750729	CAMDEN CITY	CAMDEN BREWERY		/ /	W	N	N	S
070043	[illegible]				MAFCO	2	11/19/1951	W	N	N	S

USE ORIG CURR LAT
WATER LON

A 27

A 32

USGS UNIQUE ID	SITE ID	LATITUDE	LONGITUDE	MUNICIPALITY	SITE OWNER	LOCAL IDENTIFIER	DATE COMPLETED	USE OF SITE	ORIG WATER USE	CURR WATER USE	LON ACC
070044	395508075072401	395508	750702	CAMDEN CITY	CURLEY CO INC	1	/ /	W	N	N	F
070045	395508075072402	395508	750702	CAMDEN CITY	CURLEY CO INC	2	/ /	W	N	N	F
070046	395512075064201	395512	750640	CAMDEN CITY	CAMDEN CITY W D	CITY 11	01/01/1942	W	P	P	S
070047	395524075072701	395524	750727	CAMDEN CITY	CAMDEN SEWAGE A	SEWAGE PLANT 1	01/11/1954	U	U	U	S
070048	395527075064601	395527	750646	CAMDEN CITY	CAMDEN CITY W D	CITY 6N	01/20/1948	W	P	U	F
070049	395527075064401	395527	750644	CAMDEN CITY	CAMDEN CITY W D	CITY 6-1928	09/10/1928	Z	P	U	S
070050	395528075053801	395528	750538	CAMDEN CITY	BIDLLWRECK, A N	2-1950	02/17/1950	W	N	N	S
070051	395530075071901	395530	750719	CAMDEN CITY	GALLAGHERS WHSE	EVRSN LVRNG 5	01/01/1929	W	N	N	F
070052	395530075071902	395530	750719	CAMDEN CITY	GALLAGHERS WHSE	EVRSN LVRNG 4	/ /	W	N	N	F
070053	395532075071901	395532	750719	CAMDEN CITY	GALLAGHERS WHSE	EVRSN LVRNG 6	/ /	W	N	N	F
070054	395532075072001	395532	750720	CAMDEN CITY	GALLAGHERS WHSE	EVRSN LVRNG 2	01/01/1933	W	N	N	F
070055	395534075072401	395534	750724	CAMDEN CITY	GALLAGHERS WHSE	EVRSN LVRNG 1	01/01/1929	W	N	N	F
070056	395534075072402	395534	750724	CAMDEN CITY	GALLAGHERS WHSE	EVRSN LVRNG 3	/ /	W	N	N	F
070057	395539075054101	395539	750541	CAMDEN CITY	OUR LADY HOSP	STAND BY WELL	09/18/1963	W	M	M	S
070058	395539075063001	395539	750630	CAMDEN CITY	W JERSEY HOSP	W JERSEY HOSP1	12/08/1958	W	T	T	S
070059	395540075074201	395540	750742	CAMDEN CITY	CAMDEN CITY W D	CITY 8	01/01/1928	Z	P	U	S
070060	395540075074202	395540	750742	CAMDEN CITY	CAMDEN CITY W D	CITY 8A	07/29/1983	Z	P	U	F
070061	395541075062201	395541	750622	CAMDEN CITY	CAMDEN CITY W D	CITY 4	01/01/1950	W	P	U	F
070062	395541075062202	395541	750622	CAMDEN CITY	CAMDEN CITY W D	CITY 4-1935	08/14/1935	W	P	U	S
070063	395541075062203	395541	750622	CAMDEN CITY	CAMDEN CITY W D	CITY 4-1922	01/01/1922	W	P	U	S
070064	395546075073301	395546	750733	CAMDEN CITY	CAMDEN CITY W D	CITY 17	05/13/1954	W	P	P	F
070065	395550075072901	395550	750729	CAMDEN CITY	CAMDEN CITY W D	CITY 2B	11/02/1953	Z	P	U	S
070066	395550075072902	395550	750729	CAMDEN CITY	CAMDEN CITY W D	CITY 2A	08/05/1927	Z	P	U	S
070067	395551075072701	395551	750725	CAMDEN CITY	PUBLIC SERV E-G	PSEGC 14	01/01/1950	W	N	N	S
070068	395552075073501	395552	750735	CAMDEN CITY	CAMDEN CITY W D	CITY 13	06/19/1953	W	P	P	F
070069	395554075074701	395554	750747	CAMDEN CITY	FLINTKOTE CORP	14-COKE PLANT	05/27/1950	Z	N	U	F
[redacted]	395557075062901	395557	750629	CAMDEN CITY	CAMDEN CITY W D	CITY 3A	12/31/1953	Z	P	U	S
[redacted]	395557075062902	395557	750629	CAMDEN CITY	CAMDEN CITY W D	CITY 3-1934	01/01/1934	W	P	U	S
[redacted]	395557075062903	395557	750629	CAMDEN CITY	FLIN[redacted]ORP	CITY 3-1922	04/24/1922	W	P	U	S
070073	395602075074401	395602	750744	CAMDEN CITY	PUBL[redacted]E-G	PSEGC 7	01/01/1947	Z	N	U	F
070074	395603075073401	395603	750736	CAMDEN CITY	FLINTKOTE CORP	PSEGC 8	01/01/1955	W	N	N	F
070075	395604075073501	395604	750735	CAMDEN CITY	CAMDEN CITY W D	6 REPLACEMENT	01/01/1954	Z	N	U	F
070076	395614075063301	395616	750632	CAMDEN CITY	CAMDEN CITY W D	CITY 5-1928	05/04/1928	W	P	U	F
070077	395614075063302	395616	750632	CAMDEN CITY	CAMDEN CITY W D	CITY 5-1937	01/01/1937	W	P	U	F
070078	395615075063301	395616	750632	CAMDEN CITY	CAMDEN CITY W D	CITY 5N	10/24/1963	W	P	P	F
070079	395617075071001	395617	750710	CAMDEN CITY	CAMDEN CITY W D	CITY 12	01/01/1945	W	P	P	S
070080	395630075065101	395630	750601	CAMDEN CITY	HOLLINGSHEAD, R	1-1928	01/01/1928	W	N	N	S
070081	395627075060301	395627	750603	CAMDEN CITY	PARIS PRODUCE C	REPLACEMENT	03/06/1964	W	N	N	F
070082	395633075063301	395633	750633	CAMDEN CITY	BALTIMORE MKTS	CAMDEN 2	12/05/1950				M
070083	395638075062201	395638	750622	CAMDEN CITY	CAMDEN CITY W D	CITY 1A	12/17/1953	W	P	U	F
070084	395638075062202	395638	750622	CAMDEN CITY	CAMDEN CITY W D	CITY 1-1922	01/01/1922	W	P	U	
070085	395638075071101	395638	750711	CAMDEN CITY	STANLEY CORP AM	STANLEY THEATR	06/23/1949				F
070086	395639075070401	395639	750704	CAMDEN CITY	SAVAR AMUSEMENT	SAVAR THEATRE	03/13/1950				F

E TED MATIL WEL OM T GROUND WATER SITE INVENTORY DATABASE
CAMDEN COUNTY

USGS UNIQUE ID	SITE ID	LATITU	LONGTU	MUNICIPALITY	SITE OWNER	LOCAL IDENTIFIER	DATE COMPLETED	USE OF SITE	ORIG WATER USE	CURR WATER USE	LAT LON ACC
070087	395640075041201	395640	750622	CAMDEN CITY	CAMDEN CITY W D	CITY 1-1940	01/01/1940	W	P	U	S
070088	395641075041601	395641	750546	CAMDEN CITY	CONCORD CHEM	1	/01/01/1941	W	N	N	S
070089	395649075043401	395649	750743	CAMDEN CITY	ESTERBROOK PEN	ESTERBROOK OBS	/ /	O	U	U	S
070090	395652075040701	395652	750607	CAMDEN CITY	CAMDEN CITY W D	CITY 10	03/09/1935	W	P	U	S
070091	395659075041001	395659	750610	CAMDEN CITY	CAMDEN CITY W D	CITY 9	01/01/1957	Z	P	U	F
070092	395659075041002	395659	750610	CAMDEN CITY	CAMDEN CITY W D	TEST WELL 1950	07/17/1950	T	U	U	F
070093	395659075041003	395659	750610	CAMDEN CITY	CAMDEN CITY W D	CITY 9-1924	01/01/1924	W	P	U	F
070094	395706075053301	395706	750553	CAMDEN CITY	CAMDEN CITY W D	CITY 16	05/03/1954	W	P	U	S
070095	395707075061501	395707	750615	CAMDEN CITY	CAMDEN CITY W D	CITY 14	06/01/1953	Z	P	U	S
070096	395711075053401	395711	750534	CAMDEN CITY	NJ WATER CO	36 DBS 27TH ST	01/01/1932	Z	U	U	F
070097	395715075051701	395715	750517	CAMDEN CITY	NJ WATER CO	CAMDEN DIV 44	05/15/1950	Z	P	U	S
070098	395715075051901	395715	750519	CAMDEN CITY	NJ WATER CO	CAMDEN DIV 52	07/12/1965	W	P	P	S
070099	395716075050701	395716	750507	CAMDEN CITY	H KOHNSTAMM CO	3	12/15/1954	Z	N	U	F
070100	395716075050702	395716	750507	CAMDEN CITY	H KOHNSTAMM CO	4	03/12/1959	Z	N	U	F
070101	395716075050703	395716	750507	CAMDEN CITY	H KOHNSTAMM CO	5	04/07/1960	W	N	N	F
070102	395716075040801	395716	750608	CAMDEN CITY	CAMDEN CITY W D	CITY 15	03/16/1954	W	P	U	S
070103	395718075050701	395718	750507	CAMDEN CITY	H KOHNSTAMM CO	6	02/23/1967	W	N	N	S
070104	395718075051301	395718	750513	CAMDEN CITY	NJ WATER CO	CAMDEN DIV 47	09/21/1953	Z	P	U	S
070105	395718075071001	395718	750710	CAMDEN CITY	U S GASKET CO	1	08/11/1953	W	N	N	
070106	395719075051701	395719	750517	CAMDEN CITY	NJ WATER CO	CAMDEN DIV 45	01/01/1950	Z	P	U	S
070107	395720075051301	395720	750513	CAMDEN CITY	NJ WATER CO	CAMDEN DIV 51	01/11/1965	W	P	P	F
070108	395722075051401	395719	750518	CAMDEN CITY	NJ WATER CO	CAMDEN DIV 10	01/01/1932	O	U	U	F
070109	395722075052301	395722	750523	CAMDEN CITY	NJ WATER CO	CAMDEN DIV 46	11/27/1950	Z	P	U	S
070110	395725075052101	395725	750521	CAMDEN CITY	NJ WATER [illegible]	CAMDEN DIV 49	01/01/1955	Z	P	U	S
[illegible]	395726075051801	395726	750518	CAMDEN CITY	NJ WATE[illegible]	CAMDEN DIV 50	01/01/1958	W	P	P	S
[illegible]	395728075052001	395728	750520	CAMDEN CITY	NJ WATE[illegible]	CAMDEN DIV 48	09/06/1954				S
[illegible]	395732075053201	395732	750532	CAMDEN CITY	NJ WATE[illegible]	CAMDEN DIV 27	05/19/1924	W	P	P	S
070114	395150074591301	395149	745914	CHERRY HILL TWP	WOODCREST CT CL	CLUB 2	01/01/1955	W	H	H	S
070115	395150074571601	395149	745909	CHERRY HILL TWP	WOODCREST CT CL	CLUB 1	01/01/1949	W	H	H	S
070116	395212074575701	395212	745757	CHERRY HILL TWP	BROWN, E DR	1969	09/30/1969	W	H	H	S
070117	395229074571201	395229	745712	CHERRY HILL TWP	NJ WATER CO	HUTTON HILL 1	10/23/1965	O	U	U	S
070118	395229074571202	395229	745712	CHERRY HILL TWP	NJ WATER CO	HUTTON HILL 2	10/22/1965	O	U	U	S
070119	395229074572401	395229	745724	CHERRY HILL TWP	SNYDER, HAROLD	1-1956	02/24/1956	W	H	H	S
070120	395238075003001	395238	750031	CHERRY HILL TWP	HUSSMAN REFRIDG	HUSSMAN	01/29/1957	W	N	N	F
070121	395252074594301	395252	745943	CHERRY HILL TWP	NJ WATER CO	BROWING T-1	06/04/1973	T	U	U	S
070122	395252074594302	395252	745943	CHERRY HILL TWP	NJ WATER CO	BROWNING 44	01/01/1974	W	P	P	F
070123	395252074594303	395252	745943	CHERRY HILL TWP	NJ WATER CO	BROWNING 46	01/01/1973	W	P	P	S
070124	395252074594304	395252	745943	CHERRY HILL TWP	NJ WATER CO	BROWNING 45	01/01/1973	W	P	P	S
070125	395254074582201	395254	745822	CHERRY HILL TWP	MYERS, F	1-1967	01/01/1967	[illegible]	H	H	S
070126	395259074572001	395259	745720	CHERRY HILL TWP	IMMAC CONCEPTN	NOVITIATE 2	01/01/1952	W	H	H	S
070127	395308075001501	395308	750015	CHERRY HILL TWP	NJ TURNPIKE AU	SERVICE 38-2	01/01/1951	W	H	H	S
070128	395321074581701	395321	745817	CHERRY HILL TWP	MILLER, EUGENE	1-1954	01/01/1954	W	H	H	S
070129	395331074592001	395331	745920	CHERRY HILL TWP	ROSS, A P	1-1950	09/30/1950	W	H	H	S
070142	395[illegible]	[illegible]	[illegible]	CHERRY HILL TWP	N[illegible] WATER CO	ELLIS[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
070143	395441[illegible]	[illegible]	750104	CHERRY HILL TWP	N[illegible] WATER CO	ELLISBURG 13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
070144	395444[illegible]	[illegible]	750104	CHERRY HILL TWP	DISTRIAL, W J	1-1953	01/01/1953	W	H	H	S
070145	395[illegible]	[illegible]	[illegible]	CHERRY HILL TWP	N[illegible] WATER CO	KINGSTON 27	12/03/1963	W	P	P	F
070146	395[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	KINGSTON 25	01/01/1961	W	P	P	F
						[illegible]	[illegible]	W	P	P	F

[illegible] GROUND WATER SITE INVENTORY DATABASE
CAMDEN COUNTY

USGS UNIQUE ID	[illegible]	[illegible]	SITE [illegible]	LOCAL IDENTIFIER	DATE COMPLETED	USE OF SITE	ORIG WATER USE	CURR WATER USE	LAT LON ACC
070130	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
070131	[illegible]	[illegible]	N. WATER CO	OLD ORCHARD A	03/30/1967	D	U	U	S
070132	[illegible]	[illegible]	N. WATER CO	OLD ORCHARD B	01/01/1967	D	U	U	S
070133	[illegible]	[illegible]	N. WATER CO	OLD ORCHARD C	01/01/1967	D	U	U	S
070134	[illegible]	[illegible]	N. WATER CO	OLD ORCHARD 36	04/16/1968	W	P	P	S
070135	[illegible]	[illegible]	N. WATER CO	OLD ORCHARD 37	04/16/1968	W	P	P	S
070136	[illegible]	[illegible]	N. WATER CO	OLD ORCHARD 38	05/27/1968	W	P	P	S
070137	[illegible]	[illegible]	PALMER, ARNOLD	DRIVING RANGE	05/15/1964	W	I	I	S
070138	[illegible]	[illegible]	COLEMAN, ROBERT	1953	01/01/1953	W	H	H	S
070139	[illegible]	[illegible]	WALTER, P A	1953	01/01/1953	W	H	H	S
070140	[illegible]	[illegible]	HOOVEN, JOHN	HOOVEN-64	02/10/1964	W	H	H	M
070141	[illegible]	[illegible]	FOWERS, FRANK	1949	01/01/1949	W	H	H	S
070142	[illegible]	[illegible]	DIST PARK FIRE	CO 1	01/01/1954	W	H	H	S
070143	[illegible]	[illegible]	N.J WATER CO	ELLISBURG 23	05/26/1960	W	P	P	F
070144	[illegible]	[illegible]	N.J WATER CO	ELLISBURG 16	11/23/1957	W	P	P	F
070145	[illegible]	[illegible]	NJ WATER CO	ELLISBURG 13	04/16/1953	W	P	P	S
070146	[illegible]	[illegible]	OSTERTAG, W J	1-1953	01/01/1953	W	H	H	S
070147	[illegible]	[illegible]	NJ WATER CO	KINGSTON 27	12/03/1963	W	P	P	S
070148	[illegible]	[illegible]	N. WATER CO	KINGSTON 25	01/01/1961	W	P	P	F
070149	[illegible]	[illegible]	N. WATER CO	KINGSTON 28	10/12/1964	W	P	P	F
070150	[illegible]	[illegible]	NJ NATIONAL GD	1	01/01/1956	W	T	T	S
070151	[illegible]	[illegible]	WIDELL AND SONS		01/01/1953	W	H	H	S
070152	[illegible]	[illegible]	GARDEN STATE RA	RACE TRACK	01/01/1944	W	I	I	S
070153	[illegible]	[illegible]	E H ELLIS SON	1	01/01/1949	W	N	N	
070154	[illegible]	[illegible]	QUINT, A A	1954	01/15/1954	W	H	H	M
070155	[illegible]	[illegible]	QUINT, A A	1-1954	01/12/1954	W	H	H	M
070156	[illegible]	[illegible]	MOLZER, M	1953	03/31/1953	W	H	H	S
070157	[illegible]	[illegible]	PARK CITY CONST	1955	12/14/1955	W	H	H	M
070158	[illegible]	[illegible]	N.J WATER CO	COLUMBIA 31	01/18/1967				S
070159	[illegible]	[illegible]	GARDEN STATE RA	CHRY HLL INN 1	09/01/1954	Z	C	U	S
070160	[illegible]	[illegible]	GARDEN STATE RA	CHRY HLL INN 2	01/01/1967	W	I	I	S
070161	[illegible]	[illegible]	RADIO CORP AMER	RCA 1	01/01/1955	W	N	N	F
070162	[illegible]	[illegible]	SCHAEFER, JERRY	1-1965	01/20/1965	W	H	H	S
070163	[illegible]	[illegible]	N.J WATER CO	COLUMBIA 24	03/29/1961	W	P	P	S
070164	[illegible]	[illegible]	N.J WATER CO	COLUMBIA 22	02/23/1960	W	P	P	S
070165	[illegible]	[illegible]	MALAPPA, ANTHONY	1955	01/11/1955	W	H	H	S
070166	[illegible]	[illegible]	GARDEN STATE RA	1955	07/05/1955	W	H	H	T
070167	[illegible]	[illegible]	CLEMENTON W D	CWD 9	07/30/1954	W	P	P	S
070168	[illegible]	[illegible]	CLEMENTON W D	CWD 6	01/01/1924	W	P	P	S
070169	[illegible]	[illegible]	CLEMENTON W D	CWD 7	01/01/1943	Z	P	U	S
070170	[illegible]	[illegible]	CLEMENTON W D	CWD 8	07/27/1950	Z	P	U	S
070171	[illegible]	[illegible]	CLEMENTON W D	ABANDON WELL	01/01/1970	U	U	U	S
070172	[illegible]	[illegible]	COLLINGSWOOD WD	CWD 7(B)	03/17/1965	W	P	P	F
[illegible]	[illegible]	[illegible]	[illegible] WD	CWD 6(A)	05/31/1965	W	P	P	S

SELECTED INFORMATION OF WELLS FROM THE GROUND WATER SITE INVENTORY DATABASE
CAMDEN COUNTY

USGS UNIQUE ID	SITE ID	LATITU	LONGTU	MUNICIPALITY	SITE OWNER	LOCAL IDENTIFIER	DATE COMPLETED	USE OF SITE	DRIG WATER USE	CURR WATER USE	LAT LON ACC
070173	395428075051001	395428	750510	COLLINGSWOOD BORO	COLLINGSWOOD WD	CWD 6 TEST	01/01/1964	T	U	U	M
070174	395506075050701	395506	750507	COLLINGSWOOD BORO	FRIENDSHIP DAIRY	DAIRY 1	01/01/1955	W	N	N	S
070175	395515075043601	395521	750439	COLLINGSWOOD BORO	COLLINGSWOOD WD	CWD 1R	10/24/1949	W	P	P	S
070176	395519075043201	395519	750432	COLLINGSWOOD BORO	COLLINGSWOOD WD	CWD 2R	06/02/1960	W	P	P	S
070177	395521075043501	395521	750435	COLLINGSWOOD BORO	COLLINGSWOOD WD	CWD 4	07/14/1942	W	P	P	S
070178	395522075043201	395522	750432	COLLINGSWOOD BORO	COLLINGSWOOD WD	CWD 3	06/02/1960	W	P	P	F
070179	395526075042401	395526	750424	COLLINGSWOOD BORO	COLLINGSWOOD WD	CWD 5	02/06/1956	W	P	P	S
070180	394923074571401	394923	745714	GIBBSBORO BORO	US AIR FORCE	RADAR 2	01/01/1960	W	E	E	S
070181	394927074571501	394927	745715	GIBBSBORO BORO	US AIR FORCE	RADAR 1	04/08/1959	W	H	H	S
070182	394944074571701	394944	745717	GIBBSBORO BORO	HALE, JAMES E	1952	01/01/1952	W	H	H	S
070183	394945074585501	394945	745855	GIBBSBORO BORO	NJ WATER CO	NJWC 43	01/01/1972	W	P	P	M
070184	394946074585501	394950	745855	GIBBSBORO BORO	NJ WATER CO	GIBBSBORO OB 1	01/12/1969	O	U	U	S
070185	394946074585502	394950	745855	GIBBSBORO BORO	NJ WATER CO	GIBBSBORO OB 2	01/25/1969	O	U	U	S
070186	394946074585503	394950	745855	GIBBSBORO BORO	NJ WATER CO	GIBBSBORO OB 3	02/04/1969	O	U	U	S
070187	394955074585201	394955	745852	GIBBSBORO BORO	FUCHS, KARL W	1-1951	07/24/1951	W	H	H	S
070188	395002074585101	395002	745851	GIBBSBORO BORO	NJ WATER CO	GIBBSBORO 42	05/22/1972	W	P	P	M
070189	395003074585101	395003	745851	GIBBSBORO BORO	NJ WATER CO	GIBBSBORO 41	01/01/1972	W	P	P	F
f 070190	395015074575201	395015	745752	GIBBSBORO BORO	LUCAS PAINT CO	MAIN	/ /	W	N	N	S
070191	395015074575202	395015	745752	GIBBSBORO BORO	LUCAS PAINT CO	STEAM PUMP	/ /	W	I	I	S
070192	395252075062301	395252	750623	GLOUCESTER CITY	GLOUCESTER C WD	GCWD 39	03/13/1958	Z	P	U	F
070193	395258075064101	395256	750633	GLOUCESTER CITY	CRESCENT TRLR PK	1	07/31/1952	W	P	P	M
070194	395308075074401	395308	750744	GLOUCESTER CITY	G & W NATURAL RES	4-DEEP	01/01/1958	W	N	N	S
070195	395308075074901	395308	750749	GLOUCESTER CITY	G & W NATURAL RES	5-DEEP	01/01/1954	W	N	N	S
070196	395308075075701	395308	750757	GLOUCESTER CITY	G & W NATURAL RES	2-DEEP	07/12/1954	W	N	N	S
070197	395313075080401	395313	750804	GLOUCESTER CITY	G & W NATURAL RES	3-DEEP	01/01/1958	W	N	N	S
070198	395314075074801	395314	750748	GLOUCESTER CITY	G & W NATURAL RES	1R-1973	03/08/1973	W	N	N	T
070199	395314075074901	395314	750749	GLOUCESTER CITY	G & W NATURAL RES	1-DEEP	01/01/1945	Z	N	U	S
070200	395315075061701	395315	750617	GLOUCESTER CITY	WILSON, H W JR	1-1954	01/01/1954	W	H	H	S
070201	395318075075501	395318	750755	GLOUCESTER CITY	AMSPEC CHEMICAL	HARSHAW 1	04/26/1948	W	N	N	S
070202	395321075074701	395321	750747	GLOUCESTER CITY	AMSPEC CHEMICAL	HARSHAW 3	09/26/1952	Z	U	U	S
070203	395322075075101	395322	750751	GLOUCESTER CITY	AMSPEC CHEMICAL	HARSHAW 2	03/21/1951	Z	N	U	S
070204	395322075075701	395322	750757	GLOUCESTER CITY	AMSPEC CHEMICAL	HARSHAW 4	03/18/1953	W	N	N	S
070205	395324075073601	395324	750736	GLOUCESTER CITY	HINDE AND DAUCH	3	01/01/1945	W	N	N	S
070206	395329075073201	395329	750732	GLOUCESTER CITY	HINDE AND DAUCH	2	01/01/1945	W	N	N	S
070207	395332075073401	395332	750734	GLOUCESTER CITY	HINDE AND DAUCH	JERSEY AVE 1	01/01/1945	W	N	N	F
070208	395335075073301	395335	750733	GLOUCESTER CITY	ATLANTIC ICE CO	1-62	07/20/1962	W	N	N	M
070209	395340075072801	395340	750728	GLOUCESTER CITY	PHILA DAIRY PRO	1	10/25/1949	W	N	N	M
070210	395343075065201	395343	750652	GLOUCESTER CITY	GLOUCESTER C WD	GCWD 42	01/01/1968	W	P	P	S
070211	395345075065301	395345	750653	GLOUCESTER CITY	GLOUCESTER C WD	GCWD 2	01/01/1929	U	U	U	F
070212	395346075065101	395346	750651	GLOUCESTER CITY	GLOUCESTER C WD	GCWD 32	01/01/1938	U	U	U	F
070213	395347075065101	395347	750651	GLOUCESTER CITY	GLOUCESTER C WD	GCWD 38	01/01/1949	U	U	U	F
070214	395347075065201	395347	750652	GLOUCESTER CITY	GLOUCESTER C WD	GCWD 33	01/01/1938	U	U	U	
070215	395348075065401	395348	750654	GLOUCESTER CITY	GLOUCESTER C WD	GCWD 37	01/01/1947	U	U	U	F

LISTED INFORMATION OF WELLS FROM THE GROUND WATER SITE INVENTORY DATABASE
CAMDEN COUNTY

USGS UNIQUE ID	SITE ID	LATITU	LONGITU	MUNICIPALITY	SITE OWNER	LOCAL IDENTIFIER	DATE COMPLETED	USE OF SITE	ORIG WATER USE	CURR WATER USE	LAT LON ACC
070216	39534907504540[illegible]	395348	750654	GLOUCESTER CITY	GLOUCESTER C WD	GCWD 30	01/01/1936	U	U	U	S
070217	39534907504540[illegible]	395348	750654	GLOUCESTER CITY	GLOUCESTER C WD	GCWD 34	01/01/1942	U	U	U	S
070218	39534907504540[illegible]	395348	750654	GLOUCESTER CITY	GLOUCESTER C WD	GCWD 35	06/28/1944	U	U	U	S
070219	39534907504540[illegible]	395348	750654	GLOUCESTER CITY	GLOUCESTER C WD	GCWD 36	01/26/1946	Z	U	U	S
070220	39534907504514[illegible]	395349	750651	GLOUCESTER CITY	GLOUCESTER C WD	GCWD 40	06/17/1961	W	P	P	F
070221	39535507504[illegible]	395356	750738	GLOUCESTER CITY	US GEOL SURVEY	COAST GUARD 1	01/01/1966	O	U	U	S
070222	39535907504540[illegible]	395359	750654	GLOUCESTER CITY	GLOUCESTER C WD	GCWD 41	10/27/1965	W	P	P	S
070223	39434307500490[illegible]	394343	750049	GLOUCESTER TWP	BAUER, B W	1951	10/19/1951	W	H	H	S
070224	39442107500250[illegible]	394421	750025	GLOUCESTER TWP	MELZI, JOSEPH A	1952	09/19/1952	W	H	H	S
070225	39443007459580[illegible]	394430	745958	GLOUCESTER TWP	US ARMY		06/18/1954	W	P	P	S
070226	39450907459580[illegible]	394509	745958	GLOUCESTER TWP	US ARMY		01/01/1954	W	P	P	S
070227	39451207501450[illegible]	394512	750145	GLOUCESTER TWP	JOHNSON, WALTER	1954	11/12/1955	W	H	H	S
070228	39455607459350[illegible]	394556	745835	GLOUCESTER TWP	CAMDEN CO BD ED	VOC&TECH H S 1	09/08/1967	W	P	P	S
070229	39455807502100[illegible]	394558	750210	GLOUCESTER TWP	HOTHO, E G	1955	01/01/1955	W	H	H	S
070230	39460507500160[illegible]	394605	750016	GLOUCESTER TWP	MORRISEY,HOWARD	1956	10/11/1956	W	H	H	S
070231	39460607500160[illegible]	394606	750016	GLOUCESTER TWP	MORRISEY, F	1955	09/30/1955	W	H	H	S
070232	39460707500310[illegible]	394607	750031	GLOUCESTER TWP	GLOUCESTER TWP BD ED	BD OF EDUCATN	01/01/1960	W	H	H	S
070233	39461407500170[illegible]	394614	750017	GLOUCESTER TWP	POWELL		11/06/1951	W	H	H	S
070234	39461707502370[illegible]	394617	750237	GLOUCESTER TWP	BECICA, J	1949	01/01/1949	W	H	H	S
070235	39461807502350[illegible]	394618	750235	GLOUCESTER TWP	SANDBERG, H A	1952	01/01/1952	W	H	H	S
070236	39462007500320[illegible]	394620	750032	GLOUCESTER TWP	BENNETT, ROBERT	HOME WELL	/ /				S
070237	39462607500150[illegible]	394626	750015	GLOUCESTER TWP	MINARDI, A	1-1954	07/22/1954	W	H	H	S
070238	39464107459590[illegible]	394641	745959	GLOUCESTER TWP	BARATTA, P	1951	10/23/1951	W	H	H	S
070239	39465807503050[illegible]	394658	750305	GLOUCESTER TWP	HENDRICKS, P	1956	01/01/1956	W	H	H	S
070240	39470207503210[illegible]	394702	750321	GLOUCESTER TWP	LORING, [redacted]	1957	01/01/1957	W	H	H	S
070241	39471107504180[illegible]	394711	750418	GLOUCESTER TWP	CAMDEN [redacted]	LAKELAND FOUNT	/ /	W	T	T	S
070242	39471207502200[illegible]	394712	750220	GLOUCESTER TWP	SOCIETY DIVINE	SAVIOR	01/01/1951	W	H	H	S
070243	39471307504120[illegible]	394713	750412	GLOUCESTER TWP	CAMDEN COUNTY	LAKELAND 2	01/01/1925	W	T	T	S
070244	39471407504190[illegible]	394715	750419	GLOUCESTER TWP	CAMDEN COUNTY	LAKELAND 3	/ /	W	T	T	S
070245	39471607504200[illegible]	394717	750420	GLOUCESTER TWP	CAMDEN COUNTY	LAKELAND 1	01/01/1925	Z	T	U	S
070246	39471807504410[illegible]	394718	750341	GLOUCESTER TWP	GARDEN STATE WC	PEOPLES 1	01/01/1953	W	P	P	S
070247	39471907501460[illegible]	394719	750146	GLOUCESTER TWP	BENNETT, ROBERT	MONARCH BOILER	11/07/1968	W	N	N	S
070248	39473907502270[illegible]	394739	750227	GLOUCESTER TWP	GLOU TWP BD ED	LEWIS SCHOOL	01/01/1964	W	T	T	S
070249	39475407504340[illegible]	394754	750343	GLOUCESTER TWP	GARDEN STATE WC	BLACKWOD DIV 3	07/09/1956	W	P	P	S
070250	39475807504040[illegible]	394758	750404	GLOUCESTER TWP	GARDEN STATE WC	BLACKWOD DIV 7	08/10/1974	W	P	P	F
070251	39475907501580[illegible]	394759	750158	GLOUCESTER TWP	GARDEN STATE WC	TEST HOLE 1	11/05/1970	Z	U	U	S
070252	39475907501580[illegible]	394759	750158	GLOUCESTER TWP	GARDEN STATE WC	BLACKWOD DIV 6	03/29/1971	W	P	P	N
070253	39480607504260[illegible]	394806	750426	GLOUCESTER TWP	GARDEN STATE WC	BLACKWOD DIV 2	08/11/1948	W	P	P	S
070254	39480607504260[illegible]	394806	750426	GLOUCESTER TWP	GARDEN STATE WC	BLACKWOD DIV 5	01/06/1930	W	P	P	F
070255	39481507503560[illegible]	394815	750356	GLOUCESTER TWP	CARLSON,AMANDUS	1953	01/01/1953	W	H	H	S
070256	39482007504450[illegible]	394820	750445	GLOUCESTER TWP	GLOUCESTER MUA	TREAT PLANT	01/01/1971	W			S
070257	39482907503470[illegible]	394829	750347	GLOUCESTER TWP	SUN TEMP INDUST		09/20/1966	W	N	N	S
070258	39482[illegible]	394[illegible]	750429	GLOUCESTER TWP	CATHCART, WM D	1-1967	01/01/1967	W	H	H	S

SELECTED INFORMATION OF WELLS FROM THE GROUND WATER SITE INVENTORY DATABASE
CAMDEN COUNTY

USGS UNIQUE ID	SITE ID	LATITUDE	LONGITUDE	MUNICIPALITY	SITE OWNER	LOCAL IDENTIFIER	DATE COMPLETED	USE OF SITE	ORIG WATER USE	CURR WATER USE	LAT LON ACC
070259	[illegible]	[illegible]	[illegible]	GLOUCESTER TWP	JONES. ARTHUR		/ /	W	H	H	F
070260	[illegible]	[illegible]	[illegible]	GLOUCESTER TWP	LOMBARDI.WARNER	1955	01/01/1955	W	H	H	S
070261	[illegible]	[illegible]	[illegible]	GLOUCESTER TWP	BONNIE. MARY	1-1950	03/10/1950	W	H	H	S
070262	[illegible]	[illegible]	[illegible]	GLOUCESTER TWP	MANNING. ROBERT	1953	01/01/1953	W	H	H	S
070263	[illegible]	[illegible]	[illegible]	GLOUCESTER TWP	GERSWIN. EILEEN	1952	01/11/1952	W	H	H	F
070264	[illegible]	[illegible]	[illegible]	GLOUCESTER TWP	THEISS	1	12/12/1968	W	H	H	S
070265	[illegible]	[illegible]	[illegible]	GLOUCESTER TWP	BISHOP. JOHN	1-1967	10/16/1967	W	H	H	S
070266	[illegible]	[illegible]	[illegible]	GLOUCESTER TWP	EIKELS.JOSEPH J	1952	12/27/1952	W	H	H	F
070267	[illegible]	[illegible]	[illegible]	GLOUCESTER TWP	WARGO. JOHN	1949	01/01/1949	W	H	H	S
070268	[illegible]	[illegible]	[illegible]	GLOUCESTER TWP	STEZZI. J	1955	01/21/1955	W	H	H	S
070269	[illegible]	[illegible]	[illegible]	GLOUCESTER TWP	DOUGHERTY. W L	1949	01/01/1949	W	H	H	S
070270	[illegible]	[illegible]	[illegible]	GLOUCESTER TWP	BROWN. HOWARD	1955	01/08/1955	W	H	H	S
070271	[illegible]	[illegible]	[illegible]	GLOUCESTER TWP	MARSH. EDWARD	1952	10/30/1952	W	H	H	S
070272	[illegible]	[illegible]	[illegible]	GLOUCESTER TWP	NJ WATER CO	OTTERBROOK 34	01/26/1967	W	P	P	S
070273	[illegible]	[illegible]	[illegible]	GLOUCESTER TWP	NJ WATER CO	OTTERBROOK 29	01/22/1965	W	P	P	S
070274	[illegible]	[illegible]	[illegible]	GLOUCESTER TWP	NJ WATER CO	OTTERBROOK 39	04/10/1968	W	P	P	S
070275	[illegible]	[illegible]	[illegible]	BARRINGTON BORO	NJ WATER CO	HADDON 20	01/01/1958	W	P	P	F
070276	[illegible]	[illegible]	[illegible]	HADDON HGTS BORO	NJ WATER CO	HADDON HGTS 10	08/12/1930	Z	P	U	F
070277	[illegible]	[illegible]	[illegible]	HADDON HGTS BORO	NJ WATER CO	NJ WATER CO 3	01/01/1923	W	P	P	F
070278	[illegible]	[illegible]	[illegible]	HADDON HGTS BORO	NJ WATER CO	HADDON 15	01/01/1956	W	P	P	S
070279	[illegible]	[illegible]	[illegible]	HADDON HGTS BORO	NJ WATER CO	HADDON 30	03/02/1965	W	P	P	S
070280	[illegible]	[illegible]	[illegible]	HADDON HGTS BORO	NJ WATER CO	HADDON 12	01/01/1947	W	P	P	F
070281	[illegible]	[illegible]	[illegible]	HADDON HGTS BORO	NJ WATER CO	HADDON 14	08/12/1954	W	P	P	S
070282	[illegible]	[illegible]	[illegible]	HADDON HGTS BORO	NJ WATER CO	HADDON 11	01/01/1945	W	P	P	S
070283	[illegible]	[illegible]	[illegible]	HADDON HGTS BORO	NJ WATER CO	EGBERT	01/01/1962	O	U	U	S
070284	[illegible]	[illegible]	[illegible]	HADDON HGTS BORO	NJ WATER CO	EGGBERT 35	03/30/1967	W	P	P	F
070285	[illegible]	[illegible]	[illegible]	HADDON HGTS BORO	NJ WATER CO	EGGBERT 18	07/02/1958	W	P	P	S
070286	[illegible]	[illegible]	[illegible]	HADDON HGTS BORO	NJ WATER CO	EGGBERT 6	04/13/1926	W	P	P	S
070287	[illegible]	[illegible]	[illegible]	HADDON TWP	GREEN VALLEY FM	FARM 2	07/01/1965	W	I	I	S
070288	[illegible]	[illegible]	[illegible]	HADDON TWP	HADDON TWP W D	HTWD 3	06/25/1956	W	P	P	S
070289	[illegible]	[illegible]	[illegible]	HADDON TWP	HADDON TWP W D	HTWD 2	04/04/1952	W	P	P	S
070290	[illegible]	[illegible]	[illegible]	HADDON TWP	HADDON TWP W D	HTWD 1	02/12/1952	W	P	P	S
070291	[illegible]	[illegible]	[illegible]	HADDON TWP	HADDON TWP W D	HTWD 1-R	01/01/1968	W	P	P	S
070292	[illegible]	[illegible]	[illegible]	HADDON TWP	HADDON TWP W D	HTWD 4	08/03/1965	W	P	P	S
070293	[illegible]	[illegible]	[illegible]	HADDON TWP	HADDON TWP BD ED	HADDON TWP HB1	01/01/1966	W	I	I	S
070294	[illegible]	[illegible]	[illegible]	HADDON TWP	DY-DEE SERVICE	REPLACEMENT	01/01/1967	W	N	N	T
070295	[illegible]	[illegible]	75025	HADDON TWP	DY-DEE SERVICE	1	01/01/1924	W	N	N	
070296	[illegible]	[illegible]	[illegible]	HADDON TWP	MILGRAM THEATER	WESTMONT	/ /				F
070297	[illegible]	[illegible]	[illegible]	HADDONFIELD BORO	HADDONFIELD W D	HWD 4	04/30/1943	W	P	P	S
070298	[illegible]	[illegible]	[illegible]	HADDONFIELD BORO	HADDONFIELD W D	HWD 2	01/01/1956	W	P	P	S
070299	[illegible]	[illegible]	[illegible]	HADDONFIELD BORO	HADDONFIELD W D	LAYNE 2	05/04/1956	W	P	P	S
070300	[illegible]	[illegible]	[illegible]	HADDONFIELD BORO	HADDONFIELD W D	HWD LAYNE 1	02/17/1927	U	U	U	S
070301	[illegible]	[illegible]	[illegible]	HADDONFIELD BORO	HADDONFIELD W D	CREEK 3	01/01/1938				S

SELECTED INFORMATION D[illegible]WE[illegible] FROM THE GROUND WATER SITE INVENTORY DATABASE
CAMDEN COUNTY

USGS UNIQUE ID	SITE ID	LATITU	LONGTU	MUNICIPALITY	SITE OWNER	LOCAL IDENTIFIER	DATE COMPLETED	USE OF SITE	ORIG WATER USE	CURR WATER USE	LAT LON ACC
070302	39533[illegible]	395319	750140	HADDONFIELD BORO	HADDONFIELD W D	RULON	06/11/1956	W	P	P	F
070303	39540[illegible]	395404	750202	HADDONFIELD BORO	HADDONFIELD W D	TEST WELL 1965	01/21/1965	T	U	U	
070304	39540[illegible]	395404	750202	HADDONFIELD BORO	HADDONFIELD W D	LAKE ST WELL	06/01/1967	W	P	P	F
070305	39492[illegible]	394927	750024	LAUREL SPRINGS BORO	NJ WATER CO	LAUREL 1	01/01/1918	W	P	P	S
070306	39492[illegible]	394927	750025	LAUREL SPRINGS BORO	NJ WATER CO	LAUREL 4	01/01/1918	W	P	P	S
070307	39492[illegible]	394928	750021	LAUREL SPRINGS BORO	NJ WATER CO	LAUREL 8	01/01/1920	W	P	P	S
070308	39492[illegible]	394928	750021	LAUREL SPRINGS BORO	NJ WATER CO	LAUREL 10	01/01/1923	W	P	P	S
070309	39492[illegible]	394928	750023	LAUREL SPRINGS BORO	NJ WATER CO	LAUREL 6	01/01/1918	Z	P	U	S
070310	39492[illegible]	394928	750024	LAUREL SPRINGS BORO	NJ WATER CO	LAUREL 13	01/01/1954	W	P	P	S
070311	39492[illegible]	394928	750027	LAUREL SPRINGS BORO	NJ WATER CO	LAUREL 15	01/01/1964	W	P	P	S
070312	39480[illegible]	394805	745732	LINDENWOLD BORO	LINDENWOLD ANM	ANIMAL SHELT 1	01/01/1967	W	H	H	S
070313	39492[illegible]	394929	745208	LINDENWOLD BORO	PIPPET, J A	1954	01/01/1954	W	H	H	S
070314	39493[illegible]	394932	745847	LINDENWOLD BORO	LINDNWLD BD MUA	SEWAGE PLANT 1	11/11/1964	Z	H	U	S
070315	39513[illegible]	395134	750229	MAGNOLIA BORO.	NJ WATER CO	MAGNOLIA 16	01/01/1964	W	P	P	S
070316	39513[illegible]	395134	750230	MAGNOLIA BORO	NJ WATER CO	MAGNOLIA 33	03/10/1967	W	P	P	S
070317	39513[illegible]	395134	750231	MAGNOLIA BORO	OWENS CORNING	TEST 2	01/01/1964	W	N	N	S
070318	39513[illegible]	395135	750246	MAGNOLIA BORO	OWENS CORNING	CORNING 2	03/28/1956	W	N	N	S
070319	39562[illegible]	395627	750404	MRCHNTVILLE BORO	MCHVIL PNSK WCM	1R	05/04/1971	W	P	P	F
070320	39565[illegible]	395652	750307	MRCHNTVILLE BORO	MCHVIL PNSK WCM	WOODBINE 1	09/24/1963	W	P	P	F
070321	39565[illegible]	395658	750312	MRCHNTVILLE BORO	ORISTONE,RONALD	1958	06/08/1958	W	H	H	M
[illegible]	39535[illegible]	395359	750445	OAKLYN BORO	NJ WATER,[illegible]	OAKLYN TEST	10/02/1961	[illegible]	U	U	S
[illegible]	39560[illegible]	395608	750438	PENNSAUKEN TWP	STEVENS [illegible]VE	1	04/20/1956	W	H	H	M
[illegible]	39561[illegible]	395610	750512	PENNSAUKEN TWP	GORDON, [illegible]	1-1949	06/15/1949	W	C	C	M
[illegible]	39562[illegible]	395621	750405	PENNSAUKEN TWP	MCHVIL [illegible]	BROWNING RD 2	12/10/1959	Z	P	U	F
070326	39562[illegible]	395627	750404	PENNSAUKEN TWP	MCHVIL [illegible] WCM	BROWNING 1	12/10/1959	W	P	P	F
070327	39562[illegible]	395627	750404	PENNSAUKEN TWP	MCHVIL PNSK WCM	FROSTHOFFER T1	09/17/1963	Z	U	U	S
070328	39562[illegible]	395628	750406	PENNSAUKEN TWP	MCHVIL PNSK WCM	FROSTHOFFER T2	01/01/1963	Z	U	U	S
070329	39562[illegible]	395628	750406	PENNSAUKEN TWP	MCHVIL PNSK WCM	BROWNING 2A	05/28/1965	W	P	P	F
070330	39562[illegible]	395628	750406	PENNSAUKEN TWP	MCHVIL PNSK WCM	TEST 1956	04/16/1956	T	U	U	M
070331	39570[illegible]	395709	750342	PENNSAUKEN TWP	MILLER, LUDWIG	1956	12/08/1956	W	H	H	M
070332	39571[illegible]	395711	750220	PENNSAUKEN TWP	MCHVIL PNSK WCM	MARION 2	01/01/1963	W	P	P	F
070333	39571[illegible]	395713	750405	PENNSAUKEN TWP	MCHVIL PNSK WCM	AMON HGTS 2	01/01/1923	O	U	U	F
070334	39571[illegible]	395719	750225	PENNSAUKEN TWP	MCHVIL PNSK WCM	MARION T 1	[illegible]	Z	U	U	F
070335	39572[illegible]	395720	750225	PENNSAUKEN TWP	MCHVIL PNSK WCM	MARION 1	[illegible]	W	P	P	F
070336	39573[illegible]	395736	750130	PENNSAUKEN TWP	QUINT, A A.	1-1952	[illegible]	W	H	H	M
070337	39573[illegible]	395737	750426	PENNSAUKEN TWP	US GEOL SURVEY	PETTY ISLAND 2	01/01/[illegible]	T	U	U	S
070338	39573[illegible]	395737	750426	PENNSAUKEN TWP	US GEOL SURVEY	PETTY I EAST 3	01/01/[illegible]	T	U	U	S
070339	39574[illegible]	395743	750448	PENNSAUKEN TWP	PREDCO PANELS	1962 WELL	01/01/[illegible]	W	N	N	M
070340	39575[illegible]	395752	750411	PENNSAUKEN TWP	MCHVIL PNSK WCM	DELA GARDEN 1	04/12/[illegible]	Z	P	U	F
070341	39575[illegible]	395800	750417	PENNSAUKEN TWP	MCHVIL PNSK WCM	DELA GARDEN 2	06/28/[illegible]	W	P	P	S
070342	39575[illegible]	395756	750411	PENNSAUKEN TWP	MCHVIL PNSK WCM	DELA GARDEN 1A	04/18/[illegible]	W	P	P	S
070343	39575[illegible]	395757	750640	PENNSAUKEN TWP	US GEOL SURVEY	PETTY I WEST 1	01/01/[illegible]	T	U	U	S
070344	39575[illegible]	395758	750115	PENNSAUKEN TWP	MCHVIL PNSK WCM	PARK AVE REP 4	06/06/[illegible]	Z	P	U	F

Nearest well

SELECTED INFORMATION OF WELLS FROM THE GROUND WATER SITE INVENTORY DATABASE
CAMDEN COUNTY

USGS UNIQUE ID	SITE ID	LATITU	LONGTU	MUNICIPALITY	SITE OWNER	LOCAL IDENTIFIER	DATE COMPLETED	USE OF SITE	ORIG WATER USE	CURR WATER USE	LAT LON ACC
070388	395939075022901	395939	750229	PENNSAUKEN TWP	CAMDEN CITY W D	MORRIS 5	08/03/1932	Z	P	U	F
070389	395940075023001	395940	750230	PENNSAUKEN TWP	CAMDEN CITY W D	MORRIS 5NA	01/01/1960	W	P	P	S
070390	395943075021201	395944	750211	PENNSAUKEN TWP	CAMDEN CITY W D	MORRIS 1	01/01/1961	W	P	P	S
070391	394638074585001	394639	745750	PINE HILL BORO	L CAMDEN CO REG	OVERBROOK HS 1	06/14/1971	W	I	I	S
070392	394641074590901	394641	745909	PINE HILL BORO	PINE HILL MUA	PHMUA 1	09/27/1962	W	P	P	S
070393	394642074595301	394642	745953	PINE HILL BORO	KINGETT, LEROY	1949	11/24/1949	W	H	H	F
070394	394649074583301	394649	745833	PINE HILL BORO	PINE HILL MUA	PHMUA 2	08/24/1957	Z	P	U	S
070395	394649074583302	394649	745833	PINE HILL BORO	PINE HILL MUA	PHMUA 3	03/17/1960	W	P	P	S
070396	394650074592201	394650	745922	PINE HILL BORO	MCGILLEN, J	1954	08/19/1954	W	H	H	S
070397	394707074592101	394707	745921	PINE HILL BORO	WEBER, HARRY	1955	05/09/1955	W	H	H	S
070398	394726074591101	394726	745911	PINE HILL BORO	PINE HILL MUA	PHMUA 2-1972	12/12/1972	W	P	P	M
070399	394702074582401	394702	745824	PINE VALLEY BORO	PINE VALLEY G C	GOLF CLUB 1-49	01/01/1949	W	H	H	F
070400	394712074584101	394712	745841	PINE VALLEY BORO	FERGUSON, J R	1950	08/11/1950	W	H	H	S
070401	394722074581001	394722	745810	PINE VALLEY BORO	PINE VALLEY G C	GOLF CLUB	10/13/1955	W	P	P	S
070402	394728074583701	394728	745837	PINE VALLEY BORO	[illegible]RAITH, JOHN	1952	02/22/1952	W	H	H	S
070403	395055075041801	395055	750420	RUNNEMEDE BORO	NJ WATER CO	RUNNEMEDE 7	09/15/1926	U	U	U	S
070404	395056075041701	395055	750420	RUNNEMEDE BORO	NJ WATER CO	RUNNEMEDE 19	04/28/1958	W	P	P	S
070405	395115075032501	395115	750325	RUNNEMEDE BORO	RED COACH INC	HIRST	03/10/1964	W	H	H	S
070406	395128075035001	395128	750350	RUNNEMEDE BORO	EASTERN RECORD	EASTERN 1	08/08/1963	W	I	I	F
070407	395133075045501	395133	750455	RUNNEMEDE BORO	TRAP ROCK IND	3	12/20/1968	W	H	H	S
070408	395134075045401	395134	750454	RUNNEMEDE BORO	TRAP ROCK IND	2	08/21/1963	W	N	N	F
070409	395135075045601	395135	750456	RUNNEMEDE BORO	TRAP ROCK IND	1	/ /	U	U	U	S
070410	395041075005301	395041	750056	SOMERDALE BORO	NJ WATER CO	SOMERDALE 14	05/16/1956	W	P	P	S
070411	395237075012201	395238	750121	TAVISTOCK BORO	TAVISTOCK CLUB	COUNTRY CLUB 1	07/26/1968	W	I	I	S
070412	394922074563301	394922	745630	VOORHEES TWP	NJ WATER CO	ELM TREE 2	02/19/1963	O	U	U	S
070413	394922074563302	394922	745630	VOORHEES TWP	NJ WATER CO	ELM TREE 3	02/22/1963	O	U	U	S
070414	394922074563303	394922	745633	VOORHEES TWP	NJ WATER CO	ELM TREE 26	06/20/1960	W	P	P	S
070415	394954074553001	394954	745530	VOORHEES TWP	CAMDEN LIME CO	1	01/01/1955	W	N	N	S
070416	395015074552801	395015	745528	VOORHEES TWP	CAMDEN LIME CO	3	/ /	U	U	U	S
070417	395036074553601	395036	745536	VOORHEES TWP	MCCARTHY, JOHN	1955	01/01/1955	W	H	H	S
070418	395044074574901	395044	745749	VOORHEES TWP	HAINES BLOCK CO		02/24/1955	W	N	N	S
070419	395107074585401	395107	745854	VOORHEES TWP	DOBBS, R H	1949	01/01/1949	W	H	H	S
070420	395108074564801	395108	745648	VOORHEES TWP	MUSCHLET, H E	1955	01/01/1955	W	H	H	S
070421	395109074571501	395109	745715	VOORHEES TWP	RADIO CORP AMER	RCA	01/01/1955	W	H	H	S
070422	395124074595201	395124	745952	VOORHEES TWP	NJ WATER CO	ASHLAND 17	12/19/1957	W	P	P	F
070423	395128074595401	395128	745954	VOORHEES TWP	NJ WATER CO	ASHLAND TER 32	01/01/1966	W	P	P	S
070424	395128074595402	395128	745954	VOORHEES TWP	NJ WATER CO	ASHLAND TER 9	01/01/1926	Z	P	U	S
070425	395128074595403	395128	745954	VOORHEES TWP	NJ WATER CO	ASHLAND TER 9R	06/03/1966	W	P	P	S
070426	395129074590601	395129	745906	VOORHEES TWP	NJ WATER CO	VOORHEES 21	06/22/1959	W	P	P	S
070427	395135074554601	395135	745546	VOORHEES TWP	SCHOCH H & C	U.T 1	10/12/1951	W	H	H	S
070428	395148074561501	395148	745615	VOORHEES TWP	OWENS.FRANK	DECAU.T 1	09/20/1957	W	I	I	S
070429	394148074481001	394148	744810	WATERFORD TWP	ST OF NJ	MULICA 17S	06/25/1975	O	U	U	S
070430	394204074492101	394204	744921	WATERFORD TWP	STATE OF NJ	MULLICA 7D	06/23/1975	O	U	U	S

INFORMATION OF WELLS FROM THE GROUND WATER SITE INVENTORY DATABASE
CAMDEN COUNTY

	SITE ID	LATITU	LONGTU	MUNICIPALITY	SITE OWNER	LOCAL IDENTIFIER	DATE COMPLETED	USE OF SITE	ORIG WATER USE	CURR WATER USE	LAT LON ACC
[illegible]	395243075072401	395243	750724	BROOKLAWN BORO	BROOKLAWN B W D	BBWD 4(DW 1)	01/01/1967	W	P	P	S
[illegible]	395244075072703	395244	750727	BROOKLAWN BORO	BROOKLAWN B W D	BBWD 1	01/01/1927	Z	P	U	F
[illegible]	395244075072701	395244	750727	BROOKLAWN BORO	BROOKLAWN B W D	BBWD 2R	01/01/1956	W	P	P	F
[illegible]	395251075073201	395251	750732	BROOKLAWN BORO	BROOKLAWN B W D	BBWD 3	06/30/1961	W	P	P	F
[illegible]	394742074593101	394742	745931	CLEMENTON BORO	CLEMENTON W D	CWD 10	04/01/1978	W	P	P	F
[illegible]	394035074502401	394035	745024	WINSLOW TWP	DEMEGLIO, J	2	04/01/1964	W	I	I	T
070523	395152075053301	395152	750542	BELLMAWR BORO	BELLMAWR B W D	BBWD 5	12/01/1977	W	P	P	S
070524	394418074543601	394418	745436	BERLIN BORO	PARRILLO,JOSEPH	1	03/04/1966	W	I	I	T
070525	395326075014001	395326	750140	HADDONFIELD BORO	HADDONFIELD W D	HWD 8	05/07/1976	W	P	P	T
070526	394934074585201	394932	745847	LINDENWOLD BORO	LINDNWLD BO MUA	SEWAGE PL2	08/11/1972	W			T
070527	395550075053701	395550	750537	CAMDEN CITY	CAMDEN CITY W D	PARKSIDE 18	06/21/1976	W	P	P	S
070528	395835075030201	395835	750302	PENNSAUKEN TWP	[illegible]DEN CITY W D	PUCHACK 7	01/29/1975	W	P	U	F
070529	394832074591505	394832	745915	CLEMENTON BORO	[illegible]ENTON W D	CWD11	06/04/1978	W	P	P	F
070530	395755075012701	395755	750127	PENNSAUKEN TWP	[illegible]IL PNSK WCM	4R-A	07/30/1979	W	P	P	T
070531	395246075072901	395246	750729	BROOKLAWN BORO	[illegible]OKLAWN B W D	BBWD 5(DW 3)	02/15/1979	W	P	P	T
070532	394208074503301	394208	745033	WINSLOW TWP	PRESSWELL RECOR	PRESS REC 1	10/19/1978	W	H	H	T
070533	395932075023801	395932	750238	PENNSAUKEN TWP	CADILLAC PET FOODS	1	08/14/1982	W	N	U	S
070534	395553075020701	395553	750207	CHERRY HILL TWP	GARDEN STATE RA	2	/ /	W	C	C	F
070535	395857075034401	395857	750344	PENNSAUKEN TWP	CAMDEN CITY W D	TW-1-79	01/01/1979	T	U	U	T
070536	395905075033301	395905	750333	PENNSAUKEN TWP	CAMDEN CITY W D	TW-3-79	01/01/1979	T	U	U	T
070537	395909075032801	395909	750328	PENNSAUKEN TWP	CAMDEN CITY W D	TW-4-79	01/01/1979	T	U	U	T
070538	395914075032401	395914	750324	PENNSAUKEN TWP	CAMDEN CITY W D	TW-5-79	01/01/1979	T	U	U	T
070539	395902075032501	395902	750325	PENNSAUKEN TWP	CAMDEN CITY W D	TW-6-79	01/01/1979	T	U	U	T
070540	395858075032501	395858	750325	PENNSAUKEN TWP	CAMDEN CITY W D	TW-7-79	01/01/1979	T	U	U	T
070541	395611075054601	395611	750546	CAMDEN CITY	CAMDEN CITY W D	TW-8-79	01/01/1979	T	U	U	T
070542	394618074541303	394618	745413	WATERFORD TWP	WINSLOW W C	1-TEST	07/13/1961	Z	U	U	S
070543	395519075023601	395519	750236	CHERRY HILL TWP	LATIN CABINO	1-1960	/ /	W	P	P	S
070544	395253075073701	395253	750737	BROOKLAWN BORO	BROOKLAWN B W D	UNKNOWN	/ /				S
070545	395830075033401	395900	750325	PENNSAUKEN TWP	CAMDEN CITY W D	MORRIS 11	08/01/1979	W	P	P	F
070546	394928075002501	394928	750025	LAUREL SPRINGS BORO	NJ WATER CO	LAUREL 14	05/28/1956	W	P	P	F
070547	395731075045801	395731	750458	CAMDEN CITY	NJ WATER CO	54	09/30/1982	W	P	P	F
070548	395802075061101	395802	750611	PENNSAUKEN TWP	BRENAMAN, JE	1	09/28/1982	W	H	H	S
070549	395737075062603	395737	750626	PENNSAUKEN TWP	US GEOL SURVEY	PETTY IS 3	06/29/1983	O	U	U	S
070550	395713075054001	395713	750540	CAMDEN CITY	CAMDEN CITY W D	TEST 6-1954	02/16/1954	T	U	U	T
070551	395713075023301	395713	750233	PENNSAUKEN TWP	MCHVIL PNSK WCM	NO- 6-1957	08/21/1957	W	P	P	T
070552	395713075042001	395713	750420	CAMDEN CITY	PARKS DAIRIES	WELL 3-58	01/23/1958	W	N	N	T
070553	395313075034002	395313	750340	AUDUBON BORO	VALLEE PETROLEU	MONITOR 2	09/01/1978	O	U	U	T
070554	395313075031301	395313	750313	AUDUBON BORO	VALLEE PETROLEU	MONITOR 1	09/01/1978	O	U	U	T
070555	395713075051301	395850	750230	CAMDEN CITY	PENLER CO	1-1968	09/14/1968	W	N	N	S
070556	395807075023301	395807	750233	PENNSAUKEN TWP	H H INDUSTRIES	1-1959	09/16/1959	Z	N	U	T
070557	395607075055301	395607	750553	CAMDEN CITY	CAMDEN CO PARKS	FARNHAM 1	08/28/1950	W	R	R	T
070558	395540075052701	395540	750527	CAMDEN CITY	CAMDEN CITY W D	NO-8-EUCLID	12/10/1975	T	U	U	T
070559	395833075020701	395815	750150	PENNSAUKEN TWP	MEADOW BK SWIM	SWIM 1	07/12/1963	W	R	R	S

SELECTED INFORMATION OF WELLS FROM THE GROUND WATER SITE INVENTORY DATABASE
CAMDEN COUNTY

GB IQUE	SITE ID	LATITU	LONGTU	MUNICIPALITY	SITE OWNER	LOCAL IDENTIFIER	DATE COMPLETED	USE OF SITE	ORIG WATER USE	CURR WATER USE	LA
70560	395652075030202	395652	750307	MRCHNTVILLE BORO	MCHVIL PNSK WCM	WOODBINE 2	07/06/1979	W	P	P	F
70561	395709075041501	395709	750615	CAMDEN CITY	NJ DEP.	HARRISON 1	07/01/1980	O	U	U	F
70562	395709075041502	395709	750615	CAMDEN CITY	NJ DEP	HARRISON 2	07/01/1980	O	U	U	F
70563	395712075041201	395712	750612	CAMDEN CITY	NJ DEP	HARRISON 3	07/01/1980	O	U	U	F
70564	395712075041202	395712	750612	CAMDEN CITY	NJ DEP	HARRISON 4	07/01/1980	O	U	U	F
70565	395716075040802	395716	750608	CAMDEN CITY	NJ DEP	HARRISON 5	07/01/1980	O	U	U	F
70566	395718075040502	395718	750605	CAMDEN CITY	NJ DEP	HARRISON 6	07/01/1980	O	U	U	F
70567	395718075040501	395718	750605	CAMDEN CITY	NJ DEP	HARRISON 7	07/01/1980	O	U	U	F
70568	395921075021001	395921	750210	PENNSAUKEN TWP	PENNSAUKEN TWP	LANDFILL 1	10/01/1979	O	U	U	S
70569	395916075020101	395916	750201	PENNSAUKEN TWP	PENNSAUKEN TWP	LANDFILL 2	10/01/1979	O	U	U	S
70570	395903075021701	395903	750217	PENNSAUKEN TWP	PENNSAUKEN TWP	LANDFILL 3	10/01/1979	O	U	U	S
70571	395912075024801	395912	750248	PENNSAUKEN TWP	PENNSAUKEN TWP	LANDFILL 4	10/01/1979	O	U	U	S
70572	394051074574001	394100	745035	WINSLOW TWP	ELMTOWNE VIL AS	1	10/08/1978	W	P	P	T
70573	395355075073802	395355	750738	GLOUCESTER CITY	US GEOL SURVEY	COAST GUARD 2	01/01/1966	O	U	U	F
70574	395355075073903	395355	750738	GLOUCESTER CITY	US GEOL SURVEY	COAST GUARD 3	01/01/1966	O	U	U	F
70575	395806075004601	395704	750358	PENNSAUKEN TWP	BELL SUPPLIES	1	04/12/1954	W	N	N	N
70576	394159074571201	394159	745712	WINSLOW TWP	WINSLOW W C	TW 3	03/29/1974	T	U	U	T
70577	394205074571801	394205	745718	WINSLOW TWP	WINSLOW W C	TW 4	03/29/1974	T	U	U	
70578	394156074570002	394156	745700	WINSLOW TWP	WINSLOW W C	TW 6S	03/29/1974	T	U	U	T
70579	394156074570001	394156	745700	WINSLOW TWP	WINSLOW W C	TW 6M	03/29/1974	T	U	U	T
70580	394156074570003	394156	745700	WINSLOW TWP	WINSLOW W C	TW 6D	03/29/1974	W	U	U	T
70581	394200074571402	394200	745714	WINSLOW TWP	WINSLOW W C	TW 7M	03/29/1974	T	U	U	T
70582	394200074571401	394200	745714	WINSLOW TWP	WINSLOW W C	TW 7D	03/29/1974	T	U	U	T
70583	394201074570603	394201	745706	WINSLOW TWP	WINSLOW W C	TW 5S	03/29/1974	T	U	U	T
70584	394201074570602	394201	745706	WINSLOW TWP	WINSLOW W C	TW 5M	03/29/1974	T	U	U	T
70585	394201074570601	394201	745706	WINSLOW TWP	WINSLOW W C	TW 5D	03/29/1974	T	U	U	T
70586	395914075032402	395914	750324	PENNSAUKEN TWP	CAMDEN CITY W D	MORRIS 12	01/07/1981	W	P	P	T
70587	395905075033302	395905	750333	PENNSAUKEN TWP	CAMDEN CITY W D	MORRIS 13	06/04/1980	W	P	P	T
70596	395247075033701	395247	750337	BROOKLAWN BORO	BROOKLAWN B W D	BBWD 4	12/23/1982	W	P	P	T
70597	395718075051302	395718	750513	CAMDEN CITY	NJ WATER CO	S5	08/12/1983	W	P	P	T
70598	394048074513501	394048	745135	WINSLOW TWP	STATE OF NJ	WINSLOW 1	10/17/1983	T	U	U	T
70599	394812075015101	394812	750151	GLOUCESTER TWP	GARDEN STATE WC	GSWC 9	09/13/1983	W	P	P	T
70600	394658075042101	394658	750421	GLOUCESTER TWP	LAKELAND HOSPITAL	LAKELAND H 4	03/24/1975	W	T	T	T
70601	395212075060901	395212	750609	BELLMAWR BORO	BELLMAWR B W D	BBWD 6	07/09/1982	W	P	P	P
70602	395917075012501	395917	750125	PENNSAUKEN TWP	MCHVIL PNSK WCM	NATIONAL HWY 2	09/01/1982	W	P	P	P
70603	394414075011601	394414	750016	GLOUCESTER TWP	GARDEN STATE WC	GSWC 8	04/18/1980	W	P	P	P

REFERENCE NO. 13

CENTURY LABORATORIES, INC.
P.O. Box 248/1501 Grandview Avenue/MidAtlantic Park, Thorofare, NJ 08086
Phone: (609) 848-3939 NJ 800-222-0589

ANALYSIS REPORT
NO. B6197

CERTIFICATE OF ANALYSIS

Sweeper Discharge

CLIENT
Crescent Lighting
P.O. Box 99
Barrington, N.J.

LOG NUMBER	SAMPLE IDENTIFICATION
B6197	120E Gloucester Pike/Liquid from Street Sweeper
	(5/7/85) (P.O.No. 13934)

SAMPLE RECEIVED 5/8/85 ANALYSIS COMPLETED 5/23/85
COLLECTED BY

RESULTS (mg/L unless specified)

TEST PARAMETER				TEST PARAMETER	B6197		
BOD_5*				Chlorine Demand			
COD				Chlorine Residual			
TOC				Chloride (CL)			
Dissolved Oxygen				Silica			
Suspended Solids				Petroleum HYC.	<0.5		
Total Solids				Hardness (as $CaCO_3$)			
Dissolved Solids							
Sett. Solids (ml/L)							
pH				Beryllium	<0.01		
Phenols				Aluminum			
Cyanide (Total)				Antimony	0.41		
Fluoride				Arsenic	<0.002		
Cyanide (Free)				Barium	<0.1		
Surfactants (mg/L LAS)				Boron			
Oil & Grease (Freon)				Cadmium	0.03		
				Calcium (Ca)			
Nitrogen (KJD as N)				Chromium (Total)	0.05		
Nitrogen (Ammonia as N)				Chromium (Hexa)			
Nitrogen (Organic as N)				Copper	0.11		
Nitrite (N)				Iron			
Nitrate (N)				Lead	0.16		
Phosphate (P) Total				Magnesium (Mg)			
Phosphate (P) - Ortho				Manganese			
Sulfate (SO_4)				Mercury	0.0002		
Sulfite (SO_3)				Nickel	0.29		
Sulfide				Potassium			
Color				Selenium	<0.005		
Turbidity (NTU)				Silver	<0.01		
Conductivity (Micromohs)				Sodium			
Alk (Total) as $CaCO_3$				Tin			
				Titanium			
Fecal Coliform				Zinc	3.1		
Total Coliform				Thallium	<0.1		

* A minimum of 5 sample dilutions were used for this determination.
** Non-detectable, below the limit of detection.

LAB COMMENT:

E3

Richard W. Zynel

LAB CERTIFICATION NO: 08153
N.J. DEPARTMENT OF HEALTH

REFERENCE NO. 14

R.I. Analytical Laboratories, Inc.

SPECIALIZING IN ENVIRONMENTAL ANALYSIS

231 ELM STREET
WARWICK, R.I. 02886

PHONE (401) 467-2452

CERTIFICATE OF ANALYSIS

AET/Dolce, Spirito & Associates
7 Belver Avenue
No. Kingstown, RI 02852
Attn: Mr. John Grace

DATE RECEIVED 5/09/85
DATE REPORTED 5/31/85
PURCHASE ORDER NO
RIAL INV NO E2056

One (1) soil sample from Crescent Light #7, sampled 5/08/85

Subject sample has been analyzed by our laboratory with the following results:

PARAMETER	RESULTS
Characteristic of E.P. Toxicity:	
Arsenic	<0.01 mg/l
Barium	<0.5 "
Cadmium	<0.0005 "
Chromium	<0.05 "
Lead	0.07 "
Mercury	0.0020 "
Selenium	<0.01 "
Silver	<0.01 "

Methodology: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, U.S. EPA, SW-846, July 1982, 2nd ed.

If you have any questions regarding this work or if we may be of further assistance, please contact us.

E4

APPROVED BY

Anthony E. Perrotti

REFERENCE NO. 15

Alternative Ways Inc. - ENVIRONMENTAL DIVISION

Wisdom to Finding Alternatives.

CERTIFICATE OF ANALYSIS

CLIENT: Cresent Lighting

PAGE: 1

PROJECT #: 85-2265

FACILITY: Cresent Lighting

DATE: 4/26/85

BULK SAMPLE #	LOCATION	SAMPLE APPEARANCE	TYPE OF ASBESTOS	%ASBESTOS	OTHER FIBROUS MATERIAL
B- 1	Assembly Department Compressed Paper Pipe Ins.	Fibrous/Heterogeneous Tan, Gray	CHRYSOTILE	2- 5%	CELLULOSE
B- 2	Assembly Department Elbow A/W Compressed Paper Ins.	Fibrous, Homogeneous Gray, Tan	CHRYSOTILE AMOSITE	20-25% 25-30%	NONE DETECTED
B- 3	Trailer Parking Lot Duct Insulation	Fibrous, Homogeneous Orange	NO ASBESTOS DETECTED		FIBROUS GLASS
B- 4	Shipping Department Compressed Paper Ins	Fibrous/Heterogeneous Tan, Gray	CHRYSOTILE	2- 5%	CELLULOSE
B- 5	Shipping Department Elbow A/W Compressed Pipe Ins.	Fibrous/Heterogeneous Gray, Tan	CHRYSOTILE AMOSITE	20-25% 10-15%	CELLULOSE
B- 6	Back Dumpster Soil Sample	Fibrous, Homogeneous Black	NO ASBESTOS DETECTED		CELLULOSE Hair

NIOSH PAT #0846-001 EPA Quality Assurance Program #2110

300 WHITE HORSE PIKE
HADDON HEIGHTS, N.J.
(800) 547-010
(609) 547-0
N.

REFERENCE NO. 16

GEOLOGY AND GROUND-WATER RESOURCES OF CAMDEN COUNTY, NEW JERSEY

By George M. Farlekas, Bronius Nemickas, and Harold E. Gill

U.S. GEOLOGICAL SURVEY
Water-Resources Investigations 76–76

Prepared in cooperation with
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL
PROTECTION, DIVISION OF WATER RESOURCES

June 1976

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GEOGRAPHY

TOPOGRAPHY AND DRAINAGE

Camden County lies entirely within the Atlantic Coastal Plain physiographic province, which extends from Massachusetts to Florida. The county is characterized as a low lying, gently rolling plain that ranges in altitude from sea level to about 220 feet. The maximum altitude of about 220 feet is located in the southeastern part of Voorhees Township.

A generalized topographic map of Camden County outlining the major drainage basins is shown in figure 3. In the northeastern part of the county the major streams, the Rancocas, Pennsauken, Newton, and Big Timber Creeks and the Cooper River, flow northeast and north into the Delaware River. In the southeastern part of the county the Mullica and Great Egg Harbor Rivers flow southeast towards the Atlantic Ocean.

Topographic highs in the central part of the county form the drainage divides between the basins. Topographic lows are in the southeastern part of the county and in the northern part of the county along the Delaware River and along streams flowing into the Delaware River.

CLIMATE

The climate of Camden County is continental, generally moderate, with mild winters, warm summers, and generally evenly distributed rainfall. The prevailing direction of air movement is from west to east. During the summer months the prevailing wind direction is from the southwest.

The average annual temperature of the Philadelphia Weather Bureau station for the period 1931-60 was 53.3°F (degrees Fahrenheit). Normal daily maximum and minimum are 40.3°F and 24.3°F for January, and 85.9°F and 65.2°F for July.

Average annual precipitation at the Philadelphia Weather Bureau station for 1931-60 was 42.48 inches. Precipitation is generally distributed evenly throughout the year, with the summer precipitation characterized by localized thundershowers. The winter precipitation is usually more widespread and less intense. Precipitation data for the same

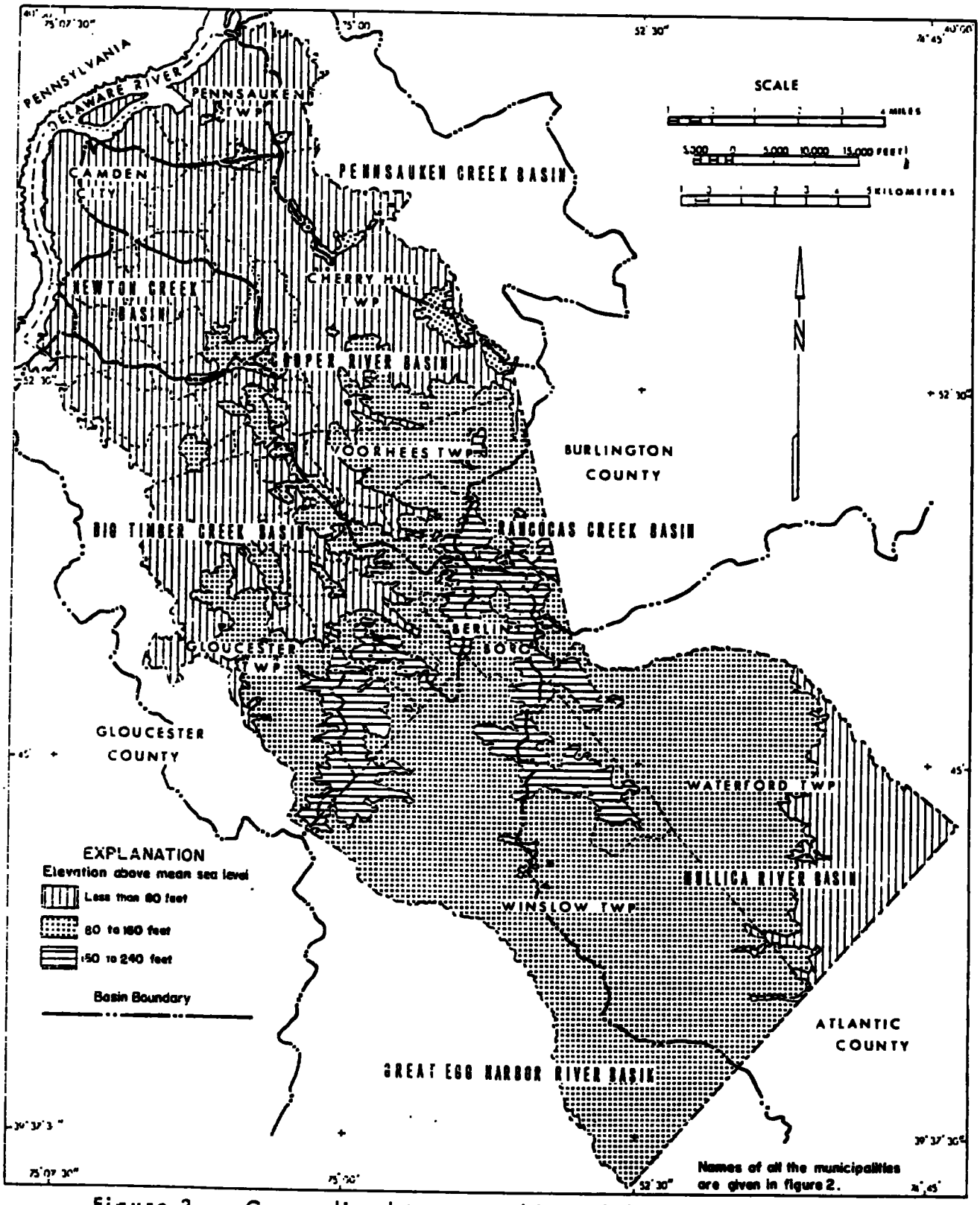


Figure 3. — Generalized topographic and drainage basin map of Camden County.

period indicate that the average of the wettest month of each year is 4.63 inches, while the average of the driest month of each year is 2.78 inches.

POPULATION AND ECONOMY

Camden County had a population of 456,291 in 1970, 392,035 in 1960, and 300,743 in 1950 (U. S. Bureau of Census). The increase from 1960 to 1970 was 16.4 percent and the increase from 1950 to 1960 was more than 30 percent. The most densely populated area is in the northern part of the county. In 1960 the municipalities north of Gloucester Township, Somerdale Borough, and Voorhees Township contained 82 percent of the total population, whereas the land area is only 31 percent. In 1970 the same municipalities contained 77 percent of the county's total population indicating a shift in population toward the southeast.

Camden County is in the Philadelphia metropolitan area and many of the county's residents work in the city or nearby counties. A large work force is employed by manufacturing companies located along the western edge of the county in the area near the Delaware River. The cities of Camden and Gloucester, as well as Pennsauken Township, have much of the manufacturing of the county, although a number of new manufacturing centers are being developed east of the New Jersey Turnpike. Three municipalities, Waterford and Winslow Townships and Chesilhurst Borough, have the largest proportion of land in the county used for agriculture. The percentage of land area used for farms in Camden County has been decreasing in recent years. The U. S. Department of Commerce, Bureau of Census reports indicate that the land area used for farms in Camden County was 8.6 percent in 1969, 10.2 percent in 1964, and 13.7 percent in 1959.

GEOLOGY

STRATIGRAPHY AND STRUCTURE

All exposed geologic units in Camden County are sedimentary and for the most part unconsolidated. They are part of the Atlantic Coastal Plain and range in age from Early Cretaceous to Quaternary. Figure 4 is a geologic map of Camden County delineating the outcrop area of the Cretaceous and Tertiary age sediments. Figures 5 and 6 show two geologic

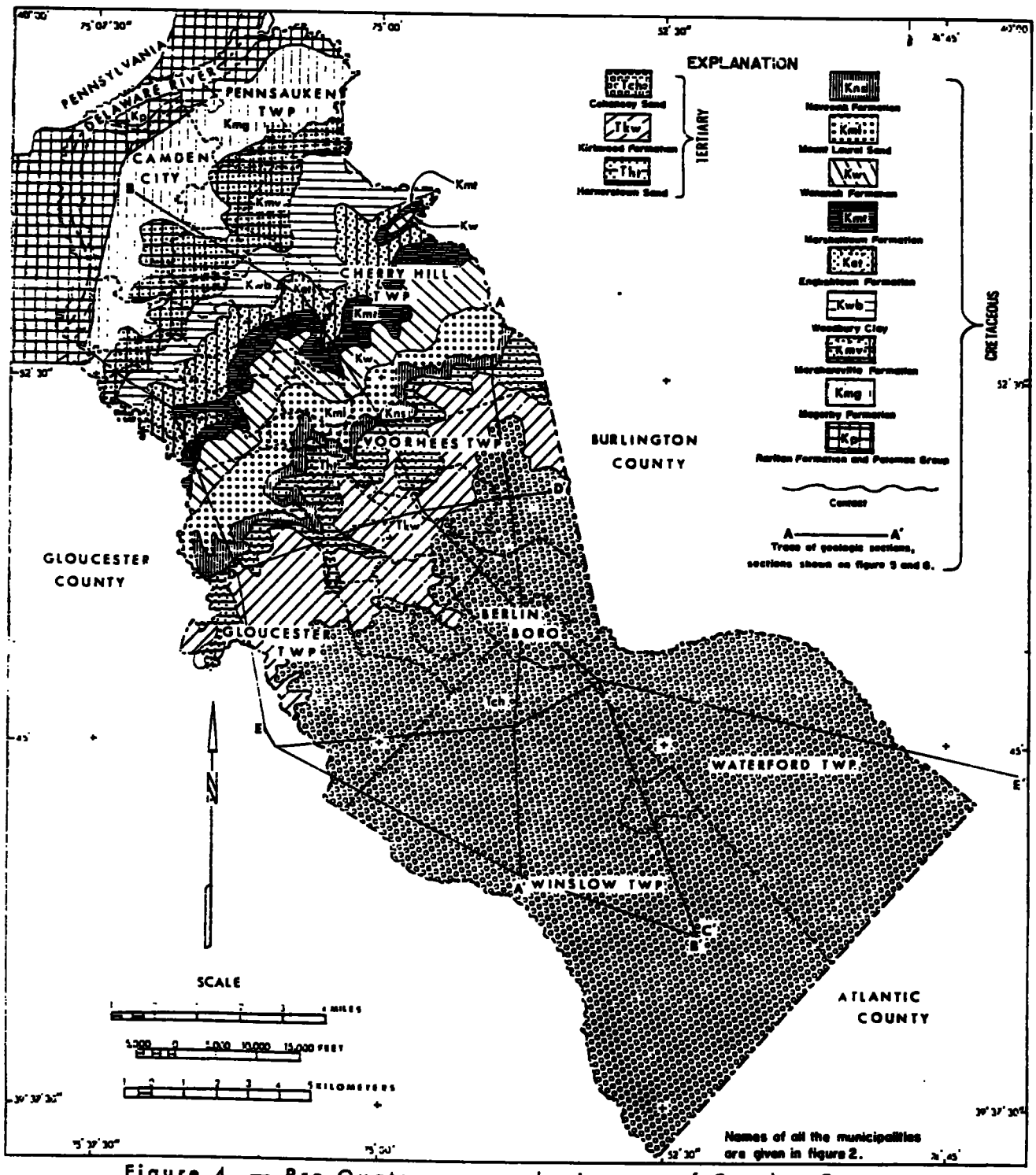


Figure 4. — Pre-Quaternary geologic map of Camden County.

Cretaceous and Tertiary sediments [illegible] with the oldest sediments cropping out at the Delaware River. In general, the older the sediments are, the greater the dip. The Quaternary formations are essentially flat-lying beds that overlie the Cretaceous and Tertiary sediments.

Underlying the sediments of the Coastal Plain in Camden County are crystalline rocks of pre-Cretaceous age. The surface of the crystalline rocks slopes towards the southeast. The altitude of the crystalline rock surface is about 40 feet below mean sea level at the Delaware River in the vicinity of the Benjamin Franklin Bridge and about 2,800 feet below mean sea level at the Camden-Atlantic County line.

The formations present in Camden County and their water-bearing properties are described in table 2. Also given is the general lithology and range in thickness of the formations.

GEOLOGIC HISTORY

During the Precambrian a great thickness of sediments was deposited in the area. The sediments included sands, silts, clays, and carbonates. The sediments were buried by additional sediments, metamorphosed, and subsequently uplifted during Paleozoic time. Part of the sediments were reconstituted into the metamorphic rocks known as the Wissahickon Formation. In the Camden County area a period of erosion occurred in the Paleozoic Era and continued into the Mesozoic Era, extending through Triassic and Jurassic time. The next sequence of sediments found are the Cretaceous units above the metamorphic rocks. During Cretaceous time sands, clays, and silts were deposited in a deltaic complex somewhat similar to modern deltas. The streams supplying sediment to the deltaic complex flowed from the west-northwest to the east-southeast. They provided the fluvial sediments that make up the Potomac Group and the Raritan and Magothy Formations. In Late Cretaceous time marine seas inundated the area. The marine invasions were cyclic in nature rather than continuous, and periods of complete withdrawal of the sea occurred. During Late Cretaceous time deposits in the Camden area were mainly of deltaic, beach, and marine origin.

The marine environment persisted into Tertiary time, but the marine inundations were not as extensive as those in the Cretaceous. Early Tertiary deposits (Paleocene to Middle Eocene) are marine in origin; whereas, middle and late Tertiary

deposits (Miocene and Pliocene) are either beach or deltaic deposits.

Sands and gravels of fluvial origin were deposited during early Pleistocene time of the Quaternary Period in extensive areas of Camden County. These deposits, known as the Bridgeton and Pennsauken Formations, may be the result of several early glacial or interglacial stages. In middle Pleistocene time sea level rose during interglacial stage. This resulted in a marine invasion of the area along the Delaware River in Camden. Clays and silts were deposited in the low-lying areas while fluvial material such as sands and gravels were deposited in the higher areas.

As the Wisconsin ice sheet advanced into the northern parts of Pennsylvania and New Jersey, sea level declined and the sea withdrew from the Camden area. Glacial meltwaters deposited sands, silts, and clays. In addition, eolian materials were deposited. Sea level rose to its present level with the withdrawal of the Wisconsin glacier. Recent measurements of sea level suggest that it is still rising.

GROUND-WATER QUALITY

Ground water contains dissolved mineral matter as the result of leaching of soluble material, primarily from the soils, sediments, or rocks through which the water moves. Thus, the natural chemical characteristics of ground water are a function of time, pressure, temperature, composition, and solubility of the minerals with which the water is in contact. Consequently, the quality of ground water may very greatly from one place to another and from one aquifer to another. Superimposed on the natural chemical characteristics of ground water is deterioration of the quality of water caused by human activities, such as the utilization of unlined industrial-retention ponds, waste-disposal wells, and improperly located or constructed sanitary landfills and septic tanks.

Pumping also can have an effect on the local quality of ground water. Changes in the potentiometric surface caused by pumping may change the direction of movement of water or greatly accelerate the movement. Thus, ground water of poor quality may move into centers of pumping. Salt water also may move from adjacent aquifers or from tidal streams into the pumped aquifer.

Water-quality standards vary widely depending on the

intended use of the water. A particular industry may have requirements for water within a narrow range of a minor constituent. If the concentration is beyond this range the water may not be suitable for the particular use without treatment. The same water, however, may be acceptable for public-water supply. The Potable Water Standards of the New Jersey Department of Environmental Protection (1970) for some chemical constituents are as follows:

Chemical constituents	Maximum concentrations (mg/l)
Chloride (Cl)	250
Fluoride (F)	1.5
Hardness (as $CaCO_3$)	150
Iron (Fe)	.3
Manganese (Mn)	.05
Nitrate (NO_3-N)	30
Sodium (Na)	50
Sulfate (SO_4)	250
Dissolved solids	500

The source and significance of dissolved-mineral constituents and physical properties of ground water in Camden County are given in table 3.

Regional water-quality studies have been made for several aquifers in Camden County and vicinity. The aquifers are 1) Potomac-Raritan-Magothy aquifer system (Langmuir, 1969a and 1969b, and Gill and Farlekas, written commun., 1969); 2) the Englishtown aquifer (Seaber, 1965); and 3) the Cohansey Sand (Rhodehamel, 1966). Water-quality data for the neighboring counties are given in ground-water reports for Burlington (Rush, 1962 and 1968), Gloucester (Hardt and Hilton, 1969), and Atlantic Counties (Clark and others, 1968). The quality of water data for Camden County are given in table 4. The quality of water data for each aquifer is discussed under the appropriate sections of the individual formations.

GEOLOGIC FORMATIONS AND THEIR HYDROLOGIC CHARACTERISTICS

PRE-CRETACEOUS CRYSTALLINE ROCKS

Geology

Crystalline rocks of pre-Cretaceous age underlie the Coastal Plain sediments in Camden County. The crystalline rocks at or near the surface near Camden are part of the Wissahickon Formation. Much of the data available on the lithology and age of the rocks are from areas where the rocks are at or near the surface. Information about these rocks at depth is from drillers' logs and seismic studies.

The Wissahickon Formation is a medium to coarse-grained foliated crystalline rock that varies in composition and texture from schist to gneiss. The lithology of the formation varies greatly in both vertical and horizontal directions. The formation was probably a sedimentary series of sandstone, siltstone, and shale that have been deformed and re-crystallized by metamorphism.

The outcrop area of the Wissahickon Formation near the project area is in Pennsylvania a few miles west of the Delaware River. The formation is near the surface in the Camden City area near the Delaware River. The depth to the Wissahickon Formation at the Delaware River in the vicinity of the Benjamin Franklin Bridge is about 60 feet. The configuration of the crystalline rocks is shown in figure 7.

Hydrology

Few wells have been drilled for water supply in the crystalline rocks below the Coastal Plain of New Jersey. Two wells were drilled 600 feet into the Wissahickon Formation in Burlington County near the Delaware River. Neither well produced sufficient water to be useful to their owners. The data from these and other wells drilled into the crystalline rocks indicate that development of these rocks as a source of a large ground-water supply is unlikely.

Although the crystalline rocks do not produce a large quantity of water, they are hydrologically important. The basement rocks form a basal confining unit for the overlying unconsolidated aquifers. In addition, the configuration of the bedrock surface is hydrologically important. During Cretaceous and pre-Cretaceous time streams incised major river channels in the bedrock surface. These west to east-trending channels are filled with highly permeable Coastal Plain sediments (Gill and Farlekas, written commun., 1969).

MESOZOIC ERATHEM

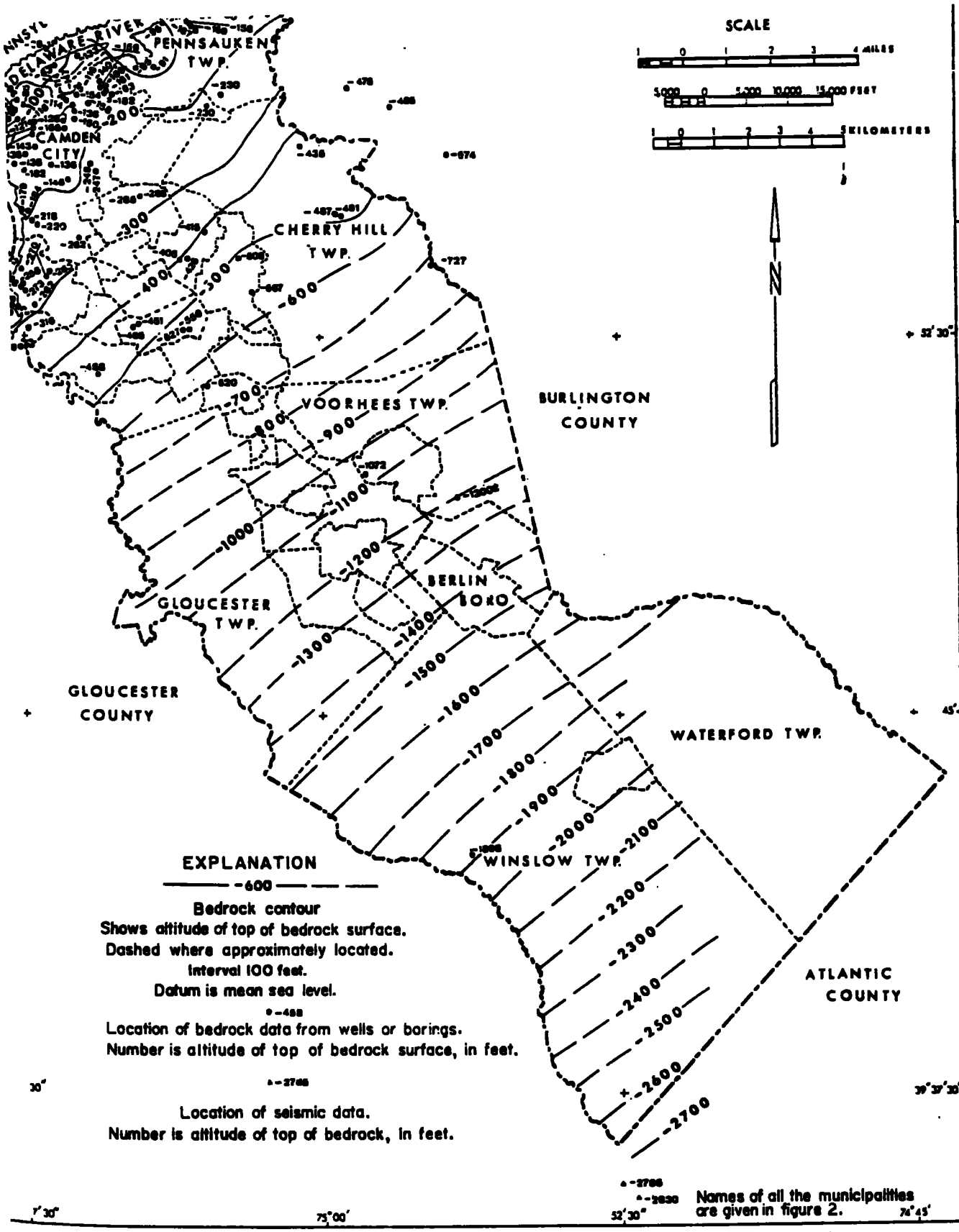


Figure 7. — Configuration of the bedrock surface beneath the Coastal Plain in Camden County.

Cretaceous System

Potomac Group and the Raritan and Magothy Formations

Regional Setting and Stratigraphic Framework

The Potomac Group and the Raritan and Magothy Formations are fluvial-marginal marine sediments of Early to Late Cretaceous age and overlie the pre-Cretaceous crystalline rocks. These sediments make up an extensive part of the Coastal Plain sediments in New Jersey and in the adjacent states. Major structures which contain the greatest thickness of sediments are the Salisbury embayment (Richards, 1945) in Delaware and the Raritan embayment in the vicinity of Raritan Bay and eastern Long Island. The area between these two embayments, which includes Camden County, contains smaller arches and troughs. The outcrop area of the Potomac Group and Raritan and Magothy Formations in Camden County (21 square miles in area) is in the northwestern part of the county near the Delaware River. The units are extensively overlain by permeable Pleistocene deposits in the outcrop area.

The Potomac Group and the Raritan and Magothy Formations form a wedge-shaped body that thickens in a downdip direction and is underlain by the crystalline basement. The configuration of the crystalline rocks is shown in figure 7. The upper limit of the wedge-shaped body is the contact between the Merchantville Formation and the top of the Magothy Formation (fig. 8). The difference between the basement and the top of the Magothy is the total thickness of Potomac Group and the Raritan and Magothy Formations (fig. 9).

In Camden County the thickness of the Potomac Group and Raritan and Magothy Formations ranges from approximately 260 feet at the Collingswood well 7 (CO 7), located near the outcrop area, to approximately 1,210 feet at the New Brooklyn Park test well (WI 27). This is shown on the thickness map in figure 9. The distance between the two wells is 13 miles.

Correlation of part of the Cretaceous stratigraphic section in northern New Jersey and Maryland as determined by Wolfe and Pakiser (1971) is given below.

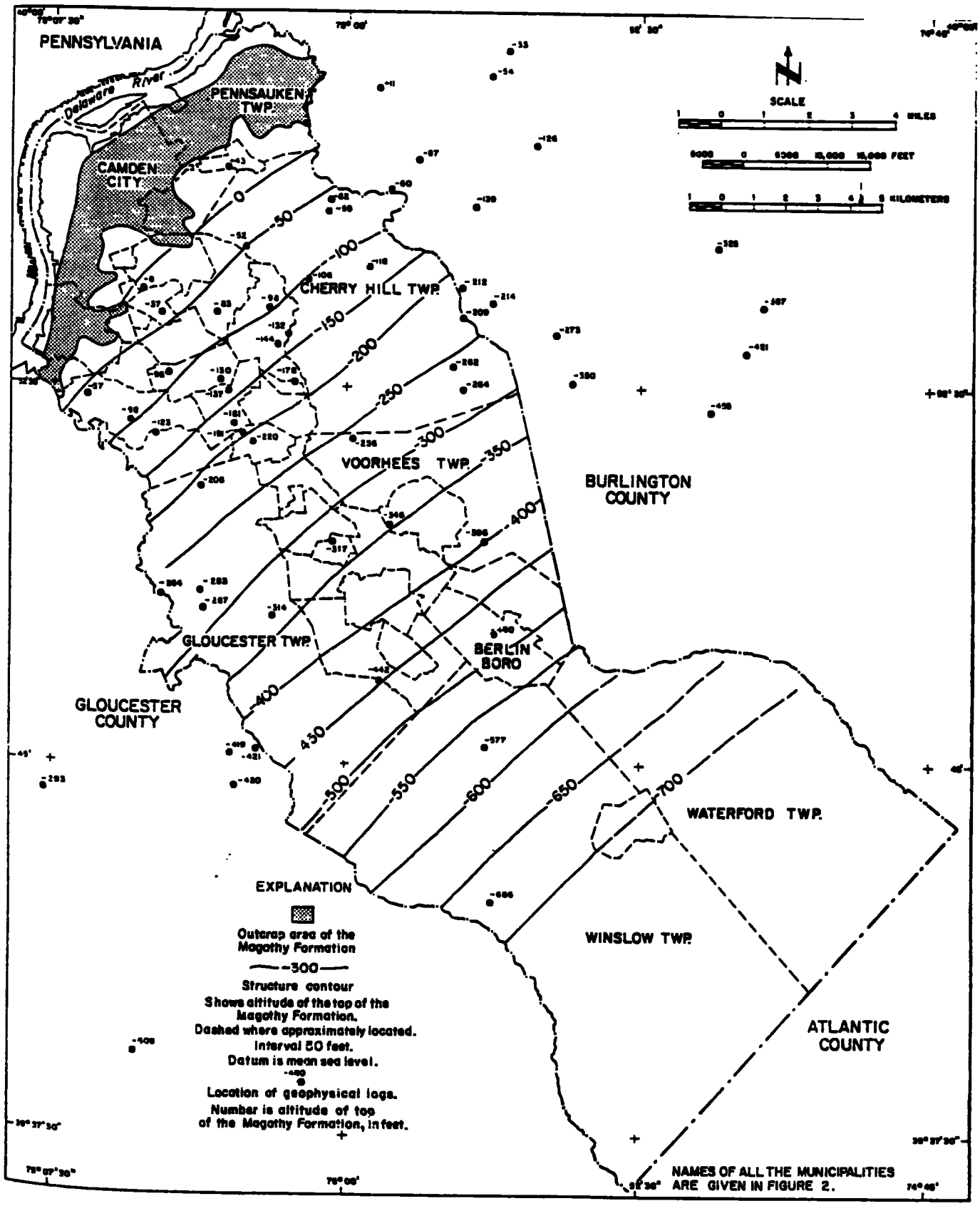


Figure 8. — Structure contour map of the top of the Magothy Formation in Camden County.

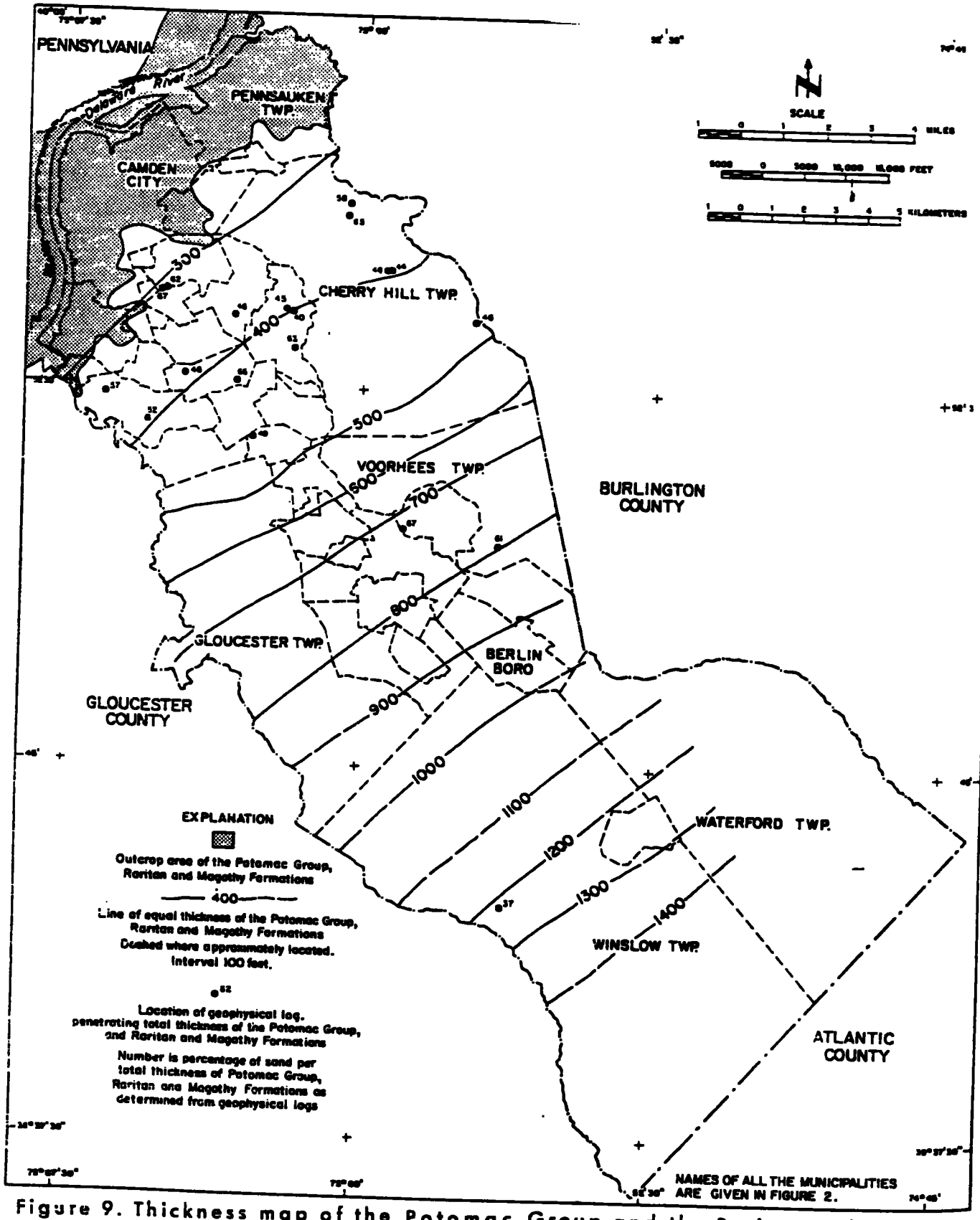
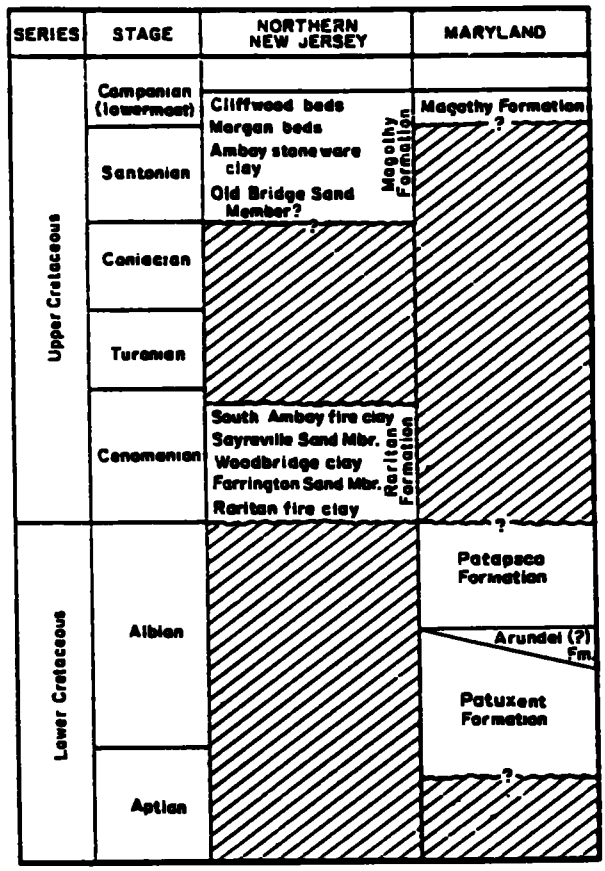


Figure 9. Thickness map of the Potomac Group and the Raritan and Magothy Formations in Camden County.



The lowermost part of the stratigraphic section, the Potomac Group, consists of the Patuxent, Arundel, and Patapsco Formations at the type locality in Maryland. Palynological studies of samples from three sites from the Camden County area by Wolfe and Pakiser (1971) and L. A. Sirkin (written commun., 1971) indicate that only the Upper Patapsco was found at two of the three sites. Berry (1911), from a study of megafossil flora, determined that the sample from a site in the outcrop near Camden is Upper Raritan. However, Wolfe and Pakiser (1971) who examined a sample from the same site indicate an uppermost Patapsco age based on palynologic data. According to Sirkin (written commun., 1971) the uppermost Patapsco can be found at Medford test well (ME 1), but not at the New Brooklyn Park test well (WI 27).

The Raritan Formation at the type locality at Raritan Bay, Middlesex County, was divided into seven units by Ries, Kümmel, and Knapp (1904) and later modified by Berry (1906). Barksdale and others (1943) assigned names to the three sand members. Recent palynological work by Wolfe and Pakiser (1971) and Doyle (1969) indicate that the upper two units, the Amboy stoneware clay and the Old Bridge Sand, are of Magothy age. Wolfe and Pakiser (1971) reassigned the Old Bridge Sand as the basal member of the Magothy Formation. However, the members of the Raritan Formation of the type area in Raritan Bay cannot be traced to the Delaware Valley as distinct lithologic units. Palynologic analysis of core samples from the New Brooklyn test well (WI 27) and the Medford test well (ME 1) indicate the Raritan Formation is present at the two sites (Sirkin, written commun., 1971).

The Magothy Formation in the Raritan Bay area has been re-examined by Owens, Minard, and Sohl (1968). Based on the then unpublished work of Wolfe and Pakiser (1971), Owens, Minard, and Sohl (1968) defined the Magothy as consisting of four units. The total thickness of the Magothy is more than 200 feet in the Raritan Bay area. Members of the Magothy Formation of the Raritan Bay area are not recognizable in the Delaware Valley. Palynological studies by Sirkin (written commun., 1971) indicate that there is about 300 feet of Magothy age sediments at New Brooklyn Park test well (WI 27) and about 100 feet at the Medford test well (ME 1).

Depositional Environment

The Potomac Group and the Raritan and Magothy Formations were deposited in a complex fluvial-deltaic environment (Owens and others, 1968). Figure 10 illustrates the idealized sand-dispersal system showing the various depositional environments for the Eocene deltas of Texas (Fisher and McGowen, 1969). The authors believed that the fluvial-deltaic sediments of the Potomac Group and the Raritan and Magothy Formations have a similar complex depositional history.

In the Camden area the sediments were deposited as part of the ancestral Schuylkill fluvial-deltaic system (Gill and Farlekas, written commun., 1969). Troughs in the bedrock surface represent erosional features that are of Late Cretaceous age or older. These troughs, filled mainly with coarse sands and gravels, have been delineated in Philadelphia by Greenman and others (1961). The sediments were deposited during Cretaceous time in the fluvial part of the system, which

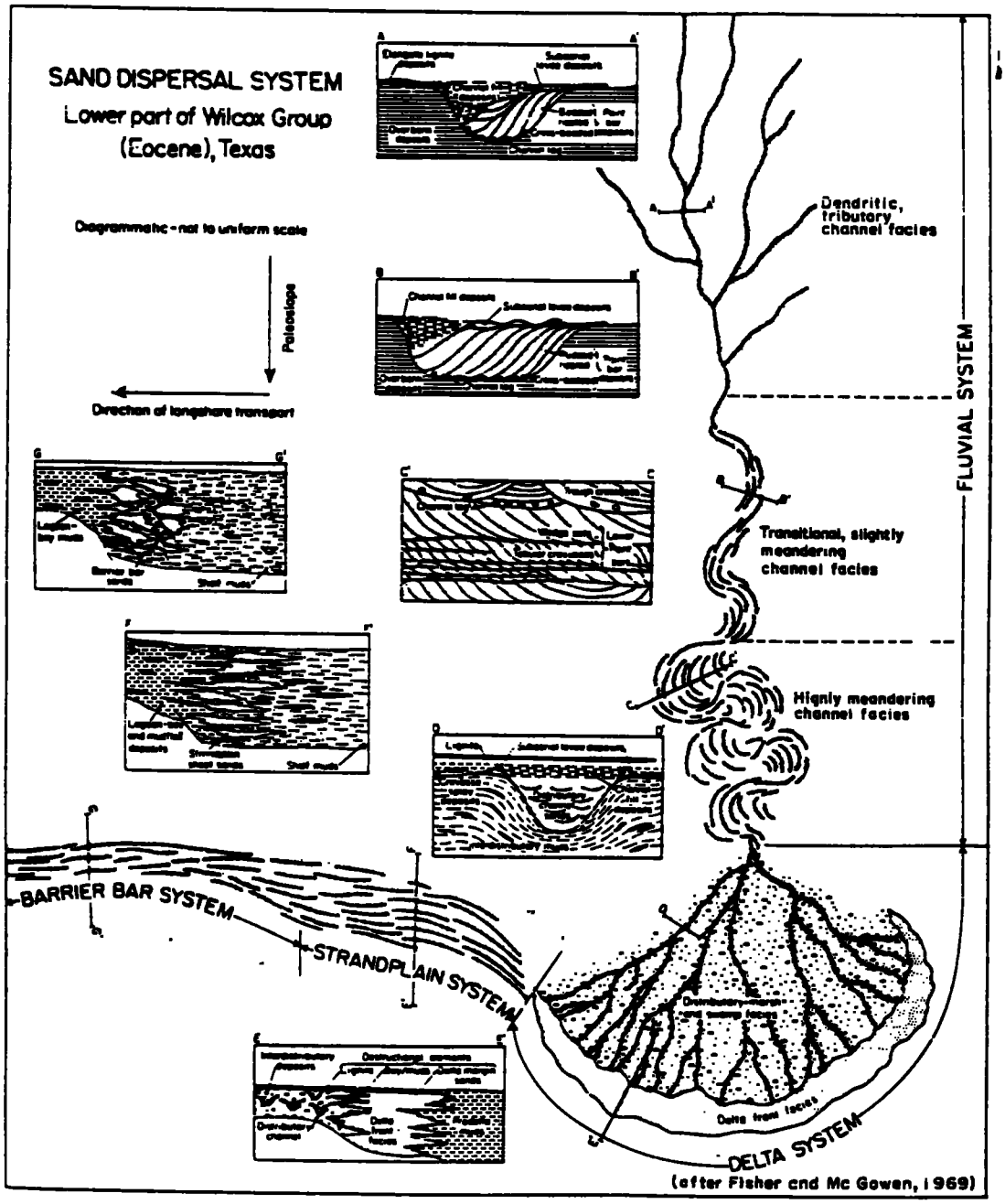


Figure 10. — Idealized sand-dispersal system n various depositional systems, Wilcox Group, Texas.

probably extended from Philadelphia to the area updip from New Brooklyn Park.

A thickness map of the Potomac Group and the Raritan and Magothy Formations is given in figure 9. Also shown is the percentage of sand as estimated from geophysical logs from wells that penetrate the section from the top of the Magothy to the crystalline rocks. The thickness lines show the thickening of the sediments downdip. The percentage of sand indicates greater values in the updip area and lower values in the downdip area. The estimated percentage of sand at the New Brooklyn Park well (WI 27) is 37. Based on the depositional concept developed by Fisher and McGowen (1969) the New Brooklyn Park well is interpreted as being in the distributary channel-marsh and swamp facies. The sediments found in the Haddonfield area are interpreted as including the transitional, slightly meandering channel facies of Fisher and McGowen (1969). The dendritic tributary channel facies is interpreted as occurring in the area from Philadelphia to the northern part of Camden County. The highly meandering channel facies probably occurs in the area downdip from Elm Tree Farms well (VO 12). Lack of data prevents the delineation of the extent of this facies downdip of the Elm Tree Farms area.

Particle-size analysis is available for samples from the New Brooklyn Park test well (WI 27) in Winslow Township (table 5). The particle-size analysis shows the predominant silt and clay values.

Hydrology

The most productive source of ground water in Camden County is the Potomac-Raritan-Magothy aquifer system. The aquifer system is made up of aquifers consisting of sand with some gravel and confining units consisting of silts and clays and is overlain in the outcrop area by highly permeable Pleistocene sand and gravel. The sands are separated into three hydrologic units, an upper, middle, and lower aquifer. The upper unit consists mainly of the sands of the Magothy Formation. The middle and lower units consist mainly of sands of the Raritan Formation and the Potomac Group. The thickness of the three hydrologic units are shown in figures 11, 12, and 13. The lower aquifer in the outcrop area is overlain by and hydraulically connected to the Pleistocene deposits and is a water-table aquifer in Philadelphia. The upper aquifer in the outcrop area is overlain by and hydraulically connected to the Pleistocene deposits in Camden County and is under water-table conditions.

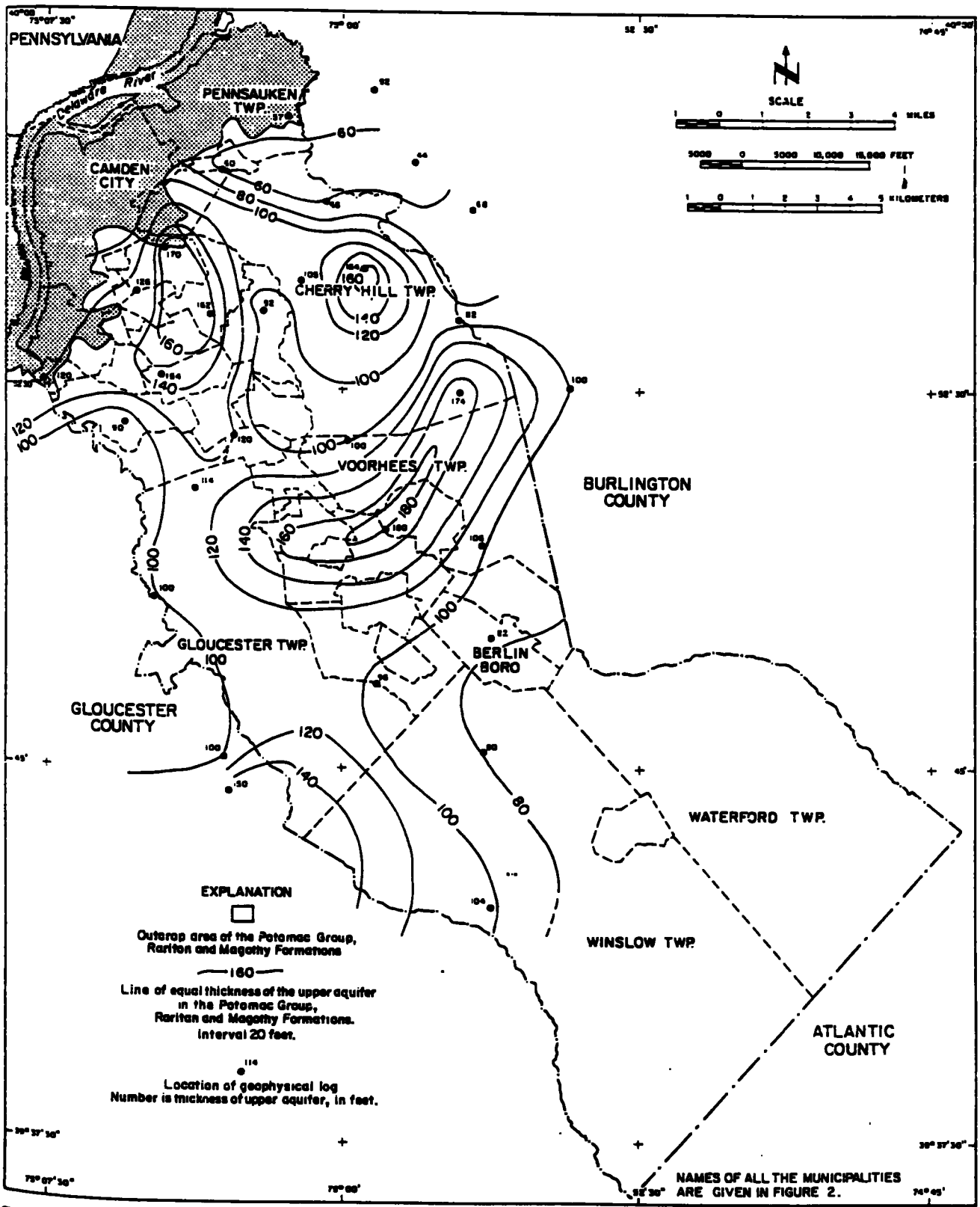


Figure 11. — Thickness map of the upper aquifer in the Potomac-Raritan-Magothy aquifer system in Camden County.

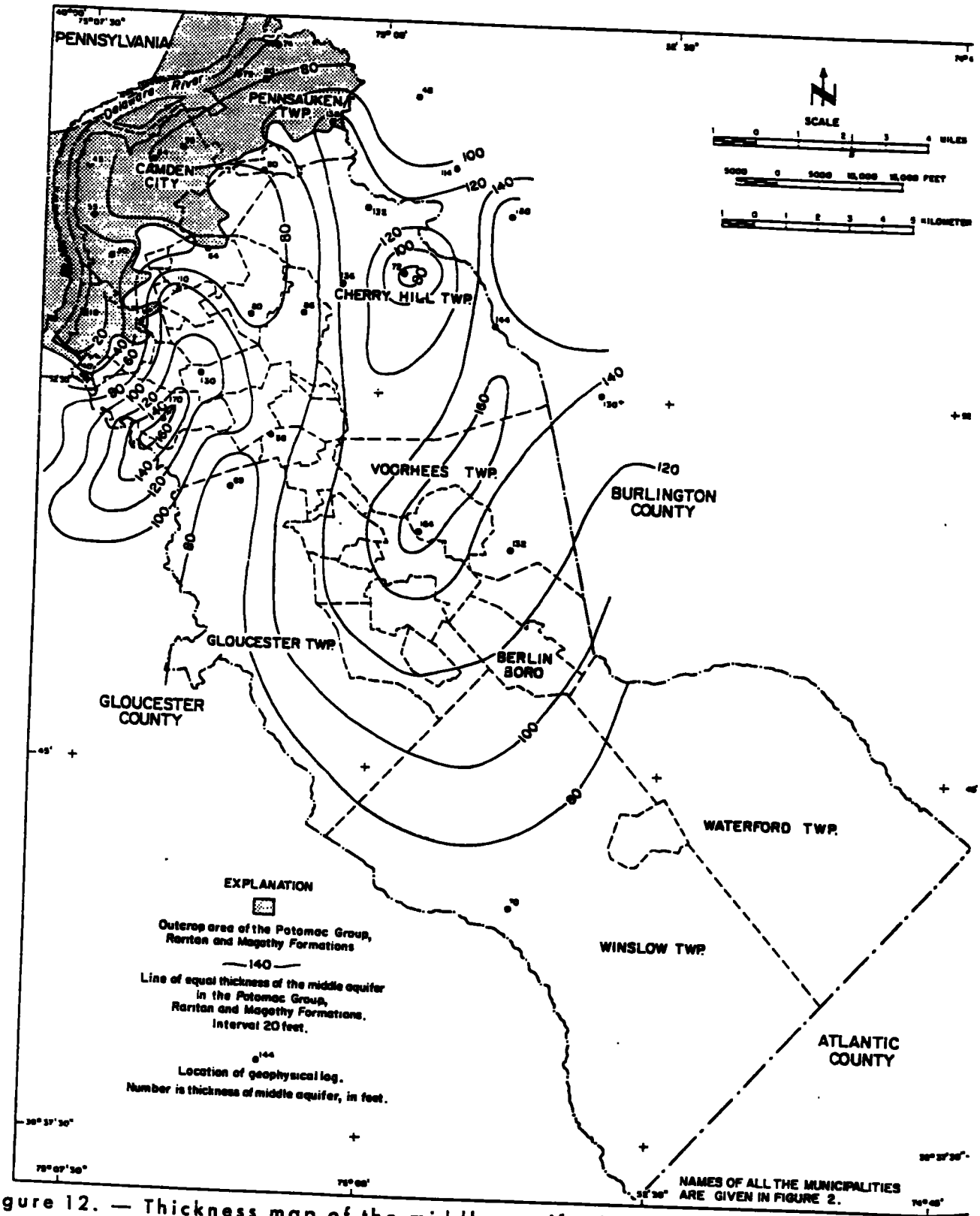


Figure 12. — Thickness map of the middle aquifer in the Potomac-Raritan-Magoth aquifer system in Camden County.

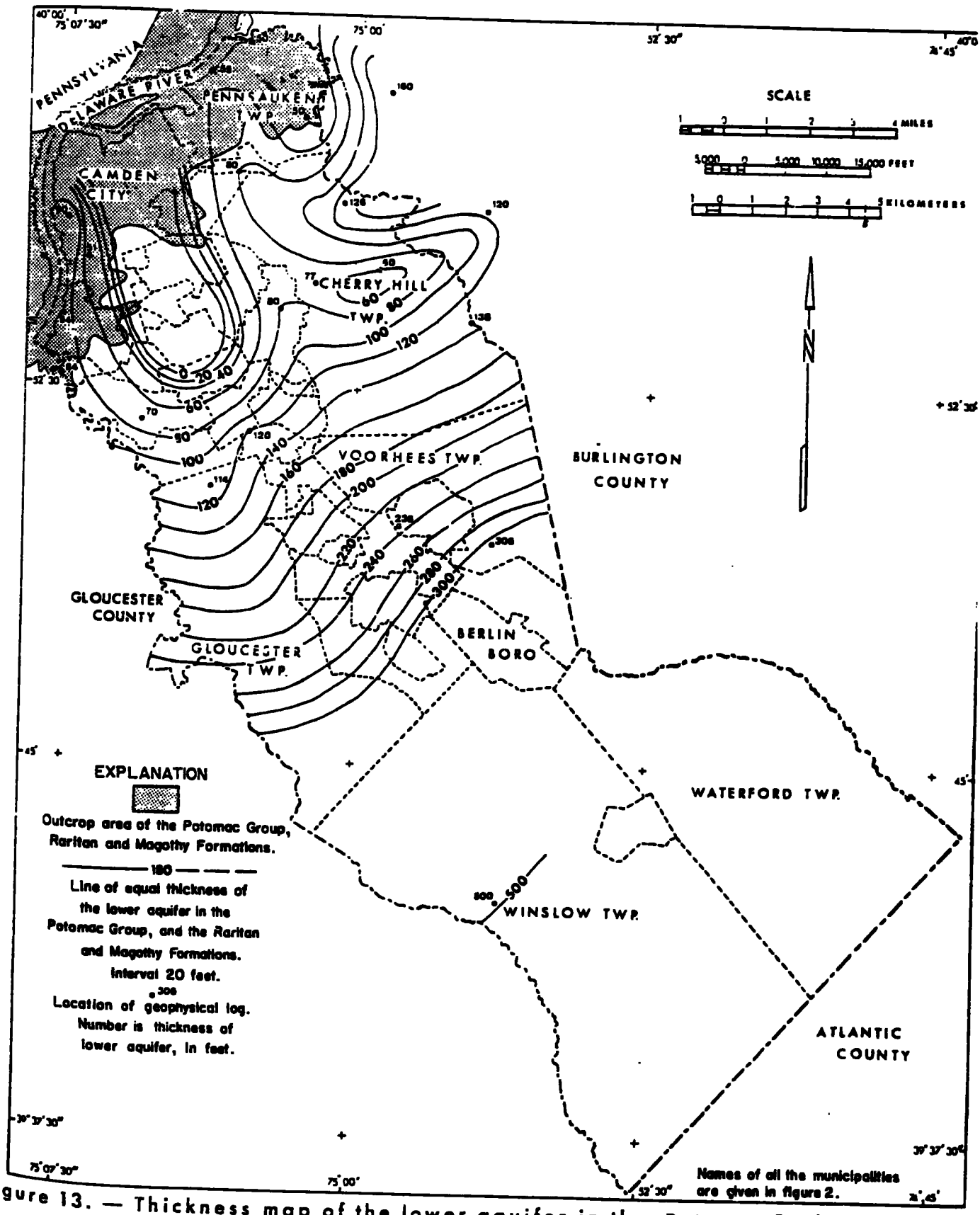


Figure 13. — Thickness map of the lower aquifer in the Potomac-Raritan-Magothy aquifer system in Camden County.

Patterns of Ground-water Movement

Pattern before development.--The natural ground-water flow regimen for the aquifer system prior to development was influenced by topography. The topographically high areas are the natural recharge zones for much of the ground-water system in the Coastal Plain. In areas of topographic highs the prepumping potentiometric surface of each aquifer was greater than that of the aquifer below. This indicates that vertical movement of ground water was downward through the semipervious confining units into the Potomac-Raritan-Magothy aquifer system. The discharge areas were the Delaware River, and to some extent, the topographic lows or stream valleys which cut across the outcrop areas.

The potentiometric map (fig. 14) represents the average natural conditions prior to 1900 for the Potomac-Raritan-Magothy aquifer system in Camden County. Most of the data for the map are from the annual reports of the State Geologist for the period 1888-1909. Water-level data for years after 1900 were used when there was reasonable certainty that the levels were indicative of natural or prepumpage conditions. In Camden County the topographically high recharge area occurs in northern Voorhees Township and southern Cherry Hill Township (fig. 14).

Pattern after development.--The first public-water supply obtained from the Potomac-Raritan-Magothy aquifer system and the hydraulically connected Pleistocene sediments in Camden County was from the Morris well field of the City of Camden in 1898. As the Camden City area's population and industry grew its need for ground water increased. Thompson (1932) describes in detail the ground-water development of the Camden area for 1898-1927. His data for Camden County were used to determine the annual pumpage from the Potomac-Raritan-Magothy aquifer system and the hydraulically connected Pleistocene sediments for 1917-27 shown in figure 15. Withdrawals by industrial wells were estimated by the present authors to be 4 mgd for 1917-27.

The early development of water in the Potomac-Raritan-Magothy aquifer system in Camden County was centered in the vicinity of Camden City, the area containing greatest concentration of population and industry. In later years suburban development had moved southeastward. During the 1950's and 1960's many new public-supply wells were drilled in

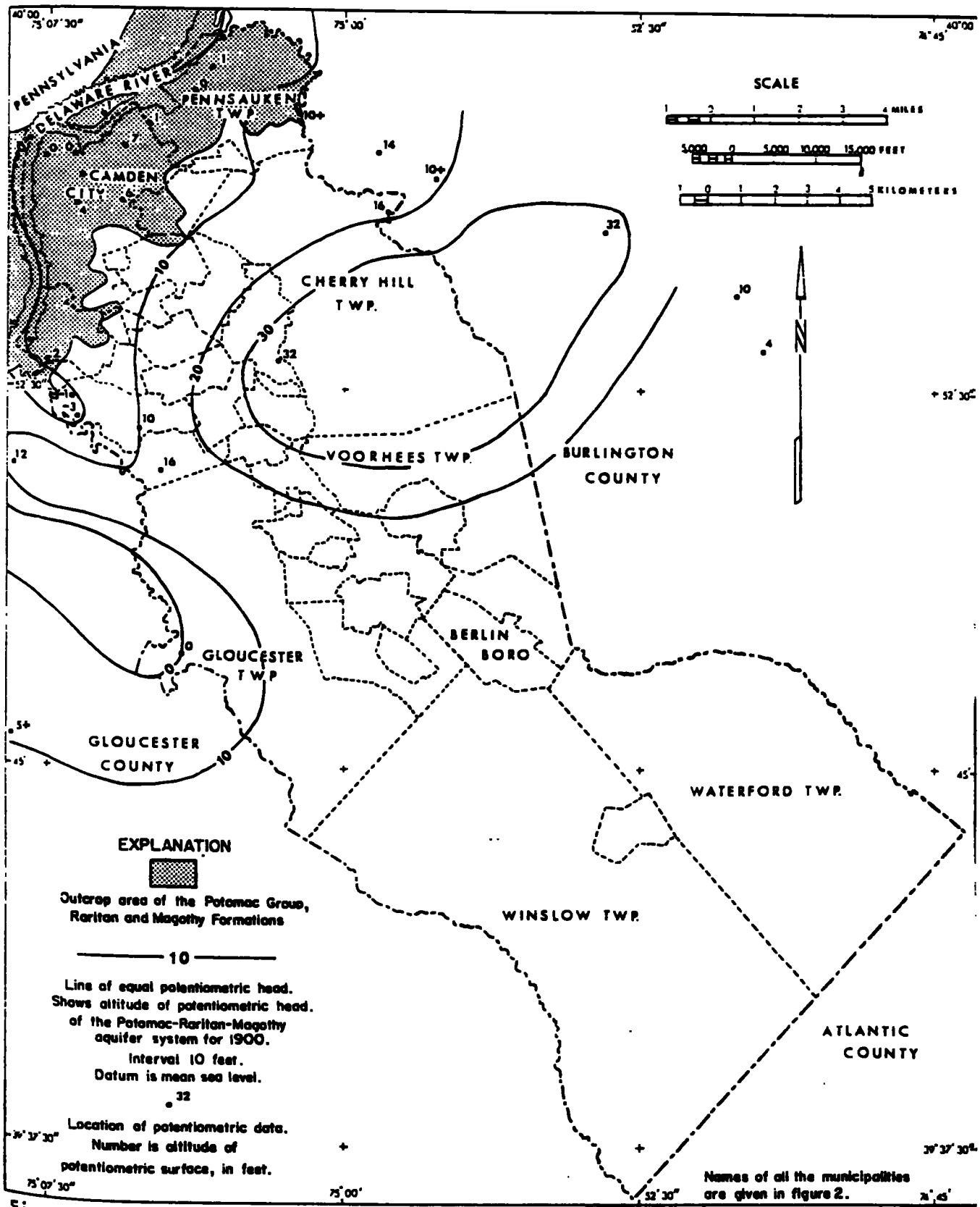


Figure 14. — Potentiometric map for the Potomac-Raritan-Magothy aquifer system in Camden County, 1900.

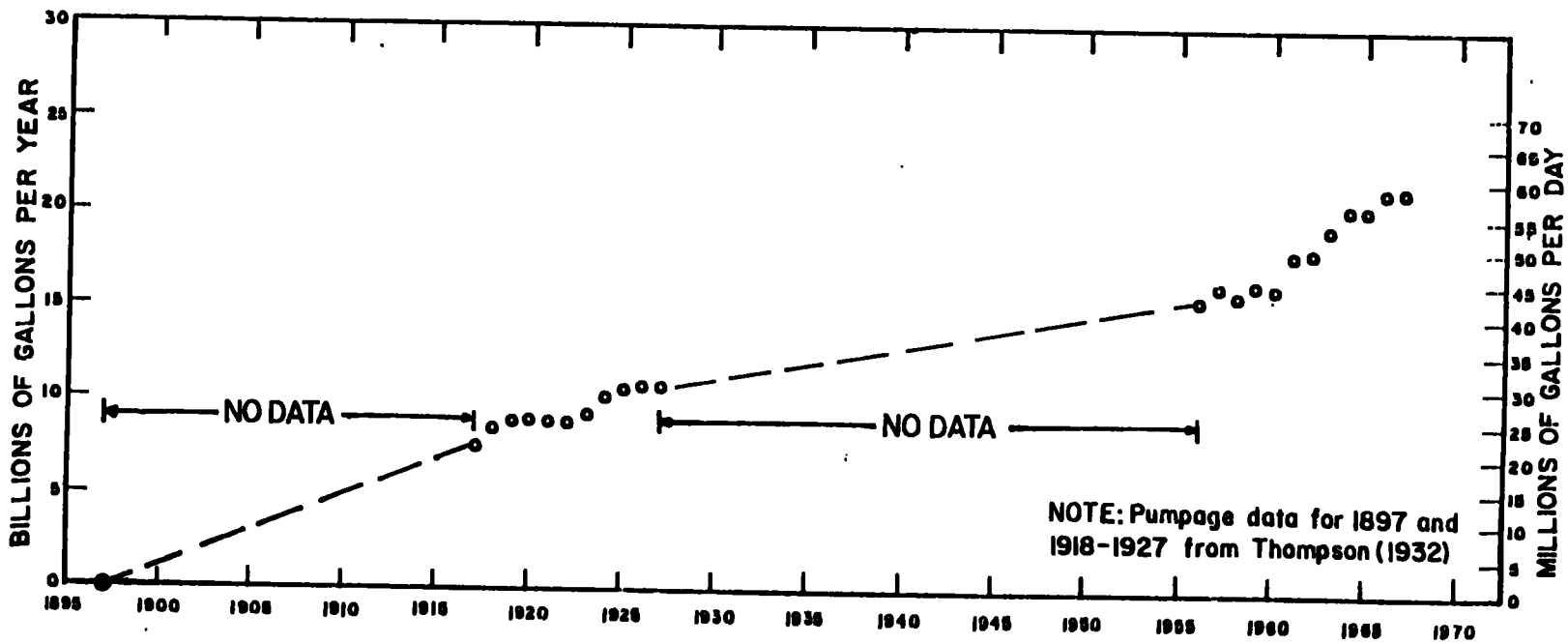


Figure 15. — Pumpage from the Potomac-Raritan-Magothy aquifer system in Camden County, 1897 - 1967.

areas where little or no water had been withdrawn from the Potomac-Raritan-Magothy aquifer system. Figure 16 shows the geographic distribution of the ground-water pumpage in 1966 for Camden County. Data used in figure 16 is tabulated in table 6. The effect of the increasing southeastward movement of demand on the aquifer system can be seen by comparing potentiometric surface maps. Figure 17 shows the 1956 potentiometric surface for the Potomac-Raritan-Magothy aquifer system. The map was developed from data from observation wells and reported data from newly drilled wells from mid-1955 to mid-1957. Figure 18 shows the potentiometric surface for 1968. This map was developed mainly from water-level measurements made over a three-day period from October 17 to October 19, 1968. A significant change in potentiometric surface occurred in the southeastern part of Camden County between 1956 and 1968. Prior to 1956 there was little ground-water diversion in the southeastern part of Camden County. New pumpage in this area after 1956, primarily from the upper and middle aquifer, is the probable cause for the change in potentiometric surface in the southeastern part of Camden County. Consequently, by 1968 a significant head difference existed between the upper and lower aquifer in southeastern Camden County and adjacent Gloucester County. The potentiometric heads for the upper and lower aquifers in the southeastern part of Camden County is shown in figure 18.

Three potentiometric decline maps were constructed from the potentiometric surface maps of the Potomac-Raritan-Magothy aquifer system. They are for 1) 1900 to 1956 (fig. 19), 2) 1956 to 1968 (fig. 20), and 3) 1900 to 1968 (fig. 21). Almost all of the decline from 1900 to 1956 occurred in the northern part of the county. The decline in the potentiometric surface during 1956 to 1968 (fig. 20) occurred throughout the county with the greatest declines in the Cherry Hill Township-Voorhees Township area and Berlin Borough area. From 1900 to 1968 the greatest potentiometric declines (more than 100 feet) occurred in the northcentral part of the county (fig. 21). Withdrawals from the Potomac-Raritan-Magothy aquifer system responsible for the decline in head are shown in figure 15. Pumpage was estimated for periods for which data were not available. Total pumpage from the Potomac-Raritan-Magothy aquifer system in Camden County from 1898 to 1968 based on figure 15 is 800 billion gallons. One-third of that pumpage was withdrawn in 13 years (1956 to 1968), which is 19 percent of the total period of pumpage.

Withdrawals in Philadelphia from the lower aquifer in the Potomac-Raritan-Magothy aquifer system has a direct effect on the potentiometric surface and ground-water flow in the Camden area. Greenman and others (1961) describe the history

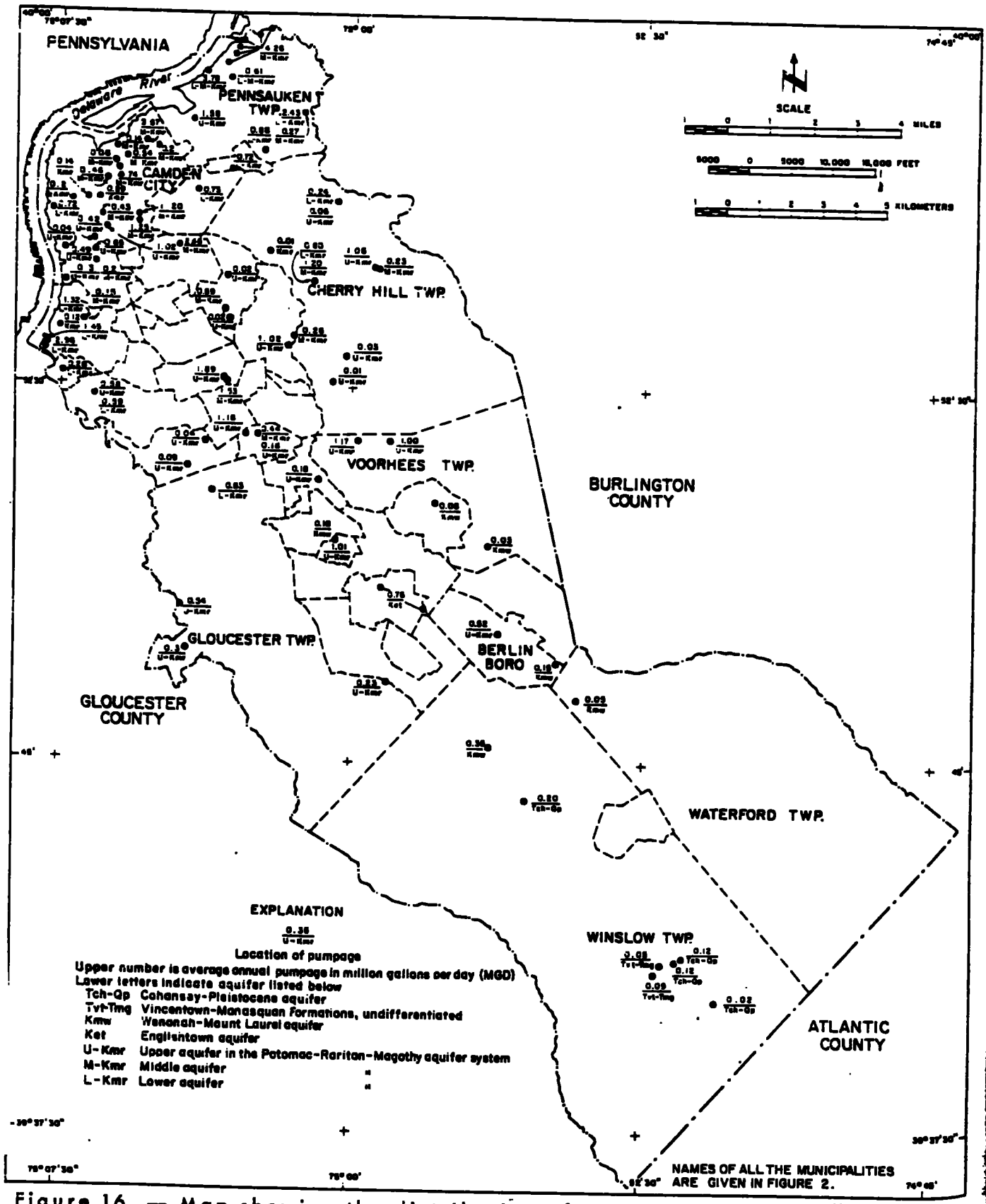


Figure 16. — Map showing the distribution of public and industrial pumpage in Camden County, 1966.

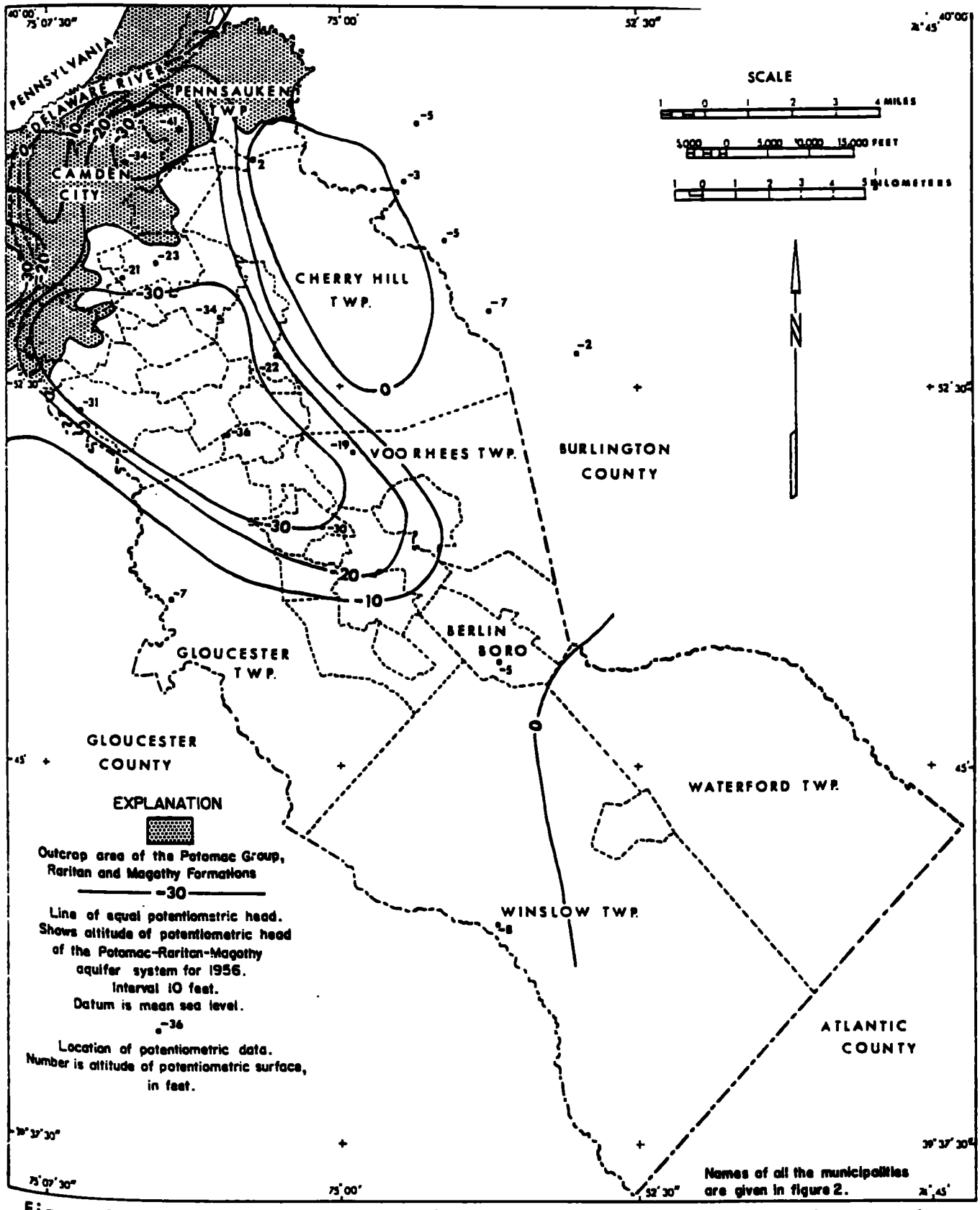


Figure 17. — Potentiometric map for the Potomac-Raritan-Magothy aquifer system in Camden County, 1956.

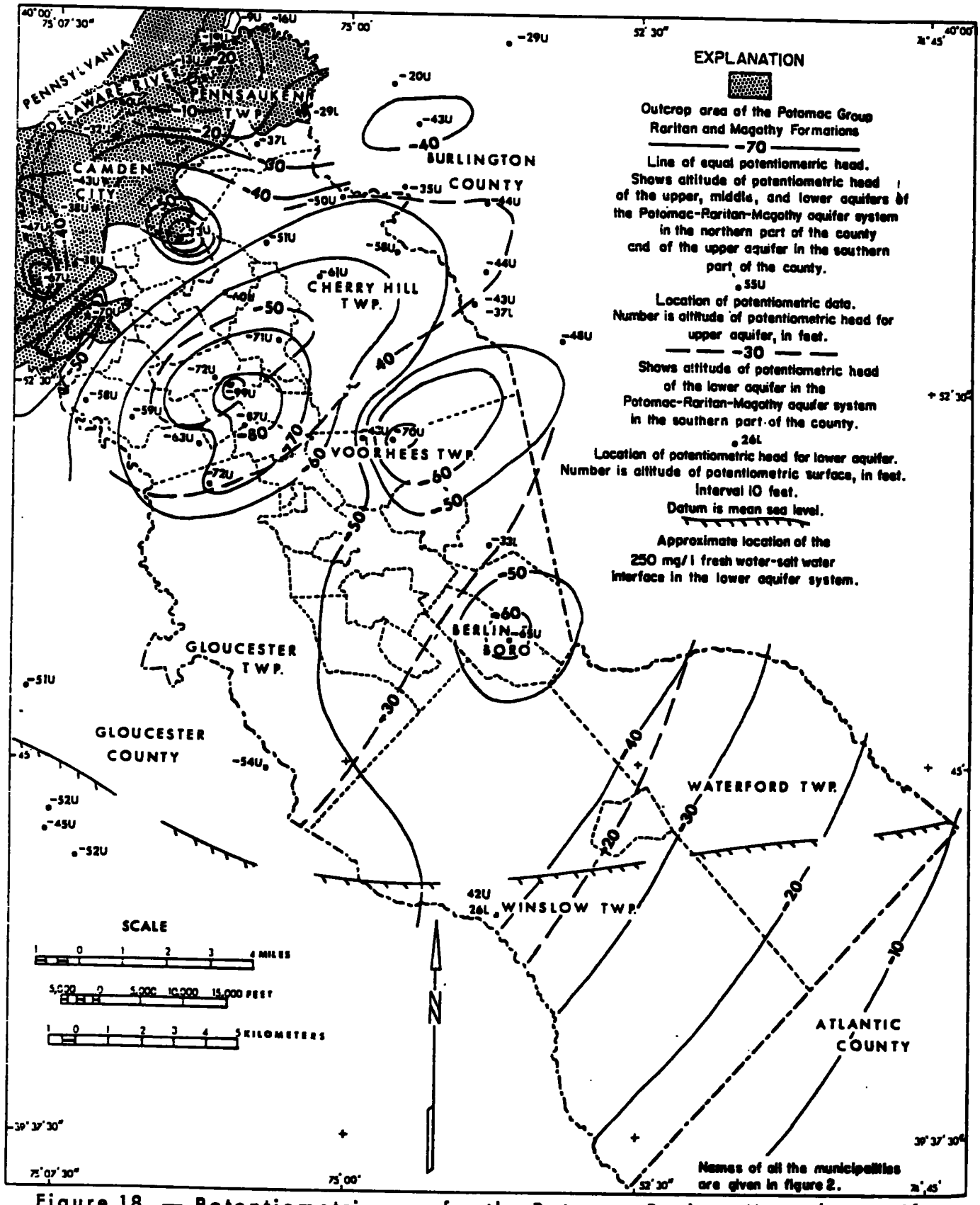


Figure 18. — Potentiometric map for the Potomac-Raritan-Magothy aquifer system in Camden County, October 17-19, 1968.

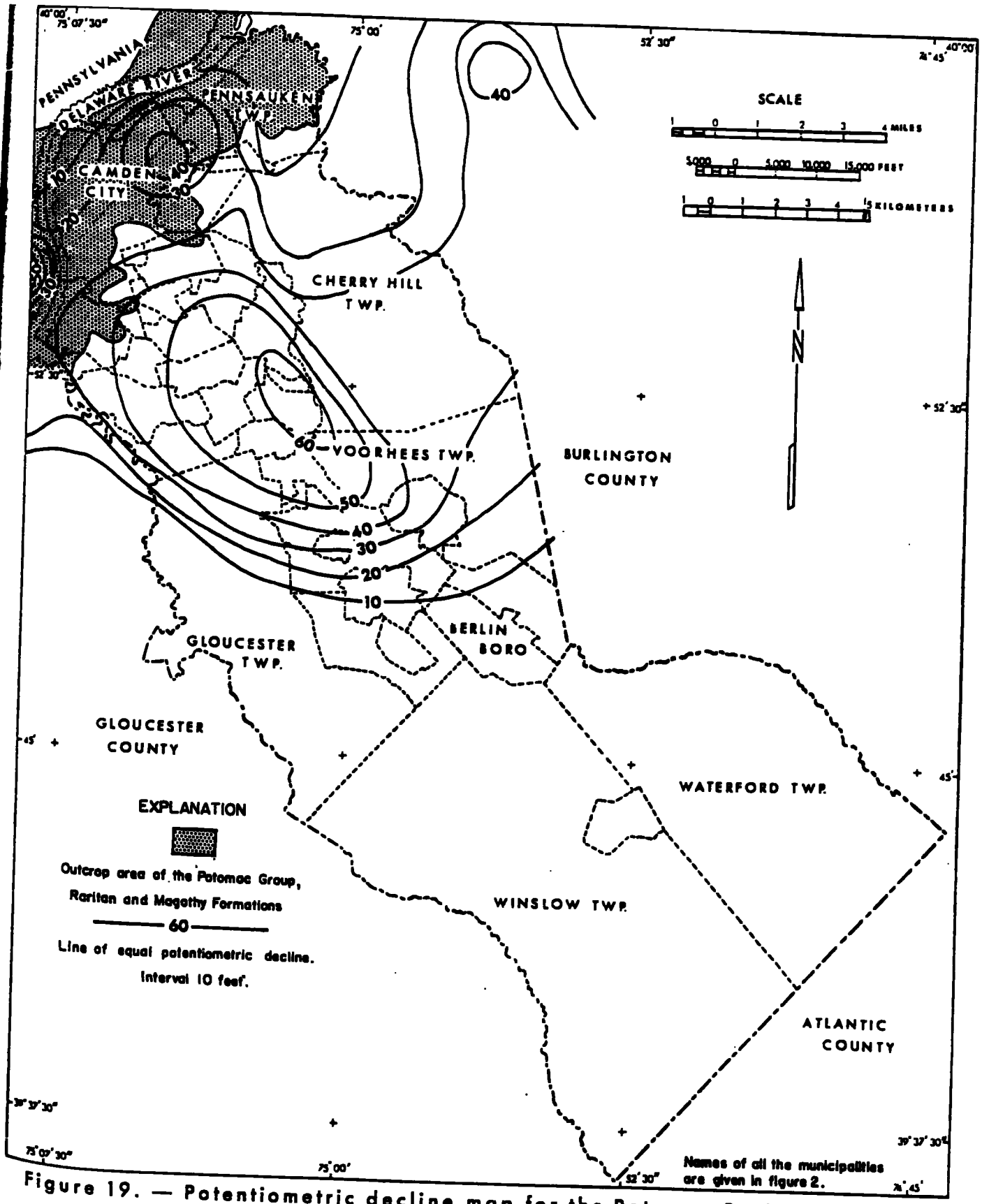


Figure 19. — Potentiometric decline map for the Potomac-Raritan-Magothy aquifer system in Camden County, 1900-56.

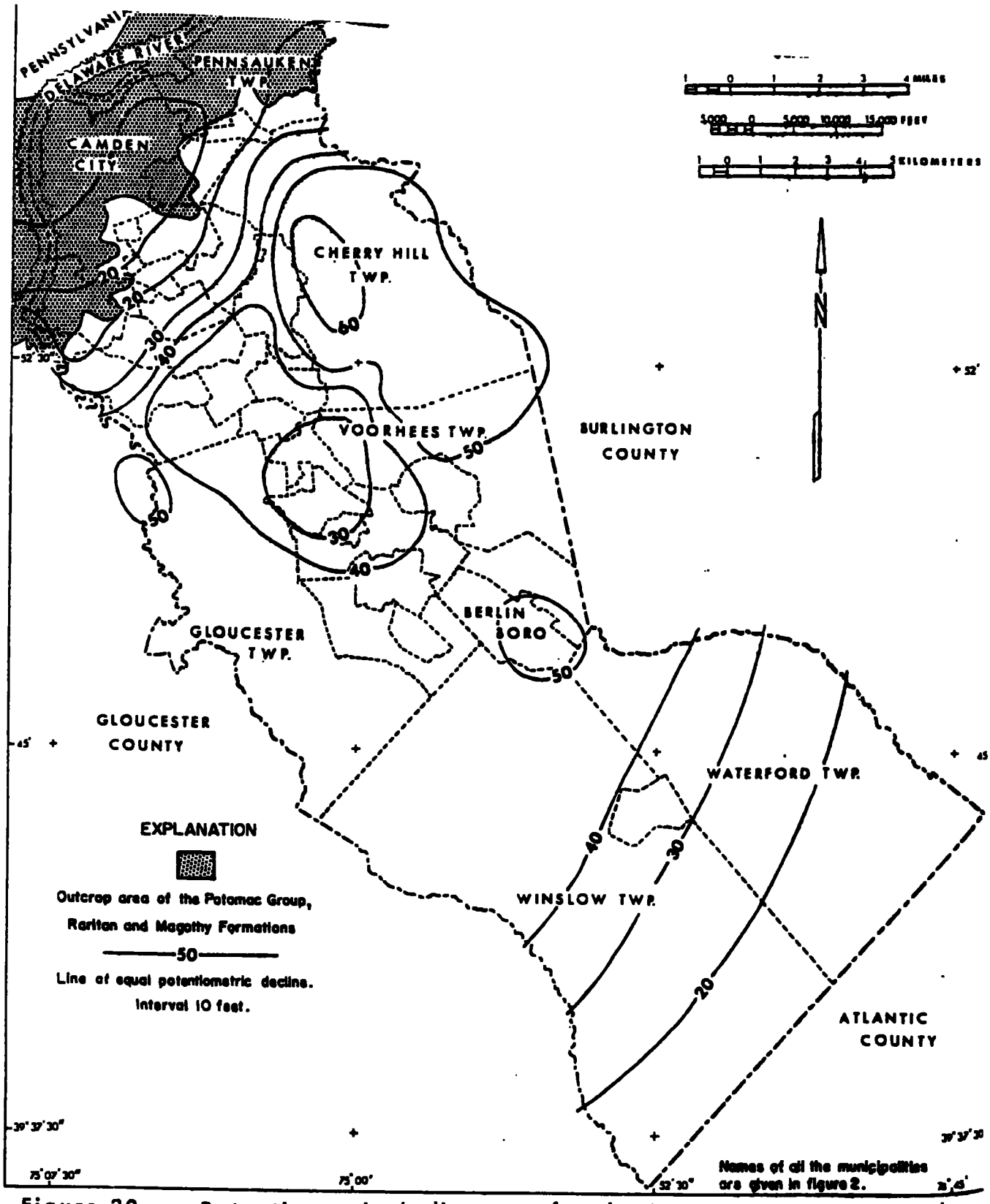


Figure 20. — Potentiometric decline map for the Potomac-Raritan-Magothy aquifer system in Camden County, 1956-68.

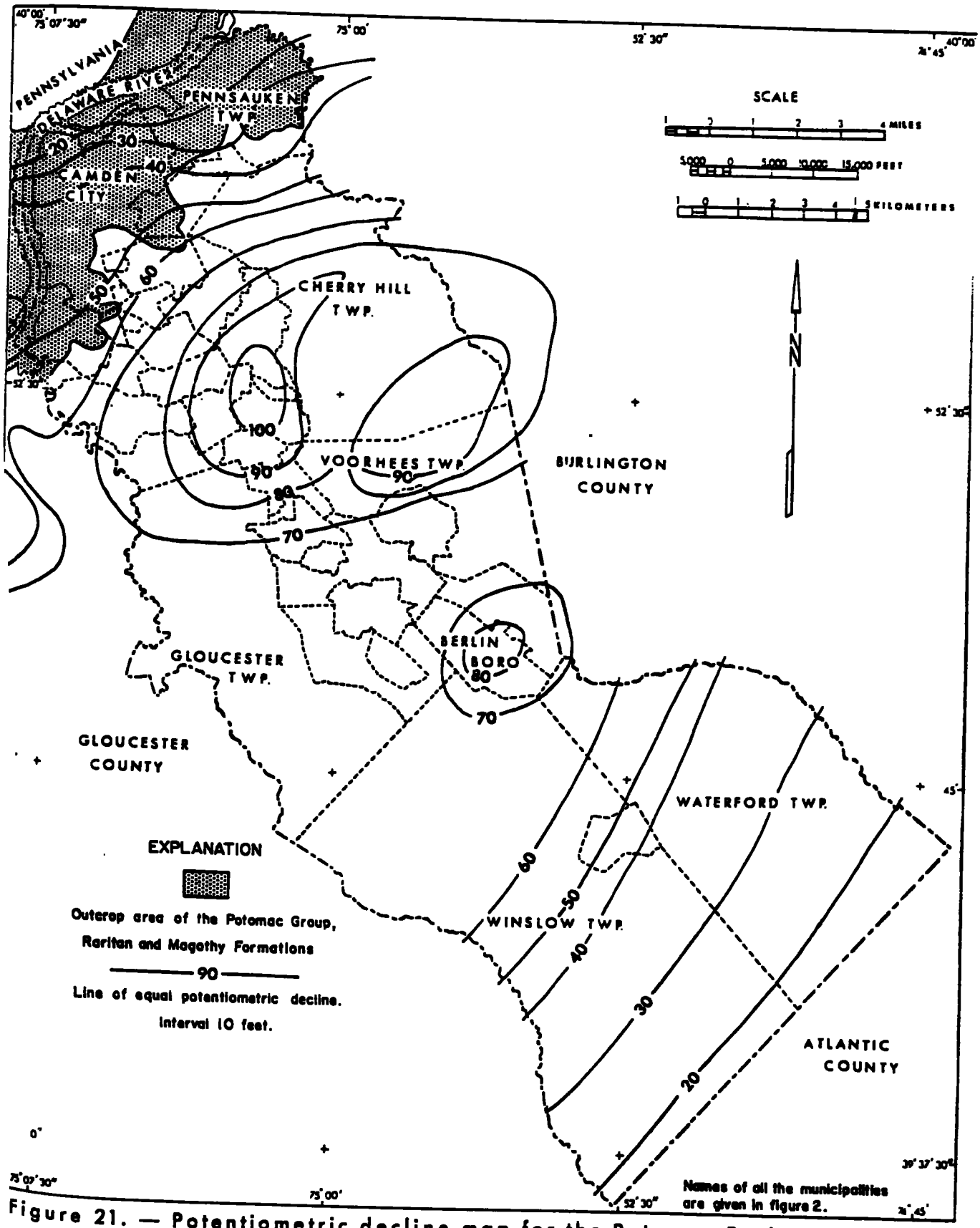


Figure 21. — Potentiometric decline map for the Potomac-Raritan-Magothy aquifer system in Camden County, 1900-68.

of development from the lower aquifer in Philadelphia and present maps of the potentiometric surface for the early 1920's, 1940, 1945, and 1954. The pumpage was approximately 5 mgd in 1920, 15 mgd in 1940, and 23 mgd in 1945. Withdrawals from the lower aquifer in Philadelphia decreased in 1946 and 1947, but again increased to 23 mgd in 1951. The rate of withdrawals declined after 1953 and pumpage in South Philadelphia in 1956 was 18 mgd. No recent complete inventory of withdrawal from the lower aquifer in Philadelphia has been made. However, spot inventories at the U. S. Navy Base and head measurements in 1968 in a few wells in Philadelphia indicate a much lower pumpage. Many wells pumped in 1956 were no longer in use in 1968.

Recharge and Movement of Ground Water

As presented in the section on patterns of ground-water movement the movement of water in the Potomac-Raritan-Magothy aquifer system prior to pumpage was influenced by recharge in topographically high areas while the discharge areas were the Delaware River, and to some extent, the topographic lows or stream valleys which cut across the outcrop areas.

Recharge and movement of water in the Potomac-Raritan-Magothy aquifer system was altered by the large amount of withdrawals, especially in the area near the Delaware River. As pumping increased the gradients were reversed in the water table and artesian aquifers near and under the Delaware River. Greenman and others (1961) suggest that induced recharge occurs from the Delaware River into the aquifers in Philadelphia. They compared the specific conductance of the water from a well located near the Delaware River and the specific conductance of the Delaware River. Fluctuations in specific conductance were similar except that there was a five-month time lag. Barksdale and others (1958) give substantial evidence to show that induced recharge from the Delaware River occurs in the heavily pumped parts of the aquifer near the river. They cite three types of evidence; aquifer test results, temperature fluctuations, and changes in chemical quality. An aquifer test at the Morro Phillips tract in Camden City near the Delaware River indicated a recharge boundary under the river and suggested that after two years of operation a well near the river would obtain 90 percent of its water from the river. Temperatures of water in a well near the river (at Beverly, Burlington County) change seasonally as does the temperature of water in the Delaware River. On the other hand the temperature of the water in a well several miles away from the river (at

Haddon Heights) remains essentially constant (Barksdale and others, 1958, p. 106-108). Changes in chemical quality of water from wells near the river were cited by Barksdale and others (1958) as evidence of induced recharge. Table 7 gives the chemical quality data of two wells, located in Pennsauken Township, used by Barksdale and others (1958, p. 121-123) and also includes more recent data. The water-quality analyses dated 1924 (table 7) were for samples collected just after completion of the wells. As pointed out by Barksdale and others (1958) the dissolved-solids content of the water from well 1 (PE 18), located near the river, more than doubled between 1924 and 1953 while the quality of water from well 4 (PE 21), located one mile from the river, remained the same. Much of the water obtained from well 1 is induced river water; whereas, well 4 receives a much greater part of its water from the aquifer and a lesser amount of water from the Delaware River. Data from samples taken after 1953 from well 1 indicate improved quality for a period of approximately 13 years. This was followed by a decline in quality as evidenced by increasing chlorides, sulfates, and specific conductance. Chlorides were 27 mg/l (milligrams per liter) in 1969, an increase from 8.0 mg/l in 1963. Changes in the quality of the river water probably caused the variation in quality of water in the wells.

Recharge of the aquifer system downdip from the outcrop area is mainly from vertical leakage through the overlying confining unit. In the area downdip of the outcrop there have been significant declines in the potentiometric surface--declines in excess of 100 feet at some locations. The difference in heads between those in the Potomac-Raritan-Magothy aquifer system and the overlying aquifers provides the driving mechanism for downward vertical leakage. The rate of vertical leakage is, with all other factors being equal, probably greater in the downdip area where large head differences occur. In the area near the outcrop the head difference is not as large, and thus the rate of vertical leakage is probably smaller. This area is also closer to the Delaware River, which is a recharge boundary. In addition to recharge of water through the confining units, significant amounts of water are released to the aquifer system from storage within the confining silts and clays in the Potomac Group and the Raritan and Magothy Formations and the overlying confining units.

An additional source of water lies outside of the political boundaries of Camden County. Water moves toward Camden from the adjacent areas outside the county line as the pumping cone of depression expands. Description of the regional pattern of ground-water flow for this aquifer system for the hydrologic unit in southern New Jersey has been studied

in detail by Gill and Farlekas (written commun., 1969).

The source of water in the Potomac-Raritan-Magothy aquifer system in Camden County is therefore 1) precipitation on the outcrop area and induced recharge from streams located in the outcrop area, for example, the Delaware River, 2) recharge through the confining units, 3) water released from storage from the silts and clays of the Potomac Group and Raritan and Magothy Formations and overlying units, and 4) water from the adjacent areas as the cone of depression expands.

Aquifer Characteristics

A number of aquifer tests in the Camden County area for wells tapping the Potomac-Raritan-Magothy aquifer system have been evaluated in the past using the Theis nonequilibrium method (Ferris and others, 1962, p. 92), which assumes that the confining layers are impermeable. Results were reported in Barksdale and others (1958, p. 96-98) and Rush (1968, p. 32-33). Four of these aquifer tests have been re-evaluated (Harold Meisler, written commun., 1973) to include leaky artesian aquifer conditions proposed by Hantush (1960). Two of the four re-evaluated aquifer tests are for wells located in Camden County near the Delaware River and tap the middle aquifer of the Potomac-Raritan-Magothy aquifer system. The results of the test at the site of the Camden Water Department well 14 (CA 18) indicate that the transmissivity ranges from 2,300 to 6,700 ft^2/day (17,000-50,000 gpd/ft) with an average of 4,300 ft^2/day (32,000 gpd/ft^2). The storage coefficient ranges from 1.0×10^{-4} to 3.5×10^{-4} with an average of 1.8×10^{-4}. The re-evaluated results of the aquifer test at the Stockton pumping station (Camden Division) of the New Jersey Water Company indicate that the transmissivity ranges from 3,200 to 3,700 ft^2/day (24,000-28,000 gpd/ft) and the storage coefficient ranges from 3.3×10^{-5} to 1.5×10^{-3}.

Many large diameter high-yielding wells tap the Potomac-Raritan-Magothy aquifer system. The yields of 106 wells in Camden County (diameter 12 inches or greater) range from 455 to 1,900 gpm (gallons per minute) (table 1). The average yield for 106 wells is 1,085 gpm. The specific capacities of these wells are high, indicating a high aquifer transmissivity. The range of specific capacity of 96 wells (diameter 12 inches or greater) tapping the Potomac-Raritan-Magothy aquifer system in Camden County is 6.1 to 80 gpm/ft (gallons per minute per foot of drawdown) (table 1). The average specific capacity of these wells is 29.3

gpm/ft. Two-thirds of the specific capacities range between 15 to 35 gpm/ft. Figure 22A shows the distribution of the specific capacities of the 96 large diameter wells.

Another method for determining the hydraulic properties of aquifers is the specific capacity of a well divided by the length of well screen. The specific capacity of the well per foot of well screen may be more meaningful than specific capacity where the length of well screens differ considerably. The distribution of values of specific capacity per foot of well screen for 95 wells (diameter 12 inches or greater) tapping the Potomac-Raritan-Magothy aquifer system in Camden County is shown in figure 22B. These values range from 0.12 to 2.29 gpm per foot of screen. About 56 percent of the values range between 0.6 and 1.0 gpm per foot of screen. The average specific capacity per foot of well screen is 0.83 gpm per foot of screen. Values of specific capacity per foot of well screen for wells tapping the Potomac-Raritan-Magothy aquifer system located in the outcrop area are generally higher than those located downdip from the outcrop. The average specific capacity per foot of well screen for 60 wells located in the outcrop area is 0.95 gpm per foot of screen and the range is from 0.35 to 2.29 gpm per foot of screen. The average specific capacity per foot of well screen for 35 wells located downdip from the outcrop is 0.52 gpm per foot of screen and the range is from 0.22 to 1.7 gpm per foot of screen. The higher values for wells located in the outcrop area are attributed to better hydraulic properties of the aquifer and proximity to source of recharge, primarily from the Delaware River. This is in agreement with the evidence cited by Barksdale and others (1958) and Greenman and others (1961) indicating recharge from the Delaware River.

Quality of Water

Detailed analysis of water-quality data for the Potomac-Raritan-Magothy aquifer system has been presented in recent publications by Langmuir (1969a and 1969b) and Gill and Farlekas (written commun., 1969). Camden County was one of the counties included in these recent studies. Some of the data used in the recent studies are given in table 4.

Water from the Potomac-Raritan-Magothy aquifer system in a large part of Camden County, with the exception of iron content, meets the State's standards for potable water (New Jersey State Department of Environmental Protection, 1970) with little or no treatment and is suitable for most industrial and agricultural needs. Recent analyses of water from two wells in Camden City suggest that chromium values are equal to or above

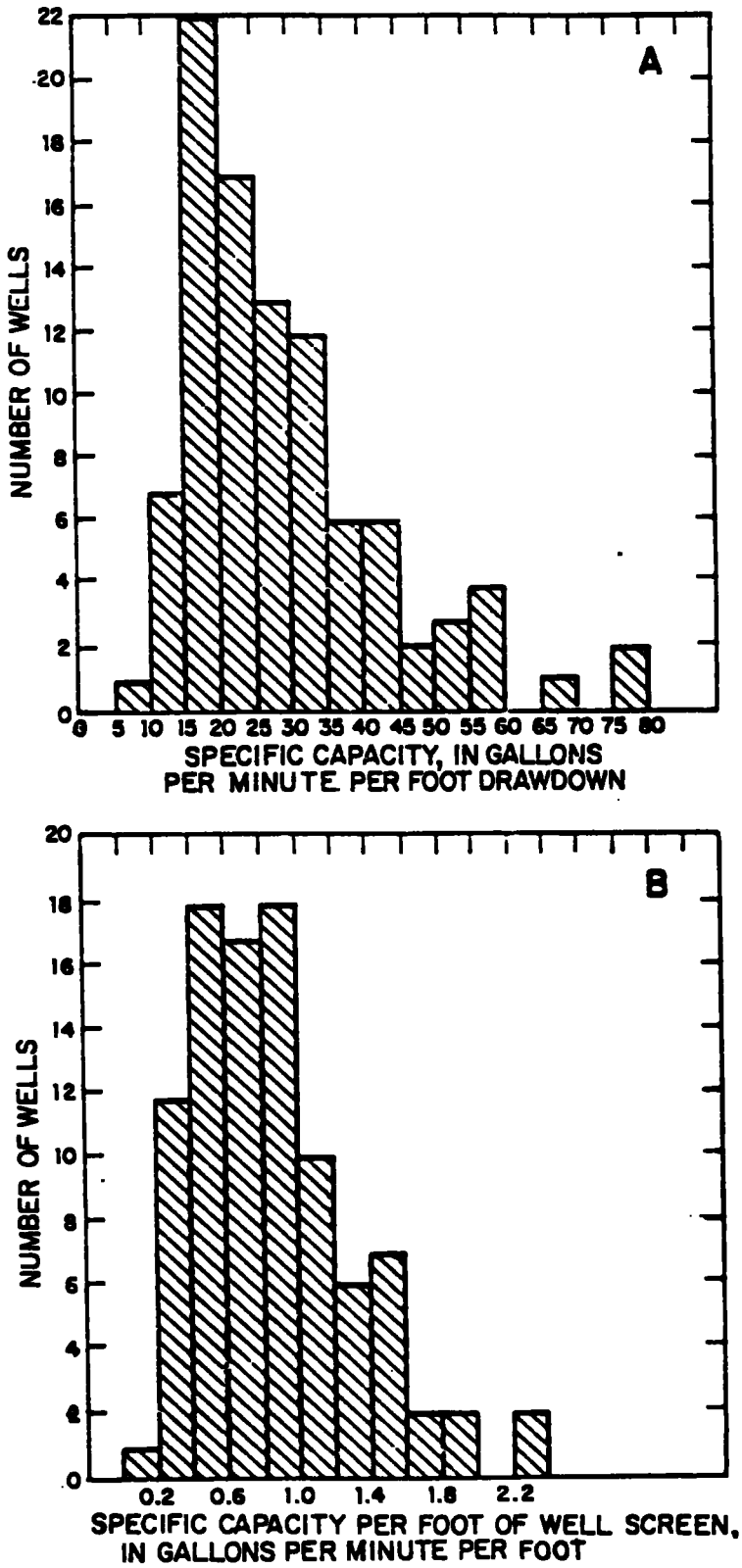


Figure 22. — Distribution of specific capacities of large diameter wells (12 inches or greater) tapping the Potomac-Raritan-Magothy aquifer system in Camden County.

the State's standards. This and additional water-quality problems are described below.

A summary of chemical analyses of water from wells tapping the Potomac-Raritan-Magothy aquifer system in Camden County is shown in table 8. This table gives maximum, average, and minimum parameters for samples from wells located in the outcrop area of the Potomac-Raritan-Magothy aquifer system and from samples from wells located downdip from the same outcrop area. Only the most recent analyses (table 4) were used to determine values shown in table 8.

The quality of water from wells located in the outcrop area of the Potomac-Raritan-Magothy aquifer system in Camden County varies from well to well. The variation is partly dependent on the depth of the well, the nature of the overlying sediments, and on the distance from the Delaware River. Chemical analyses (table 8) indicate that dissolved solids range from 39-445 mg/l; sulfates, 0.8-178 mg/l; and chlorides, 5.5-59 mg/l for samples from wells located in the outcrop area. Hardness ranges from soft to very hard (14-274 mg/l).

The quality of water of the Potomac-Raritan-Magothy aquifer system is, with the exception of iron content, within the State's standards for potable water in the area from the southeast limit of the outcrop area downdip to the vicinity of the New Brooklyn Park observation wells in Winslow Township. Water obtained from wells tapping the aquifer in the area that is overlain by the Merchantville-Woodbury confining unit, excluding the New Brooklyn Park area, is low in dissolved solids (48-150 mg/l), sulfates (2.6-34 mg/l), and chlorides (1.4-18 mg/l). Hardness ranges from soft to moderately hard (14-114 mg/l).

Samples collected in 1961 from the New Brooklyn Park well (WI 27) tapping the upper aquifer indicate chloride concentrations of approximately 4.0 mg/l; whereas, water from well (WI 28) tapping the lower aquifer in 1960 had a chloride concentration of approximately 300 mg/l (Donsky, 1963). Analyses of samples collected in 1972 for these two wells have similar values (table 4). The difference in chloride data from the New Brooklyn Park wells and other wells tapping the Potomac-Raritan-Magothy aquifer system in Ocean and Gloucester Counties (Gill and Farlekas, written commun., 1969) suggests lateral as well as vertical differences in chloride content in the aquifer system. This difference in chloride content as well as other water-quality parameters suggest that an interface exists between the salt water to the southeast and fresh water to the northwest and is represented by a broad zone of diffusion in the aquifer system. The 250 mg/l chloride line

for the upper aquifer is located several miles southeastward of the 250 mg/l chloride line for the lower aquifer (fig. 19). The 250 mg/l chloride line may be considered the limit of sea-water encroachment, inasmuch as the interface of salt and fresh water probably is not far seaward from this line (Parker, 1964). The high-chloride water in the southeastern part of the Potomac-Raritan-Magothy aquifer system is probably due to brackish-marine water entering the aquifer system during deposition of the sediments or the re-entering of ocean water after changes in sea level.

Water-quality analyses for wells tapping the Potomac-Raritan-Magothy aquifer system in Camden County indicate change in quality of water in the aquifers with time. In some cases the analyses show decreases in chloride and nitrate concentrations over a period of time; whereas, in other cases analyses show increases in chloride, sulfate, and dissolved solids. A summary of chemical analyses for selected wells tapping the Potomac-Raritan-Magothy aquifer system in Camden City for 1923-70 is shown in table 9. Data used in table 9 is from Thompson (1932), Donsky (1963), and table 4.

Chlorides, as reported (Thompson, 1932) for wells at two different sites tapping the upper aquifer in Camden City, were higher than those reported for the same or comparable well samples in 1966-67. The chloride content at one of the sites (Camden City Water Department wells 3-3A) decreased from 51 mg/l in 1928 (Thompson, 1932) to 28 mg/l in 1949 (Donsky, 1963). The chloride content for the same site was 41 mg/l in 1969 (table 4). At the second site (Camden City Water Department wells 6-6N) the chloride content decreased from 72 mg/l in 1932 (Donsky, 1963) to 32 mg/l in 1969 (table 4).

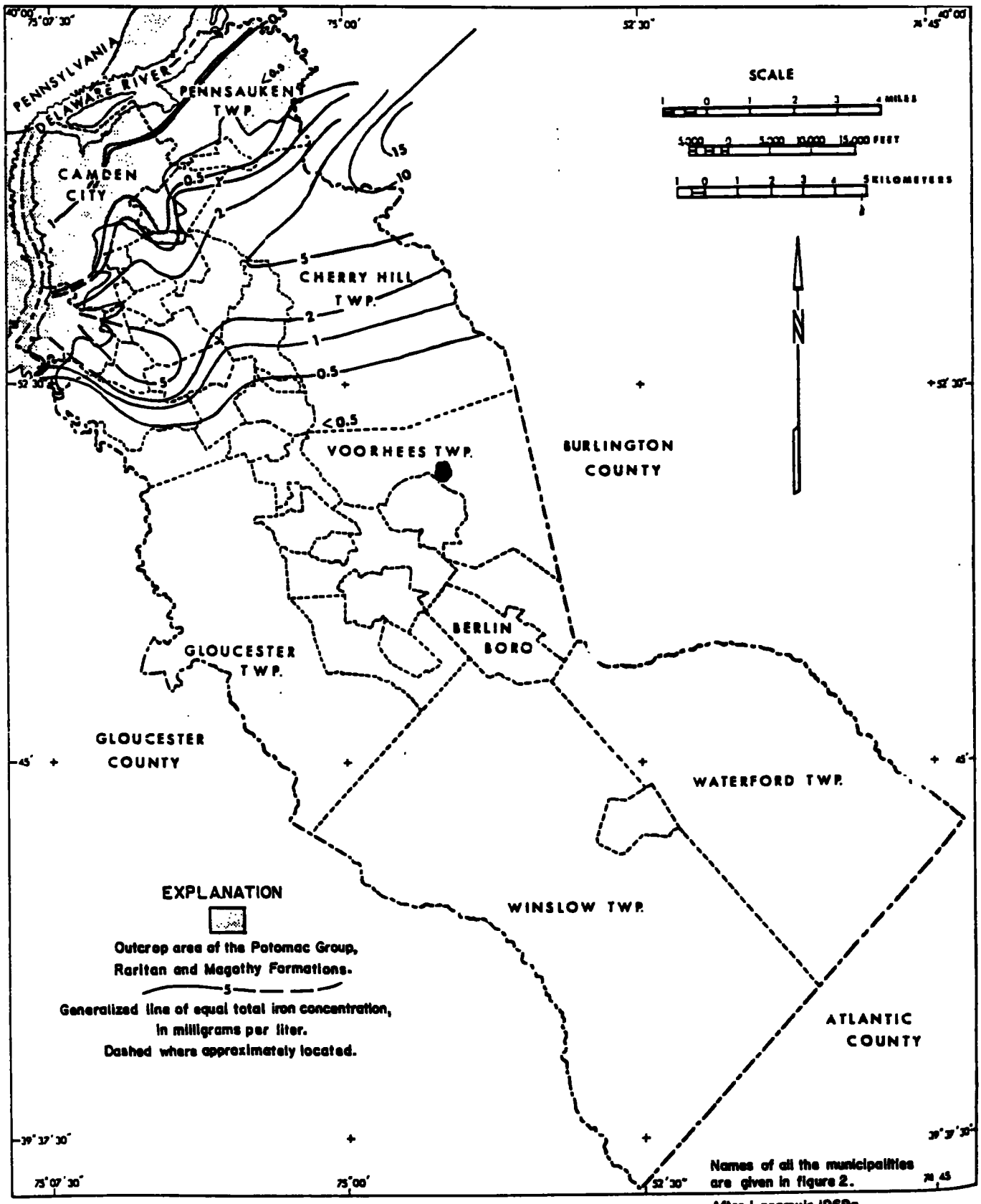
Wells tapping the middle or lower aquifer near the Delaware River generally have shown a deterioration in water quality over a period of time, as indicated by an increase in chloride and sulfate concentrations. Camden City Water Department wells at four sites (1A, 5-5N, 7, and 11) indicate a rise in chloride concentration over a period of years (table 4). There is also a corresponding rise in sulfate concentration in Camden City Water Department wells 1, 3, 4, 5, 6, and 10 (table 4). Water-quality analyses from Camden City wells 13 and 17, which tap the middle or lower aquifer, indicate that there has not been a change in quality at the two sites during the period samples. These two wells are located farther east than the other Camden City wells cited above, suggesting no change in water quality of the middle and lower aquifer in this area.

It can be assumed that water from wells in the Camden City area prior to 1920 probably was of slightly better quality than that reported by Thompson (1932). The change in the quality of water in the shallow and deeper aquifer between 1900 and 1967 as noted above may have been due to contamination from disposal ponds, waste-injection wells, and improperly sealed abandoned wells. The contamination may be similar to that documented by Greenman and others (1961) in adjacent areas of Philadelphia, but on a smaller scale.

Iron in the water of the Potomac-Raritan-Magothy aquifer system is the most troublesome water-quality parameter for many users. New Jersey's Potable Water Standards (1970) recommends a maximum iron concentration of less than 0.3 mg/l for potable supplies; however, most of the water analyses for the aquifer system indicate concentrations greater than 0.3 mg/l. Thus, treatment for iron removal is required for most users. The iron is present in the water as dissolved Fe^{+2} and $FeOH^{+1}$, and as suspended ferric oxyhydroxides, probably caused by the oxidation of ferrous species already in solution (Langmuir, 1969b). Langmuir (1969b) suggests that the oxyhydroxides are mixtures of goethite and amorphous materials with small amounts of hematite.

Samples from wells in the Camden County area were collected and analyzed separately for total iron and ferrous iron, with the difference assumed to be the concentration of particulate ferric hydroxide (Langmuir, 1969a, p. 19). Total iron, therefore, represents the sum of dissolved ferrous iron and colloidal ferric hydroxide. The distribution of total iron and ferrous iron concentrations in water of the Potomac-Raritan-Magothy aquifer system in the vicinity of Camden County as determined by Langmuir (1969b) is shown in figures 23 and 24. In the outcrop area dissolved ferrous or suspended ferric species are generally less than 0.5 mg/l in unpolluted waters. High concentrations in the outcrop area are interpreted by Langmuir (1969b) as the result of local ground-water contamination.

Immediately downdip of the outcrop area the ferrous and ferric iron species increase abruptly to about 7.0 mg/l. The high build-up of ferrous iron species in this area is due to the reaction with the ferrous iron minerals, such as pyrite and siderite, in the Merchantville-Woodbury confining bed. Langmuir (1969b) concluded that the parallel increase in ferric species to 6.0-11 mg/l may be caused by partial oxidation of Fe^{+2} and $FeOH^{+1}$. Total iron concentrations in the water of the Potomac-Raritan-Magothy aquifer system are highest in areas adjacent to the outcrop area. Seaber (1965) in his geochemical analysis of the Englishtown Formation also noted that the



After Langmuir 1969a.

Figure 23. — Map showing generalized total iron concentrations in water of the Potomac-Raritan-Magothy aquifer system in Camden County, 1965.

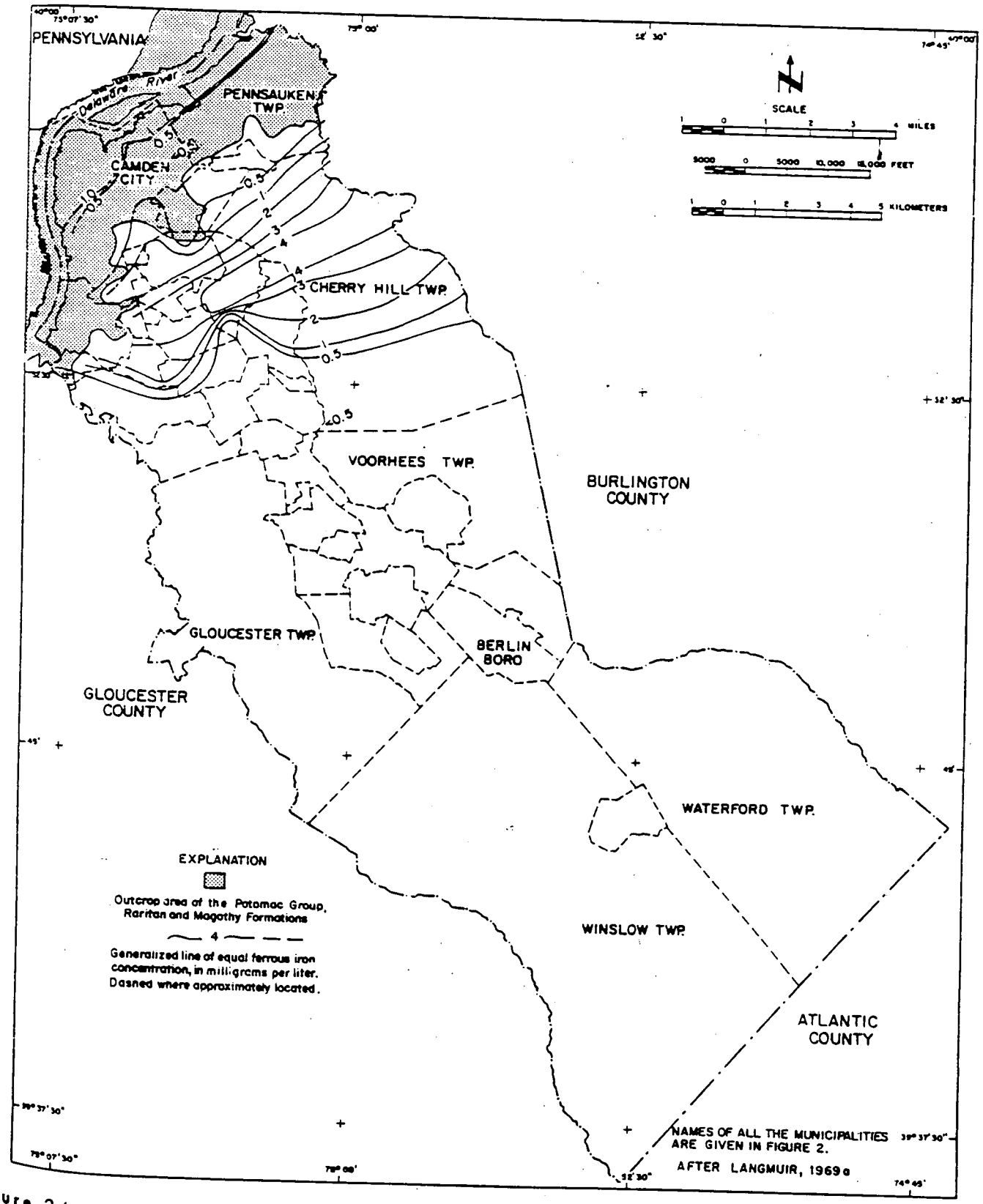


Figure 24. — Map showing generalized ferrous iron concentrations in water of the Potomac-Raritan-Magothy aquifer system in Camden County, 1965.

highest total iron concentrations occurred adjacent to the outcrop area.

Farther downdip both the dissolved ferrous and suspended ferric iron species decrease gradually to less than 0.5 mg/l. Langmuir (1969b) attributed the gradual decline in ferrous species to an increase in the stability of the suspended amorphous material due to aging, coupled with adsorption of ferrous iron by the oxyhydroxides and partial conversion of the amorphous phase to goethite. The decrease in suspended ferric species is interpreted by Langmuir as being caused by cation adsorption, aging, coagulation, and settling.

Ground-Water Contamination

Contamination of the water in the Potomac-Raritan-Magothy aquifer system is presently limited to the area at or near the outcrop. Contamination of the water-table and the artesian aquifer underlying Philadelphia has been thoroughly documented for the period prior to 1956 by Greenman and others (1961). They cite many instances of contamination, with the largest known area of contamination from industrial wastes located in the League Island Trough.

The League Island Trough is shown on the bedrock surface map of the Philadelphia area (fig. 25). The trough, filled with highly permeable sediments, has a northwest trend. A geologic section showing the distribution of the water-bearing sands and gravels from the Schuylkill River in Philadelphia through the Philadelphia Navy Base to the Texas Company's Eagle Point works near Westville, New Jersey, just south of the Camden County line, is shown in figure 26. The lower artesian aquifer (Farrington Sand of Greenman and others, 1961), consisting of sands and gravel immediately above the bedrock, has a direct hydraulic connection with the lower aquifer being tapped by the Texas Company wells in West Deptford Township, Gloucester County.

Barksdale and others (1958, p. 121) stated that, "Originally, the wells at the Navy Base yielded waters that were similar in chemical characteristics to that from the wells of The Texas Co." Greenman and others (1961, plates 21 and 22) indicate high concentrations of sulfates and dissolved solids in the water of the lower artesian aquifer in the League Island Trough in 1956. A sample from one well had more than 1,300 mg/l of sulfate. The movement of ground water with high

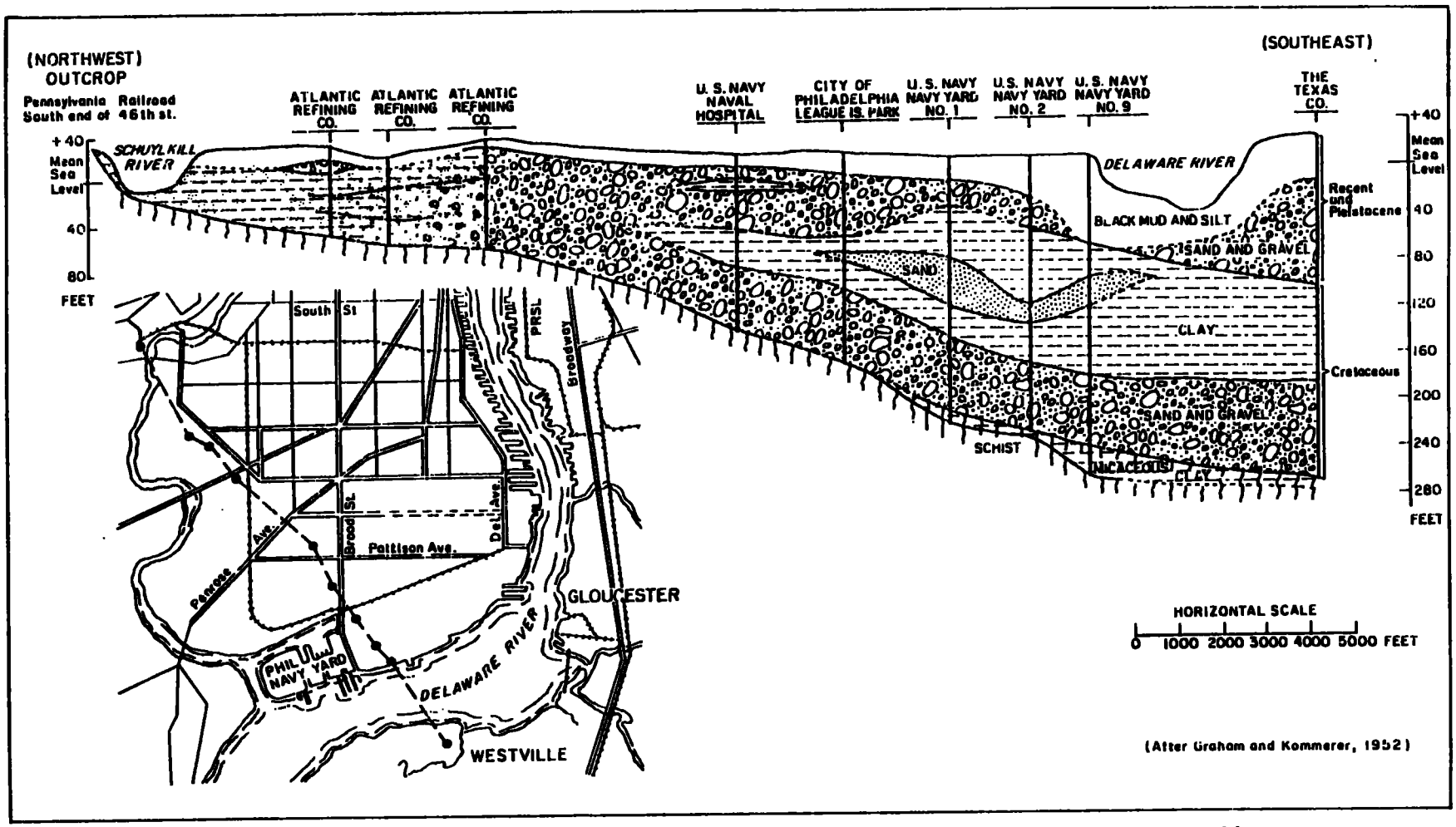


Figure 26. — Geologic cross section, Philadelphia, Pa. - Westville, N. J.

concentration of sulfates and dissolved solids was documented (Greenman and others, 1961) as moving downdip along the trough. The location of the 200 mg/l sulfate line in 1956 (Greenman and others, 1961) is shown in figure 27.

Withdrawal of water at the Philadelphia Navy Base from the lower aquifer had a regional effect on the potentiometric surface. As documented by Greenman and others (1961), heavy pumping at the Philadelphia Navy Base provided the hydraulic gradient that caused the movement of poor quality water from the head of League Island Trough downdip toward the Navy Base. Barksdale and others (1958, p. 121) stated that if pumping were greatly curtailed at the Navy Base the contaminated water would move beneath the river into New Jersey. In 1966 withdrawals at the Navy Base were substantially curtailed, while other wells in the area had been shut down. The Navy Base wells no longer act as a shield for the New Jersey wells and pumping at the Texas Company wells and other wells in New Jersey provided a new hydraulic gradient. A map of the potentiometric surface for the artesian aquifer in the Philadelphia area in October 1968 is shown on figure 28. The area with the lowest potentiometric surface is the area of the Texas Company well field. The nearest pumping to Navy Base wells is the Texas well field. Pumpage for 1968 for this well field was an average of 5.5 mgd. This was the largest total daily pumpage from the lower aquifer in the vicinity. In 1968 water samples of wells tapping the lower aquifer in Philadelphia, Camden area, and the Texas Company well field were collected and analyzed. Figure 27 shows the change in the 200 mg/l sulfate line from 1956 to 1968. The high sulfate, high dissolved-solids water will probably continue to move towards the Texas Company well field if present or increased pumpage rates are maintained.

Additional water samples were collected in 1971 from wells tapping the lower artesian aquifer for chemical (table 4) and trace-element analyses (table 10). The sulfate concentrations are shown in figure 27. Results indicate a decrease in concentrations of sulfate and dissolved solids from 1968 to 1971 in Navy Base wells 4 (PH 11) and 11 (PH 16), but an increase in Navy Base well 9 (PH 13). Navy Base wells 4 and 11 are located downdip from an area that had lower concentrations of sulfate in 1956 (Greenman and others, 1961, plate 22). If movement of ground water did occur downdip, there would be first an increase and then a decrease of sulfate content. Analyses for 1968 and 1971 indicate the decrease in sulfate concentration suggesting movement of ground water downdip. The sulfate concentration updip from Navy Base well 9 in 1956, as given in Greenman and others (1961, plate 22), indicates progressively higher sulfate concentrations.

Analysis of samples taken from Navy Base well 9 in 1967 and 1971 indicates progressively higher sulfate also suggesting movement of ground water downdip toward the Texas Oil Company well field.

The concentration of 24 trace elements in the water samples were obtained from wells tapping the lower aquifer. Results of the analysis (table 10) indicate that only iron and manganese exceed the limits suggested by the U. S. Public Health Service for drinking water. High concentrations of both these elements are not uncommon in the Potomac-Raritan-Magothy aquifer system and have been found in areas of no known contamination resulting from man's activities.

Another area of ground-water contamination, documented by Greenman and others (1961), is the artesian aquifer in the area north of the Philadelphia Navy Base, northwest of the Walt Whitman Bridge. Water from the well (PH 6) at the center of this area had a sulfate concentration of 231 mg/l in 1956 (Greenman and others, 1961, plate 22). Recent analyses of water from wells in this same area (table 4) show a lower sulfate concentration at the center of the area. Water from the same well (PH 6) at the center of the area had a sulfate concentration of 162 mg/l in July 1967 (table 4), a decrease in sulfate concentration of over 30 percent. However, sulfate and dissolved solids in water from PH 7, a well downdip from well PH 6, increased substantially. Sulfate concentration of water from well PH 7 in February 1956 was 18 mg/l (Greenman and others, 1961). In July 1967 the sulfate concentration was 22 mg/l and in May 1971, 131 mg/l (table 4), a 600 percent increase. The increase in sulfate concentration may be due to movement of water from well PH 6 toward well PH 7. Figure 28 shows the area at well PH 7 to be a center of a regional cone of depression. There is a possibility that the contaminated water in the Navy Base area may also move northward due to the much greater gradient in that direction since 1966. Continued surveillance of the quality of ground water would be a method that could be used to determine the change in quality and its possible effect on the ground-water supplies of New Jersey.

Another area of possible water-quality problems in the Potomac-Raritan-Magothy aquifer system in Camden County is located approximately one mile south of the Benjamin Franklin Bridge. Water samples from wells in Philadelphia (one mile south of the Benjamin Franklin Bridge) indicate that water in the lower aquifer contained high sulfates (as much as 284 mg/l) and dissolved solids (as much as 646 mg/l) in 1956 (Greenman and others, 1961, plates 21 and 33). Recent potentiometric measurements in the area show a gradient to the east and to the south; thus, it is possible for this poor quality water to move

to New Jersey. No water samples have been collected from wells in immediately adjacent areas of Camden County. Analyses of water from wells inland show that the quality in the lower aquifer has improved since 1927 (Thompson, 1932) to 1967 (table 4).

Chromium equal to or in excess of the State's standards for potable water has been found in water from two wells in Camden City. Routine sampling of the Camden City Water Department's distribution system by the State in December 1972 showed a high chromium content in the water delivered to a residence. Analyses for chromium from samples obtained from Camden City Water Department public-supply wells in the same area indicated that well 4 (CA 42) had chromium values in excess of the State's standards. Sampling of additional wells located nearby showed even higher chromium values for the West Jersey Hospital well (CA 47). Re-sampling of water from five wells in November 1973 confirmed the high chromium values for two of the five wells. The results of the analysis are given in table 10. The chromium values are 200 µg/l (micrograms per liter) for the West Jersey Hospital well and 50 µg/l for Camden City Water Department well 4. The State's standard for potable water is 50 µg/l for hexavalent chromium. It can be assumed that most of the chromium reported in table 10 is hexavalent chromium. Both wells tap the same sand unit in the aquifer system. The well yielding water with the lower chromium values is located 600 feet east of the West Jersey Hospital well. The potentiometric head measurements made in November and December 1973 show water levels were lower east of the two wells, indicating an easterly hydraulic gradient with ground-water movement in that direction. Water-level measurements made in October 1968 indicated the same gradient direction. This would suggest the chromium content in the ground water in this sand unit would be higher in the area west of the West Jersey Hospital well.

The source of the chromium is not known. However, at least three metal plating companies are located within a radius of 1,600 feet. Analyses of waste water to sewer lines from three metal plating companies for samples collected in February and March 1973 show high chromium values in excess of 9 mg/l (written commun., New Jersey Department of Environmental Protection, 1973).

Barksdale and others (1953) and Greenman and others (1961) have shown that induced recharge from the Delaware River does occur. Deterioration of the quality of the river by man's activities may, in turn, cause water-quality problems in that part of the aquifer being recharged by the river. A "polluted" Delaware River is a possible source of water contamination in

the Potomac-Raritan-Magothy aquifer system in the northeastern part of Camden County.

Salt-Water Encroachment

There are two areas of potential salt-water encroachment in the Potomac-Raritan-Magothy aquifer system in Camden County. One area is along the Delaware River and the second is near the fresh water-salt water interface in Winslow Township.

The Delaware River in the vicinity of Camden County is tidal. Normally salt water from the ocean does not reach the vicinity of Camden. In extended drought, such as that between 1961 and 1966, a decrease in fresh-water inflow to the estuary permits salt water to move farther upstream. For example, in 1965 and 1966 the salt front advanced farther upstream in the Delaware estuary than had been previously recorded. On September 1966 the 250 mg/l chloride line reached the vicinity of the Benjamin Franklin Bridge (Keighton, 1969). At the same time the chloride concentration of the Delaware River at Delaware Memorial Bridge was 4,340 mg/l. Aquifer test and water-quality data given in another section of this report have indicated hydraulic connection between the river water and nearby wells. If the river's chloride content in the Philadelphia-Camden area were to remain at relatively high levels for a long period of time, there could be movement of this water from the river into the aquifer system, especially the middle and upper aquifers.

The second area of potential salt-water encroachment in the aquifer system is in the vicinity of the salt water-fresh water interface. The interface in the aquifer system is actually a broad zone. An approximate location in Camden County based primarily on the chloride concentration of the water from the New Brooklyn Park well 1 (WI 27) is shown on figure 18. The chloride concentration of water from this well in 1960 (Donsky, 1961) was 310 mg/l. In 1967 and in 1972 the chloride concentration (table 4) was approximately the same suggesting no change in the lower aquifer for the 12-year period. The chloride concentration of a water sample from the upper aquifer (New Brooklyn Park 2, WI 28) was 4.2 mg/l in 1961 (Donsky, 1961) and 2.5 mg/l in 1972 (table 4).

The ground-water system is a dynamic one. Changes in the hydraulic gradients due to pumping may cause the movement of higher chloride water towards centers of pumpage. Withdrawals from the Potomac-Raritan-Magothy aquifer system in the central part of the county is almost all from the upper

aquifer (fig. 16). In addition pumping withdrawals from the upper aquifer at Bell's Lake, Pitman, Glassboro, and Clayton in Gloucester County to the south has further enlarged the cone of depression over a sizable area (fig. 18). Increased pumping in this area of Gloucester County and additional pumping downdip of areas of existing pumping in Camden County may move water of high chloride content toward the centers of pumping. Water-level measurements made in October 1968 indicate that the potentiometric surface in the upper aquifer is lower in the area of pumping than in the downdip area (fig. 18). The direction of the hydraulic gradient is from the interface toward the center of pumping. It is, therefore, possible for the high-chloride water to migrate toward the centers of pumping.

An extensive aquifer test at Courses Landing in Salem County has shown that the most immediate danger of salt-water contamination of middle and upper aquifers is probably by vertical coning of the salt water from the lower aquifer (Gill and Farlekas, written commun., 1969). For example, heads in the upper aquifer at Courses Landing were lowered by withdrawals causing a head difference to develop between the upper and lower aquifer. This change in the hydraulic gradient caused the higher chloride water to move upward from the lower aquifer. A similar situation may exist in southeastern Camden County and adjacent Gloucester County. Head measurements made in October 1968 at the New Brooklyn Park observation wells (WI 27 and WI 28) indicate that a 16-foot head differential exists between the upper aquifer and the lower aquifer. The well tapping the upper aquifer had the lower head. The head in the upper aquifer was at an altitude of 42 feet below mean sea level. The nearest withdrawal point from the Potomac-Raritan-Magothy aquifer system is 6 miles from the New Brooklyn Park wells. In Glassboro, Gloucester County head measurements of approximately 50 feet below mean sea level were observed in October 1968 during non-pumping conditions in three wells tapping the upper aquifer. Under pumping conditions the water levels would be at least 20 feet lower near the pumping wells. The potentiometric surface for the lower aquifer is not known for the Glassboro area, but in all probability it is higher than the potentiometric surface in the upper aquifer. If the head in the lower aquifer is significantly higher than the head in the upper aquifer, the head differential would cause water to move upward into the upper aquifer. High-chloride water (chloride content greater than 250 mg/l) underlies the water in the upper aquifer in the southeastern part of Camden and adjacent Gloucester County (fig. 18). Hence, vertical coning of high-chloride water is a possibility in this area.

Merchantville Formation and Woodbury Clay

Geology

The Merchantville Formation and Woodbury Clay crop out in an irregular-shaped belt in the northwestern part of Camden County (fig. 4). Together they have an outcrop area of 18.7 square miles.

The Merchantville Formation is the oldest major marine glauconitic unit in the New Jersey Coastal Plain. The contact between the Merchantville Formation and the underlying Magothy Formation is always sharp and disconformable (Owens and Sohl, 1969). The thickness of the Merchantville Formation is consistently 50 feet in outcrop but the lithology varies along strike. The formation is essentially a dark gray to grayish-black micaceous clay to clayey silt with beds and lenses of glauconite sand, especially near the top of the formation. A sand unit which ranges from 0-30 feet thick in Camden County has been mapped from geophysical logs. The thickness is shown on figure 29. The structure contour map of the top of the sand unit is given in figure 30. Three cross sections (fig. 31) based on geophysical logs suggest that this unit is near the top of the Merchantville Formation.

The Woodbury Clay which overlies the Merchantville Formation is a grayish-black massive micaceous clayey silt. The thickness of the Woodbury in the outcrop area is reported to be 50 feet (Owens and Sohl, 1969). Calcareous fossils found at Haddonfield indicate a marine origin for the unit (Owens and Sohl, 1969). The top of the Woodbury Clay is delineated in figure 32. The thickness of the Merchantville Formation and Woodbury Clay ranges from 106 to 165 feet in Camden County and thickens downdip as shown on figure 33.

Particle-size analyses of samples of the Merchantville Formation and Woodbury Clay from the New Brooklyn Park well (WI 27) in Winslow Township are given in table 5. The analyses of the Woodbury Clay indicate a range of 70 to 98 percent clay and silt. The analyses of the Merchantville Formation indicate a range of 42 to 56 percent of clay and silt.

Hydrology

The Merchantville Formation and Woodbury Clay function

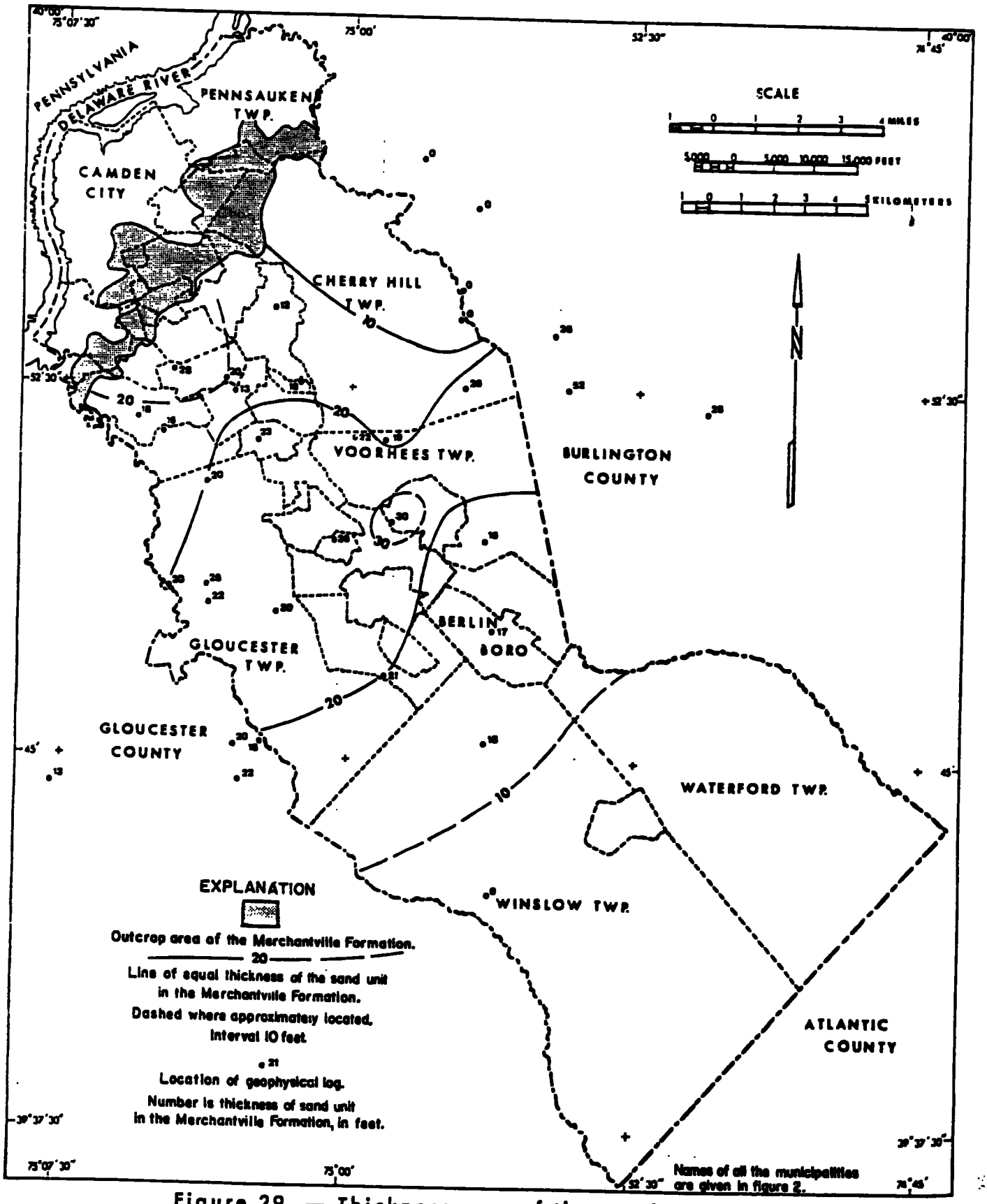


Figure 29. — Thickness map of the sand unit in the Merchantville Formation in Camden County.

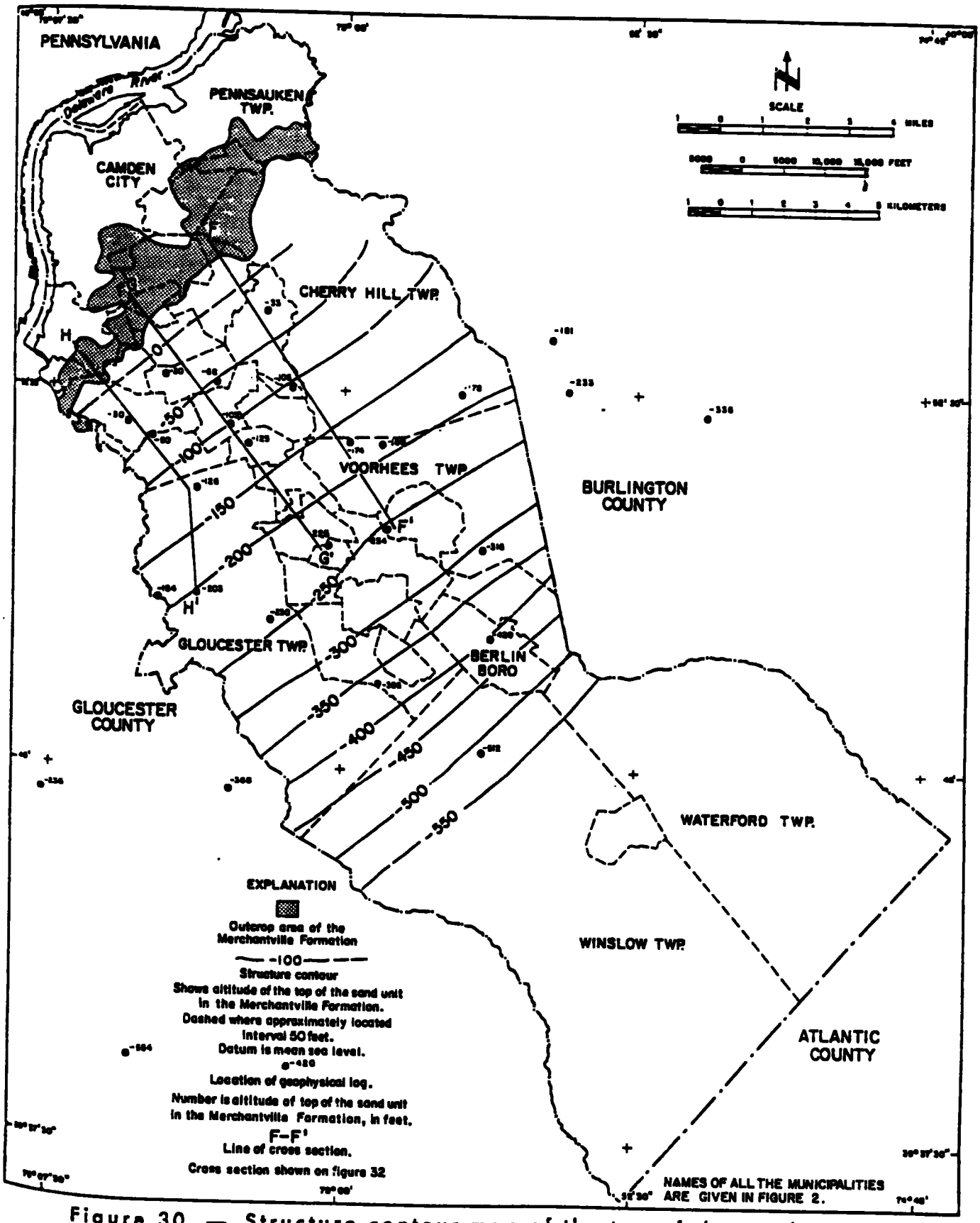


Figure 30. — Structure contour map of the top of the sand unit in the Merchantville Formation in Camden County.

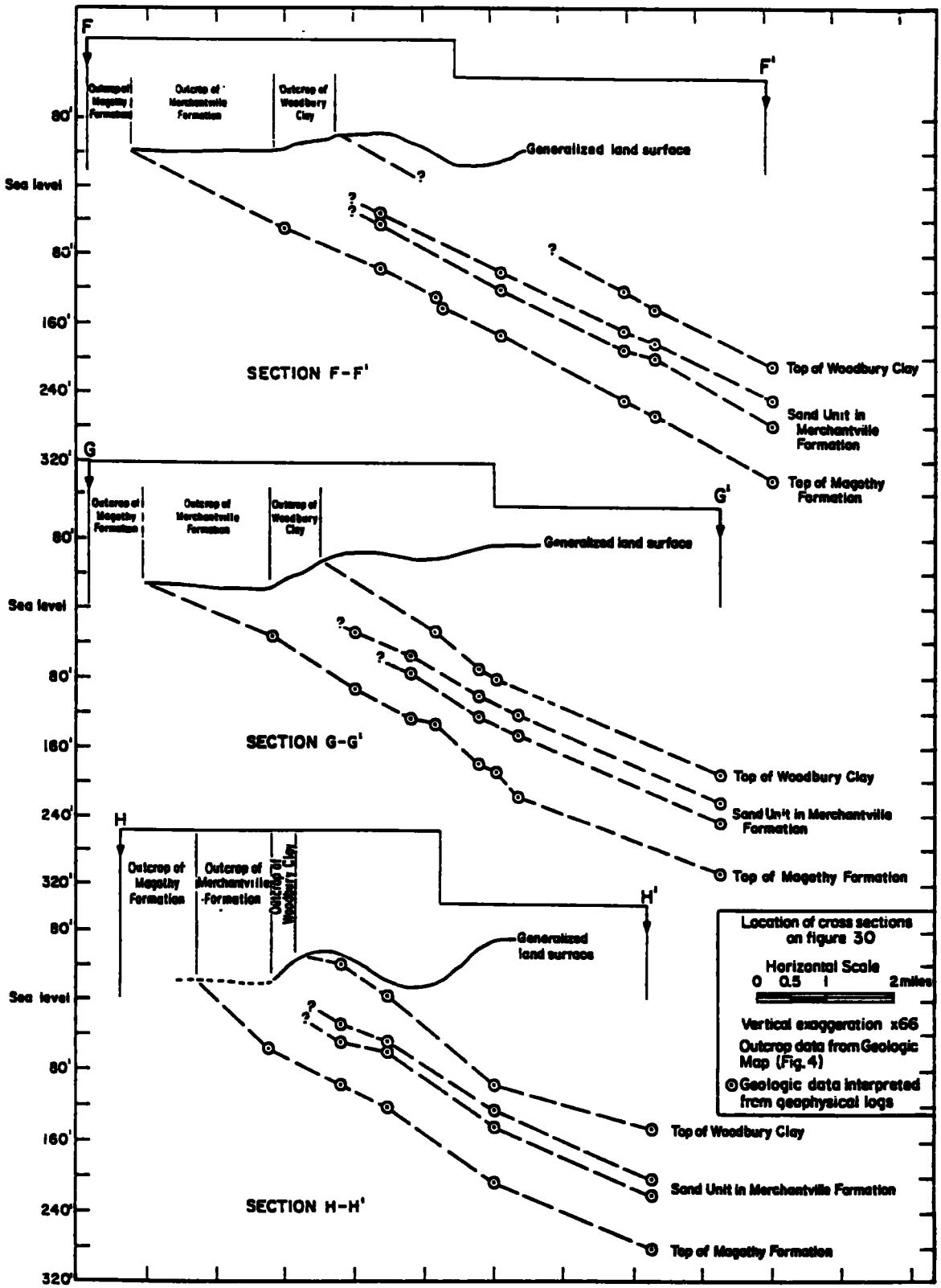


Figure 31. — Geologic sections of the Coastal Plain in the northeastern part of Camden County.

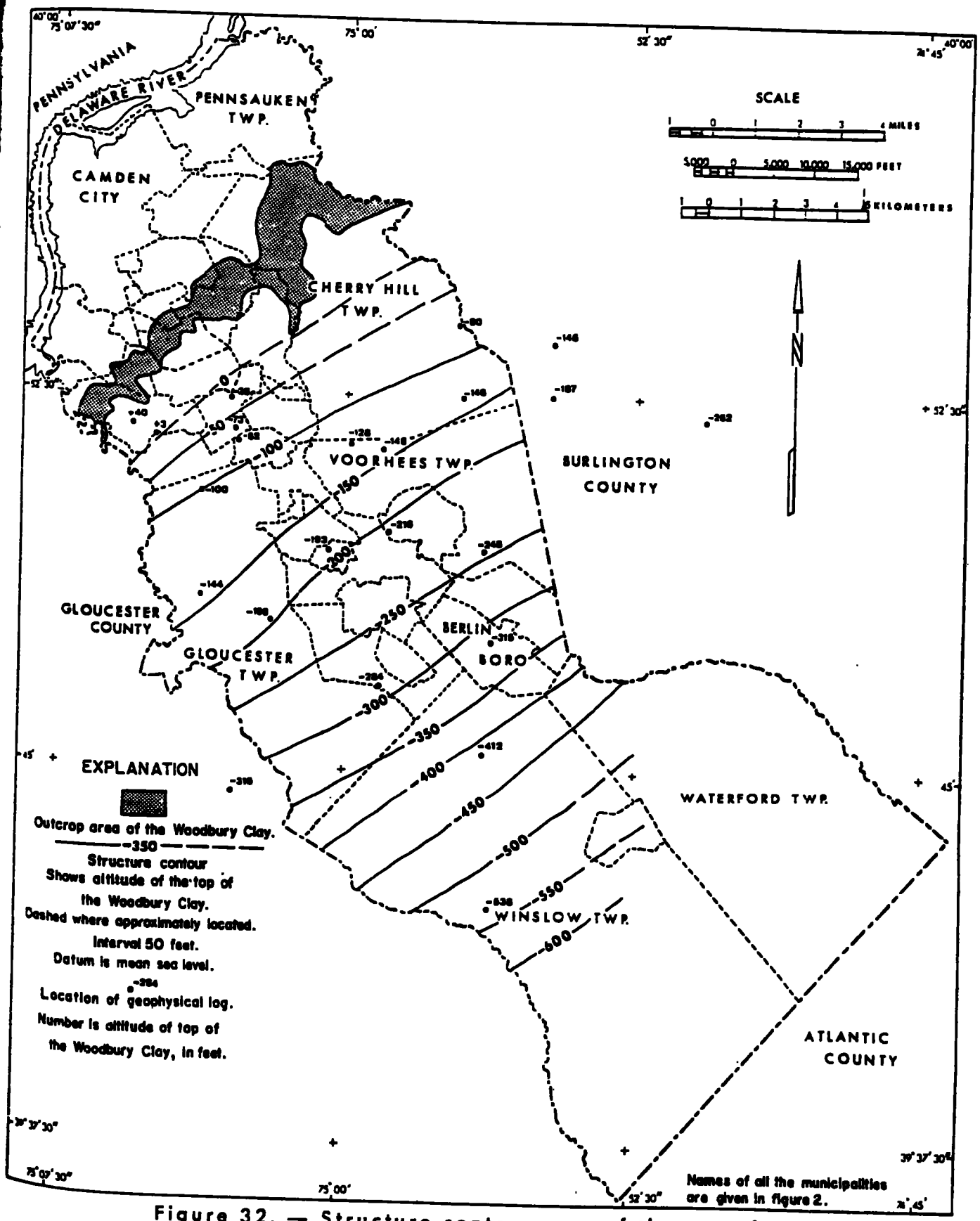


Figure 32. — Structure contour map of the top of the Woodbury Clay in Camden County.

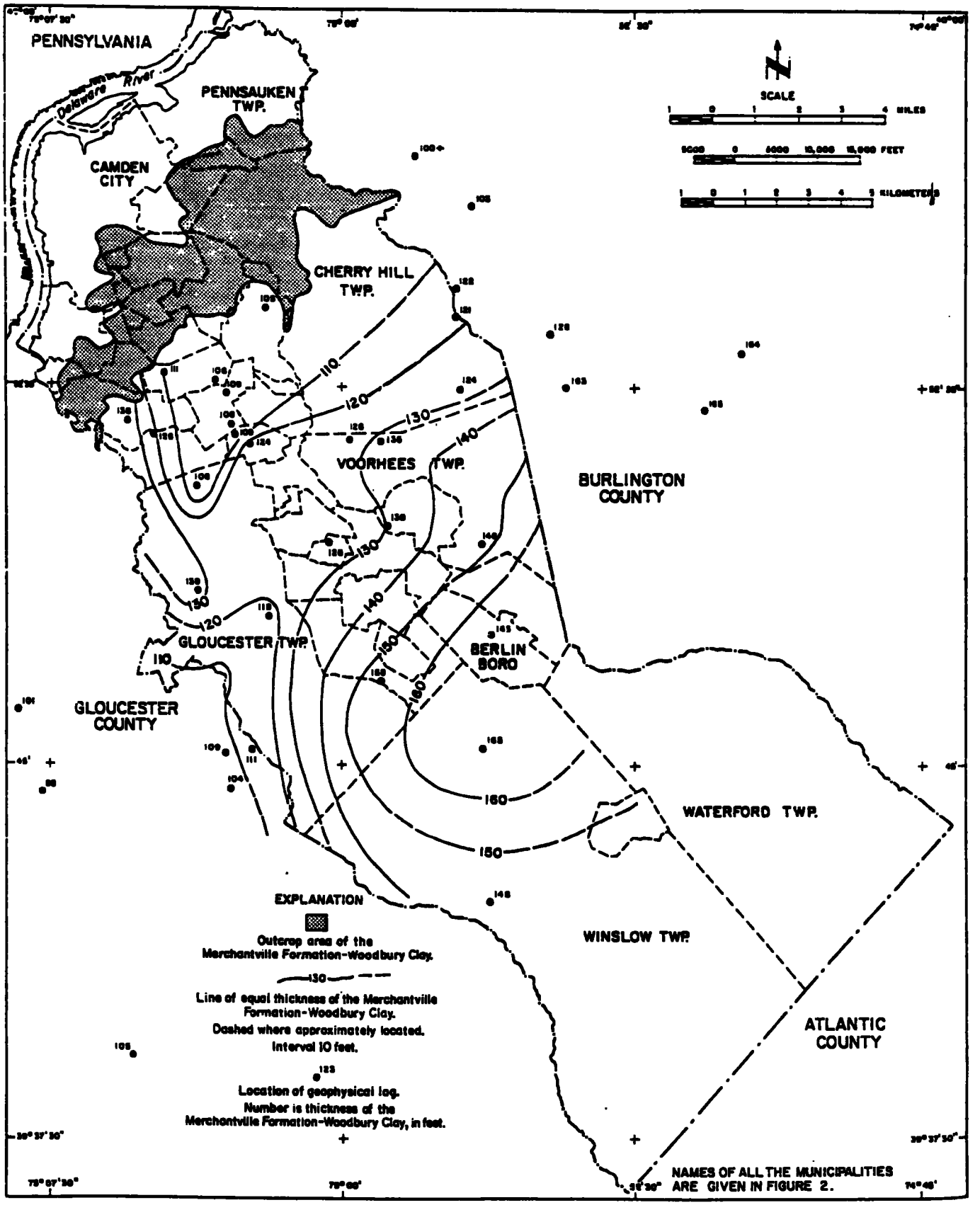


Figure 33. — Thickness map of the Merchantville Formation-Woodbury Clay in Camden County.

as semipervious confining units. However, the lensing sand unit near the top of the Merchantville Formation is tapped for domestic water supplies. Yields range from 15 to 50 gpm for the wells given in table 1. Wells that tap this sand unit are located near the outcrop area. The prepumpage potentiometric surface in this unit in Camden County was at a higher level than the prepumpage potentiometric surface of the Potomac-Raritan-Magothy aquifer system and at a lower level than the prepumpage potentiometric surface in the overlying Englishtown Formation, for the same area. Sparse water-level data from drillers' records of wells drilled in the early to mid-1950's suggest a decline in potentiometric surface from 1900 to the 1950's.

Quality of Water

Only one sample (GT 4) was obtained from a well tapping the sand unit in the Merchantville Formation. The sample (table 4) had a high pH (8.3), low chloride content (0.8 mg/l), low sulfate content (3.9 mg/l), and low dissolved solids (107 mg/l).

Englishtown Formation

Geology

The Englishtown Formation crops out in the northwestern part of the county in an area of approximately 7.7 square miles (fig. 4). It lies conformably above the Woodbury Clay. The transition from the Woodbury Clay to the Englishtown Formation is marked by a gradual increase of quartz sand and a decrease in silt and clay.

The lithology of the Englishtown Formation in New Jersey varies along strike and downdip. Several lithofacies have been recognized. In the southern part of the coastal plain the Englishtown is a massive dark-colored silty sand that resembles the non-glauconitic beds of the Merchantville Formation (Owens and Sohl, 1969). It is 40 feet thick in outcrop. Rush (1968, fig. 22) has shown that the aggregate thickness of sand in the Englishtown decreases downdip toward the south in Burlington County.

The structure contours (fig. 34) on the top of the Englishtown Formation in Camden County indicate that the

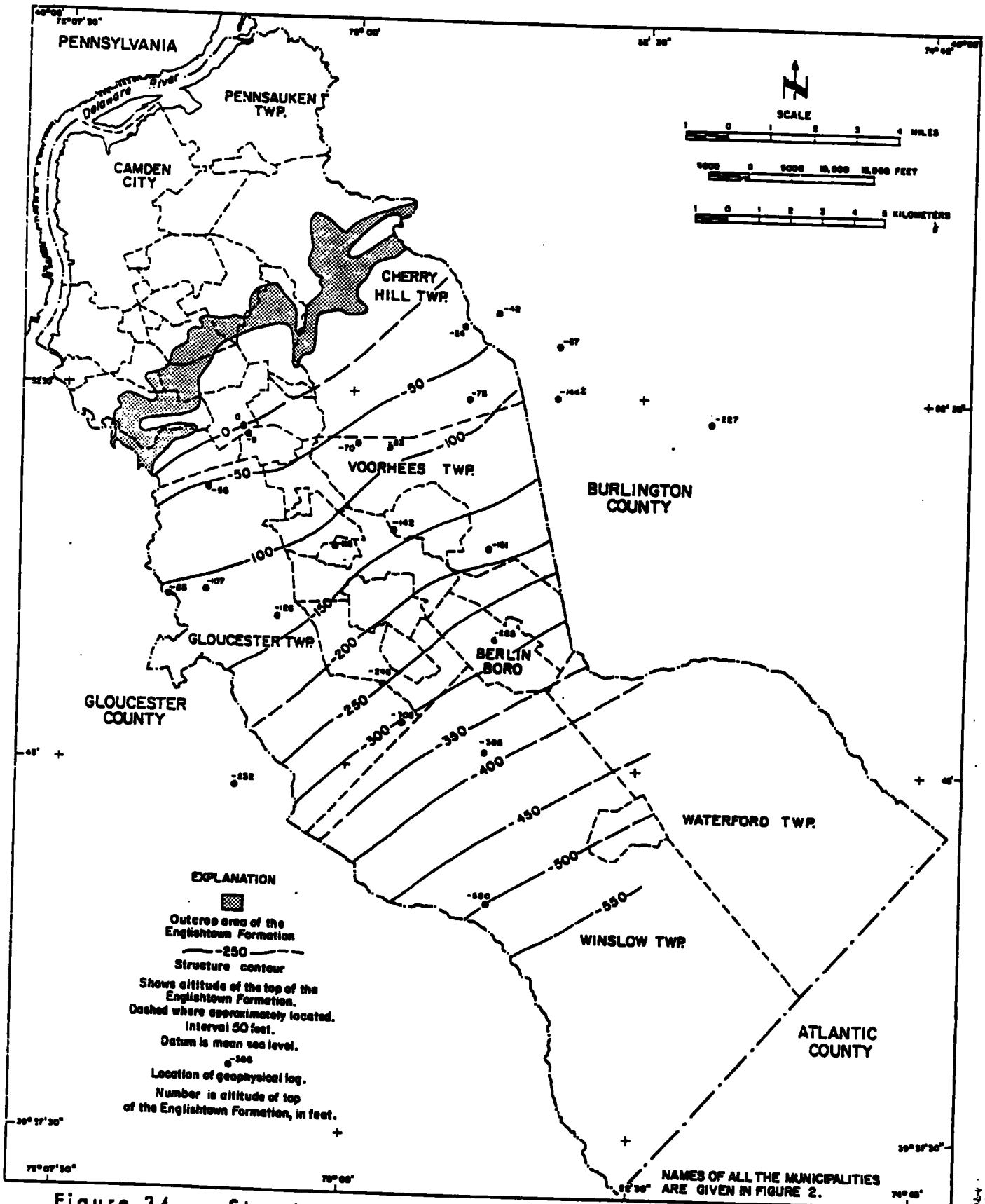


Figure 34. — Structure contour map of the top of the Englishtown Formation in Camden County.

Englishtown strikes in a northeasterly direction and has a dip of approximately 40 feet per mile toward the southeast.

Figure 35 is a lithologic map of the sand facies of the Englishtown Formation in Camden County. The aggregate thickness of the sand ranges from 5 to 30 feet with the greatest thickness of the sand in the central part of the county. The farthest downdip data available for the Englishtown in Camden County is from the New Brooklyn Park well 1 (WI 27). Particle-size analyses of samples from this test well (table 5) indicate a range of 67 to 87 percent of clay and silt.

Hydrology

Few wells tap the Englishtown Formation in Camden County (table 1). Domestic wells tapping the unit are located near the outcrop area. The only known public-supply or industrial wells tapping the formation in Camden County belong to the Clementon Water Department. All but one of their wells tap the Englishtown aquifer. The Clementon Water Department wells are located in the central part of the county, the area of greatest sand thickness. Yields of three wells in the Englishtown (Clementon Water Department wells 6, 8 and 9) are 250, 510, and 503 gpm, respectively. The specific capacities for wells 8 and 9 are 9.8 and 5.3 gpm, respectively.

Analysis of data from an aquifer test conducted in 1959 in Lakewood, Ocean County, (Seaber, 1965, p. B16) indicated a transmissivity of 1,340 ft^2/day (10,000 gpd/ft) and a coefficient of storage of 2.7×10^{-4} for the pumping phase of the test. For the recovery phase of this test the transmissivity is 2,144 ft^2/day (16,000 gpd/ft) and storage coefficient is 2.0×10^{-4}. The computed average hydraulic conductivity is about 40 ft/day (300 gpd/ft^2).

The transmissivity of the aquifer near the Clementon Water Department wells 8 and 9 was calculated using the method devised by Hurr (1966) which is based on the analysis of a single observation of drawdown at one well. This method is useful although it provides only an estimate. The computed transmissivity of the aquifer using data from the Clementon Water Department well 8 (CL 3) is 2,150 ft^2/day (16,050 gpd/ft); whereas, well 9 (CL 5) is 1,290 ft^2/day (9,630 gpd/ft). An assumed coefficient of storage of 2.7×10^{-4} was used in the calculations.

Porosity and hydraulic conductivity values obtained

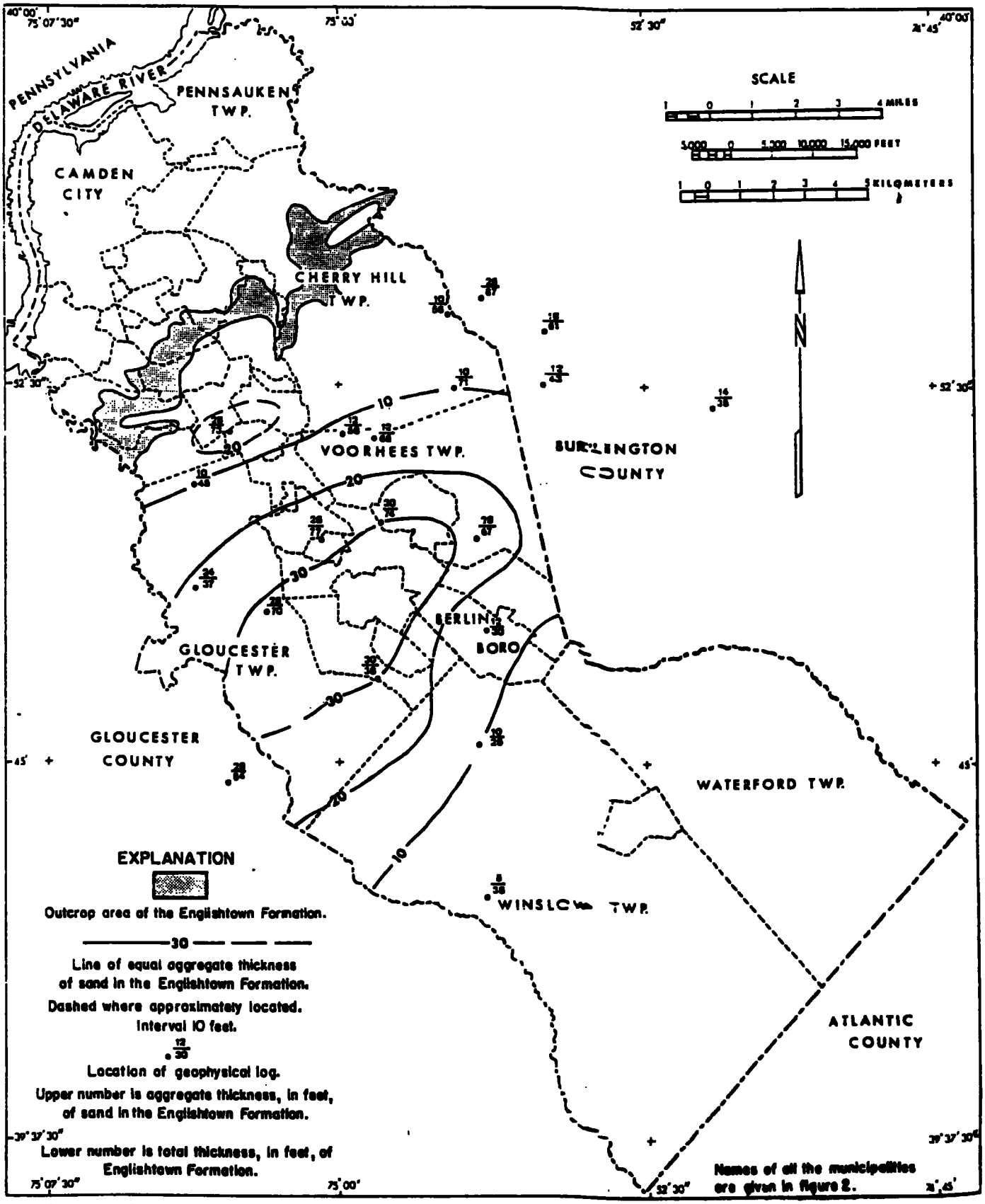


Figure 35. — Map showing aggregate thickness of the sand facies of the Englishtown Formation in Camden County.

from laboratory analyses of samples from the New Brooklyn Park well (WI 27) in Winslow Township are listed in table 5. The hydraulic conductivity values are very low indicating that the Englishtown Formation in the New Brooklyn Park area is not suitable for development as a source of water.

Seaber (1965, p. 16) indicates that the Englishtown Formation does not receive its major recharge from the outcrop area but rather from vertical leakage. The recharge is obtained from the overlying Wenonah-Mount Laurel aquifer through the Marshalltown Formation in areas of topographic highs. Figure 36 shows the potentiometric surface for the Englishtown Formation based on limited available data. The data suggest that a potentiometric high occurs in the Marlton area of Burlington County just east of Cherry Hill Township.

Pumpage from the Englishtown Formation in Camden County during 1966 amounted to 0.76 mgd. Peak use occurred in July with an average of 1.02 mgd. Additional amounts of water can be derived from the Englishtown Formation, especially in the central part of the county where the sand is thickest. However, greatly increased withdrawals from the aquifer in the county may accelerate the rate of water-level decline.

Quality of Water

Only one analysis of a well sample from the Englishtown Formation in Camden County is given in table 4. Seaber (1965, p. 6) in his study on the variations in chemical character of water from the Englishtown Formation lists additional water analyses of six wells in Camden County. The quality of the water from the Englishtown Formation in Camden County, as reported by Seaber (1965), is within the State's standards for potable water. Chloride concentration of water from the six wells ranges from 1.9-10 mg/l; sulfate from 6.9-25 mg/l; dissolved solids from 35-105 mg/l; and iron from 0.26-7.8 mg/l.

An analysis in September 1969 of a sample from the Clementon Water Department well 8 (CL 3) (table 4) is similar to a 1957 analysis of the Water Department's well 9 (CL 5). This suggests that very little change has occurred in the quality of water of the Englishtown Formation in the area.

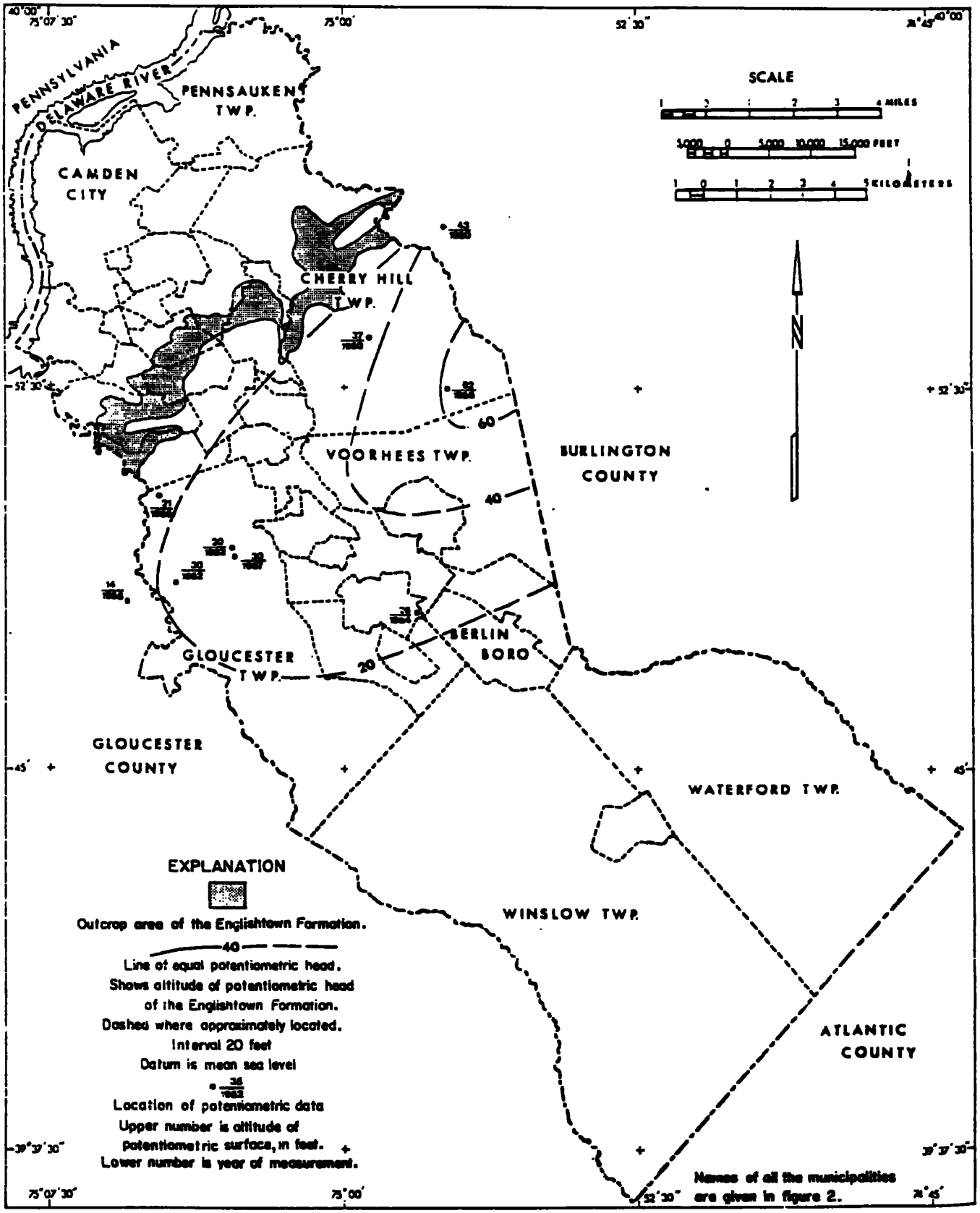


Figure 36. — Generalized potentiometric map of the Englishtown Formation in Camden County.

REFERENCE NO. 17

INTRODUCTION

The Potomac Group and the Raritan and Magothy Formations of late Early to early Late Cretaceous age form an aquifer system consisting chiefly of interlayered beds of quartz sand, silt, and clay. The aquifer system is the most heavily pumped in New Jersey and contains fresh water over an area of about 2,500 mi^2 (6,500 km^2).

This atlas illustrates some of the geohydrologic information available for the aquifer system and its confining units. The maps show the configuration of the bedrock surface and the altitude of the top of the confining unit above the aquifer system. Also included are maps depicting the altitude of the top of the aquifer system, three time-related potentiometric surface configurations, and three head declines of the aquifer system.

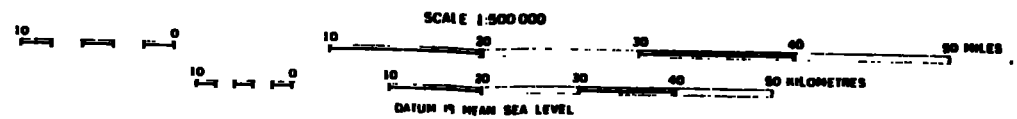
The area represented by these maps lies within the Coastal Plain physiographic province (Fenneman, 1938) and is almost entirely within New Jersey. The area is a low lying, gently rolling plain that ranges in altitude from sea level to about 390 ft (120 m). The western boundary of the province is marked by the Fall Line, which separates the rolling hills of the Piedmont on the west from the flat lowland of the Coastal Plain on the east. The Fall Line occurs along the west edge of the Potomac-Raritan-Magothy aquifer system.

The atlas presents information collected during an investigation of the geology, hydrology, and water quality of the Potomac-Raritan-Magothy aquifer system. The investigation was made by the U.S. Geological Survey in cooperation with the New Jersey Department of Environmental Protection, Division of Water Resources (formerly the Department of Conservation and Economic Development, Division of Water Policy and Supply).

Most numbers are given in this report in English units followed by metric units in parentheses. The conversion factors used are as follows:

MULTIPLY ENGLISH UNITS	BY	TO OBTAIN METRIC UNIT
feet (ft)	.3048	metres (m)
square feet (ft^2)	.0929	square metres (m^2)
feet squared per day (ft^2/d)	.0929	metres squared per day (m^2/d)
gallons (gal)	3.7854	litres (l)
gallons per minute (gal/min)	.06309	litres per second (l/s)
gallons per minute per foot [(gal/min)/ft]	.207	litres per second per metre [(l/s)/m]
inches (in)	25.40	millimetres (mm)
square miles (mi^2)	2.590	square kilometres (km^2)

Chemical concentration is given in milligrams per litre (mg/l). For concentrations less than 7,000 mg/l, the numerical value is about the same as for concentrations given in parts per million.



GEOHYDROLOGIC MAPS OF THE POTOMAC-RARITAN-MAGOTHY AQUIFER SYSTEM IN THE NEW JERSEY COASTAL PLAIN

By

H. E. Gill and G. M. Farlekas

1976

Most numbers are given in this report in English units followed by metric units in parentheses. The conversion factors used are as follows:

MULTIPLY ENGLISH UNITS	BY	TO OBTAIN METRIC UNIT
feet (ft)	.3048	metres (m)
square feet (ft^2)	.0929	square metres (m^2)
feet squared per day (ft^2/d)	.0929	metres squared per day (m^2/d)
gallons (gal)	3.7854	litres (l)
gallons per minute (gal/min)	.06309	litres per second (l/s)
gallons per minute per foot [(gal/min)/ft]	.207	litres per second per metre [(l/s)/m]
inches (in)	25.40	millimetres (mm)
square miles (mi^2)	2.590	square kilometres (km^2)

Chemical concentration is given in milligrams per litre (mg/l). For concentrations less than 7,000 mg/l, the numerical value is about the same as for concentrations given in parts per million.

LOWER CONFINING UNIT

The Coastal-Plain sediments in New Jersey and Pennsylvania lie unconformably on pre-Cretaceous bedrock consisting chiefly of rocks of Precambrian(?) and early Paleozoic age. The bedrock surface beneath the Coastal Plain sediments (bedrock surface map, sheet 1) is irregular and resembles the bedrock surface of the Piedmont physiographic province. The configuration of the bedrock surface has been influenced by at least two major factors: (1) structural elements within the bedrock and (2) fluvial erosional processes. The two dominant regional structural features of the northern Atlantic Coastal Plain are the large downwarped troughs in the vicinity of Raritan Bay (Owens and Sohl, 1969) and the Salisbury embayment (Richards, 1945), which is centered in the vicinity of Chesapeake Bay and extends into southern New Jersey. Smaller troughs and arches exist between these two large elements. Fluvial erosional features, such as channels incised into the bedrock in Philadelphia and Bucks Counties in Pennsylvania, have been described in detail by Greenman and others (1961). These southeast-trending channels are filled with highly permeable Coastal-Plain sediments.

The contours on the bedrock surface map (sheet 1) are based on data from deep wells, test holes, and seismic refraction profiles. Well and test-hole data are the primary control in those areas where the depth to bedrock is 1,000 ft (305 m) or less. Seismic data are the primary control in the remainder of the area, with data from several deep test wells confirming the seismic data.

POTOMAC-RARITAN-MAGOTHY AQUIFER SYSTEM

The Potomac Group and Raritan and Magothy Formations in New Jersey consist of interbedded quartz sand (contains some gravel), silt, and clay, which were deposited in a complex fluvial-deltaic environment (Owens and others, 1968). The sediments range in age from late Early Cretaceous to early Late Cretaceous. Recent palynologic analysis by Wolfe and Pakiser (1971), Doyle (1969), and Sirkin (written commun., 1971) indicate that although the Potomac Group is present in more than 10 sites in widely distributed locations in New Jersey, it is missing at other sites. The known thickness of the Potomac Group is as much as 200 ft (60 m) in New Jersey.

The type locality for the Raritan Formation Late Cretaceous in age is near Raritan Bay, where it is exposed in several pits. The Raritan has been divided into five members (Wolfe and Pakiser, 1971, p. B45). The maximum total thickness of the five members in the type locality is approximately 400 ft (120 m) near the outcrop (Owens and Sohl, 1969, p. 239, Barksdale and others, 1943, p. 67–68). Individual members cannot be traced into the Delaware Valley, where the Raritan consists largely of thick interbeds of light-colored sands and massive to thick-bedded variegated silty clay. Thick black clay beds are present in the type locality but are not found in the Delaware Valley (Owens and Sohl, 1969, p. 239).

The Magothy Formation of Late Cretaceous age lies unconformably on the Raritan Formation. At Raritan Bay the Magothy consists of four units, with a total thickness of approximatley 250 ft (75 m). Southeast of Raritan Bay near Trenton, the Magothy, consisting of light-colored cross-stratified sand and lenses of dark clay, thins to approximately 50 ft (15 m). The four separate units are not discernable near Trenton (Owens and Sohl, 1969, p. 240–242).

The Potomac Group and the Raritan and Magothy Formations together form a wedge-shaped body that thickens downdip to the southeast. The thickness of the aquifer system near the outcrop in Camden County is approximately 250 ft (75 m). The maximum thickness in New Jersey is 4,100 ft (1,250 m) at Cape May. The thickness can be estimated by comparing the bedrock surface map (sheet 1) with the map showing the top of the aquifer system (sheet 1). The aquifer system contains aquifer units consisting of sand, containing some gravel in places, and confining units of silt and clay. In general, sand predominantes in the outcrop area; whereas, the amount of silt and clay increases downdip.

The aquifer system is very productive, yielding nearly 50 billion gal (190 billion l) of water in 1967 in the four Delaware Valley counties of Salem, Gloucester, Camden, and Burlington. Individual wells tapping the system yield more than 2,000 gal/min or 125 l/s. Average yield for more than 100 wells in Camden County, having diameters of 12 in (305 mm) or greater, is almost 1,100 gal/min (70 l/s). The average specific capacity of these wells is 29 (gal/min)/ft or 6 (l/s)/m of drawdown (Farlekas and others, 1973). Analyses of aquifer tests in Burlington, Camden, and Gloucester Counties using equations for leaky artesian aquifer (Hantush, 1960) indicate that the transmissivity of individual aquifers ranges from 2,300 to 31,000 ft^2/d (215 to 2,900 m^2/d), and the storage coefficient ranges from 3.3×10^{-5} to 4.0×10^{-3} (Harold Meisler, written commun., 1973).

A potentiometric surface map (sheet 2) representing the generalized natural (prepumping) condition about 1900 was constructed largely from data recorded in the annual reports of the State Geologist from 1885 to 1904. More recent water-level data have been used where these levels were believed to represent natural (prepumping) conditions.

The 1900 potentiometric surface map (sheet 2) shows several ground-water mounds that coincide with topographically high areas, suggesting that the Potomac-Raritan-Magothy aquifer system is recharged by infiltration in the high-level outcrop area northeast of Trenton and by leakage through the overlying semipervious confining layers downdip of the outcrop area. The altitude of the potentiometric surface at its high point exceeds 80 ft (24 m). Water movement in the Potomac-Raritan-Magothy aquifer system before pumping was from the mounds toward areas with lower water levels.

Data from observation wells and from wells drilled from mid-1955 to mid-1957 were used to construct the 1956 potentiometric surface (sheet 2). Areas of heavy ground-water development are indicated by cones of depression in Camden and Gloucester Counties. Water levels in these areas were in excess of 30 ft (9 m) below sea level.

The 1968 potentiometric surface map (sheet 2) was constructed from water levels measured in about 300 wells in October 1968. The most extensive water-level depressions underlie Camden County, where levels are more than 70 ft (21 m) below mean sea level. The cones of depression expanded from 1956 to 1968 to include larger areas underlying Salem, Gloucester, Camden, and Burlington Counties. The cones extend into that part of the aquifer system containing brackish to salty water. Water levels throughout much of this four-county area were below mean sea level in October 1968.

Water-quality sampling in the early 1960's and 1970's of several test wells in southeastern Camden County, and the central part of Burlington County indicate no apparent change in chloride concentrations. A test well at the coast in Ocean County indicates chloride concentrations have increased from 670 mg/l in 1962 to 840 mg/l in 1970.

Water-level decline maps for 1900–56, 1956–68, and 1900–68 (sheet 2) were constructed from the potentiometric maps. In much of Salem, Gloucester, Camden, Burlington, Ocean, and Monmouth Counties the decline was 10 ft (3 m) or more and in some areas exceeded 30 ft (9 m) from 1900 to 1956. The greatest decline from 1900 to 1956 was in Camden County, where levels declined more than 60 ft (18 m). The average rate of decline was approximately 1 ft (0.3 m) per year at the decline center.

Declines in excess of 30 ft (9 m) occurred over a wide area from 1956 to 1968. The area with declines of 10 ft (3 m) or more occurred mainly in parts of Gloucester, Camden, and Burlington Counties. The largest decline from 1956 to 1968, in excess of 60 ft (18 m), was in Camden County. The average rate of decline was approximately 5 ft (1.5 m) per year at the decline center. A comparison of the 1900–56 and 1956–68 decline maps (sheet 2) indicates a much larger decline during 1956–68 than during 1900–56.

Much of Gloucester, Camden, and Burlington had declines of 30 ft (9 m) or more from 1900 to 1968. Declines in excess of 100 ft (30 m) from 1900 to 1968 are centered in Camden County. The average rate of decline was approximately 1.5 ft (0.5 m) per year at the decline center.

Total pumpage for the Potomac-Raritan-Magothy aquifer system in New Jersey during 1900–68 is not known. However, total pumpage during the same period in Camden County is estimated to be 800 billion gal (3.0 trillion l), one-third of which was during 1956–68 (Farlekas and others, 1973).

UPPER CONFINING UNIT

The Merchantville Formation and the Woodbury Clay of Late Cretaceous age are marine in origin. Together they function as a semipervious confining unit overlying the Potomac-Raritan-Magothy aquifer system.

The Merchantville Formation overlies the Magothy Formation with a sharp and disconformable contact. Several lithofacies of the Merchantville Formation have been reported. In the outcrop area in the northern Coastal Plain of New Jersey (Middlesex County), the Merchantville consists mainly of thin-bedded clayey silt and thick beds of glauconite sand. In the central outcrop area it consists of thick-bedded, clayey quartz silt and quartz-glauconite sand (Owens and others, 1970). It is the oldest glauconitic unit of the New Jersey Coastal Plain. The thickness of the Merchantville ranges from 40 to 60 ft (12–18 m) in the outcrop area.

The Woodbury Clay overlies the Merchantville Formation in most of the New Jersey Coastal Plain. The contact is gradational. The Woodbury Clay in outcrop is mainly a thick massive clayey silt with lenses of glauconite sand (Owens and others, 1970, p. 6). The thickness of the Woodbury in the outcrop area ranges from a featheredge in the southwest to 50 ft (15 m) in the west-central and northern part of the Coastal Plain. The Woodbury thickens downdip.

Twelve split-spoon cores have been obtained from the more clayey parts of the confining unit at three sites. Laboratory analyses for these core samples indicate hydraulic conductivity values ranging from 2.8×10^{-6} to 4.3×10^{-4} ft/d (8.5×10^{-7} to 1.3×10^{-4} m/d).

The combined thickness of the Merchantville Formation and the Woodbury Clay ranges about 40 ft (12 m) in the outcrop area to as much as 325 ft (100 m) downdip. The map of the Woodbury Clay (sheet 1) shows the altitude of the top of the confining unit. The thickness of the confining unit can be estimated by comparing the map showing the top of the Magothy Formation (sheet 1), and the map showing the top of the Woodbury Clay (sheet 1). This semipervious confining unit is the most extensive confining unit in the New Jersey Coastal Plain.

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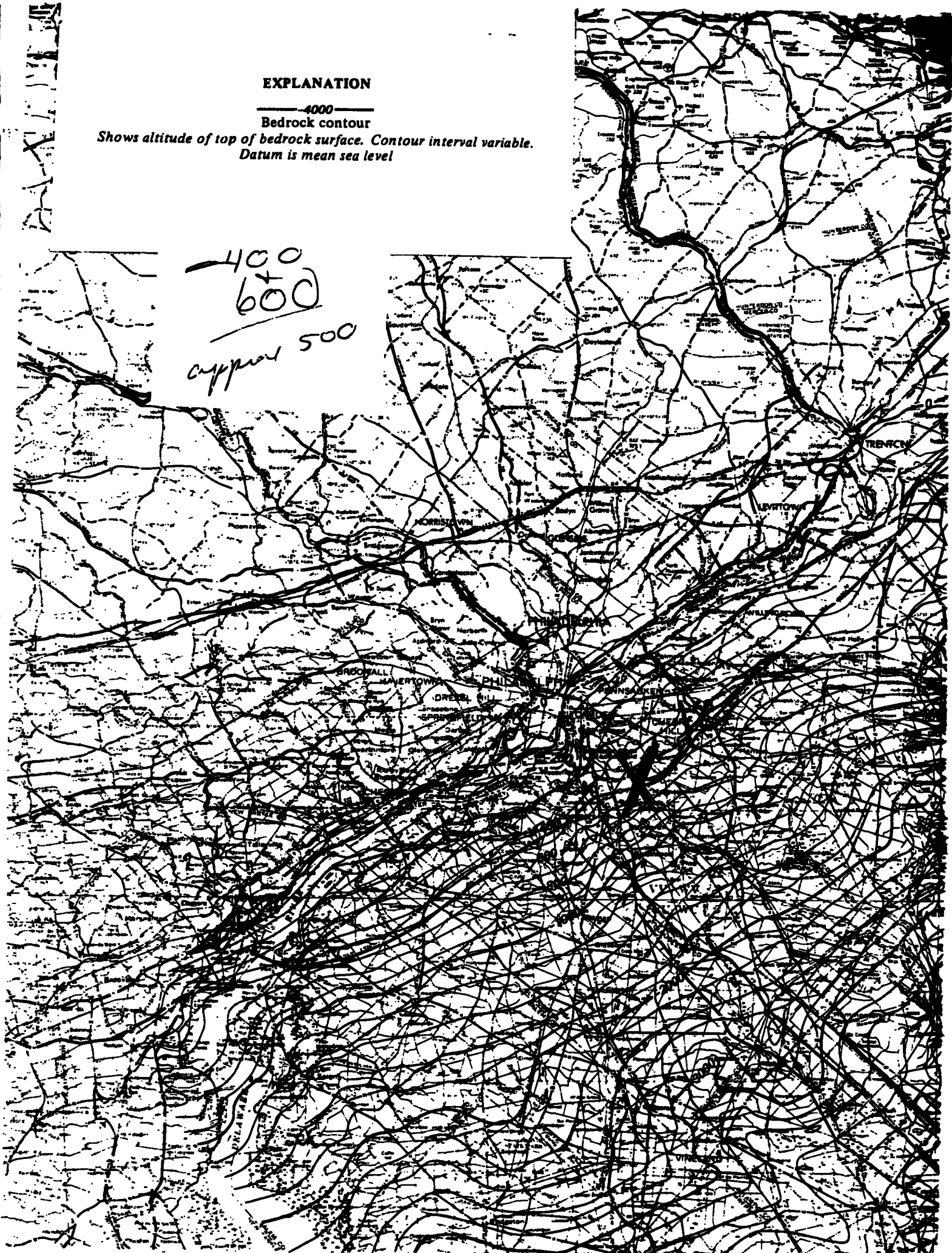
EXPLANATION

——4000——

Bedrock contour

Shows altitude of top of bedrock surface. Contour interval variable. Datum is mean sea level

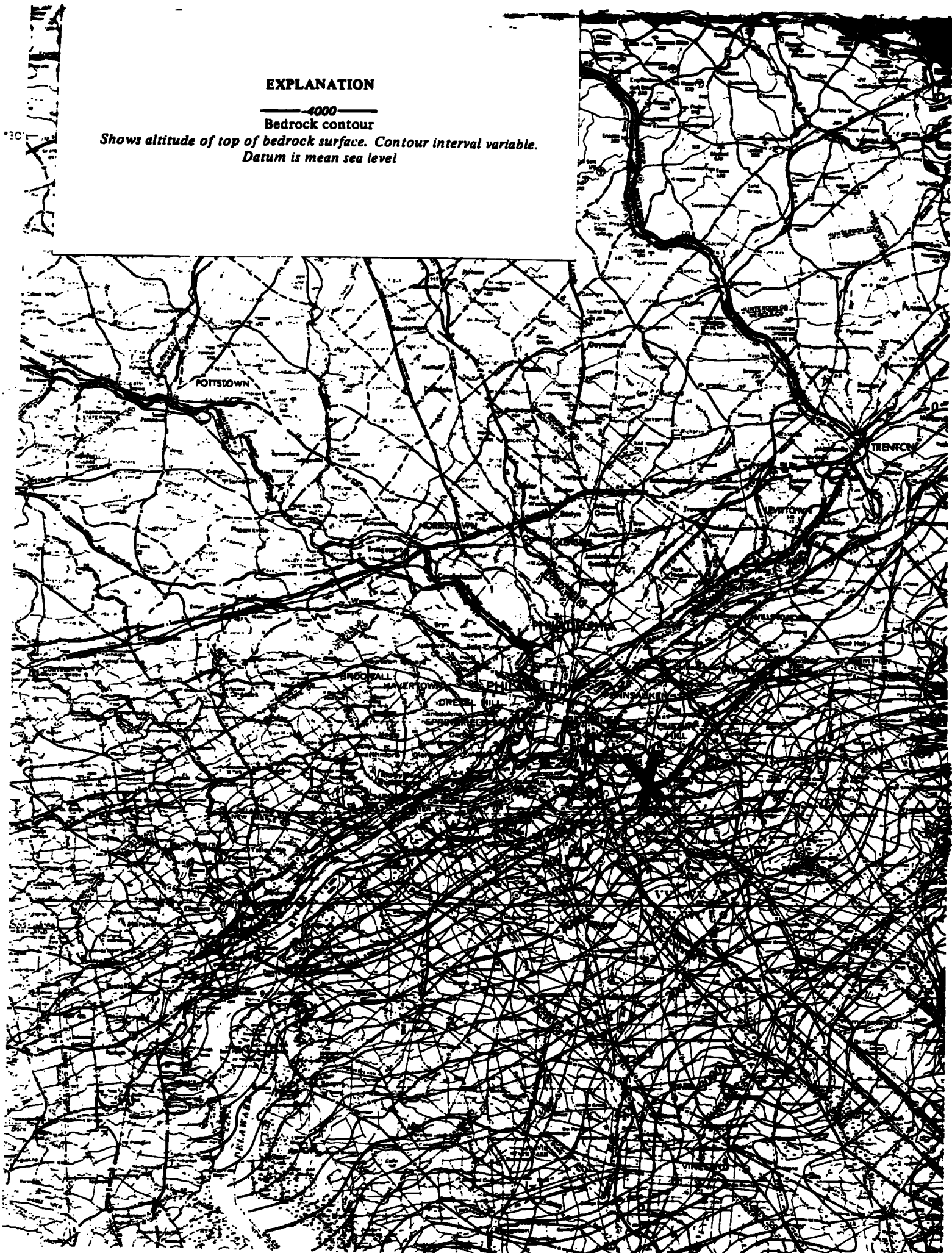


EXPLANATION

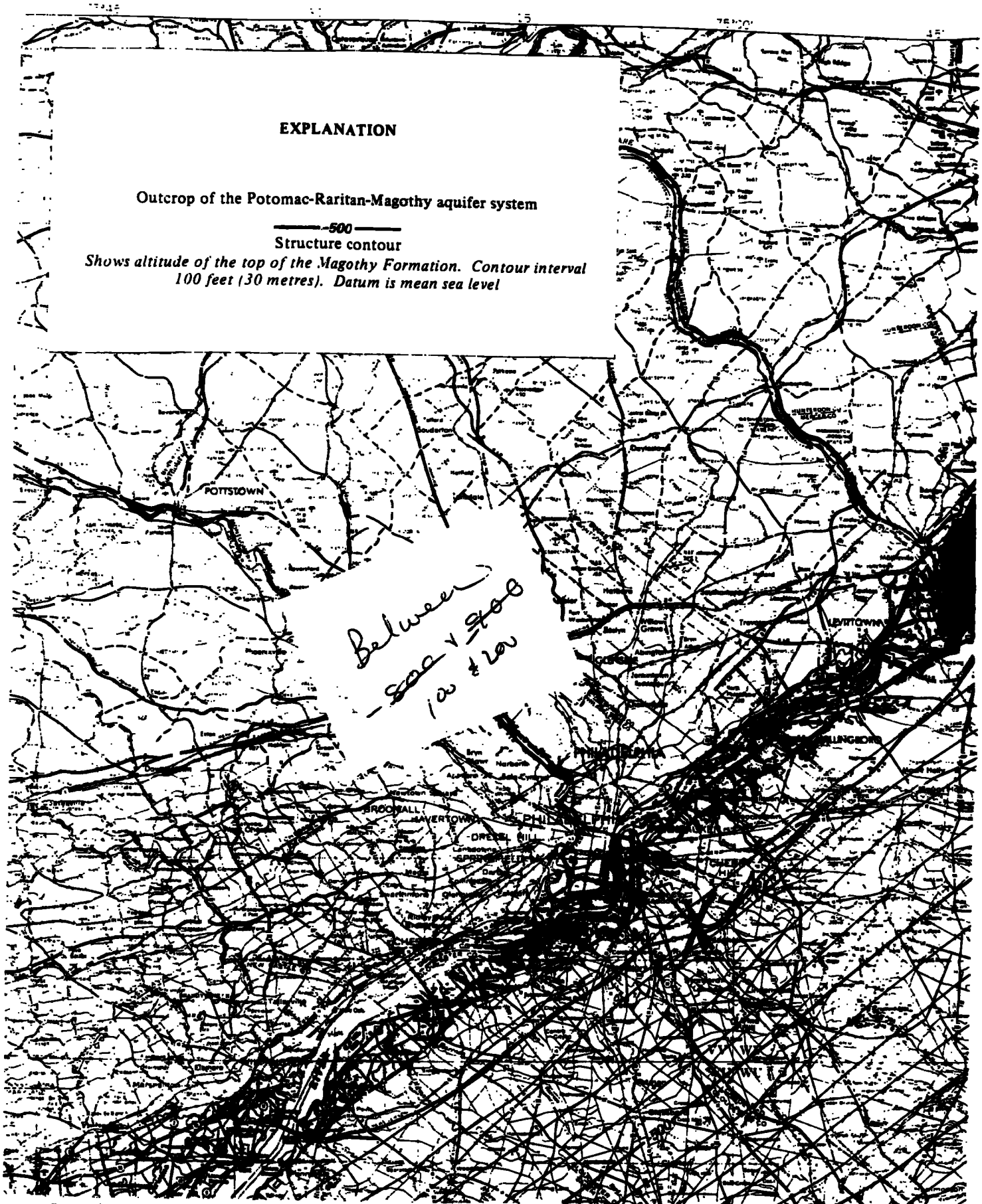
——4000——

Bedrock contour

Shows altitude of top of bedrock surface. Contour interval variable. Datum is mean sea level

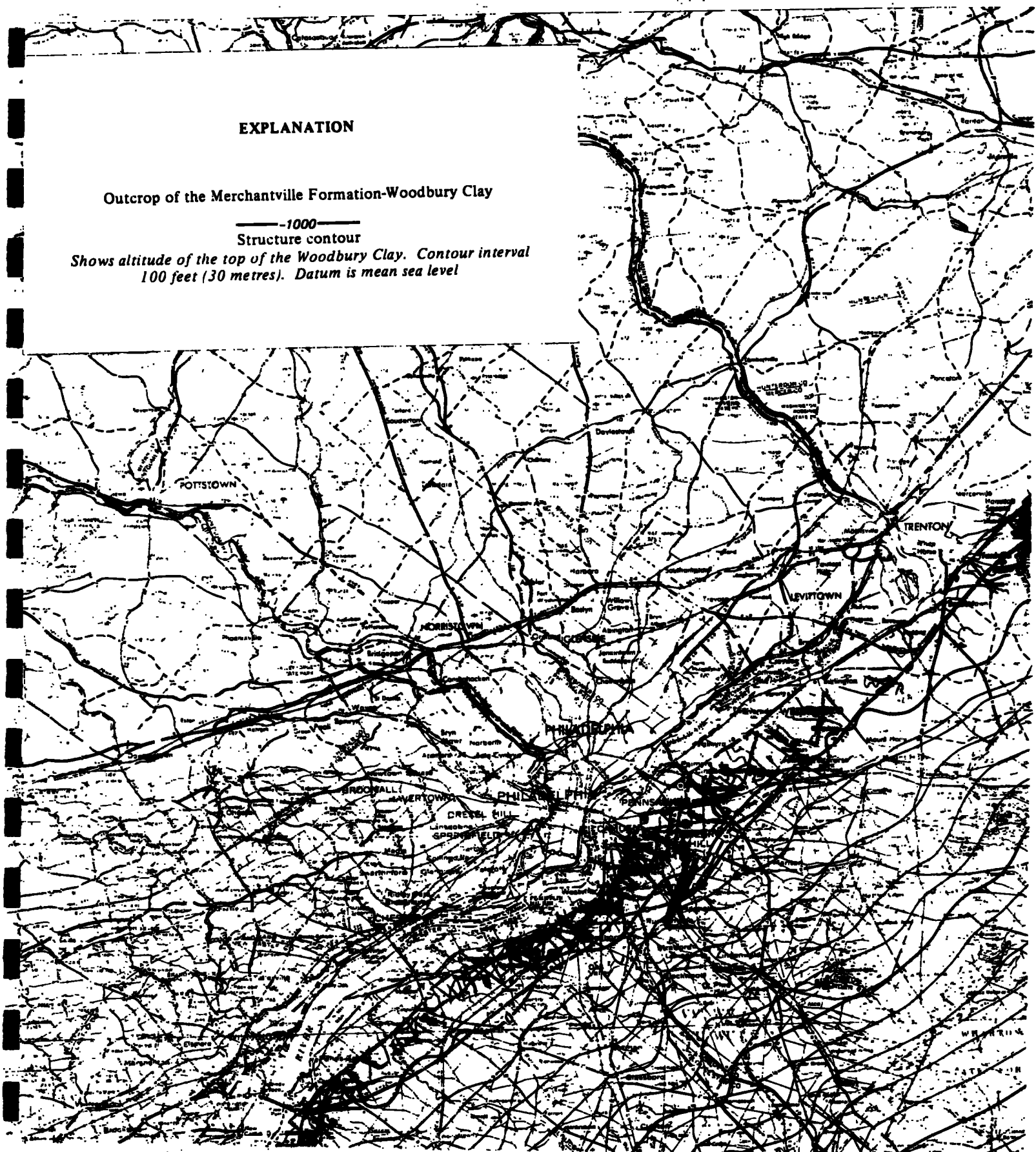


Prepared in cooperation with the
STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION



FACE.

Contours of bedrock surface compiled
by H. E. Gill, John Walker, M. A. Apgar



REFERENCE NO. 18

New Jersey-American Water Company

Western Division • 515 Grove Street • Haddon Heights, NJ 08035

(609) 547-1700

Joseph P. Dugandzic, PE
Engineering Manager

March 19, 1991

File 520-800

Lois Adams
NUS Corporation
1090 King Georges Post Road
Suite 1103
Edison, NJ 08837

RECEIVED

MAR 25 RECD

NUS CORPORATION
REGION II
SENT TO

RE: NEW JERSEY-AMERICAN WATER COMPANY
CAMDEN COUNTY SERVICE AREA

Dear Ms. Adams:

In response to your February 21, 1991, letter request to Mr. Michael Chern, enclosed for your information is data which addresses your list of water supply questions.

With regard to the service area boundaries, I've included a map which indicates the franchised area served by New Jersey-American Water Company in Camden County. This service area is completely interconnected. There are no surface water supplies, only ground water.

I trust this information will be helpful to you in your investigations.

Very truly yours,

NEW JERSEY-AMERICAN WATER COMPANY

Joseph P. Dugandzic

J. P. Dugandzic, P.E.

JPD:aj

cc: L. W. Brokaw

Enclosure

Mr. Michael Chern
N.J. American Water Company
February 20, 1991-Page Two

1. Location of wells in Runnemede Magnolia, Barrington, Gendora, Hilltop, Mt. Ephraim, Cherry Hill, Mechanicsville, Blenheim, Blackwood and Vorhees.

2. If no wells are in the above areas, are they served by other wells outside the area? If so, what is the location of those wells.

3. What aquifer is serving the wells in all of the above mentioned wells in #1 and #2.

4. What is the number of hook-ups (population served by wells) in Camden Co.?

5. Are the wells interconnected (blended) with each other or with surface water in Camden County?

6. Are there any surface water intakes in Camden County ? Are they blended with groundwater sources?

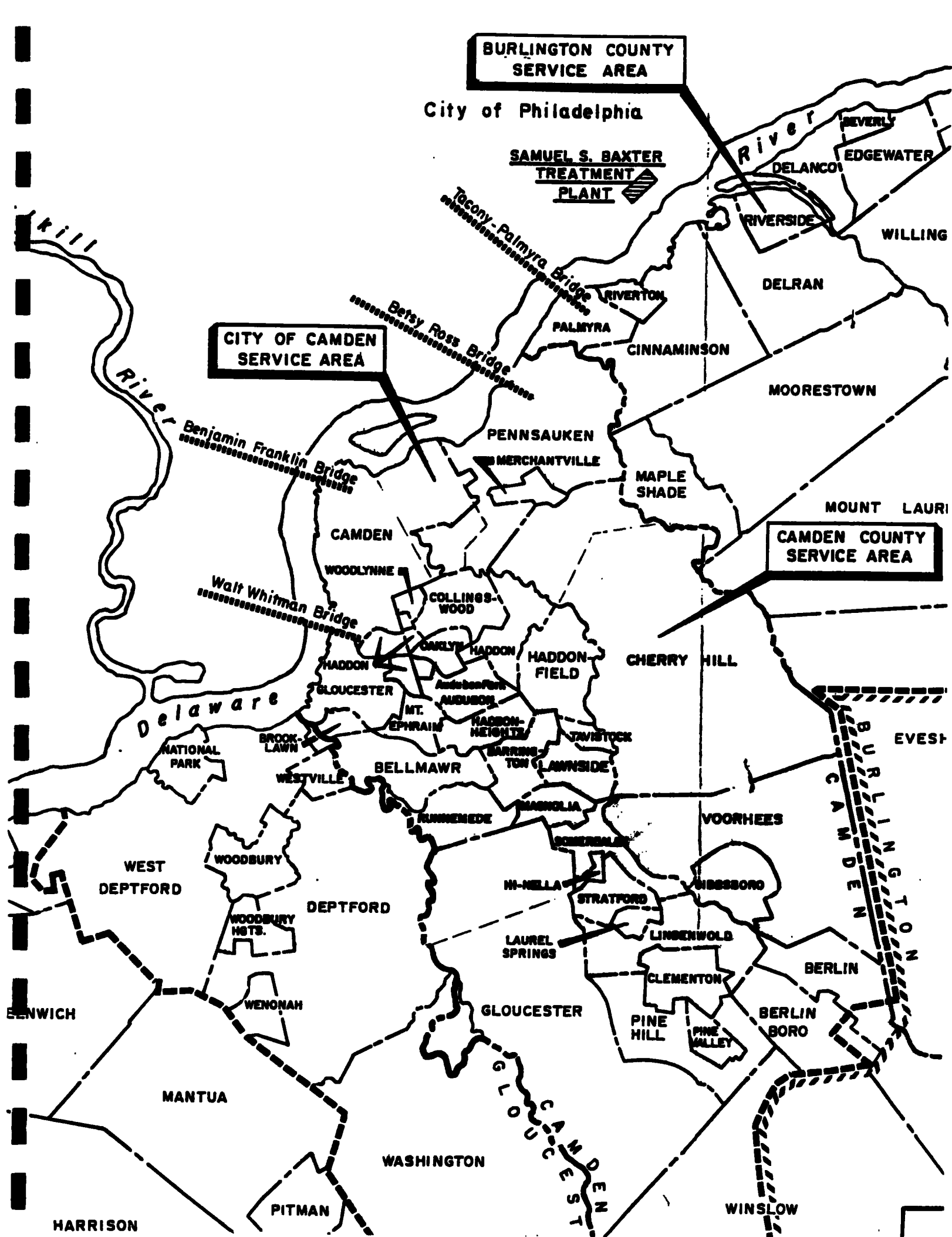
7. What is the population served by groundwater vs. surface water in Camden Co.?

8. Are backup wells maintained in Camden Co.?

9. What is the depth of wells in Barrington, Magnolia and Runnemede?

10. What is the pump rate at each well in Barrington, Magnolia and Runnemede?

1. See Well Logs - Latitude + Longitude.
2. See Well Logs - Latitude + Longitude.
3. See Well Logs: PRM = Potomac-Raritan-Magothy, ET = Englishtown, MLW = Mt. Laurel-Wenonah.
4. 58,498 Customers, 209,402 people (1990).
5. System is interconnected - ONLY Groundwater.
6. NO 7. N/A.
8. See Well Logs.
9. See Well Logs. Haddon Heights #20 is in Barrington.
10. Haddon Heights #20 - 700 gpm.
Magnolia #16 - 1,000 gpm
Magnolia #33 - 1,000 gpm
Runnemede #7 - 350 gpm
[illegible] #19 - 760 gpm


BURLINGTON COUNTY SERVICE AREA
City of Philadelphia
SAMUEL S. BAXTER TREATMENT PLANT
River
BEVERLY
EDGEWATER
DELANCO
RIVERSIDE
WILLING
Tacony-Palmyra Bridge
RIVERTON
DELRAN
Betsy Ross Bridge
PALMYRA
CINNAMINSON
CITY OF CAMDEN SERVICE AREA
MOORESTOWN
River
Benjamin Franklin Bridge
PENNSAUKEN
MERCHANTVILLE
MAPLE SHADE
MOUNT LAURI
CAMDEN
CAMDEN COUNTY SERVICE AREA
WOODLYNNE
Walt Whitman Bridge
COLLINGS-WOOD
OAKLYN
HADDON
HADDON-FIELD
CHERRY HILL
HADDON
GLOUCESTER
AUDUBON
Delaware
MT. EPHRAIM
HADDON-HEIGHTS
TAVISTOCK
EVESH
NATIONAL PARK
BROOK-LAWN
BARRING-TON
LAWNSIDE
WESTVILLE
BELLMAWR
MAGNOLIA
RUNNEMEDE
VOORHEES
BURLINGTON
CAMDEN
WEST DEPTFORD
WOODBURY
SOMERDALE
HI-NELLA
STRATFORD
HADDONFIELD
DEPTFORD
WOODBURY HGTS.
LAUREL SPRINGS
LINDENWOLD
CLEMENTON
BERLIN
WENONAH
GLOUCESTER
PINE HILL
PINE VALLEY
BERLIN BORO
MANTUA
GLOUCESTER
CAMDEN
WASHINGTON
PITMAN
WINSLOW
HARRISON

FILENAME: NUSWLLOG

NEW JERSEY-AMERICAN WATER COMPANY
WESTERN DIVISION

PRODUCTION DEPARTMENT
WELL LOG - CAMDEN COUNTY

STATION	WELL NO.	DATE DRILLED	DEPTH	SCREEN LENGTH	AQUIFER	LATITUDE	LONGITUDE
ASHLAND	17	1958	421	42	PRM	395124	745952
	32	1966	437	40	PRM	395128	745954
BROWNING LANE	44	1973	744	47	PRM	395250	745943
	45	1973	626	53	PRM	395252	745943
	46	1973	738	50	PRM	395252	745943
COLUMBIA LAKES	22	1960	453	82	PRM	395609	750028
	24	1961	167	56	PRM	395608	750025
	31	1967	427	47	PRM	395600	750031
EGBERT	18	1958	190	46	PRM	395248	750433
	35	1967	483	62	PRM	395247	750432
ELLISBURG	13	1953	537	37	PRM	395442	750103
	16	1957	220	33	PRM	395441	750104
	23	1960	378	55	PRM	395438	750107
ELM TREE	26	1961	273	40	MLW	394922	745633
GIBBSBORO	41	1972	1099	75	PRM	394945	745855
	42	1972	998	52	PRM	395003	745851
	43	1972	1014	88	PRM	395002	745850
	56	1989	238	20	ET	394945	745855
	57	1989	236	20	ET	394945	745855
HADDON HEIGHTS	11	1945	275	52	PRM	395243	750320
	12	1947	267	40	PRM	395240	750318
	14	1954	598	92	PRM	395242	750323
	15	1956	598	74	PRM	395238	750316
	20	1958	267	35	PRM	395240	750320
	30	1965	279	52	PRM	395238	750318
KINGSTON	25	1962	367	62	PRM	395455	745929
	59	1989	423	80	PRM	395455	745929
	62	1989	208	25	PRM	395455	745929

NEW JERSEY-AMERICAN WATER COMPANY
WESTERN DIVISION

PRODUCTION DEPARTMENT
WELL LOG - CAMDEN COUNTY

STATION	WELL NO.	DATE DRILLED	DEPTH	SCREEN LENGTH	AQUIFER	LATITUDE	LONGITUDE
LAUREL SPRINGS	1	1918	134	20	MLW	394927	750024
	4	1918	128	N/A	MLW	394927	750025
	8	1923	138	N/A	MLW	394928	750021
	10	1923	126	27	MLW	394928	750021
	13	1954	456	61	PRM	394928	750024
	15	1964	473	64	PRM	394928	750027
	60	1988	236	20	ET	394927	750024
	61	1988	217	20	ET	394927	750024
MAGNOLIA	16	1965	510	58	PRM	395134	750229
	33	1991	346	60	PRM	395134	750230
OLD ORCHARD	36	1968	349	50	PRM	395353	745708
	37	1968	488	34	PRM	395353	745708
	38	1968	493	50	PRM	395353	745708
	58	1989	495	52	PRM	395353	745708
OTTERBROOK	29	1965	722	89	PRM	395030	750347
	34	1967	377	81	PRM	395028	750344
	39	1968	348	80	PRM	395030	750347
RUNNEMEDE	7	1926	266	53	PRM	395055	750420
	19	1958	339	41	PRM	395055	750420
SOMERDALE	14	1956	441	48	PRM	395041	750056
VOORHEES	21	1960	482	60	PRM	395129	745906

REFERENCE NO. 19

EPA ID	SITE/ALIAS NAME STREET CITY COUNTY NAME	STATE COUNTY	ZIP CODE	ALIAS SEQ. #	NAME SOURCE	FED FAC
NJD002141190	CPS/MADISON INDUSTRIES				EPA	N
	WATERWORKS RD					
	OLD BRIDGE TWP	NJ	08857			
	MIDDLESEX	023				
	CPS CHEMICAL			01		
	OLD BRIDGE	NJ	08857			
	OLD BRIDGE CHEMICAL			02		
	CPS/MADISON INDUSTRIES			03		
	MIDDLESEX	NJ				
NJD002394955	CRAMER PLATING & ANODIZING CO, INC				EPA	N
	OFF RTE 46 & MT LAKE RD					
	BUTTZVILLE (WHITE TWP)	NJ	07829			
	WARREN	041				
	CRAMER PLATING & ANODIZING			01		
	GREEN POND RD					
	BUTTZVILLE	NJ	07829			
	CRAMER LAGOON			02		
	OFF GREEN POND RD					
	BUTTZVILLE	NJ	07829			
	CRAMER PLATING & ANODIZING CO, INC			03		
	WARREN	NJ				
NJD980769244	CREEK-TURN CERAMICS				EPA	N
	RTE 38					
	HAINESPORT	NJ	08036			
	BURLINGTON	005				
NJD980774467	CRESCENT LIGHTING, INC.				EPA	N
	120 E. GLOUCESTER PIKE					
	BARRINGTON	NJ	08007			
	CAMDEN	007				

REFERENCE NO. 20

R. Allan Freeze

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University of Waterloo
Waterloo, Ontario

GROUNDWATER

Prentice-Hall, Inc.
Englewood Cliffs, New Jersey 07632

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Table 2.2 Range of Values of Hydraulic Conductivity and Permeability

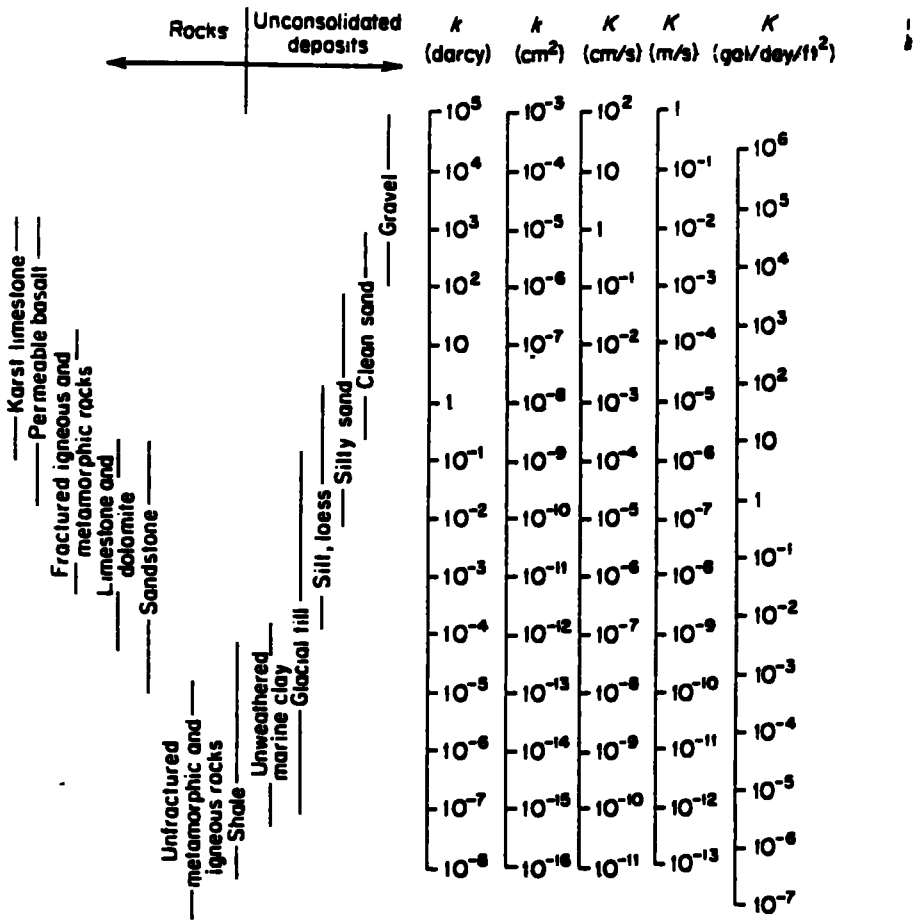

Table 2.3 Conversion Factors for Permeability and Hydraulic Conductivity Units

	Permeability, k*			Hydraulic conductivity, K		
	cm²	ft²	darcy	m/s	ft/s	U.S. gal/day/ft²
cm²	1	1.08×10^{-3}	1.01×10^{8}	9.80×10^{2}	3.22×10^{3}	1.85×10^{9}
ft²	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/ft²	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 ft², multiply k in cm² by 1.08×10^{-3}.

REFERENCE NO. 21

CRESCENT LIGHTING
LATITUDE 39:51:58 LONGITUDE 75: 2:48 1980 POPULATION

KM	0.00-.400	.400-.810	.810-1.60	1.60-3.20	3.20-4.80	4.80-6.40	SECTOR TOTALS
S 1	0	1287	10131	41855	60566	72995	186834
RING TOTALS	0	1287	10131	41855	60566	72995	186834

> I

CRESCENT LIGHTING
LATITUDE 39:51:58 LONGITUDE 75: 2:48 1980 HOUSING

KM	0.00-.400	.400-.810	.810-1.60	1.60-3.20	3.20-4.80	4.80-6.40	SECTOR TOTALS
S 1	0	501	3626	14517	20679	26668	65991
RING TOTALS	0	501	3626	14517	20679	26668	65991

(cumulative)

Distance In Miles	Population	Housing
1/4	0	0
1/2	1287	501
1	11418	4127
2	53273	18644
3	113839	39323
4	186834	65991

REFERENCE NO. 22

REFERENCE NO. 23

TERRESTRIAL ORGANISMS

Shown in BROWN: species with special status shown in RED-(F) or (S) indicates species protected by Federal or State Legislation (see text)

SYMBOL SPECIES

PLANTS (301–350)

301 Eastern hemlock
302 Spleenwort (S)
303 Spider lily (S)
304 Pond bush (S)
305 Watermilfoil (S)
306 Hooded pitcher plant (S)
307 Tree
308 Prickly pear cactus (S)
309 Trailing arbutus (S)
310 Eastern bumelia
311 Pitcher plant
312 Baldcypress
313 Redbay
314 Seaside alder
315 Box huckleberry
316 Purple fringeless orchid
317 Pink lady's slipper
318 Ebony spleenwort (S)
319 Orchids (S)
320 Golden club (S)
321 Florida beargrass
322 East-coast coontie
323 Fall-flowering ixia
324 Jackson-vine
325 Spoon-flower
326 Curtiss milkweed
327 Sea lavender
328 Hand fern
329 Needle palm
330 Yellow squirrel-banana
331 Beach creeper
332 Florida coontie
333 Four-petal pawpaw
334 Bird's nest spleenwort
335 Burrowing four-o clock
336 Beach star
337 Silver palm
338 Dancing lady orchid
339 Tamarindillo
340 Fuch's bromeliad
341 Everglades peperomia
342 Buccaneer palm
343 Slender spleenwort
344 Pineland jacquemontia
345 Mahogany mistletoe
346 Florida thatch
347 Twisted air plant
348 Long's bittercress
349 Venus's flytrap

INVERTEBRATES (351–400)

351 Monarch butterfly
352 Zebra butterfly

BIRDS (401–600)

SHOREBIRDS (401–430)

401 Shorebirds
402 Terns
403 Gulls
404 Forster's tern
405 Arctic tern
406 Least tern (S)
407 Roseate tern (S)
408 Common tern
409 Great black-backed gull
410 Herring gull
411 Laughing gull
412 Black skimmer (S)
413 Turnstones
414 Plovers
415 Piping plover
416 American oystercatcher (S)

WADING BIRDS (431–460)

431 Wading birds
432 Herons
~~433 Egrets~~
434 Rails
435 Ibises
436 Bitterns
437 Great blue heron (S)
438 Wood ibis (S)
439 Anhinga
440 Little blue heron (S)
441 Yellow-crowned night heron (S)
442 Black-crowned night heron
443 Florida sandhill crane (S)
444 Louisiana heron (S)
445 Limpkin (S)
446 Roseate spoonbill (S)
447 Snowy egret (S)
448 Magnificent frigate-bird (S)
449 Reddish egret (S)
450 Clapper rail
451 King rail
452 Virginia rail
453 Sora rail

WATERFOWL (461–500)

461 Waterfowl
462 Swans
463 Geese
464 Dabbling ducks
465 Diving ducks
466 Common eider
467 Harlequin duck
468 Wood duck
469 Fulvous tree duck
470 Loons
471 Grebes

Wilmington

DEL.—MD.—N. J.—PA.

1:250 000-scale map of

Atlantic Coast Ecological Inventory

Produced by

U. S. FISH AND WILDLIFE SERVICE

1980

AQUATIC ORGANISMS

Shown in BLUE: species with special status shown in RED-(F) or (S) indicates species protected by Federal or State Legislation (see text)

SYMBOL SPECIES

PLANTS (1–50)

1 Irish moss
2 Rockweed

INVERTEBRATES (51–100)

51 Crabs
52 Mussels
53 Oysters
54 Scallops
55 Clams
56 Worms
57 Shrimp
58 American lobster
59 Blue crab
60 Eastern oyster
61 European oyster
62 Bay scallop
63 Deep-sea scallop
64 Calico scallop
65 Surf clam
66 Hard clam
67 Soft shell clam
68 Brackish-water clam
69 Bloodworm

404 Forster's tern
405 Arctic tern
406 Least tern (S)
407 Roseate tern (S)
408 Common tern
409 Great black-backed gull
410 Herring gull
411 Laughing gull
412 Black skimmer (S)
413 Turnstones
414 Plovers
415 Piping plover
416 American oystercatcher (S)

WADING BIRDS (431–460)

431 Wading birds
432 Herons
433 Egrets
434 Rails
435 Ibises
436 Bitterns
437 Great blue heron (S)
438 Wood ibis (S)
439 Anhinga
440 Little blue heron (S)
441 Yellow-crowned night heron (S)
442 Black-crowned night heron
443 Florida sandhill crane (S)
444 Louisiana heron (S)
445 Limpkin (S)
446 Roseate spoonbill (S)
447 Snowy egret (S)
448 Magnificent frigate-bird (S)
449 Reddish egret (S)
450 Clapper rail
451 King rail
452 Virginia rail
453 Sora rail

WATERFOWL (461–500)

461 Waterfowl
462 Swans
463 Geese
464 Dabbling ducks
465 Diving ducks
466 Common eider
467 Harlequin duck
468 Wood duck
469 Fulvous tree duck
470 Loons
471 Grebes
472 Brant geese
473 Snow goose
474 Gadwall
475 Black duck

RAPTORS (501–530)

501 Raptors
502 Owls
503 Kites
504 Hawks
505 Bald eagle (F)
506 Osprey (S)
507 Peregrine falcon (F)
508 Cooper's hawk (S)
509 Swallow-tailed kite
510 Marsh hawk (S)
511 Southeastern American kestrel (S)
512 Florida burrowing owl (S)

SEABIRDS (531–550)

531 Seabirds
532 Petrels, shearwaters, and albatrosses
533 Pelican and allies
534 Alcids
535 Brown pelican (F)
536 Black guillemot
537 Leach's petrel
538 Razorbill
539 Common puffin
540 Double-crested cormorant
541 Gannet
542 Wilson's petrel
543 Northern phalarope
544 Audubon's shearwater
545 Greater shearwater
546 Shearwaters
547 Petrels
548 Jaegers
549 White pelican

SONGBIRDS AND OTHERS (551–600)

551 Songbirds and others
552 Red-cockaded woodpecker (F)
553 Chachalaca
554 Bachman's warbler (F)
555 Wild turkey
556 American woodcock
557 Pileated woodpecker
558 Swainson's warbler
559 Ruffed grouse
560 Bobwhite
561 Mourning dove
562 Warblers
563 Ring-necked pheasant
564 Bank swallow
565 Dusky seaside sparrow (F)
566 White-crowned pigeon (S)

REPTILES AND AMPHIBIANS (601–700)

601 Eastern narrow-mouthed toad (S)
602 Eastern indigo snake (F)
603 American alligator (F)
604 Northern diamondback terrapin
605 Amphibians
606 Greater siren
607 Bog turtle (S)
608 Gopher tortoise (S)
609 Eastern tiger salamander (S)
610 Northern fence lizard
611 Five-lined skink

Produced by
U. S. FISH AND WILDLIFE SERVICE
1980

AQUATIC ORGANISMS

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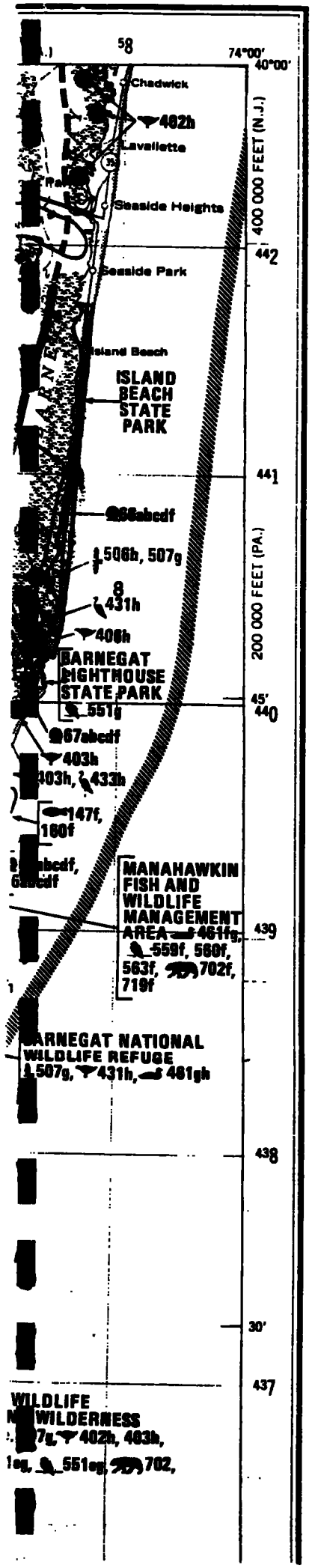
62 Bay scallop
63 Deep-sea scallop
64 Calico scallop
65 Surf clam
66 Hard clam
67 Soft shell clam
68 Brackish-water clam
69 Bloodworm
70 Sandworm
71 White shrimp
72 Brown shrimp
73 Northern shrimp
74 Rock crab
75 Jonah crab
76 Whelk
77 Ocean quahog
78 Pink shrimp
79 Stone crab
80 Spiny lobster

FISH (101–200)

101 Sharks, skates, rays
102 Herring
103 Salmon and trout
104 Catfish
105 Cod
106 Sunfish and bass
107 Drum
108 Flatfish
109 Longnose gar
110 Shortnose sturgeon (F)
111 Atlantic sturgeon (S)
112 American eel
113 Blueback herring
114 Hickory shad
115 Alewife
116 American shad (S)
117 Atlantic menhaden
118 Atlantic herring
119 Gizzard shad
120 Tarpon
121 Atlantic salmon
122 White catfish
123 Channel catfish
124 Yellow bullhead
125 Brown bullhead
126 Flat bullhead
127 Sea catfish
128 White perch
129 Striped bass
130 Black sea bass
131 Redbreast sunfish
132 Warmouth
133 Bluegill
134 Largemouth bass
135 Black crappie
136 Sheepshead
137 Spotted seatrout
138 Weakfish
139 Spot
140 Atlantic croaker
141 Southern kingfish
142 Northern kingfish
143 Gulf kingfish
144 Red drum
145 Star drum
146 Black drum
147 Summer flounder
148 Southern flounder
149 Winter flounder
150 Rainbow smelt
151 Atlantic tomcod
152 Threadfin shad
153 Carp
154 Atlantic mackerel
155 Chain pickerel



Federal or State Legislation (see text)

SYMBOL	SPECIES
	PLANTS (301–350)
	301 Eastern hemlock
	302 Spleenwort (S)
	303 Spider lily (S)
	304 Pond bush (S)
	305 Watermilfoil (S)
	306 Hooded pitcher plant (S)
	307 Tree
	308 Prickly pear cactus (S)
	309 Trailing arbutus (S)
	310 Eastern bumelia
	311 Pitcher plant
	312 Baldcypress
	313 Redbay
	314 Seaside alder
	315 Box huckleberry
	316 Purple fringeless orchid
	317 Pink lady's slipper
	318 Ebony spleenwort (S)
	319 Orchids (S)
	320 Golden club (S)
	321 Florida beargrass
	322 East-coast coontie
	323 Fall-flowering ixia
	324 Jackson-vine
	325 Spoon-flower
	326 Curtiss milkweed
	327 Sea lavender
	328 Hand fern
	329 Needle palm
	330 Yellow squirrel-banana
	331 Beach creeper
	332 Florida coontie
	333 Four-petal pawpaw
	334 Bird's nest spleenwort
	335 Burrowing four-o'clock
	336 Beach star
	337 Silver palm
	338 Dancing lady orchid
	339 Tamarindillo
	340 Fuch's bromeliad
	341 Everglades peperomia
	342 Buccaneer palm
	343 Slender spleenwort
	344 Pineland jacquemontia
	345 Mahogany mistletoe
	346 Florida thatch
	347 Twisted air plant
	348 Long's bittercress
	349 Venus's flytrap
	INVERTEBRATES (351–400)
	351 Monarch butterfly
	352 Zebra butterfly
	BIRDS (401–600)
	SHOREBIRDS (401–430)
	401 Shorebirds
	402 Terns
	403 Gulls
	404 Forster's tern
	405 Arctic tern
	406 Least tern (S)
	407 Roseate tern (S)
	408 Common tern
	409 Great black-backed gull
	410 Herring gull
	411 Laughing gull
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	468 Wood duck
	469 Fulvous tree duck
	470 Loons
	471 Grebes
	472 Brant geese
	473 Snow goose
	474 Gadwall
	475 Black duck
	RAPTORS (501–570)

DEL.—MD.—N

1:250

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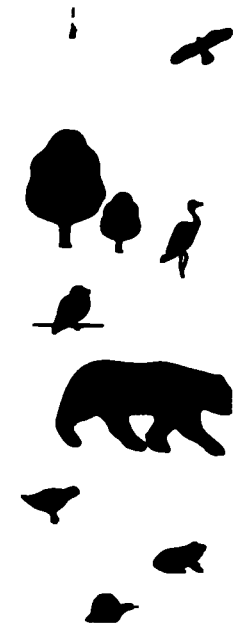
Ecolog



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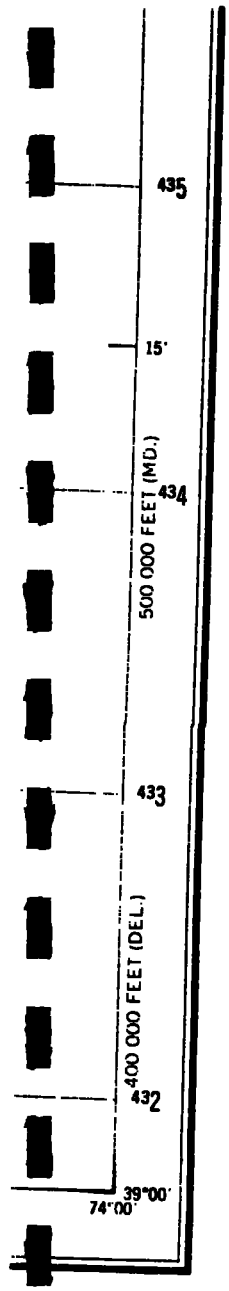
Shown in BL
in RED-(F) c
Federal or S

SYMB



510 Marsh hawk (S)
511 Southeastern American kestrel (S)
512 Florida burrowing owl (S)

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603 American alligator (F)
604 Northern diamondback terrapin
605 Amphibians
606 Greater siren
607 Bog turtle (S)
608 Gopher tortoise (S)
609 Eastern tiger salamander (S)
610 Northern fence lizard
611 Five-lined skink
612 Map turtle
613 Plymouth red-bellied turtle (F)
614 Eastern diamondback rattlesnake
615 Carolina gopher frog
616 Florida gopher frog (S)
617 Atlantic salt marsh watersnake (F)
618 American crocodile (F)
619 Florida Keys mole skink (S)
620 Florida black-headed snake (S)
621 Pine barrens tree frog (S)
622 Northern pine snake (S)
623 Corn snake (S)
624 Timber rattlesnake (S)
625 Southern gray tree frog (S

MAMMALS (701-800)

701 Beaver
702 Whitetail deer
703 European fallow deer
704 Blackbeard Island deer
705 Opossum
706 Marsh rabbit
707 Rice rat
708 Raccoon
709 St. Simon Island raccoon
710 Mink
711 River otter (F)
712 Feral hog
713 Feral cow
714 Cumberland Island pocket gopher
715 Anastasia Island cotton mouse
716 Aquatic furbearers
717 Black bear (S)
718 Bobcat
719 Eastern gray squirrel
720 Eastern fox squirrel
721 Eastern cottontail
722 Delmarva fox squirrel (F)
723 Muskrat
724 Red fox
725 Bats
726 Gray fox
727 Striped skunk
728 Nutria
729 Longtail weasel
730 Colonial pocket gopher (S)
731 Wild ponies
732 Sika deer
733 Beach meadow vole
734 Block Island meadow vole
735 Pallid beach mouse (S)
736 Sherman's fox squirrel (S)
737 Florida mouse (S)
738 Florida panther (F)
739 Gulf's pocket gopher (S)
740 Key Largo wood rat (S)
741 Lower keys cotton rat (S)
742 Key Largo cotton mouse (S)

HABITAT USE

Shown in RED for species with special status, BLUE for aquatic organisms and BROWN for terrestrial organisms

101 Sharks
102 Herring
103 Salmon
104 Catfish
105 Cod
106 Sunfish
107 Drum
108 Flatfish
109 Longnose
110 Shortnose
111 Atlantic
112 American
113 Blueback
114 Hickory
115 Alewife
116 American
117 Atlantic
118 Atlantic
119 Gizzard
120 Tarpon
121 Atlantic
122 White cat
123 Channel
124 Yellow bu
125 Brown bu
126 Flat bulle
127 Sea catfis
128 White per
129 Striped ba
130 Black sea
131 Redbreast
132 Warmouth
133 Bluegill
134 Largemouth
135 Black crap
136 Sheepshea
137 Spotted se
138 Weakfish
139 Spot
140 Atlantic cr
141 Southern k
142 Northern k
143 Gulf kingfi
144 Red drum
145 Star drum
146 Black dru
147 Summer flo
148 Southern fl
149 Winter flour
150 Rainbow sm
151 Atlantic to
152 Threadfin s
153 Carp
154 Atlantic mac
155 Chain picker
156 White bass
157 Northern pu
158 Silver perc
159 Florida pomp
160 Bluefish
161 Spanish mac
162 Cobia
163 Mullet
164 White crappie
165 Redear sunfis
166 Smallmouth
167 Yellow perc
168 Pumpkinsee
169 Atlantic halib
170 Atlantic co
171 Pollock
172 Haddoc
173 Hake
174 Bluefin tun
175 Walleye
176 Northern pi
177 Scup
178 Tautog
179 Atlantic spade
180 Bay anchov
181 Butterfish
182 Little tunn
183 Atlantic bon
184 Brown trout
185 Cunner
186 Yellowtail flou
187 Gulf flounde
188 Pinfish
189 King mackere
190 Pigfish
191 White grunt
192 Tripletail
193 Ladyfish
194 Snook
195 Jack
196 Snapper
197 Grouper
198 Sailfish
199 Great barracud
200 Maryland darte

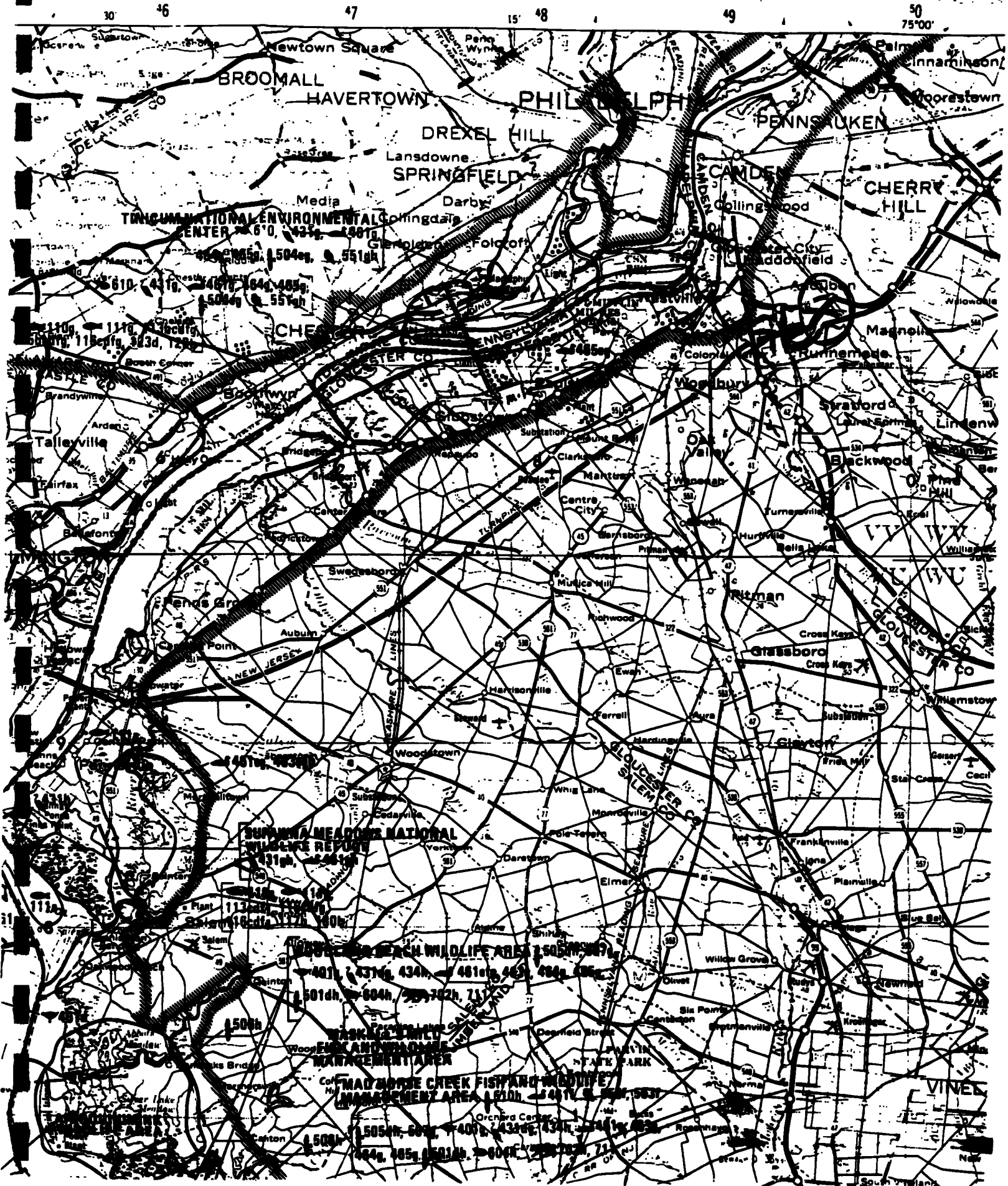
REPTILES AND AMPHIB

201 Green sea tur
202 Loggerhead se
203 Hawksbill tur
204 Atlantic ridley
205 Leatherback tur

MAMMALS (251-300)

251 Florida manate
252 Atlantic bottlen
253 Pigmy sperm wh
254 Short-finned pi
255 Harbor seal
256 Gray seal
257 Right whale (F
258 Atlantic spotted

High salinity estuarine habitat


N
Newtown Square
BROOMALL
HAVERTOWN
PHILADELPHIA
DREXEL HILL
Lansdowne
SPRINGFIELD
Media
Darby
Collingdale
Folcroft
PENNSAUKEN
CAMDEN
Collingswood
CHERRY HILL
Haddonfield
Audubon
Magnolia
Runnemede
Woodbury
Stratford
Lindenwold
Blackwood
Pine Hill
Oak Valley
Mantua
Centre City
Turnersville
Hurffville
Bellis Lake
Swedesboro
Mullica Hill
Pitman
Richwood
Glassboro
Cross Keys
Ewan
Harrisonville
Ferrell
Aura
Williamstown
Woodstown
Whig Lane
Monroeville
Pole Tavern
Daretown
Elmer
Franklinville
Plainville
Willow Grove
Newfield
Six Points
Centerton
Brotmanville
Deerfield Street
Orchard Center
Rosenhayn
Talleyville
Fairfax
Brandywine
Arden
Booth Corner
Bridgeport
Clarkboro
Auburn
Cedarville
Salem
Quinton
Canton
Woodstown
Glassboro
Clayton
Williamstown
Franklinville
Elmer
Willow Grove
Newfield
Six Points
Centerton
Brotmanville
Deerfield Street
Orchard Center
Rosenhayn
TINICUM NATIONAL ENVIRONMENTAL CENTER
SUSQUEHANNA MEADOWS NATIONAL WILDLIFE REFUGE
MASKELL'S MILL FISH AND WILDLIFE MANAGEMENT AREA
MAD HORSE CREEK FISH AND WILDLIFE MANAGEMENT AREA
PARVIN STATE PARK
NEW JERSEY
GLOUCESTER CO
CAMDEN CO
SALEM CO
CUMBERLAND CO
DELAWARE CO
CHESTER
VINELAND
75°00'

EXTON 2 MI
(DEL.)
45'
44
45
30'
46
47
15'
48
Thorndale
Coatesville
West Chester
Goshenville
Whitehorse
Newtown Square
Rocky Hill
Edgemont
BROOMALL
HAVERTOWN
PHIL
Milltown
Ridley Creek State Park
DREXEL HILL
Mortonville
Marshallton
Sycamore Mills
Gradyville
Lansdowne
SPRINGFIELD
Cheyney
Glen Mills
Media
Darby
Northbrook
Thornton
Collingdale
Unionville
Dilworthtown
Folcroft
Concordville
Upland
Logan
Red Lion
Willowdale
London Grove
BRANDYWINE CREEK STATE PARK
CHESTER
NEW CASTLE CO
Toughkenamon
Avondale
New Garden
Yorklyn
Brandywine
Ardencroft
Talleyville
Kaolin
Rockland
Fairfax
Landenberg
Bellefonte
BRANDYWINE SPRINGS STATE PARK
WILMINGTON
Marshallton
Stanton
Swedesboro
Auburn
Millford Crossroads
NEW JERSEY
Wilmington Manor
Harrisonville
Brookside
Woodstown
Salem
FORT MOTT STATE PARK
FORT DELAWARE STATE PARK
SUPAWNA MEADOWS NATIONAL WILDLIFE REFUGE
LUMS POND STATE PARK
Salem
CHESAPEAKE AND DELAWARE CANAL WILDLIFE AREA
AUGUSTINE WILDLIFE AREA
MAD HORSE CREEK FISH AND WILDLIFE MANAGEMENT AREA
Centre City
Mullica Hill
Deerfield Street

REFERENCE NO. 24

COPY OF CLP DATA
COMPUTER QA'D PRINTOUT

ORGANICS

___ Laboratory QA

___ FIT Validation

X EPA Approved / Final Data

INORGANICS

___ Laboratory QA

___ FIT Validation

X EPA Approved / Final Data

Site Name : Crescent LIGHTING

Case No. and/or SAS No. : 16538

BRICS No. : NJ1tZ

TDD No. : 02-9011-24

09/19/91

SITE NAME: CRESCENT LIGHTING, INC.
TDGO: 02-9011-24
SAMPLING DATE: 5/31/91
EPA CASE NO.: 16538 LAB: PACIFIC NORTHWEST ENVIRONMENTAL LABORATORIES

VOLATILES										
Sample ID No.	NJNZ-S1	NJNZ-S2	NJNZ-S3	NJNZ-S4	NJNZ-S5(MS/MSD)	NJNZ-S6	NJNZ-S7(DUP)	NJNZ-RIN1	NJNZ-RIN2	NJNZ-RIN3
Traffic Report No.	BNF49	BNF50	BNF51	BNF52	BNF53	BNF55	BNF56	BNF57	BNF58	BNF59
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	WATER	WATER	WATER
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/L	ug/L	ug/L
Dilution Factor	1	1	1	1	1	1	1	1	1	1
Percent Moisture	8	12	11	7	7	9	8	--	--	--
Chloromethane								R		
Bromomethane								R		
Vinyl Chloride								R		
Chloroethane								R		
Methylene Chloride	J		J					R		
Acetone	130 E	J	J					R		
Carbon Disulfide								R		
1,1-Dichloroethene								R		
1,1-Dichloroethane								R		
Trans-1,2-Dichloroethene (total)								R		
Chloroform								R		
1,2-Dichloroethane								R		
2-Butanone								R		
1,1,1-Trichloroethane								R		
Carbon Tetrachloride								R		
Vinyl Acetate								R		
Bromodichloromethane								R		
1,2-Dichloropropane								R		
cis-1,3-Dichloropropene								R		
Trichloroethene								R		
Dibromochloromethane								R		
1,1,2-Trichloroethane								R		
Benzene								R		
trans-1,3-Dichloropropene								R		
Bromoform								R		
4-Methyl-2-Pentanone								R		
2-Hexanone								R		
Tetrachloroethene								R		
Toluene								R		
1,1,2,2-Tetrachloroethane								R		
Chlorobenzene								R		
Ethylbenzene								R		
Styrene								R		
Xylenes (Total)								R		

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required

SITE NAME: CRESCENT LIGHTING, INC.
TDDR: 02-9011-24
SAMPLING DATE: 5/31/91
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Sample ID No.	BNF49	BNF50	BNF51	BNF52	BNF53	BNF55	BNF56	BNF57	BNF58	BNF59
Traffic Report No.	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	WATER	WATER	WATER
Matrix	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/L	ug/L	ug/L
Units	1	1	1	1	1	10	1	1	1	1
Dilution Factor/GPC Cleanup (Y)	8	12	11	7	7	9	8	--	--	--
Percent Moisture										
Pentachlorophenol										
Phenanthrene	560			J	J	18000	2800			
Anthracene	J					8800	640			
Di-n-butylphthalate	J		880	420	670	J	400			
Fluoranthene	910		J	J	J	19000	3100			
Pyrene	750		J	J	440	20000	6000 E			
Butylbenzylphthalate				J	J		J			
3,3'-Dichlorobenzidine										
Benzo(a)anthracene	450			J	J	17000	2300 E			
Chrysene	500			J	J	15000	2300 E			
bis(2-Ethylhexyl)phthalate	J	J	J	J	4000	J	R			
Di-n-octylphthalate										
Benzo(b)fluoranthene	630			J	J	17000	3900 E			
Benzo(k)fluoranthene	J			J	J	4500 E	1500 E			
Benzo(a)pyrene	400			J	J	12000	2800 E			
Indeno(1,2,3-cd)pyrene	J			J	J	6300	2300 E			
Dibenz(a,h)anthracene	J					J	690 E			
Benzo(g,h,i)perylene	J			J	J	J	1800 E			

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Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

08/08/91

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Traffic Report No.	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	WATER	WATER	WATER
Matrix	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/L	ug/L	ug/L
Units	1	1	1	1	1	10	1	1	1	1
Dilution Factor/GPC Cleanup (Y)	8	12	11	7	7	9	8	--	--	--
Percent Moisture										
Phenol										
bis(2-Chloroethyl)ether										
2-Chlorophenol										
1,3-Dichlorobenzene										
1,4-Dichlorobenzene										
Benzyl alcohol										
1,2-Dichlorobenzene										
2-Methylphenol										
bis(2-Chloroisopropyl)ether										
4-Methylphenol										
N-Nitroso-di-n-dipropylamine										
Hexachloroethane										
Nitrobenzene										
Isophorone				J	J		J			
2-Nitrophenol										
2,4-Dimethylphenol										
Benzoic acid										
bis(2-Chloroethoxy)methane										
2,4-Dichlorophenol										
1,2,4-Trichlorobenzene										
Naphthalene							J			
4-Chloroaniline										
Hexachlorobutadiene										
4-Chloro-3-Methylphenol										
2-Methylnaphthalene							J			
Hexachlorocyclopentadiene										
2,4,6-Trichlorophenol										
2,4,5-Trichlorophenol										
2-Chloronaphthalene										
2-Nitroaniline										
Dimethylphthalate					J					
Acenaphthylene	J			J			J			
2,6-Dinitrotoluene										
3-Nitroaniline										
Acenaphthene	J					J	J			
2,4-Dinitrophenol										
4-Nitrophenol										
Dibenzofuran						J	J			
2,4-Dinitrotoluene										
Diethylphthalate										
4-Chlorophenyl-phenyl ether										
Fluorene	J					4200	J			
4-Nitroaniline										
4,6-Dinitro-2-methylphenol										
N-nitrosodiphenylamine										
4-Bromophenyl-phenyl ether										
Hexachlorobenzene										

08/08/91

SITE NAME: CRESCENT LIGHTING, INC.
TDD#: 02-9011-24
SAMPLING DATE: 5/31/91
EPA CASE NO.: 16538 LAB: PACIFIC NORTHWEST ENVIRONMENTAL LABORATORIES

PESTICIDES										
Sample ID No.	NJNZ-S1	NJNZ-S2	NJNZ-S3	NJNZ-S4	NJNZ-S5(MS/MSD)	NJNZ-S6	NJNZ-S7(DUP)	NJNZ-RIN1	NJNZ-RIN2	NJNZ-RIN3
Traffic Report No.	BNF49	BNF50	BNF51	BNF52	BNF53	BNF55	BNF56	BNF57	BNF58	BNF59
Matrix	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	WATER	WATER	WATER
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/L	ug/L	ug/L
Dilution Factor/GPC Cleanup (Y)	1	1	1	1	1	1	1	1	1	1
Percent Moisture	8	12	11	7	7	9	8	--	--	--
alpha-BHC										
beta-BHC										
delta-BHC										
gamma-BHC (Lindane)										
Heptachlor										
Aldrin										
Heptachlor epoxide	J					J	J			
Endosulfan I										
Dieldrin										
4,4'-DDE	J		J	J	J	5.9	4.8 E			
Endrin						22 E	51			
Endosulfan II	J			J	J	3.9 E	4.5 E			
4,4'-DDD										
Endosulfan sulfate										
4,4'-DDT	J		J	5 E	8.5 E	24 E	21 E			
Methoxychlor										
Endrin ketone										
alpha-Chlordane	J	J	J	J	J	3.8 E	3.4 E			
gamma-Chlordane						3.5 E	3.3 E			
Toxaphene										
Aroclor-1016										
Aroclor-1221										
Aroclor-1232										
Aroclor-1242										
Aroclor-1248										
Aroclor-1254	J		61	100	190	530	490			
Aroclor-1260										

NOTES:
Blank space - compound analyzed for but not detected
B - compound found in lab blank as well as sample, indicates possible/probable blank contamination
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
N - Presumptive evidence of the presence of the material
NR - analysis not required
Detection limits elevated if Dilution Factor >1 and/or percent moisture >0%

SAMPLING TRIP REPORT

SITE NAME:	Crescent Lighting, Inc.
TDD NO.:	02-9011-24
SAMPLING DATE:	May 31, 1991
EPA CASE NO.:	16538

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	Pacific Northwest Environmental Laboratories 3820 159th Avenue, NE Redmond, WA 98052
Inorganic	U.S. Environmental Protection Agency Region II Environmental Services Division Laboratory Edison, New Jersey 08817

5. Sample Dispatch Data:

A total of seven soil and three aqueous samples for organic analysis were shipped by FIT 2 personnel via Federal Express under Airbill No. 980240625 to Pacific Northwest Environmental Laboratories, on May 31, 1991 at approximately 1610 hours.

A total of seven soil samples and three aqueous samples for inorganic analysis were delivered by FIT 2 personnel to the Environmental Protection Agency, Region II, Environmental Services Division Laboratory, Edison, New Jersey, on May 31, 1991 at approximately 1600 hours.

6. Sampling Personnel:

Name	Organization	Duties on Site
Lois Perlstein	NUS Corporation, FIT 2	Site Manager, Written and Photographic Documentation
David Grupp	NUS Corporation, FIT 2	Site Safety Officer
Joanne Torchia	NUS Corporation, FIT 2	Sample Management Officer
Robert Lynch	NUS Corporation, FIT 2	Sampler
Christopher Jimenez	NUS Corporation, FIT 2	Sampler

7. Weather Conditions:

Temperature approximately 90° F, sunny, hazy, winds 5-10 mph out of SE.

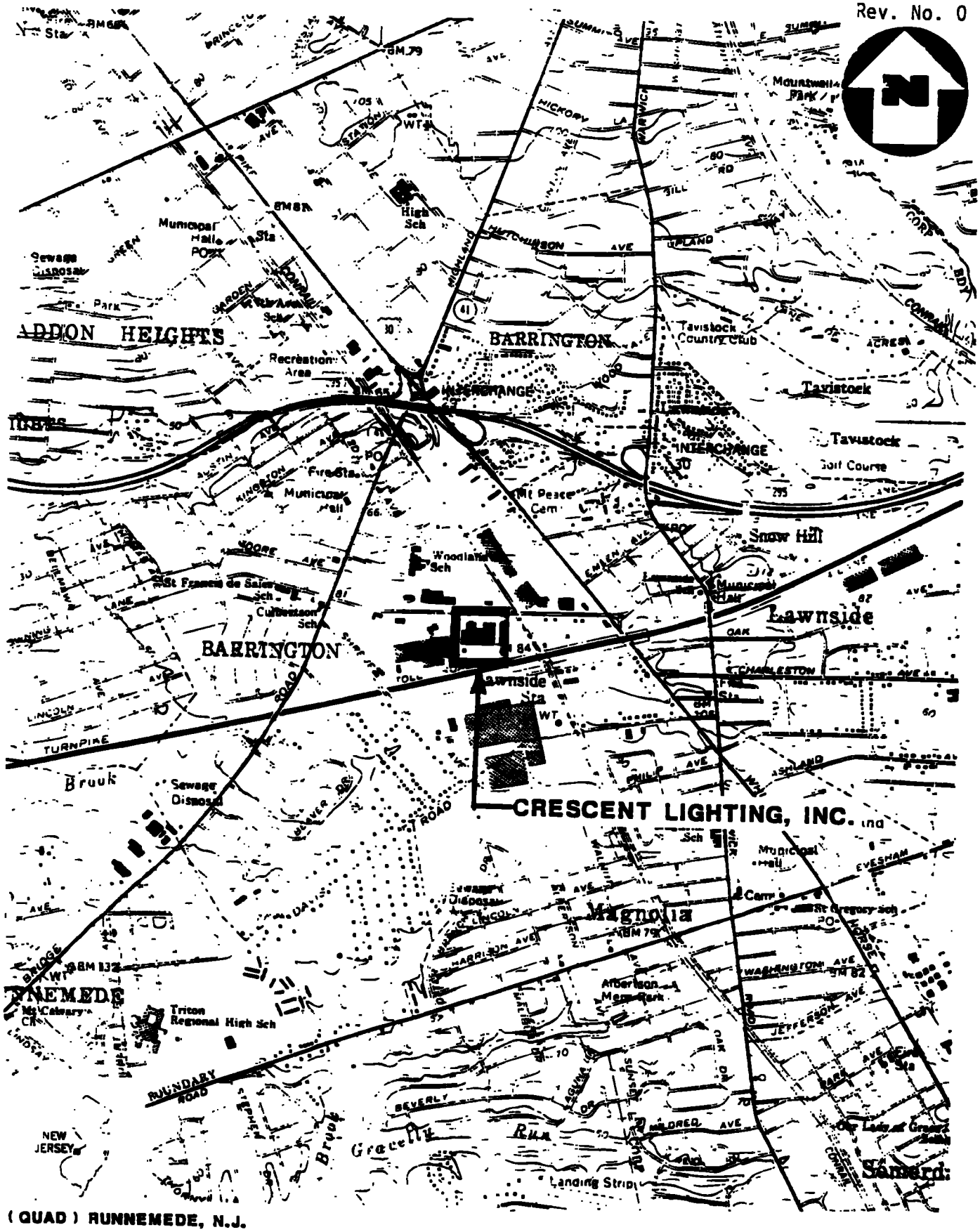
8. Additional Comments:

A total of seven environmental samples including five surface soil and two subsurface soil samples were collected. All samples will be analyzed for Target Compound List (TCL) organic and inorganic compounds, excluding cyanide.

Soil sample NJHZ-S6 and its duplicate NJHZ-S7 were collected in a different location than noted in the sample plan since the drum storage area is presently located on asphalt. These samples were relocated to a drainage path that lead from the drum storage area to the fill area. The background soil sample location (NJHZ-S1) was also changed to a different area. There were no readings above background on the HNu photoionization detector, organic vapor analyzer (OVA) or Monitor 4 Radiation meter from the soil in any of the sample locations.

9. Report Prepared By: Lois Perlstein Date: June 4, 1991

10. Approved By: [signature] Date: 6/14/91



(QUAD) RUNNEMEDE, N.J.

FIGURE 1

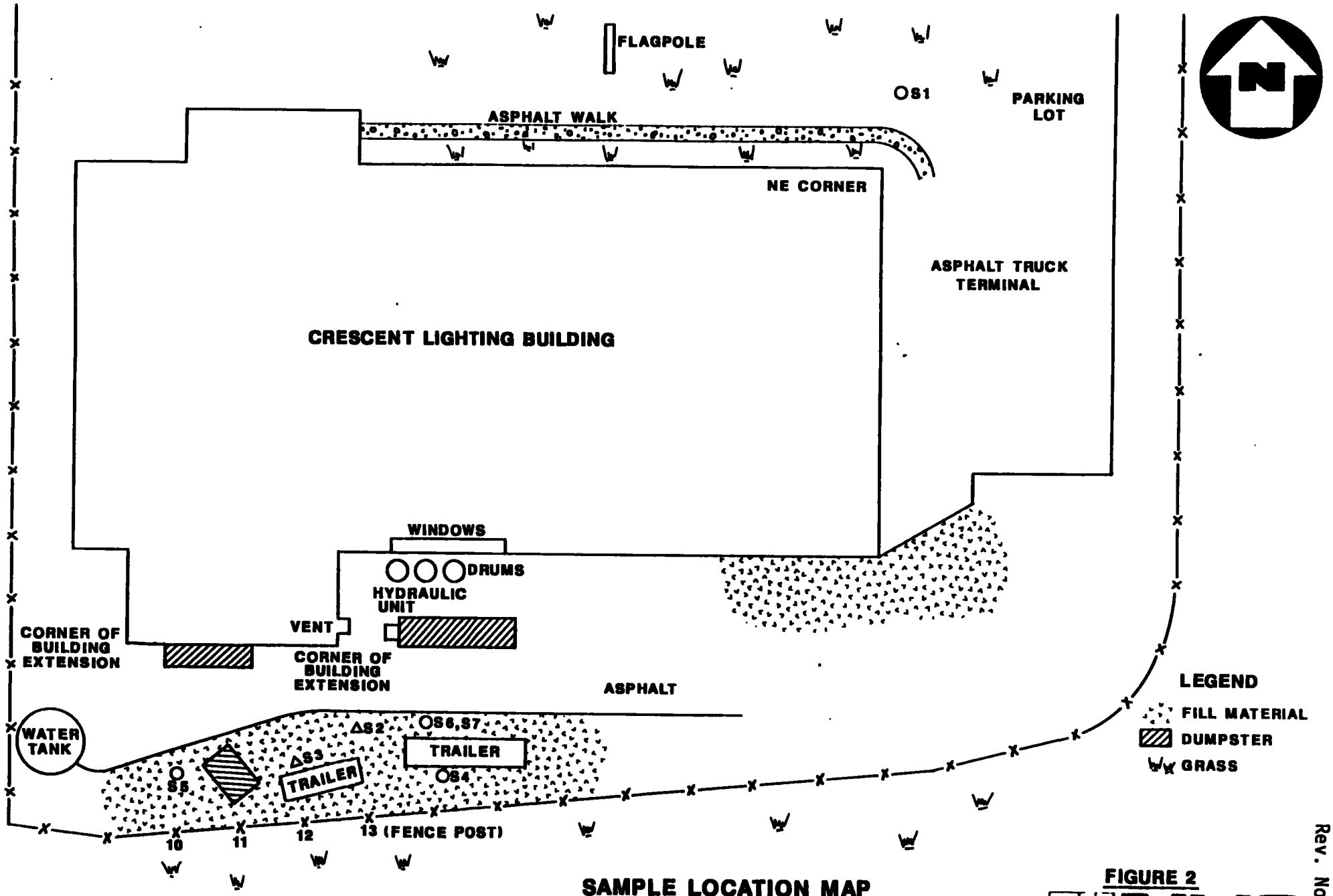
SITE LOCATION MAP

CRESCENT LIGHTING, INC.,

BARRINGTON, N.J.

SCALE: 1" = 2000'

NUS CORPORATION



SAMPLE LOCATION MAP

CRESCENT LIGHTING, INC., BARRINGTON, N.J.

NOT TO SCALE

FIGURE 2

NUS CORPORATION

02-9011-24-STR
Rev. No. 0

TABLE I
SAMPLE DESCRIPTIONS
CRESCENT LIGHTING, INC.
BARRINGTON, NEW JERSEY
MAY 31, 1991
CASE NO. 16538

NUS Sample ID Number	CLP Organic Sample Number	ESD Inorganic Sample Number	Collection Time	Sample Type	Sample Location
NJHZ-S1	BHF49	097596	1010	Soil	Surface soil sample located 63 feet 9 inches from flagpole and 45 feet 8 inches from the northeast corner of building. The angle from the NE corner of building to the sample location is 30°; from the flagpole to the sample location is 90°. The sample collection was at a depth of 0 to 6 inches.
NJHZ-S2	BHF50	097597	1120	Soil	Subsurface composite soil sample located 36 feet from the east corner of the building extension, and 31 feet from the twelfth fence post counting from the west. The angle from the corner of the building extension, is 180° and the angle from the twelfth fence post is 30°. The composite sample was collected from a depth of 24 to 34 inches.
NJHZ-S3	BHF51	097598	1250	Soil	Subsurface composite soil sample located 37 feet 6 inches from the east corner of the building extension, and 29 feet 2 inches from thirteenth fence post. The angle from the thirteenth fence post to the sample location is 350° and the angle from the east corner of the building extension is 200°. The composite sample was collected from a depth of 36 to 46 inches.

TABLE I (Cont'd)
SAMPLE DESCRIPTIONS
CRESCENT LIGHTING, INC.
BARRINGTON, NEW JERSEY
MAY 31, 1991
CASE NO. 16538

NUS Sample Number	CLP Organic Sample Number	ESD Inorganic Sample Number	Collection Time	Sample Type	Sample Location
NJHZ-S4	BHF52	097599	1105	Soil	Surface soil sample located 13 feet from the twelfth fence post and 52 feet from the east corner of the building extension. The angle from the east corner building extension is 170°. The sample was collected at a depth of 0 to 6 inches.
NJHZ-S5*	BHF53	097600	1200	Soil	Surface soil sample located 32 feet from the tenth fence post and 36 feet from the west corner of the building extension. The angle from the corner of the building extension is 150°; and from the tenth fence post is 30°. The sample was collected at a depth of 0 to 6 inches.
NJHZ-S6	BHF55	097588	1032	Soil	Surface soil sample located 26 feet from the east corner of the building extension, and 26 feet 6 inches from the corner of the hydraulic portion of the dumpster. The angle from the corner of the building extension is 130°; from the dumpster hydraulic unit is 160°. The sample was collected at a depth of approximately 0 to 6 inches.

Note:

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

TABLE I (Cont'd)
SAMPLE DESCRIPTIONS
CRESCENT LIGHTING, INC.
BARRINGTON, NEW JERSEY
MAY 31, 1991
CASE NO. 16538

NUS Sample Number	CLP Organic Sample Number	ESD Inorganic Sample Number	Collection Time	Sample Type	Sample Location
NJHZ S7**	BHF56	097589	1032	Soil	Duplicate sample collected at the same depth and location as NJHZ-S6.
NJHZ-RIN1	BHF57	097592	1034	Aqueous Rinsate Blank	Bowl and trowel rinsate collected in the field.
NJHZ-RIN2	BHF58	097593	1030	Aqueous Rinsate Blank	Bowl rinsate collected in the field.
NJHZ-RIN3	BHF59	097594	1045	Aqueous Rinsate Blank	Auger rinsate collected in the field.

Note:
** Duplicate- Indicates that a sample was collected as an environmental duplicate sample.

DJNZ

ATTACHMENT 1
SOP NO. HW-6

TOTAL REVIEW

PAGE __OF__

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organics Analysis

Case No. 16538 SDG No. BN749 LABORATORY PNELI SITE Crescent Lighting Corp.

DATA ASSESSMENT:

The ~~current functional guidelines (1988)~~ S.O.W. Document # OLM01.0 (Rev. 12/90) 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: 7/15/1991

Verified By: Susan Lewczyk Date: 08/01/1991

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.

BNA- for BHF56 and 56 DL, all analytes not already black J'd were qualified J, as the holding time for extraction was exceeded by less than 2 weeks.

BNA + Pest/PCBs - for BHF49, 50, 51, 52, 53, 53DL, and 55 (BNAs), and in BHF49, 50, 51, 52, 53, 55, and 56 (Pest/PCBs), extraction was performed 8 days after collection. No qualification of data was done, based on professional judgment.

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

BNH - bis(2-ethylhexyl)phthalate was qualified undetected in BH 54, 56 DL.

- Various TICs were ~~qualified~~ B rejected due to method blank contamination.

PEST - methoxychlor in BN 55, 56

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

C) Trip blank contamination

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 [illegible]~~ agree with those listed in the S.O.W. in both the initial and continuing calibrations. A value ~~[illegible]~~ out of criteria 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")~~. flagged estimated "J" or rejected "R".

ATTACHMENT 1
SOP NO. HW-6

PAGE__OF__

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.~~

BNA — benzo(k)fluoranthene was qualified estimated (J) in BHJ55 due 40%D>25 in CCC. (This analyte would have been J'd in BHJ49,52,53 for the same reason but was already black J'd)

- In BHF50,51,57,58, and 59, 4-chloroaniline was qualified estimated (J) because the %D in the CCC was greater than 50, but less than 90.

PEST — Endrin Aldehyde was qualified estimated (J) in BHJ52 due 40% RSD > 20 in Form I.

VOA - In BHF49 acetone was qualified estimated (J) because the %D (30.4) in the continuing calibration check is greater than the level normally used for qualifying ~~the~~ values as questionable. (Note: the new SOW is not specific concerning guidelines for qualifying acetone for %D.)

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.

PEST - Surrogate recoveries were outside QC limits however no qualification was necessary since these limits are advisory.

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.

BNA - Analytes quantitated with CRY and PRY in BA956 ~~were~~ would have been qualified estimated (J) due to IS area counts being out of GC limits. However, these analytes had ~~were~~ already been qualified J due to holding time

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.

PEST/PCB

- Identified compounds ~~that~~ qualified with a 'P' were changed to 'JN' due to the difference in quantity indicated by the quantitation column and the confirmation column. This difference indicates that the quantity and the identification may be doubtful.

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:

VOA Rinsate sample BH757 had air bubbles in both vials, therefore nondetects were rejected in this sample.

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

BNH - BH756 & BH755 were duplicate samples. BH756 required a 10X dilution while 3X dilution. Many analytes had a RPD>100 in these two samples

PEST - The correct analytical sequence was not followed however no qualifications were necessary (see narrative for explanation)

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.

BNH - The value for pyrene was transferred from BH756DL to BH756.
- The value for bis(2-ethylhexyl) phthalate was transferred from BH753 DL to BH753.

DATA ASSESSMENT:

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT (continued):

NUS CORPORATION AND SUBSIDIARIES

TELECON NOTE

CONTROL NO: 02-9011-24 NJHZI$	DATE: July 30, 1991	TIME: a.m.

DISTRIBUTION: Crescent Lighting

BETWEEN: Karen Kotz, CLP Project Manager	OF: NATEX Pacific Northwest Environmental Laboratory Inc.	PHONE: (206) 885-0083

AND: Susan Lenczyk

DISCUSSION:

I inquired as to why for sample BHF56 (Pest/PCBs) there was what appeared to be an "R" qualifier for endrin aldehyde. She checked the data and said that the lab's copy had a "P" not an R. She said their lab does not use an R ever. I suggested that perhaps it was a stray pen mark.

In any case, I confirmed that the ~~qualified~~ qualifier is definitely a P.

ACTION ITEMS:

Sue Lenczyk 8/1/91

NUS 087 REVISED 0886

[redacted]e [redacted]ev[redacted] [redacted] Date: 7/15/91 Case #: 16538

Project: Crescent Lighting Corp.

Lab Name: PNEL I

Reviewer's Initials: JB

Number of Samples: 10

Analytes Rejected Due to Exceeding Review Criteria:

	Surrogates	Holding Time	Calibration	Method Contamination	Field Contamination	ID	Other	Total # Samples	Total # Rejected/ Total # in all Samples
Acids (15)								11	0 / 165
B/N (50)				2/2				11	2 / 550
VOA (35)							air bubbles 35/1	10	35 / 350
PEST (20)				2/2				9	2 / 180
PCB (7)								9	0 / 63
TCDD (1)									

Analytes Estimated Due to Exceeding Review Criteria for:

Acids (15)		14/1				IS	11	14/ 165
B/N (50)		42/1	6/6	1		~~23/1~~ al 9/10	11	48/ 550
VOA (35)							10	0 / 350
PEST (20)							9	0 / 180
PCB (7)							9	0 / 63
TCDD (1)								

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF49

Lab Name: PNELI Contract: 68D00152

Lab Code: PNELI Case No.: 16538 SAS No.: SDG No.: BHF49

Matrix: (soil/water) SOIL Lab Sample ID: 3196-01

Sample wt/vol: 5.0 (g/mL) G Lab File ID: B6342

Level: (low/med) LOW Date Received: 06/01/91

% Moisture: not dec. 8 Date Analyzed: 06/04/91

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	2	J
67-64-1	Acetone	130	J
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BHF49

Lab Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-01_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: B6342_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: not dec. ___8 Date Analyzed: 06/04/91

GC Column: CAP_____ ID: _0.530 (mm) Dilution Factor: _____1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: __0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

400016

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF50

Lab Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-02_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: B6343_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: not dec. __12 Date Analyzed: 06/04/91

GC Column: CAP_____ ID: _0.530 (mm) Dilution Factor: _____1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	11	U
67-64-1	Acetone	11	J
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BHF50

Contract: 68D00152___

PNELI___ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

(soil/water) SOIL__ Lab Sample ID: 3196-02_____

le wt/vol: __5.0 (g/mL) G___ Lab File ID: B6343_____

vel: (low/med) LOW___ Date Received: 06/01/91

Moisture: not dec. __12 Date Analyzed: 06/04/91

C Column: CAP_____ ID: _0.530 (mm) Dilution Factor: _____1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

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

Number TICs found: __0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF51

Lab Name: PNELI Contract: 68D00152

Lab Code: PNELI Case No.: 16538 SAS No.: _____ SDG No.: BHF49

Matrix: (soil/water) SOIL Lab Sample ID: 3196-03

Sample wt/vol: 5.0 (g/mL) G Lab File ID: B6344

Level: (low/med) LOW Date Received: 06/01/91

% Moisture: not dec. 11 Date Analyzed: 06/04/91

GC Column: CAP _____ ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	2	J
67-64-1	Acetone	2	J
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BHF51

Lab Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-03_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: B6344_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: not dec. __11 Date Analyzed: 06/04/91

GC Column: CAP_____ ID: _0.530 (mm) Dilution Factor: _____1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: __0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF52

Lab Name: PNELI Contract: 68D00152

Lab Code: PNELI Case No.: 16538 SAS No.: SDG No.: BHF49

Matrix: (soil/water) SOIL Lab Sample ID: 3196-04

Sample wt/vol: 5.0 (g/mL) G Lab File ID: B6345

Level: (low/med) LOW Date Received: 06/01/91

% Moisture: not dec. 7 Date Analyzed: 06/04/91

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	11	U
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BHF52

Lab Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-04_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: B6345_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: not dec. ___7 Date Analyzed: 06/04/91

GC Column: CAP_____ ID: _0.530 (mm) Dilution Factor: _____1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: __0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF53

Lab Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-05_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: B6346_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: not dec. ___7 Date Analyzed: 06/04/91

GC Column: CAP_____ ID: _0.530 (mm) Dilution Factor: _____1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	11	U
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BHF53

Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-05_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: B6346_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: not dec. ___7 Date Analyzed: 06/04/91

GC Column: CAP_____ ID: _0.530 (mm) Dilution Factor: _____1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: __0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF55

Lab Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-06_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: B6357_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: not dec. ___9 Date Analyzed: 06/05/91

GC Column: CAP_____ ID: _0.530 (mm) Dilution Factor: _____1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	11	U
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF56

Lab Name: PNELI Contract: 68D00152

Lab Code: PNELI Case No.: 16538 SAS No.: SDG No.: BHF49

Matrix: (soil/water) SOIL Lab Sample ID: 3196-07

Sample wt/vol: 5.0 (g/mL) G Lab File ID: B6351

Level: (low/med) LOW Date Received: 06/01/91

% Moisture: not dec. 8 Date Analyzed: 06/04/91

GC Column: CAP ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	U
74-83-9	Bromomethane	11	U
75-01-4	Vinyl Chloride	11	U
75-00-3	Chloroethane	11	U
75-09-2	Methylene Chloride	11	U
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	11	U
591-78-6	2-Hexanone	11	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BHF56

Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-07_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: B6351_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: not dec. ___8 Date Analyzed: 06/04/91

GC Column: CAP_____ ID: _0.530 (mm) Dilution Factor: _____1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: __0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF57

Lab Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) WATER_ Lab Sample ID: 3196-08_____

Sample wt/vol: __5.0 (g/mL) ML__ Lab File ID: A7501_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: not dec. ____ Date Analyzed: 06/06/91

GC Column: CAP_____ ID: _0.530 (mm) Dilution Factor: _____1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

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

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BHF57

Lab Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) WATER_ Lab Sample ID: 3196-08_____

Sample wt/vol: __5.0 (g/mL) ML__ Lab File ID: A7501_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: not dec. ____ Date Analyzed: 06/06/91

GC Column: CAP_____ ID: _0.530 (mm) Dilution Factor: _____1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: __0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

400063

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF58

Lab Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) WATER_ Lab Sample ID: 3196-09_____

Sample wt/vol: __5.0 (g/mL) ML__ Lab File ID: A7502_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: not dec. ____ Date Analyzed: 06/06/91

GC Column: CAP_____ ID: _0.530 (mm) Dilution Factor: _____1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BHF58

Contract: 68D00152___

Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix (soil/water) WATER_ Lab Sample ID: 3196-09_____

Sample wt/vol: __5.0 (g/mL) ML__ Lab File ID: A7502_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: not dec. ____ Date Analyzed: 06/06/91

GC Column: CAP_____ ID: _0.530 (mm) Dilution Factor: _____1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: __0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

400063

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF59

Lab Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) WATER_ Lab Sample ID: 3196-10_____

Sample wt/vol: __5.0 (g/mL) ML__ Lab File ID: A7503_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: not dec. ____ Date Analyzed: 06/06/91

GC Column: CAP_____ ID: _0.530 (mm) Dilution Factor: _____1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BHF59

Lab Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) WATER_ Lab Sample ID: 3196-10_____

Sample wt/vol: __5.0 (g/mL) ML__ Lab File ID: A7503_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: not dec. ____ Date Analyzed: 06/06/91

GC Column: CAP_____ ID: _0.530 (mm) Dilution Factor: _____1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: __0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF49

Lab Name: PNELI Contract: 68D00152

Lab Code: PNELI Case No.: 16538 SAS No.: SDG No.: BHF49

Matrix: (soil/water) SOIL Lab Sample ID: 3196-01

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C2057

Level: (low/med) LOW Date Received: 06/01/91

% Moisture: 8 decanted: (Y/N) N Date Extracted: 06/07/91

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 06/14/91

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	45	J
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	98	J

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF49

Lab Name: PNELI Contract: 68D00152

Lab Code: PNELI Case No.: 16538 SAS No.: SDG No.: BHF49

Matrix: (soil/water) SOIL Lab Sample ID: 3196-01

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C2057

Level: (low/med) LOW Date Received: 06/01/91

% Moisture: 8 decanted: (Y/N) N Date Extracted: 06/07/91

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 06/14/91

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 5.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	80	J
534-52-1	4,6-Dinitro-2-methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine (1)	1800	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	360	U
85-01-8	Phenanthrene	1800	U
120-12-7	Anthracene	560	
86-74-8	Carbazole	130	J
84-74-2	Di-n-butylphthalate	80	J
206-44-0	Fluoranthene	41	J
129-00-0	Pyrene	910	
85-68-7	Butylbenzylphthalate	750	
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	450	
117-81-7	bis(2-Ethylhexyl)phthalate	500	
117-84-0	Di-n-octylphthalate	84	J
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	630	
50-32-8	Benzo(a)pyrene	220	J
193-39-5	Indeno(1,2,3-cd)pyrene	400	
53-70-3	Dibenz(a,h)anthracene	240	J
191-24-2	Benzo(g,h,i)perylene	79	J
		200	J

(1) - Cannot be separated from Diphenylamine

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BHF49

Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-01_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: C2057_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: ____8 decanted: (Y/N) N__ Date Extracted: 06/07/91

Concentrated Extract Volume: 500.0___(uL) Date Analyzed: 06/14/91

Injection Volume: _____2.0(uL) Dilution Factor: _____1.0

GPC Cleanup: (Y/N) Y__ pH: _5.2

Number TICs found: _22

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	4.80	290	~~JNB~~ R
2. 123422	Diacetone alcohol	8.12	1500	~~AB JN~~
3.	Unknown alkane	8.44	470	~~JNB~~
4.	Unknown alkane	8.49	400	~~JNB~~
5.	Unknown alkane	8.61	430	~~JNB~~
6.	Unknown alkane	8.66	400	~~JNB~~
7.	Unknown alkane	8.80	510	~~JNB~~
8.	Unknown ketone	10.18	1500	~~B JN~~
9.	Unknown ketone	10.48	1900	~~JNB~~
10.	Unknown ketone	10.70	540	~~JNB~~
11.	Unknown	11.36	900	~~JNB~~ R
12.	Unknown aromatic HC MW216	28.22	220	JN
13.	Unknown aromatic HC MW216	28.38	140	JN
14.	Unknown	29.56	180	JN
15.	Unknown alkane	31.75	250	JN
16.	Unknown aldehyde	33.08	250	JN
17.	Unknown alkane	33.67	720	~~JNB~~ R
18.	Unknown aromatic HC MW252	34.30	330	JN
19.	Unknown alkane	36.22	1300	~~JNB~~ R
20.	Unknown	36.57	330	JN
21.	Unknown alkane	39.75	940	~~JNB~~ R
22.	Unknown	40.31	650	JN

5023

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF50

Lab Name: PNELI Contract: 68D00152

Lab Code: PNELI Case No.: 16538 SAS No.: SDG No.: BHF49

Matrix: (soil/water) SOIL Lab Sample ID: 3196-02

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C2047

Level: (low/med) LOW Date Received: 06/01/91

% Moisture: 12 decanted: (Y/N) N Date Extracted: 06/07/91

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 06/13/91

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	UJ
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	380	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF50

Lab Name: PNELI Contract: 68D00152

Lab Code: PNELI Case No.: 16538 SAS No.: _____ SDG No.: BHF49

Matrix: (soil/water) SOIL Lab Sample ID: 3196-02

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C2047

Level: (low/med) LOW Date Received: 06/01/91

% Moisture: 12 decanted: (Y/N) N Date Extracted: 06/07/91

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 06/13/91

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)phthalate	76	J
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenz(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

(1) - Cannot be separated from Diphenylamine

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BHF50

Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-02_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: C2047_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: ___12 decanted: (Y/N) N__ Date Extracted: 06/07/91

Concentrated Extract Volume: 500.0___(uL) Date Analyzed: 06/13/91

Injection Volume: _____2.0(uL) Dilution Factor: _____1.0

GPC Cleanup: (Y/N) Y__ pH: _6.5

Number TICs found: _19

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown ketone	6.98	420	~~JNB~~ R
2. 123422	Diacetone alcohol	8.10	1400	~~ABJN~~
3.	Unknown alkane	8.41	340	~~JNB~~
4.	Unknown alkane	8.48	380	~~JNB~~
5.	Unknown alkane	8.58	420	~~JNB~~
6.	Unknown alkane	8.63	300	~~JNB~~
7.	Unknown alkane	8.78	450	~~JNB~~
8.	Unknown ketone	10.15	610	~~JNB~~
9.	Unknown ketone	10.46	1900	~~BJN~~
10.	Unknown ketone	10.68	420	~~BJN~~
11.	Unknown	11.34	1100	~~BJN~~ R
12.	Unknown	11.70	110	JN
13.	Unknown	11.79	230	JN
14.	Unknown alkane	24.53	76	JN
15.	Unknown hydrocarbon	28.32	76	~~JNB~~ R
16.	Unknown alkane	33.64	76	~~JNB~~ R
17.	Unknown alkane	36.16	76	JNB
18.	Unknown alkane	37.77	76	JNB
19.	Unknown alkane	39.68	76	JNB

5071

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF51

Lab Name: PNELI Contract: 68D00152

Lab Code: PNELI Case No.: 16538 SAS No.: SDG No.: BHF49

Matrix: (soil/water) SOIL Lab Sample ID: 3196-03

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C2048

Level: (low/med) LOW Date Received: 06/01/91

% Moisture: 11 decanted: (Y/N) N Date Extracted: 06/07/91

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 06/13/91

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF51

Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-03_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: C2048_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: ___11 decanted: (Y/N) N__ Date Extracted: 06/07/91

Concentrated Extract Volume: 500.0___(uL) Date Analyzed: 06/13/91

Injection Volume: _____2.0(uL) Dilution Factor: _____1.0

GPC Cleanup: (Y/N) Y__ pH: _6.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-butylphthalate	880	
206-44-0	Fluoranthene	42	J
129-00-0	Pyrene	41	J
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	150	J
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenz(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BHF51

Lab Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-03_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: C2048_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: ___11 decanted: (Y/N) N__ Date Extracted: 06/07/91

Concentrated Extract Volume: 500.0___(uL) Date Analyzed: 06/13/91

Injection Volume: _____2.0(uL) Dilution Factor: _____1.0

GPC Cleanup: (Y/N) Y__ pH: _6.3

Number TICs found: _22

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	4.75	370	~~JNB~~ R
2.	Unknown ketone	6.98	750	~~JNB~~ R
3.	Unknown	7.52	970	JN
4. 123422	Diacetone alcohol	8.15	4900	~~JBNA~~ R
5.	Unknown alkane	8.42	340	~~JNB~~
6.	Unknown alkane	8.48	410	~~JNB~~
7.	Unknown alkane	8.58	370	~~JNB~~
8.	Unknown alkane	8.62	340	~~JNB~~
9.	Unknown alkane	8.78	490	~~JNB~~
10.	Unknown ketone	10.13	370	~~JNB~~
11.	Unknown ketone	10.48	2100	~~JNB~~
12.	Unknown ketone	10.69	520	~~JNB~~ R
13.	Unknown ketone	11.32	260	JN
14.	Unknown	11.34	860	~~JNB~~ R
15.	Unknown	19.09	150	JN
16.	Unknown alkane	22.14	220	JN
17.	Unknown alkane	28.47	450	JN
18.	Unknown alkane	30.04	190	JN
19.	Unknown phthalate	31.35	220	JN
20.	Unknown hydrocarbon	31.87	150	JN
21.	Unknown hydrocarbon	35.13	220	JN
22.	Unknown hydrocarbon	36.83	790	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF52

Lab Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-04_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: C2058_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: ____7 decanted: (Y/N) N__ Date Extracted: 06/07/91

Concentrated Extract Volume: 500.0___(uL) Date Analyzed: 06/14/91

Injection Volume: _____2.0(uL) Dilution Factor: _____1.0

GPC Cleanup: (Y/N) Y__ pH: _6.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	150	J
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	39	J
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF52

Lab Name: PNELI Contract: 68D00152

Lab Code: PNELI Case No.: 16538 SAS No.: SDG No.: BHF49

Matrix: (soil/water) SOIL Lab Sample ID: 3196-04

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C2058

Level: (low/med) LOW Date Received: 06/01/91

% Moisture: 7 decanted: (Y/N) N Date Extracted: 06/07/91

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 06/14/91

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.3

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	130	J
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	420	
206-44-0	Fluoranthene	290	J
129-00-0	Pyrene	250	J
85-68-7	Butylbenzylphthalate	36	J
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	110	J
218-01-9	Chrysene	170	J
117-81-7	bis(2-Ethylhexyl)phthalate	160	J
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	230	J
207-08-9	Benzo(k)fluoranthene	73	J
50-32-8	Benzo(a)pyrene	130	J
193-39-5	Indeno(1,2,3-cd)pyrene	83	J
53-70-3	Dibenz(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	62	J

(1) - Cannot be separated from Diphenylamine

5132

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BHF52

Lab Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-04_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: C2058_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: ____7 decanted: (Y/N) N__ Date Extracted: 06/07/91

Concentrated Extract Volume: 500.0___(uL) Date Analyzed: 06/14/91

Injection Volume: _____2.0(uL) Dilution Factor: _____1.0

GPC Cleanup: (Y/N) Y__ pH: _6.3

Number TICs found: _22

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	4.78	250	~~JNB~~ R
2.	Unknown ketone	6.99	390	~~JNB~~ R
3.	Unknown	7.55	1200	JN
4. 123422	Diacetone alcohol	8.19	5700	~~BJNR~~ R
5.	Unknown alkane	8.43	320	~~JNB~~
6.	Unknown alkane	8.49	320	~~JNB~~
7.	Unknown alkane	8.60	360	~~JNB~~
8.	Unknown alkane	8.64	250	~~JNB~~
9.	Unknown alkane	8.80	470	~~JNB~~ R
10.	Unknown	9.35	320	JN
11.	Unknown ketone	10.16	680	~~JNB~~ R
12.	Unknown ketone	10.47	1600	~~JNB~~
13.	Unknown ketone	10.68	390	~~JNB~~
14.	Unknown	11.34	790	~~JNB~~ R
15.	Unknown phthalate	24.04	290	JN
16.	Unknown aromatic hydrocarbon	28.46	210	JN
17.	Unknown	31.44	250	JN
18.	Unknown alkane	33.63	360	~~JNB~~ R
19.	Unknown aromatic HC MW252	34.27	210	JN
20.	Unknown alkane	36.16	360	~~JNB~~ R
21.	Unknown hydrocarbon	39.73	1100	JN
22.	Unknown hydrocarbon	40.25	210	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF53

Lab Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-05_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: C2059_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: ____7 decanted: (Y/N) N__ Date Extracted: 06/07/91

Concentrated Extract Volume: 500.0___(uL) Date Analyzed: 06/14/91

Injection Volume: _____2.0(uL) Dilution Factor: _____1.0

GPC Cleanup: (Y/N) Y__ pH: _6.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	160	J
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethylphthalate	46	J
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF53

Lab Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-05_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: C2059_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: ____7 decanted: (Y/N) N__ Date Extracted: 06/07/91

Concentrated Extract Volume: 500.0___(uL) Date Analyzed: 06/14/91

Injection Volume: _____2.0(uL) Dilution Factor: _____1.0

GPC Cleanup: (Y/N) Y__ pH: _6.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	130	J
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	670	
206-44-0	Fluoranthene	270	J
129-00-0	Pyrene	440	
85-68-7	Butylbenzylphthalate	95	J
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	140	J
218-01-9	Chrysene	300	J
117-81-7	bis(2-Ethylhexyl)phthalate	4000	~~[illegible]~~
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	210	J
207-08-9	Benzo(k)fluoranthene	64	J
50-32-8	Benzo(a)pyrene	110	J
193-39-5	Indeno(1,2,3-cd)pyrene	79	J
53-70-3	Dibenz(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	50	J

(1) - Cannot be separated from Diphenylamine

*Value from BHF53 DL

1F

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BHF53

Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-05_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: C2059_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: ____7 decanted: (Y/N) N__ Date Extracted: 06/07/91

Concentrated Extract Volume: 500.0___(uL) Date Analyzed: 06/14/91

Injection Volume: _____2.0(uL) Dilution Factor: _____1.0

GPC Cleanup: (Y/N) Y__ pH: _6.0

Number TICs found: _22

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	4.78	290	~~JNB~~ R
2.	Unknown ketone	6.99	430	~~JNB~~ R
3.	Unknown	7.55	1100	JN
4. 123422	Diacetone alcohol	8.19	5400	~~BJNA~~ R
5.	Unknown alkane	8.43	290	~~JNB~~
6.	Unknown alkane	8.48	290	~~JNB~~
7.	Unknown alkane	8.60	320	~~JNB~~
8.	Unknown alkane	8.80	390	~~JNB~~ R
9.	Unknown	9.35	320	JN
10.	Unknown ketone	10.16	1000	~~JNB~~ R
11.	Unknown ketone	10.46	1400	~~JNB~~ R
12.	Unknown ketone	10.68	320	~~JNB~~ R
13.	Unknown	11.34	820	~~JNB~~ R
14.	Unknown	19.08	180	JN
15.	Unknown phthalate	24.04	250	JN
16.	Unknown aromatic HC MW216	28.38	180	JN
17.	Unknown alkane	30.09	290	JN
18.	Unknown alkane	31.73	210	JN
19.	Unknown alkane	33.64	540	~~JNB~~ R
20.	Unknown alkane	36.16	500	~~JNB~~ R
21.	Unknown alkane	39.69	290	~~JNB~~ R
22.	Unknown aromatic HC	40.25	250	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF53DL

Lab Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-05DL____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: C2067_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: ____7 decanted: (Y/N) N__ Date Extracted: 06/07/91

Concentrated Extract Volume: 500.0___(uL) Date Analyzed: 06/17/91

Injection Volume: _____2.0(uL) Dilution Factor: _____2.0

GPC Cleanup: (Y/N) Y__ pH: _6.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	710	U
111-44-4	bis(2-Chloroethyl)ether	710	U
95-57-8	2-Chlorophenol	710	U
541-73-1	1,3-Dichlorobenzene	710	U
106-46-7	1,4-Dichlorobenzene	710	U
95-50-1	1,2-Dichlorobenzene	710	U
95-48-7	2-Methylphenol	710	U
108-60-1	2,2'-oxybis(1-Chloropropane)	710	U
106-44-5	4-Methylphenol	710	U
621-64-7	N-Nitroso-di-n-propylamine	710	U
67-72-1	Hexachloroethane	710	U
98-95-3	Nitrobenzene	710	U
78-59-1	Isophorone	160	DJ
88-75-5	2-Nitrophenol	710	U
105-67-9	2,4-Dimethylphenol	710	U
111-91-1	bis(2-Chloroethoxy)methane	710	U
120-83-2	2,4-Dichlorophenol	710	U
120-82-1	1,2,4-Trichlorobenzene	710	U
91-20-3	Naphthalene	710	U
106-47-8	4-Chloroaniline	710	U
87-68-3	Hexachlorobutadiene	710	U
59-50-7	4-Chloro-3-methylphenol	710	U
91-57-6	2-Methylnaphthalene	710	U
77-47-4	Hexachlorocyclopentadiene	710	U
88-06-2	2,4,6-Trichlorophenol	710	U
95-95-4	2,4,5-Trichlorophenol	3700	U
91-58-7	2-Chloronaphthalene	710	U
88-74-4	2-Nitroaniline	3700	U
131-11-3	Dimethylphthalate	710	U
208-96-8	Acenaphthylene	710	U
606-20-2	2,6-Dinitrotoluene	710	U
99-09-2	3-Nitroaniline	3700	U
83-32-9	Acenaphthene	710	U

do not use

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF53DL

Lab Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-05DL____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: C2067_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: ____7 decanted: (Y/N) N__ Date Extracted: 06/07/91

Concentrated Extract Volume: 500.0___(uL) Date Analyzed: 06/17/91

Injection Volume: _____2.0(uL) Dilution Factor: _____2.0

GPC Cleanup: (Y/N) Y__ pH: _6.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	3700	U
100-02-7	4-Nitrophenol	3700	U
132-64-9	Dibenzofuran	710	U
121-14-2	2,4-Dinitrotoluene	710	U
84-66-2	Diethylphthalate	710	U
7005-72-3	4-Chlorophenyl-phenylether	710	U
86-73-7	Fluorene	710	U
100-01-6	4-Nitroaniline	3700	U
534-52-1	4,6-Dinitro-2-methylphenol	3700	U
86-30-6	N-Nitrosodiphenylamine (1)	710	U
101-55-3	4-Bromophenyl-phenylether	710	U
118-74-1	Hexachlorobenzene	710	U
87-86-5	Pentachlorophenol	3700	U
85-01-8	Phenanthrene	130	DJ
120-12-7	Anthracene	710	U
86-74-8	Carbazole	710	U
84-74-2	Di-n-butylphthalate	800	D
206-44-0	Fluoranthene	280	DJ
129-00-0	Pyrene	270	DJ
85-68-7	Butylbenzylphthalate	710	U
91-94-1	3,3'-Dichlorobenzidine	710	U
56-55-3	Benzo(a)anthracene	97	DJ
218-01-9	Chrysene	180	DJ
117-81-7	bis(2-Ethylhexyl)phthalate	4000	D
117-84-0	Di-n-octylphthalate	710	U
205-99-2	Benzo(b)fluoranthene	190	DJ
207-08-9	Benzo(k)fluoranthene	75	DJ
50-32-8	Benzo(a)pyrene	110	DJ
193-39-5	Indeno(1,2,3-cd)pyrene	92	DJ
53-70-3	Dibenz(a,h)anthracene	710	U
191-24-2	Benzo(g,h,i)perylene	710	U

(1) - Cannot be separated from Diphenylamine

do 207 use

1F

NIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BHF53DL

Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-05DL____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: C2067_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: ____7 decanted: (Y/N) N__ Date Extracted: 06/07/91

Concentrated Extract Volume: 500.0___(uL) Date Analyzed: 06/17/91

Injection Volume: _____2.0(uL) Dilution Factor: _____2.0

GPC Cleanup: (Y/N) Y__ pH: _6.0

Number TICs found: _21

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	7.59	2700	JN
2. 123422	Diacetone alcohol	8.28	18000	~~BJNA~~
3.	Unknown alkane	8.45	290	~~JNB~~
4.	Unknown alkane	8.51	360	JNB
5.	Unknown alkane	8.62	290	JNB
6.	Unknown alkane	8.66	360	JNB
7.	Unknown alkane	8.82	430	JNB
8.	Unknown	9.39	360	JN
9.	Unknown	9.86	790	JN
10.	Unknown ketone	10.20	930	~~JNB~~
11.	Unknown ketone	10.48	1500	~~JNB~~
12.	Unknown	11.37	930	~~JNB~~
13.	Unknown	19.16	220	JN
14.	Unknown phthalate	24.12	290	JN
15.	Unknown hydrocarbon	28.55	220	JN
16.	Unknown alkane	30.18	220	JN
17.	Unknown alkane	31.83	220	JN
18.	Unknown alkane	33.76	430	~~JNB~~
19.	Unknown alkane	36.35	430	JNB
20.	Unknown alkane	39.94	220	JN
21.	Unknown hydrocarbon	40.50	220	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF55

Lab Name: PNELI Contract: 68D00152

Lab Code: PNELI Case No.: 16538 SAS No.: SDG No.: BHF49

Matrix: (soil/water) SOIL Lab Sample ID: 3196-06

Sample wt/vol: 30.0 (g/mL) G Lab File ID: C2073

Level: (low/med) LOW Date Received: 06/01/91

% Moisture: 9 decanted: (Y/N) N Date Extracted: 06/07/91

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 06/17/91

Injection Volume: 2.0 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 6.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	3600	U
111-44-4	bis(2-Chloroethyl)ether	3600	U
95-57-8	2-Chlorophenol	3600	U
541-73-1	1,3-Dichlorobenzene	3600	U
106-46-7	1,4-Dichlorobenzene	3600	U
95-50-1	1,2-Dichlorobenzene	3600	U
95-48-7	2-Methylphenol	3600	U
108-60-1	2,2'-oxybis(1-Chloropropane)	3600	U
106-44-5	4-Methylphenol	3600	U
621-64-7	N-Nitroso-di-n-propylamine	3600	U
67-72-1	Hexachloroethane	3600	U
98-95-3	Nitrobenzene	3600	U
78-59-1	Isophorone	3600	U
88-75-5	2-Nitrophenol	3600	U
105-67-9	2,4-Dimethylphenol	3600	U
111-91-1	bis(2-Chloroethoxy)methane	3600	U
120-83-2	2,4-Dichlorophenol	3600	U
120-82-1	1,2,4-Trichlorobenzene	3600	U
91-20-3	Naphthalene	3600	U
106-47-8	4-Chloroaniline	3600	U
87-68-3	Hexachlorobutadiene	3600	U
59-50-7	4-Chloro-3-methylphenol	3600	U
91-57-6	2-Methylnaphthalene	3600	U
77-47-4	Hexachlorocyclopentadiene	3600	U
88-06-2	2,4,6-Trichlorophenol	3600	U
95-95-4	2,4,5-Trichlorophenol	19000	U
91-58-7	2-Chloronaphthalene	3600	U
88-74-4	2-Nitroaniline	19000	U
131-11-3	Dimethylphthalate	3600	U
208-96-8	Acenaphthylene	3600	U
606-20-2	2,6-Dinitrotoluene	3600	U
99-09-2	3-Nitroaniline	19000	U
83-32-9	Acenaphthene	2700	J

1C
ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF55

Contract: 68D00152___

Lab Name: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-06_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: C2073_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: ____9 decanted: (Y/N) N__ Date Extracted: 06/07/91

Concentrated Extract Volume: 500.0___(uL) Date Analyzed: 06/17/91

Injection Volume: _____2.0(uL) Dilution Factor: ____10.0

GPC Cleanup: (Y/N) Y__ pH: _6.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	19000	U
100-02-7	4-Nitrophenol	19000	U
132-64-9	Dibenzofuran	1400	J
121-14-2	2,4-Dinitrotoluene	3600	U
84-66-2	Diethylphthalate	3600	U
7005-72-3	4-Chlorophenyl-phenylether	3600	U
86-73-7	Fluorene	4200	
100-01-6	4-Nitroaniline	19000	U
534-52-1	4,6-Dinitro-2-methylphenol	19000	U
86-30-6	N-Nitrosodiphenylamine (1)	3600	U
101-55-3	4-Bromophenyl-phenylether	3600	U
118-74-1	Hexachlorobenzene	3600	U
87-86-5	Pentachlorophenol	19000	U
85-01-8	Phenanthrene	18000	
120-12-7	Anthracene	8800	
86-74-8	Carbazole	5800	
84-74-2	Di-n-butylphthalate	400	J
206-44-0	Fluoranthene	19000	
129-00-0	Pyrene	20000	
85-68-7	Butylbenzylphthalate	3600	U
91-94-1	3,3'-Dichlorobenzidine	3600	U
56-55-3	Benzo(a)anthracene	17000	
218-01-9	Chrysene	15000	
117-81-7	bis(2-Ethylhexyl)phthalate	580	J
117-84-0	Di-n-octylphthalate	3600	U
205-99-2	Benzo(b)fluoranthene	17000	
207-08-9	Benzo(k)fluoranthene	4500	J
50-32-8	Benzo(a)pyrene	12000	
193-39-5	Indeno(1,2,3-cd)pyrene	6300	
53-70-3	Dibenz(a,h)anthracene	1900	J
191-24-2	Benzo(g,h,i)perylene	2900	J

(1) - Cannot be separated from Diphenylamine

1F

ORGANICS ANALYSIS DATA SHEET

TATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BHF55

LI_____ Contract: 68D00152___

de: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-06_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: C2073_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: ____9 decanted: (Y/N) N__ Date Extracted: 06/07/91

Concentrated Extract Volume: 500.0___(uL) Date Analyzed: 06/17/91

Injection Volume: _____2.0(uL) Dilution Factor: ____10.0

GPC Cleanup: (Y/N) Y__ pH: _6.2

Number TICs found: _22

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	7.58	3700	JN
2. 123422	Diacetone alcohol	8.24	37000	~~JBNR~~ R
3.	Unknown aromatic HC MW192	25.05	2600	JN
4.	Unknown aromatic HC MW192	25.13	3300	JN
5.	Unknown aromatic HC MW190	25.35	5100	JN
6.	Unknown aromatic HC MW216	28.09	2900	JN
7.	Unknown aromatic hydrocarbon	28.30	2200	JN
8.	Unknown aromatic HC MW216	28.38	5500	JN
9.	Unknown aromatic HC MW216	28.55	6200	JN
10.	Unknown aromatic HC MW232	28.64	3300	JN
11.	Benzonaphthothiophene	29.98	2900	JN
12.	Unknown aromatic HC MW228	30.06	2600	JN
13.	Unknown aromatic HC MW226	30.12	3300	JN
14.	Unknown aromatic HC MW228	30.93	4000	JN
15.	Unknown aromatic HC MW242	31.66	2900	JN
16.	Unknown aromatic HC MW240	31.93	2200	JN
17.	Unknown aromatic HC MW254	32.08	2200	JN
18.	Unknown aromatic HC MW252	33.92	2600	JN
19.	Unknown aromatic HC MW252	34.52	6600	JN
20.	Unknown aromatic HC MW252	35.00	3300	JN
21.	Unknown aromatic HC MW278	38.88	2200	JN
22.	Unknown aromatic HC MW278	39.98	2200	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF56

Lab Name: PNELI Contract: 68D00152

Lab Code: PNELI Case No.: 16538 SAS No.: SDG No.: BHF49

Matrix: (soil/water) SOIL Lab Sample ID: 3196-07

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D1985

Level: (low/med) LOW Date Received: 06/01/91

% Moisture: 8 decanted: (Y/N) N Date Extracted: 06/11/91

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 06/28/91

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 6.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	130	J
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	60	J
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-methylphenol	360	U
91-57-6	2-Methylnaphthalene	36	J
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	47	J
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	250	J

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF56

Lab Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-07_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: D1985_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: ____8 decanted: (Y/N) N__ Date Extracted: 06/11/91

Concentrated Extract Volume: 500.0___(uL) Date Analyzed: 06/28/91

Injection Volume: _____2.0(uL) Dilution Factor: _____1.0

GPC Cleanup: (Y/N) Y__ pH: _6.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	110	J
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	310	J
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	2800	
120-12-7	Anthracene	640	
86-74-8	Carbazole	470	
84-74-2	Di-n-butylphthalate	400	
206-44-0	Fluoranthene	3100	
129-00-0	Pyrene	6000* ~~6300~~	~~E~~ DJ
85-68-7	Butylbenzylphthalate	160	J
91-94-1	3,3'-Dichlorobenzidine	360	U J
56-55-3	Benzo(a)anthracene	2300	
218-01-9	Chrysene	2300	
117-81-7	bis(2-Ethylhexyl)phthalate	~~710~~	~~B~~
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	3900	
207-08-9	Benzo(k)fluoranthene	1500	
50-32-8	Benzo(a)pyrene	2800	
193-39-5	Indeno(1,2,3-cd)pyrene	2300	
53-70-3	Dibenz(a,h)anthracene	690	
191-24-2	Benzo(g,h,i)perylene	1800	J

(1) - Cannot be separated from Diphenylamine

*Value from BHF56.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BHF56

Lab Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-07_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: D1985_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: ____8 decanted: (Y/N) N__ Date Extracted: 06/11/91

Concentrated Extract Volume: 500.0___(uL) Date Analyzed: 06/28/91

Injection Volume: _____2.0(uL) Dilution Factor: _____1.0

GPC Cleanup: (Y/N) Y__ pH: _6.5

Number TICs found: _22

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown hydrocarbon	3.58	3600	~~JNB~~ R
2.	Unknown ketone	5.47	400	~~JNB~~
3. 123422	Diacetone alcohol	6.55	31000	~~LB JNA~~
4.	Unknown alkane	6.60	510	~~JNB~~
5.	Unknown alkane	6.65	510	~~JNB~~
6.	Unknown alkane	6.73	400	~~JNB~~
7.	Unknown alkane	6.89	470	~~JNB~~
8.	Unknown ketone	8.02	1200	~~JNB~~
9.	Unknown ketone	8.31	2500	~~JNB~~ R
10.	Unknown ketone	8.49	360	JN
11.	Unknown	9.10	1200	~~JNB~~ R
12.	Unknown	9.52	510	JN
13.	Unknown alkane	10.32	510	~~JNB~~ R
14.	Unknown aromatic HC MW192	22.47	290	JN
15.	Unknown aromatic HC MW192	22.55	220	JN
16.	Unknown aromatic C14H802	23.31	220	JN
17.	Unknown aromatic	24.50	220	JN
18.	Unknown aromatic HC MW216	25.81	2100	JN
19.	Unknown aromatic HC MW216	25.98	2600	JN
20.	Unknown alkane	30.27	1800	JN
21.	Unknown alkane	31.23	2100	JN
22.	Unknown alkane	32.35	1700	JN

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF56DL

Lab Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-07DL____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: D1986_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: ____8 decanted: (Y/N) N__ Date Extracted: 06/11/91

Concentrated Extract Volume: 500.0___(uL) Date Analyzed: 06/28/91

Injection Volume: _____2.0(uL) Dilution Factor: _____3.0

GPC Cleanup: (Y/N) Y__ pH: _6.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	N-Nitroso-di-n-propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	120	DJ
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
111-91-1	bis(2-Chloroethoxy)methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	5500	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	5500	U
131-11-3	Dimethylphthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U
99-09-2	3-Nitroaniline	5500	U
83-32-9	Acenaphthene	230	DJ

Dexa st use

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF56DL

Lab Name: PNELI Contract: 68D00152

Lab Code: PNELI Case No.: 16538 SAS No.: _____ SDG No.: BHF49

Matrix: (soil/water) SOIL Lab Sample ID: 3196-07DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D1986

Level: (low/med) LOW Date Received: 06/01/91

% Moisture: 8 decanted: (Y/N) N Date Extracted: 06/11/91

Concentrated Extract Volume: 500.0 (uL) Date Analyzed: 06/28/91

Injection Volume: 2.0 (uL) Dilution Factor: 3.0

GPC Cleanup: (Y/N) Y pH: 6.5

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	5500	U
100-02-7	4-Nitrophenol	5500	U
132-64-9	Dibenzofuran	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
86-73-7	Fluorene	290	DJ
100-01-6	4-Nitroaniline	5500	U
534-52-1	4,6-Dinitro-2-methylphenol	5500	U
86-30-6	N-Nitrosodiphenylamine (1)	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	5500	U
85-01-8	Phenanthrene	3000	D
120-12-7	Anthracene	650	DJ
86-74-8	Carbazole	480	DJ
84-74-2	Di-n-butylphthalate	400	DJ
206-44-0	Fluoranthene	3800	D
129-00-0	Pyrene	6200	D
85-68-7	Butylbenzylphthalate	150	DJ
91-94-1	3,3'-Dichlorobenzidine	1100	U
56-55-3	Benzo(a)anthracene	2200	D
218-01-9	Chrysene	2200	D
117-81-7	bis(2-Ethylhexyl)phthalate		
117-84-0	Di-n-octylphthalate	1100	U
205-99-2	Benzo(b)fluoranthene	3900	D
207-08-9	Benzo(k)fluoranthene	1300	D
50-32-8	Benzo(a)pyrene	2700	D
193-39-5	Indeno(1,2,3-cd)pyrene	2300	D
53-70-3	Dibenz(a,h)anthracene	700	DJ
191-24-2	Benzo(g,h,i)perylene	1600	D

(1) - Cannot be separated from Diphenylamine

Do not use

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BHF56DL

Lab Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) SOIL__ Lab Sample ID: 3196-07DL____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: D1986_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: ____8 decanted: (Y/N) N__ Date Extracted: 06/11/91

Concentrated Extract Volume: 500.0___(uL) Date Analyzed: 06/28/91

Injection Volume: _____2.0(uL) Dilution Factor: _____3.0

GPC Cleanup: (Y/N) Y__ pH: _6.5

Number TICs found: _22

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown ketone	5.42	430	~~JNB~~
2. 123422	Diacetone alcohol	6.40	40000	~~BJNA~~
3.	Unknown alkane	6.56	650	~~JNB~~
4.	Unknown alkane	6.62	430	~~JNB~~
5.	Unknown alkane	6.70	430	~~JNB~~
6.	Unknown ketone	8.00	1100	~~JNB~~
7.	Unknown ketone	8.26	2600	~~JNB~~
8.	Unknown ketone	8.47	330	JN
9.	Unknown	9.06	1200	~~JNB~~
10.	Unknown	9.50	430	JN
11.	Unknown alkane	10.27	430	~~JNB~~
12.	Unknown aromatic HC MW192	22.47	330	JN
13.	Unknown aromatic HC MW192	22.54	330	JN
14.	Unknown aromatic C14H8O2	23.30	220	JN
15.	Unknown aromatic HC MW216	25.80	430	JN
16.	Unknown aromatic HC MW216	25.98	430	JN
17.	Unknown	28.36	540	JNB
18.	Unknown alkane	29.40	330	JN
19.	Unknown alkane	30.26	1700	JN
20.	Unknown alkane	31.22	2000	JN
21.	Unknown alkane	32.34	2100	JN
22.	Unknown alkane	33.64	1600	JN

Do not use

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF57

Lab Name: PNELI Contract: 68D00152

Lab Code: PNELI Case No.: 16538 SAS No.: SDG No.: BHF49

Matrix: (soil/water) WATER Lab Sample ID: 3196-08

Sample wt/vol: 1000 (g/mL) ML Lab File ID: C2041

Level: (low/med) LOW Date Received: 06/01/91

% Moisture: decanted: (Y/N) Date Extracted: 06/05/91

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 06/13/91

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

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
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	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
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	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF57

Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) WATER_ Lab Sample ID: 3196-08_____

Sample wt/vol: 1000_ (g/mL) ML__ Lab File ID: C2041_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 06/05/91

Concentrated Extract Volume: 1000____(uL) Date Analyzed: 06/13/91

Injection Volume: _____2.0(uL) Dilution Factor: _____1.0

GPC Cleanup: (Y/N) N__ pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L_	Q
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	10	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	50	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	10	U
85-01-8	Phenanthrene	50	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	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	10	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-octylphthalate	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.

BHF57

Lab Name: PNELI_____ Contract: 68D00152___

Lab Code: PNELI__ Case No.: 16538_ SAS No.: _____ SDG No.: BHF49_

Matrix: (soil/water) WATER_ Lab Sample ID: 3196-08_____

Sample wt/vol: 1000_ (g/mL) ML__ Lab File ID: C2041_____

Level: (low/med) LOW___ Date Received: 06/01/91

% Moisture: _____ decanted: (Y/N) ___ Date Extracted: 06/05/91

Concentrated Extract Volume: 1000____(uL) Date Analyzed: 06/13/91

Injection Volume: _____2.0(uL) Dilution Factor: _____1.0

GPC Cleanup: (Y/N) N__ pH: ____

Number TICs found: __4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown	8.48	8	JNB
2.	Unknown	9.21	3	JNB
3. 930687	2-Cyclohexen-1-one (8CI9CI)	10.21	4	BJN
4.	Unknown alkane	37.74	2	JNB

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF51

Lab Name: PNELI Contract: 68D00152

Lab Code: PNELI Case No.: 16538 SAS No.: SDG No.: BHF49

Matrix: (soil/water) SOIL Lab Sample ID: 3196-03

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

% Moisture: 11 decanted: (Y/N) N Date Received: 06/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/07/91

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 06/18/91

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.3 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/KG	Q
319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	1.9	U
58-89-9	gamma-BHC (Lindane)	1.9	U
76-44-8	Heptachlor	1.9	U
309-00-2	Aldrin	1.9	U
1024-57-3	Heptachlor epoxide	1.9	U
959-98-8	Endosulfan I	1.9	U
60-57-1	Dieldrin	3.7	U
72-55-9	4,4'-DDE	0.58	J
72-20-8	Endrin	3.7	U
33213-65-9	Endosulfan II	3.7	U
72-54-8	4,4'-DDD	3.7	U
1031-07-8	Endosulfan sulfate	3.7	U
50-29-3	4,4'-DDT	0.7[illegible]	J N
72-43-5	Methoxychlor	19	U
53494-70-5	Endrin ketone	3.7	U
7421-36-3	Endrin aldehyde	15	U
5103-71-9	alpha-Chlordane	0.28	J N
5103-74-2	gamma-Chlordane	1.9	U
8001-35-2	Toxaphene	190	U
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	[illegible]	U
11141-16-5	Aroclor-1232	[illegible]	U
53469-21-9	Aroclor-1242	[illegible]	U
12672-29-6	Aroclor-1248	[illegible]	U
11097-69-1	Aroclor-1254	[illegible]	
11096-82-5	Aroclor-1260	[illegible]	

006022

PESTICIDE ORGANICS 1D ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF50 ✓

Lab Name: PNELI Contract: 68D00152

Lab Code: PNELI Case No.: 16538 SAS No.: SDG No.: BHF49 ✓

Matrix: (soil/water) SOIL Lab Sample ID: 3196-02 ✓

Sample wt/vol: ✓30.0 (g/mL) G ✓ Lab File ID:

% Moisture: 12 ✓ decanted: (Y/N) N ✓ Date Received: 06/01/91 ✓

Extraction: (SepF/Cont/Sonc) SONC ✓ Date Extracted: 06/07/91 ✓

Concentrated Extract Volume: ✓5000 (uL) Date Analyzed: 06/15/91 ✓

Injection Volume: 2.00 (uL) Dilution Factor: 1.00 ✓

GPC Cleanup: (Y/N) Y ✓ pH: 6.5 ✓ Sulfur Cleanup: (Y/N) N ✓

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/KG	Q
319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	1.9	U
58-89-9	gamma-BHC (Lindane)	1.9	U
76-44-8	Heptachlor	1.9	U
309-00-2	Aldrin	1.9	U
1024-57-3	Heptachlor epoxide	1.9	U
959-98-8	Endosulfan I	3.9	U
60-57-1	Dieldrin	3.9	U
72-55-9	4,4'-DDE	3.9	U
72-20-8	Endrin	3.9	U
33213-65-9	Endosulfan II	3.9	U
72-54-8	4,4'-DDD	3.9	U
1031-07-8	Endosulfan sulfate	3.9	U
50-29-3	4,4'-DDT	3.9	U
72-43-5	Methoxychlor	19.0	U
53494-70-5	Endrin ketone	3.9	U
7421-36-3	Endrin aldehyde	3.9	U
5103-71-9	alpha-Chlordane	0.34	JN
5103-74-2	gamma-Chlordane	1.9	U
8001-35-2	Toxaphene	190	U
12674-11-2	Aroclor-1016	190	U
11104-28-2	Aroclor-1221	190	U
11141-16-5	Aroclor-1232	190	U
53469-21-9	Aroclor-1242	190	U
12672-29-6	Aroclor-1248	190	U
11097-69-1	Aroclor-1254	190	U
11096-82-5	Aroclor-1260	190	U

006015

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF52

Lab Name: PNELI Contract: 68D00152

Lab Code: PNELI Case No.: 16538 SAS No.: SDG No.: BHF49

Matrix: (soil/water) SOIL Lab Sample ID: 3196-04

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

% Moisture: 7 decanted: (Y/N) N Date Received: 06/03/91

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/07/91

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 06/16 91

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.3 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	1.8	U
309-00-2	Aldrin	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
959-98-8	Endosulfan I	1.8	U
60-57-1	Dieldrin	3.5	U
72-55-9	4,4'-DDE	3.0	JN
72-20-8	Endrin	3.5	U
33213-65-9	Endosulfan II	1.1	JN
72-54-8	4,4'-DDD	3.5	U
1031-07-8	Endosulfan sulfate	3.5	U
50-29-3	4,4'-DDT	5.0	JN
72-43-5	Methoxychlor	16	U
53494-70-5	Endrin ketone	3.5	U
7421-36-3	Endrin Aldehyde	16	U
5103-71-9	alpha-Chlordane	0.77	JPN
5103-74-2	gamma-Chlordane	1.8	U
8001-35-2	Toxaphene	130	U
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	35	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	70	U
11096-82-5	Aroclor-1260	35	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF53

Lab Name: PNELI Contract: 68D00152

Lab Code: PNELI Case No.: 16538 SAS No.: SDG No.: BHF49

Matrix: (soil/water) SOIL Lab Sample ID: 3196-05

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

% Moisture: 7 ✓ decanted: (Y/N) N Date Received: 06/01/9[illegible] ✓

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/07/9[illegible] ✓

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 06/16/9[illegible]

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.0 ✓ Sulfur Cleanup: (Y/N) N ✓

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

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.9	U
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	1.8	U
309-00-2	Aldrin	1.8	U
1024-57-3	Heptachlor epoxide	1.8	U
959-98-8	Endosulfan I	1.8	U
60-57-1	Dieldrin	3.5	U
72-55-9	4,4'-DDE	[illegible]	JN
72-20-8	Endrin	[illegible]	U
33213-65-9	Endosulfan II	1.4	JN
72-54-8	4,4'-DDD	[illegible]	U
1031-07-8	Endosulfan sulfate	[illegible]	U
50-29-3	4,4'-DDT	[illegible]	JN
72-43-5	Methoxychlor	[illegible]	U
57494-70-5	Endrin ketone	[illegible]	U
7421-36-3	Endrin aldehyde	[illegible]	JN
5103-71-9	alpha-Chlordane	1.8	U
5103-74-2	gamma-Chlordane	1.8	U
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	[illegible]	U
11104-28-2	Aroclor-1221	[illegible]	U
11141-16-5	Aroclor-1232	[illegible]	U
53469-21-9	Aroclor-1242	[illegible]	U
12672-29-6	Aroclor-1248	[illegible]	U
11097-69-1	Aroclor-1254	[illegible]	U
11096-82-5	Aroclor-1260	[illegible]	U

006040

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF55

Lab Name: PNELI Contract: 68D00152

Lab Code: PNELI Case No.: 16538 SAS No.: SDG No.: BHF49

Matrix: (soil/water) SOIL Lab Sample ID: 3196-06

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

% Moisture: 9 decanted: (Y/N) N Date Received: 06/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/07/91

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 06/15/91

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	1.9	U
58-89-9	gamma-BHC (Lindane)	1.9	U
76-44-8	Heptachlor	1.9	U
309-00-2	Aldrin	1.9	U
1024-57-3	Heptachlor epoxide	0.75	J
959-98-8	Endosulfan I	1.9	U
60-57-1	Dieldrin	3.6	U
72-55-9	4,4'-DDE	5.9	
72-20-8	Endrin	22	
33213-65-9	Endosulfan II	3.9	
72-54-8	4,4'-DDD	3.6	U
1031-07-8	Endosulfan sulfate	3.6	U
50-29-3	4,4'-DDT	24	
72-43-5	Methoxychlor	18	
53494-70-5	Endrin ketone	3.6	U
7421-36-3	Endrin aldehyde	45	
5103-71-9	alpha-Chlordane	3.6	
5103-74-2	gamma-Chlordane	3.5	
8001-35-2	Toxaphene	190	U
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	74	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	530	
11096-82-5	Aroclor-1260	36	

006043

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF56

Lab Name: PNELI Contract: 68D00152

Lab Code: PNELI Case No.: 16538 SAS No.: SDG No.: BHF49

Matrix: (soil/water) SOIL Lab Sample ID: 3196-07

Sample wt/vol: 30.0 (g/mL) G Lab File ID:

% Moisture: 8 decanted: (Y/N) N Date Received: 06/01/91

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/07/91

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 06/16/91

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) Y pH: 6.5 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.8	U
319-85-7	beta-BHC	1.8	U
319-86-8	delta-BHC	1.8	U
58-89-9	gamma-BHC (Lindane)	1.8	U
76-44-8	Heptachlor	1.8	U
309-00-2	Aldrin	1.8	U
1024-57-3	Heptachlor epoxide	0.39	JN
959-98-8	Endosulfan I	1.8	U
60-57-1	Dieldrin	3.6	U
72-55-9	4,4'-DDE	4.8	JN
72-20-8	Endrin	51	
33213-65-9	Endosulfan II	4.5	JN
72-54-8	4,4'-DDD	3.6	U
1031-07-8	Endosulfan sulfate	3.6	U
50-29-3	4,4'-DDT	21	JN
72-43-5	Methoxychlor	~~2.1~~	~~BJPQ~~
53494-70-5	Endrin ketone	3.6	U
7421-36-3	Endrin aldehyde	32	JN
5103-71-9	alpha-Chlordane	3.4	JN
5103-74-2	gamma-Chlordane	3.3	JN
8001-35-2	Toxaphene	180	U
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	73	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	490	
11096-82-5	Aroclor-1260	36	U

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006053

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF57

Lab Name: PNELI Contract: 68D00152

Lab Code: PNELI Case No.: 16538 SAS No.: SDG No.: BHF49

Matrix: (soil/water) WATER Lab Sample ID: 3196-08

Sample wt/vol: 1000 (g/mL) ML Lab File ID:

% Moisture: decanted: (Y/N) Date Received: 06/01/91

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 06/05/91

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 06/15/91

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

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
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM I PEST

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BHF59

Lab Name: PNELI Contract: 68D00152

Lab Code: PNELI Case No.: 16538 SAS No.: SDG No.: BHF49

Matrix: (soil/water) WATER Lab Sample ID: 3196-09

Sample wt/vol: 1000 (g/mL) ML Lab File ID:

% Moisture: decanted: (Y/N) Date Received: 06/01/9

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 06/05 9

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 06/15/9

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

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
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

6HF59

Lab Name: PNELI Contract: 68D00152

Lab Code: PNELI Case No.: 16538 SAS No.: SDG No.: 6HF49

Matrix: (soil/water) WATER Lab Sample ID: 3136-10

Sample wt/vol: 1000 (g/mL) ML Lab File ID:

% Moisture: decanted: (Y/N) Date Received: 05/21/91

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 06/05/91

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 06/15/91

Injection Volume: 2.00 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0 Sulfur Cleanup: (Y/N) N

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	0.050	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	0.10	U
53494-70-5	Endrin ketone	0.50	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.10	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	0.050	U
12674-11-2	Aroclor-1016	5.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

REFERENCE NO. 25

COPY OF CLP DATA
COMPUTER QA'D PRINTOUT

ORGANICS

___ Laboratory QA

___ FIT Validation

X EPA Approved / Final Data

INORGANICS

___ Laboratory QA

___ FIT Validation

X EPA Approved / Final Data

Site Name : Crescent LIGHTING

Case No. and/or SAS No. : 16538

BRICS No. : NJ1HZ

TDD No. : 02-9011-24

SITE NAME: CRESCENT LIGHTING
TODO: 02-9011-24
SAMPLING DATE: 5/31/91
EPA CASE NO.: 16530
LAB NAME: U.S. E.P.A.

INORGANICS Sample ID No. Traffic Report No. Matrix Units	KRAZ-01 097596 SOIL ug/kg	KRAZ-02 097597 SOIL ug/kg	KRAZ-03 097598 SOIL ug/kg	KRAZ-04 097599 SOIL ug/kg	KRAZ-05(DUP/DUP) 097600 SOIL ug/kg	KRAZ-06 097308 SOIL ug/kg	KRAZ-07(DUP) 097309 SOIL ug/kg	KRAZ-01W1 097592 WATER ug/L	KRAZ-01W2 097593 WATER ug/L	KRAZ-01W3 097594 WATER ug/L
Aluminum	2050	9630	6200	3340	3960	3930	4000			
Antimony		13	7	7		8	7			
Arsenic	3.3	8.3	5.0	3.9	3.9	3.1	3.1			
Barium	22				23	29	34			
Beryllium										
Cadmium	2.5	7.1	3.9	3	3.7	4.8	4.2			
Calcium						1190	19900			
Chromium	16	42	24	16	23	23	19			
Cobalt										
Copper	4		5	29	8	15	11			
Iron	6310	10000	10300	7370	8650	9900	8290			
Lead	36	6	5	37	45	79	52			
Magnesium		1110	696		552	704	9470			
Manganese	23	20	16	26	40	40	55			
Mercury						0.19	0.18			
Nickel				5		5	7			
Potassium	857	2400	1590	800	1160	917	922			
Selenium										
Silver	2.2 E	6 E	3.5 E	2.8 E	3.1 E	3.4 E	3.3 E			
Sodium										
Thallium										
Vanadium	21	52	31	22	26	23	20			
Zinc	22	18	16	17	36	80	62			

NOTES:
Blank space - compound analyzed for but not detected
E - estimated value
J - estimated value, compound present below CRQL but above IDL
R - analysis did not pass EPA QA/QC
NR - analysis not required

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II
EDISON, NEW JERSEY 08837

JUL 12 1991

RECEIVED

NUS
1090 King Georges Post Rd.
Suite 1103
Edison, NJ 08837

Attn: Lois Perlstein

Dear Ms. Perlstein:

Enclosed are the results of the Crescent Lighting Corp. sampling survey conducted by your firm during the week of May 27, 1991. These data include the results of 3 water and 7 soil samples for TAL metals analysis. Any correspondence concerning these results should refer to our internal project number, 055, to uniquely identify it.

Please refer to the first page of the report for a description of any remark codes used as data qualifiers.

It should be noted that all data is considered EPA-validated.

Yours truly,

John Birri, Chief
Inorganic Chemistry Section
Technical Support Branch

cc: Philip Guarraia

Enclosure

LAB DATA MANAGEMENT SYSTEM - REGION II
COMPLETED PROJECT APPROVAL

REPORT DATE 91/07/11

PROJECT NUMBER	PROJECT DATE	PROJECT NAME	
055	91/05/31	CRESCENT LIGHTING	APPROVED B. Pinazzo for GFM 7/12/91

PROJECT NO: 055

REPORT DATE: 91/07/11

COMPLETED ANALYSIS REPORT

PROJECT NAME: CRESCENT LIGHTING

EXPLANATIONS OF REMARK CODES

REMARK CODE	EXPLANATION
B	RESULTS BASED UPON COLONY COUNTS OUTSIDE ACCEPTABLE RANGE
J	ESTIMATED VALUE
K	ACTUAL VALUE KNOWN TO BE LESS THAN VALUE GIVEN
L	ACTUAL VALUE KNOWN TO BE GREATER THAN VALUE GIVEN
M	PRESENCE OF MATERIAL VERIFIED BUT NOT QUANTIFIED
N	NO OBSERVABLE EFFECT CONCENTRATION < 0.3%
O	SAMPLED BUT NOT ANALYZED DUE TO LAB ACCIDENT
T	REPORTED VALUE LESS THAN CRITERIA OF DETECTION
U	REPORTING LIMIT

QA/QC REMARK CODES

CODE	EXPLANATION
QD	ACCURACY CHECK SAMPLE ABOVE UPPER ACCEPTANCE LIMIT
QE	ACCURACY CHECK SAMPLE BELOW LOWER ACCEPTANCE LIMIT
QF	PRECISION OF CALIBRATION CURVE LESS THAN ACCEPTANCE CRITERIA
QG	CONTINUING CALIBRATION CHECK DOES NOT MEET ACCEPTANCE CRITERIA
QS	SPIKE RECOVERIES ABOVE UPPER ACCPETANCE LIMIT
QR	SPIKE RECOVERIES BELOW LOWER ACCPETANCE LIMIT
QP	SAMPLE REPLICATE PRECISION DOES NOT MEET ACCEPTANCE CRITERIA
QH	RECOMMENDED HOLDING TIMES EXCEEDED
QT	TENTATIVELY IDENTIFIED COMPOUND
QB	BLANK CONTAMINATED BY ANALYTE IN EXCESS OF ACCEPTANCE CRITERIA
QQ	SAMPLE IMPROPERLY PRESERVED

LOCATION CODES FOR IDENTIFICATION OF SAMPLING POINTS AT INDUSTRIAL / SANITARY FACILITIES, LANDFILLS, HAZARDOUS WASTE SITES.

CODE NUMBERS	SAMPLING POINTS
1001 - 1050	EFFLUENT PIPE NUMBER 001 TO 050
1051 - 1099	OTHER EFFLUENTS SUCH AS COOLING TOWER DISCHARGE, DISCHARGE FROM HOLDING PONDS, ETC...
1100 - 1249	IN PLANT SAMPLES
1435 - 1454	SEPARATE INFLUENT POINTS/WATER SOURCES
15XX	INFLUENT ASSOCIATED WITH EFFLUENT 10XX
2000	BLANK FOR VOLATILE ORGANICS
3000 - 3099	GROUND WATER FROM WELL 01 TO 99
3100 - 3199	SEDIMENT SAMPLE (WATER BOTTOM)
3200 - 3299	SOIL SAMPLE
3300 - 3399	STREAM WATER SAMPLE
3400 - 3499	LAGOON SAMPLE
3500 - 3599	STORAGE TANK SAMPLE
3600 - 3699	LEACHATE SAMPLE
3700 - 3799	OTHER TYPE SAMPLE

COMPLETED ANALYSIS REPORT

REPORT DATE: 91/07/11

PROJECT NO: 055

PROJECT NAME: CRESCENT LIGHTING

STATION NO	DATE FROM TO	TIME OF DAY	LABNO	PARNO	PARAMETER NAME	UNITS	CHEMISTRY	VALUE & REMARK	QA/QC REMARK
NONE	91/05/31	1034							
DEPTH: 0000	SUBSTRATE: SOIL								
DESCRIPTION: NJHZ-S6									
			097588	01078	SILVER	MG/KG		3.4	QD
				01108	ALUMINUM	MG/KG		3930	
				01003	ARSENIC	MG/KG		3.1	
				01008	BARIUM	MG/KG		29	
				01013	BERYLLIUM	MG/KG		0.5 U	
				00917	CALCIUM	MG/KG		1190	
				01028	CADMIUM	MG/KG		4.8	
				01038	COBALT	MG/KG		5 U	
				01029	CHROMIUM	MG/KG		23	
				01043	COPPER	MG/KG		15	
				01170	IRON	MG/KG		9930	
				71921	MERCURY	MG/KG		0.19	
				99999	POTASSIUM	MG/KG		917	
				00924	MAGNESIUM	MG/KG		701	
				01053	MANGANESE	MG/KG		48	
				00934	SODIUM	MG/KG		543 U	
				01068	NICKEL	MG/KG		5	
				01052	LEAD	MG/KG		79	
				01098	ANTIMONY	MG/KG		8	
				01148	SELENIUM	MG/KG		0.54 U	
				34480	THALLIUM	MG/KG		1.1 U	QR
				01088	VANADIUM	MG/KG		23	
				01093	ZINC	MG/KG		80	
NONE	91/05/31	1034							
DEPTH: 0000	SUBSTRATE: SOIL								
DESCRIPTION: NJHZ-S7									
			097589	01078	SILVER	MG/KG		3.3	QD
				01108	ALUMINUM	MG/KG		4080	
				01003	ARSENIC	MG/KG		3.1	
				01008	BARIUM	MG/KG		34	
				01013	BERYLLIUM	MG/KG		0.5 U	
				00917	CALCIUM	MG/KG		19500	
				01028	CADMIUM	MG/KG		4.2	
				01038	COBALT	MG/KG		5 U	
				01029	CHROMIUM	MG/KG		19	
				01043	COPPER	MG/KG		11	
				01170	IRON	MG/KG		8290	
				71921	MERCURY	MG/KG		0.18	
				99999	POTASSIUM	MG/KG		922	

COMPLETED ANALYSIS REPORT

REPORT DATE: 91/07/11

PROJECT NO: 055

PROJECT NAME: CRESCENT LIGHTING

STATION NO	DATE FROM TO	TIME OF DAY	LABNO	PARNO	PARAMETER NAME	UNITS	CHEMISTRY	VALUE & REMARK	QA/QC REMARK
			097589	00924	MAGNESIUM	MG/KG		9470	
				01053	MANGANESE	MG/KG		55	
				00934	SODIUM	MG/KG		542 U	
				01068	NICKEL	MG/KG		7	
				01052	LEAD	MG/KG		52	
				01098	ANTIMONY	MG/KG		7	
				01148	SELENIUM	MG/KG		0.54 U	
				34480	THALLIUM	MG/KG		1.1 U	QR
				01088	VANADIUM	MG/KG		20	
				01093	ZINC	MG/KG		62	
NONE	91/05/31	1015							
DEPTH: 0000 SUBSTRATE: AQUEOUS									
DESCRIPTION: NJHZ-RIN1									
			097592	01077	SILVER	UG/L		10 U	
				01105	ALUMINUM	UG/L		200 U	
				01002	ARSENIC	UG/L		10 U	
				01007	BARIUM	UG/L		200 U	
				01012	BERYLLIUM	UG/L		5 U	
				00916	CALCIUM	MG/L		5 U	
				01027	CADMIUM	UG/L		5 U	
				01037	COBALT	UG/L		50 U	
				01034	CHROMIUM	UG/L		10 U	
				01042	COPPER	UG/L		25 U	
				01045	IRON	UG/L		100 U	
				71900	MERCURY	UG/L		0.2 U	
				00937	POTASSIUM	MG/L		5 U	
				00927	MAGNESIUM	MG/L		5 U	
				01055	MANGANESE	UG/L		15 U	
				00929	SODIUM	MG/L		5 U	
				01067	NICKEL	UG/L		40 U	
				01051	LEAD	UG/L		20 U	
				01097	ANTIMONY	UG/L		60 U	
				01147	SELENIUM	UG/L		5 U	
				01059	THALLIUM	UG/L		10 U	
				01087	VANADIUM	UG/L		50 U	
				01092	ZINC	UG/L		20 U	

COMPLETED ANALYSIS REPORT

REPORT DATE: 91/07/11

PROJECT NO: 055

PROJECT NAME: CRESCENT LIGHTING

STATION NO	DATE FROM TO	TIME OF DAY	LABNO	PARNO	PARAMETER NAME	UNITS	CHEMISTRY	VALUE & REMARK	QA/QC REMARK
			097594	00927	MAGNESIUM	MG/L		5	U
				01055	MANGANESE	UG/L		15	U
				00929	SODIUM	MG/L		5	U
				01067	NICKEL	UG/L		40	U
				01051	LEAD	UG/L		20	U
				01097	ANTIMONY	UG/L		60	U
				01147	SELENIUM	UG/L		5	U
				01059	THALLIUM	UG/L		10	U
				01087	VANADIUM	UG/L		50	U
				01092	ZINC	UG/L		20	U
NONE	91/05/31	1010							
DEPTH: 0000	SUBSTRATE: SOIL								
DESCRIPTION: NJHZ-S1									
			097596	01078	SILVER	MG/KG		2.2	QD
				01108	ALUMINUM	MG/KG		2850	
				01003	ARSENIC	MG/KG		3.3	
				01008	BARIUM	MG/KG		22	
				01013	BERYLLIUM	MG/KG		0.5	U
				00917	CALCIUM	MG/KG		533	U
				01028	CADMIUM	MG/KG		2.5	
				01038	COBALT	MG/KG		5	U
				01029	CHROMIUM	MG/KG		16	
				01043	COPPER	MG/KG		4	
				01170	IRON	MG/KG		6310	
				71921	MERCURY	MG/KG		0.11	U
				99999	POTASSIUM	MG/KG		857	
				00924	MAGNESIUM	MG/KG		533	U
				01053	MANGANESE	MG/KG		23	
				00934	SODIUM	MG/KG		533	U
				01068	NICKEL	MG/KG		4	U
				01052	LEAD	MG/KG		36	
				01098	ANTIMONY	MG/KG		6	U
				01148	SELENIUM	MG/KG		0.53	U
				34480	THALLIUM	MG/KG		1.1	U
				01088	VANADIUM	MG/KG		21	
				01093	ZINC	MG/KG		22	

COMPLETED ANALYSIS REPORT

REPORT DATE: 91/07/11

PROJECT NO: 055

PROJECT NAME: CRESCENT LIGHTING

STATION NO	DATE FROM TO	TIME OF DAY	LABNO	PARNO	PARAMETER NAME	UNITS	CHEMISTRY	VALUE & REMARK	QA/QC REMARK
NONE	91/05/31	1030							
DEPTH: 0000	SUBSTRATE: AQUEOUS								
DESCRIPTION: NJHZ-RIN2									
			097593	01077	SILVER	UG/L		10	U
				01105	ALUMINUM	UG/L		200	U
				01002	ARSENIC	UG/L		10	U
				01007	BARIUM	UG/L		200	U
				01012	BERYLLIUM	UG/L		5	U
				00916	CALCIUM	MG/L		5	U
				01027	CADMIUM	UG/L		5	U
				01037	COBALT	UG/L		50	U
				01034	CHROMIUM	UG/L		10	U
				01042	COPPER	UG/L		25	U
				01045	IRON	UG/L		100	U
				71900	MERCURY	UG/L		0.2	U
				00937	POTASSIUM	MG/L		5	U
				00927	MAGNESIUM	MG/L		5	U
				01055	MANGANESE	UG/L		15	U
				00929	SODIUM	MG/L		5	U
				01067	NICKEL	UG/L		40	U
				01051	LEAD	UG/L		20	U
				01097	ANTIMONY	UG/L		60	U
				01147	SELENIUM	UG/L		5	U
				01059	THALLIUM	UG/L		10	U
				01087	VANADIUM	UG/L		50	U
				01092	ZINC	UG/L		20	U
NONE	91/05/31	1045							
DEPTH: 0000	SUBSTRATE: AQUEOUS								
DESCRIPTION: NJHZ-RIN3									
			097594	01077	SILVER	UG/L		10	U
				01105	ALUMINUM	UG/L		200	U
				01002	ARSENIC	UG/L		10	U
				01007	BARIUM	UG/L		200	U
				01012	BERYLLIUM	UG/L		5	U
				00916	CALCIUM	MG/L		5	U
				01027	CADMIUM	UG/L		5	U
				01037	COBALT	UG/L		50	U
				01034	CHROMIUM	UG/L		10	U
				01042	COPPER	UG/L		25	U
				01045	IRON	UG/L		100	U
				71900	MERCURY	UG/L		0.2	U
				00937	POTASSIUM	MG/L		5	U

COMPLETED ANALYSIS REPORT

REPORT DATE: 91/07/11

PROJECT NO: 055

PROJECT NAME: CRESCENT LIGHTING

STATION NO	DATE FROM TO	TIME OF DAY	LABNO	PARNO	PARAMETER NAME	UNITS	CHEMISTRY	VALUE & REMARK	QA/QC REMARK
NONE	91/05/31	1120							
DEPTH: 0000	SUBSTRATE: SOIL								
DESCRIPTION: NJHZ-S2									
			097597	01078	SILVER	MG/KG		6.0	J QD
				01108	ALUMINUM	MG/KG		9650	
				01003	ARSENIC	MG/KG		8.3	
				01008	BARIUM	MG/KG		22 U	
				01013	BERYLLIUM	MG/KG		0.6 U	
				00917	CALCIUM	MG/KG		561 U	
				01028	CADMIUM	MG/KG		7.1	
				01038	COBALT	MG/KG		6 U	
				01029	CHROMIUM	MG/KG		42	
				01043	COPPER	MG/KG		3 U	
				01170	IRON	MG/KG		18000	
				71921	MERCURY	MG/KG		0.11 U	
				99999	POTASSIUM	MG/KG		2400	
				00924	MAGNESIUM	MG/KG		1110	
				01053	MANGANESE	MG/KG		20	
				00934	SODIUM	MG/KG		561 U	
				01068	NICKEL	MG/KG		4 U	
				01052	LEAD	MG/KG		6	
				01098	ANTIMONY	MG/KG		13	
				01148	SELENIUM	MG/KG		0.56 U	
				34480	THALLIUM	MG/KG		1.1 U	QR
				01088	VANADIUM	MG/KG		52	
				01093	ZINC	MG/KG		18	
NONE	91/05/31	1250							
DEPTH: 0000	SUBSTRATE: SOIL								
DESCRIPTION: NJHZ-S3									
			097598	01078	SILVER	MG/KG		3.5	J QD
				01108	ALUMINUM	MG/KG		6280	
				01003	ARSENIC	MG/KG		5.8	
				01008	BARIUM	MG/KG		22 U	
				01013	BERYLLIUM	MG/KG		0.6 U	
				00917	CALCIUM	MG/KG		552 U	
				01028	CADMIUM	MG/KG		3.9	
				01038	COBALT	MG/KG		6 U	
				01029	CHROMIUM	MG/KG		24	
				01043	COPPER	MG/KG		5	
				01170	IRON	MG/KG		10300	
				71921	MERCURY	MG/KG		0.11 U	
				99999	POTASSIUM	MG/KG		1590	

COMPLETED ANALYSIS REPORT

REPORT DATE: 91/07/11

PROJECT NO: 055

PROJECT NAME: CRESCENT LIGHTING

STATION NO	DATE FROM TO	TIME OF DAY	LABNO	PARNO	PARAMETER NAME	UNITS	CHEMISTRY	VALUE & REMARK	QA/QC REMARK
			097598	00924	MAGNESIUM	MG/KG		696	
				01053	MANGANESE	MG/KG		16	
				00934	SODIUM	MG/KG		552 U	
				01068	NICKEL	MG/KG		4 U	
				01052	LEAD	MG/KG		5	
				01098	ANTIMONY	MG/KG		7	
				01148	SELENIUM	MG/KG		0.55 U	
				34480	THALLIUM	MG/KG		1.1 U	QR
				01088	VANADIUM	MG/KG		31	
				01093	ZINC	MG/KG		16	
NONE	91/05/31	1105							
DEPTH: 0000	SUBSTRATE: SOIL								
DESCRIPTION: NJNZ-S4									
			097599	01078	SILVER	MG/KG		2.8 J	QD
				01108	ALUMINUM	MG/KG		3340	
				01003	ARSENIC	MG/KG		3.9	
				01008	BARIUM	MG/KG		21 U	
				01013	BERYLLIUM	MG/KG		0.5 U	
				00917	CALCIUM	MG/KG		535 U	
				01028	CADMIUM	MG/KG		3.0	
				01038	COBALT	MG/KG		5 U	
				01029	CHROMIUM	MG/KG		16	
				01043	COPPER	MG/KG		29	
				01170	IRON	MG/KG		7370	
				71921	MERCURY	MG/KG		0.11 U	
				99999	POTASSIUM	MG/KG		808	
				00924	MAGNESIUM	MG/KG		535 U	
				01053	MANGANESE	MG/KG		26	
				00934	SODIUM	MG/KG		535 U	
				01068	NICKEL	MG/KG		5	
				01052	LEAD	MG/KG		37	
				01098	ANTIMONY	MG/KG		7	
				01148	SELENIUM	MG/KG		0.53 U	
				34480	THALLIUM	MG/KG		1.1 U	QR
				01088	VANADIUM	MG/KG		22	
				01093	ZINC	MG/KG		17	

COMPLETED ANALYSIS REPORT

REPORT DATE: 91/07/11

PROJECT NO: 055

PROJECT NAME: CRESCENT LIGHTING

STATION NO	DATE FROM TO	TIME OF DAY
NONE	91/05/31	1200

DEPTH: 0000 SUBSTRATE: SOIL
DESCRIPTION: NJHZ-S5

LABNO	PARNO	PARAMETER NAME	UNITS	CHEMISTRY	VALUE & REMARK	QA/QC REMARK
097600	01078	SILVER	MG/KG		3.1	QD
	01108	ALUMINUM	MG/KG		3960	
	01003	ARSENIC	MG/KG		3.9	
	01008	BARIUM	MG/KG		23	
	01013	BERYLLIUM	MG/KG		0.5 U	
	00917	CALCIUM	MG/KG		539 U	
	01028	CADMIUM	MG/KG		3.7	
	01038	COBALT	MG/KG		5 U	
	01029	CHROMIUM	MG/KG		23	
	01043	COPPER	MG/KG		8	
	01170	IRON	MG/KG		8650	
	71921	MERCURY	MG/KG		0.11 U	
	99999	POTASSIUM	MG/KG		1160	
	00924	MAGNESIUM	MG/KG		552	
	01053	MANGANESE	MG/KG		40	
	00934	SODIUM	MG/KG		539 U	
	01068	NICKEL	MG/KG		4 U	
	01052	LEAD	MG/KG		45	
	01098	ANTIMONY	MG/KG		6 U	
	01148	SELENIUM	MG/KG		0.54 U	
	34480	THALLIUM	MG/KG		1.1 U	QR
	01088	VANADIUM	MG/KG		26	
	01093	ZINC	MG/KG		36	

***** END OF PROJECT *****

REFERENCE NO. 26

OFFICE USE ONLY
Ann. Fee _____
RA _____
Date _____
Rec'd By _____

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
HAZARDOUS WASTE GENERATOR ANNUAL REPORT 1990
CERTIFICATION FORM

ITEM 1 USEPA Identification (Generator) Number: NJD 980774467

ITEM 2 Generator (Company) Name: Crescent Lighting

ITEM 3 Contact Person: Wayne Tarkan

ITEM 4 Phone Number: (609) 546-5500

ITEM 5 Certification:

I certify that the information given in this annual report is true, accurate and complete.

Wayne Tarkan (Print or type name) Wayne [signature] (Signature) 2/27/91 (Date)

ITEM 6 Place an X next to the letter that applies:

A ____ This site (company) manifested less than 1.33 tons of hazardous waste for the calendar year 1990 (No Fee)

B ✓ This site (company) manifested 1.33 tons or more of hazardous waste but less than 10 tons of hazardous waste during the calendar year 1990 (Fee $200)

C ____ This site (company) manifested 10 tons or more of hazardous waste but less than 100 tons of hazardous waste during the calendar year (Fee $300)

D ____ This site (company) manifested 100 tons or more of hazardous waste during the calendar year (Fee $400)

ITEM 7 Federal Vendor Identification Number (Tax Identification Number)

22-2584333

PLEASE SUBMIT CHECK WITH YOUR COMPLETED REPORT.

C

OMB# 2050-0024 Expires 3-31-92

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME: Crescent Lighting
120 E. Gloucester Pike
Barrington, NJ 08007

EPA ID NO.: NJD980774467

FORM IC

U.S. ENVIRONMENTAL PROTECTION AGENCY

1990 Hazardous Waste Report

IDENTIFICATION AND CERTIFICATION

INSTRUCTIONS: Read the detailed instructions beginning on page 7 of the 1990 Hazardous Waste Report booklet before completing this form.

SEC. I Site name and location address. Complete items A through H. Check the box ☒ in items A, B, D, E, F, G, and H if same as label; if different, enter corrections. If label is absent, enter information. Instruction page 7.

A. EPA ID No. Same as label ☒ or →

B. Site/company name Same as label ☐ or → Crescent Lighting

C. Has the site name associated with this EPA ID changed since 1987? ☐ 1 Yes ☒ 2 No

D. Street name and number. If not applicable, enter industrial park, building name or other physical location description. Same as label ☒ or →

E. City, town, village, etc. Same as label ☒ or →

F. County: Camden

G. State Same as label ☒

H. Zip Code Same as label ☒

SEC. II Mailing address of site. Instruction page 7.

A. Is the mailing address the same as the location address? ☒ 1 Yes (SKIP TO SEC. III) ☐ 2 No (COMPLETE SEC. II)

B. Number and street name of mailing address

C. City, town, village, etc.

D. State

E. Zip Code

SEC. III Name, title, and telephone number of the person who should be contacted if questions arise regarding this report. Instruction page 7.

A. Please print: Last name: TARKEN First name: WAYNE M.I.: A

B. Title: Manager, Hum Resources

C. Telephone: 609 546-5500 Extension 62

SEC. IV Enter the Standard Industrial Classification (SIC) Code that describes the principal products, group of products, produced or distributed, or the services rendered at the site's physical location. Enter more than one SIC Code only if no one industry description includes the combined activities of the site. Instruction page 8.

A. 3646

B. NA

C. NA

D. NA

SEC. V I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. Number of form pages submitted: Form ID 2 Form GM 003 Form WR 000 Form PG 001

B. Please print: Last name: Tarken First name: Wayne M.I.: A

C. Title: Manager, Human Resources

D. Signature: Wayne Tarken

E. Date of signature: 02 27 91 (MO. DAY YR.)

OVER →

Sec. VI Generator Status

A. 1990 generation (CHECK ONE BOX BELOW)
Instruction page 8

- ☐ 1 No (CONTINUE TO BOX B)
- ☑ 2 ~~LQG~~ FRG
- ☐ 3 SQG (SKIP TO SEC. VII)

B. Reason for not generating (CHECK ALL THAT APPLY)
Page 10

- ☐ 1 Never generated
- ☐ 2 Out of business
- ☐ 3 Only excluded or delisted waste
- ☐ 4 Only non-hazardous waste
- ☐ 5 Periodic or occasional generator
- ☐ 6 Waste minimization activity
- ☐ 7 Other (SPECIFY IN COMMENTS)

Sec. VII On-Site Waste Management Status

A. Storage Instruction page 11	B. RCRA treatment, recycling, or disposal Page 11	C. Exempt treatment, recycling, or disposal Page 12
1	1	3

Sec. VIII Waste Minimization Activity during 1989 or 1990

A. Did this site begin or expand a source reduction activity during 1989 or 1990? Instruction page 12	B. Did this site begin or expand a recycling activity during 1989 or 1990? Page 13	C. Did this site conduct a source reduction or recycling opportunity assessment during 1989 or 1990? Page 13
☐ 1 Yes ☑ 2 No	☐ 1 Yes ☑ 2 No	☐ 1 Yes ☑ 2 No

D. What factors have limited this site from initiating new source reduction activities during 1989 or 1990? (CHECK ALL THAT APPLY)
Page 13

- ☐ 01 No factors have limited new source reduction activities.
- ☐ 02 Insufficient capital to install new source reduction equipment or implement new source reduction practices.
- ☐ 03 Lack of technical information on source reduction techniques applicable to the specific production processes.
- ☑ 04 Source reduction is not economically feasible: cost savings in waste management or production will not recover the capital investment.
- ☐ 05 Concern that product quality may decline as a result of source reduction.
- ☐ 06 Technical limitations of the production processes.
- ☐ 07 Permitting burdens.
- ☐ 08 Other (SPECIFY IN COMMENTS)

E. What factors have limited this site from initiating new on-site or off-site recycling activities during 1989 or 1990? (CHECK ALL THAT APPLY)
Page 13

- ☐ 01 No factors have limited new recycling activities.
- ☐ 02 Insufficient capital to install new recycling equipment or implement new recycling practices.
- ☐ 03 Lack of technical information on recycling techniques applicable to this site's specific production processes.
- ☑ 04 Recycling not economically feasible: cost savings in waste management or production will not recover the capital investment.
- ☐ 05 Concern that product quality may decline as a result of recycling.
- ☐ 06 Requirements to manifest wastes inhibit shipments off site for recycling.
- ☐ 07 Financial liability provisions inhibit shipments off site for recycling.
- ☐ 08 Technical limitations of product processes inhibit shipments off site for recycling.
- ☐ 09 Techical limitations of production processes inhibit on-site recycling.
- ☐ 10 Permitting burdens inhibit recycling.
- ☐ 11 Lack of permitted off-site recycling facilities.
- ☐ 12 Unable to identify a market for recyclable materials.
- ☐ 13 Other (SPECIFY IN COMMENTS)

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME: Crescent Lighting
120 E. Gloucester Pike
Barrington, NJ 08007

EPA ID NO. NJD980774467

U.S. ENVIRONMENTAL PROTECTION AGENCY

1990 Hazardous Waste Report

FORM GM

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 14 of the 1990 Hazardous Waste Report booklet before completing this form.

Sec. I

A. Waste description (Instruction Page 15): Solvent, waste paint - generated by cleaning of parts in paint spray system line. Ignitable - contains solvent, paint

B. EPA hazardous waste code (Page 15): D001

C. State hazardous waste code (Page 16):

D. SIC code (Page 16): 3646

E. Source code (Page 16): 09

F. Form code (Page 16): 211

G. Origin (Page 16): Code 1; System type MI WA

H. TRI constituent (Page 17): 8

I. CAS numbers (Page 17): 1. 2. 3. 4. 5.

Sec. II

A. Quantity generated in 1990 (Instruction Page 17): 550

B. Quantity generated in 1989 (Page 17): 220

C. UOM (Page 18): 5

D. Density (Page 18): 2.08 ☐ 1 lbs/gal ☐ 2 kg

E. Was this waste treated, disposed or recycled on site or discharged to a sewer/POTW? (Page 18) ☐ 1 Yes (CONTINUE TO SYSTEM 1) ☑ 2 No (SKIP TO SEC. III)

SYSTEM 1: System type (Page 18): MI; Quantity treated, disposed or recycled in 1990 (Page 18):

SYSTEM 2: System type (Page 18): MI; Quantity treated, disposed or recycled in 1990 (Page 18):

Sec. III

A. Was this waste shipped off site? (Instruction Page 18) ☑ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (SKIP TO SEC. IV)

	B. EPA ID No. of facility to which waste was shipped (Instruction Page 18)	C. System type (Page 18)	D. Total quantity shipped in 1990 (Page 18)
Site 1	WSD991291105	MI DK	220
Site 2		MI	

Sec. IV

A. Waste minimization results in 1990 (Instruction Page 20) ☐ 1 Yes (CONTINUE TO BOX B) ☑ 2 No (THIS FORM IS COMPLETE)

B. Activity (Page 21)	C. Other effects (Page 21)	D. Quantity recycled in 1990 due to new activities (Page 21)	E. Activity/Production Index (Page 21)	F. Source Reduction Quantity (Page 22)
W1 W1 W1 W1	☐ 1 Yes ☐ 2 No			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME: Crescent Lighting
120 E. Gloucester Pike
Barrington, NJ 08007

EPA ID NO.: NJD980774467

U.S. ENVIRONMENTAL PROTECTION AGENCY

1990 Hazardous Waste Report

FORM **GM**

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 14 of the 1990 Hazardous Waste Report booklet before completing this form.

Sec. I

A. Waste description (Instruction Page 15): paint chips and paint generated in scraping and cleaning of electrostatic spray paint booth

B. EPA hazardous waste code (Page 16): D008 D006 ___ ___

C. State hazardous waste code (Page 16): ___ ___

D. SIC code (Page 16): 36446

E. Source code (Page 16): A01

F. Form code (Page 16): B DK

G. Origin (Page 16): Code 1; System type M WA

H. TRI constituent (Page 17): 8

I. CAS number (Page 17): 1. ___ 2. ___ 3. ___ 4. ___ 5. ___

Sec. II

A. Quantity generated in 1990 (Instruction Page 17): 0

B. Quantity generated in 1990 (Page 17): 110

C. UOM (Page 16): S

D. Density (Page 16): DK ☐ lbs/gal ☐ kg

E. Was this waste treated, disposed or recycled on site or discharged to a sewer/POTW? (Page 16): ☐ 1 Yes (CONTINUE TO SYSTEM 1) ☑ 2 No (SKIP TO SEC. III)

SYSTEM 1: System type (Page 16): M; Quantity treated, disposed or recycled in 1990 (Page 16): ___

SYSTEM 2: System type (Page 16): M; Quantity treated, disposed or recycled in 1990 (Page 16): ___

Sec. III

A. Was this waste shipped off site? (Instruction Page 18): ☑ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (SKIP TO SEC. IV)

	B. EPA ID No. of facility to which waste was shipped (Instruction Page 18)	C. System type (Page 18)	D. Total quantity shipped in 1990 (Page 18)
Site 1	WSD991129115	M DK	110
Site 2		M	

Sec. IV

A. Waste minimization results in 1990 (Instruction Page 20): ☐ 1 Yes (CONTINUE TO BOX B) ☑ 2 No (THIS FORM IS COMPLETE)

B. Activity (Page 21)	C. Other effects (Page 21)	D. Quantity recycled in 1990 due to new activities (Page 21)	E. Activity/Production Index (Page 21)	F. Source Reduction Quantity (Page 22)
W ___ W ___ W ___ W ___	☐ 1 Yes ☐ 2 No	___	___	___

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME: Crescent Lighting
120 E. Gloucester Pike
Barrington, NJ 08007

EPA ID NO.: NJD980774467

FORM GM

U.S. ENVIRONMENTAL PROTECTION AGENCY

1990 Hazardous Waste Report

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 14 of the 1990 Hazardous Waste Report booklet before completing this form.

Sec. I

A. Waste description Instruction Page 16: Oil contaminated speedi-dry or absorbant generated when cleaning up leaks in and around machines. Speedi-dry, P16 (absorbant)

B. EPA hazardous waste code Page 15: NA NA NA NA

C. State hazardous waste code Page 16: NA X725

D. SIC code Page 16: 3646

E. Source code Page 16: A 53

F. Form code Page 16: B 310

G. Origin Page 16: Code 1; System type M NA

H. TRI constituent Page 17: 8

I. CAS numbers Page 17: 1. ___ 2. ___ 3. ___ 4. ___ 5. ___

Sec. II

A. Quantity generated in 1989 Instruction Page 17: 440

B. Quantity generated in 1990 Page 17: 440

C. UOM Page 18: 5

D. Density Page 18: DK ☐ 1 lbs/gal ☐ 2 kg

E. Was this waste treated, disposed or recycled on site or discharged to a sewer/POTW? Page 18: ☐ 1 Yes (CONTINUE TO SYSTEM 1) ☑ 2 No (SKIP TO SEC. B)

SYSTEM 1: System type Page 18: M; Quantity treated, disposed or recycled in 1990 Page 18:

SYSTEM 2: System type Page 18: M; Quantity treated, disposed or recycled in 1990 Page 18:

Sec. III

A. Was this waste shipped off site? Instruction Page 19: ☑ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (SKIP TO SEC. IV)

Site	B. EPA ID No. of facility to which waste was shipped Instruction Page 19	C. System type Page 19	D. Total quantity shipped in 1990 Page 19
Site 1	NJD991291105	M DK	440
Site 2		M	

Sec. IV

A. Waste minimization results in 1990 Instruction Page 20: ☐ 1 Yes (CONTINUE TO BOX B) ☑ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 21	C. Other effects Page 21	D. Quantity recycled in 1990 due to new activities Page 21	E. Activity/Production Index Page 21	F. Source Reduction Quantity Page 22
W W W W	☐ 1 Yes ☐ 2 No			

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME: Crescent Lighting

120 E. Gloucester Pike

Barrington, NJ 08007

EPA ID NO.: NJD980774467

U.S. ENVIRONMENTAL PROTECTION AGENCY

1990 Hazardous Waste Report

FORM 01

OFF-SITE IDENTIFICATION

INSTRUCTIONS: Read the detailed instructions on the back of this page before completing this form.

Site 1

A. EPA ID No. of off-site installation or transporter: NJD991291105

B. Name of off-site installation or transporter: S+W Waste, Inc

C. Handler type (CHECK ALL THAT APPLY):
- ☐ Generator
- ☒ Transporter
- ☐ TSDR

D. Address of off-site installation:
Street: NA
City: ____ State: ____ Zip Code: ____-____

Site 2

A. EPA ID No. of off-site installation or transporter:

B. Name of off-site installation or transporter:

C. Handler type (CHECK ALL THAT APPLY):
- ☐ Generator
- ☐ Transporter
- ☐ TSDR

D. Address of off-site installation:
Street: ____
City: ____ State: ____ Zip Code: ____-____

Site 3

A. EPA ID No. of off-site installation or transporter:

B. Name of off-site installation or transporter:

C. Handler type (CHECK ALL THAT APPLY):
- ☐ Generator
- ☐ Transporter
- ☐ TSDR

D. Address of off-site installation:
Street: ____
City: ____ State: ____ Zip Code: ____-____

Site 4

A. EPA ID No. of off-site installation or transporter:

B. Name of off-site installation or transporter:

C. Handler type (CHECK ALL THAT APPLY):
- ☐ Generator
- ☐ Transporter
- ☐ TSDR

D. Address of off-site installation:
Street: ____
City: ____ State: ____ Zip Code: ____-____

Site 5

A. EPA ID No. of off-site installation or transporter:

B. Name of off-site installation or transporter:

C. Handler type (CHECK ALL THAT APPLY):
- ☐ Generator
- ☐ Transporter
- ☐ TSDR

D. Address of off-site installation:
Street: ____
City: ____ State: ____ Zip Code: ____-____

Comments:

BEFORE COPYING FORM, ATTACH SITE IDENTIFICATION LABEL OR ENTER:

SITE NAME: Crescent Lighting
120 E. Gloucester Pike
Barrington, NJ 08007

EPA ID NO.: NJD980774467

U.S. ENVIRONMENTAL PROTECTION AGENCY

1990 Hazardous Waste Report

FORM **PS**

WASTE TREATMENT, DISPOSAL, OR RECYCLING PROCESS SYSTEMS

INSTRUCTIONS: Read the detailed instructions beginning on page 30 of the 1990 Hazardous Waste Report booklet before completing this form.

Sec. I

A. Waste treatment, disposal or recycling system description (Instruction Page 30): Reuse of excess paint from electrostatic paint booth paint runs off sides of booth and is collected into containers. Paint is then used again in the process

B. System type (Page 30)	C. Registration status (Page 30)	D. Operational status (Page 37)	E. Unit types (Page 37)
M032	10	01	W02 / 02

Sec. II

A. 1990 influent quantity (Instruction Page 30)

	Total	UOM	Density
Total	780	5	DW
RCRA	0		☐ 1 lbs/gal ☐ 2 kg

B. Maximum operational capacity (Page 30)

Total	55
RCRA	0

C. 1990 liquid effluent quantity (Page 40)

	Total	UOM	Density
Total	0		.
RCRA	0		☐ 1 lbs/gal ☐ 2 kg

D. 1990 solid/sludge residual quantity (Page 41)

	Total	UOM	Density
Total	0		.
RCRA	0		☐ 1 lbs/gal ☐ 2 kg

E. Limitations on capacity (Page 41): 1. WAT 2. WAT 3. 09

F. Commercial availability code (Page 41): 4

G. Percent capacity commercially available (Page 42): WAT %

Sec. III

A. Planned change in maximum operational capacity (Instruction Page 42)

☐ 1 Yes (CONTINUE TO BOX B)
☑ 2 No (THIS FORM IS COMPLETE)

B. New maximum operational capacity (Page 42)

		UOM
Total		
RCRA		

C. Planned year of change (Page 42): 1991

D. Future commercial availability code (Page 42):

E. Percent future capacity commercially available (Page 42): %

Comments: Section 1, B - recovery of excess paint to be used again in the painting process.

REFERENCE NO. 27

Cont'd

NUS CORPORATION
SUPERFUND DIVISION

PROJECT NOTES

TO: File of Crescent Lighting

DATE: 8/26/91

FROM: V. Perlstein

COPIES:

SUBJECT: Population Calculation using groundwater

REFERENCE: 4 mile vicinity map to Crescent Lighting = 64, 50, 52, 53, 54, 17, 28

Number of Wells within Distance Rings

0-1/4 miles - 0
1/4-1/2 - 0
1/2-1 - 4 NJ 1 H = 26,179 People
1-2 - 9 NJ 2 H 3 HF - 64043.8 People
2-3 - 3 NJ 10 H 4 HF 7 HA 2 BL - 45,525.4 People
3-4 - 16 NJ 4 H 4 BL - 2 CO - 112,458.8 people

Total pop. served by NJ = 209,402 → 32 / 209,402 = 6543.8
Total number of NJ wells = 32 (people served per NJ well)
∴ 6543.8 people per well

Total pop served by H (Domestic) = 3.8/per well

Total pop. served by HF = 12,000 → 12,000 / 7 = 1714
Total # of HF wells = 7
∴ 1714 people served per well

NJ New Jersey American Water Co
H - Domestic
HF - Haddonfield Municipal Water System
HA - Haddon Twp. Municipal Water System
Co - Collingswood
BL Bellmawr

NUS 443A 58 1182

Cont'd.

NUS CORPORATION
SUPERFUND DIVISION

PROJECT NOTES

TO: File of Crescent Lighting DATE: 8/26/91

FROM: J. Perlstein COPIES:

SUBJECT: Population Calculation using groundwater

REFERENCE: 22, 28, 35, 36, 45, 46, 47, 50, 51, 52, 53, 54, 55, 56, 57, 64

total pop. served by HA = 16,000 $7\overline{)16{,}000}$ = 2,285

total # of HF wells = 7

∴ 2,285 people served per HA well
(However All HA well located in 2-3 mile Ring)

total pop. served by BL = 9,000 $6\overline{)9{,}000}$ = 1,500

total # of BL wells is = 6

∴ 1,500 people served per BL well

total pop served by Co = 6,100 $7\overline{)6100}$ = 871.4

total # of Co wells = 7

∴ 871.4 people served per CO well

0 - 1/4 miles 0

1/4 - 1/2 miles 0

1/2 - 1 miles = 4 NJ wells × 6543.8 people/well = 26,175.2 + 1 H (3.8) =
26179. people

1 - 2 - miles = 9 NJ × 6543.8 people/well = 58,894.2 + (2 H × 3.8) (7.6) + 3 HF × 1714 (5,142)
= 64043.8 people

2 - 3 - miles = 3 NJ × 6543.8 = 19631.4 + 10 H (38) + 4 HF × 1714 (6856) +
7 HA (16,000) + 2 BL × 1,500 (3,000) = 45525.4 people

3 - 4 - miles = 16 NJ × 6543.8 = 104,700.8 + 4 H × 3.8 (15.2) + 4 BL × 1,500 (6,000) +
2 Co × 871.4 (1742.8) = 112458.8

NUS 443A 58 1182

REFERENCE NO. 28

Series 1961, No. 42

Issued April 1966

SOIL SURVEY

Camden County New Jersey

OUR SOIL ★ OUR STRENGTH

This is the last report of the 1961 series.

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
In cooperation with
NEW JERSERY AGRICULTURAL EXPERIMENT STATION

SOIL SURVEY OF CAMDEN COUNTY, NEW JERSEY

REPORT BY MARCO MARKLEY, SOIL CONSERVATION SERVICE, UNITED STATES DEPARTMENT OF AGRICULTURE

SOILS SURVEYED BY MARCO MARKLEY AND JOHN KROHN, SOIL CONSERVATION SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE IN COOPERATION WITH THE COLLEGE OF AGRICULTURE AND THE NEW JERSEY AGRICULTURAL EXPERIMENT STATION

CAMDEN COUNTY is in the southern part of New Jersey on the Atlantic Coastal Plain (fig. 1). It is opposite the city of Philadelphia, along the navigable Delaware River, which provides excellent port facilities for shipbuilding and other industries. It extends to the southeast from the Delaware River. Its total area is 141,400 acres, or about 221 square miles. Its average width is about 12 miles, and its average length is about 25 miles.

In 1960 the population in Camden County was 392,035, and the average density was more than 1,800 persons per square mile. More than 117,000 people lived in the city of Camden, the county seat. Much of the remaining population is concentrated in the western one-third of the county within 15 miles of the Delaware River. At present about 40 percent of the land in the county is in forest and 18 percent[1] is in farmland. The principal crops grown are vegetables and nursery crops, sweetpotatoes, corn, alfalfa, and tree fruits. About 42 percent of the land is in urban and suburban use; this figure includes idle areas that obviously will be developed for nonfarm use.

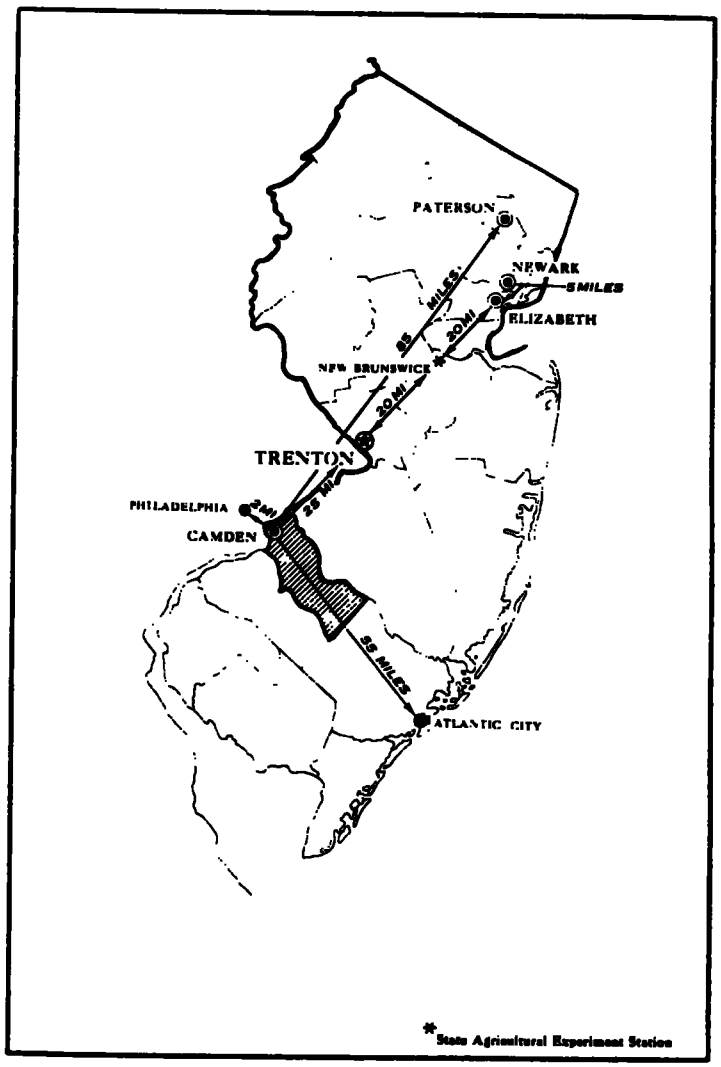


Figure 1.—**Location of Camden County in New Jersey.**

How This Soil Survey Was Made

Soil scientists made this survey to learn what kinds of soils are in Camden County, where they are located, and how they can be used.

They went into the county knowing they likely would find many soils they had already seen, and perhaps some they had not. As they traveled over the county, they observed steepness, length, and shape of slopes; size and speed of streams; kinds of native plants or crops; kinds of geologic materials; and many facts about the soils. They dug many holes to expose soil profiles. A profile is the sequence of natural layers, or horizons, in a soil (fig. 2); it extends from the surface down into the parent material that has not been changed much by leaching or by roots of plants.

The soil scientists made comparisons among the profiles they studied, and they compared these profiles with those in counties nearby and in places more distant. They classified and named the soils according to nationwide, uniform procedures. For successful use of this report, it is necessary to know the kinds of groupings most used in a local soil classification.

[1] This estimate is based on a 2 percent sample and is considerably higher than the amount reported in the 1960 agricultural census.

The Leon soils occur mostly beside the St. Johns and the Lakehurst soils. They are grayer than the Lakehurst soils and do not have a thick, black surface layer like that in the St. Johns soils.

Because the Leon soils are infertile, they are not suitable for general crops, but blueberries and possibly strawberries can be grown profitably in most areas. These soils hold little water when drained, and the height of the water table must be controlled for crop production.

The Leon soils are less productive of blueberries than the St. Johns soils. They should be graded to improve drainage before blueberries are planted. If the need arises, these soils can be used to produce high-value vegetables by careful control of the water table. In most places the soils provide good sites for dugout ponds.

(Lo) **Leon sand.**—A profile of this soil is described as typical of the Leon series. Small areas of loamy sand and fine sand are included with this soil in mapping. Lenses of clay or sandy clay occur in some areas between a depth of 30 and 60 inches, but these areas were not extensive enough to be mapped separately. In places the light-gray subsurface layer is thicker than the darker surface layer. In these places the soil is less suitable for crops. In areas where a hardpan is continuous, the soil is less permeable.

This soil provides good sites for dugout ponds. In areas that have underlying clayey layers, however, the rate of recharge is slower than is normal for Leon soils. (Capability unit Vw-22; woodland suitability group 7; urban group 9)

(Ls) **Leon-St. Johns sands.**—This mapping unit contains areas of both Leon sand and St. Johns sand so intermingled that it is not practical to map them separately. A typical profile of St. Johns soil is described for the St. Johns series. Most areas of Leon-St. Johns sands occur adjacent to the main streams of the county and are flooded after exceptionally heavy rainfall. In places clay layers are between a depth of 30 and 60 inches. Also, in places, the surface layer is mucky.

Areas of the St. Johns sand are in lower positions. If used for blueberries, these areas are commonly graded before they are planted in order to reduce the drainage problem.

The soils of this unit provide good sites for dugout ponds. In areas underlain by clay layers, however, the rate of recharge is slower than is normal for these soils. (Capability unit Vw-22; woodland suitability group 7; urban group 9)

(Lv) Loamy Alluvial Land

This land type is composed mostly of fine sandy loam, sandy loam, or loam soil material deposited recently by floodwater. It is in nearly level areas beside meandering perennial streams. Generally, slopes range from ½ to 1 percent. Microrelief, or small knolls and depressions, however, occur within these nearly level areas. The knolls are generally sandy.

Generally, the texture of Loamy alluvial land is similar to that of the surrounding soils. A clayey subsoil has not had time to develop. In the greensand area, the soil material contains various amounts of glauconite. In places olive-colored, glauconitic layers underlie the sandy deposits. Deposits of gravel and coarse sand occur in places.

The natural vegetation consists mostly of pin oak, willow oak, white oak, northern red oak, elm, yellow-poplar, boxelder, ash, sweetgum, and river birch.

Natural drainage ranges from somewhat poor to poor. In winter the water table is between a depth of 0 and 2 feet and is only about 1 foot lower in summer.

This land is suited to forest, pasture, and wildlife. It can be developed for parks, and it provides a suitable site for dugout ponds. (Capability unit VIw-28; woodland suitability group 4; urban group 12)

(Ma) Made Land

This mapping unit consists of areas where the soil material has been so mixed by excavation, filling, or other disturbances that the original soil horizons have been destroyed. In sanitary landfills, for example, much foreign material was mixed with the soil before it was graded.

In most places in Camden County, the soil material near the surface of Made land is predominantly sand and gravel, but in a few places there is much fine material, especially in the Howell-Urban land soil association. In some places this land type is underlain by clayey layers. Along the Delaware River and other major streams, the material making up Made land came from pumping operations done to deepen stream channels. These areas contain boulders in addition to sand and gravel. Many recent residential and commercial building sites are in this mapping unit. Also, along the Cooper River this land has been developed as part of the Camden County system of parks. (Urban group 13)

Marlton Series

The Marlton series consists of nearly level to steep, moderately well drained to well drained sandy loams. These soils developed only in deposits that contain a large amount of glauconite. Both the subsoil and substratum contain more than 40 percent glauconite. The subsoil has distinctly finer texture than either the surface layer or the layers below.

The natural vegetation consists of red, black, and white oaks and beech. Yellow-poplar or Virginia pine naturally succeed these trees in the plant succession.

A typical profile of a Marlton soil has an olive-gray sandy loam plow layer about 8 inches thick; an olive, blocky, sandy clay subsoil 22 inches thick; and a stratified, friable, olive and gray sandy loam and sandy clay substratum. The subsoil is firm and plastic when moist and is very firm when dry.

The subsoil ranges from 18 to 36 inches in thickness and in some places has mottling in the lower part. In some places the color of the subsoil dominantly is olive brown, but in others small reddish blotches occur. Also, various amounts of rounded quartzose gravel occur throughout the profile in some areas.

Marlton soils naturally are extremely acid, but fields that have been heavily limed now are less acid. Because of the clayey subsoil, permeability is slow, runoff is very rapid, and erosion is severe. Some areas are ponded for short periods after heavy rains.

The Marlton soils occur beside the Kresson, Colemantown, Freehold, and Collington soils. They are less

(Joins sheet 8)

0 ½ 1 Mile

Scale 1:15 840

(Joins sheet 11) | (Joins sheet

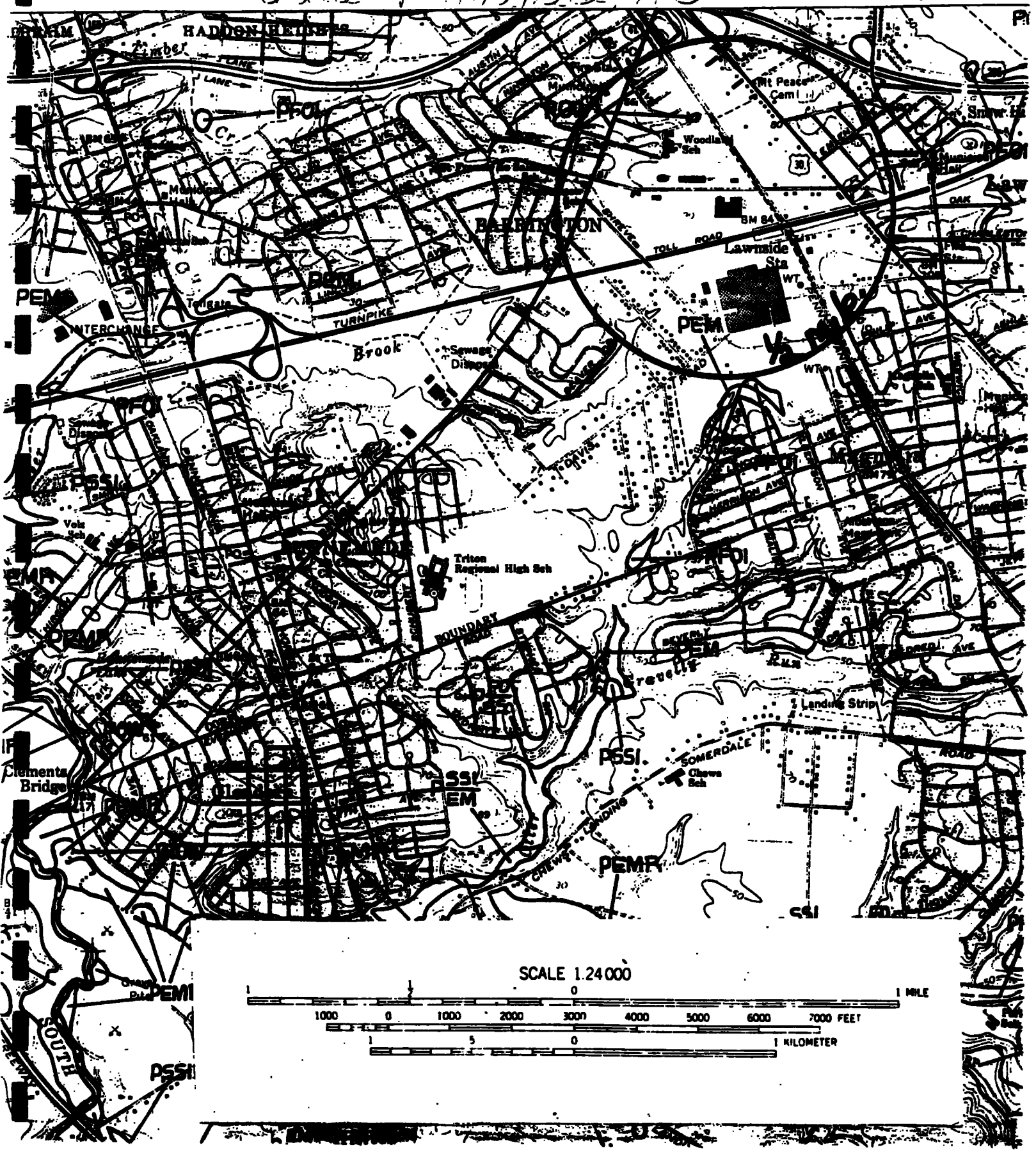
REFERENCE NO. 29

NATIONAL WETLANDS INVENTORY

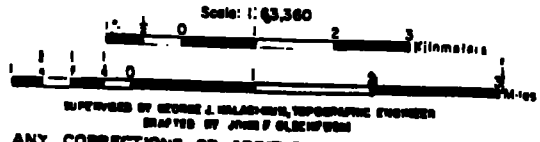
UNITED STATES DEPARTMENT OF THE INTERIOR

Quad Camden NJ

North



REFERENCE NO. 30



ANY CORRECTIONS OR ADDITIONAL INFORMATION WILL BE APPRECIATED

LEGEND

AREA SERVED BY PRIVATE WATER SERVICE COMPANIES

AREA SERVED BY REGIONALLY OWNED WATER SERVICE COMPANIES

AREA SERVED BY MUNICIPALLY OWNED WATER SERVICE COMPANIES

AREA NOT PRESENTLY SERVED BY WATER SERVICE

PUBLIC SUPPLY WELLS

SURFACE WATER INTAKE

—W— MAJOR WATER MAINS

TOWNSHIP BOUNDARIES

COUNTY BOUNDARIES

STATE BOUNDARIES

ALL MAP COORDINATES ARE FOR THE LOWER LEFT HAND CORNER.

SURFACE WATER INTAKES

None Available - 6/76

CORRECTIONS
WATER SUPPLY OVERLAY 31
AUGUST 1979
31-03-135 SYMBOL NOT SHOWN
31-03-135 SYMBOL NOT SHOWN
31-11-422 TWO WELLS
31-22-538 CHANGE TO 31-22-558

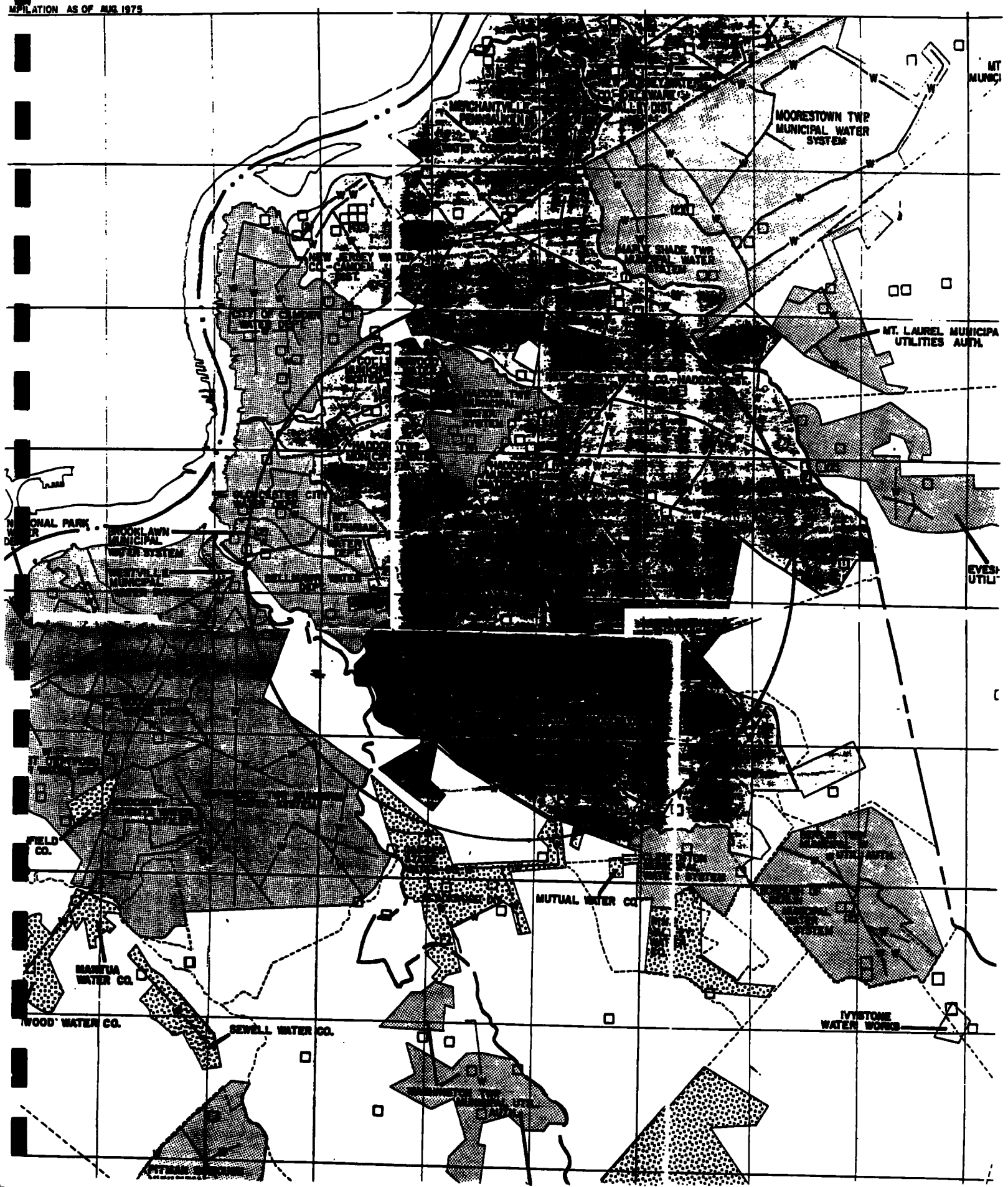
STATE OF NEW JERSEY

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DAVID J. BARDIN, COMMISSIONER

BUREAU OF GEOLOGY AND TOPOGRAPHY
A. WIDMER, STATE GEOLOGIST

COMPILATION AS OF AUG. 1975



REFERENCE NO. 31

NUS CORPORATION

II

0739

CRESCENT LIGHTING, INC.
02-9011-24
TDD MANAGER-L. ADAMS
LOGBOOK #0739
JANUARY 31, 1991

7/14/91 Crescent Lighting 02-8011-24 2

Table of Contents

I. ~~OFF~~ ON 7/13/91 Site Reconnaissance

A) Personnel (NUS), Weather Conditions, Equipment List

B) Photo Log

C) Site Map

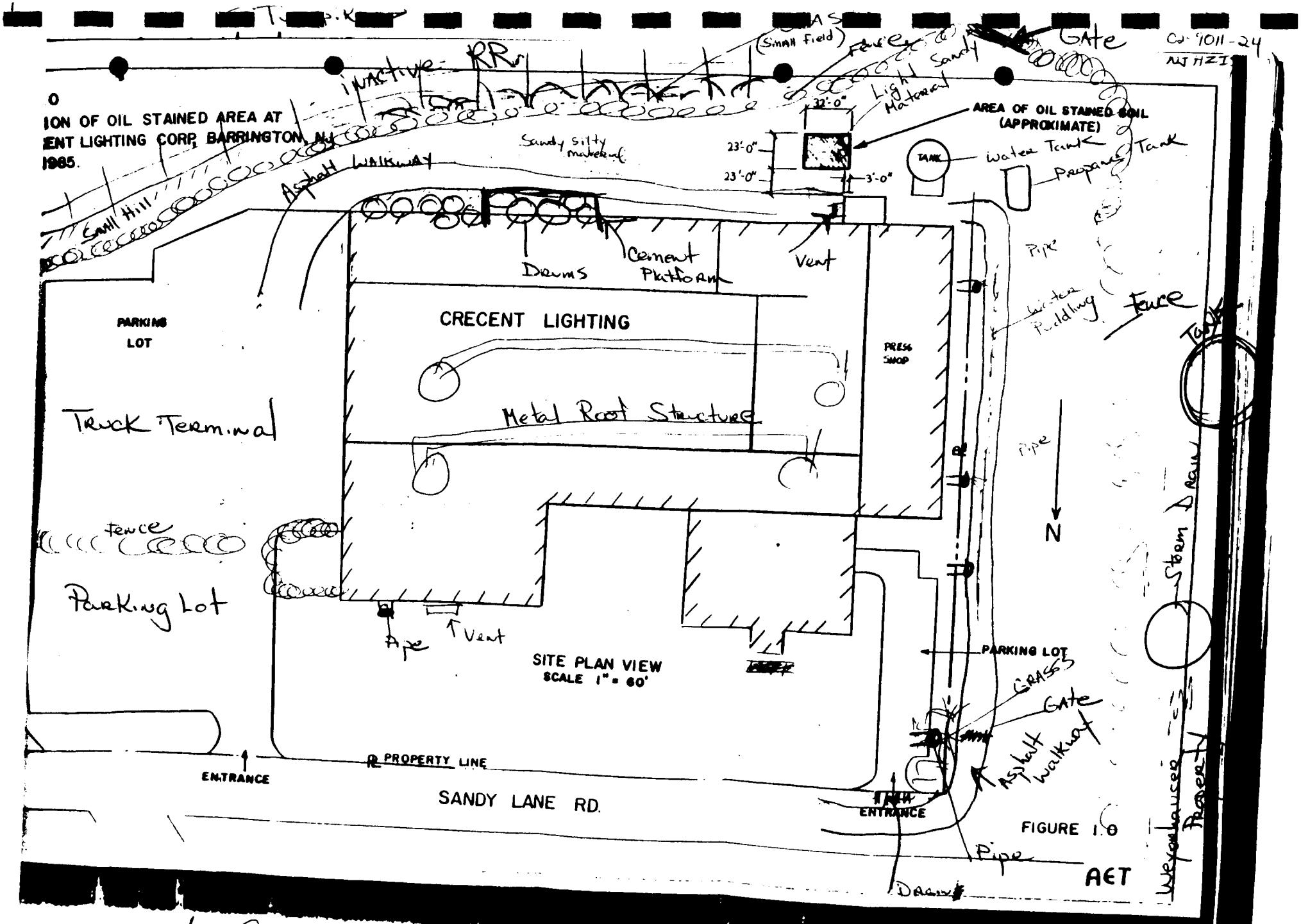
D) ~~OFF~~ ON Site Recon

E) Photo Location Map

page 15 (F) Summary

II On Site Inspection Sampling investigation on May 31, 1991

Karen Alexander 3/14/91



O
ION OF OIL STAINED AREA AT
ENT LIGHTING CORP, BARRINGTON, NJ
1985.

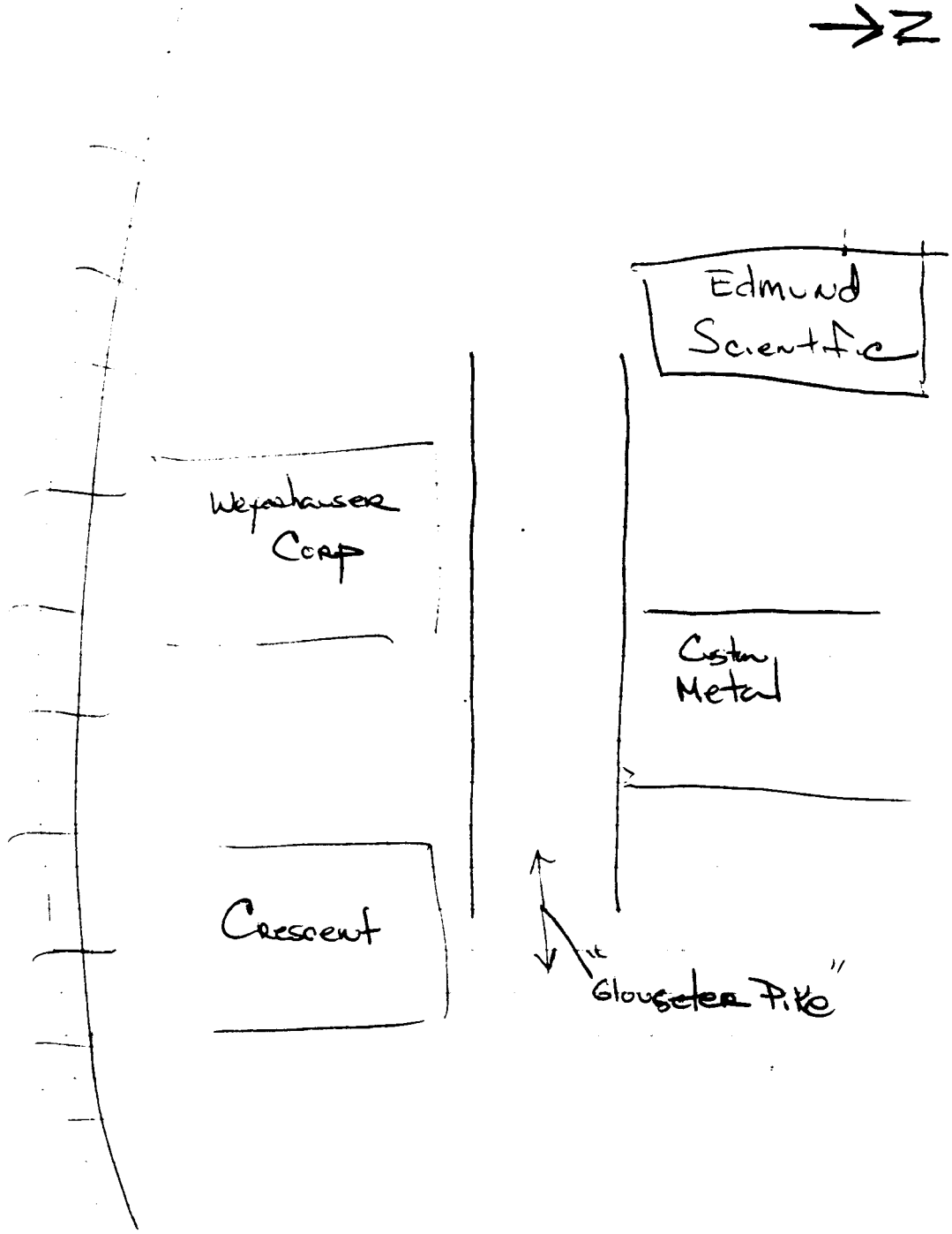
Jan Alexander 3/20/91

Karen Alexander 3/14/91

N

Crescent Lighting
Barrington, NJ

Crescent Lighting
G2-9011-24[3]



Karen Alexander 3/14/91

Jim Anderson 3/15/91

To Crescent Lighting 02-9011-24 2/14/91 4

0924 Arrived at Crescent Lighting.
NUS Personnel on-site include

			DATE
Joe Filosa	SSO	Joe Filosa	2/14/91
Kathy Indelicato	Support	Kathy Indelicato	2/14/91
Lois Adams	site manager	Lois Adams	2/14/91

ALL the above personnel have read and understood the workplan

weather - cloudy drizzling 40° F wind SW warm 0-5 mph

Tasks today include an On-Site Reconnaissance to determine if sampling is necessary

Tailgate Time: 0940
→ safety meeting discussed the following:

(A) Discussed contaminants to look for
(B) level of safety
(C) Route to Hospital
(D) Area of Concern
(E) Posting's in Truck
(F) Signals
(E) Keys
(F) Area to avoid

EQuipment List		Camera #
110 Minolta-Camera Points		428801
OVA	0	M 469784
HNU	3	D 307144
MinRAD	9 cpm	428588
Compass		

↑ Background Readings at Crescent

Lois Adams 2/14/91
Karen Alexander 3/14/91

0930 Met with Glen Fogel and Wayne Tarken of Crescent Lighting. The meeting was held for 10 minutes and was over at 09:40

for K Cooper 4/15/91

Karen Alexander 3/14/91

2/14/91 Crescent Lighting 02-9011-24

5

[ON Site Reconnaissance Photo Log

Time ~~DATE~~ 2/22/91	Date ~~Time~~ 2/22/91	ROLL	Picture Slide #	DESCRIPTION	Photographer
0945	02/14/91	R1	1P/2S	Facing east, Back of Bldg. Drums	Lois
0950	02/14/91	R1	2P/3S	Facing toward (North) West Bldg. drums	Lois
10:10	02/14/91	R1	3P/4S	Facing West in South side (back) of Bldg shows Crescent Water Tank	Lois
1012	2/14/91	R1	4P/5S	Facing South on east side of Bldg.	Lois
1015	02/14/91	R1			
10:18	02/14/91	R1	5P/9S	Facing ~~east~~ west 2/22/91 from ~~front~~ (NORTH) of Bldg. Shows Vent.	Lois
1020	02/14/91	R1	6P/7S	Facing ~~west~~ east front of Bldg	Lois
1023	02/14/91	R1	7P/8S	Facing South on West side of bldg Tank (Weyerhauser)	Lois
10:28	02/14/91	R1	8P/6S	Facing West at front West side of Crescent Bld. Shows Weyer. Tank	

Karen Alexander 2/14/91

Lois Adam 2/14/91

2/14/91 Crescent Lighting 02-9011-24 6

Off Site Reconnaissance Photo Log

Time ~~Date~~	Date ~~Time~~	Roll	Picture/Slide #	DESCRIPTION	Photographer
2/22/91 10:30	02/14/91	R1	10P/10S	Facing NW toward back of Cresc. bldg. Shows soil area of Concern	
JCA 2/22/91 ~~10:40~~				~~Facing west~~ & ~~clear~~ JA 2/22/91 ~~as soil area~~	Jas
10:40	02/14/91	R1	11P/12S	Facing into soils in "Area of Concern" on South side of Bld	
10:45	02/14/91	R1	12P/13S	Facing South from South side of Crescent bldge	

NJ DEP
ECRA Case # 85015

2/14/91

2/14/91 Crescent Lighting 02-9011-24 7

ON site Reconnaissance Photo Log

Date	Time	Roll	Picture/ Slide #	Description	Photographer

Tom Adams
2/22/91

Kron [illegible] 2/[illegible]/91

[redacted]

Feb 2/14/91 Crescent Lighting 02-901124

Drums appr.

Joe [illegible] 2/27/91

Karen Alexander 3/14/91

I 02/14/91 Crescent Lighting 02-9011-24 10

0945 South perimeter of Bldg
Drums 20 approx - Against back of Bldg
14 Lubricating oil
8 Marked "Haz Waste"
12 On side
Lois 3/22/91 ~~Cutout recycles own oil~~. The oil is shipped off site for recycling
Drums Labled X 7-25 → (EPA + NJD 980 774 467)
D001

Lable solvent A-100 (ON Bldg S. Side)
*Reading 3 PPM (HNU) Vent at Decon area
South Side of Bldg
1000 4 Spent oil Drum
To be Shipped to oil recycle center. Drums are on wood Flats + cement Platform
Platform is 40 ft Towards fence
Blg | Platform 40 ft →

Decon area South Side of Bldg Next to Back Entrance and drum area

*Vent is for ventilating paint storage inside Bldg.

1005 Ask Mr.* T. where property line. Mr. T. was not certain

He said the land used to be an airport, but wasn't certain

Soil is silty, sandy

[signature] 2/14/91

Karen Alexander 5/14/91

* Mr T = Mr Wayne Tarken of Crescent Lighting

02/14/91 Crescent Lighting 02-9011-24 11

1008 Asked Mr. T "has Crescent ever used property past the fence line near RR"?

He replied he wasn't sure.

Ask Mr. T how many employees

1015 He replied 200 employees

ask Mr. T about processing chemicals. He replied the following were used: Varnish - 250 gallons
solvent
* Paints (where most Chemicals Used)
White Enamel
The chemicals ↑ are stored inside the Crescent bldg.

White Tank is property of Weyhauser Co's off-site on West side of Crescent Bldg. Past the Crescent fence line. Contents Unknown

10:23 Noticed Piddling on West side of Bldg. (Crescent)
We Turned and backtracked, Fence locked.

Small Drum at Front of the (on the ground) Garage at North side of Bldg.

Kris Adams 2/14/91

I 02/14/91 Crescent Lighting 02-9011-24 12

1025 Walk down paved walkway on west side of Bld but gate locked

Noted Roof drains onto grass. Possibly rainwater from roof. No readings above background on OVA and HNU and Min RAD

1030 Noted North side of (front Bldg) pipe protrude small amount of rainwater ~~liquid~~ discharging onto grass LA 2/22/91
No readings above background on HNU, OVA & Min RAD ~~No readings~~
A vent. at same location for "air compressor" for pumps" as described by Mr. T.

1035 Walk back down East side of Bldg through parking lot
No readings above background on HNU, OVA & Min RAD ~~No readings~~ LA 2/22/91

Noted Roof drain down South side of Bldg was broken

Asked Mr. T. "What replaces the Floorsweeper?"
Mr. T. replied "there a tube on the sweeper and the wastes are sent to ~~E~~ ... continued

Karen Alexander 3/14/91 Lois Adams 2/14/91

02/14/91 Crescent Lighting 02-9011-24 13

I.

Municipal system along with

10:45 other wastes.

No readings above background on HNU and Ovc and Min. RAD

Asked Mr T. about Tank (Southside of Bldg) He said 250 Thousand Gallons of water for fire & sprinkler

10:50 Walked around to West side of bldg noted pipes (3) ** coming out of bldg sudsy material flows onto asphalt, Believed to be RAINWATER

** (3) Pipe are pool drains for rainwater JA 3/22/91

Puddling in Middle of asphalt walkway on west side

No Readings

Storm drain on Weyhauser lot. Used

10:55 I ask Mr. T if there were any Above ground storage tank or below ground storage tank

Mr T replied no other than the inside storage of Vanishing oil 250 gallons

Karen Alexander Iris Cadena 2/14/91

02/14/91 Crescent Lighting 03-8011-14

I

1100 Leaving site at 1100
Decon water
disposed of ON site
with Approval from
Ms T.

Summary

A decon area was set up on the southside, in back of the Crescent bldg. A reading of 3 ppm was recorded on the HNU. This reading was taken from an air vent attached to the bldge, 3 ft off ground and next to decon area. This is the only reading of concern during the entire recon. The weather conditions (drizzling rain, HIGH HUMIDITY) is the main contributing factor. We walked in east past the drum storage area. Integrity was good. The drums were on a cement platform. Special notice was taken of overall terrain. Looking in a Southern direction facing out from bldg. you noticed the terrain was flat for about 20-40 (approx) feet past fence line then it sloped gently down then immediately sloped up toward the RR tracks, especially on the South eastern side. We walked around to North side of bldge but the gate on N-West side locked. Therefore we back tracked. We did however inspect the entire Crescent Property.

Karen [illegible] Jim Colono 2/15/91

continued. Summary JA 2/22/91 Crescent 02-9011-24

15

Noted ~~observations was~~ puddling on westside corner probably due to roof drains and lack of proper drainage (on ground). A small ~~drain~~ pipe on northside of bldg, placed near ground, possibly for roof drainage? Walked to southside of bldg again and noted a broken roof drain. Proceeded to large above ground tank. Contents is water for fire fighting. Looked closely at area of concern, (soil designated on ECRA Clean-Up Plan). Soil was actually a heavier, lighter color sand.* No discoloration noticed but only obvious natural sandy color ~~a~~ contrast. Again, no readings on monitoring equipment. We proceeded to the westside. Noted was a propane gas tank, good integrity and properly labled. Noted pipes with clear liquid, slighty sudsy discharging onto asphalt walkway on westside*. These pipes possibly roof drains. There were 3 draining onto asphalt and 1 onto the grass. Pudding was occurring in the middle section of walkway. Also noted was a storm drain* on the Weyhauser property as well as a white above ground tank similar to the one at Crescent. At 11:00 we prepared to leave the site.

* The soil in the area of concern was different than the predominating soil already existing on the Crescent property

* The soil are no storm drains at the Crescent site. Below to be rainwater

Kappa Alexander similar [illegible] 2/15/91

3/27/91

* air vent - used to vent the paint storage area which pumps paint to the paint booths

Karen Alexander 3/14/91

REFERENCE NO. 32

NUS CORPORATION

TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-9011-24	2/6/91	2:30

DISTRIBUTION:

Crescent Lighting, Inc

BETWEEN: Jerry Clear

OF: Water Superintendent of Garden State Water Co.

PHONE: (609) 784-3322

AND: Lois Adams

DISCUSSION: (NUS)

I asked Mr Jerry Clear if any wells were located in Blenheim north of Coles Ave. Mr Clear replied there were no wells in or immediately north of that location

ACTION ITEMS:

Lois Adams

NUS 087 REVISED 0391

REFERENCE NO. 33

NUS CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
02-9011-24	2/6/91	12:50

DISTRIBUTION: Crescent Lighting 02-9011-24

BETWEEN:	OF:	PHONE:
Edward Deak	Superintendent of Water DEPTFORD TWP Municipal Water Gloucester Co.	(609) 848-0200
AND: Lois Adams		NUS

DISCUSSION: Lois Adams asked Mr. Deak if any municipal wells were located in the following described area: *Moving east to west*, from the S. Branch and Big Timber Creek to Delsea Drive. *Moving south to north*, from Cooper Sts. to approx 2 miles north of Westville (town of).

Mr. Deak replied the only existing well was located at "3RD and Summit" Sts. He also added Summit Sts was off Westville Almonesson Rd and "3RD" was off of Cedar Ave.

ACTION ITEMS: These wells are outside the 4 mile radius.

Lois Adams

REFERENCE NO. 34

NUS CORPORATION

TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-9011-24	2/20/91	2:00

DISTRIBUTION:

Crescent Lighting Corp.

02-9011-24

BETWEEN:	OF:	PHONE:
Mr. Wayne Tarken	Crescent Lighting Environmental Manager	(609) 546-5500

AND: Lois Adams

DISCUSSION: (NUS)

* Lois Adams asked Wayne Tarken of any sampling data of the post soil excavation existed?

Wayne Tarken said he was still searching for it

* Lois Adams asked Wayne Tarken how long has Crescent Lighting occupied the bldg. its presently located in.

Mr. Tarken replied for 7 yrs Crescent has occupied the bldg

* Lois Adams asked Mr. Tarken When the airport was occupying the Crescent location

Mr. Tarken replied approx 20-30 yrs ago

* Lois Adams asked Mr. Tarken to describe the Crescent property boundries.

Mr. Tarken replied at the Southern side the property goes past the fence to the turnpike and encompasses the Railroad. The North East + West boundries are the woods and Weyerhaeuser Corp property.

Continued *

ACTION ITEMS:

Adams

NUS CORPORATION

TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-9011-24	2/20/91	2:00

DISTRIBUTION:

Crescent Lighting 02-9011-24

BETWEEN:	OF:	PHONE:
Wayne Tarken	Crescent Lighting Environmental Div.	(609) 546-5500

AND: Lois Adams

DISCUSSION: (NUS)

* Lois Adams asked Mr. Tarken if the pipes described to him on the Feb. 14th. Rdcon were roof drains.
Mr. Tarken replied, Yes they are roof drains
* Lois Adams asked Mr. Tarken if there were any storm drains on the Crescent property
Mr. Tarken replied that there are no storm drains.
* Lois Adams asked Mr. Tarken what the vent on the south side of the bldg. was used for venting?
Mr Tarken replied it was used to ventilate the paint storage which pumps to the booth (paint). ~~It is not permitted~~ It does not have a permit 2/20/91
* Lois Adams asked Mr. Tarken to describe the base operations at Crescent
Mr. Tarken replied that raw steel coils were pressed

ACTION ITEMS:

Continued *

NUS CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
02-9011-24	2/20/91	2:00

DISTRIBUTION:

Crescent Lighting 02-9011-24

BETWEEN:	OF:	PHONE:
Wayne Tarken	Crescent Lighting	(609) 546-5500

AND: Lois Adams NUS

DISCUSSION:

Continued: are molded to become "lighting housings". A product referred to as Vanishing oil is used during this process. The vanishing oil enhances "bending" through its lubrication. The vanishing oil does dissipate off the housing "over a period of time". Once the housings are "shaped" some go on to be painted and some go on to be washed & dried. Approximately 30% of the fixtures recieve enamalite paint. This paint is also baked on. The fixtures are put on an assembly line to recieve ballasts, light bulbs, sockets and wires.

* Lois Adams asked Mr. Tarken what feedstock "Chemicals or Materials" are used.

Mr. Tarken replied there were no chemicals or Dyes that are part of their production other than the paint used on the fixtures. He added that "Iron & steel Die Casts" were used as MOLDS.

ACTION ITEMS:

Lois Adams

CONTINUED

NUS CORPORATION

4 of 7

TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-9011-24	2/20/91	2:00

DISTRIBUTION:

Crescent Lighting 02-9011-24

BETWEEN:	OF:	PHONE:
Wayne Tarken	Crescent Lighting	(609) 546-5500

AND: Lois Adams

DISCUSSION: (NUS)

* Continued * Lois Adams asked Mr. Tarken what wastes were generated?
Mr Tarken replied there were 4 waste "categories" 3 relating to paint and 1 to preventative maintenance.
Mr. Tarken described them as follows:
From the 3 categories relating to Painting
(A) Excess paint from the paint booths is shipped off and drummed in 55 gallon drums S+W Waste Transp
(B) Solvent used to clean nozzles is drummed in 55 gallon drums
3 Paint
(C) Water that is used to clean fixtures before the fixtures are painted. This water is sucked into a 3000 gallon tanker truck "Cusco Company" and shipped to Dupont to recycle (the code NJDEP is X900).

ACTION ITEMS:

Continued

Lois Adams

NUS 067 REVISED 0581

NUS CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
02-9011-24	2/20/91	2:00

DISTRIBUTION: Crescent Lighting; 02-9011-24

BETWEEN:	OF:	PHONE:
Wayn Tarken	Crescent	(609) 546-5500

AND: Lois Adams of NUS

DISCUSSION:

Continued. Mr. Tarken continued to describe the waste generated for "preventative maintenance" Mr Tarken said that lubricating oil sometimes spills out of old machines. Therefore Crescent uses "Speedy Dry Pig" an absorbent material classified as X725 (NJ DEP) which is drummed in 55 gall. drums. Mr Tarken also added that the lubricating oils used in the new machines was sent out in 55 gallon drums to be recycled and landfill possibly.

* Lois Adams asked Mr. Tarken what the waste quantities produced.

Mr. Tarken replied. He could send a 1989 Generation Report or as of March 1991 He would have (As required by NJ state DEP) continued

ACTION ITEMS:

Lois

NUS 067 REVISED 0685

NUS CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
02-9011-24	2/20/91	2:00

DISTRIBUTION:

Crescent Lighting 02-9011-24

BETWEEN:	OF:	PHONE:
Wayne Tarken	Crescent	(609) 546-5580

AND: Lois Adams of NUS

DISCUSSION:

Continued. The 1990 Generator Report.

Lois Adams asked Mr. Tarken what was sent to the Municipal Sewer and how much. Mr. Tarken replied. The paint line overflow and wash rinse. He also added that it was not permitted because there wasn't enough Quantity according to NJDEP requirement.

Lois asked Mr. Tarken what was stored other than paint.

Mr. Tarken replied a Vanishing Oil Tank 250 gallons.

Lois Adams asked Mr. Tarken if there were any Permits.

Mr. Tarken replied that there was only

ACTION ITEMS:

Continued

Lois Adams

NUS CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
02-9011-24	2/20/91	2:00

DISTRIBUTION: Crescent Lighting 02-9011-24

BETWEEN:	OF:	PHONE:
~~Lois A~~ Wayne Tarken 2/20/91	Crescent	(609) 546-5500

AND: Lois Adams of NUS

DISCUSSION:

continued an Air site (Facility ID) NJDEP for registration #50705.

Mr Tarken said he didn't believe this was a permit but merely a registration

* Lois Adams asked Mr. Tarken if there were any wells on the Crescent property.

Mr. Tarken replied there were not any wells on the Crescent property

ACTION ITEMS:

Lo Adams

REFERENCE NO. 35

NUS CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
02-9011-24	3/5/91	3:30

DISTRIBUTION:

Crescent Lighting Corp.

BETWEEN:	OF:	PHONE:
Mr. Clark Gillman	Chief of Flood Plain Management, NJ DEP	(609) 292-2296

AND: Lois Adams — NUS

DISCUSSION:

L. Adams asked Mr. Gilman about the floodplain in the Barrington Boro. Mr. Gilman replied there isn't a floodplain map in existence for Barrington Boro. He mentioned a small creek that ran along 295 as flooding occasionally but it doesn't come under the classification of floodplain. It is believe no flooding occurs in Barrington Boro.

ACTION ITEMS:

REFERENCE NO. 36

NUS CORPORATION AND SUBSIDIARIES

TELECON NOTE

CONTROL NO.:	DATE:	TIME:
02-9011-26	1/3/91	0922

DISTRIBUTION:

Finnessy Body Works

BETWEEN:	OF:	PHONE:
Mark Huff	Bellmawr Boro Water Dept.	(609) 933-1313

AND: Keith Billy

(NUS)

DISCUSSION:

Mr. Huff was asked how many 1/31/91 people are served by their public supply water system. He said approx. 9000 people are served by their department.

ACTION ITEMS:

NUS 067 REVISED 0685

REFERENCE NO. 37

NUS CORPORATION AND SUBSIDIARIES

TELECON NOTE

CONTROL NO.:	DATE:	TIME:
02-9011-26	1/3/91	0905

DISTRIBUTION:

Finnessy Body Works

BETWEEN:	OF:	PHONE:
Dave Barcklow	Brooklawn Boro Water Dept	(609) 456-2638

AND: Keith Billy

DISCUSSION: (NUS)

Mr. Barcklow was asked how many people are served by their public water supply system. He said approx. 2500 people are served by their department.

ACTION ITEMS:

NUS 867 REVISED 0685

REFERENCE NO. 38

NUS CORPORATION AND SUBSIDIARIES

TELECON NOTE

CONTROL NO.:	DATE:	TIME:
02-9011-26	1/3/91	0933

DISTRIBUTION:

Finnessy Body Works

BETWEEN:	OF:	PHONE:
Keith Hastings	Collingswood Water Dept.	(609)858-0613

AND:

Keith Billy

(NUS)

DISCUSSION:

Mr. Hastings was asked how many people are served by their public supply water system. He said approx. 4,500 people from Collingswood and another 1,600 people outside of Collingswood. Therefore approx 6,100 people are served by their department.

ACTION ITEMS:

NUS 867 REVISED 0685

REFERENCE NO. 39

NUS CORPORATION AND SUBSIDIARIES

TELECON NOTE

CONTROL NO.:	DATE:	TIME:
00-9011-96	1/3/91	0938

DISTRIBUTION:

Finnesey Body Works

BETWEEN:	OF:	PHONE:
Joe Keating	Haddonfield Water Dept.	(609) 429-0183

AND: Keith Billy

(NUS)

DISCUSSION:

Mr. Keating was asked how many people are served by their public water system. He said they serve approx. 12,000 people by their department.

ACTION ITEMS:

NUS 067 REVISED 0685

REFERENCE NO. 40

NUS CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

CONTROL NO.:	DATE:	TIME:
00-9011-06	1/3/91	1123

DISTRIBUTION:

Finnessy Body Works

BETWEEN:	OF:	PHONE:
Al Boening	Haddon Township Public Works	(609) 854-1825

AND: Keith Billy (NUS)

DISCUSSION:

Mr. Boening was asked how many people are served by their public water system. He said his department serves approx 16,000 people.

ACTION ITEMS:

NUS 867 REVISED 0685

REFERENCE NO. 41

NUS CORPORATION AND SUBSIDIARIES

TELECON NOTE

CONTROL NO.:	DATE:	TIME:
02-9011-06	1/3/91	1326

DISTRIBUTION:

Finnessey Body Works

BETWEEN:	OF:	PHONE:
John Williams	Gloucester City Public Works	(609) 456-0781

AND: Keith Billy (NUS)

DISCUSSION:

Mr. Williams was asked how many people are served by their public water system. He said his department serves approx. 12,000 people.

ACTION ITEMS:

NUS 067 REVISED 0685

REFERENCE NO. 42

NUS CORPORATION AND SUBSIDIARIES — TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-8901-20	2/14/89	1045

DISTRIBUTION:
- GOW Natural Resources File

BETWEEN:	OF:	PHONE:
Ed Knicely	Gloucester City Water Dept.	(609) 456-0165

AND:
Gary Rotek

DISCUSSION:
Re: Drinking water Gloucester City
- Gloucester City Water Dept. provides all potable water for Gloucester City Residents
- serves 13,400 people
- 4 wells are in use:
  GCWD 40
  " 41
  " 42
  " 43
- They are not tied in to either the Camden, Mt. Ephraim, or New Jersey Water Companies, but emergency hook-ups are available to each of these

ACTION ITEMS:

REFERENCE NO. 43

Ref 17

NUS CORPORATION

TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-8901-04	2/14/89	3:30 p.m.

DISTRIBUTION:

Campbell Soup Company (Market St.)

BETWEEN:	OF:	PHONE:
John Rattie	Delaware River Basin Commission	(609) 883-9500

AND:

Tammy Marquart (NUS)

DISCUSSION:

Mr. Rattie said the Delaware River is tidal in the Camden area. In the Camden area the river is a ~~the~~ large shipping area. The river is used for recreational boating, but no swimming.

For reference, the Ben Franklin Bridge is located at river mile 100.1 and the Cape is 0. He said the only drinking water intake is by ~~Philadelphia~~ City of Philadelphia at Torsdale - river mile 110.5. Mr. Rattie mentioned the following industrial intakes. Roman Haas at river mile 106.2 (Phila.), Georgia Pacific at river mile 104.3 (NJ), another industrial intake at river mile 97.8 (NJ), Texaco at River mile 94.0 (NJ), PSE&G of Burlington at river mile 117.2 (NJ) and Stepan Chemical Co. at river mile 127.2 (NJ).

Tammy Marquart 2/14/89

ACTION ITEMS:

NUS 057 REVISED 0581

REFERENCE NO. 44

NUS CORPORATION

TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-9011-24	2/8/91	4:00 PM

DISTRIBUTION:

Crescent Lighting

BETWEEN:	OF:	PHONE:
Carolyn Scott	NJ DEP ECRA TRENTON, NJ	(609) 633-7141

AND: Lois Adams

DISCUSSION: (NUS)

L. Adams asked if Crescent Lighting, Inc. ECRA CASE # 85-015 has any info past 1985. Carolyn Scott replied the case was closed out on May 6th 1986.

ACTION ITEMS:

Lois Adams

NUS 067 REVISED 0581

REFERENCE NO. 45

NUS CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
02-9011-24	JAN. 14, 1991	11:00 AM

DISTRIBUTION:

Crescent Lighting 02-9011-24

BETWEEN:	OF:	PHONE:
Helen Orfe	Camden County Tax Office	(609) 757-6751

AND: Lois Adams — NUS Corp

DISCUSSION:

Ms. Helen Orfe was asked by L. Adams who the present owner(s) of 120 E. Gloucester Pike Barrington, N.J. was. Ms. Orfe stated that it is presently ((120 E. Gloucester Pike, Barrington)) owned by GenLyte Group, Inc. The Block is 0013, and the Lot is 00001-C.

Lois K. Adams

ACTION ITEMS:

NUS 067 REVISED 0685

REFERENCE NO. 46

NUS CORPORATION
SUPERFUND DIVISION

INTERNAL CORRESPONDENCE

C-584-02-91-12

TO: TECHNICAL STAFF

DATE: FEBRUARY 6, 1991

FROM: RICH FEINBERG

COPIES:

SUBJECT: WELLHEAD PROTECTION AREAS

As you already know the revised HRS requires an assessment of potential impacts to wellhead protection areas. Section 1428 of the Safe Water Drinking Act amendments of 1986 declares that each state must adopt and submit a program to protect wellhead areas from contaminants that may have any adverse affect on the health of persons. At a minimum each state program is required to:

(a) specify the duties or responsibilities of state agencies, local governments, and public water supply systems with respect to development and implementation of wellhead protection programs;

(b) determine the Wellhead Protection Areas (WHPAs) based on all reasonably available hydrogeologic information including groundwater flow, recharge and discharge areas, and various other hydrogeologic parameters to create a model of the area;

(c) identify all man-made sources of contaminants within the WHPA that may have adverse health effects on the general population;

(d) assure that each program discusses plans for technical and financial assistance, and implementation of control measures;

(e) have contingency plans for the location and provision of alternate drinking water supplies for each public water system.

These are just some of the requirements that have been mandated by the EPA. A training will be held soon to explain pertinent specifics of the wellhead protection policy as they apply to HRS; but for now please channel your questions to Steve Okulewicz or me.

Presently, New Jersey, Puerto Rico, and the U.S. Virgin Islands have submitted wellhead protection programs to the EPA for approval. New York has had an approved plan since September 1990. The delineation of the WHPAs in New York State are as follows.

In unconsolidated aquifers upstate WHPAs are delineated as the land surface boundaries of these aquifers. There are 5 maps delineating these areas in the office. Four of these are titled, Potential Yields of Wells in Unconsolidated Aquifers in Upstate New York. One Map is titled, Unconsolidated Aquifers in Upstate New York. Some of these maps are on loan from the USGS and for the interim are in the custody of Bill Foss. Please see Bill for these maps.

In Bedrock aquifers, WHPAs are delineated as a radius of 1,500 feet from the wellhead. However, this delineation may be subject to change at a later date based on site-specific information and the approval of the NYSDEC.

MEMO TO: TECHNICAL STAFF
FEBRUARY 6, 1991 - PAGE TWO

Wellhead Protection Areas for the Magothy and Lloyd Aquifers on Long Island are considered to be the boundaries of the Deep Flow Recharge Area, as recognized by the NYSDEC. The delineation of the Deep Flow Recharge Area on Long Island for all public supply wells has been defined according to road boundaries. Every effort will be made to obtain these delineation maps in the coming weeks. If you think your site is in or near a Deep Flow Recharge Area for these aquifers, let me know.

Wellhead Protection Areas for the Glacial Aquifer on Long Island are defined as a fixed variable shape zone with a fixed 1,500 foot radius in the upgradient groundwater flow direction and a fixed radius of 500 feet in the downgradient direction of flow. These delineations are somewhat subjective. County health departments, municipalities, and public water supply companies should be consulted. Baseline WHPA boundaries for public water supply wells in Suffolk County have already been determined by the Suffolk County Department of Health Services. Every effort will be made to obtain boundaries maps in the coming weeks.

RF/bgp

Reviewed and Approved: Rm Naman

REFERENCE NO. 47

5/31/91 Crescent Lighting 02-9011-24 180

Time	Date	Roll	Picture Slide	Description	Photographer
1010	5/31	2	~~2~~ S2	Chris Jimenez collecting background soil sample NJHZIS SI	LP
		2	P1		
		2	S3	Chris Jimenez collecting S6, S7 NJHZIS	LP
		2	P2		
1105	5/30	2	S4	Chris Jimenez collecting S4	LP
		2	P3		
1200		2	S3	Chris J collecting S2	LP
		2	P4		
1300		2	S6	Robert Lynch collecting S3	LP
		2	P5		

NO Readings on ENG & OVA

VOA's taken 1st

5/31/91

L. Perlstein

T. Crescent Lighting 02-9011-24 5/31/91 17

Arrived at Crescent Lighting 0850
NUS Personnel on-site include

		DATE
- DAVID GRUPP (SSO) (PM)	[signature]	5/31/91
- Joanne Tochia (SMO)	[signature]	5/31/91
- Lois Perlstein (SM)	[signature]	5/31/91
- Chris Jimenez (Sampler)	[signature]	5/31/91
- Robert Lynch (Sampler)	[signature]	5/31/91

All the above personnel have read and understood the workplan

Weather - sunny but hazy wind
temperature 90° approximately 5-10 Mph SE

Tasks today include an on-site inspection and sampling investigation

tailgate meeting time 0955 discussed safety the following:

(A) Contaminants to look for
(B) level of safety
(C) Route to hospital
(D) Area of Concern
(E) Postings in Truck
(F) signals
(G) Keys
(F) Areas to avoid
(G) Radio Communication

Equipment List Camera # Kind

	READINGS at CRESCENT		
Field Read 5/30			
0 VA	"C" 469758	ID	0 ppm
5/2/91 HNU	"A" 192120 (PROBE 307147)		0 ppm
Mini RAD	731691		.13 cpm
> Compass	"C" [signature] 6/12/91		L. Perlstein 5/31/91

EPA: Case # 16538

5/31/91 Crescent Lighting 02-9011-24 180

Time	Date	Roll	Picture Slide	Description	Photographer
1010	5/31	2	~~2~~ S2	Chris Jimenez collecting background soil sample NJHZIS SI	LP
		2	P1		
		2	S3	Chris Jimenez collecting S6, S7 NJHZIS	LP
		2	P2		
1105	5/30	2	S4	Chris Jimenez collecting S4	LP
		2	P3		
1120		2	S5	Chris J collecting S2	LP
		2	P4		
1200		2	S6	Robert Lynch collecting S5	LP
		2	P5		

NO Readings on TNL & OVA

VOA's taken 1st

5/31/91

L. Perlstein

18b

Time of Photo	Pict/Slide	Description	Photogr
time 1301	S 14 P 12	- Area of S6 and its duplicate S7	LP

[illegible]

[illegible] 5/31/91

5/31/91 Crescent Lighting 02-9011-24 19

Time	Date	Roll	Picture Slide	Description	Photographer
				S5 area has soil that's olive-yellow and silty colored	
1250		2	S7	~~Robert~~ J. Perlstein 5/31/91 Lynch Chris J. collecting S3 subsurface sample	LP
		2	P6		
1301		2	S9 ~~S10~~ P7	Drum storage area facing west.	LP
			S10 P8	area of S2 & S3 facing SW	LP
			S11 P9	area of S2 & S3 facing SE	LP
			S12 P10	South side of Cresc building facing EAST	LP
			S13 P11	Drum storage area facing NE	LP

5/31/91

J. Perlstein

5/31/91 Crescent Lighting 02-9011-24 20

Time	Date	Roll	Pict/Slide	Description	Photographer

J. Perlstein 5/31/91

5/31/9: Crescent Lighting 02-9011-24 21G

Time	Date ~~Roll~~	Roll	Pict. slide	Description	Photograph

0920 Set up decon area SE corner of Crescent facility Instrument monitoring prepared.

10:05 Leaving to collect S1.
Changed position (area) of S1
See map, LP
-Sample collection by C. Jimenez

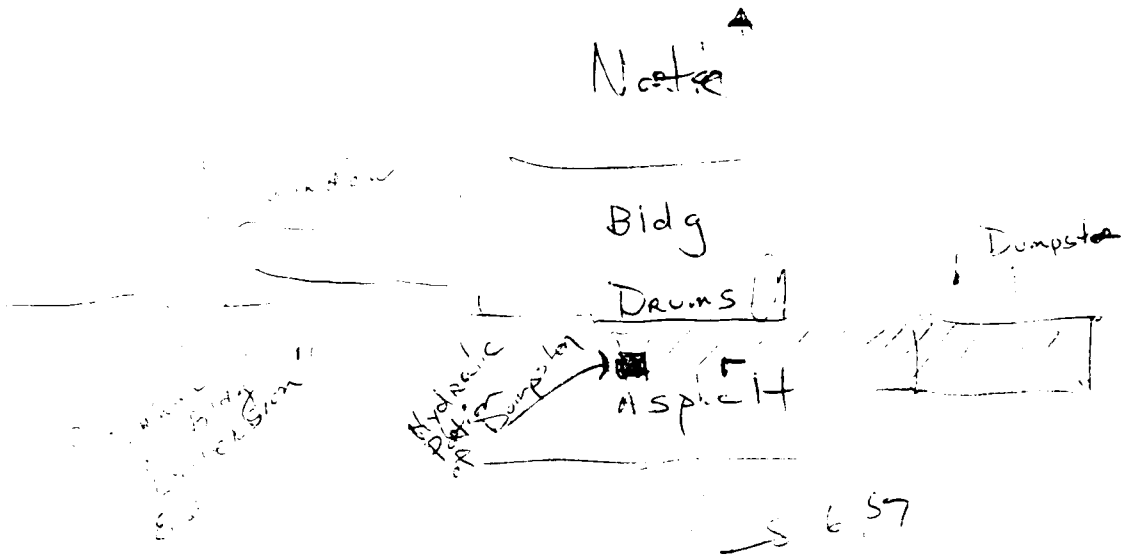
10:10 At area of S1
No readings on HNU
Begins to collected soil
sample which is brown sandy silt.
Collecting VOa first

10:15 Finish collecting sample S1
Distance from sample Location SI Vo
Flagpole is 63 feet 9" inches
At the NE corner of Facility
45 feet 8" inches
Angle From Flag Pole to
sample Location is 90°
Angle From corner of building
is 30°

10:20 Return to decon area to
drop off S1 and to pickup
S6 & S7

[signature] 6/1/9

J. Perlstein 5/31/9



Note. Rinsate's collected: AP 5/31/91

RIN 1 : Bowl & Trowel 1034

RIN 2 Bowl 1030

RIN 3 : Auger 1045

note:
160° from
hydraulic potion
of Dumpster
To S6 & S7

Tom Pentstein 5/31/91

[illegible] 6/12/91

5/31/91 Crescent Lighting 02-9011-24

22

Time	Date	Roll	Pic Slide	Description	Photographer

1027 Left Decon area to collect soil sample S6 & S7

1030 Arrive at sample site for S6 & S7. The new area is now in drainage path from Drum storage to Soil

OVA 1 ppm Near Bldg Vent
HNU .05 ppm

Collecting Vea first

No Readings off soil

10:32 Chris J. collecting S6 & S7
S7 is the duplicate sample

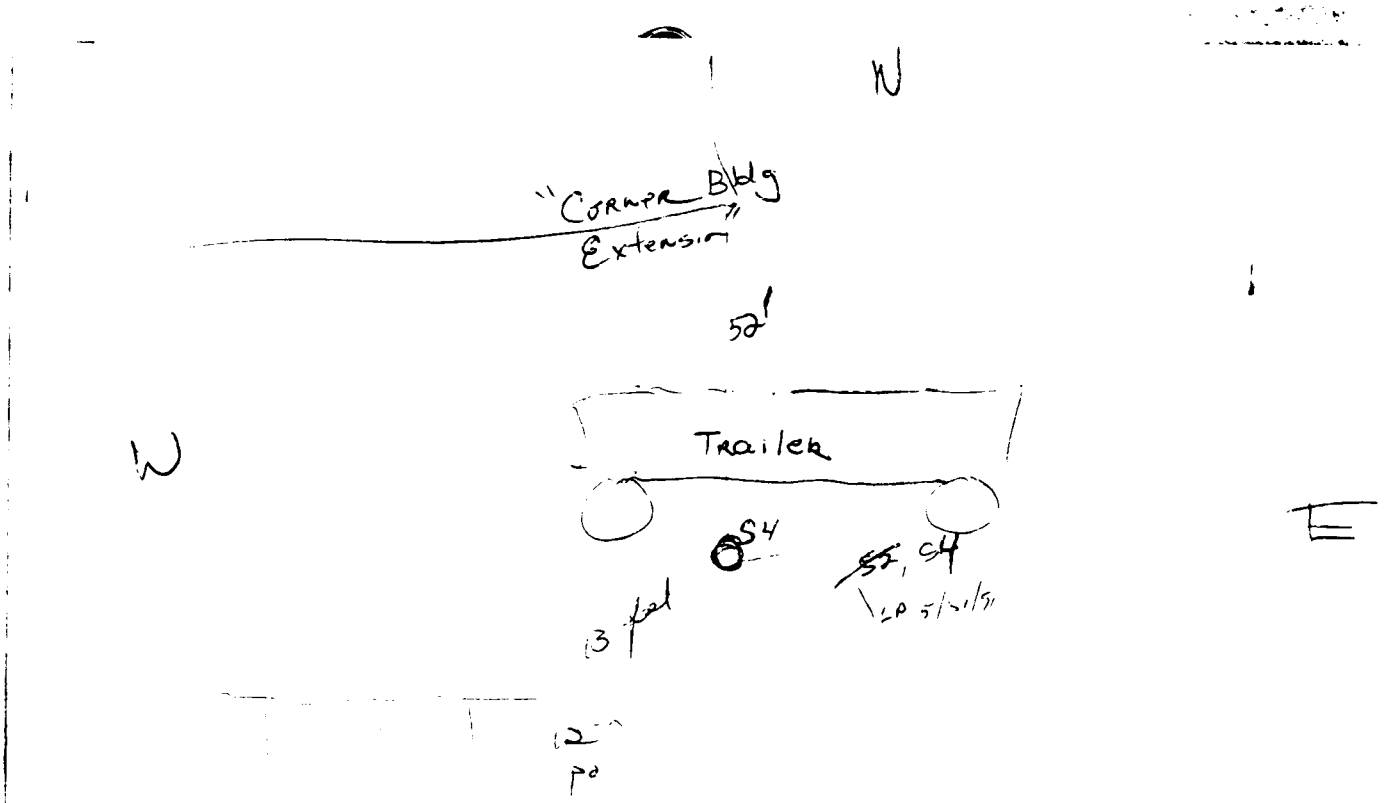
Angle from "corner of bldge # Extent" (East)
130° See Map,
It is 26 feet from Corner to S6 and 26 feet 6" to Corner of Hydraulic potion of Dumpster S7
See note

Mr. Glen Fogel came out to meet us and inquire into our Activities

10:40 Chris J. finished Collecting

10:42 Return to Decon area

5/31/91
Pertstein


N
"Corner Bldg
Extension"
52'
W
Trailer
S4
~~S2~~, S4
LP 5/31/91
13 feet
12
po
E

5/31/91

5/31/91 Crescent Lighting 02-9011-24 23a

Time	Date	Roll	Pict/Slide	Description	Photographer

10:55 Leave to collect S2 + S4

11:00 Arrive at area of S2 + S4
Next to Trailer on Southside, between (fence + trailer). In the area of concern on the southside

Mr. Wayne Tarker is observing our activities

11:03 Chris J. starts collecting S4 ~~+ S4~~ LP 5/31/91
Voa are collected first.
(S4 area between fence + trailer)

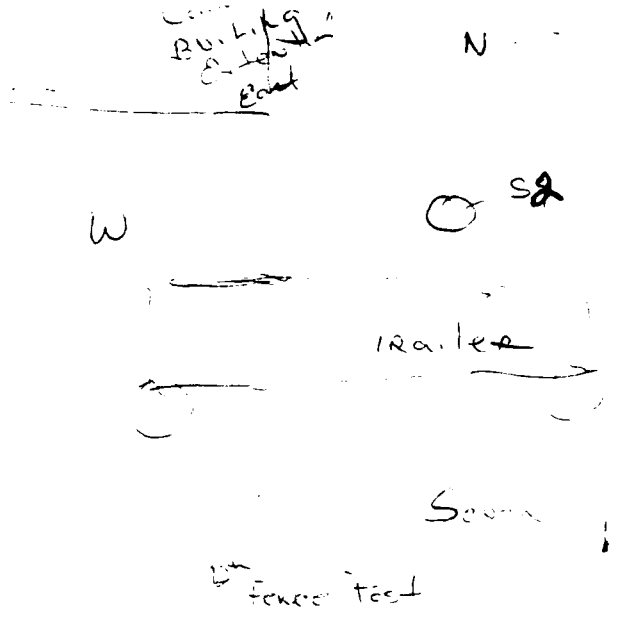
No readings on OVa + HNU.

11:06 Finish sampling
~~Move~~ LP 5/31/91

It is 13 feet from the 12" fence post from West side Prop of 52 feet from Corner of Bldg Extension (East) same "Corner Extension" ~~as S6 + S7~~ LP 5/31
The Angle from ~~12th fence post~~ LP 5/31/91 is 170°
See MAP corner bldg. extension

11:08 Move to S2 location

J. Pulstein 5/31/91



D. Perlstein 5/31/9

5/1/91 Crescent Lighting 02-9011-24 24

11.08 Arrive at S2 location
(North side of trailer)
See MAP

11.09 Chris J. begins augering for subsurface sample S2.

No reading on OVa

First soil coming from auger is a yellow colored sand - Medium grain.

24 inches notice a change in color. Darker color (brown) finer composition

No reading on OVa.

Noticed adhesion or clodding of soil matter at 24 → 28 inches

Composite from 24 to 34 inches

20 Collection of S2 by Chris Jimenez

Angle 180° from corner bldg. Extension East to S2.

Angle of 30° from 12th fence post see MAP

J. Pertsten 5/31/91

Note
Temperature
~ 90°

N

Building
Extension West

K

O

S5

Post

J. Perlstein 5/31/91

5/31/91 Crescent Lighting 02-9011-24 25a.

36 feet From Corner Bldg extension (East) to S2

31 feet From 12th Fence post

11:24 Return to Decon area

11:55 Leave to collect S5 and S53 [illegible] L. Grupp, L. Perlstein and Robert Lynch

11:59 Arrive at area of S5

12:00 Robert Lynch begins collecting S5 surface soil sample olive yellow silty sand

37 feet to 10 fence Post

VOA collected first

S5 is the MS/MSD Sample

[illegible] Corner of Building extension West

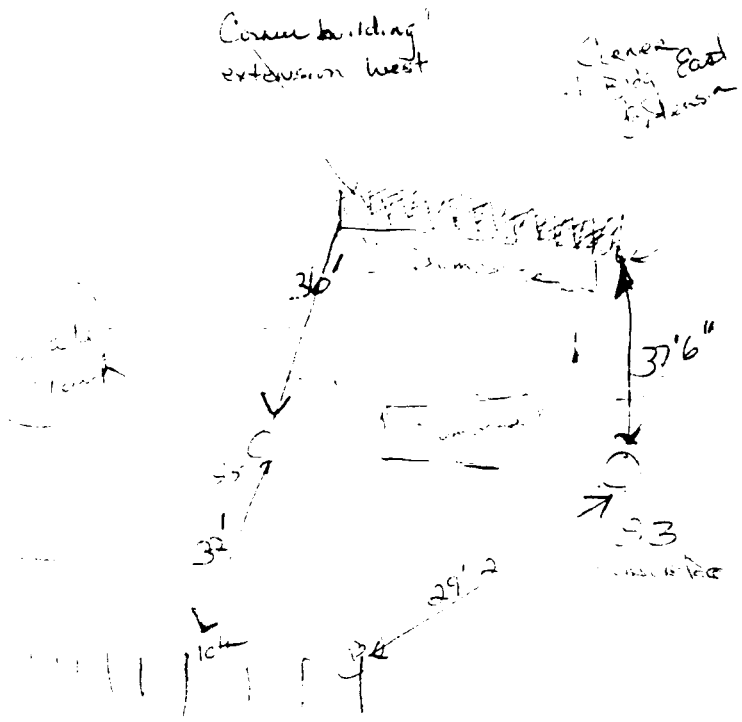
Angle 30° From 10th Fence post

Angles 150° From Corner of Building extension West) See MAP

12:14 Finish collecting S5

12:21 Return to Decon

L. Perlstein 5/31/91



[illegible] 5/31/19

5/31/91 Crescent Lighting 02-90X-24/26a

Health & Safety break
taken 12.25 to 12.35 Robert
Lunch show signs of heat stress

~~1235~~

1240 Leave Decon area to
area of S3

1250 [illegible] begins [illegible]
at area of S3

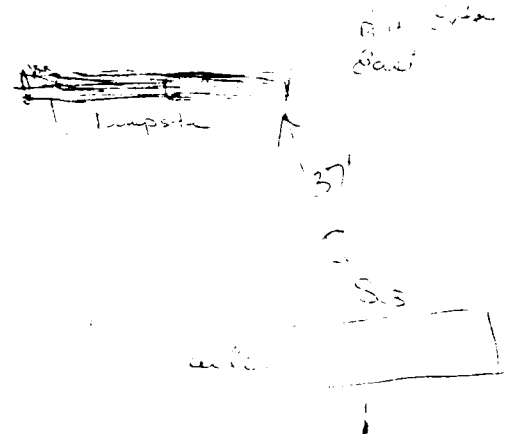
Soil Light yellow sand
Medium grain

30" Whitish orange sand [illegible]
and brown [illegible] too
(darker brown silty sand material)
36 inches color begins
to change

Samples taken from 36" to
46 inches (Hit pockets of
White Clay)
Robert Lunch [illegible]
[illegible] J. bottling sample

[illegible] Pritstein 5/31/91

26 bi



13th fence

J. Perkoten 5/31/91

5/31/91 Crescent Lighting

Angle 200° From Corner Bldg Ext East

37 feet and 6 inches from Corner Bldg Extension East

29 feet 2 6 inch from 13th fence post.

Angle 350° from 13th fence post

13 ~~01~~ 00 Leave area of S3

13 ~~01~~ 05 Begin Decon

13 ~~01~~ 10 Wayne Tarken and D. Grupp discussing Sample turnaround times & future expectations Mr. T interested in getting results

Mr Tarken said this property was an airport at one time

JP 5/31/91

~~012~~

~~13~~

[signature] L. Perlstein 5/31/91

5/31/91 Crescent

1350 Packing up Coolers in Suburban

Copy Receipt of Samples to INVS

Original Receipt of Samples to Mr Wayne Tarka of Crescent

1400 - Left the Crescent Fighting site

1600 Samples dropped off at EPA Laboratory, Edison, NJ

1610 Dropped samples off at Federal Express, Edison, NJ

5/31/91
D. Perlstein

Summary

A decon area was set up on the SE side of the current facility. It was very hot, 90° F. There were no readings on the monitoring equipment. There was a lot of pallets and dumpsters on the site property. Seven soil samples were collected, a duplicate and an MS/MSD. The sample location for the background S1 was changed as well as the sample location for S6 and S7. The drum storage area was located on asphalt. Therefore S6 and S7 were taken elsewhere. When ~~stop~~ collecting for S2 and S3 (subsurface) the depth was determined upon a change in soil stratigraphy. We left the site at 1400. Samples were dropped off at EPA Laboratory at 1600 and at the Federal Express at 1610.

V. Pentelay
5/31/91