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SITE INVESTIGATION

HAMERSLEY MANUFACTURING COMPANY LANDFILL
WALLINGTON BOROUGH, BERGEN COUNTY
EPA ID NO. NJSFN0204214

Volume 1 of 3

New Jersey Department of Environmental Protection
Division of Publicly Funded Site Remediation
Environmental Measurements and Site Assessment Section

HAMERSLEY MANUFACTURING COMPANY LANDFILL
BLOCK 71, LOT 30.02
WALLINGTON BOROUGH, BERGEN COUNTY
NEW JERSEY
EPA ID NO. NJSFN0204214

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NARRATIVE

SITE INVESTIGATION REPORT

PART I: GENERAL INFORMATION

Site Name: Hamersley Manufacturing Company Landfill
Aka: Farmland Dairy, Inc.
Address: The site is known as "Main Avenue, Rear Lot"
Municipality: Wallington **State:** New Jersey **Zip Code:** 07057
County: Bergen
EPA ID No.:NJSFN0204214
Block: 71 **Lot(s):** 35.02
Latitude:40° 51′ 43″ **Longitude:** 74° 06′ 03″
Acreage: 6.85 **SIC Code:** 4953

Current Owner: Farmland Dairy
Mailing Address: 520 Main Avenue
City: Wallington Borough **State:** New Jersey **Zip Code:**
Telephone No.: 973-777-2500

Current Operator: The site is a vacant lot

Owner/Operator History:

NAME	OPERATOR/ OWNER	DATES	
		FROM	TO
Hamersley Manufacturing Company	Operator/ Owner	Prior to 1917	Unknown
H.P. Land Corporation	Owner	Unknown	12/1/69
Riverdrive Park Corporation	Owner/ Operator	12/1/69	11/20/89
Anthony Labue	Owner	11/20/89	11/30/89
Lake Side Properties, Inc.	Owner	11/30/89	3/93
Farmland Dairy	Owner	3/93	Present

Surrounding Land Use (zoning, adjacent properties): The property is a vacant lot with no frontage on Main Avenue. It therefore does not have a street address. To the north it is bordered by an active passenger railroad with residential buildings on the other side of the railroad. Its eastern border is separated from Main Avenue by a small strip of lawn which is a part of Lot 35.01. The industrial buildings of Curtiss Wright Corporation and Farmland Dairy are located across Main Avenue to the east. Most of the

southern border of the site is adjacent to the commercial buildings and parking area of Lot 35.01. A portion of the southwestern border abuts an apartment complex known as the Jasontown Apartments. The entire western border of the site is adjacent to the Saddle River and the former facilities of Hamersley Manufacturing just across the river.

Distance to Nearest Residence/School: Adjacent **Direction:** South
Population Density (residents per square mile): The 1990 census indicates that the Borough of Wallington has 10,773 people per square mile.

PART II: SITE OPERATIONS

Discuss all current and past operations at the site. In addition, tabulate all areas of concern (AOC) and provide the waste source type for each AOC. Include the physical state of waste at each AOC as stored or disposed, and the volume of waste stored or disposed, or the volume or area of contaminated soil or water.

The Hamersley Manufacturing Company (Hamersley) was engaged in the production of wax papers and other paper products since at least 1917 (MAP 11). Hamersley owned parcels of land in Garfield City and the Borough of Wallington (Wallington) which were located on directly opposing sides of the Saddle River (MAPS 2(a), 11, 13). The parcel on the Wallington side of the river was designated as Block 71, Lot 35 until approximately 1964 when Hamersley subdivided same into two parcels known as Block 71, Lots 35.01 and 35.02. Lot 35.01 was sold to "Krugman, et als". The Krugman lot was developed into a commercial facility (ATTACHMENT C). Lot 35.02 (the Site) was retained by Hamersley and is the subject of this investigation.

The New Jersey Department of Environmental Protection (NJDEP) interviewed Emil Sudol during June 1998. Mr. Sudol, who is a former fire official for the Borough of Wallington, stated that the Site was formerly owned and operated by Hamersley for the purposes of fuel storage and wastewater disposal. Mr. Sudol inspected underground fuel tanks at the site and recalled a large pond at the Site. Per Mr. Sudol, fuel from the tanks was pumped through an aboveground pipeline across the Saddle River to the Hamersley manufacturing facility in Garfield. (ATTACHMENT V)

NJDEP interviewed Joseph Sudol duing July 1999. Mr. Sudol is a a Wallington resident currently residing on Main Avenue. Mr. Sudol stated that a local sand mining operator, William Van Kruiningen, had mined sand from the Hamersley pond. Per Mr. Sudol, a dredge used by Mr. Van Kruiningen to mine sand was lost into the pond. (Attachment GG)

Wallington's historic files, archived in the basement of the police building, contain an undated petition from residents which sought to persuade Wallington to forbid "...the establishment of a dump on the Hamersley property along upper Main Avenue...". Based upon the signatures of Mr. William Van Kruiningen and his son Herbert and upon their relative ages, the petition was submitted to Wallington approximately between the years 1940 and 1965.

NJDEP has reviewed aerial photography of the northern sector of Wallington Borough. The 1932 photograph reveals a building at the western border of the Site near the Saddle River. At the section of river adjacent to the building, the above noted fuel pipeline can be seen spanning the river. A dirt road is visible along the entire southern border of the former Lot 35 from the river to Main Avenue. At the central and eastern portions of the Site, two relatively dark and flat areas are visible. Although the photo is somewhat grainy, the appearance of these areas are consistent with water bodies. The 1940 aerial photo has better resolution and reveals two areas which are clearly water bodies at the same areas noted above. Objects viewed in the 1940 photo are otherwise unchanged from the 1932 photo. A 1947 photo reveals the water bodies have widened and joined and cover the majority of the site. The pipeline is clearly defined in the 1947 photo (also see MAP 13). The land on the southeastern portion of the water body (position of current Lot 35.01) appears to be freshly disturbed soil. The 1951 photo reveals that the site is essentially unchanged. The 1953 photo reveals objects within both the eastern and western portions of the water body. These objects, possibly small islands, are not visible in the 1954 photo. The entire southern flank of the site appears to have been regraded and filled with soil during the period 1947 through 1954. The 1961 photo reveals that the site is essentially unchanged. The 1974 photo reveals that the eastern section of the waterbody has been filled. The 1978 photo reveals that the western section of the waterbody has been predominantly filled. By the 1991 aerial photo, no trace of the waterbody is visible. Finally, the 1995 photo reveals that the building is no longer visable.

During 1982, Wallington sought to enjoin River Drive Park Corporation, which was the owner of the Site at the time, from allowing dumping at the Site by Penral, Inc. By setttlement agreement dated July 30, 1982, River Drive Park Corporation and Penral agreed to restrict dumping to 5,000 cubic yards of demolition materials. According to the agreement, these materials were to be deposited onto the Site, graded and covered with clean earth. (Attachment KK)

During February, August and October of 1990, the NJDEP received complaints of oil sheens on the Saddle River. A source for the February incident was not found, but the other two discharges were traced to a storm drain outfall at the southernmost extent of the

Site which led investigators to the Farmland Dairy facility at 520 Main Avenue, Wallington. Another storm drain incident which occurred on July 30, 1993 was positively traced to a 300 gallon diesel fuel spill at the Farmland facility. (ATTACHMENTS E-H, P) On September 4, 1991 the NJDEP received notification that large underground tanks were partially exposed on the bank of the Saddle River and leaking what appeared to be #6 fuel oil. By letter dated May 23, 1994, the NJDEP found that the landowner of the Site had adequately remediated discharges from fourteen (14) 20,000 gallon underground storage tanks which were the subject of the 1991 incident. The tanks were excavated along with contaminated soil and removed from the Site. A more detailed description of remedial activities associated with these tanks can be found in Sections IV and V below. (ATTACHMENTS I - U)

Based upon all of the above, the NJDEP has determined that the Site was utilized as an unlined landfill and that as such was a potential source for ground water contamination which was known to have contaminated the former municipal wells in Wallington. One of the contaminated wells, which is located approximately 1,400 feet southwest of the Site on Main Avenue, was known to be contaminated by dichloroethene, trichloroethene, tetrachloroethene and vinyl chloride.

Therefore, during the period January 19 through February 3, 1999, the NJDEP conducted soil, ground water, surface water and sediment sampling at and near the Site. The sampling results supported previous work at the underground tank area which indicated that a discharge had been adequately remediated. The sampling also revealed that sediments in the Saddle River adjacent to the tank location are contaminated by petroleum and metals. Additionally, the sampling revealed that the former pond was filled with waste materials that are contaminated with semivolatile organic compounds. Notably absent from soil samples within the landfill are any detections of volatile organic compounds. However, also notable are groundwater data which reveal that volatile organic compounds increase in concentration as depth of groundwater samples increase. The compounds detected in groundwater are identical to those contaminants found in the municipal well. This data, when combined with the soils data, indicates that the volatile organic compounds found in ground water are not attributable to the Site and are attributable to a hydrologically upgradient source.

AOC SUMMARY TABLE

AOC Name	HRS Source Type	Physical State	Waste Quantity
Landfill	Landfill	Liquid and Solid	Unknown

PART III: PERMITS

A. NJPDES

Number	Date Issued	Expiration Date	Formation or Water Body Discharged To
None			

B. New Jersey Air Pollution Control Certificates

Plant ID No.: None

C. BUST Registration

Registration No.: 0222194
No. of Tanks: 14

Tank No.	Capacity (gallons)	Contents of Tank	Status
1 - 14	20,000 each	#6 Fuel Oil	Discharges occurred. All were removed under Bureau of Underground Storage Tanks oversight (case C91-3617) and NJDEP issued a 5/23/94 "No Further Action" letter for the tanks.

D. Other Permits

Issuing Agency	Permit Type	Permit No.	Date Issued	Expiration Date
None known				

PART IV: SOIL EXPOSURE

Describe soil type. Include soil series, composition of the soil and permeability of the soil.

The soils at the Site have been well documented. The Site is covered by "urban fill and debris". Documented thickness of the fill is between 6 feet and approximately 25 feet, although it is suspected that fill is deeper in some areas of the former pond. The naturally occurring soil materials which can be found below the fill are encountered with increasing depth as follows:

Oradell Terrace Deposits: An up to 30-feet thick layer of pale to yellow-brown sands and minor pebble gravel.

Glacial Lake Paramus Deposits: Fine grained reddish-brown to gray silts, clays and fine sands up to 80 feet thick.

Glacial Lake Paramus Lucustrine-Fan Deposits: Coarse-grained brown to red-brown sands and gravels of approximately 20 feet thickness. (ATTACHMENT W)

Discuss contaminants identified in the soil. Include sampling date, sampling agency or company, sample locations, depth and contaminant level. Identify samples collected from a residential property, school, daycare center, workplace, terrestrial sensitive environment or resource. State whether Level 1 or Level 2 contamination is present. For each sampling event, list the name, address and certification number of the lab which performed the analyses. State who conducted the quality assurance review of the data and summarize any data qualifications.

During the period spanning January 19, 1999 through February 3, 1999, the NJDEP conducted sampling at the site. Soil samples were collected as noted in the tables below. No sample was collected from a residential property, school, daycare center, workplace, terrestrial sensitive environment or resource. Since no resident population exists, neither Level 1 nor Level 2 contamination is present. A summary of analytical data is presented in the table on the following page. A complete list of sample results can be viewed at attachments HH and JJ. All sample locations can be viewed on the sample locator map (MAP 2b).

Selected Analytical Results for Soil Samples Collected at Hammersley (1999)

	NJDEP USCC	S1	S2	S3	S4	S5	S6	S7	S8	S9
Sample Depth		15 ft	25 ft	24 ft	22 ft	19 ft	21 ft	16 ft	20 ft	16 ft
Arsenic	20	6.1	5.6	3.5	--	2.2B	6.6	13.2	3.6	2.4
Lead	400	103	347	6.5	--	1.9	41.8	34.9	49.3	7
Magnesium	NA	3,270	1,630	1,650	--	1,590	206	417	1,360	2,200
Vinyl Chloride	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloro-ethene	79	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloro-ethene	23	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloro-ethene	4	ND	ND	ND	ND	ND	ND	ND	ND	ND
PCBs	0.49	ND	ND	ND	0.21	ND	.04J	.19J	0.14	ND
Phenanthrene	NA	0.8	12	.014J	110	ND	.11J	10	1.7	ND
Benzo(b) fluoranthene	0.9	0.3J	**2.4**	ND	**37**	ND	.038J	**5.9**	**0.93**	ND
Benzo(a) anthracene	0.9	0.49	**4.1**	ND	**52**	ND	.058J	**7.5**	**1.0**	ND
Benzo(a) Pyrene	0.66	0.48	**3.6**	ND	**42**	0.35	0.44	**7.2**	**0.98**	ND

All units are parts per million.
"USCC" stands for unrestricted soil cleanup criteria
"NA" stands for not applicable.
"ND" stands for not detected.
"J" stands for an estimated value.
"B" stands for an estimated value due to blank contamination.

Samples of soil were analyzed for volatile organic compounds by Severn Trent Laboratories of Colchester, Vermont. Severn Trent has a NJDEP laboratory certification number of 12543.

Samples of soil were analyzed for metals by Chemtech Consulting Group of Englewood, New Jersey. Chemtech is a USEPA Contract Lab Program laboratory.

Samples of soil were analyzed for semi-volatile organic compounds, pesticides and polychlorinated biphenyls (PCBs) by Industrial Environmental Analysts (IEACT) of Monroe, Connecticut. IEACT is a USEPA Contract Lab Program laboratory.

Volatile organic compounds were not detected in soil samples. Metals, pesticides and PCBs were not detected in excess of NJDEP's Unrestricted Use Soil Cleanup Criteria (USCC). Numerous semivolatile compounds were detected and a number of which were above the USCC. (Attachment HH)

Sample results reveal elevated semi-volatile compounds, which supports visual observations of oily soils mixed with ash, asphalt and other demolition wastes. The semi-volatile compounds detected may be attributable to the presence of asphalt mixed with oil in the landfill. The oil would tend to leach anthracenes and pyrenes from the asphalt. (Photo E, Attachment HH)

Since a resident population does not exist with regard to this site, determinations regarding Level 1 or Level 2 are not required.

BACKGROUND Soil background conditions at the site for all parameters were established at or just above the analytical detection limits by sample S9. (Attachment HH)

Total area of surficial contamination (square feet): Surface soils were not sampled due to a lack of a resident population. Subsurface soils were collected from approximately 15 feet below grade to 25 feet below grade. Soil was collected at this depth to assist in attributing any ground water contamination to the Site.

Although the area of surficial contamination cannot be determined based upon these samples, subsurface contamination is documented by samples S2, S4, S7 and S8 for an area of approximately 1 acre.

If no soil sampling has been conducted, discuss areas of potentially contaminated soil, areas that are visibly contaminated or results from soil gas surveys.

Sampling was conducted as noted above.

Determine if any commercial agriculture, silviculture, livestock production or grazing are present on or within 200 feet of the site.

None of the noted activities are conducted within 200 feet.

Number of people occupying residences or attending school or day care on or within 200 feet of the site:

The Jasontown Apartments abut the southern border of the Site. However, it is estimated that only 20 of the apartments are within 200 feet of the Site. Using an average of 3 persons per apartment, it is estimated that 60 people reside within 200 feet of the Site. However, none of these people live within 200 feet of contaminated soil as documented by sampling. Additionally, access to the site from Jasontown Apartments is restricted by an 8 foot fence. (Photos C & D)

Number of workers on or within 200 feet of the site:

There are 2 commercial facilities within 200 feet of the site. It is estimated that 30 workers report to these facilities.

Number of on-site employees: Zero. The Site is a vacant lot.

PART V: GROUND WATER ROUTE

A. HYDROGEOLOGY

Describe geologic formations and aquifer(s) of concern. Include interconnections, confining layers, discontinuities, composition, hydraulic conductivity and permeability.

The Borough of Wallington is located in the Piedmont Physiographic Province of New Jersey along the Passaic River just south of its confluence with the Saddle River. The Piedmont Province is characterized by gently rolling lowlands of sedimentary rocks ranging in elevation from sea level to 400 feet above sea level, intersected by hills of igneous rock, ranging up to 879 feet above sea level. In the northern section of Wallington Borough, elevations range from over 120 feet above sea level at the Jefferson School on Mount Pleasant Avenue, sloping generally southeast to about 40 feet above mean sea level in the vicinity of the Main Avenue Well, to near sea level at the confluence of the Passaic and Saddle Rivers.

The Piedmont Province or Newark Basin contain the Newark Supergroup of sedimentary and igneous rock of Triassic to Jurassic age. In Wallington, the Passaic formation member of the Newark Supergroup is present, with alternating layers of red siltstones, mudstones and sandstones. Generally, the siltstone and mudstone layers contain few fractures whereas the sandstone layers are highly fractured. The porosity in these sedimentary layers is mainly due to the fracturing of the parent, so the bedding partings and the highly fractured sandstone layers are the most permeable zones in the Passaic Formation.

The Passaic Formation bedrock in the Wallinton area is overlain by Quaternary-age unconsolidated gaciofluvial deposits. These surficial deposits of Quaternary-age unconsolidated sediments consist of sands, gravels, silts, and clays, with some areas covered by artificial fill.

The underlying sedimentary rock layers of the Passaic Formation, the major water-bearing formation in the area, generally strike northeast-southwest and dip gently (~5-15^0) to the northwest. Locally, measurements by the United States Geologic Survey and New Jersey Geologic Survey at the Woodridge High School about one mile southeast of the Site found a north 35^0 east strike and a 10^0 northwest dip. Investigations conducted at nearby sites such as the Maywood Chemical Superfund Site and the Industrial Latex Superfund Site have found or used these same strike and dip patterns. CA Rich (see attachment W) found similar strike and dip features at the Curtiss Wright Site with a north 30^0 east strike and a 10-20^0 dip to the northwest. Typically, there are two sets of near vertical joints, a prominent set parallel to strike and a less prominent set parallel to dip. These vertical joints are typically not as wide or as extensive as the bedding partings.

The hydrogeology in the Main Avenue Study Area is complex and controlled by the geologic framework, topographic features, surface water bodies and local ground water withdrawals such as at the Curtiss Wright and Farmland Dairy sites. Ground water is first encountered in the overburden at depths of approximately 20 feet. Overburden ground water is fed by precipitation and generally moves horizontally toward local discharge areas such as the Saddle River or moves vertically into the bedrock.

At higher elevations, overburden ground water is expected to move into the bedrock. But at lower elevations, such as at the Site, ground water is expected to move horizontally toward discharge areas such as the Saddle River. At the Site, four 26 to 27 feet deep monitor wells were installed in the overburden during 1992. The wells revealed that overburden ground water was moving toward the Saddle River.

Overall, ground water flow in the overburden in the area of the Site is anticipated to be toward the northwest and west following topographic and surface water features. Overall, ground water flow in the Passaic formation will migrate downdip (to the northwest) and downstrike (to the southwest), with the preferential flow being along the strike to the southwest. (ATTACHMENT W)

Depth to aquifer of concern: 60 feet
Depth from lowest point of waste disposal/storage to highest seasonal level of the saturated zone of the aquifer of concern:

The overburden aquifer is hydraulically connected to the bedrock (Passaic) aquifer and recharges same. However, the overburden aquifer is not a part of the Passaic. Waste has been deposited to depths below the highest seasonal level of the saturated zone. Therefore, wastes come into direct contact with ground water in the overburden aquifer.

Thickness and permeability of the least permeable layer between the ground surface and the aquifer of concern:

The Site has been filled with sands and demolition wastes. The permeability of same would be equivalent to that of coarse sand (10^{-4} cm/sec).

Thickness of aquifer: Overburden Aquifer - Approximately 80 feet
Passaic Aquifer - Greater than 1,000 feet
Direction of ground water flow: Generally west to southwest.
Karst (Y/N): No **Wellhead Protection Area (Y/N):** No

B. MONITORING WELL INFORMATION

Lake Side Properties Temporary Monitor Wells - 1992

Well No.	Screen Depth (feet)	Formation	Location
MW1	11 to 26.5	Overburden Aquifer	Former location of Underground Petroleum Storage Tanks
MW2	10.5 to 26	Overburden Aquifer	Former location of Underground Petroleum Storage Tanks
MW3	11.5 to 27	Overburden Aquifer	Former location of Underground Petroleum Storage Tanks
MW4	11.5 to 27	Overburden Aquifer	Former location of Underground Petroleum Storage Tanks

Jordan, Jones & Goulding temporary Monitor Wells - February, 1999

Well No.	Screen Depth (feet)	Formation	Location
FS1	15 to 25	Passaic overburden	Adjacent to Saddle River, at former underground tanks
FS2	15 to 25	Passaic overburden	Lagoon
FD1	66 to 71	Passaic overburden	Lagoon
FD2	63 to 68	Passaic overburden	Lagoon
FM1	45 to 50	Passaic overburden	Lagoon
FM2	41 to 46	Passaic overburden	Lagoon

Identify the upgradient well(s): Relative to the 1992 Farmland Dairy wells, the upgradient well was MW-1.

Relative to the 1999 Jordon, Jones & Goulding wells, it is not known which well was upgradient since they were neither surveyed nor were static water levels measured.

Briefly discuss why the monitoring wells were installed and describe contaminants identified in the monitoring wells. Include Well No., sampling date, sampling agency or company, contaminant levels and remediation standards. Discuss any other groundwater sampling that has occurred. For each sampling event, list the name, address and certification number of the lab which performed the analyses. State who conducted the quality assurance review of the data and summarize any data qualifications.

During 1992, four monitor wells were installed by Lake Side Properties (see table above) in response to petroleum discharges from 14 20,000 gallon underground storage tanks located within the eastern bank of the Saddle River at the Site. Data presented in the June 30, 1992 report from Lake Side Properties indicate that naphthalene-related targeted and non-targeted semi-volatile compounds were present in the MW3. Based upon the ground water flow data presented in the same report from Lake Side Properties,

MW3 is in a downgradient position from the tanks. The naphthalene compounds, therefore, are linked to the fuel oil which was discharged from the tanks. The presence of trichloroethene was noted in the upgradient well (MW1) at 2.2 ppb. By letter dated August 17, 1992, the NJDEP stated that "no volatile or semi-volatile compounds [were] present above the proposed cleanup goals". By letter dated May 23, 1994, NJDEP concluded that no further action was required relative to the tanks. (ATTACHMENT U)

During the period spanning January 19, 1999 through February 3, 1999, the NJDEP conducted sampling at the site. Ground water samples were collected via Geoprobe, a hydraulically powered, direct push-point device.

Samples were not collected from a residential property, school, daycare center, workplace, terrestrial sensitive environment or resource. Since no resident population exists, neither Level 1 nor Level 2 contamination is present. A summary of Analytical data is presented in the tables below and are expressed in parts per billion (ppb). A complete list of sample results can be viewed at attachments HH and JJ. All sampling locations can be viewed on the sample locator map (MAP 2b).

Ground water was analyzed for semi-volatile organic compounds, pesticides and polychlorinated biphenyls (PCBs) by Severn Trent Laboratories of Colchester, Vermont. Severn Trent has a NJDEP laboratory certification number of 12543.

Ground water was analyzed for volatile organic compounds by PDP Analytical Services of The Woodlands, Texas. PDP is a USEPA Contract Lab Program laboratory.

Ground water samples were collected at intervals of 20 to 25 feet, 40 feet, 55 feet and 70 feet below grade. With regard to volatile organic compounds, every sample location at the Site exhibited increasing contamination with depth. At locations GW2, GW3 and GW4, the concentration increased an order of magnitude from the 40 foot sample to the 70 foot sample. These sample locations were at the most upgradient edge of the Site, indicating that the contaminants found at depth are migrating onto the Site from an upgradient location.

Ground water samples did not reveal pesticide or PCB contamiation. Results for semi-volatile compounds did not reveal contamination above a standard despite the visual observations of oil sheens on ground water (GW8B) and analytical data confirming contamination of soils (S4) with semi-volatile compounds.

BACKGROUND: Background was established by sample GW1A which did

not reveal contamination by any volatile organic compounds, semi-volatile organic compounds, pesticides or PCBs.

The tables below use the abbreviations DCE for dichloroethylene, TCE for trichloroethylene and PCE for tetrachloroethylene.

Sample #	Sample Depth	1,2-DCE (CIS)	TCE	Vinyl Chloride	PCE
GW1A	20 feet	ND	ND	ND	ND
GW1B	30 feet	8 ppb	8 ppb	ND	1 ppb
GW1C	40 feet	7 ppb	9 ppb	ND	1 ppb
GW1D	40 feet	7 ppb	9 ppb	ND	1 ppb
Note: Geoprobe could not penetrate beyond 40 feet in depth					

Sample #	Sample Depth	1,2-DCE (CIS)	TCE	Vinyl Chloride	PCE
GW2A	25 feet	0.6 PPB	ND	ND	ND
GW2B	40 feet	18 ppb	4 ppb	3 ppb	ND
GW2C	55 feet	490 ppb	160 ppb	1 ppb	6 ppb
GW2D	70 feet	270 ppb	100 ppb	2 ppb	5 ppb

Sample #	Sample Depth	1,2-DCE (CIS)	TCE	Vinyl Chloride	PCE
GW3A	25 feet	ND	0.6 ppb	ND	ND
GW3B	40 feet	0.8 ppb	0.7 ppb	ND	ND
GW3C	55 feet	67 ppb	25 ppb	ND	1 ppb
GW3D	70 feet	93 ppb	70 ppb	1 ppb	6 ppb
GW16B	GW3B Duplicate	0.8 ppb	0.6 ppb	ND	ND

Sample #	Sample Depth	1,2-DCE (CIS)	TCE	Vinyl Chloride	PCE
GW4A	Note: These sample bottles were broken. Also broken were all of GW5 samples and all of GW13 excepting the GW13A sample.				
GW4B					
GW4C					
GW4D	70 feet	270 ppb	78 ppb	3 ppb	1 ppb

Sample #	Sample Depth	1,2-DCE (CIS)	TCE	Vinyl Chloride	PCE
GW7A	25 feet	ND	ND	ND	ND
GW7B	40 feet	9 ppb	ND	5 ppb	ND
GW7C	55 feet	12 ppb	0.8 ppb	ND	ND ppb
GW7D	69.4 feet	22 ppb	16 ppb	2 ppb	20 ppb
Note: Chlorobenzene was detected at GW7C & 7D at 21 ppb and 13 ppb respectively. The GWQS for same is 50 ppb. Note: Geoprobe could not penetrate deeper than 69.4 feet.					

Sample #	Sample Depth	1,2-DCE (CIS)	TCE	Vinyl Chloride	PCE
Note: None of the above noted compounds were detected at GW8. However, a sheen was observed on the ground water collected and naphthalene was detected in GW8B and GW8C at 2ppb. The GWQS for naphthalene is 300 ppb.					

Sample #	Sample Depth	1,2-DCE (CIS)	TCE	Vinyl Chloride	PCE
GW10A	21 feet	ND	ND	ND	ND
GW13A	20 feet	2 ppb	ND	0.7 ppb	ND
GW14A	24 feet	4 ppb	5 ppb	ND	ND

3rd Party "Due Diligence" Ground Water Sampling - February 1999

Sample #	Sample Depth	1,2-DCE (CIS)	TCE	Vinyl Chloride	PCE
FS2	25 feet	ND	ND	ND	ND
FS1	25 feet	ND	ND	ND	ND
FM2	47 feet	ND	ND	ND	ND
FM1	45 feet	120 ppb	13 ppb	19 ppb	ND
FD2	67 feet	230 ppb	30 ppb	150 ppb	ND
FD1	72 feet	4,700 ppb	10,000 ppb	150 ppb	190 ppb

During February of 1999, a third party interested in purchasing the Site conducted sampling in accordance with due diligence requirements. Their ground water data confirmed data collected by the NJDEP during January. As is demonstrated by the data in the table above, contamination is not found in the shallow ground water samples but is found in the deeper samples, especially those which were collected just above bedrock (FD1 and FD2).

C. POTABLE WELL INFORMATION

Distance to nearest potable well:

The Site is 1,300 feet northeast of wallington Borough's Main Avenue well.

Depth of nearest potable well:

The Main Avenue well is 400 feet deep.

Identify all public supply wells within 4 miles of the site:

Water Company	Distance from Site (miles)	Depth (feet)	Formation
Wallington Water Department	0.3	400	Passaic
Wallington Water Department	0.8	503	Passaic
Wallington Water Department	0.8	506	Passaic
Wallington Water Department	1.0	400	Passaic
Wallington Water Department	1.0	400	Passaic
Garfield Water Department	1.2	300	Passaic
Garfield Water Department	1.4	475	Passaic
Garfield Water Department	1.5	400	Passaic
Garfield Water Department	2.0	405	Passaic
Garfield Water Department	3.5	404	Passaic
Garfield Water Department	3.5	300	Passaic
Garfield Water Department	3.6	353	Passaic
Garfield Water Department	3.6	400	Passaic
Garfield Water Department	3.6	485	Passaic
Garfield Water Department	3.6	350	Passaic
Garfield Water Department	3.6	353	Passaic
Garfield Water Department	3.6	358	Passaic
Garfield Water Department	3.7	350	Passaic

Discuss private potable well use within 4 miles of the site. Include depth, formation and distance, if available.

The area is highly urbanized. The use of private wells for potable purposes is very low and no potable wells were discovered by this investigation.

Discuss the site's source of potable water.

The site is a vacant lot and does not have water service. The area is supplied water from the Borough of Wallington which gets water via bulk purchase agreements with the Hackensack Water Company and the Passaic Valley Water Authority.

Discuss information regarding the population utilizing wells that are known to be contaminated. Also include any other evidence of contaminated drinking water or wells closed due to contamination. State whether Level 1 or Level 2 contamination is present.

From the early part of this century, the Borough of Wallington (the Borough) maintained wells to serve the Borough's need for water. By the 1960s, the Borough was using five wells which were identified by their locations as follows, Hathaway Street #8, Hathaway Street #5, Main Avenue, Dul Field and Lester Street (MAP 10).

The well at Main Avenue was closed by the Borough during the mid-1970s due to concentrations of volatile organic contaminants present in excess of the drinking Water Maximum Contamination Levels (MCLs), which is Level 1 contamination. Records maintained by the New Jersey Department of Environmental protection (NJDEP) indicate that the Borough offered a number of reasons for closing the well, including that it suffered from "sand problems" and that it exhibited "excessive manganese content". However, recent interviews with current and former Superintendents of the Borough Water Department indicate that the well was closed due to contamination by a petroleum substance. Robert Siery, the current Superintendent, stated that the well underwent a unsucessful 72-hour pumping test during the early 1980s. He stated that after a number of hours, the water began to exhibit a "solvent" odor which increased in intensity over a number of hours. William McNiff, the former Superintendent, also recalled an odor and stated that the water was "pumped to waste" in the street which caused a "cleaning fluid" odor in the neighborhood which was intense enough to cause complaints from local residents, resulting in early cessation of the 72 hour test. While original analytical data regarding the Main Avenue well was not found, a report from the Curtiss Wright Company summarizes data which indicates that the

Main Avenue well was sampled during 1987 for volatile organic compounds (VOCs), semivolatile compounds, pesticides, PCBs, metals and cyanide during 1987. The data summary indicates that the following VOCs were discovered, but does not mention results for the other parameters.

1987 Sample from the Main Avenue Well

Contaminant	Results in ug/Liter (ppb)
1,1-DICHLOROETHANE	9.24
1,1-DICHLOROETHENE	12
1,2-DICHLOROETHANE	6.08
METHYLENE CHLORIDE	6.94
TETRACHLOROETHENE	337
1,2-TRANS-DICHLOROETHENE	1,110
1,1,1-TRICHLOROETHANE	6.75
TRICHLOROETHENE	4,930
VINYL CHLORIDE	81.2

During the 1980s, the Borough conducted analyses of water collected from its four other public supply wells. The sample results revealed contamination as listed in the following table.

Analytical Results from Borough Wells

Well Sampled	Depth (feet)	Date Sampled	Contaminant	Result (ppb)	NJDEP MCL
Hathaway #8	300	6/21/83	trichloroethene	23	1
			1,1,1-trichloroethane	2	30
		12/31/85	Trichloroethene	47	1
		1/15/86	Trichloroethene	56	1
Hathaway #5		7/19/83	Trichloroethene	47	1
		3/21/85	Trichloroethene	75	1
			1,1,1-trichloroethane	1	30
		8/6/85	Trichloroethene	81	1
			1,1,1-trichloroethane	3	30
Dul Field		4/15/85	Trichloroethene	33	1
		3/3/86	Trichloroethene	23	1
			Tetrachloroethene	2.5	1
Lester St.		11/30/82	Trichloroethene	7.6	1
			Tetrachloroethene	20	1
		3/3/86	Trichloroethene	11	1
			Tetrachloroethene	13	1
			1,2-trans dichloroethene	53	100

"GWQS" stand for Ground Water Quality Standards (ATTACHMENT W)
"MCL" stand for Maximum Contaminant Level

During 1986, the Borough voluntarily removed all four remaining wells from service due to the noted contamination. The Borough provides potable water to its residents via bulk purchase agreements with the Hackensack Water Company and the Passaic Valley Water Authority. The City of Garfield also maintains wells for production of potable water. Garfield also removed wells from service due to petroleum contamination. Based upon the presence of free floating petroleum in the Midland Avenue wellfield supply, it would appear that the Garfield contamination is not related to the contamination which impacted Wallington's wells.

United Water Company also removed wells from service due to contamination. United Water closed three wells in Bogota Borough and one well in Rochelle Park. The Bogota wells were closed due to tetrachloroethene and trichloroethene contamination. The Rochelle Park well was closed due to inorganic contaminants.

Tabulate for each aquifer the population utilizing that aquifer for drinking purposes within 4 miles of the site. Include only those populations which utilize wells that have a potential to be impacted, not wells which are actually impacted.

Distance from site (miles)	Population/Aquifer
	Passaic
0 - ¼	Zero - All wells closed
1/4 - ½	Zero - All wells closed
1/2 - 1	Zero - All wells closed
1 - 2	Zero - All wells closed
2 - 3	Zero - No wells
3 - 4	36,000 - Garfield City, Elmwood Park Well Field

Identify industrial/irrigation wells within the vicinity of the site. Include depth, formation, distance and direction, if available.

There are approximately 50 industrial wells within the vicinity which draw 100,000 gallons or more of water from the Passaic aquifer daily. The vast majority of these wells are from 250 to 400 feet deep, but some are up to 650 feet deep. (MAP 5)

D. POTENTIAL

Discuss the potential for ground water contamination, including any other information concerning the ground water contamination route.
As noted above, groundwater is contaminated by volatile organic compounds. This contamination is not attributable to the site.

PART VI: SURFACE WATER ROUTE

A. SURFACE WATER

Does a migration pathway to surface water exist? (Y/N): Yes
Flood plain: Site is above 100 year flood plain due to extensive filling.

Slope: 0 to 3 degrees

Does contaminated ground water discharge to surface water? (Y/N):

Yes. Ground water flow direction at the location of the former underground storage tanks, in the shallow overburden aquifer has been shown to be to the west, which is directly toward the Saddle River. The ground water at the site is contaminated by volatile organic compounds from an upgradient source.

Identify known or potentially contaminated surface water bodies. Follow the pathway of the surface water and indicate all adjoining bodies of water along a route of 15 stream miles.

Surface Water Body	Distance from Site (miles)	Flow (cfs)	Usage(s)
Saddle River	0.0	86	Recreation
Passaic River	0.5	890	Recreation, Commerce
Newark Bay	6	---	Recreation, Commerce

(ATTACHMENT LL)

Identify drinking water intakes and fisheries within 15 miles downstream (or upstream in tidal areas) of the site. For each intake or fishery identify the distance from the point of surface water entry, the name of the fishery and/or supplier and population served.

The nearest surface water intake is well upstream of the site above the head of tide. (MAP 14) There is no documented fishery in the Saddle River. There is a posted fishing ban on the Passaic River. (ATTACHMENT MM)

Discuss surface water or sediment sampling conducted in relation to the site. Discuss visual observations if analytical data are not available (include date of observation). Include surface water body, sampling date, sampling agency or company, contaminant. State whether Level 1 or Level 2 contamination is present for surface water. State whether Level 2 contamination of sediments is present. For each sampling event, list the name, address and certification number of the lab which performed the analyses. State who conducted the quality assurance review of the data and summarize any data qualifications.

During January of 1999, the NJDEP conducted surface water and sediment sampling in the Saddle River at five locations which spanned areas upstream, adjacent to and downstream of the Site. The locations can be viewed on map 2b.

Surface water and sediment samples were analyzed for metals by Chemtech Consulting Group of Englewood, New Jersey. Chemtech is a USEPA Contract Lab Program laboratory.

Sediment was analyzed for volatile and semivolatile organic compounds, pesticides and polychlorinated biphenyls (PCBs) by Severn Trent Laboratories of Colchester, Vermont. Severn Trent has a NJDEP laboratory certification number of 12543.

Surface water was analyzed for volatile organic compounds by PDP Analytical Services of The Woodlands, Texas. PDP is a USEPA Contract Lab Program laboratory.

The data quality assurance review was conducted by the United States Environmental Protection Agency and Environmental Quality Associates. The data was found to be acceptable. (ATTACHMENT II)

NJDEP Surface Water Sample Results, Volatiles - January 1999

Sample Location	Vinyl Chloride	1,2-cis-DCE	Chlorobenzene	TCE
SW1- Upstream	2 ppb	5 ppb	2 ppb	2 ppb
SW2 - site	2 ppb	5 ppb	2 ppb	1 ppb
SW3 - site	2 ppb	5 ppb	2 ppb	1 ppb
SW4 - site	2 ppb	5 ppb	2 ppb	1 ppb
SW5 - downstream	2 ppb	5 ppb	2 ppb	0.9 ppb

NJDEP Sediment Sample Results, Volatiles - January 1999

Sample Location	Vinyl Chloride	Cis-DCE	Chlorobenzene	TCE
SW1 - upstream	ND	ND	ND	ND
SW2 - site	ND	ND	ND	ND
SW3 - site	0.91 ppm	1.9 ppm	ND	ND
SW4 - site	ND	ND	ND	ND
SW5 - downstream	ND	ND	ND	ND

NJDEP Surface Water Sample Results, Semivolatiles - January 1999

Sample Location	Benzo (a) Pyrene	Fluoranthene	Phenanthrene	Total TICs
SW1 - upstream	ND	ND	ND	21 ppb
SW2 - site	ND	ND	ND	7 ppb
SW3 - site	ND	ND	ND	16 ppb
SW4 - site	Bottle broken	Bottle broken	Bottle broken	Bottle broken
SW5 - downstream	0.6 ppb	0.2 ppb	0.2 ppb	6 ppb

Sample Location	Benzo (a) Pyrene	Fluoranthene	Phenanthrene	Total TICs
SED1 - upstream (TOC: 1.4%)	**0.97 ppm**	**2.3 ppm**	**1.5 ppm**	12 ppm
SED2 - site (TOC: 1.2%)	Bottle broken	Bottle broken	Bottle broken	Bottle broken
SED3 - site (TOC: 4.0%)	**1.7 ppm**	**2.7 ppm**	**2.7 ppm**	100 ppm
SED4 - site (TOC: 2.0%)	**1.5 ppm**	**2.9 ppm**	**2.6 ppm**	37 ppm
SED5- downstream (TOC: 4.0%)	**2.7 ppm**	**4.0 ppm**	**4.9 ppm**	100 ppm
NJDEP Low Effects Level	**0.32 ppm**	0.75 ppm	0.56 ppm	NA
NJDEP Severe Effects Level	1,480 ppm	1,020 ppm	950 ppm	NA

NJDEP Sediment Sample Results, Metals - January 1999

Sample Location	Arsenic	Cadmium	Copper	Lead
SED1 - upstream (TOC: 1.4%)	ND	ND	**36 ppm**	**92 ppm**
SED2 (TOC: 1.2%)	Bottle broken	Bottle broken	Bottle broken	Bottle broken
SED3 - USTs (TOC: 4.0%)	**21 ppm**	**5 ppm**	**1,060 ppm**	**173 ppm**
SED4 (TOC: 2.0%)	5 ppm	ND	**48 ppm**	**62 ppm**
SED5- downstream (TOC: 4.0%)	**6 ppm**	ND	**66 ppm**	**188 ppm**
NJDEP Low Effects Level	**6 ppm**	**0.6 ppm**	**16 ppm**	**31 ppm**
NJDEP Severe Effects Level	33 ppm	10 ppm	110 ppm	250 ppm

Surface water results for volatile organic compounds revealed that all locations had approximately the same concentrations of the same four contaminants. This is indicative of a contaminant source which is upstream of the Site. The semivolatile results for surface water did not reveal any trend of contaminants which were, in general, at very low concentrations.

Sediment contaminant concentrations have a positive correlation with Total Organic Carbon concentrations (TOC), which in turn have

a positive correlation to deposition zones. Increased contaminant levels at SED3 and SED5, therefore, appear to be related to sediment deposition rather than discharges from the Site. This suggests that the contaminant source is upstream of the Site.

Lead concentrations were above NJDEP lower effects level (LEL) for benthic organisms in all samples. However, there is no trend to the lead exceedances and the NJDEP finds that its presence in sediments is not attributable to the Site.

At SED1, which is the upstream sample location, arsenic and cadmium were not detected, but copper was in excess of the LEL. It should be noted that SED1 has the lowest TOC of all sediment samples. Low TOC generally correlates with faster moving water and non-depositional environment. This is supported by NJDEP staff Observations of shallow faster moving water at this location and sandy, gravelly sediments at SED1.

At the SED3 location, which is adjacent to the site, arsenic, cadmium and copper concentrations were all in excess of the LEL and significantly more concentrated than the upstream sample. The SED4 location which is 100 feet downstream from SED3, exhibited arsenic and copper concentrations slightly above the LEL. At SED4, cadmium was not detected and copper was comparable to the upstream concentration.

Relative to the attribution of the sediment contamination to the Site, it should be noted that all eight soil samples collected within the on-site wastes had arsenic, cadmium, copper and lead concentrations below the USCC. Nevertheless, the elevated concentrations of arsenic, cadmium and copper at sediment sample location SED3 technically supports a finding that metals contamination in sediments is attributable to the Site.

Pesticides and PCBs were detected in sediments at levels below method detection limits, but slightly above NJDEP lowest effects levels for benthic organisms. The distribution of contaminants did not suggest a source related to the Site.

Determine if a contaminant on site displays bioaccumulative properties. Identify all bioaccumulative substances that may impact the food chain.

Sample Location	Arochlor 1232	Arochlor 1254
S4	210 ppb	ND
S7	ND	190 ppb
S8	ND	140 ppb

Determine if surface water is used for irrigation of commercial food or commercial forage crops, watering of commercial livestock or commercial food preparation.

None of the noted uses were discovered.

Discuss the potential for surface water contamination, include any additional information concerning the surface water route.

As noted above, surface water contamination was discovered.

B. SENSITIVE ENVIRONMENTS

Identify all sensitive environments, including wetlands, along the 15 stream-mile pathway from the site:

No wetlands were discovered downstream of the site within seven miles. After that point, surface water meets Newark Bay.

PART VII: AIR ROUTE

Discuss observed or potential air release.

There are no potential or observed air releases.

Identify populations residing within 4 miles of the site.

Distance (miles)	Population
0 - 1/4	1,484
1/4 - 1/2	4,131
1/2 - 1	30,131
1 - 2	114,045
2 - 3	85,601
3 - 4	129,259

Identify sensitive environments and wetland acreage within 4 miles of the site.

Distance	Type of environment	Wetland acreage
0 - 1/4	Wetland	0 acres
> 1/4 - 1/2	Wetland	0 acres
> 1/2 - 1	Wetland	0 acres
> 1 - 2	Wetland	92 acres
> 2 - 3	Wetland	594 acres
> 3 - 4	Wetland	1,000 acres

Identify all land resources (commercial agriculture, silviculture or recreation) within 4 miles of the site.

None were discovered.

PART VIII: REMOVAL ACTION AND/OR IEC CONDITION

Discuss conditions which constitute an Immediate Environmental Concern (IEC) or warrant EPA Removal Action consideration (improper storage of incompatible/reactive materials, leaking or unsound containers, inadequate site security, subsurface gas threat).

Conditions at this site due not represent an IEC or warrant any removal action.

PART IX: ENFORCEMENT ACTIONS

1. **Type of enforcement activity:** No enforcement actions.

PART X: CONCLUSIONS AND RECOMMENDATIONS

Sampling conducted by the NJDEP during January of 1999 indicates that subsurface soils at the Site are contaminated with semi-volatile organic compounds at concentrations which exceed NJDEP unrestricted use soil cleanup criteria. These soil contaminants are attributable to wastes deposited at the Site, however, they do

not appear to have impacted ground water at concentrations above NJDEP Ground Water Quality Standards. No volatile organic contaminants were discovered in association with on-site soils.

Relative to the attribution of the sediment contamination to the Site, it should be noted that all eight soil samples collected within the on-site wastes had arsenic, cadmium, copper and lead concentrations below the USCC. Nevertheless, the elevated concentrations of arsenic, cadmium and copper at sediment sample location SED3 technically supports a finding that metals contamination in sediments is attributable to the Site.

Based upon the hydrogeologic characteristics of the overburden aquifer (see Part V, section A above) NJDEP's ground water sampling at the upgradient border of the Site revealed that volatile organic compounds are migrating onto the Site from an upgradient source. Furthermore, groundwater sampling at the central portion of the Site, where waste deposition is deepest, revealed that there were no volatile organic compounds associated with the waste in the shallow portion of the overburden aquifer. This supports the NJDEP's conclusion that the Site is not a source of volatile organic contaminants in groundwater, nor is it a source of the contamination detected at the Wallington Well-field.

As a result of confirmed soil contamination, and, possibly, contamination of sediments in the adjacent Saddle River, further remedial action is required.

No further action is required under CERCLA.

Submitted by: Nick Sodano
Title: HSMS 2
NJDEP, Division of Publicly Funded Site Remediation,
Bureau of Environmental Measurements and Quality Assurance
Environmental Measurements and Site Assessment Section
Date: June 30, 2000

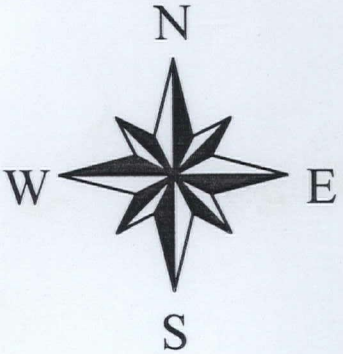
PART XI: POTENTIALLY RESPONSIBLE PARTIES

NAME	OWNER/OPERATOR/ KNOWN DISCHARGER	CURRENT ADDRESS
Farmland Dairy	Owner	520 Main Avenue Wallington Borough New Jersey

MAPS

HAMERSLEY MANUFACTURING COMPANY LANDFILL
MAIN AVENUE
WALLINGTON BOROUGH, BERGEN COUNTY
LAT 40 51 43 LONG 74 06 03

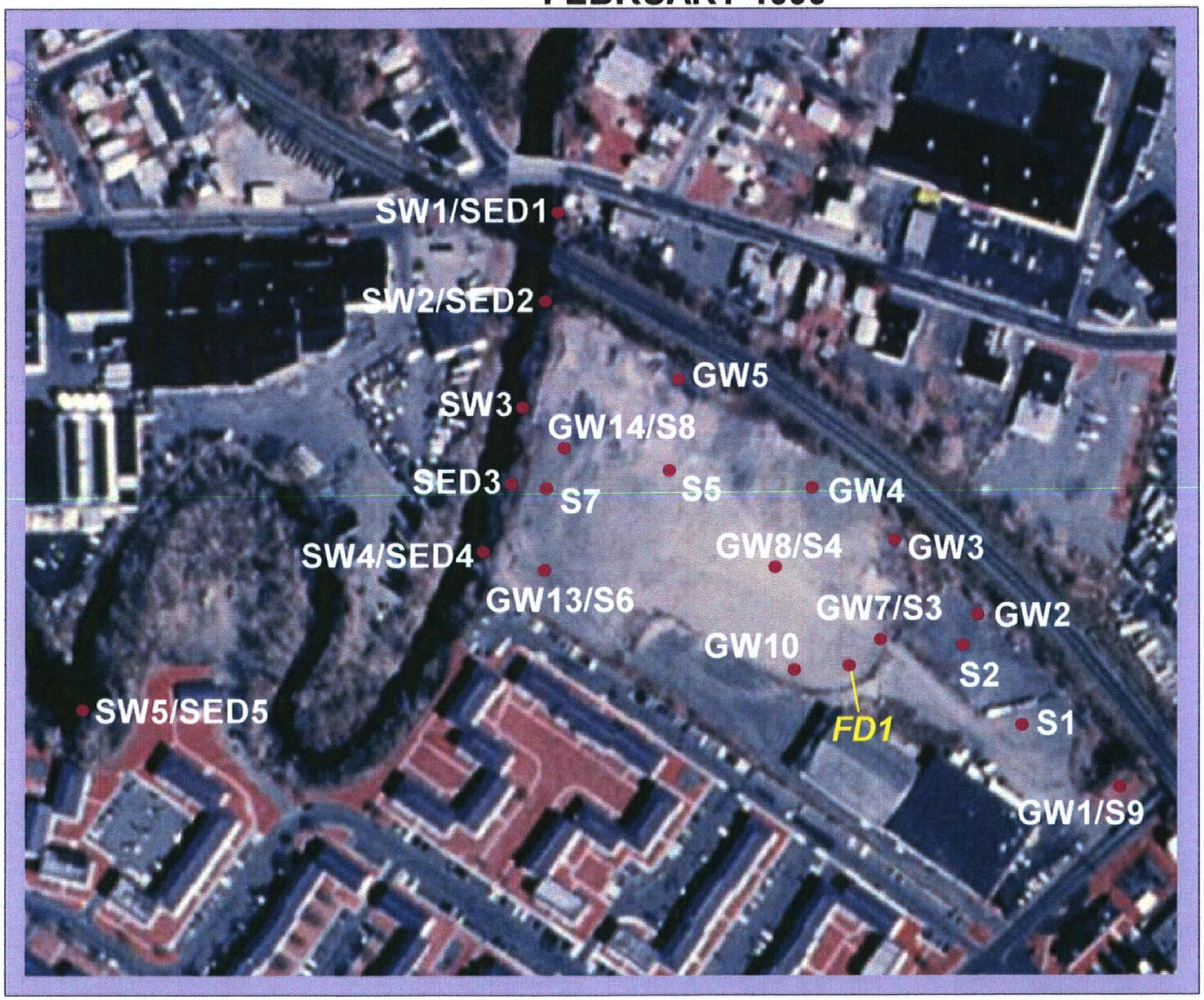
MAP CREATED 10/1/98



MAP 2a - SITE LOCATOR
HAMERSLEY MANUFACTURING COMPANY LANDFILL
WALLINGTON BOROUGH, BERGEN COUNTY

1000 0 1000 2000 Feet

MAP 2 b - SAMPLE LOCATION MAP
HAMERSLEY MANUFACTURING COMPANY LANDFILL
WALLINGTON, BERGEN COUNTY
FEBRUARY 1999

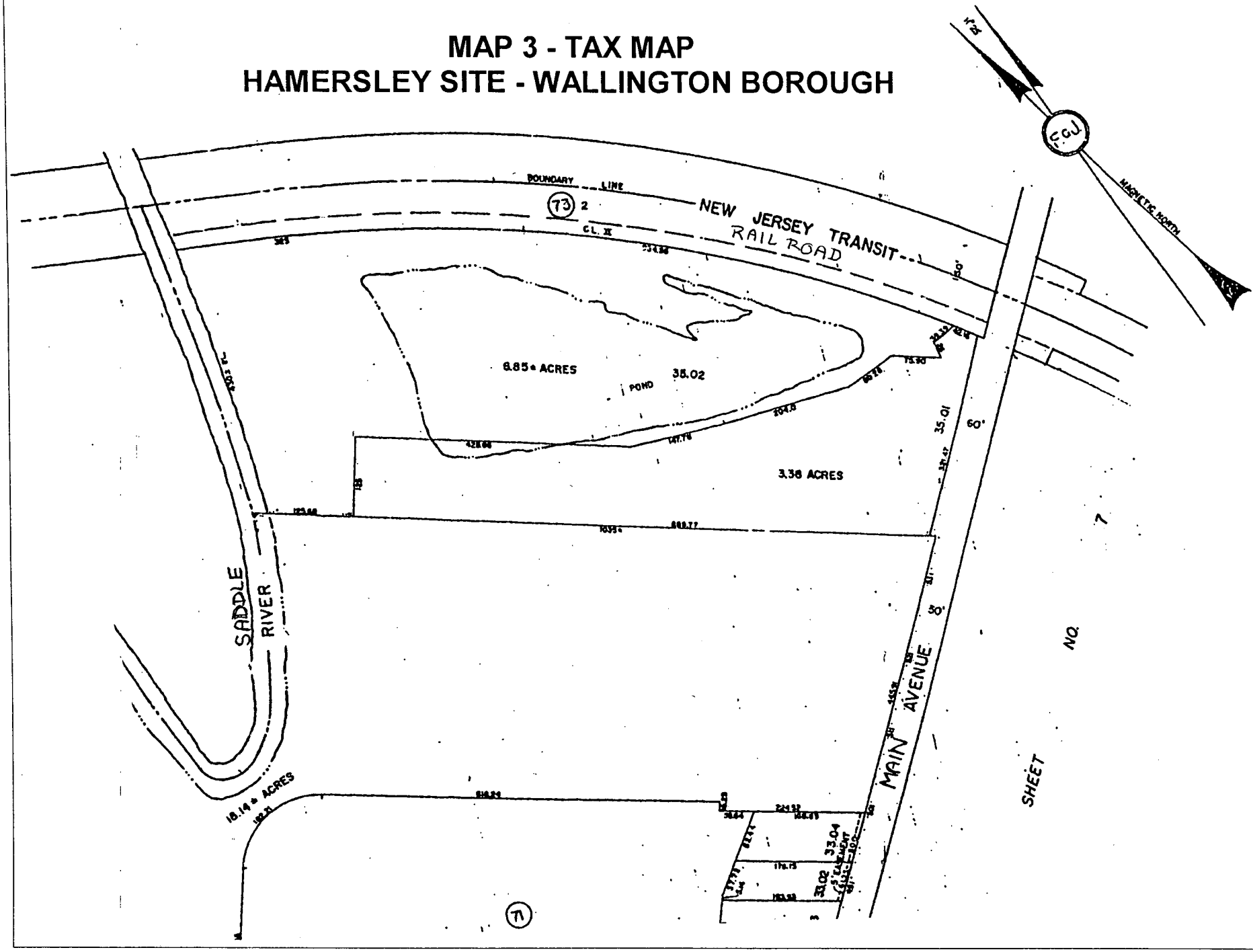


500 0 500 1000 Feet

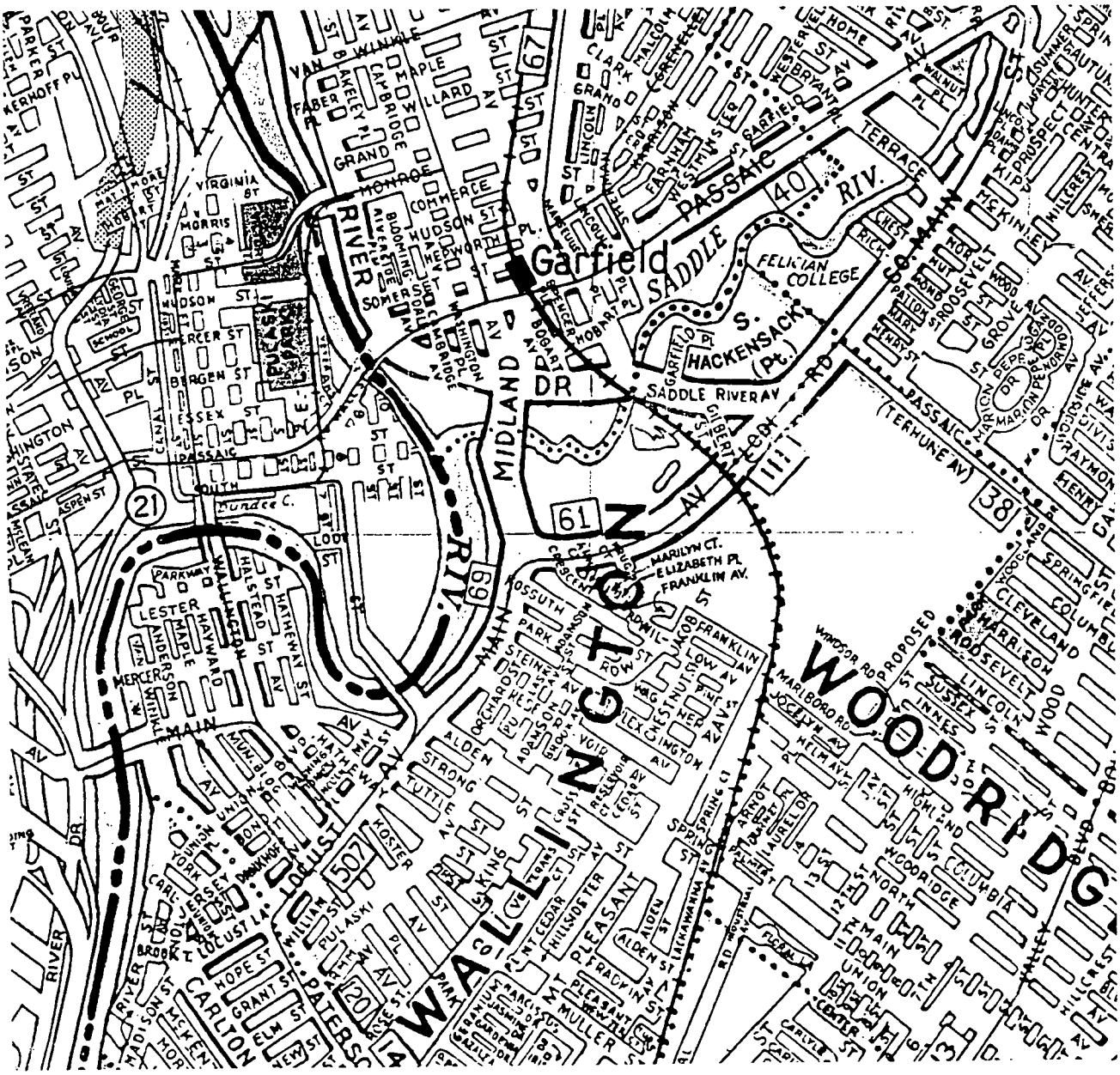
● SAMPLE LOCCATIONS

NOTE: FD1 represents the location of a temporary monitor well installed by third party personnel during February 1999.

MAP 3 - TAX MAP
HAMERSLEY SITE - WALLINGTON BOROUGH



MAP 4 - HANGSTROM ROAD MAP (1983)
HAMERSLEY SITE
WALLINGTON, BERGEN COUNTY



Scale in Feet (Approx.)

2,000 0 2,000 4,000

N

W E

S

SUBJECT TO REVISION

WATER WITHDRAWAL POINTS WITHIN 5.0 MILES OF:

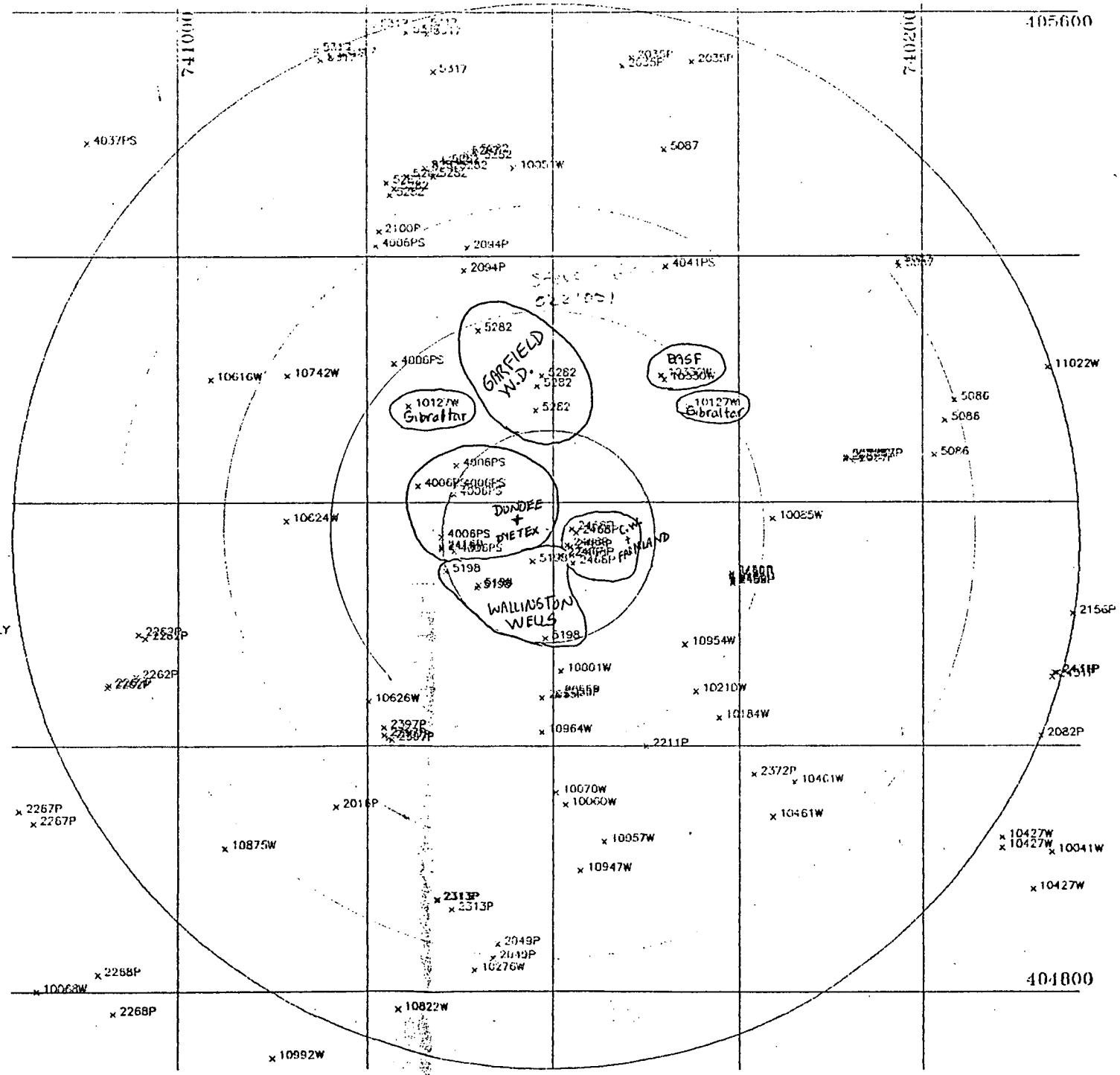
LATITUDE 405143
LONGITUDE 740603

DRAFT

SCALE: 1:63,360
(1 Inch = 1 Mile)

× 100,000 GPD WATER WITHDRAWAL POINTS ONLY

1 MILE AND 5 MILE RADII INDICATED



PLOT PRODUCED BY:
NJDEP
WATER SUPPLY ELEMENT
BUREAU OF WATER ALLOCATION
CN-426
TRENTON, NJ 08625

DATE: 03/02/00

SUBJECT TO REVISION

NUMBER	NAME	SOURCEID	LOCID	LAT	LON	ULACC	DISTANCE	COUNTY	MUN	DEPTH	GEO1	GEO2	CAPACITY
[illegible]	SUN CHEMICAL CORP.	4640725	WELL #1	405037	740555	M	1.3	03	05	150	GTR6		150
	SUN CHEMICAL CORP.	4640754	WELL #2	405037	740556	M	1.3	03	05	280	GTR2		200
1031W	NOVEL KNIT	2601914	WELL 1	404908	740039	T	5.6	03	18	65			110
[illegible]	GRANT CHEMICAL COMPANY	2604140	#1	405443	740625	T	3.5	03	11	300			300
[illegible]	CARLSTADT - E. RUTHERFORD BOE	[illegible]	1	404931	740552	F	2.5	03	12	274	GTRE		80
[illegible]	BLOOMFIELD TOWNSHIP	2604763	INACTIVE 1	404800	741130	T	6.4	13	02	380	GTRE		330
[illegible]	HELLER PROPERTIES INC.	2603962	#1	404937	740552	T	3.4	03	12	300	GTRE		115
[illegible]	TAKASAGO INT. USA/FLAVOR DIV.	2603461	#1	405152	740332	T	3.1	03	32	445	GTRE		210
1012W	GIBRALTAR PLASTICS CORPORATION	2602901	WELL 3	405247	740433	M	1.8	03	31	400	GTREP		110
	GIBRALTAR PLASTICS CORPORATION	UNK-PRE 1947	WELL 1	405247	740733	U	1.5	03	31	300	GTRDP		125
1018W	WORLD PLASTIC EXPLORERS INC.	2603941	#1	405014	740413	T	3.3	03	37	200	GTRE		150
1021W	THUMANN INC.	2604987	#1	405027	740426	T	2.0	03	05	300	GTRE		250
1027W	BENEDICT-MILLER, INC	2603645	WELL 1	404610	740650	T	4.1	03	32	222	GTRE		100
1033W	BASF CORPORATION	2600130	WELL 2	405302	740450	T	1.3	03	31	435	GTRE		200
	BASF CORPORATION	4639261	WELL 1	405300	740448	T	1.8	03	31	355	GTRE		200
1040W	MEER CORPORATION	[illegible]	WELL 1	404910	740110	U	5.2	17	06	153	GTRE		60
	MEER CORPORATION	2605294	WELL 3	404915	740110	U	5.1	17	06	170	GTRE		40
	MEER CORPORATION	2606604	WELL 6	404850	740050	U	5.6	17	06	255	GTRE		40
1041W	CARLTON-HOOKE PLATING CORP.	2602470	WELL 1	404942	740324		3.3	03	05	429	GTRE		70
	CARLTON-HOOKE PLATING CORP.	2604253	WELL 2	404925	740338	T	3.4	03	05	400	GTRE		70
1046W	INTERNATIONAL METALS CORP.	2600402	WELL	405300	740739	T	3.8	21	02	307			120
1048W	SUPERCO TUBE CORP.	2605011	1	405151	740251	S	2.5	31	02	300			200
1050W	FALSTROM COMPANY, INC.	2601494	1	405022	740759	T	2.3	31	07	300	GTRE		145
1074W	ALFRED HELLER HEAT TREATING CO	UNKNOWN	002	405302	740650	T	2.9	31	02		GTRE		150
	ALFRED HELLER HEAT TREATING CO	2604290	001	405302	740650	T	2.9	31	02	300	GTRE		200
[illegible]	IGA SUPERMAR ST-EA DRILLT	[illegible]	WELL 1	404751	740740	S	4.7	03	09	300	GTRE		80
[illegible]	NUTLEY TOWNSHIP WELL	2603666	1	404910	740730	M	4.2	13	16	166	GTRE		90
1094W	HOMEDICA ORTHOPEDIC CORP	2603819	WELL 1	404859	740542		3.2	03	56	500	GTRE		58
1095W	DIAMOND CHEMICAL CO. INC.	2604914	WELL 1	405050	740435		1.6	03	56	305	[illegible]		75
1096W	COATES SCREEN, INC.	2604061	1	404913	740527	T	2.9	03	12	400	GTREP		125
[illegible]	US INK/SUN CHEMICAL	2602964	WELL 1	405007	740607	T	1.8	03	12	700	GTREP		120
[illegible]	BONNETTO LAUNDRY	4647751	WELL 1	404727	740700	T	5.5	13	01	545	GTREP		300
[illegible]	HOLY NAME HOSPITAL	2600507	DW-1	405306	740040	T	5.0	03	60	60	GTRE		70
	HOLY NAME HOSPITAL	2600509	DW-2	405306	740040	T	5.0	03	60	60	GTRE		70
	HOLY NAME HOSPITAL	[illegible]	DW-1	405306	740040		5.0	03	60		GTRE		70
[illegible]	[illegible]	[illegible]	1	404930	740520	T	3.0	13	16	500	GTRE		15
	[illegible]	[illegible]	2	[illegible]	[illegible]		3.2	13	16	450	[illegible]		[illegible]
	[illegible]	[illegible]	3	[illegible]	[illegible]		3.2	13	16	500	[illegible]		[illegible]
	[illegible]	[illegible]	7	[illegible]	[illegible]	S	4.3	03	46	[illegible]	[illegible]		[illegible]
	[illegible]	[illegible]	1	[illegible]	[illegible]	S	[illegible]	03	46	[illegible]	[illegible]		[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
	[illegible]	[illegible]	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
	[illegible]	[illegible]	1	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
	[illegible]	[illegible]	2	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
	[illegible]	[illegible]	3	[illegible]	[illegible]	T	1.5	03	05	400	[illegible]		[illegible]
	[illegible]	[illegible]	4	[illegible]	[illegible]	[illegible]	1.3	03	05	[illegible]	[illegible]		[illegible]
	[illegible]	[illegible]	5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
	[illegible]	[illegible]	3	[illegible]	[illegible]	[illegible]	[illegible]	03	[illegible]	[illegible]	[illegible]		65
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
	[illegible]	[illegible]	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
	[illegible]	[illegible]	5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
	[illegible]	[illegible]	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
	[illegible]	[illegible]	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible] PAPER	4600177	4	405[illegible]	740[illegible]	F	5.4	03	49	587	GTRB		100
	[illegible] PAPER	4[illegible]	5	[illegible]	740[illegible]	F	[illegible]	[illegible]	[illegible]	[illegible]	GTRB		[illegible]
	[illegible] INDUSTRIES LINE PAPER	4600[illegible]	6	405[illegible]	740[illegible]	F	5.[illegible]	03	49	600	GTRB		50
2[illegible]	D.A.K. MANUFACTURING CORP.	2[illegible]	1	405[illegible]	740[illegible]	F	[illegible]	[illegible]	[illegible]		GTRB		
	D.A.K. MANUFACTURING CORP.	4600210	2	405404	740655	U	3.[illegible]	03	11		GTRB		
	D.A.K. MANUFACTURING CORP.	4600211	3	405404	740655	U	3.5	03	11		GTRB		
	D.A.K. MANUFACTURING CORP.	2[illegible]	4	405[illegible]	740657	F	3.6	03	11	250	GTRB		60
2100P	MARCAL PAPER MILLS, INC.	4600[illegible]	1	40[illegible]	740[illegible]	F	[illegible]	[illegible]	[illegible]	[illegible]	GTRB		150
	MARCAL PAPER MILLS, INC.	4600[illegible]	2	405412	740752	F	3.[illegible]	[illegible]	11	[illegible]	GTRB		260
	MARCAL PAPER MILLS, INC.	4600210	3	405412	740752	F	3.2	03	11	[illegible]	GTRB		250
	MARCAL PAPER MILLS, INC.	4600211	4	405412	740752	F	3.3	03	11	250	GTRB		90
	MARCAL PAPER MILLS, INC.	4600212	5	405412	740752	F	3.2	03	11		GTRB		135
	MARCAL PAPER MILLS, INC.	4600213	6	405412	740752	F	3.3	03	11		GTRB		300
2154P	BERGEN COUNTY DEPT. OF PARKS	2604300	WELL 2	405105	740035	F	5.0	03	45	455	GTRB		125
2211P	HENKEL PROCESS CHEM/CANCELLED	4600125	1 CANCELLED	405000	740500		2.2	03	05	170	GOSD		600
2246P	PARMALAT NORTHEAST	2604169	1	405134	740655	U	0.2	03	65	450	GTRB		200
	PARMALAT NORTHEAST	2604250	2	405134	740655	U	0.2	03	65	300	GTRB		155
2310P	UPPER MONTCLAIR COUNTRY CLUB	2601199	1	405035	741025	U	3.9	31	02	490	GTRB		90
	UPPER MONTCLAIR COUNTRY CLUB	2604390	2	405034	741027	U	4.1	13	02	325	GTRB		132
	UPPER MONTCLAIR COUNTRY CLUB	2604825	3	405033	741022	U	3.9	31	02	300	GTRB		60
	UPPER MONTCLAIR COUNTRY CLUB	INTAKE NO. 1	POND SW	405029	741045	U	4.3	17	02		GOSD		1100
	UPPER MONTCLAIR COUNTRY CLUB	2602962	4	405030	741044	U	4.3	13	02	300	GTRB		200
2267P	GLEN RIDGE COUNTRY CLUB	2601852	1	404922	741132	S	5.5	13	02	353	GTRB		400
	GLEN RIDGE COUNTRY CLUB	4600168	3	404922	741141	F	5.6	13	02	400	GTRB		10
2268P	FOREST HILL FIELD CLUB	2604258	1	404749	741041	S	6.0	13	02	239	GTRB		60
	FOREST HILL FIELD CLUB	POND		404938	741051	F	5.9	13	02	14	SPLLW		1200
2313P	FENCO OF LYNDHURST/CANCELLED	4600172	1	404845	740714	F	3.6	03	32	267	GTRB		110
	FENCO OF LYNDHURST/CANCELLED	4600173	2	404845	740715	F	3.6	03	32	313	GTRB		185
	FENCO OF LYNDHURST/CANCELLED	2601899	4	404845	740715	F	3.6	03	32	410	GTRB		150
	FENCO OF LYNDHURST/CANCELLED	2603904	5	404840	740706	F	3.6	03	32	352	GTRB		185
2370P	AUSTIN NICHOLS & CO. INC.	2602067	1	404946	740350		3.0	03	05	303	GTRB		90
	AUSTIN NICHOLS & CO. INC.	2602068	2	404946	740350		3.0	03	05	373	GTRB		50
	AUSTIN NICHOLS & CO. INC.	2603053	3	404946	740350		3.0	03	05	378	GTRB		55
2357P	SANDY ALEXANDER INC	2607737	1	405005	740749	S	2.4	31	02	400	GTRB		150
	SANDY ALEXANDER INC	2608396	4	405009	740749	S	2.4	31	02	400	GTRB		50
	SANDY ALEXANDER INC	2608398	2	405003	740744	S	2.4	31	02	400	GTRB		0
	SANDY ALEXANDER INC	2608397	3	405004	740746	S	2.4	31	02	400	GTRB		0
2416P	DYE-TEX CORP.	4600217	WELL NO 1	405137	740717	F	1.0	31	07	220	GTRB		250
	DYE-TEX CORP.	4600218	WELL NO 2	405138	740712	F	1.0	31	07	300	GTRB		350
2431P	FRISTER CHEMICAL, INC.	2600007	RW-2	405036	740035	U	5.0	3	49	352	GTRB		100
	FRISTER CHEMICAL, INC.	2600011	RW-3	405036	740036	U	4.9	3	49	327	GTRB		100
	FRISTER CHEMICAL, INC.	OVERPECK CREEK		405034	740034	U	4.9	3	49		SK		700
2459P	ALLIED SIGNAL, INC.	2635951	GWE 8	405121	740404	F	1.9	03	62	29	GOGU		
	ALLIED SIGNAL, INC.	2635952	GWE 9	405123	740405	F	1.8	03	62	245	GOGU		
	ALLIED SIGNAL, INC.	2635953	GWE 10	405124	740405	F	1.8	03	62	28	GOGU		
	ALLIED SIGNAL, INC.	2635954	GWE 11	405125	740405	F	1.9	03	62	26	GOGU		
	ALLIED SIGNAL, INC.	2635955	GWE 12	405120	740404	F	1.9	03	62	28.5	GOGU		
	ALLIED SIGNAL, INC.	2635956	GWE 13	405121	740404	F	1.8	03	62	25	GOGU		
	ALLIED SIGNAL, INC.	2635957	GWE 14	405123	740403	F	1.8	03	62	29	GOGU		
	ALLIED SIGNAL, INC.	2634958	GWE 15	405124	740405	F	1.8	03	62	28	GOGU		
	ALLIED SIGNAL, INC.	2635959	GWE 16	405120	740404	F	1.8	03	62	28	GOGU		
	ALLIED SIGNAL, INC.	2635960	GWE 17	405122	740404	F	1.9	03	62	28	GOGU		
	ALLIED SIGNAL, INC.	2635961	GWE 18	405121	740404	F	1.8	03	62	27.5	GOGU		
	ALLIED SIGNAL, INC.	PROPOSED	GWE1-GWE7	405121	740404		1.8	03	62	25	GOGU		
2468P	CURTISS-WRIGHT CORPORATION	2635338	RW-1	405145	740645	S	0.3	03	68	200	GTRB		30
	CURTISS-WRIGHT CORPORATION	2635339	RW-2	405147	740646	S	0.2	03	68	190	GTRB		100

NUMBER	NAME	SOURCE	LOCATION	LAT	LON	LEVEL	DISTANCE	COUNTY	MUN	DEPT	PT	SOUL	CAPACITY
	CURTISS-WRIGHT CORPORATION	[illegible]	PAPER	405126	740549	G	1.2	03	68	[illegible]	[illegible]		20
	CURTISS-WRIGHT CORPORATION	[illegible]	PAPER	405124	740548	G	1.3	03	68	[illegible]	[illegible]		30
	CURTISS-WRIGHT CORPORATION	[illegible]	PAPER	405130	740537	G	0.3	03	68	[illegible]	[illegible]		30
	CURTISS-WRIGHT CORPORATION	[illegible]	PAPER	405139	740534	G	1.2	03	68	[illegible]	[illegible]		45
4008PS	DUNDEE WATER POWER & LAND CO.	DUNDEE DAM/S.S.	S.S. PAPER	405308	740742	T	2.2	03	21		SPPAP		
	DUNDEE WATER POWER & LAND CO.	DUNDEE DAM	WHIPPANY	405309	740727	T	1.7	31	02		SP		
	DUNDEE WATER POWER & LAND CO.	DUNDEE DAM	SHELTON CO	405208	740702	T	1.0	31	02		SP		
	DUNDEE WATER POWER & LAND CO.	DUNDEE DAM	DERBYTE CO	405143	740712	T	1.0	31	07		SP		
	DUNDEE WATER POWER & LAND CO.	DUNDEE DAM/	MORRIS CO.	405405	741734	T	1.2	31	11		SPPAP		
	DUNDEE WATER POWER & LAND CO.	DUNDEE DAM	PASSAIC IN	405218	740732	T	1.1	31	02		SP		
	DUNDEE WATER POWER & LAND CO.	DUNDEE DAM	TUCK IND.	405136	740714	T	0.9	31	07		SP		
	DUNDEE WATER POWER & LAND CO.	DUNDEE DAM	PASSAIC RIVER	405304	740714	T	1.0	31	02		SP		
4037PS	GREAT FALLS HYDROELECTRIC CO.	PASSAIC RIVER		405455	741058		5.7	31	08		SPPAP		
4041PS	STEPAN CHEMICAL COMPANY	PASSAIC RIVER		405355	740417		1.5	03	54		SPPAP		1200
5086	UNITED WATER NEW JERSEY	4600045	2	405233	740153	G	3.7	03	09	550	GTRB		190
	UNITED WATER NEW JERSEY	4600046	3	405250	740140	G	4.0	03	09	350	GTRB		175
	UNITED WATER NEW JERSEY	4600047	4	405240	740145	G	3.9	03	09	335	GTRB		
5087	UNITED WATER NEW JERSEY	2600714	1	405257	740216		4.2	03	23	[illegible]	GRBD		1550
	UNITED WATER NEW JERSEY	2601034	2	405255	740215		4.2	03	23	190	GRBD		1400
	UNITED WATER NEW JERSEY	2603017	ROCHELLE P	405452	740448	G	3.8	03	54	473	GTRB		200
5198	WALLINGTON WATER DEPARTMENT	2603533	DUL	405053	740605	G	1.0	03	65	400	GTRB		140
	WALLINGTON WATER DEPARTMENT	2603934	MAIN AVE	405131	740613	G	0.3	03	65	400	GTRB		150
	WALLINGTON WATER DEPARTMENT	2603027	LESTER ST	405126	740709	G	1.0	03	65	400	GTRB		130
	WALLINGTON WATER DEPARTMENT	4600075	8	405119	740648	G	0.8	03	65	503	GTRB		30
	WALLINGTON WATER DEPARTMENT	4600074	5	405118	740649	G	0.9	03	65	506	GTRB		150
5282	GARFIELD WATER DEPARTMENT	4600113	1	405439	740717	G	3.5	03	11	404	GTRB		100
	GARFIELD WATER DEPARTMENT	4600114	2	405445	740716	G	3.6	03	11	352	GTRB		125
	GARFIELD WATER DEPARTMENT	4600118	10	405451	740650	G	3.7	03	11	350	GTRB		150
	GARFIELD WATER DEPARTMENT	4600119	11	405448	740648	G	3.6	03	11	353	GTRB		190
	GARFIELD WATER DEPARTMENT	4600120	12	405443	740722	G	3.6	03	11	350	GTRB		140
	GARFIELD WATER DEPARTMENT	4600121	14	405439	740734	G	3.6	03	11	455	GTRB		140
	GARFIELD WATER DEPARTMENT	4600122	16	405436	740747	G	3.6	03	11	400	GTRB		60
	GARFIELD WATER DEPARTMENT	4600123	17	405433	740742	G	3.6	03	11	353	GTRB		110
	GARFIELD WATER DEPARTMENT	4600124	1	405430	740745	T	3.5	03	11	300	GTRB		150
	GARFIELD WATER DEPARTMENT	2604016	1A	405302	740607	G	1.5	03	21	400	GTRB		300
	GARFIELD WATER DEPARTMENT	2604063	2	405257	740610	G	1.4	03	21	475	GTRB		150
	GARFIELD WATER DEPARTMENT	2604103	6	405245	740611	G	1.2	03	21	300	GTRB		150
	GARFIELD WATER DEPARTMENT	2604064	8D	405324	740648	G	2.0	03	21	405	GTRB		400
	GARFIELD WATER DEPARTMENT	4600115	4	405446	740704	G	3.6	03	11	353	GTRB		90
	GARFIELD WATER DEPARTMENT	4600116	5	405443	740704	G	3.6	03	11	353	GTRB		275
	GARFIELD WATER DEPARTMENT	4600117	8	405450	740656	G	3.7	03	11	354	GTRB		165
5317	FAIR LAWN BOROUGH	4600147	2	405337	740733	G	4.9	03	17	300	GTRBP		50
	FAIR LAWN BOROUGH	4600151	7	405330	740734	G	4.9	03	17	458	GTRBP		200
	FAIR LAWN BOROUGH	4600152	8	405330	740717	G	4.5	03	17	400	GTRBP		200
	FAIR LAWN BOROUGH	4600153	9	405353	740755	G	5.1	03	17	404	GTRBP		115
	FAIR LAWN BOROUGH	2600445	16	405336	740829	G	4.9	03	17	413	GTRBP		250
	FAIR LAWN BOROUGH	2601031	17	405341	740832	G	5.0	03	17	350	GTRBP		200
	FAIR LAWN BOROUGH	2601197	19	405333	740823	G	4.9	03	17	400	GTRBP		400
	FAIR LAWN BOROUGH	260[illegible]	15	405339	740816	G	4.9	03	17	402	GTRBP		200
	FAIR LAWN BOROUGH	4600215	5	405349	740731	G	4.8	03	17	300	GTRBP		150

THIS IS A CANAL

CLOSED

CLOSED

Number of Observations: 161

Record of Telephone Discussion March 6, 2000

R: Dundee Water Power & Land Co

Maria Laurino, Attorney for United Water, 201 767 2823.

She told me that UW jointly owns the Dundee Water Power & Land Co. and its diversion rights with North Jersey District Water Supply Commission. Dundee is a company given its charter by the legislature back in the early part of this century. UW diverts water from a CANAL for two industial users, Marcal and American Paperboard. The water would appear to only be used for non-potable purposes. UW also uses the water in connection with fire protection.agreements.

Conclusion: The entries on the water withdrawl points map for Dundee Water Power are of no public health/exposure concern.

MEMORANDUM

TO: Wallington Wells Investigation File

FROM: Nick Sodano

Re: Water Withdrawls Point Map

DATE: March 6, 2000

I have reviewed the noted map for the Wallington area within two miles of the Hamersley site and find that it presents no new information regarding potable withdrawal points. The Dundee Water Power entries only refer to a canal which is used by some industrial users for non-potable purposes. Otherwise, the map shows industrial users within two miles (such as Dye-Tex and BASF) and Garfield Water. I have made a call to BSDW this date to determine what volatiles data can be had from Garfield Water regulatory sampling.

DESCRIPTION OF WATER WITHDRAWAL POINTS

The Water Withdrawal Points listing contains the following fields:

CAPACITY:	The pump capacity in gallons per minute
COUNTY:	County the withdrawal point is in
DEPTH:	Depth of the well or pond
DISTANCE:	Distance in miles from center of circle
GEO1:	The ground or surface water source
GEO2:	A secondary source of the water
LAT:	Latitude of the withdrawal point
LLACC:	Accuracy of the latitude and longitude estimates
LOCID:	The local identification of the withdrawal point, or a continuation of the SOURCEID field for surface water
LON:	Longitude of the withdrawal point
MUN:	The municipality the withdrawal point is in
NAME:	Name of the permit, certificate, or registration holder
NUMBER:	Water Allocation Permit, Agricultural Certification, or Registration number
SOURCEID:	The well permit number or other identifier for the water withdrawal

The listing that you have requested includes most wells and surface intakes that are in the Water Allocation Permits, Water Use Registrations, and representative sources from most of the Agricultural Certificates. Recognizing the fact that the list will contain errors and omissions, it is advisable to use this resource as a guide and to verify all data. We try to maintain an accurate database; however, we can not yet guarantee reliability. If you spot any errors we would be very grateful to hear about them. Please call or write to us in reference to the "Radius Program" at:

NJDEP
Water Supply Element
Bureau of Water Allocation
P.O. BOX 426
Trenton, New Jersey 08625-0426

(609)292-2957

Thank you.

Please see the attached sheets for definitions of the codes used in the Water Withdrawal Points listing.

COUNTY:

01 - Atlantic	15 - Gloucester	29 - Ocean
03 - Bergen	17 - Hudson	31 - Passaic
05 - Burlington	19 - Hunterdon	33 - Salem
07 - Camden	21 - Mercer	35 - Somerset
09 - Cape May	23 - Middlesex	37 - Sussex
11 - Cumberland	25 - Monmouth	39 - Union
13 - Essex	27 - Morris	41 - Warren

GEO:

RECENT	
Surficial Deposits	GRS
PLEISTOCENE	
Glacial Undifferentiated	GQGU
Stratified Drift	GQSD
Terminal Moraine	GQTM
Continuous Till	GQCT
Discontinuous Till	GQDT
Morainic Deposits	GQM
Illinoian Morainic Deposits	GQIM
Lake Bottom Sediment	GQL
Deltaic Deposits	GQD
Illinoian Deltaic Deposits	GQID
Fluvial over Lacustrine Deposits	GQFL
Fluvial Deposits	GQF
Illinoian Fluvial Deposits	GQIF
Ice Contact Sediment	GQIC
Till of Illinoian Age	GQIT
Till of Jersean Age	GQJT
Sand and Gravel of Jersean Age	GQJS
Bridgeton	GQBS
Cape May	GQCM
Holly Beach Mbr.	GQCHB
Estuarine Sand	GQES
Van Sciver Lake Beds	GQVSL
Spring Lake Beds	GQSL
Pennsauken	GQPS
TERTIARY-MIOCENE	
Beacon Hill	GTBH
Cohansey	GTCH
Kirkwood-Cohansey	GTCK
Kirkwood	GTKW
Upper Kirkwood Sand	GTKSU
Rio Grande	GTKRG
Atlantic City 800' Sands	GTKW8
Upper Sand Unit (800' Sands)	GTKWU
Lower Sand Unit (800' Sands)	GTKWL
Piney Point Aquifer	GTPP
TERTIARY-OIGOCENE	
Old Church-Piney Point	GIKOCPP
TERITARY-EOCENE	
Shark River Marl-Piney Point	GTSRPP
Manasquan	GTMQ

TERITARY-PALEOCENE	
Vincentown Sand	GTVT
Hornerstown	GTHT
CRETACEOUS	
Red Bank	GKRB
Navesink	GKNS
Mount Laurel	GKML
Wenonah	GKWE
Wenonah & Mount Laurel Aquifer	GKMW
Marshalltown	GKMT
Englishtown	GKET
Upper Sand	GKETU
Lower Sand	GKETL
Woodbury	GKWB
Merchantville	GKMV
Magothy	GKM
Old Bridge	GKROB
Upper Aquifer PRM	GKMU
Raritan	GKR
Sayreville Sand	GKRSS
Farrington	GKRF
Middle Aquifer PRM	GKRM
Raritan/Magothy	GKMR
Potomac	GKP
Lower Aquifer PRM	GKPL
TRIASSIC	
Brunswick Group	GTRB
Boonton Formation	GTRBB
Hook Mountain Basalt	GTRBHM
Towaco Formation	GTRBT
Preakness Basalt	GTRBPR
Feltville Formation	GTRBF
Orange Mountain Basalt	GTRBOM
Passaic Formation	GTRBP
Lockatong Formation	GTRL
Stockton Formation	GTRS
Basalt	GTRBS
Diabase	GTRDB
Conglomerate	GTRCG
DEVONIAN	
Undifferentiated	GD
DEVONIAN-Green Pond Mountain Region	
Devonian Green Pond Mountain Undifferentiated	GDGPU
Skunnemunk Conglomerate	GDSC
Bellvale Sandstone	GDB
Cornwall Shale	GDC
Kanouse Sandstone	GDK
Esopus Formation	GDGPE

Connelly Conglomerate	GDC
DEVONIAN-Valley and Ridge	
Devonian Valley & Ridge Undifferentiated	GDVRU
Marcellus Shale	GDM
Buttermilk Falls Limestone	GDBF
Schohane Formation	GDS
Esopus Formation	GDVRE
Oriskany Group	
Ridgely Sandstone	GDORS
Shriver Chert	GDOS
Glenerie Formation	GDOG
Helderburg Group	
Port Ewen Shale	GDHPE
Minisk Limestone	GDHM
New Scotland Formation	GDHNS
Cosymans Formation	GDHC
Rondout Formation	GDR
SILURIAN-Green Pond Mountain	
Silvrian Green Pond Mountain Undifferentiated	GSGPU
Berkshire Valley Formation	GSBV
Poxono Island Formation	GSPIGP
Longwood Shale	GSLS
High Falls	GSHF
Green Pond Conglomerate	GSGP
Silurian-Valley and Ridge	
Silvrian Valley & Ridge Undifferentiated	GSVRU
Decker	GSDK
Bossardville Limestone	GSBD
Poxono Island	GSPIVR
Bloomsburg Red Beds	GSBRB
Shawangunk Formation	GSSG
ORDOVICIAN	
Beemerville Intrusive Complex	GOBI
Martinsburg Formation	GOMB
Jacksonburg Formation	GOJB
Jutland Klippe	GOJK
Kittatinny Super Group	GOK
Beakmantown Group	
Outleaunee Formation	GOKO
Harmonyvale Mbr.	GOKOH
Beaver Run Mbr.	GOKOB
Epler	GOKE
Rickenbach	GOKR

CAMBRO ORDOVICIAN	
Kittatinny Formation	GCOK
CAMBRIAN	
Allentown Formation	GCKA
Upper Mbr.	GCKU
Limeport Mbr.	GCKLP
Leithsville Formation	GCKL
Walkill Mbr.	GCKLW
Hamburg Mbr.	GCKLH
Califon Mbr.	GCKLC
Hardyston Quantzite	GCH
PRECAMBRIAN	
Chestnut Hill Formation	GPCCH
Byram Intrusive Suite	GPCBI
Lake Hopatcong Intrusive Suite	GPCHI
Mount Eve Granite	GPCME
Franklin Marble	GPCFM
Wildcat Marble	GPCFW
Losee Metamorphic Suite	GPCLM
Granite	GPCGR
Gneiss	GPCGN
Undifferentiated	GPC
Undifferentiated Metasedimentary	GPCUM
Franklin Lms	GPCFL
UNCERTAIN AGE (Pre-Silurian)	
Manhattan Schist	GMS
Wissahickon Formation	GWF
Serpentinite	GSER
Chickies Quartzite	GCQ
DELAWARE RIVER BASIN	
Unknown or Non-Specific	SD
Alloways Creek	SDALL
Alexsocken Creek	SDALE
Assiscunk Creek	SDASC
Assunpink Creek	SDASP
Big Timber Creek	SDBIG
Blacks Creek	SDBLA
Cooper's Creek	SDCOO
Crafts Creek	SDCRA
Crosswicks Creek	SDCRO
Delaware River	SDDEL
Flat Brook	SDFLA
Hakihokake Creek	SDHAK
Harihokake Creek	SDHAR
Jacob's Creek	SDJAC
Lockatong Creek	SDLOC
Lopatcong Creek	SDLOP
Mantua Creek	SDMNT

Musconetcong River	SDMUS
Nichisakawick Creek	SDNIC
Oldman's Creek	SDOLD
Paulins Kill	SDPAU
Pennsauken Creek	SDPEN
Pequest River	SDPST
Pohatcong Creek	SDPOH
Raccoon Creek	SDRAC
Rancocas Creek	SDRAN
Salem River	SDSAL
Wickecheoke Creek	SDWIC

RARITAN RIVER BASIN

Unknown or Non-Specific	SR
Lawrence Brook	SRLAW
Lower Raritan	SRLOW
Millstone River	SRMIL
North Branch Raritan	SRNBR
South Branch Raritan	SRSBR
South River	SRSRV

PASSAIC RIVER BASIN

Unknown or Non-Specific	SP
Canoe Brook	SPCAN
Lower Mid-Passaic River	SPLMP
Lower Passaic	SPLOW
Passaic River	SPPAS
Peckman River	SPPEC
Pequannock River	SPPNK
Pompton River	SPPOM
Ramapo River	SPRAM
Rockaway River	SPROC
Saddle River	SPSAD
Upper Mid-Passaic River	SPUMP
Upper Passaic River	SPUPP
Wanaque River	SPWAN
Whippany River	SPWHI

ATLANTIC COASTAL BASIN

Unknown or Non-Specific	SC
Atlantic County Coastal	SCATL
Cape May County Coastal	SCCAP
Cedar Creek	SCCED
Great Egg Harbor River	SCGRE
Manasquan River	SCMSQ
Metedeconk River	SCMET
Monmouth County Coastal	SCMON
Mullica River	SCMUL
Navesink River	SCNAV
Ocean County Coastal	SCOCE
Raritan Bay	SCRAR
Shark River	SCSHA
Shrewsbury River	SCSHR

Toms River	SCTOM
Tuckahoe River	SCTUC
HUDSON RIVER BASIN	
Unknown or Non-Specific	SH
Hudson River	SHHUD
Papakating Creek	SHPAP
Pochuck Creek	SHPOC
Wallkill River	SHWAL
HACKENSACK RIVER BASIN	
Unknown or Non-Specific	SK
Hackensack River	SKHAC
RAHWAY RIVER BASIN	
Unknown or Non-Specific	SY
Rahway River	SYRAH
ELIZABETH RIVER BASIN	
Unknown or Non-Specific	SE
Elizabeth River	SEELI
DELAWARE BAY BASIN	
Unknown or Non-Specific	SB
Cohansey River	SBCOH
Maurice River	SBMAU
Stow Creek	SBSTO

LLACC:

G - GPS located
S - accurate to +- 1 second
F - accurate to +- 5 seconds
T - accurate to +- 10 seconds
M - accurate to +- 1 minute
U - accuracy unknown

MUN:

ATLANTIC COUNTY (01)

01 - Absecon City
02 - Atlantic City
03 - Brigantine City
04 - Buena Boro
05 - Buena Vista Twp.
06 - Corbin City
07 - Egg Harbor City
08 - Egg Harbor Twp.
09 - Estell Manor City
10 - Folsom Boro
11 - Galloway Twp.
12 - Hamilton Twp.
13 - Hammonton Town
14 - Linwood City
15 - Longport Boro
16 - Margate City
17 - Mullica Twp.
18 - Northfield City
19 - Pleasantville City
20 - Port Republic City
21 - Somers Point City
22 - Ventnor City
23 - Weymouth Twp.

BERGEN COUNTY (03)

01 - Allendale Boro
02 - Alpine Boro
03 - Bergenfield Boro
04 - Bogota Boro
05 - Carlstadt Boro
06 - Cliffside Park Boro

07 - Closter Boro
09 - Demarest Boro
12 - East Rutherford Boro
11 - Elmwood Park Boro
15 - Englewood City
17 - Fair Lawn Boro
19 - Fort Lee Boro
21 - Garfield Boro
23 - Hackensack City
25 - Hasbrouck Heights Boro
27 - Hillsdale Boro
29 - Leonia Boro
31 - Lodi Boro
33 - Mahwah Twp.
35 - Midland Park Boro
37 - Moonachie Boro
39 - North Arlington Boro
41 - Norwood Boro
43 - Old Tappan Boro
45 - Palisades Park Boro
47 - Park Ridge Boro
49 - Ridgefield Boro
51 - Ridgewood Village
53 - River Vale Twp.
55 - Rockleigh Boro
57 - Saddle Brook Twp.
59 - South Hackensack Twp.
61 - Tenafly Boro
63 - Upper Saddle River Boro
65 - Wallington Boro
67 - Westwood Boro
69 - Woodcliff Lake Boro
08 - Cresskill Boro
10 - Dumont Boro
13 - Edgewater Boro
14 - Emerson Boro
16 - Englewood Cliffs Boro
18 - Fairview Boro
20 - Franklin Lakes Boro
22 - Glen Rock Boro
24 - Harrington Park Boro
26 - Haworth Boro
28 - Hohokus Boro
30 - Little Ferry Boro
32 - Lyndhurst Twp.
34 - Maywood Boro
36 - Montvale Boro
38 - New Milford Boro
40 - Northvale Boro
42 - Oakland Boro
44 - Oradell Boro
46 - Paramus Boro
48 - Ramsey Boro
50 - Ridgefield Park Village
52 - River Edge Boro
54 - Rochelle Park Twp.
56 - Rutherford Boro
58 - Saddle River Boro
60 - Teaneck Twp.
62 - Teterboro Boro
64 - Waldwick Boro
66 - Washington Twp.
68 - Wood-Ridge Boro
70 - Wyckoff Twp.

BURLINGTON COUNTY (05)

01 - Bass River Twp.
03 - Bordentown City
05 - Burlington City
07 - Chesterfield Twp.
09 - Delanco Twp.
11 - Eastampton Twp.
13 - Evesham Twp.
15 - Florence Twp.
17 - Lumberton Twp.
19 - Maple Shade Twp.
21 - Medford Twp.
23 - Mount Holly Twp.
25 - New Hanover Twp.
27 - Palmyra Boro
29 - Pemberton Twp.
31 - Riverton Boro
33 - Southampton Twp.
35 - Tabernacle Twp.
37 - Westampton Twp.
02 - Beverly City
04 - Bordentown Twp.
06 - Burlington Twp.
08 - Cinnaminson Twp.
10 - Delran Twp.
12 - Edgewater Park Twp.
14 - Fieldsboro Boro
16 - Hainesport Twp.
18 - Mansfield Twp.
20 - Medford Lakes Boro
22 - Moorestown Twp.
24 - Mount Laurel Twp.
26 - North Hanover Twp.
28 - Pemberton Boro
30 - Riverside Twp.
32 - Shamong Twp.
34 - Springfield Twp.
36 - Washington Twp.
38 - Willingboro Twp.

39 - Woodland Twp.

40 - Wrightstown

CAMDEN COUNTY (07)

01 - Audubon Boro
02 - Audubon Park Boro
03 - Barrington Boro
04 - Bellmawr Boro
05 - Berlin Boro
06 - Berlin Twp.
07 - Brooklawn Boro
08 - Camden City
09 - Cherry Hill Twp.
10 - Chesilhurst Boro
11 - Clementon Boro
12 - Collingswood Boro
13 - Gibbsboro Boro
14 - Gloucester City
15 - Gloucester Twp.
18 - Haddon Heights Boro
16 - Haddon Twp.
17 - Haddonfield Boro
19 - Hi-Nella Boro
20 - Laurel Springs Boro
21 - Lawnside Boro
22 - Lindenwold Boro
23 - Magnolia Boro
24 - Merchantville Boro
25 - Mount Ephraim Boro
26 - Oaklyn Boro
27 - Pennsauken Twp.
28 - Pine Hill Boro
29 - Pine Valley Boro
30 - Runnemede Boro
31 - Somerdale Boro
32 - Stratford Boro
33 - Tavistock Boro
34 - Voorhees Twp.
35 - Waterford Twp.
36 - Winslow Twp.
37 - Woodlynne Boro

CAPE MAY COUNTY (09)

01 - Avalon Boro
02 - Cape May City
03 - Cape May Point Boro
04 - Dennis Twp.
05 - Lower Twp.
06 - Middle Twp.
07 - North Wildwood City
08 - Ocean City
09 - Sea Isle City
10 - Stone Harbor Boro
11 - Upper Twp.
12 - West Cape May Boro
13 - West Wildwood Boro
14 - Wildwood City
15 - Wildwood Crest Boro
16 - Woodbine Boro

CUMBERLAND COUNTY (11)

01 - Bridgeton City
02 - Commercial Twp.
03 - Deerfield Twp.
04 - Downe Twp.
05 - Fairfield Twp.
06 - Greenwich Twp.
07 - Hopewell Twp.
08 - Lawrence Twp.
09 - Maurice River Twp.
10 - Millville City
11 - Shiloh Boro
12 - Stow Creek Twp.
13 - Upper Deerfield Twp.
14 - Vineland City

ESSEX COUNTY (13)

01 - Belleville Town
02 - Bloomfield Town
03 - Caldwell Boro
04 - Cedar Grove Twp.
05 - East Orange City
06 - Essex Fells Boro
07 - Fairfield Boro
08 - Glen Ridge Boro
09 - Irvington Town
10 - Livingston Twp.
11 - Maplewood Twp.
12 - Millburn Twp.
13 - Montclair Town
14 - Newark City
15 - North Caldwell Boro
16 - Nutley Town
17 - Orange City
18 - Roseland Boro
19 - South Orange Village
20 - Verona Boro

21 - West Caldwell Boro
22 - West Orange Town

GLOUCESTER COUNTY (15)

01 - Clayton Boro
02 - Deptford Twp.
03 - East Greenwich Twp.
04 - Elk Twp.
05 - Franklin Twp.
06 - Glassboro Boro
07 - Greenwich Twp.
08 - Harrison Twp.
09 - Logan Twp.
10 - Mantua Twp.
11 - Monroe Twp.
12 - National Park Boro
13 - Newfield Boro
14 - Paulsboro Boro
15 - Pitman Boro
16 - South Harrison Twp.
17 - Swedesboro Boro
18 - Washington Twp.
19 - Wenonah Boro
20 - West Deptford Twp.
21 - Westville Boro
22 - Woodbury City
23 - Woodbury Heights Boro
24 - Woolwich Twp.

HUDSON COUNTY (17)

01 - Bayonne City
02 - East Newark Boro
03 - Guttenberg Town
04 - Harrison Town
05 - Hoboken City
06 - Jersey City
07 - Kearny Town
08 - North Bergen Twp.
09 - Secaucus Twp.
10 - Union City
11 - Weehawken Twp.
12 - West New York Town

HUNTERDON COUNTY (19)

01 - Alexandria Twp.
02 - Bethlehem Twp.
03 - Bloomsbury Boro
04 - Califon Boro
05 - Clinton Town
06 - Clinton Twp.
07 - Delaware Twp.
08 - East Amwell Twp.
09 - Flemington Boro
10 - Franklin Twp.
11 - Frenchtown Boro
12 - Glen Gardner Boro
13 - Hampton Boro
14 - High Bridge Boro
15 - Holland Twp.
16 - Kingwood Twp.
17 - Lambertville City
18 - Lebanon Boro
19 - Lebanon Twp.
20 - Milford Boro
21 - Raritan Twp.
22 - Readington Twp.
23 - Stockton Boro
24 - Tewksbury Twp.
25 - Union Twp.
26 - West Amwell Twp.

MERCER COUNTY (21)

01 - East Windsor Twp.
02 - Ewing Twp.
03 - Hamilton Twp.
04 - Hightstown Boro
05 - Hopewell Boro
06 - Hopewell Twp.
07 - Lawrence Twp.
08 - Pennington Boro
09 - Princeton Boro
10 - Princeton Twp.
11 - Trenton City
12 - Washington Twp.
13 - West Windsor Twp.

MIDDLESEX COUNTY (23)

01 - Carteret Boro
02 - Cranbury Twp.
03 - Dunellen Boro
04 - East Brunswick Twp.
05 - Edison Twp.
06 - Helmetta Boro

07 - Highland Park Boro
10 - Metuchen Boro
12 - Milltown Boro
14 - New Brunswick City
09 - Old Bridge Twp.
17 - Piscataway Twp.
19 - Sayreville Boro
21 - South Brunswick Twp.
23 - South River Boro
25 - Woodbridge Twp.

08 - Jamesburg Boro
11 - Middlesex Boro
13 - Monroe Twp.
15 - North Brunswick Twp.
16 - Perth Amboy City
18 - Plainsboro Twp.
20 - South Amboy City
22 - South Plainfield Boro
24 - Spotswood Boro

MONMOUTH COUNTY (25)

30 - Aberdeen Twp.
02 - Allentown Boro
04 - Atlantic Highlands Boro
06 - Belmar Boro
08 - Brielle Boro
10 - Deal Boro
12 - Englishtown Boro
14 - Farmingdale Boro
16 - Freehold Twp.
17 - Highland Boro
19 - Howell Twp.
21 - Keansburg Boro
23 - Little Silver Boro
25 - Long Branch City
27 - Manasquan Boro
29 - Matawan Boro
32 - Millstone Twp.
35 - Neptune City Boro
37 - Ocean Twp.
40 - Red Bank Boro
42 - Rumson Boro
44 - Sea Girt Boro
46 - Shrewsbury Twp.
48 - Spring Lake Boro
36 - Tinton Falls Boro
51 - Upper Freehold Twp.
53 - West Long Branch Twp.

01 - Allenhurst Boro
03 - Asbury Park City
05 - Avon-By-The-Sea Boro
07 - Bradley Beach Boro
09 - Colts Neck Twp.
11 - Eatontown Boro
13 - Fair Haven Boro
15 - Freehold Boro
39 - Hazlet Twp.
18 - Holmdel Boro
20 - Interlaken Boro
22 - Keyport Boro
24 - Loch Arbour Village
26 - Manalapan Twp.
28 - Marlboro Twp.
31 - Middletown Twp.
33 - Monmouth Beach Boro
34 - Neptune Twp.
38 - Oceanport Boro
41 - Roosevelt Boro
43 - Sea Bright Boro
45 - Shrewsbury Boro
47 - South Belmar Boro
49 - Spring Lake Heights Boro
50 - Union Beach Boro
52 - Wall Twp.

MORRIS COUNTY (27)

01 - Boonton Town
03 - Butler Boro
05 - Chatham Twp.
07 - Chester Twp.
09 - Dover Town
11 - Florham Park Boro
13 - Harding Twp.
15 - Kinnelon Boro
17 - Madison Boro
19 - Mendham Twp.
21 - Montville Twp.
22 - Morris Twp.

02 - Boonton Twp.
04 - Chatham Boro
06 - Chester Boro
08 - Denville Twp.
10 - East Hanover Twp.
12 - Hanover Twp.
14 - Jefferson Twp.
16 - Lincoln Park Boro
18 - Mendham Boro
20 - Mine Hill Twp.
23 - Morris Plains Boro
24 - Morristown Town

26 - Mount Arlington Boro
25 - Mountain Lakes Boro
29 - Parsippany Troy-Hills Twp.
31 - Pequannock Twp.
33 - Riverdale Boro
35 - Rockaway Twp.
37 - Victory Gardens Boro
39 - Wharton Boro
27 - Mount Olive Twp.
28 - Netcong Boro
30 - Passaic Twp.
32 - Randolph Twp.
34 - Rockaway Boro
36 - Roxbury Twp.
38 - Washington Twp.

OCEAN COUNTY (29)

01 - Barnegat Light Boro
02 - Bay Head Boro
04 - Beachwood Boro
06 - Brick Twp.
08 - Eagleswood Twp.
10 - Island Heights Boro
12 - Lacey Twp.
14 - Lakewood Twp.
16 - Little Egg Harbor Twp.
18 - Manchester Twp.
21 - Ocean Gate Boro
22 - Pine Beach Boro
25 - Point Pleasant Beach Boro
26 - Seaside Heights Boro
28 - Ship Bottom Boro
30 - Stafford Twp.
32 - Tuckerton Boro
33 - Barnegat Twp.
03 - Beach Haven Boro
05 - Berkeley Twp.
07 - Dover Twp.
09 - Harvey Cedars Boro
11 - Jackson Twp.
13 - Lakehurst Boro
15 - Lavalette Boro
17 - Long Beach Twp.
19 - Mantaloking Boro
20 - Ocean Twp.
23 - Plumsted Twp.
24 - Point Pleasant Boro
27 - Seaside Park Boro
29 - South Toms River Boro
31 - Surf City Boro

PASSAIC COUNTY (31)

01 - Bloomingdale Boro
03 - Haledon Boro
05 - Little Falls Twp.
07 - Passaic City
09 - Pompton Lakes Boro
11 - Ringwood Boro
13 - Wanaque Boro
15 - West Milford Twp.
02 - Clifton City
04 - Hawthorne Boro
06 - North Haledon Boro
08 - Paterson City
10 - Prospect Park Boro
12 - Totowa Boro
14 - Wayne Twp.
16 - West Paterson Boro

SALEM COUNTY (33)

01 - Alloway Twp.
02 - Elmer Boro
04 - Lower Alloways Creek Twp.
06 - Oldmans Twp.
08 - Pennsville Twp.
10 - Pittsgrove Twp.
12 - Salem City
15 - Woodstown Boro
13 - Carney's Point Twp.
03 - Elsinboro Twp.
05 - Mannington Twp.
07 - Penns Grove Boro
09 - Pilesgrove Twp.
11 - Quinton Twp.
14 - Upper Pittsgrove Twp.

SOMERSET COUNTY (35)

01 - Bedminster Twp.
03 - Bernardsville Boro
05 - Branchburg Twp.
07 - Far Hills Boro
02 - Bernards Twp.
04 - Bound Brook Boro
06 - Bridgewater Twp.
08 - Franklin Twp.

09 - Green Brook Twp.
11 - Manville Boro
13 - Montgomery Twp.
15 - Peapack-Gladstone Boro
17 - Rocky Hill Boro
19 - South Bound Brook Boro
21 - Watchung Boro

10 - Hillsborough Twp.
12 - Millstone Boro
14 - North Plainfield Boro
16 - Raritan Boro
18 - Somerville Boro
20 - Warren Twp.

SUSSEX COUNTY (37)

01 - Andover Boro
03 - Branchville Boro
05 - Frankford Twp.
07 - Fredon Twp.
09 - Hamburg Boro
11 - Hardyston Twp.
13 - Lafayette Twp.
15 - Newton Town
17 - Sandyston Twp.
19 - Stanhope Boro
21 - Sussex Boro
23 - Walpack Twp.

02 - Andover Twp.
04 - Byram Twp.
06 - Franklin Boro
08 - Green Twp.
10 - Hampton Twp.
12 - Hopatcong Boro
14 - Montague Twp.
16 - Ogdensburg Boro
18 - Sparta Twp.
20 - Stillwater Twp.
22 - Vernon Twp.
24 - Wantage Twp.

UNION COUNTY (39)

01 - Berkeley Heights Twp.
03 - Cranford Twp.
05 - Fanwood Boro
07 - Hillside Twp.
09 - Linden City
11 - New Providence Boro
13 - Rahway City
15 - Roselle Park Boro
17 - Springfield Twp.
19 - Union Twp.
21 - Winfield Twp.

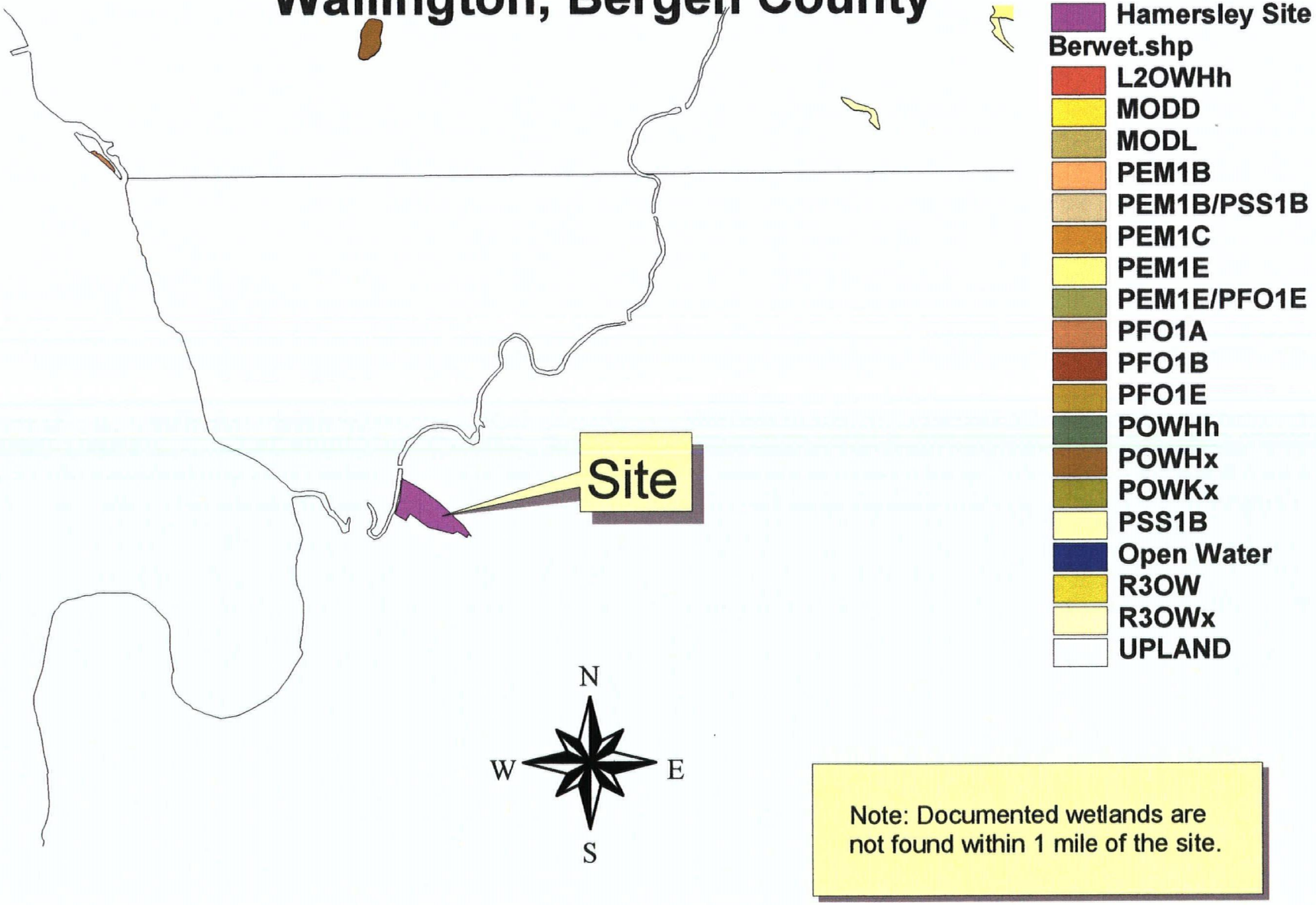
02 - Clark Twp.
04 - Elizabeth City
06 - Garwood Boro
08 - Kenilworth Boro
10 - Mountainside Boro
12 - Plainfield City
14 - Roselle Boro
16 - Scotch Plains Twp.
18 - Summit City
20 - Westfield Town

WARREN COUNTY (41)

01 - Allamuchy Twp.
03 - Belvidere Town
05 - Franklin Twp.
07 - Greenwich Twp.
09 - Hardwick Twp.
11 - Hope Twp.
13 - Knowlton Twp.
15 - Lopatcong Twp.
17 - Oxford Twp.
19 - Phillipsburg Town
21 - Washington Boro
23 - White Twp.

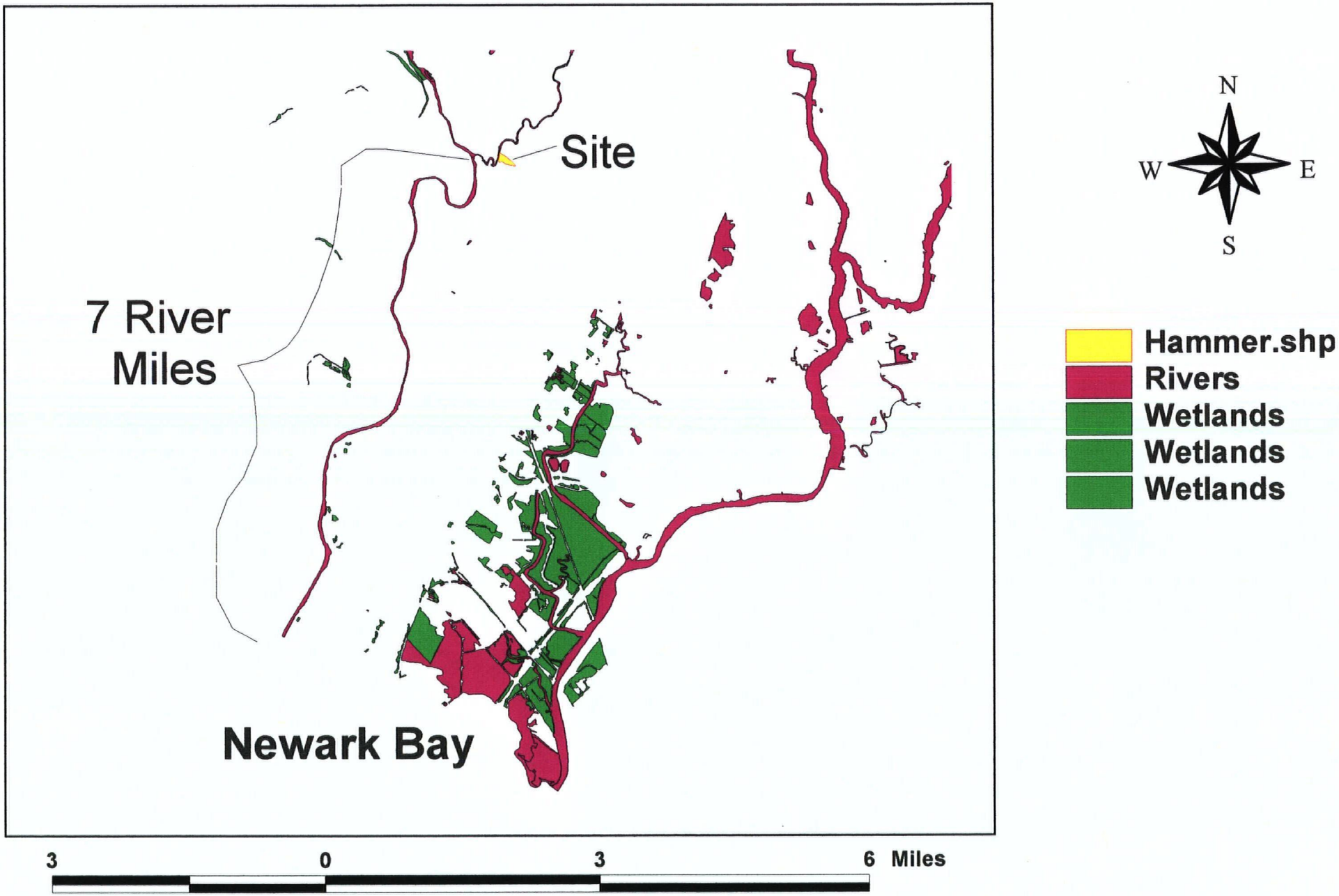
02 - Alpha Boro
04 - Blairstown Twp.
06 - Frelinghuysen Twp.
08 - Hackettstown Town
10 - Harmony Twp.
12 - Independence Twp.
14 - Liberty Twp.
16 - Mansfield Twp.
18 - Pahaquarry Twp.
20 - Pohatcong Twp.
22 - Washington Twp.

Map 6 - Wetlands Proximate to Site
Hamersley Manufacturing Company
Wallington, Bergen County

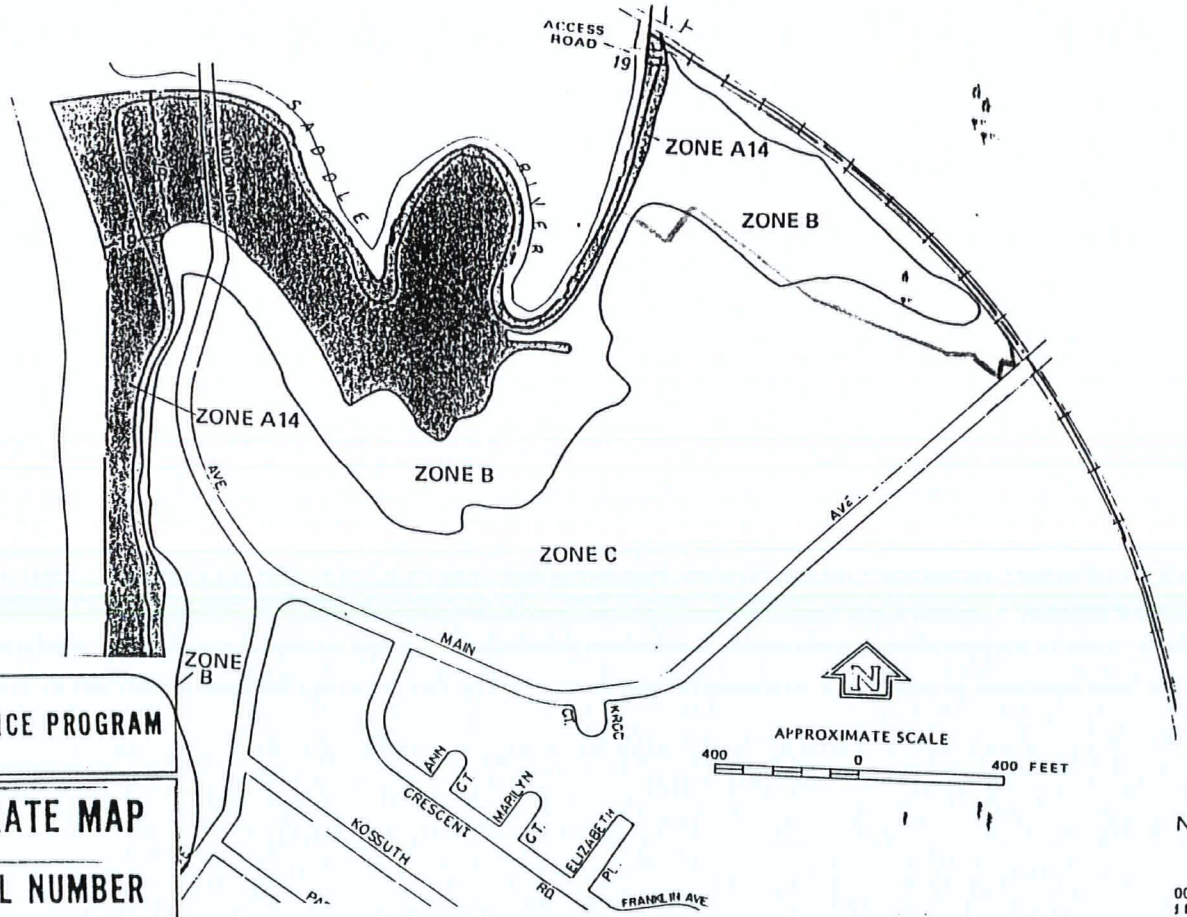


Note: Documented wetlands are not found within 1 mile of the site.

Wetlands Downstream of Hamersley



MAP 7 - FLOOD PRONE AREAS
HAMERSLEY SITE
WALLINGTON, BERGEN COUNTY



NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

COMMUNITY-PANEL NUMBER
340079 0001 B

EFFECTIVE DATE:
JUNE 4, 1980

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

N OF ZONE DESIGNATIONS

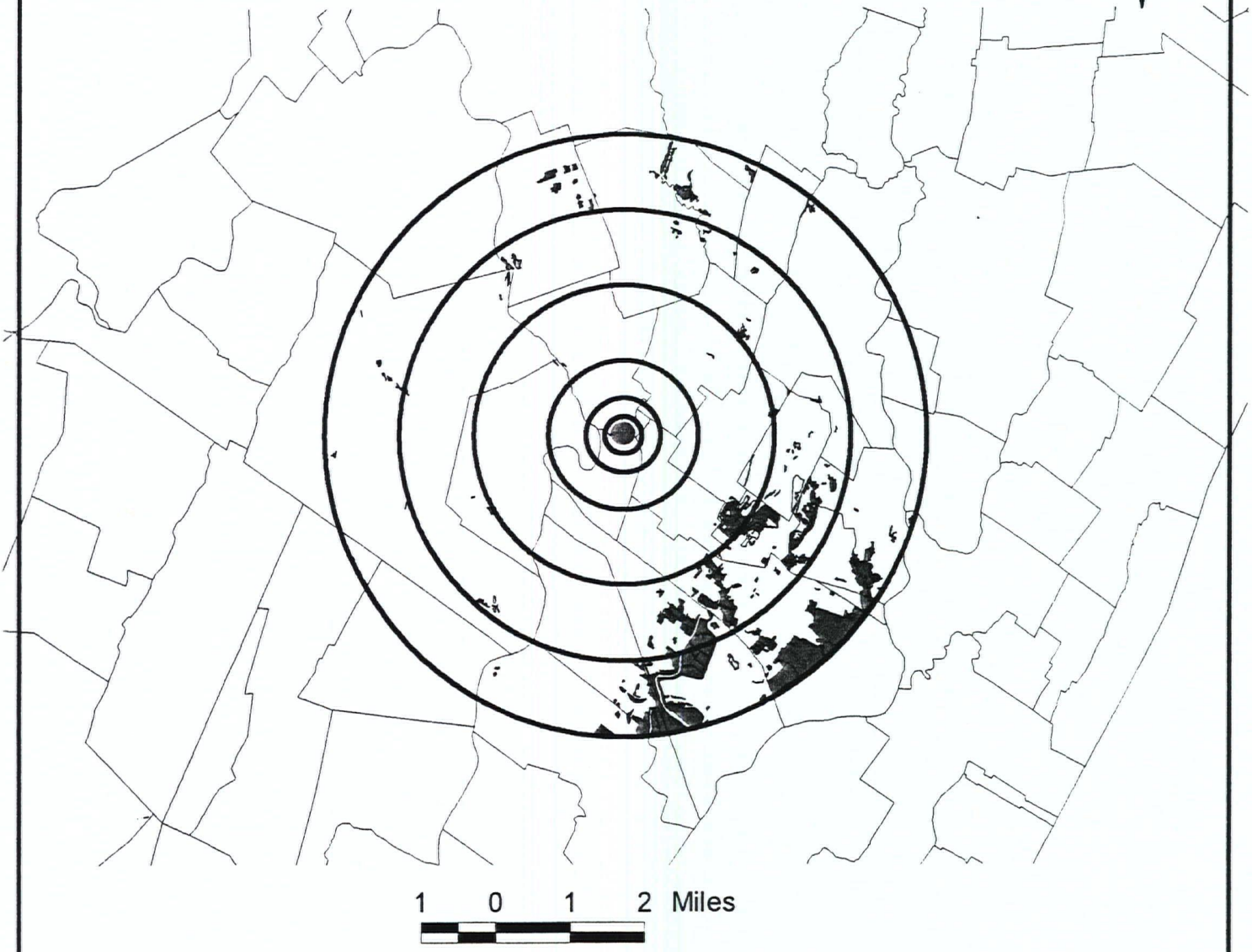
EXPLANATION

00-year flood; base flood elevations and
l factors not determined.

A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)

Map 8 - Wetlands Proximate to Hamersley Manufacturing Company Landfill
WALLINGTON BORO, BERGEN COUNTY
SP: (602527.1,739153.3)

Lat: 40° 51' 43.00" , Long: -74° 6' 03.00"



Ring	1	(0.00- 0.25)	has Wetlands Acres:	0
Ring	2	(0.25- 0.50)	has Wetlands Acres:	0
Ring	3	(0.50- 1.00)	has Wetlands Acres:	0
Ring	4	(1.00- 2.00)	has Wetlands Acres:	92
Ring	5	(2.00- 3.00)	has Wetlands Acres:	594
Ring	6	(3.00- 4.00)	has Wetlands Acres:	1000

*Based on 1986 Land Use/Land Cover Data

Map 9 - Population Proximate to Hamersley Manufacturing Company Landfill WALLINGTON BORO, BERGEN COUNTY

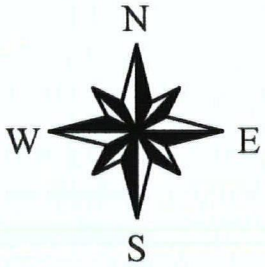
SP: (602527.1,739153.3)

Lat: 40° 51' 43.00" , Long: -74° 6' 03.00"

Ring 1	(0.00- 0.25)	has Population:	1484
Ring 2	(0.25- 0.50)	has Population:	4131
Ring 3	(0.50- 1.00)	has Population:	30131
Ring 4	(1.00- 2.00)	has Population:	114045
Ring 5	(2.00- 3.00)	has Population:	85601
Ring 6	(3.00- 4.00)	has Population:	129259

*Based on 1990 Census Data.

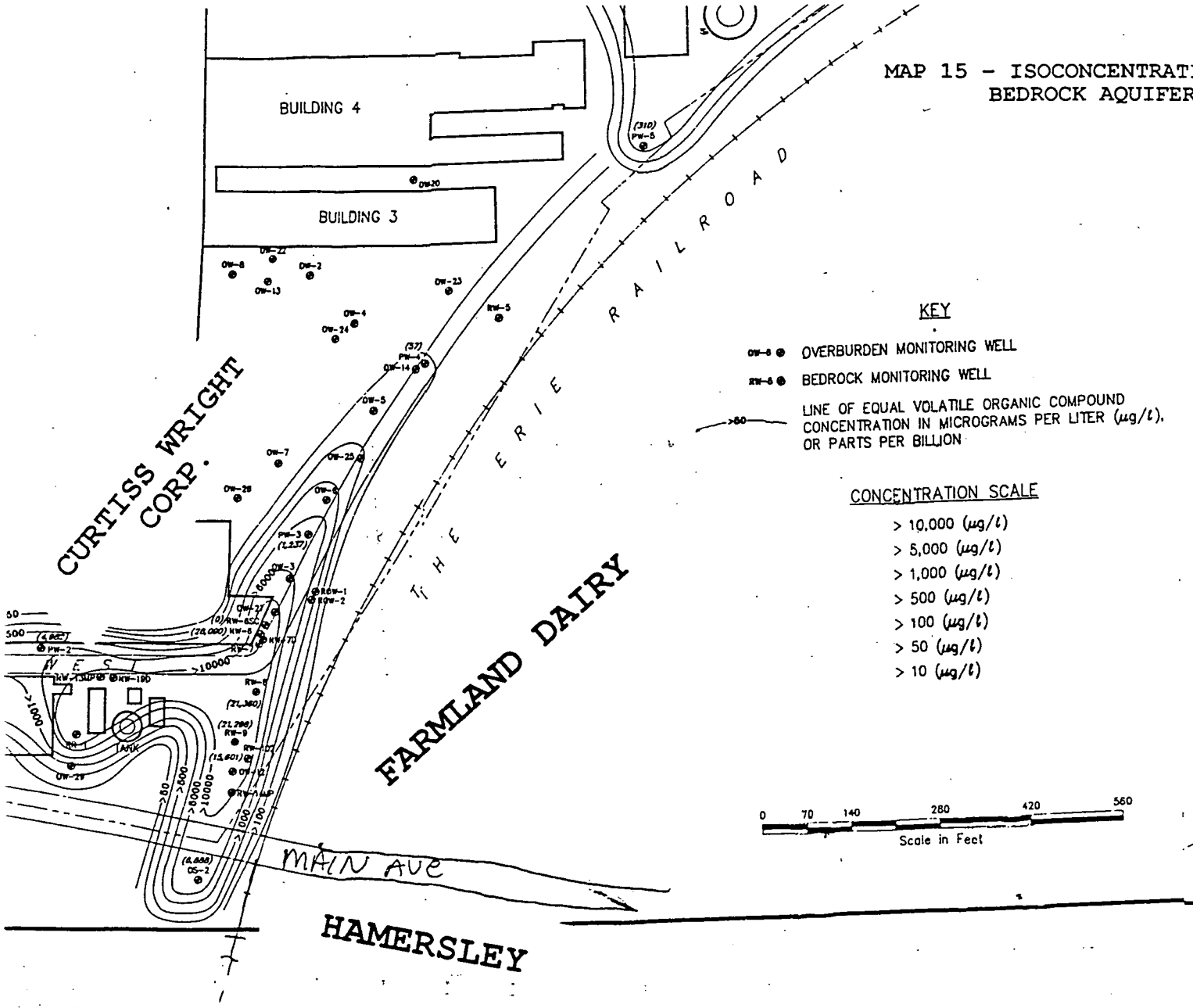
MAP 10 - Municipal Well Locations Relative to Site
Hamersley Manufacturing Company Landfill



Hamersley
Wallington Wells

2000 0 2000 4000 Feet

MAP 15 - ISOCONCENTRATION OF HALOGENATED COMPOUNDS IN BEDROCK AQUIFER - CURTISS WRIGHT CORP.



NOTE:
CONTOURS AROUND RW-4, RW-13MP RW-16 AND REPRESENT CONCENTRATIONS PRESENT IN DECEM OR MARCH 1994.

NO.	DESCRIPTION
	REVISIONS

CA RICH CONSULTANTS
Certified Ground-Water and Environmental
404 Glen Cove Avenue, Sea Cliff, NY

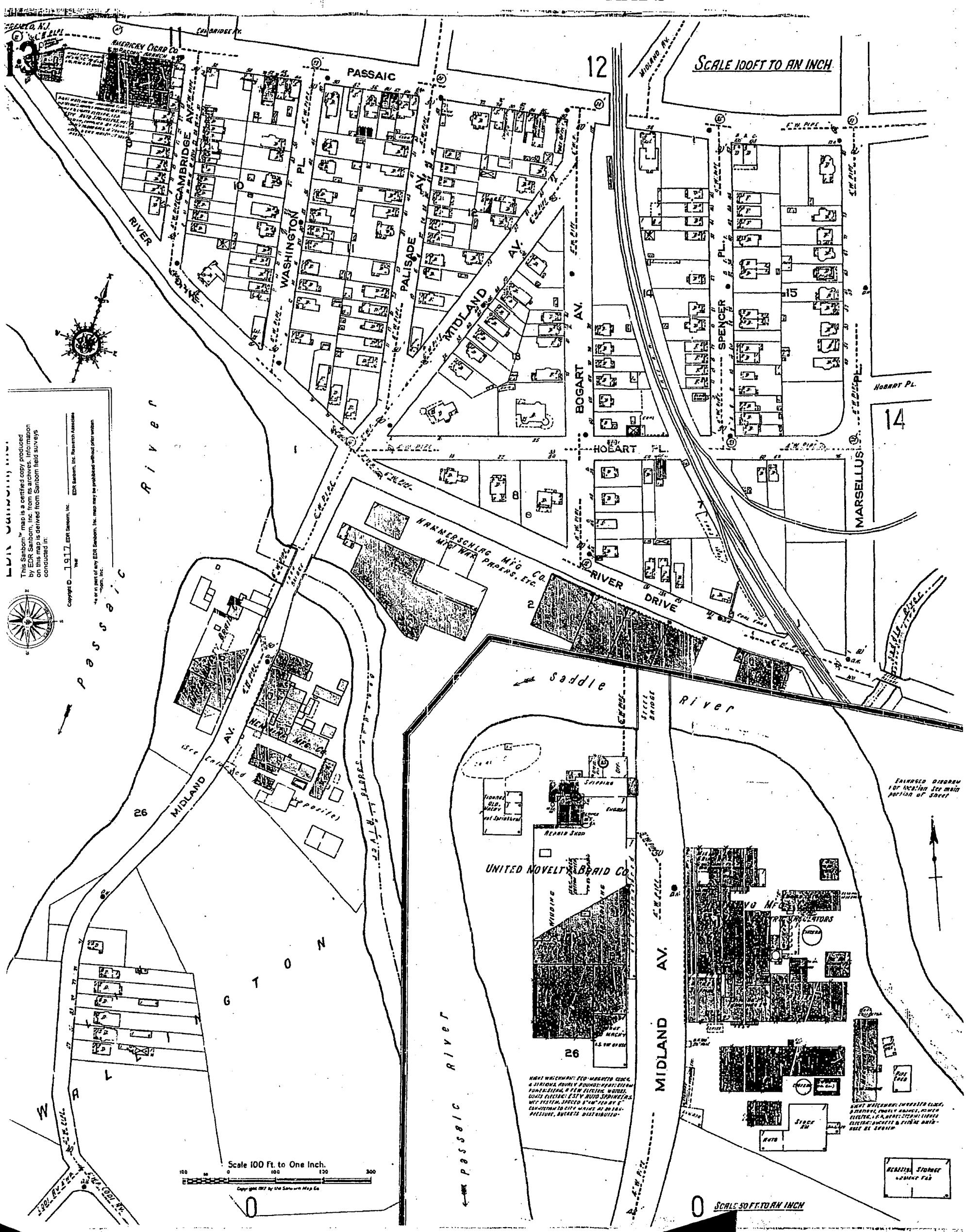
TITLE: HALOGENATED VOLATILE ORGANIC COMPOUND ISOCONCENTRATION CONTOUR MAP OF THE PASSAIC SHALE BEDROCK AQUIFER (JUNE 1994)

PLATE: 13

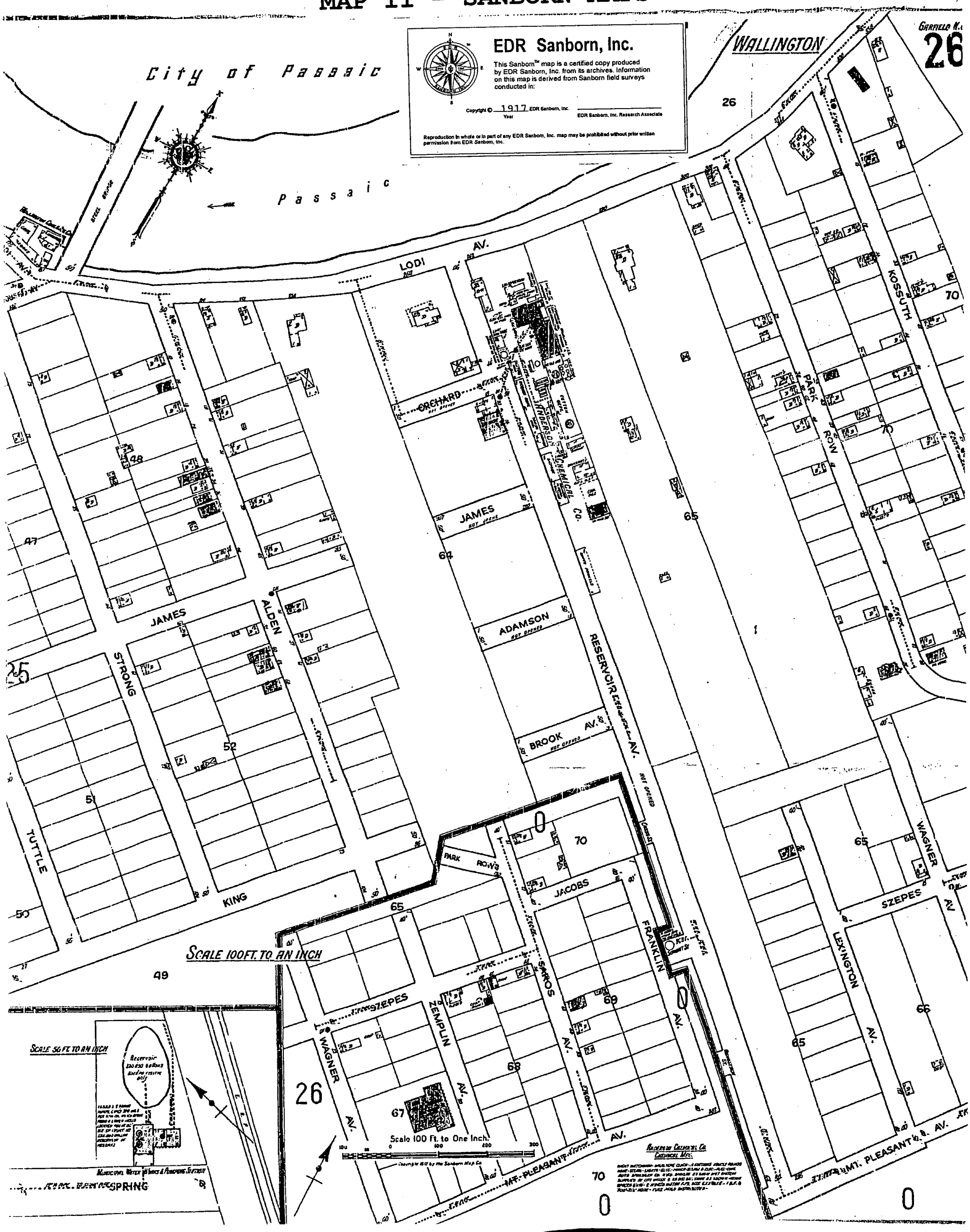
DRAWING NO: 3216-01E.4B

CURTISS-WRIGHT CORP.
1 PASSAIC STREET
WOOD RIDGE, NEW JERSEY

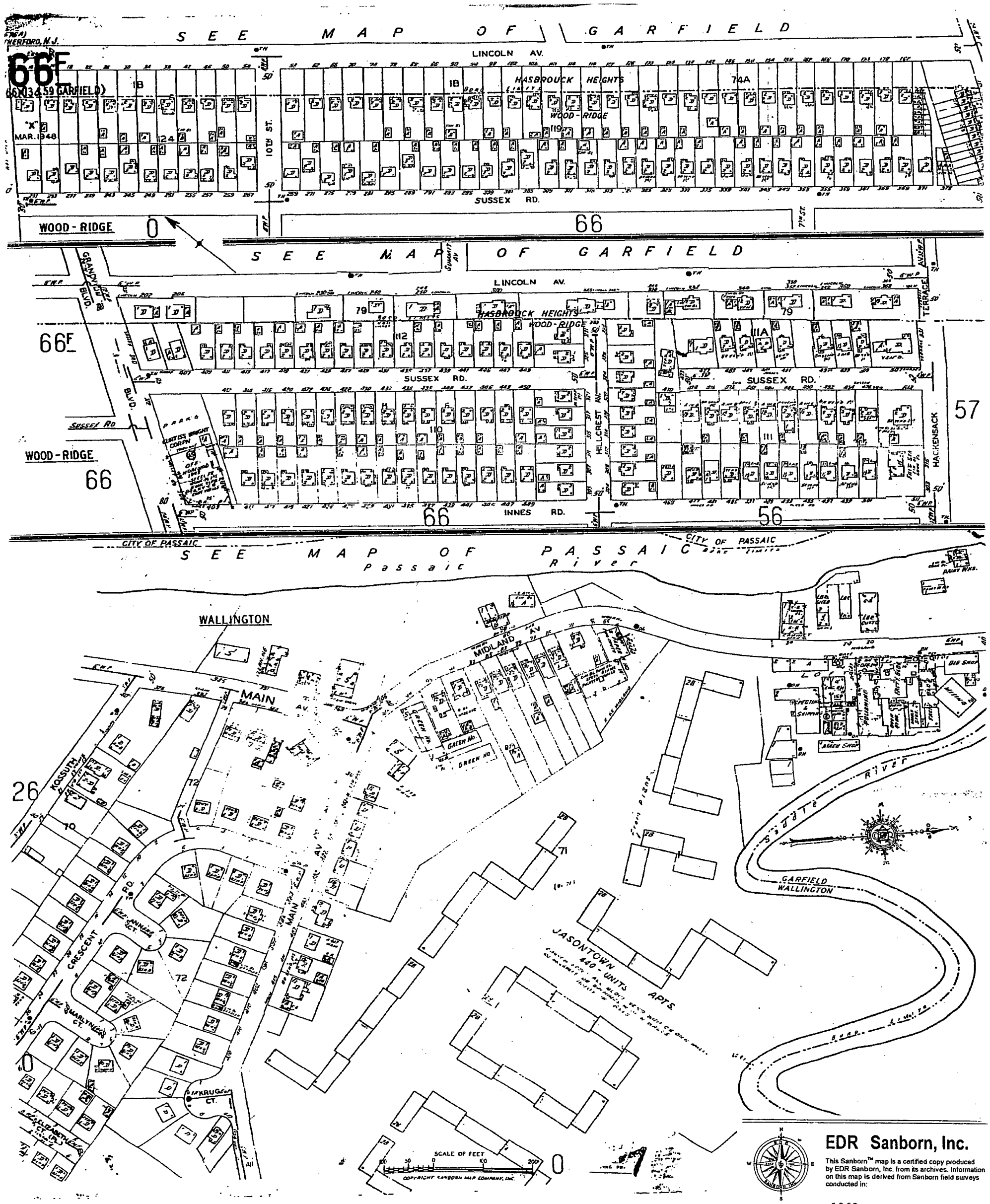
MAP 11 - SANBORN MAPS



MAP 11 - SANBORN MAPS



MAP 11 - SANBORN MAPS



EDR Sanborn, Inc.

This Sanborn™ map is a certified copy produced by EDR Sanborn, Inc. from its archives. Information on this map is derived from Sanborn field surveys conducted in:

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Year
EDR Sanborn, Inc. Research Associ.

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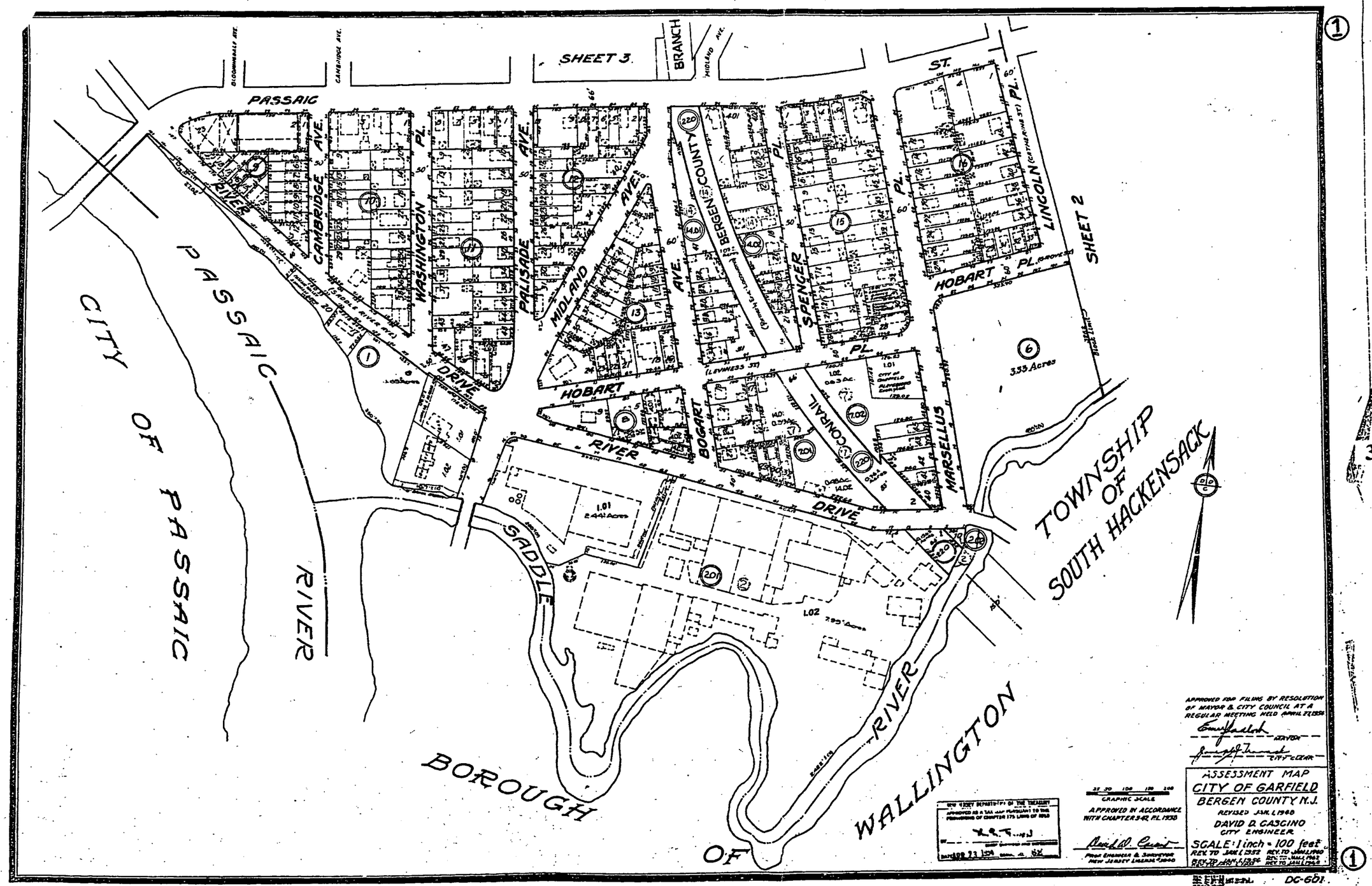
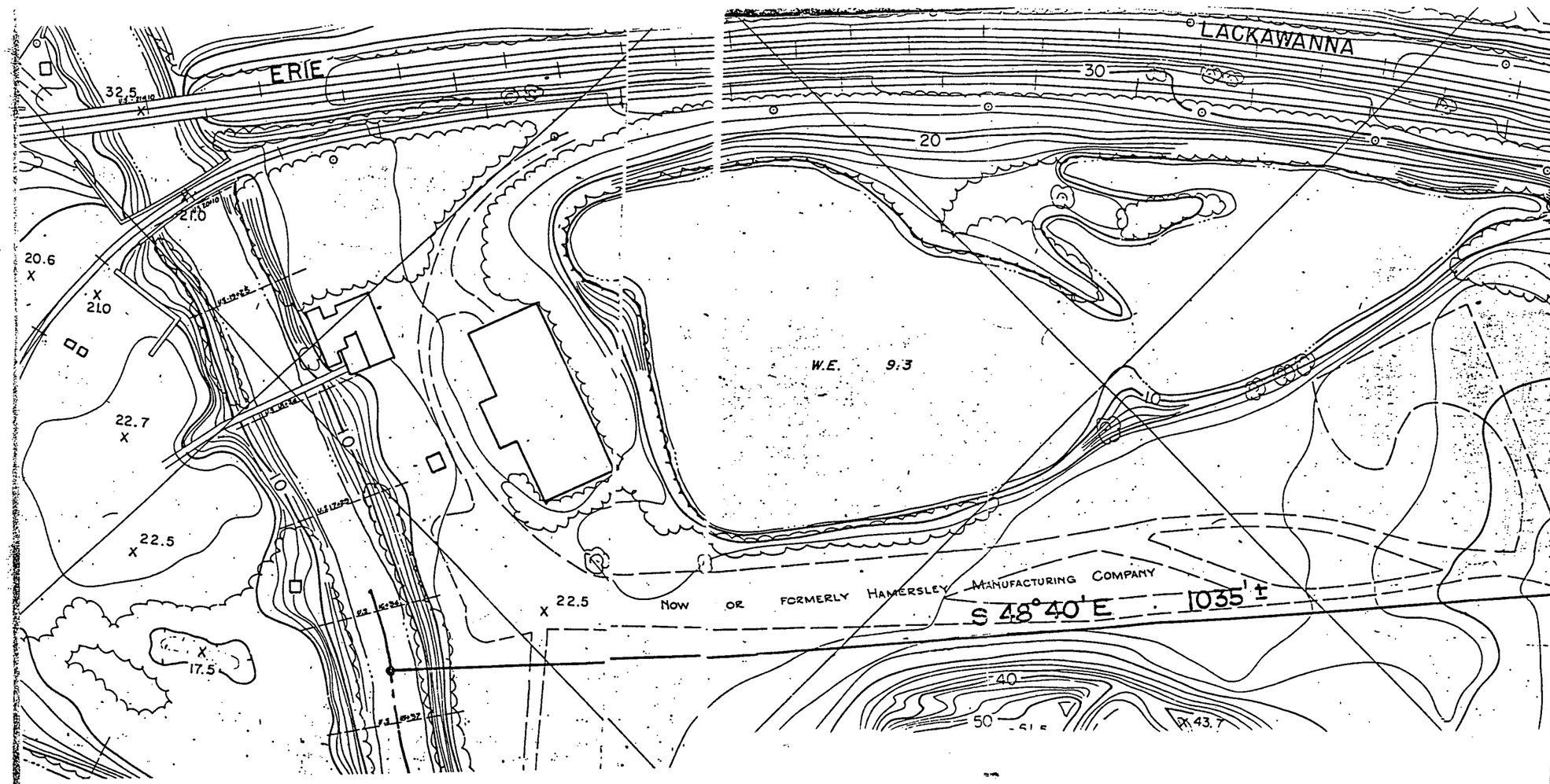
MAP 12 - OLD TAX MAP



THIS MAP REDRAFTED FROM COPY OF 1928 ASSESSMENT MAP OF THE CITY OF GARFIELD REVISED BY ARTHUR HORCK CIVIL ENGINEER IN 1929.

MAP 13 - PORTION OF TOPOGRAPHIC MAP



PREPARED FOR
JAMES NUCKEL CONSTRUCTION CO.
JASONTOWN APARTMENTS, SEC. NO. 2
BOR. OF WALLINGTON COUNTY OF BERGEN, N.J.

SCALE - 1" = 50'

SEPT. 30, 1969

THIS SURVEY IS CERTIFIED TO THE NEW JERSEY HOUSING FINANCE AGENCY, ST. PAUL TITLE INSURANCE COMPANY, THE MONDAY CORPORATION AND ALL OTHER PARTIES IN INTEREST.

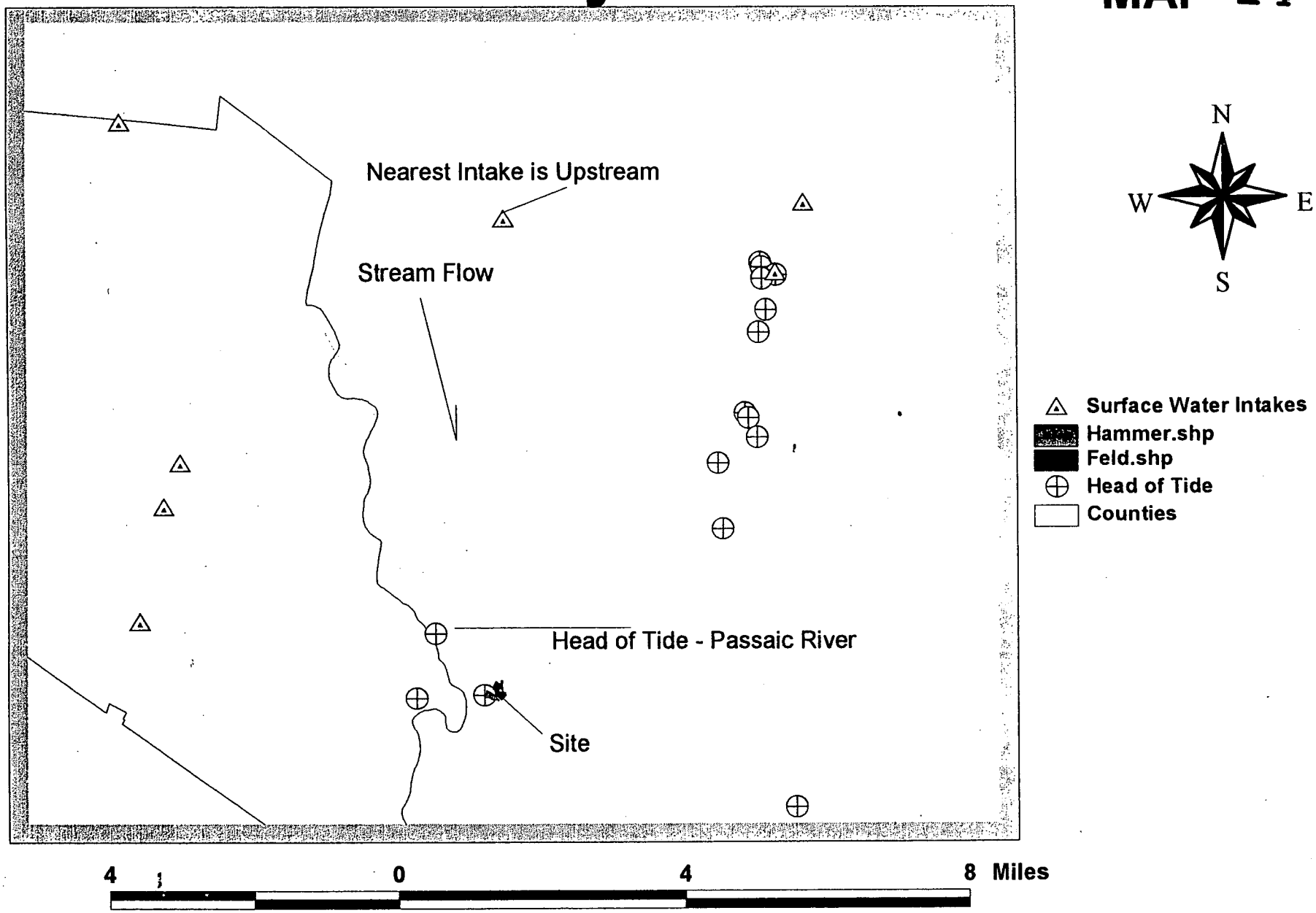
REVISIONS
10/23/69 70-
6/3/70 RDB
6/8/70 RDB

JOHN A. DOOLITTLE & CO.
ENGINEERS EST. 1890 SURVEYORS
1130 CLIFTON AVE., CLIFTON, N.J.

BY Robert B. Doolittle P.E./L.S.

Water Intakes in Vicinity of Hamersley Landfill

MAP 14



PHOTOGRAPHS

PHOTOGRAPH LOG

PHOTO A. Looking due east. Geoprobe at Location GW1/S9. Curtiss Wright ground water treatment vapor stack visible in background beyond railroad trestle. Farmland Dairy storage tank visible across Main Avenue.

PHOTO B. Looking southwest from fence with railroad. GW2 location. Rollerblade rink is visible in background on lot 35.02. Grouting equipment in foreground.

PHOTO C. Looking South-southeast. GW13/S6 location. Jasontown Apartments are visible in background beyond 8 foot fence.

PHOTO D. Looking west-northwest. GW7/S3 location. Just beyond landfill gate.

PHOTO E. Sample S3 empty core. This interval was void but did contain oily, wet silt. Sheens are visible.

PHOTO F. Sample S3 core from 20 - 25 feet below grade. Sample was taken from this interval.

PHOTO G. Sample S3 core from 20 - 25 feet below grade. Close up.

PHOTO H. Sample S3 core from 20 - 25 feet below grade. Close up.

PHOTO H. Looking due south. S1 location. Farmland Dairy tanks visible.

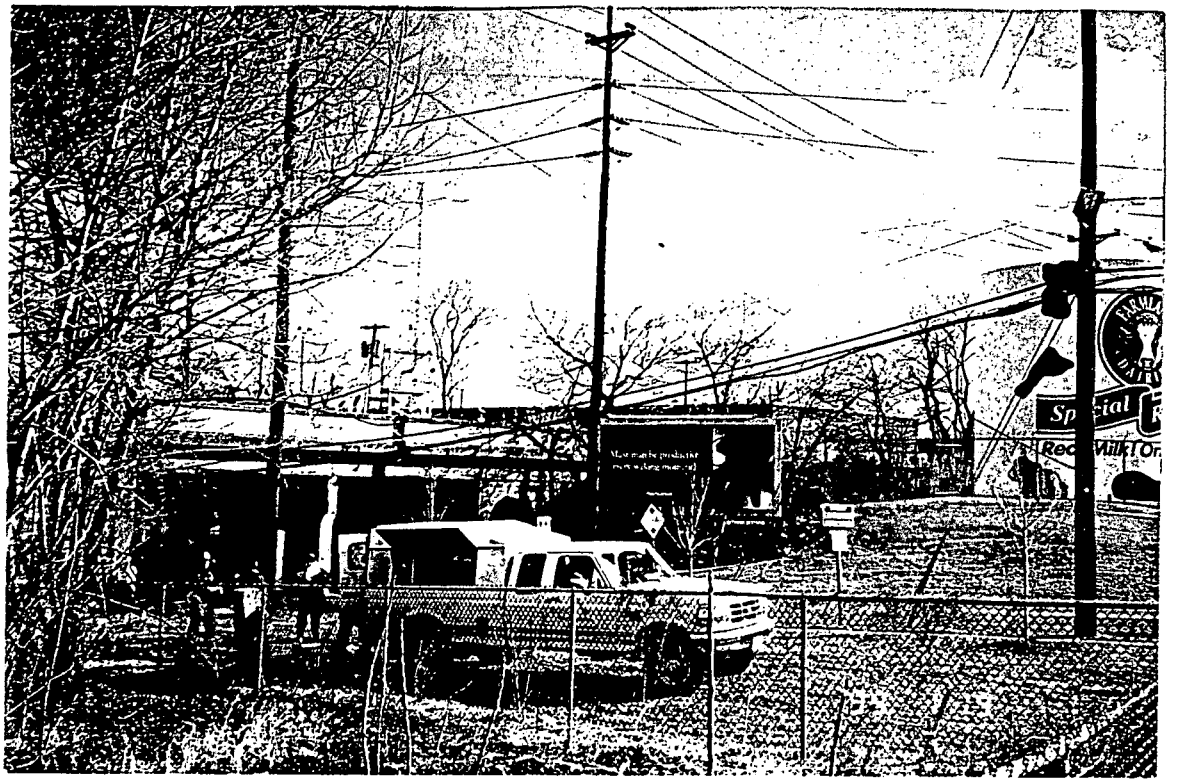
PHOTO I. S1 cores.

PHOTO J. Looking southeast towards Curtiss Wright. Geoprobe at location GW3.

PHOTO K. Looking due south towards Geoprobe which is over GW3.

PHOTO L. S3 cores.

PHOTO M. Decon in parking lot area near GW1.



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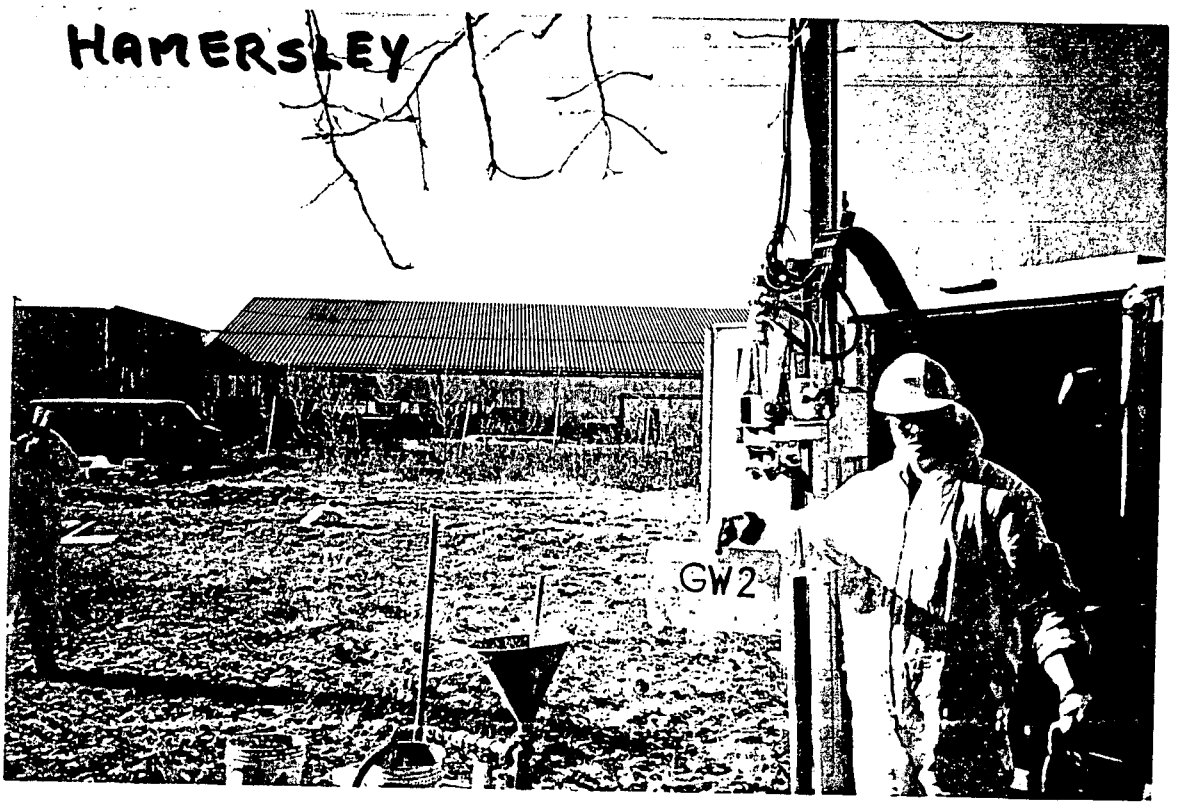

PHOTO B. Looking southwest from fence with railroad. GW2 location. Rollerblade rink is visible in background on lot 35.02. Grouting equipment in foreground.

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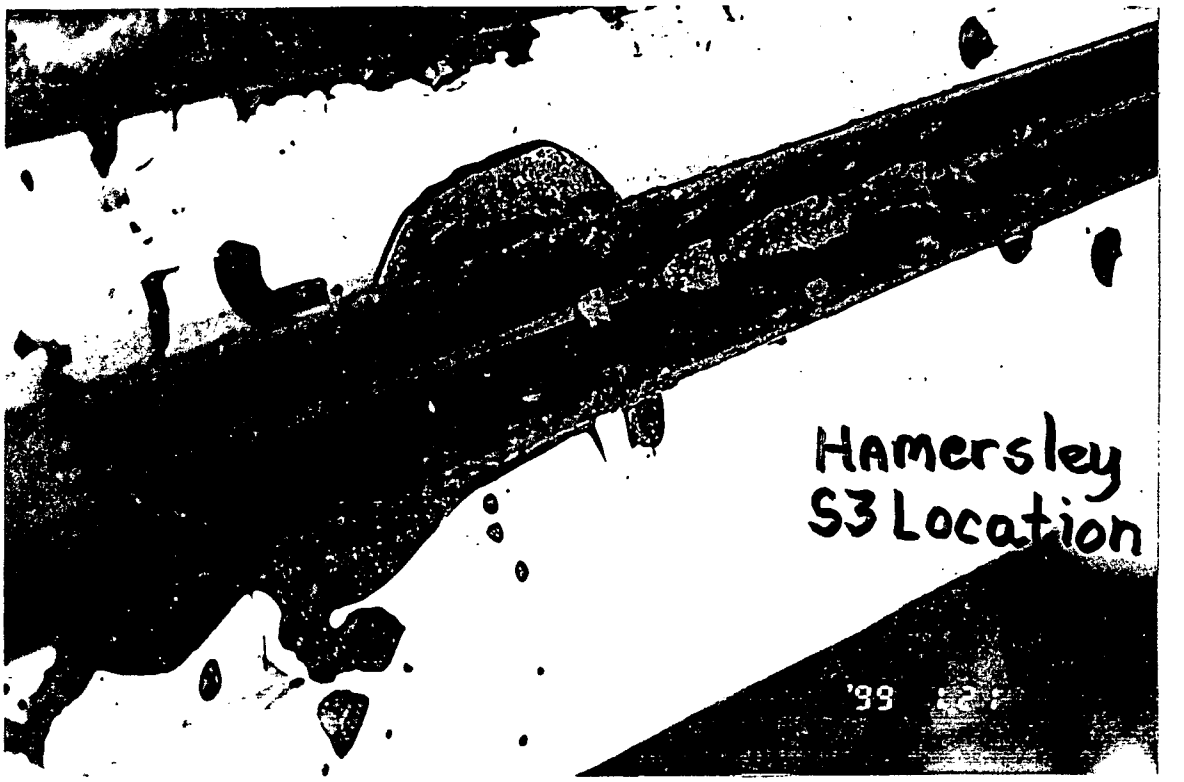


PHOTO E. Sample S3 empty core. This interval was void but did contain oily, wet silt. Sheens are visible.

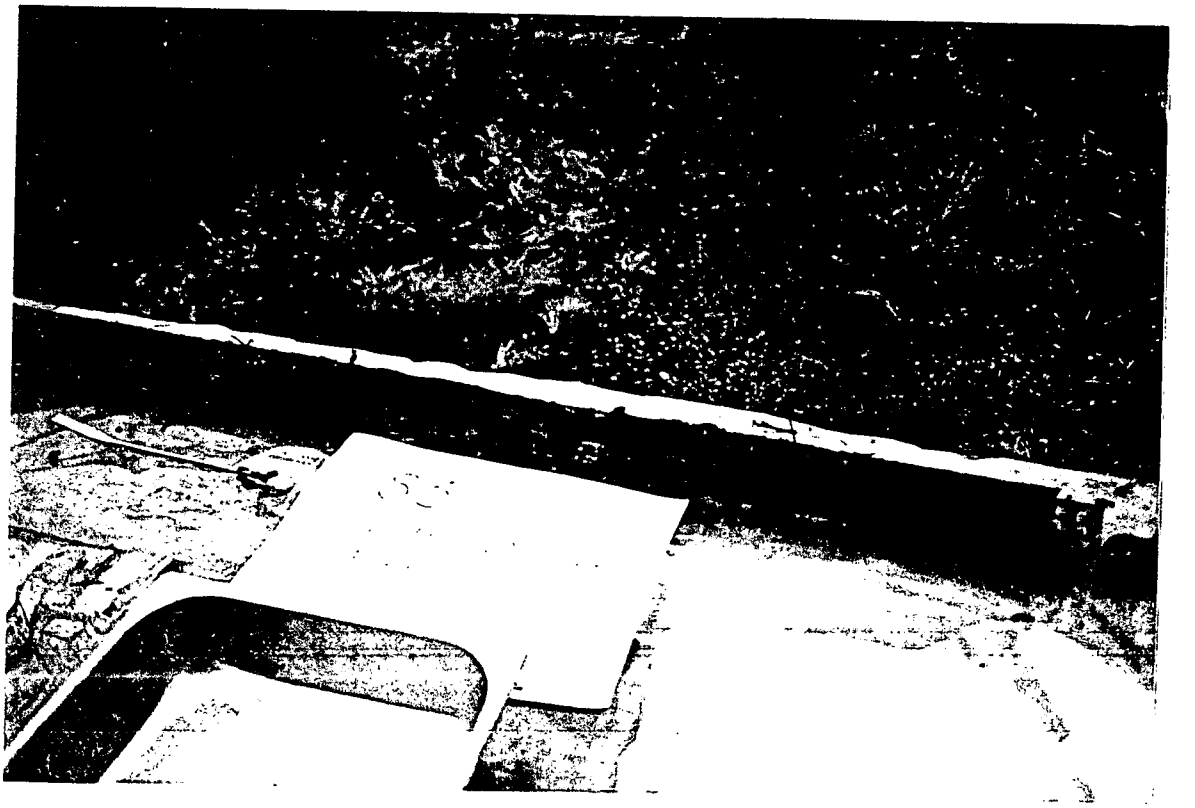
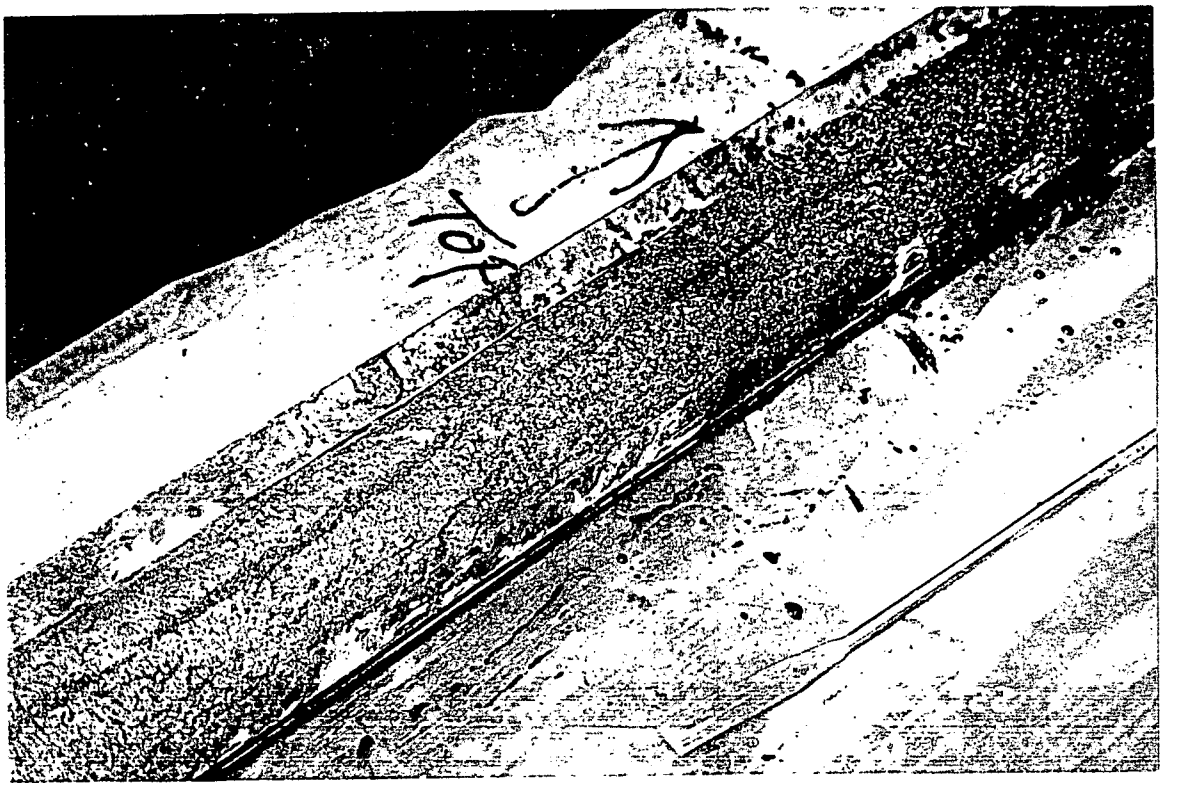


PHOTO F. Sample S3 core from 20 - 25 feet below grade. Sample was taken from this interval.



HOTO G. Sample S3 core from 20 - 25 feet below grade. Close up.

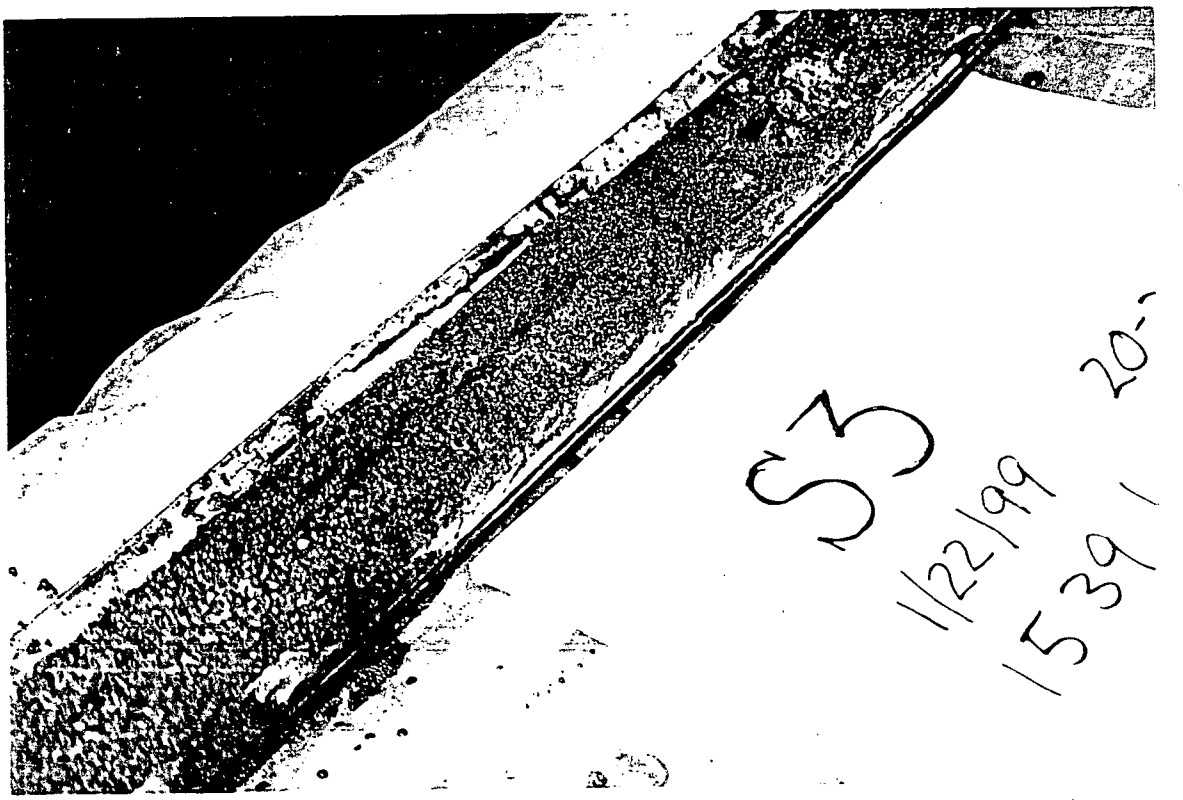


PHOTO H. Sample S3 core from 20 - 25 feet below grade. Close up.

HAMERSLEY
S1 Location

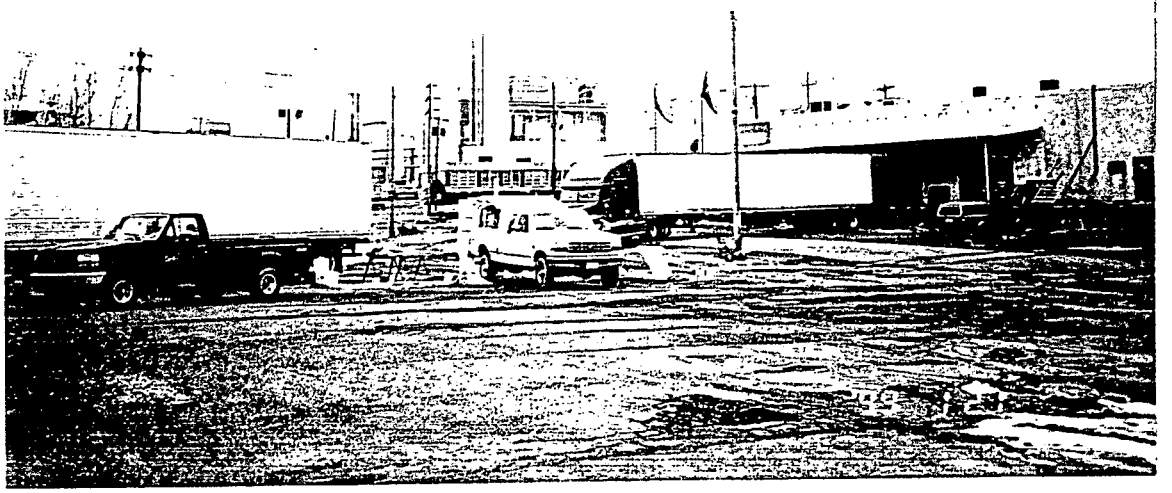


PHOTO H. Looking due south. S1 location. Farmland Dairy tanks visible.

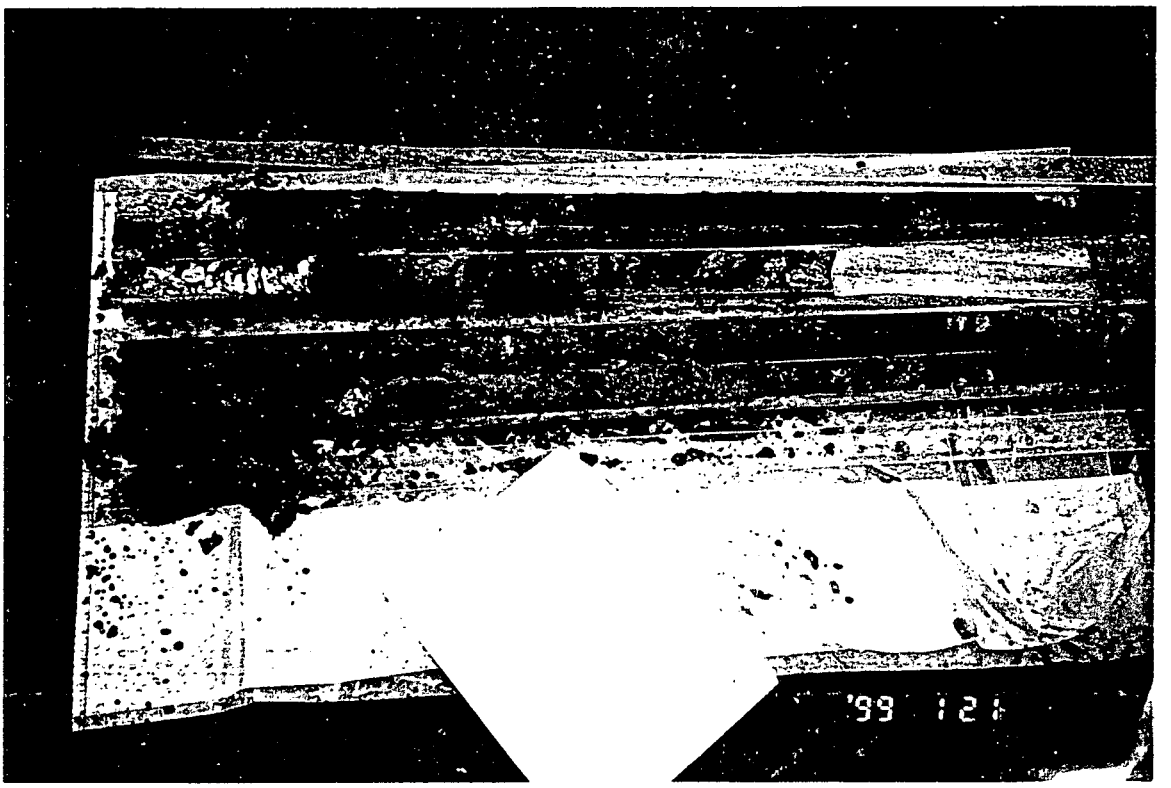


PHOTO I. S1 cores.

PHOTO J. Looking southeast towards Curtiss Wright. Geoprobe at location GW3.

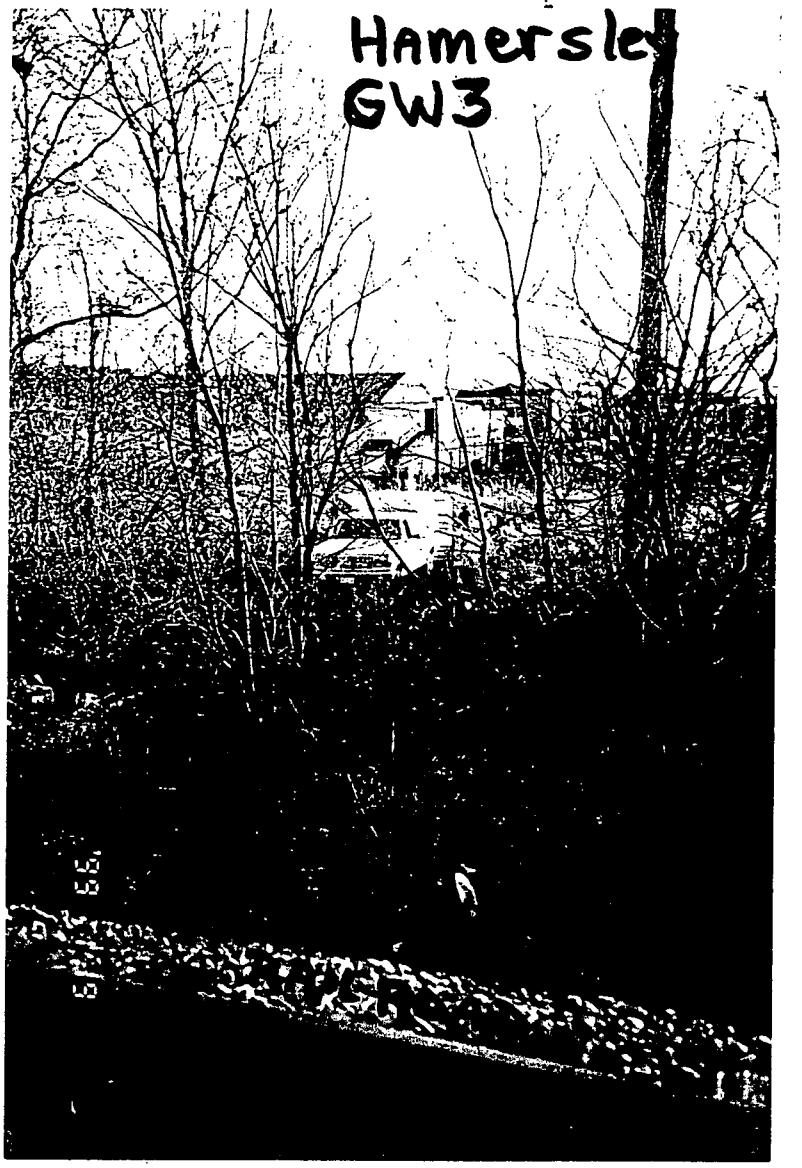


PHOTO K. Looking due south towards Geoprobe which is over GW3.

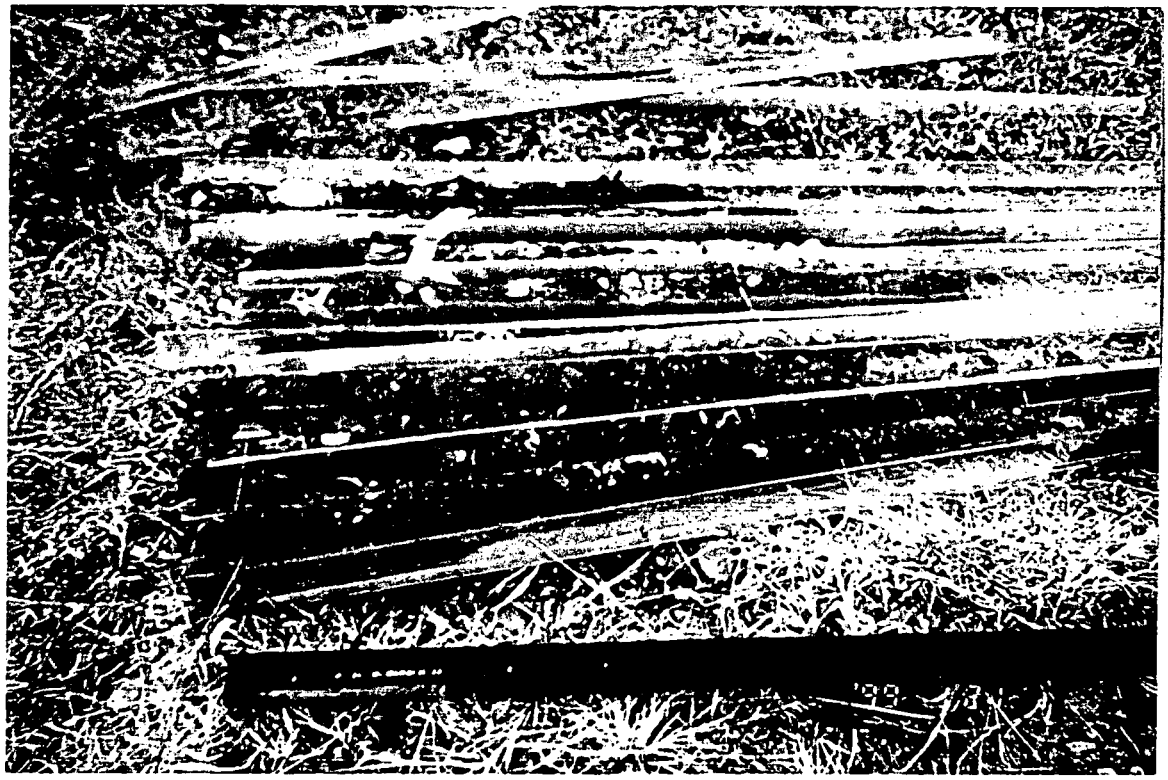


PHOTO L. S3 cores.

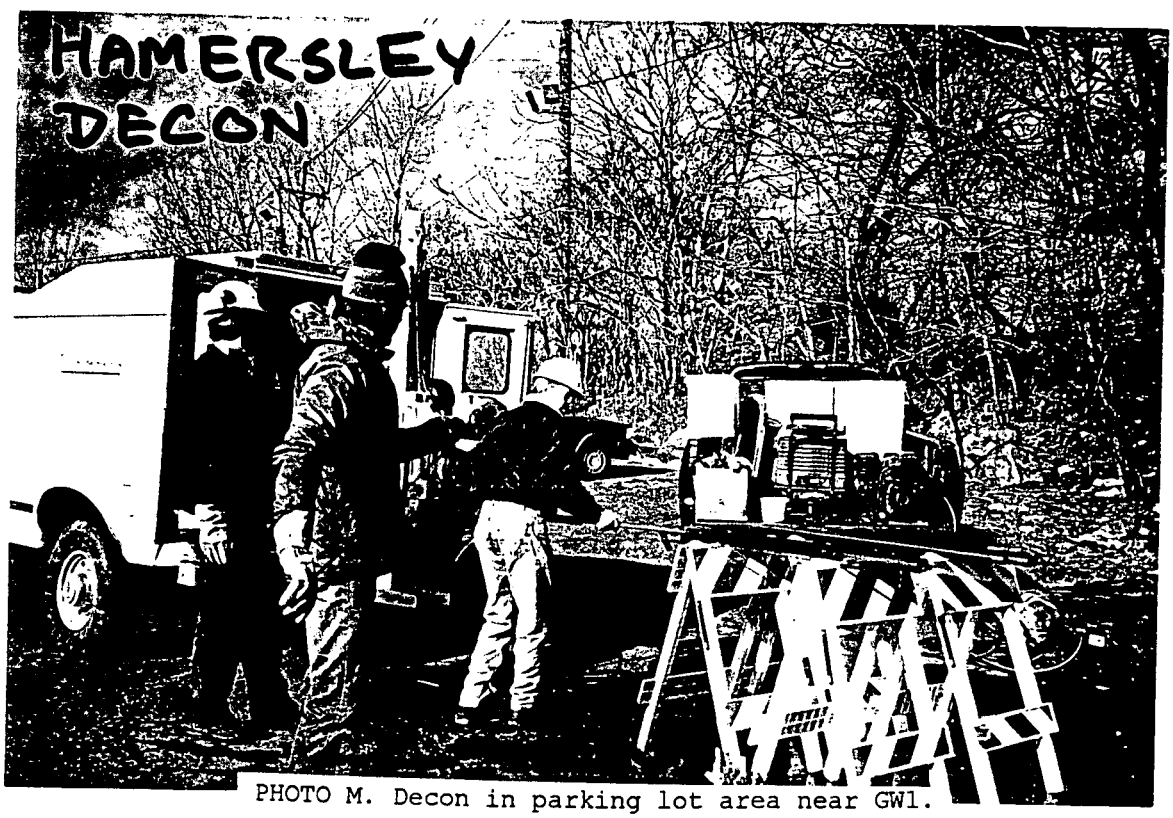


PHOTO M. Decon in parking lot area near GW1.

ATTACHMENT A

(1)

Garfield, N. J.,

October 2, 1918.

To the Honorable, the Mayor and Council,

Borough of Wallington, N. J.,

Gentlemen:

The undersigned respectfully petition your Honorable Body to grant your consent to a contemplated change in the present run of the Saddle River. A very sharp bend in the river, situated between the Railroad Bridge and the Midland Avenue Bridge, causes inconveniences, and, during heavy rainstorms, damages the adjoining properties.

It is proposed to eliminate this bend in the river, and substitute a straight channel. By changing the run of the river, the useless land, now exposed to inundation by the rise of the river, may be utilized for building purposes, and thus create additional revenue to your community.

The Federal laws provide that the municipalities in which the river is located, give formal consent to the change. A resolution to this effect, approved by your Mayor and attested by your Clerk, will be necessary to be presented to the Federal Government, before permission is granted by the latter for the proposed improvement.

The accompanying map shows the contemplated change in the run of the Saddle River.

We trust that this petition will receive your favorable consideration.

Respectfully,

THE HAMERSLEY MFG. CO.

Geo W Hamersley

GARFIELD MFG CO.

H W Appleton

A

ATTACHMENT B

November
Twenty Seventh
Nineteen Eighteen.,

Mr. Geo W Hamersley
The Hamersley Manufacturing Company
Garfield
New Jersey

Dear Sir:-

Regarding petition presented to the Mayor and Council of the Borough of Wallington, I enclose herewith copy of an opinion rendered by our Attorney, which is self-explanatory.

Under these circumstances, as set forth in this report, I have been directed to inform you with regrets, that we do not see our way clear to take any action in this matter.

Very truly yours

Borough Clerk.

B

ATTACHMENT C

MESSINEO & MESSINEO
COUNSELLORS AT LAW

ARTHUR J. MESSINEO
ARTHUR J. MESSINEO, JR.

EDWARD V. TORACK

60 PASSAIC STREET
GARFIELD, NEW JERSEY

779-7073

November 17, 1964

Borough Clerk
Municipal Building
Wallington, New Jersey

Re: Hamersley Mfg. to Krugman, et als
part of Lot 35, Block 71
Our file No. 19,317

Dear Sir:

We desire to obtain a minor subdivision in the above matter and would appreciate your forwarding the necessary forms, instructions as to requirements, as well as advice as to next date at which the matter may be heard.

Thank you.

Very truly yours,
MESSINEO & MESSINEO
By
Arthur J. Messineo
Arthur J. Messineo

jeb

Replied 12/4/64

C

ATTACHMENT D

To the Mayor and Council of Wallington:

We, the undersigned, protest against the establishment of a dump on the Hamersley property along upper Main Avenue because of the unpleasant odors and unhealthful conditions resulting from such.

Ex. 6

[redacted]

The redacted information consists of 20 names and addresses of private individuals. Disclosure of this information would constitute a clearly unwarranted invasion of personal privacy and thus is exempt from mandatory disclosure by virtue of Exemption 6 of the FOIA, 5 U.S.C. § 552(b)(6).

Ex. 6

[redacted]

The redacted information consists of 13 names and addresses of private individuals. Disclosure of this information would constitute a clearly unwarranted invasion of personal privacy and thus is exempt from mandatory disclosure by virtue of Exemption 6 of the FOIA, 5 U.S.C. § 552(b)(6).

D2

ATTACHMENT E

BERGEN COUNTY OFFICE OF EMERGENCY MANAGEMENT
HAZARDOUS SUBSTANCE RELEASE NOTIFICATION

DEP CASE #: 90-02081524 EVENT #

AME OF CALLER: Chris Gibbons

AGENCY: NJ DEP CALLBACK NUMBER: 669-3957

TIME CALL RECEIVED: 1541 DATE CALL RECEIVED: 02/08/90

NCIDENT DATE: Thu, Feb 8, 1990 INCIDENT TIME: Ongoing

NAME OF SITE: Saddle River
STREET ADDRESS: off Midland Avenue
MUNICIPALITY: Wallington

STATUS AT CENE UPON ARRIVAL OR DESCRIPTION OF INCIDENT: No response by this department necessary - see narrative.

PERSONNEL ASSIGNED: Lt. Edward Sturm #44 notified
IME ASSIGNED: 1543
REFERRED TO:

S IMMEDIATE RESPONSE REQUIRED? No

REMARKS: Resident ([redacted] Ex. 6) reports sheen of suspected Diesel Fuel to be width of river, could not estimate length, says incident is ongoing at this time. No personnel from Wallington on scene, Mr. Gibbons will call to have Wallington Police respond to scene. 1550 hours - Chris Gibbons called back - he spoke with Wallington Police dispatcher, she said a unit went out and checked the river - no product found; it is assumed to have either dissipated or washed into the Passaic River with the normal tide.

CALL RECEIVED BY: Heidi S. Kulesh

HECK IF NO RESPONSE MADE X

1	2	3	4	5	6	7	8
X			X			X	

The redacted information consists of the name and phone number of a private individual. Disclosure of this information would constitute a clearly unwarranted invasion of personal privacy and thus is exempt from mandatory disclosure by virtue of Exemption 6 of the FOIA, 5 U.S.C. § 552(b)(6).

E

ATTACHMENT F

1	2	3	4	5	6	7	8	N
X		X	X	X	X	X		

BERGEN COUNTY OFFICE OF EMERGENCY MANAGEMENT
HAZARDOUS MATERIALS INCIDENT REPORT

DEP Case #: 90-08141404 EVENT # 90-07256
RECEIVED FROM: NJ DEP TIME: 1420 DATE: 08/14/90

INCIDENT TYPE: _ TRANSPORTATION X FACILITY _ OTHER

NAME OF SITE: Rear of:
STREET ADDRESS: 551 Main Avenue PHONE #: _____
MUNICIPALITY: Wallington

INCIDENT TIME: Ongoing INCIDENT DATE: Tuesday, August 14, 1990

INCIDENT DESCRIPTION: _ FIRE _ EXPLOSION _ AIR RELEASE
_ ODOR _ SEWAGE _ SPILL
_ MVA _ SMOKE/DUST _ ILLEGAL DUMPING
X OTHER (specify) Sheen on river

HAZARDS(S): _ FLAMMABLE _ TOXIC _ CORROSIVE X COMBUSTIBLE

INJURIES: 0 WHERE TREATED: _____

AFFECTED AREAS: _ CATCH BASIN _ WELL X RIVER _ VEHICLE
_ PUMP STATION _ STREAM _ TRANSPORTATION
_ WATER SUPPLY* _____ OTHER (specify)
*(if water supply) NAME _____ and DISTANCE ____

EVACUATIONS: (#) 0 WHERE EVACUATED TO: _____
PUBLIC EXPOSURE: (how many?) 0

WIND DIRECTION/SPEED: W/5 mph WEATHER: Clear TEMP: 85F

LOCATION TYPE: _ RESIDENTIAL X INDUSTRIAL _ SHOPPING _ BUSINESS

STATUS AT SCENE UPON ARRIVAL: An oil sheen was observed on the Saddle River coming from a storm drain pipe at the rear of the property at 551 Main Avenue.

TIME OF TERMINATION OF RELEASE/SPILL: Ongoing
IDENTITY OF SUBSTANCE(S) IS _ KNOWN X SUSPECTED _ UNKNOWN
NAME OF SUBSTANCE(S): Fuel oil _ SOLID X LIQUID _ GAS
UN #: 1993 DOT CLASS #: ____ CAS #: ____ EPA #: ____
AMOUNT RELEASED/SPILLED: Unknown _ ACTUAL _ POTENTIAL _ ESTIMATED
SUBSTANCE CONTAINED: (Y/N/U) Y METHOD OF CONTAINMENT: Sorbent Boom
CONTAINED BY (agency or company): Bergen County Hazmat Response Unit
STATUS OF RELEASE/SPILL: _ TERMINATED X CONTINUING _ INTERMITTANT

F1

90-08141404 08/14/90 (continued) Page 2 of 2

METHOD OF RECOVERY: Sorbent Boom METHOD OF DISPOSAL: Solid Waste
RESPONSIBLE PARTY: _ UNKNOWN X SUSPECTED KNOWN
fn _____ ln President
COMPANY: Farmland Dairies, Inc. PHONE # 777-2500
STREET: 520 Main Avenue
CITY: Wallington New Jersey 07055
NAME OF INSURANCE COMPANY: N/A CODE (if vehicle) __
ADDRESS: _____ POLICY # _____

IF VEHICLE: MAKE/MODEL: N/A YR: _ LIC #: ____ STATE: _
TRAILER MAKE/MODEL: _____ YR: _ LIC #: ____ STATE: _
DRIVER NAME: N/A D/L #: _____
ADDRESS: _____
CITY: _____ STATE: _ ZIP: ___

CLEANUP CONTRACTOR NAME: None TIME CONTACTED: _____
ADDRESS: _____ PHONE #: _____
ARRIVAL TIME OF CONTRACTOR: _____

AGENCIES: NOTIFIED (N) ON SCENE (S) (specify name of person)
(N) B. Doyle NJDEP _____ USEPA _____ LOCAL HEALTH

(S) J. Taradash COUNTY HEALTH _____ SPILLER _____ MFGR

_____ LOCAL POLICE _____ LOCAL FIRE

_____ NJSP-OEM _____ FD HAZMAT _____ OTHER

NARRATIVE An oil sheen on the Saddle River was traced up stream to a pipe at the rear of 551 Main Avenue. The pipe was traced east to Main Avenue, where a manhole was located. Upon opening the manhole cover, marked "County of Bergen", it was observed that the main flow of the water in the manhole was coming from the Farmland plant. County Health was notified and responded. A boom was installed where the pipe empties into the river. Follow up investigation will begin on Wednesday 08/15/90 by the Bergen County Department of Health Services.

PERSONNEL ASSIGNED: PO W. A. Weber, Sgt. K. Hartnett, E/S J. Taradash , E/S R. Farr
ENDING TIME AND DATE 1740 08/14/90 TOTAL PERSONNEL: 2 TOTAL MANHOURS: 5
REPORT FILED BY: P.O. William A. Weber #111

SIGNATURE _____ DATE: 08/14/90

F2

ATTACHMENT G

BERGEN COUNTY OFFICE OF EMERGENCY MANAGEMENT
HAZARDOUS SUBSTANCE RELEASE NOTIFICATION

DEP CASE #: 90-10261321 EVENT # 90-09900

NAME OF CALLER: NJ DEP

AGENCY: NJ DEP CALLBACK NUMBER: 669-3955

TIME CALL RECEIVED: 1436 DATE CALL RECEIVED: 10/26/90

INCIDENT DATE: Fri, Oct 26, 1990 INCIDENT TIME: 1230

NAME OF SITE: Farmland Dairies, Incorporated
STREET ADDRESS: Rear of 551 Main Avenue
MUNICIPALITY: Wallington

STATUS AT SCENE UPON ARRIVAL OR DESCRIPTION OF INCIDENT: No response by this department necessary - notification only.

PERSONNEL ASSIGNED: Sgt. John Weber #55 notified
TIME ASSIGNED: 1445
REFERRED TO: Bergen County Health Department

IS IMMEDIATE RESPONSE REQUIRED? No

REMARKS: A pipe at the above location is alledgedly discharging petroleum product into the Saddle River. Turned over to Jim Taradash, Bergen County Health Department at 1500 hours, 10/26/90. See NJ DEP Case #90-08141404 for related information.

CALL RECEIVED BY: Communications Operator #311

CHECK IF NO RESPONSE MADE X

1	2	3	4	5	6	7	8
X			X			X	

G

ATTACHMENT H

1	2	3	4	5	6	7	8	N
X		X	X		X	X		

BERGEN COUNTY OFFICE OF EMERGENCY MANAGEMENT
HAZARDOUS MATERIALS INCIDENT REPORT

DEP Case #: 91-09040952-14 EVENT # 91-8018
RECEIVED FROM: NJ DEP TIME: 1005 DATE: 09/04/91

INCIDENT TYPE: _ TRANSPORTATION X FACILITY _ OTHER

NAME OF SITE: Rear property adjacent to the Saddle River
STREET ADDRESS: 551 Main Avenue PHONE #: _____
MUNICIPALITY: Wallington

INCIDENT TIME: 0952 INCIDENT DATE: Wednesday, September 4, 1991

INCIDENT DESCRIPTION: _ FIRE _ EXPLOSION _ AIR RELEASE
_ ODOR _ SEWAGE _ SPILL
_ MVA _ SMOKE/DUST _ ILLEGAL DUMPING
_ OTHER (specify) Leaking U.S.T's

HAZARDS(S): _ FLAMMABLE _ TOXIC _ CORROSIVE X COMBUSTIBLE

INJURIES: 0 WHERE TREATED: N/A

AFFECTED AREAS: _ CATCH BASIN _ WELL X RIVER _ VEHICLE
_ PUMP STATION _ STREAM _ TRANSPORTATION
_ WATER SUPPLY* _____ OTHER (specify)
*(if water supply) NAME _____ and DISTANCE ____

EVACUATIONS:(#) 0 WHERE EVACUATED TO: N/A
PUBLIC EXPOSURE: (how many?) 0

WIND DIRECTION/SPEED: SW/12 mph WEATHER: Clear TEMP: 73F

LOCATION TYPE: _ RESIDENTIAL X INDUSTRIAL _ SHOPPING _ BUSINESS

STATUS AT SCENE UPON ARRIVAL: NJ DEP personnel on scene investigating.

TIME OF TERMINATION OF RELEASE/SPILL: N/A
IDENTITY OF SUBSTANCE(S) IS _ KNOWN X SUSPECTED _ UNKNOWN
NAME OF SUBSTANCE(S): #6 Fuel Oil _ SOLID X LIQUID _ GAS
UN #: 1993 DOT CLASS #: 3 CAS #: ____ EPA #: ____
AMOUNT RELEASED/SPILLED: Unknown _ ACTUAL _ POTENTIAL _ ESTIMATED
SUBSTANCE CONTAINED: (Y/N/U) N METHOD OF CONTAINMENT: N/A
CONTAINED BY (agency or company): N/A
STATUS OF RELEASE/SPILL: _ TERMINATED X CONTINUING _ INTERMITTANT

H1

METHOD OF RECOVERY: Unknown METHOD OF DISPOSAL: Unkn at this time
RESPONSIBLE PARTY: X UNKNOWN SUSPECTED KNOWN
fn _____ ln _____
COMPANY: _____ PHONE # _____
STREET: _____
CITY: _____
NAME OF INSURANCE COMPANY: CODE (if vehicle) __
ADDRESS: _____ POLICY # _____

IF VEHICLE: MAKE/MODEL: N/A YR: _ LIC #: ____ STATE: _
TRAILER MAKE/MODEL: _____ YR: _ LIC #: ____ STATE: _
DRIVER NAME: N/A D/L #: _____
ADDRESS: _____
CITY: _____ STATE: _ ZIP: ___

CLEANUP CONTRACTOR NAME: None at this time. TIME CONTACTED: _____
ADDRESS: _____ PHONE #: _____
ARRIVAL TIME OF CONTRACTOR: _____

AGENCIES: NOTIFIED (N) ON SCENE (S) (specify name of person)
(S) Garamone NJDEP _____ USEPA _____ LOCAL HEALTH
(S) Farr COUNTY HEALTH _____ SPILLER _____ MFGR
_____ LOCAL POLICE _____ LOCAL FIRE
_____ NJSP-OEM _____ FD HAZMAT (S) Gibbons DEP OTHER

NARRATIVE Six twenty thousand gallon underground storage tanks were discovered along the Saddle River in the rear of 551 Main Avenue. The tanks are along the river bank and are partially exposed. The tanks are oozing what appeared to be #6 Fuel Oil. The tanks are apparently abandoned and the responsible party is unknown. NJ DEP and BCDHS will continue the investigation to locate a property owner for removal and cleanup.

PERSONNEL ASSIGNED: J. Weber, K. Madden, R. Farr. N. Edsall

ENDING TIME AND DATE 1100 09/04/91 TOTAL PERSONNEL: 4 TOTAL MANHOURS: 4
REPORT FILED BY: Sgt. John O. Weber #55

SIGNATURE _____ DATE: 09/04/91

H2

ATTACHMENT I

VHW-001 (REV. 9/88)

File - Enviro

State of New Jersey
Department of Environmental Protection
Division of Hazardous Waste Management
Manifest Section
CN 028, Trenton, NJ 08625

Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039. Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. [illegible] Manifest Document No.

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address [illegible]

4. Generator's Phone ([illegible]) 177 [illegible]

A. State Manifest Document Number **NJA 1192305**

B. State Generator's ID [illegible]

5. Transporter 1 Company Name: L+L Oil Service

6. US EPA ID Number: [illegible]

C. State Trans. ID [illegible]

7. Transporter 2 Company Name

8. US EPA ID Number

D. Transporter's Phone ([illegible])

E. State Trans. ID

9. Designated Facility Name and Site Address: L+L Oil Service, 74 Lloyd Road, Aberdeen NJ, 07747

10. US EPA ID Number: [illegible]

F. Transporter's Phone ( )

G. State Facility's ID

H. Facility's Phone ([illegible])

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.		[illegible] Combustible Liquids [illegible]	91	TT	1490	G	X722
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above

a. LT [illegible] 40%

c.

b.

d.

K. Handling Codes for Wastes Listed Above

a. S02

c.

b. T01

d.

15. Special Handling Instructions and Additional Information

Emergency Phone # (908) 566-2715 ERG # 27

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: FRANK POLIZZI

Signature: [illegible]

Month Day Year

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Gary Laiello

Signature: [illegible]

Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

I

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

Signature

Month Day Year

GENERATOR

TRANSPORTER

FACILITY

In case of an emergency or spill immediately call the state the emergency occurred in and the N.J. Dept. of Environmental Protection (609) 292-5560 (Day) (609) 292-7172 (Night)

NJA 1192305

ATTACHMENT J

FARER SIEGAL FERSKO
A PROFESSIONAL ASSOCIATION
ATTORNEYS AT LAW
600 SOUTH AVENUE
P.O. BOX 580
WESTFIELD, NEW JERSEY 07091

(908) 789-8550

FAX (908) 789-8660

HENRY FARER
MARTIN F. SIEGAL
JACK FERSKO
DAVID B. FARER
STEPHEN L. RITZ
RICHARD J. ERICSSON

ANN M. WAEGER
HEIDI S. MINUSKIN
REBECCA C. CRONEBERGER
DANIELE CERVINO
JAY A. JAFFE
BETH D. POLLACK
ANDREW W. KRANTZ
LAWRENCE F. JACOBS
JOHN P. QUIRKE

September 25, 1991

Via Telecopier and Regular Mail

Jamie MacBlane, Investigator
Bureau of Metro Enforcement
New Jersey Department of Environmental Protection and Energy
2 Babcock Place
West Orange, New Jersey 07052

Re: **Notice of Violation**
Premises: 551 Main Avenue
Wallington, New Jersey
Our client: Lake Side Properties, Inc.
Our file no.: 230302

Dear Ms. MacBlane:

As you know, we represent Lake Side Properties, Inc. ("Lake Side"), the owner of the referenced premises.

This is to advise you that the Notice of Violation ("NOV") that you issued on September 5, 1991 improperly named Farmland Dairies as the facility at the referenced premises. The premises is owned by Lake Side, which should have been named in the NOV rather than Farmland.

This is also to keep you advised of the activities undertaken by Lake Side with regard to the underground storage tanks ("USTs"). Lake Side is currently moving forward with the registration of the USTs and has retained Environmental Waste Management Associates to prepare a Closure Plan and supervise the removal of the USTs.

As we advised you, Lake Side was unaware of the presence of these USTs at the time the premises was purchased in April 1990, and is currently undertaking an investigation to determine prior owners and operators of the USTs.

We will continue to keep you informed of any further developments relating to the registration, closure application and removal of the USTs.

J1

In the interim, if you have any questions concerning this matter please contact us immediately so that we may provide you with a swift response.

Lawrence F. Jacobs
LFJ:cer
cc: Lake Side Properties, Inc.
Bergen County Department of Health Services

J2

ATTACHMENT K

FARER SIEGAL FERSKO
A PROFESSIONAL ASSOCIATION
ATTORNEYS AT LAW
600 SOUTH AVENUE
P.O. BOX 580
WESTFIELD, NEW JERSEY 07091
(908) 789-8550
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DANIELE CERVINO
JAY A. JAFFE
BETH D. POLLACK
ANDREW W. KRANTZ
LAWRENCE F. JACOBS
JOHN P. QUIRKE

October 7, 1991

Via Federal Express

Rob Nugent, Section Chief
Bureau of Underground Storage Tanks
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection and Energy
401 East State Street
CN-029
Trenton, New Jersey 08625-0029

Re: **Underground Storage Tank Registration and Closure Plan Approval Application**
Facility: Lake Side Properties, Inc.
Premises: 551 Main Avenue
Borough of Wallington
Bergen County, New Jersey
Our file no.: 230302

Dear Mr. Nugent:

We are environmental counsel for Lake Side Properties, Inc. ("Lake Side"), the owner of the referenced premises.

In December 1989, Lake Side purchased the premises. At that time, Lake Side was unaware of the presence of any underground storage tanks ("USTs") located at the premises. However, on August 30, 1990 Lake Side discovered that several USTs were present along the embankment of the Saddle River, which abuts the rear of the premises. These tanks were apparently releasing product onto the soil. At that time, Lake Side retained Environmental Waste Management Associates ("EWMA") to contain the spill and stabilize the USTs to prevent any further discharge. On September 1, 1990, Lake Side contacted the New Jersey Department of Environmental Protection and Energy's emergency response hotline and reported the discharge. This was Lake Side's first information regarding the existence of USTs on its premises.

Subsequent to its discovery of the USTs, Lake Side commenced an investigation to determine the owner and operator of the USTs in order to ensure that the responsible party undertake the required UST registration and remediation activities. Lake Side is

K1

FARER SIEGAL FERSKO
A PROFESSIONAL ASSOCIATION
ATTORNEYS AT LAW

continuing this investigation and denies ultimate responsibility for the previously undiscovered USTs.

Until such time as Lake Side can determine the responsible party for the USTs, Lake Side is moving forward to ensure that the USTs are registered and properly removed in compliance with the appropriate laws and regulations.

Accordingly, on behalf of Lake Side, here is an executed Underground Storage Tank Registration Questionnaire and check number 012534 in the amount of $100.00 to cover the initial registration fee.

Additionally, since Lake Side is seeking to remove the USTs as soon as possible, here is an Underground Storage Tank Closure Plan Approval application and Closure Plan along with check number 012535 in the amount of $170.00 for the Closure Plan Review fee.

Please process the Underground Storage Tank Registration Questionnaire and Closure Plan Approval application as soon as possible, so that Lake Side may commence with the removal activities.

If you have any questions in this matter, please contact us immediately by telephone so that we may provide you with a swift response.

Lawrence F. Jacobs
LFJ:cer
Enclosure
cc: Lake Side Properties, Inc.
Jamie MacBlane, Investigator
Bergen County Department of Health Services

K2

ATTACHMENT L

FARER SIEGAL FERSKO
A PROFESSIONAL ASSOCIATION
ATTORNEYS AT LAW
600 SOUTH AVENUE
P.O. BOX 580
WESTFIELD, NEW JERSEY 07091
(908) 789-8550
FAX (908) 789-8660

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BETH D. POLLACK
ANDREW W. KRANTZ
LAWRENCE F. JACOBS
JOHN P. QUIRKE

October 17, 1991

Via Telecopier and Regular Mail

Stanley J. Delikat, Chief
Bureau of Emergency Response
Division of Responsible Party Site Remediation
New Jersey Department of Environmental Protection and Energy
401 East State Street, CN 028
Trenton, New Jersey 08625-0028

Re: **Administrative Cost Recovery - Enforcement Invoice**
Case No.: 91-09-04-0952
Premises: 551 Main Avenue
Borough of Wallington
Bergen County, New Jersey
Our file no.: 230302

Dear Mr. Delikat:

We are environmental counsel for Farmland Dairies, Inc. ("Farmland"), the subject of the referenced enforcement invoice.

In line with your October 7, 1991 correspondence, a check was submitted to the Bureau of Revenue in the amount of $232.71, the full amount of the enforcement invoice.

This is to advise you that Farmland is neither the owner nor operator of the subject underground storage tanks ("USTs") to which you referred in your October 7, 1991 correspondence nor the owner of the premises on which the USTs are located. As we advised Inspector Jamie MacBlane of DEPE's Bureau of Metro Enforcement, the property is owned by Lake Side Properties, Inc. ("Lake Side"). We are also environmental counsel for Lake Side as well as Farmland.

Lake Side purchased the property in December 1989, at which time it was unaware of the presence of any USTs located on the property. Lake Side first became aware of the USTs in August 1990 when released product was observed on the soil. Lake Side appropriately reported this release to DEPE. Subsequent investigation led to the discovery of the USTs.

L1

Following the discovery of the USTs, Lake Side commenced an investigation to determine the owner and operator of the USTs in order to ensure that the responsible party undertake the required remedial activities. Lake Side is continuing this investigation and denies ultimate responsibility for these previously undiscovered USTs. In the interim, Lake Side has moved forward with remedial actions, including retaining Environmental Waste Management Associates ("EWMA") to stabilize the USTs. Additionally, Lake Side has registered these USTs and has submitted a Closure Plan to DEPE in order to have the USTs removed as soon as possible.

If you have any questions in this matter, please contact us by telephone so that we may provide you with a swift response.

Lawrence F. Jacobs
LFJ:cer
cc: Farmland Dairies, Inc.
Lake Side Properties, Inc.
Jamie MacBlane, Inspector
Bergen County Department of Health Services
Gary Allen, Bureau of Emergency Response

L2

ATTACHMENT M

COPY

Discharge Investigation
&
Corrective Action Report

Case #91-09-04-0952

for

Lake Side Properties

551 Main Avenue

Wallington Township

Bergen County

New Jersey

TMS #C-91-3617

UST #0222194

June 30, 1992

Volume 1 of 4

As Prepared By:

Environmental Waste Management Associates
P.O. Box 648, 1235A Route 23 South
Wayne, New Jersey 07474

M1

ENVIRONMENTAL WASTE
MANAGEMENT ASSOCIATES

CORPORATE
HEADQUARTERS:
1235A Route 23 South
P.O. Box 648
Wayne, New Jersey 07474
Phone: 201/633-7900
Fax: 201/633-7482

June 30, 1992

Mr. John Blankenship, Bergen County Case Manager
NJDEPE/DRPSR/ISEE/BUST
CN 028
401 East State Street
Trenton, New Jersey 08625-0028

REFERENCE: DICAR - Case #91-9-4-0952
Lake Side Properties, Inc.
551 Main Ave, Wallington, N. J.
TMS #C91-3617/UST Registration #0222194
EWMA Job #90270

Dear Mr. Blankenship:

Enclosed please find a completed DICAR for the above referenced facility. An environmental audit indicated a potential discharge to the subsurface environment. This incident was reported to the NJDEPE Environmental Hot-Line on September 4, 1991, and given Case #91-9-4-0952. On December 17-19, 1991, EWMA removed fourteen underground storage tanks and associated saturated soils at the above referenced property. Post excavation soil samples were obtained to document the condition of the subsurface soils in the area. Stockpiled soils were also sampled, with results sent to the NJDEPE Waste Classification Section for review. In addition, four ground water monitoring wells were installed to monitor the uppermost water bearing zone.

Recommendations are based on field observations during the removal of the UST's, the results of field tests, microtip screening, and the results of the post excavation soil and ground water samples.

All post excavation soil samples registered total organic contaminant levels below the NJDEPE proposed cleanup standard limit of 10,000 ppm in soil. All individual compounds detected were also checked against the individual cleanup levels and were noted to be below the proposed soil cleanup standards. Ground water samples from all four monitoring wells also registered below the proposed

MIDATLANTIC
REGION:
Skillman, NJ
Phone: 609/683-7600
Fax: 609/683-1556

WESTERN REGION:
Englewood, CO
Phone: 303/843-9700
Fax: 303/843-9094

M2

RECYCLED

NJDEPE cleanup standards, except for one compound with a proposed level noted to be below the minimum detection limit established by EPA guidelines. This contaminant was not detected within the second round of sampling and was detected at the upgradient monitoring well only. In addition, trichloroethene is not associated with the former contents of the UST's (i.e. #6 fuel oil). Therefore, EWMA believes that the removed tanks had minimal impact on the surrounding subsurface environment, and that the extent of the contaminated soil area has been delineated, excavated and properly stockpiled on-site for future disposal.

Based on the above factors, EWMA recommends no further action and requests formal closure of Case #91-9-4-0952.

Should you have any questions regarding the DICAR please contact me at 201-633-7900.

Very truly yours,
Environmental Waste Management Associates

Thomas Andrews, P.E.

Enclosures

cc: Frank Polizzi, V.P. Operations, Farmland Dairies
Farer Siegel Fersko

DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF UNDERGROUND STORAGE TANKS
DICAR SUMMARY SHEET

Case # 91-9-4-0952

Fill in "Yes" "No" "N/A" (non-applicable or "U" (unknown) after each completed statement and the appropriate response after each uncompleted statement. Explain any "No" "U" or "N/A" responses.

1.) The substance(s) discharged was (were) #6 FUEL OIL

2.) The highest ground water contamination at any 1 sampling location and at any 1 sampling event to date has been determined to be:
a.) N D ppb total BTEX, 188.6 ppb total non-targeted VOC
b.) 74.0 BJ ppb total B/N, 71.6 ppb total non-targeted B/N
c.) N D ppb total MTBE, N D ppb TBA
d.) N/A ppb N/A (for non-petroleum substance)
e.) greatest thickness of separate phase product found 0 (non found)
f.) separate phase product has been delineated N/A

3a.) A well search (including a review of manual well records) indicates that private, municipal or commercial wells do exist within the distances specified in the Scope of Work. YES
b.) The number of these wells identified is 39.

4a.) The shallowest depth of any well noted in the well search which may be in the horizontal or vertical potential path (s) of the contaminant plume(s) is 118± feet below grade (consideration has been given for the effects of pumping, subsurface structures, etc. on the direction(s) of contaminant migration). This well is 2000± feet from the source and its screening begins at a depth of NOT INDICATED feet.
b.) The shallowest depth to the top of the well screen for any well in the potential path of the plume(s) (as described in # 4a above) is 118± feet below grade. This well is located 2000± feet from the source.
c.) The closest horizontal distance of a private, commercial or municipal well in the potential path of the plume (as determined in #4a) is 2000± feet from the source. This well is 118± feet deep and screening begins at a depth of NOT INDICATED feet.

5.) A plan for separate phase product recovery has been included. NO

6.) A ground water contour map has been submitted which includes the ground water elevations for each well. YES

7.) Any vapor hazards which the consultant or the client have become aware of have been mitigated. N/A

8a.) The ground water contaminants have been delineated to MCLs or lower values at the property boundaries. YES
b.) The plume is suspected to continue off the property at concentrations greater than MCLs. NO
c.) Off property access: is being sought / has been approved / has been denied (circle one). N/A

(OVER) M4

Underground Storage Tank
DICAR - Explanations
Lake Side Properties, Inc.
CASE #91-9-4-0952
TMS #C91-3617
UST #0222194

2a.) "N D" indicates not detected.

2c.) "N D" indicates not detected.

2d.) Ground water samples were not analyzed for non-petroleum products.

2f.) No separate phase product has been noted to date.

4a.) No information was listed with respect to screening depth.

4c.) No information was listed with respect to screening depth.

5.) No separate phase product has been noted to date.

7.) No vapor hazards were encountered.

8b.) Extent of contaminant plume has been delineated within property boundary.

8c.) Off property access not required at this time.

11b.) No free product contaminated soils are suspected to remain below the water table.

11c.) No free product contaminated soils are suspected to exist off the property boundary.

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Ground Water Monitoring Well Construction 7
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TABLES

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Table 2 - Base Neutral Compounds (Soil)
Table 3 - Volatile Organic Compounds (Ground Water - Round #1)
Table 4 - Base Neutral Compounds (Ground Water - Round #1)
Table 5 - Volatile Organic Compounds (Ground Water - Round #2)
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APPENDICES

Appendix #:

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Site Plan and Topo Map 2
Sample Location Map 3
Waste Removal Documentation 4
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Tank Cross Section 7
Soil Borings and Well Logs 8
Well Purge Guides 9
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Soil Laboratory Package 12
Ground Water Laboratory Package 13

Introduction:

This document is intended to demonstrate compliance with the New Jersey Department of Environmental Protection and Energy, Bureau of Underground Storage Tanks (NJDEPE/BUST) regulations by detailing actions taken during closure of the underground storage tank (UST) systems at the above referenced facility. This summary contains a description of all procedures implemented in accordance with the NJDEPE/BUST Closure Plan, approved November 4, 1991, as well as changes that became necessary as field conditions dictated.

Scope of Work:

The following sections of this report discuss the removal of fourteen (14) 20,000 gallon No. 6 heating oil UST's (E1 through E14), located at the above referenced site. Formal NJDEPE/BUST approval of the submitted UST Closure Plan was granted on November 4, 1991 (Permit TMS #C-91-3617). Tank decommissioning procedures and any modifications to the UST Closure Plan and Implementation Schedule are reported herein. See Appendix #1 for a copy of the NJDEPE/BUST approval letter.

Technical Overview:

On September 4, 1991, NJDEPE/BUST received notification of a release from an UST. The release was discovered during a Phase 1 site inspection of the property by a representative from Environmental Waste Management Associates (EWMA). EWMA observed several UST's and staining along the banks of the Saddle River. The UST's appeared antiquated due to the riveted type construction and overall appearance, with an estimated age of over 50 years.

On October 2, 1991, EWMA submitted a UST Closure Plan for the above referenced facility. The Plan was approved by Kenneth Goldstein, the NJDEPE/DWR/BUST Bureau Chief, on November 4, 1991 (Permit TMS #C-91-3617). The submitted Plan anticipated the removal of fourteen (14) 20,000 gallon #6 heating oil underground storage tanks. UST's E1 through E14 were located in an area covered with trees and bushes on the western side of an existing masonry building. The UST's were located within a single excavation area on a bank adjacent to the Saddle River. A copy of the "Site Plan" is attached as Appendix #2. Due to the close proximity of the tank field to the Saddle River, a waiver from a stream encroachment permit was requested from the NJDEPE. The waiver was granted on December 16,

1991, by Richard Reilly, Section Chief, Northeast Engineering Section, NJDEPE.

The post excavation sampling scheme proposed in the Plan called for soil samples to be collected from below the tanks or from the bottom of the excavation area previously containing the UST's, in addition to one sample taken from the piping run if greater than fifteen feet, (refer to the "Sample Location Map" in Appendix #3). In order to document the integrity of the tanks, seventy-four (74) samples were to be collected at the 0-6 inch increment below the tank inverts. As a result of ground water seepage into the bottom of the excavation, post excavation samples were collected from the side wall and at the end of each tank within the excavation area. A total of sixty (60) post excavation soil samples were collected from the excavation area, in replacement of the seventy four (74) samples stated in the closure plan. A main piping manifold interconnected the UST's and was removed during the tank closure. Since the manifold piping runs were less than fifteen feet in length, no sampling was required from below the piping.

Site Topography and Drainage:

The site is located within the eastern plain of the Passaic River, which is positioned approximately 1,500 feet west of the subject property. The topography surrounding the site is largely composed of moderately flat land with gently sloping hills. A copy of the USGS Topographic Quadrangle for Weehawken, New Jersey, is included within Appendix #2. Poor drainage is noted at the site as surface water run-off flows directly into the Saddle River, seated adjacent to the site. This system flows west discharging directly into the Passaic River. Elevations in the area range from 4 to 25 feet above mean sea level (MSL), with the site situated approximately at 20 feet above MSL. The property's surroundings are used for commercial and industrial development, as well as central school sites.

Site Geology:

According to the Geologic Map of New Jersey, the site is underlain by stratified glacial drift deposits which overlie consolidated bedrock of the Brunswick Formation. The drift consists of stratified gravel's, sands, silts, and clays deposited during the Pleistocene Age glaciation. The Triassic Age bedrock consists of interbedded shale and sandstone, with minor amounts of conglomerate, characteristically having a red-brown coloration.

The Rutgers University Engineering Soil Survey of New Jersey (Report No. 4, Bergen and Hudson Counties) describes the area as being underlain by

glacial ground moraine, mapped as GS-24ig, composed of non-residual, unstratified materials, deposited during the Wisconsin glaciation. The GS portion of the symbol signifies that the area is underlain by ground moraine which is an irregular sheet of unconsolidated sediment deposited primarily by a melting glacier. It is composed mainly of unsorted and unstratified material known as "till", which consists of pebbles, cobbles, and boulders in a mixture of sand, silt and clay. The 24ig portion of the symbol indicates the textural and drainage characteristics of the soil. Specifically, the number "24" in the symbol represents an abbreviated form of the 1946 Highway Research Board classification system for soil types given the symbol A-4 to A-2-4. This indicates a soil type characterized by good internal drainage and moderately low to very low capillarity. Surface drainage may be offset by the flat surfaces of the land and, heavy rains may induce temporary saturation. The "ig" indicates imperfect to good ground water drainage conditions (exact position of the water-table is contingent primarily on the detail and magnitude of local relief).

Tank excavation activities showed the stratigraphic column at the site to be consistent with published geological literature. Soils encountered in the excavation area were as follows: urban fill with debris and ash from 0' to 6'; brown fine sand from 6' to 10'; and gray silty clay from 10' to 17'.

Site Hydrogeology:

A 2500 foot radius well search was requested from the NJDEPE Bureau of Water Allocation to assess the potential risk to potable water quality in the area immediately surrounding the site. Review of well records contained within the well search revealed that the majority of potable water supply wells in the area withdraw ground water from consolidated bedrock of the Brunswick Formation. Ground water in the Brunswick exists under confined conditions due to the overlying glacial ground moraine deposits (aquitards) and impermeable nature of the bedrock. Typical hydraulic conductivity for the Brunswick bedrock range between 10^{-3} cm/sec to 10^{-11} cm/sec. The wells are not believed to be at risk from the contamination in the former tank field due to their substantial depths below grade and the thickness of the overlying confining units.

One potable water supply well was located downgradient and within a 2500 foot radius of the site. This well is not believed to be at risk because the area between the well and the former tank field is interrupted by a meander in the Passaic River. Local potable water supply is provided by the Passaic Valley Water Commission which receives its supply through a network of rivers and reservoirs.

Further review of the well search document shows that numerous industrial supply and monitoring wells are located within the 2500 foot radius of the site. Specifically, seven deep industrial supply wells are located on the Curtis Wright property (ECRA Case #84205). In addition to the seven industrial wells, there are six medium depth (61-82 feet below grade) recovery wells and nine shallow (24-28 feet below grade) monitoring wells on the Curtis Wright property. There are also seven industrial supply wells on the Farmland Dairies property at the rear southeastern corner.

First water at the site was encountered at approximately sixteen feet below grade within a brown sandy stratum. The water table at the site exists under unconfined conditions as evidenced by the moist conditions encountered during well installation. A ground water contour map was constructed following the second round of sampling (relative elevation of 100 feet was assigned for a relative datum monitoring well survey). Analysis of the ground water contour map indicated predominant ground water flow was in a west-southwesterly direction (see ground water contour map in Appendix #10) toward the Saddle River.

Tank Removal Activities:

On December 17th, 18th, and 19th, 1991 an Environmental Specialist and an Environmental Scientist from EWMA were on site to observe the removal of fourteen (14) underground storage tank systems. Standard removal procedures for the UST's were as follows: Joe Royce, Inc. (Joe Royce) excavated the soil exposing the top of each tank. The remaining product within each UST and piping system was drained and flushed into each tank by D & M Tank Cleaning of Saddle Brook, New Jersey (D & M). Following completion of the product removal, the tanks that formerly contained fuel/heating oil had their atmosphere rendered vapor free by adding solid carbon dioxide (dry ice). The dry ice was crushed and distributed evenly over the greatest possible area to secure rapid evaporation. Purging of the tank's atmosphere was considered complete when the lower explosive limit (LEL) registered less than 25% on a combustible gas indicator. Manways at the top of each UST were opened by Joe Royce so that D & M could enter and squeegee clean the inside. A copy of the waste disposal documentation from D & M is included within Appendix #4.

Following cleaning, the tanks were removed from the excavation. The excavation area and all excavated soils were field screened with a photoionization detector (PID) in order to detect the presence of volatile organic contamination. Due to the moist weather conditions, the equipment occasionally malfunctioned, therefore, PID readings were not recorded at each location. There was evidence of soil staining along the river side of the

excavation, and an odor was evident. During removal of the tanks, there was ground water intrusion into the excavation area which had visible sheen and odor. Concrete cradles used to secure the UST's were also noted.

Typical tank dimensions were 36' long by 9'7" in diameter, verfiying their 20,000 gallon capacities. Tanks E8 through E14 were in fair condition, with some rust and pitting observed. No holes were noted in the UST's, however each tank had a 6" drain plug on the invert side. Tanks E1 through E7 were in fair to good condition, with some rust and pitting observed. No holes were noted in these UST's, however, tanks E1 through E7 were manifolded through the sidewall via a 2" diameter pipe.

Approximately 2300 cubic yards of contaminated soil from the excavation area was segregated from the clean excavation and stockpiled on-site on six-mil plastic sheeting and covered. The soil stockpile was sampled for TCLP Waste Class parameters for subsequent disposal. EWMA is currently awaiting soil classification from the NJDEPE Division of Hazardous Waste Management.

The UST's were labeled and secured on a truck for transportation to an approved disposal facility. Clean fill tickets and tank disposal documentation are included within Appendices #5 and #6.

Soils encountered in the excavation area were as follows: urban fill with debris and ash from 0' to 6'; brown fine sand from 6' to 10'; and gray silty clay from 10' to 17'. The average excavation area dimensions were 40' wide by 140' long by 15' below grade. Ground water was encountered at 12' during the excavation activities along the river bank. A soil profile and typical tank cross section can be found in Appendix #7.

Soil Sampling Activities:

Following the completion of all tank removal procedures, two EWMA Environmental Scientists obtained 60 post excavation soil samples from the excavation area, along with 2 field blank samples as per EWMA QA/QC methodology. Samples were collected in accordance with procedures set forth in the 1990 NJDEPE/BUST Technical Guidance Document and the approved Closure Plan. As a result of ground water seepage into the bottom of the excavation, post excavation samples were collected from the side wall and at the end of each tank within the excavation area. A total of sixty (60) post excavation soil samples were collected from the excavation area, in replacement of the seventy four (74) samples stated in the closure plan. A main piping manifold interconnected the UST's and was removed during the tank closure. Since the manifold piping runs were less than fifteen feet

in length, no sampling was required from below the piping. Post excavation soil sample locations can be viewed on the "Sample Location Map" located within Appendix #3.

Soil Sample Results:

A total of sixty samples were collected from the tank excavation areas. All samples were sent to a New Jersey certified laboratory and analyzed as dictated within the approved Closure Plan. Daily field blanks were also analyzed as per EWMA QA/QC methodology.

In accordance with the approved Closure Plan, all samples collected were analyzed for total petroleum hydrocarbons (TPHC). TPHC levels ranged from not detected (N D) in four samples to 3,420 parts per million (ppm) in sample E1B. Due to the elevated TPHC concentrations over 100 ppm, 25% of the samples with the highest TPHC's (15 samples) were additionally analyzed for base neutral compounds plus a forward library search (BN+15). Total BN levels ranged from 251 parts per billion (ppb) in sample E9D to 38,700 ppb in sample E1B.

Total organic contaminants ranged from N D (several sample locations) to 3,437 ppm (E1B), which is well below the February 3, 1992, proposed soil cleanup standard of 10,000 ppm. All individual compounds detected were also checked against the individual cleanup levels and were noted to be below the proposed standards.

Summarized analytical results for the soil samples are shown in Tables #1 & #2; and can also be viewed on the "Sample Location Map" located within Appendix #3. The complete laboratory analytical package is included as Appendix #12.

Ground Water Monitoring Well Installation:

Four ground water monitoring wells were installed on the following dates: March 25th, 26th, and April 20th, 1992, under the supervision of an EWMA geologist, by SBI Environmental Drilling, Inc., of Wayne, New Jersey, a New Jersey licensed well driller (SBI). Permits were issued (#2628938, #2628939, #2628940, and #2628941) to install the three monitoring wells within 10 feet of the former #6 heating oil tank field and one well within the excavation area. Two monitoring wells could not be installed due to inaccessable site conditions during March, 1992, however, these were installed in April, 1992. Monitoring well locations are depicted on the "Site Plan" contained within Appendix #2.

The boreholes were advanced using an air rotary rig equipped with 8" outside diameter truck mounted Tricone roller bit. Each location was advanced approximately ten feet below the ground water table prior to well installation. Following this, four inch diameter PVC pipe was installed in the boreholes. Each well was pumped with a submersible pump until turbid free. Copies of the boring logs are contained in Appendix #8.

Soils encountered during monitoring well installation activities were classified according to the Unified Soil Classification System. See Appendix #8 for a copy of the well construction log

Ground Water Monitoring Well Construction:

All wells were constructed according to NJDEPE Standard Unconsolidated Well Specifications. Specifically, all wells were constructed of four inch diameter, Schedule 40 PVC, with machine slot PVC well screen (.020 inch slot size) was placed approximately ten feet below and five feet above the ground water table. A solid Schedule 40, PVC riser completed the upper part of each well. The connections between screen and riser were flush-joint screw type (no adhesive required). Each well was filter packed with clean #2 sand (<10% fines) from the bottom of the well to two feet above the top of the screen level. Approximately two feet of 3/8 inch diameter bentonite pellets were placed on top of the filter pack sand.

Following this, wells were grouted using a mixture of Portland Type 2 cement and #2 filter sand. All wells installed at the site were flush-mount type with locking caps covered by steel manhole cover assemblies. Specific stratigraphy and well construction logs for each location can be viewed in Appendix #8.

Ground Water Sampling Activities:

The first rounds of ground water sampling were performed on April 10th and May 5th, 1992. The second round of ground water sampling was performed on June 5th, 1992. Typical sampling procedures are as follows: Water levels were recorded with a SINCO Slope Indicator upon arrival at the site, following well purging, and prior to sample collection. Prior to, and following monitoring well purging, ground water samples were obtained with a clear Teflon bailer to check for free-phase floating product and product sheen or product odor. Neither free phase floating product, product sheen, or product odor was noted in any wells. Well purging was accomplished using clear Teflon bailers, purged three to five well volumes

prior to obtaining the ground water sample. The monitoring well purge guides can be viewed within Appendix #9.

Ground water samples were collected with separate clear Teflon bailers and poured into laboratory supplied containers with Teflon lined caps. The containers were stored at four degrees Celsius before being sent to a New Jersey certified laboratory. Proper NJDEPE protocol and chain of custody was maintained. The samples were analyzed for VO+15 according to EPA Method 624+15, modified to include xylenes, Methyl t-butyl ether ("MTBE") and t-butyl alcohol ("TBA"). A field and trip blank were also analyzed as per EWMA QA/QC methodology.

Ground Water Sampling Results:

Laboratory analytical results obtained from the initial round of ground water sampling on April 10, 1992 and May 5, 1992 registered total levels of organic compounds ranging from N D (MW-4), to 40.1 ppb (MW-1), to 140.3 ppb (MW-3), to 148.5 ppb (MW-2). All individual compounds detected were non-carcinogenic contaminants and below the proposed ground water cleanup standards except for 2.2 ppb of trichloroethene (1 ppb limit) noted within the upgradient monitoring well MW-1. It should be noted that trichloroethene is not associated with the contents of the former UST field (i.e. #6 fuel oil).

Laboratory analytical results obtained from the second round of ground water sampling on June 5, 1992 registered total levels of organic compounds ranging from N D (MW-1 & MW-4), to 30.0 ppb (MW-2), to 219.2 ppb (MW-3). All individual compounds detected were non-carcinogenic contaminants and below the proposed ground water cleanup standards. Additionally, most contaminants detected were non-targeted VO and BN compounds.

Summarized analytical results for the ground water samples are listed in Tables #3 through #6, and can be viewed on the "Sample Location Map" located within Appendix #3. The complete laboratory analytical package is included as Appendix #13.

Summary:

On December 17, 1991, through December 19, 1991, EWMA removed fourteen (14) 20,000 gallon underground storage tanks at the above referenced property. Field screening and previous observations indicated a potential discharge to the subsurface environment. This incident was reported to the NJDEPE Environmental Hot-Line on September 4, 1991,

and given Case #91-9-4-0952. Post excavation soil samples were obtained to document the condition of the subsurface soils in the area. Stockpiled soils were also sampled, with results sent to the NJDEPE Waste Classification Section for review. In addition, four ground water monitoring wells were installed to monitor the uppermost water bearing zone.

Laboratory analytical results of the soil and ground water samples indicated volatile organic compounds below the proposed NJDEPE cleanup standards, except for one compound with a proposed limit noted to be below the minimum detection limit established by EPA guidelines.

Recommendations:

Recommendations are based on field observations during the removal of the UST's, the results of field tests, microtip screening, and the results of the post excavation soil and ground water samples. EWMA makes such recommendations as follows:

All post excavation soil samples registered total organic contaminant levels below the NJDEPE proposed cleanup standard limit of 10,000 ppm in soil. All individual compounds detected were also checked against the individual cleanup levels and were noted to be below the proposed soil cleanup standards. Ground water samples from all four monitoring wells also registered below the proposed NJDEPE cleanup standards, except for one compound with a proposed level noted to be below the minimum detection limit established by EPA guidelines. This contaminant was not detected within the second round of sampling and was detected at the upgradient monitoring well only. In addition, trichloroethene is not associated with the former contents of the UST's (i.e. #6 fuel oil). Therefore, EWMA believes that the removed tanks had minimal impact on the surrounding subsurface environment, and that the extent of the contaminated soil area has been delineated, excavated and properly stockpiled on-site for future disposal.

Based on the above factors, EWMA recommends no further action and requests formal closure of Case #91-9-4-0952.

TABLES

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TABLE 1 - Total Petroleum Hydrocarbon Compounds (SOIL)

Sample number:	E1A	E1B	E1C	E1D	E2A	E2B	E2C	E2D
Lab ID number:	902001	902002	902003	902004	902005	902006	902007	902008
Sample date:	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91
Sample type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample depth:	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'
Total Petroleum Hydrocarbons (ppm):	1,550	3,420	2,310	416	730	N D	N D	26
Sample number:	E3A	E3B	E3C	E3D	E4A	E4B	E4C	E4D
Lab ID number:	902009	902010	902011	902012	902013	902014	902059	902060
Sample date:	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91
Sample type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample depth:	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'
Total Petroleum Hydrocarbons (ppm):	N D	17.8	19.5	2,230	98.2	52.4	2,020	412
Sample number:	E5A	E5B	E5C	E5D	E6A	E6B	E6C	E6D
Lab ID number:	902015	902016	902017	902018	902019	902020	902021	902022
Sample date:	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91
Sample type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample depth:	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'
Total Petroleum Hydrocarbons (ppm):	45	630	268	29.3	20.6	257	1690	397
Sample number:	E7A	E7B	E7C	E7D	E8A	E8B	E8C	E8D
Lab ID number:	902023	902024	902025	902026	902027	902028	902029	902030
Sample date:	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91
Sample type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample depth:	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'
Total Petroleum Hydrocarbons (ppm):	11.2	138	313	2,490	17	7.27	2,540	2,510
Sample number:	E9A	E9B	E9C	E9D	E10A	E10B	E10C	E10D
Lab ID number:	902031	902032	902033	902034	902035	902036	902037	902038
Sample date:	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91
Sample type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample depth:	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'
Total Petroleum Hydrocarbons (ppm):	1.20 J	27.7	74.2	470	13.2	7.74	94.5	11.8

J - Indicates an estimated value. The compound was detected at a value below the minimum detection limit and greater than zero.
ND - Indicates the compound was analyzed for, but was not detected.

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Environmental Waste Management Associates

TABLE 1 - Total Petroleum Hydrocarbon Compounds (SOIL)

Sample number:	E11A	E11B	E11C	E11D	E12A	E12B	E12C	E12D
Lab ID number:	902039	902040	902041	902042	902043	902044	902045	902046
Sample date:	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91
Sample type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample depth:	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'
Total Petroleum Hydrocarbons (ppm):	11.1	25.3	18.9	12	ND	25.3	11.6	64
Sample number:	E13A	E13B	E13C	E13D	E14A	E14B	E14C	E14D
Lab ID number:	902047	902048	902049	902050	902051	902052	902053	902054
Sample date:	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91
Sample type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample depth:	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'
Total Petroleum Hydrocarbons (ppm):	297	43.8	67	13.8	1,960	132	302	308
Sample number:	E14E	E14F	FIELD 1	FIELD 2	QC BLANK			
Lab ID number:	902055	902056	902057	902058	SBS0110A			
Sample date:	12/26-27/91	12/26-27/91	12/26/91	12/27/91	12/27/91			
Sample type:	Soil	Soil	Water	Water	Soil			
Sample depth:	15'-17'	15'-17'	N/A	N/A	N/A			
Total Petroleum Hydrocarbons (ppm):	36.5	75.8	ND	ND	ND			

J - Indicates an estimated value. The compound was detected at a value below the minimum detection limit and greater than zero.
ND - Indicates the compound was analyzed for, but was not detected.

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TABLE #2 - Base Neutral Compounds (SOIL)

Sample number:	E1A	E1B	E1C	E1D	E2A	E3D	E4C	E4D	E5B
Lab ID number:	902001	902002	902003	902004	902005	902012	902059	902060	902016
Sample date:	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91
Sample type:	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample depth:	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'
Targeted Base Neutral Compounds (ppb):									
N-Nitrosodiphenylamine	N D	N D	N D	N D	N D	258 J	N D	N D	N D
Phenanthrene	N D	N D	N D	506 J	N D	485 J	N D	N D	N D
Di-n-butyl phthalate	201 J	N D	N D	N D	150 J	N D	N D	N D	N D
Fluoranthene	N D	N D	N D	1020	N D	371 J	N D	89 J	N D
Pyrene	N D	N D	N D	521 J	N D	652 J	N D	141 J	N D
Butylbenzyl phthalate	N D	N D	N D	219 J	N D	N D	N D	N D	N D
Benzo(a)anthracene	N D	N D	N D	347 J	N D	311 J	N D	N D	N D
Chrysene	N D	N D	N D	340 J	N D	455 J	N D	N D	N D
Bis(2-ethylhexyl)phthalate	194 J	N D	1,890 J	393 J	N D	318 J	N D	311 J	N D
Benzo(b)fluoranthene	151 J	N D	N D	793	N D	432 J	N D	N D	N D
Benzo(a)pyrene	N D	N D	N D	408 J	N D	235 J	123 J	115 J	N D
Indeno(1,2,3-cd)pyrene	N D	N D	N D	181 J	N D	N D	N D	N D	N D
Benzo(a,h)anthracene	N D	N D	N D	N D	N D	227 J	N D	N D	N D
Benzo(g,h,i)perylene	151 J	N D	N D	219 J	N D	N D	N D	N D	N D
TOTAL Targeted BN'S (ppb)	**697 J**	**N D**	**1,890 J**	**4,947 J**	**150 J**	**3,744 J**	**123 J**	**656 J**	**N D**
Non Targeted BN Compounds (ppb):									
Decane	559 J	N D	N D	N D	1,320	1,870	N D	N D	1,570
(E)-9-Octadecene	2,410	N D	N D	N D	N D	N D	N D	N D	866
Cyclododecane	2,240	N D	N D	N D	N D	N D	N D	N D	597 J
(E)-5-Octadecene	617 J	N D	N D	N D	N D	N D	N D	N D	N D
Unknown Retention Time 32:04	911	N D	N D	N D	N D	N D	N D	N D	N D
1,3,3-Trimethylbicyclo[2,2,1]heptane	2,220	N D	N D	N D	N D	N D	N D	N D	N D
(5. ,13.)-D-homoandrostane	480 J	N D	N D	N D	N D	N D	N D	N D	N D
Unknown Retention Time 34:07	1,110	N D	N D	N D	N D	N D	N D	N D	N D
9-Dodecyltetradecahydro phenanthrene	1,090	N D	N D	N D	N D	N D	N D	N D	N D
(1-Methylethyl)cycloundecane	2,670	N D	N D	N D	N D	N D	N D	N D	N D
9-Dodecyltetradecahydro anthracene	1,260	N D	N D	N D	N D	N D	N D	N D	N D
3,4-Bis(1-methylethyl)-1,1-dimethylcyclohexane	1,000	N D	N D	N D	N D	N D	N D	N D	N D
(E)-5-Eicosene	N D	38,700	N D	N D	N D	N D	N D	N D	N D
2,3,4-Trimethylhexane	N D	N D	8,310	N D	N D	N D	N D	N D	N D
Unknown (Retention Time 33:19	N D	N D	6,490	N D	N D	N D	N D	N D	N D
1-Fluorodecane	N D	N D	19,300	N D	N D	N D	N D	N D	N D
(Z)-9-Octadecenamide	N D	N D	N D	1,170	N D	N D	N D	N D	N D
Unknown (Retention Time 33:27)	N D	N D	N D	2,270	N D	N D	N D	N D	N D
3-Methyltridecane	N D	N D	N D	N D	780	N D	N D	N D	N D
Cyclodecane	N D	N D	N D	N D	1,110	N D	N D	N D	N D
Unknown (Retention Time 36:27)	N D	N D	N D	N D	1,250	N D	N D	N D	N D
9-Dodecyltetrahydro phenanthrene	N D	N D	N D	N D	1,300	N D	N D	N D	N D
1-1'-(Oxyo1-2,1-ethanediyl)bis-cyclohexane	N D	N D	N D	N D	N D	1,080	N D	N D	N D
4,5-Dimethylnonane	N D	N D	N D	N D	N D	1,030	N D	N D	N D
1,7-Dimethylnaphthalene	N D	N D	N D	N D	N D	705 J	N D	N D	N D
1,8-Dimethylnaphthalene	N D	N D	N D	N D	N D	1,200	N D	N D	N D
1,7-Dimethyldecane	N D	N D	N D	N D	N D	925	N D	N D	N D
(S)-2-Methyl-1-dodecanecol	N D	N D	N D	N D	N D	1,110	N D	N D	N D
1,4,6-Trimethylnaphthalene	N D	N D	N D	N D	N D	1,320	N D	N D	N D
1,4,5-Trimethylnaphthalene	N D	N D	N D	N D	N D	1,790	N D	N D	N D
2-Methyl-1-propylnaphthalene	N D	N D	N D	N D	N D	2,340	N D	N D	N D
2,6,10,14-Tetramethylpentadecane	N D	N D	N D	N D	N D	2,190	N D	N D	N D
2,6-Dimethylheptadecane	N D	N D	N D	N D	N D	1,390	N D	N D	N D
2,6,11-Trimethyldodecane	N D	N D	N D	N D	N D	1,000	N D	N D	N D
2,7-Dimethylphenanthrene	N D	N D	N D	N D	N D	1,160	N D	N D	N D
2,5-Dimethylphenanthrene	N D	N D	N D	N D	N D	1,740	N D	N D	N D
2,7-Dimethyl-5-(1-methylethenyl 1,8-nonadiene	N D	N D	N D	N D	N D	N D	438	N D	N D
2,2,5,5,8,8-Hexamethyl tricyclo[4.3.0.07]nonane	N D	N D	N D	N D	N D	N D	486	N D	N D
1,3,5,7-Cyclooctatetrene	N D	N D	N D	N D	N D	N D	N D	N D	604 JB
(Z)-5-Dodecane	N D	N D	N D	N D	N D	N D	N D	N D	2,020
3,7,11-Trimethyl-1,6,10-dodecatrien-3-ol	N D	N D	N D	N D	N D	N D	N D	N D	N D
(2-Methylbutyl)cyclopentane	N D	N D	N D	N D	N D	N D	N D	N D	N D
4-Methylpyrene	N D	N D	N D	N D	N D	N D	N D	N D	N D
Methylacetate (VAN)	N D	N D	N D	N D	N D	N D	N D	N D	N D
Benzo[J]fluoranthene	N D	N D	N D	N D	N D	N D	N D	N D	N D
Unknown (Retention Time 25:05)	N D	N D	N D	N D	N D	N D	N D	N D	N D
2-Heptyn-1-ol	N D	N D	N D	N D	N D	N D	N D	N D	N D
.-Farnesene	N D	N D	N D	N D	N D	N D	N D	N D	N D
Benzo[E]pyrene	N D	N D	N D	N D	N D	N D	N D	N D	N D
Benzo[E]acephenanthrylene	N D	N D	N D	N D	N D	N D	N D	N D	N D
Unknown (Retention Time 35:41)	N D	N D	N D	N D	N D	N D	N D	N D	N D
1-Methyl-3-(2-methylpropyl)cyclopentane	N D	N D	N D	N D	N D	N D	N D	N D	N D
1,2,4a,5,6,7,8,8a-Octahydro-4a-methyl-2-etc.	N D	N D	N D	N D	N D	N D	N D	N D	N D
9-Cyclohexyltetradecahydro anthracene	N D	N D	N D	N D	N D	N D	N D	N D	N D
TOTAL Non Targeted BN's (ppb)	**16,567 J**	**38,700**	**34,100**	**3,440**	**5,760**	**20,850 J**	**924**	**N D**	**5,657 JB**
TOTAL BASE NEUTRALS (ppb)	**17,264 J**	**38,700**	**35,900 J**	**8,387 J**	**5,910 J**	**24,594 J**	**1,047 J**	**656 J**	**5,657 JB**

ND - Indicates the compound was analyzed for, but was not detected.

J - Indicates an estimated. The compound was detected at a value below the minimum detection limit (MDL) and greater than zero. For GC/MS procedures, the mass spectral data meets the criteria required to identify the target compound.

B - Indicates the analyte was found in the blank and in the sample. It indicates possible sample contamination and warns the data user to use caution when applying the results of this analyte.

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TABLE #2 - Base Neutral Compounds (SOIL)

Sample number:	E8C	E7D	E8C	E8D	E9D	E14A	FIELD 1	FIELD 2	QC BLANK
Lab ID number:	902021	902026	902029	902030	902034	902051	902057	902058	SBS0110A
Sample date:	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26-27/91	12/26/91	12/27/91	12/27/91
Sample type:	Soil	Soil	Soil	Soil	Soil	Soil	Water	Water	Soil
Sample depth:	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	15'-17'	N/A	N/A	N/A
Targeted Base Neutral Compounds (ppb):									
N-Nitrosodiphenylamine	N D	N D	N D	N D	N D	N D	N D	N D	N D
Phenanthrene	N D	267 J	N D	115 J	N D	147 J	N D	N D	N D
Di-n-butyl phthalate	N D	N D	N D	N D	N D	N D	N D	N D	N D
Fluoranthene	N D	386 J	N D	426	N D	283 J	N D	N D	N D
Pyrene	N D	N D	N D	222 J	N D	124 J	N D	N D	N D
Butylbenzyl phthalate	N D	N D	N D	N D	N D	N D	N D	N D	N D
Benzo(a)anthracene	N D	N D	N D	107 J	N D	320 J	N D	N D	N D
Chrysene	N D	N D	N D	240 J	N D	309 J	N D	N D	N D
Bis(2-ethylhexyl)phthalate	N D	N D	N D	N D	N D	N D	N D	N D	N D
Benzo(b)fluoranthene	N D	N D	N D	107 J	251 J	1390	N D	N D	N D
Benzo(a)pyrene	N D	N D	N D	111 J	N D	520	N D	N D	N D
Indeno(1,2,3-cd)pyrene	N D	N D	N D	N D	N D	418	N D	N D	N D
Benzo(a,h)anthracene	N D	N D	N D	N D	N D	N D	N D	N D	N D
Benzo(g,h,i)perylene	N D	N D	N D	N D	N D	290 J	N D	N D	N D
TOTAL Targeted BN'S (ppb)	**N D**	**653 J**	**N D**	**1,328 J**	**251 J**	**3,810 J**	**N D**	**N D**	**N D**
Non Targeted BN Compounds (ppb):									
Decane	473 J	N D	N D	N D	N D	N D	N D	N D	N D
(E)-9-Octadecene	N D	N D	N D	N D	N D	N D	N D	N D	N D
Cyclododecane	N D	N D	N D	N D	N D	N D	N D	N D	N D
(E)-5-Octadecene	N D	N D	N D	N D	N D	N D	N D	N D	N D
Unknown Retention Time 32:04	N D	N D	N D	N D	N D	N D	N D	N D	N D
1,3,3-Trimethylbicyclo[2,2,1]heptane	N D	N D	N D	N D	N D	N D	N D	N D	N D
(5. .13.)-D-homoandrostane	N D	N D	N D	N D	N D	N D	N D	N D	N D
Unknown Retention Time 34:07	N D	N D	N D	N D	N D	N D	N D	N D	N D
9-Dodecyltetradecahydro phenanthrene	N D	N D	N D	1,100	N D	N D	N D	N D	N D
(1-Methylethyl)cycloundecane	N D	N D	N D	N D	N D	N D	N D	N D	N D
9-Dodecyltetradecahydro anthracene	N D	N D	N D	485	N D	N D	N D	N D	N D
3,4-Bis(1-methylethyl)-1,1-dimethylcyclohexane	N D	N D	N D	721	N D	N D	N D	N D	N D
(E)-5-Eicosene	N D	N D	N D	N D	N D	N D	N D	N D	N D
2,3,4-Trimethylhexane	N D	N D	N D	N D	N D	N D	N D	N D	N D
Unknown (Retention Time 33:19	N D	N D	N D	N D	N D	N D	N D	N D	N D
1-Fluorodecane	N D	N D	N D	N D	N D	N D	N D	N D	N D
(Z)-9-Octadecenamide	N D	N D	N D	N D	N D	N D	N D	N D	N D
Unknown (Retention Time 33:27)	N D	N D	N D	N D	N D	N D	N D	N D	N D
3-Methyltridecane	N D	N D	N D	N D	N D	N D	N D	N D	N D
Cyclodecane	N D	N D	N D	N D	N D	N D	N D	N D	N D
Unknown (Retention Time 36:27)	N D	N D	N D	N D	N D	N D	N D	N D	N D
9-Dodecyltetrahydro phenanthrene	N D	N D	N D	N D	N D	N D	N D	N D	N D
1-1'-(Oxyo1-2,1-ethanediyl)bis-cyclohexane	N D	N D	N D	N D	N D	N D	N D	N D	N D
4,5-Dimethylnonane	N D	N D	N D	N D	N D	N D	N D	N D	N D
1,7-Dimethylnaphthalene	N D	N D	N D	N D	N D	N D	N D	N D	N D
1,8-Dimethylnaphthalene	N D	N D	N D	N D	N D	N D	N D	N D	N D
1,7-Dimethyldecane	N D	N D	N D	N D	N D	N D	N D	N D	N D
(S)-2-Methyl-1-dodecanecol	N D	N D	N D	N D	N D	N D	N D	N D	N D
1,4,6-Trimethylnaphthalene	N D	N D	N D	N D	N D	N D	N D	N D	N D
1,4,5-Trimethylnaphthalene	N D	N D	N D	N D	N D	N D	N D	N D	N D
2-Methyl-1-propylnaphthalene	N D	N D	N D	N D	N D	N D	N D	N D	N D
2,6,10,14-Tetramethylpentadecane	N D	N D	N D	N D	N D	N D	N D	N D	N D
2,6-Dimethylheptadecane	N D	N D	N D	N D	N D	N D	N D	N D	N D
2,6,11-Trimethyldodecane	N D	N D	N D	N D	N D	N D	N D	N D	N D
2,7-Dimethylphenanthrene	N D	N D	N D	N D	N D	N D	N D	N D	N D
2,5-Dimethylphenanthrene	N D	N D	N D	N D	N D	N D	N D	N D	N D
2,7-Dimethyl-5-(1-methylethenyl 1,8-nonadiene	N D	N D	N D	N D	N D	N D	N D	N D	N D
2,2,5,5,8,8-Hexamethyl tricyclo[4.3.0.07]nonane	N D	N D	N D	N D	N D	N D	N D	N D	N D
1,3,5,7-Cyclooctatetrene	N D	N D	N D	N D	N D	N D	N D	N D	306 J
(Z)-5-Dodecane	N D	N D	N D	N D	N D	N D	N D	N D	N D
3,7,11-Trimethyl-1,6,10-dodecatrien-3-ol	N D	N D	5,390 J	N D	N D	N D	N D	N D	N D
(2-Methylbutyl)cyclopentane	N D	N D	30,800	N D	N D	N D	N D	N D	N D
4-Methylpyrene	N D	N D	N D	607	N D	N D	N D	N D	N D
Methylacetate (VAN)	N D	N D	N D	2,490	N D	N D	N D	N D	N D
Benzo[J]fluoranthene	N D	N D	N D	1,510	N D	N D	N D	N D	N D
Unknown (Retention Time 25:05)	N D	N D	N D	N D	N D	249 J	N D	N D	N D
2-Heptyn-1-ol	N D	N D	N D	N D	N D	298 J	N D	N D	N D
.-Farnesene	N D	N D	N D	N D	N D	403	N D	N D	N D
Benzo[E]pyrene	N D	N D	N D	N D	N D	1,170	N D	N D	N D
Benzo[E]acephenanthrylene	N D	N D	N D	N D	N D	317 J	N D	N D	N D
Unknown (Retention Time 35:41)	N D	N D	N D	N D	N D	528	N D	N D	N D
1-Methyl-3-(2-methylpropyl)cyclopentane	N D	N D	N D	N D	N D	2,220	N D	N D	N D
1,2,4a,5,6,7,8,8a-Octahydro-4a-methyl-2-etc.	N D	N D	N D	N D	N D	403	N D	N D	N D
9-Cyclohexyltetradecahydro anthracene	N D	N D	N D	N D	N D	860	N D	N D	N D
TOTAL Non Targeted BN's (ppb)	**473 J**	**N D**	**36,190 J**	**6,913**	**N D**	**6,448 J**	**N D**	**N D**	**306 J**
TOTAL BASE NEUTRALS (ppb)	**473 J**	**653 J**	**36,190 J**	**8241 J**	**251 J**	**10,258 J**	**N D**	**N D**	**306 J**

ND - Indicates the compound was analyzed for, but was not detected.

J - Indicates an estimated. The compound was detected at a value below the minimum detection limit (MDL) and greater than zero. For GC/MS procedures, the mass spectral data meets the criteria required to identify the target compound.

B - Indicates the analyte was found in the blank and in the sample. It indicates possible sample contamination and warns the data user to use caution when applying the results of this analyte.

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TABLE 3 - Volatile Organic Compounds for MW-1, MW-2, MW-3, and MW-4 (Round #1)

Sample Number:	MW1	MW2	MW3	MW4	Field	Trip	Field	Trip
Lab ID number:	285001	285002	349001	349002	285003	285004	349003	349004
Sample date:	4/10/92	4/10/92	5/5/92	5/5/92	4/10/92	4/10/92	5/5/92	5/5/92
Sample type:	Water	Water	Water	Water	Water	Water	Water	Water
Sample depth:	15.44'	15.45'	16.52'	15.52'	N/A	N/A	N/A	N/A
Targeted Volatile Organic Compounds (ppb):								
Methylene chloride	N D	2.9 JB	N D	N D	N D	1.1 J	N D	N D
Trichloroethene	2.2 J	N D	N D	N D	N D	N D	N D	N D
TOTAL Targeted VO's (ppb)	**2.2 J**	**2.9 JB**	**N D**	**N D**	**N D**	**1.1 J**	**N D**	**N D**
Non-Targeted Volatile Organic Compounds (ppb):								
Ethanol	N D	N D	5.7	N D	N D	N A	N D	N A
1-Ethenyl-3-ethylbenzene	N D	N D	5.1	N D	N D	N A	N D	N A
2-Ethyl-1,4-dimethylbenzene	N D	N D	10.7	N D	N D	N A	N D	N A
2,3-Dihydro-1,2-dimethyl-1H-indene	N D	N D	6.2	N D	N D	N A	N D	N A
2-Ethenyl-1,3,5-trimethylbenzene	N D	N D	9.7	N D	N D	N A	N D	N A
1,2,3,4-Tetrahydro-1,8-dimethylnaphthalene	N D	N D	5.7	N D	N D	N A	N D	N A
2,3-Dihydro-4,7-dimethyl-1H-indene	N D	N D	5.6	N D	N D	N A	N D	N A
6-Ethyl-1,2,3,4-tetrahydronaphthalene	N D	N D	5.1	N D	N D	N A	N D	N A
1-Ethylidene-1H-indene	N D	N D	13.5	N D	N D	N A	N D	N A
1-Methylnaphthalene	N D	N D	17	N D	N D	N A	N D	N A
TOTAL Non-Targeted VO's (ppb)	**N D**	**N D**	**84.3**	**N D**	**N D**	**N A**	**N D**	**N A**
TOTAL Targeted VO's (ppb)	2.2 J	2.9 JB	N D	N D	N D	1.1 J	N D	N D
TOTAL Non-Targeted VO's (ppb)	N D	N D	84.3	N D	N D	N A	N D	N A
TOTAL VO's (ppb)	**2.2 J**	**2.9 JB**	**84.3**	**N D**	**N D**	**1.1 J**	**N D**	**N D**

B - Indicates the analyte was found in the blanks and in the sample. It indicates possible sample contamination.
J - Indicates an estimated value. The compound was detected at a value below the minimum detection limit (MDL) and greater than zero.
N.D - Indicates the compound was analyzed for, but was NOT detected.
N.A - Indicates the compound was not analyzed.

TABLE 4 - Base Neutral Compounds Analysis for MW-1, MW-2, MW-3, and MW-4 (Round #1)

Sample Number:	MW1	MW2	MW3	MW4	Field	Field
Lab ID number:	285001	285002	349001	349002	285003	349003
Sample date:	4/10/92	4/10/92	5/5/92	5/5/92	4/10/92	5/5/92
Sample type:	Water	Water	Water	Water	Water	Water
Sample depth:	15.44'	15.45'	16.52'	15.52'	N/A	N/A
Targeted Base-Neutral Compounds (ppb):						
Bis (2-ethylhexyl) phthalate	16.8 B	37.1 B	N D	N D	18.1 B	N D
Di-n-butyl-phthalate	21.1 B	28.1 B	N D	N D	11.1 B	N D
2-Methylnaphthalene	N D	3.9 J	7.7 J	N D	N D	N D
Pyrene	N D	4.9 J	N D	N D	N D	N D
TOTAL Targeted BN's (ppb)	**37.9 B**	**74.0 BJ**	**7.7 J**	**N D**	**29.2 B**	**N D**
Non-Targeted Base-Neutral Compounds (ppb):						
1,4-Dihydro-1, 4-methanonaphthalene	N D	15.1	N D	N D	N D	N D
1,2-Dimethylnaphthalene	N D	N D	5.5 J	N D	N D	N D
1,3-Dimethylnaphthalene	N D	N D	8.5 J	N D	N D	N D
1,5-Dimethylnaphthalene	N D	14.4	N D	N D	N D	N D
1,7-Dimethylnaphthalene	N D	14.9	N D	N D	N D	N D
1,8-Dimethylnaphthalene	N D	N D	7.8 J	N D	N D	N D
2,7-Dimethylnaphthalene	N D	N D	7.5 J	N D	N D	N D
1-Ethyliene-1H-indene	N D	N D	19.3	N D	N D	N D
2,6,10,14 - Tetramethylpentadecane	N D	27.2	N D	N D	N D	N D
TOTAL Non-Targeted BN's (ppb)	**N D**	**71.6**	**48.6 J**	**N D**	**N D**	**N D**
TOTAL Targeted BN's (ppb)	37.9 B	74.0 BJ	7.7 J	N D	29.2 B	N D
TOTAL Non-Targeted BN's (ppb)	N D	71.6	48.6 J	N D	N D	N D
TOTAL BN's (ppb)	**37.9 B**	**145.6 BJ**	**56.3 J**	**N D**	**29.2 B**	**N D**

B - Indicates the analyte was found in the blanks and in the sample. It indicates possible sample contamination.
J - Indicates an estimated value. The compound was detected at a value below the minimum detection limit (MDL) and greater than zero.
N D - Indicates the compound was analyzed for, but was NOT detected.
N A - Indicates the compound was not analyzed.

TABLE 5 - Volatile Organic Compounds for MW-1, MW-2, MW-3, and MW-4 (Round #2)

Sample Number:	MW1	MW2	MW3	MW4	Field	Trip
Lab ID number:	414001	414002	414003	414004	414005	414006
Sample date:	6/5/92	6/5/92	6/5/92	6/5/92	6/5/92	6/5/92
Sample type:	Water	Water	Water	Water	Water	Water
Sample depth:	15.16'	15.12'	15.88'	15.02'	N/A	N/A
Targeted Volatile Organic Compounds (ppb):						
Methylene chloride	N D	N D	1.6 J	N D	N D	N D
TOTAL Targeted VO's (ppb)	**N D**	**N D**	**1.6 J**	**N D**	**N D**	**N D**
Non-Targeted Volatile Organic Compounds (ppb):						
1-Ethenyl-3-ethylbenzene	N D	9.7	N D	N D	N D	N A
2,3-Dihydro-1,2-dimethyl-1H-indene	N D	5.2	N D	N D	N D	N A
2,3-Dihydro-1,3-dimethyl-1H-indene	N D	7.8	11.4	N D	N D	N A
1-Phenyl-2-cyclopenten-1-ol	N D	7.3	N D	N D	N D	N A
2,3-Dihydro-1-methyl-1H-indene	N D	N D	12.4	N D	N D	N A
(1-Methyl-1-propenyl) (E) benzene	N D	N D	11.4	N D	N D	N A
1-Methyl-2-(2-propenyl) benzene	N D	N D	26.2	N D	N D	N A
1,2,4,5-Tetramethylbenzene	N D	N D	21.9	N D	N D	N A
2,3-Dihydro-1,6-dimethyl-1H-indene	N D	N D	16.3	N D	N D	N A
Unknown	N D	N D	18.4	N D	N D	N A
2,3-Dihydro-4,7-dimethyl-1H-indene	N D	N D	21.6	N D	N D	N A
Unknown	N D	N D	7.3	N D	N D	N A
1,(1,1-Dimethylethyl)-4-ethylbenzene	N D	N D	6.8	N D	N D	N A
2,3-Dihydro-1,1-dimethyl-1H-indene	N D	N D	8.6	N D	N D	N A
Unknown	N D	N D	8.6	N D	N D	N A
1-Ethylidene-1H-indene	N D	N D	17.7	N D	N D	N A
TOTAL Non-Targeted VO's (ppb)	**N D**	**30**	**188.6**	**N D**	**N D**	**N A**
TOTAL Targeted VO's (ppb)	N D	N D	1.6 J	N D	N D	N D
TOTAL Non-Targeted VO's (ppb)	N D	30	188.6	N D	N D	N A
TOTAL VO's (ppb)	**N D**	**30**	**190.2 J**	**N D**	**N D**	**N D**

B - Indicates the analyte was found in the blanks and in the sample. It indicates possible sample contamination.
J - Indicates an estimated value. The compound was detected at a value below the minimum detection limit (MDL) and greater than zero.
N D - Indicates the compound was analyzed for, but was NOT detected.
N A - Indicates the compound was not analyzed.

TABLE 6 - Base Neutral Compounds Analysis for MW-1, MW-2, MW-3, and MW-4 (Round #2)

Sample Number:	MW1	MW2	MW3	MW4	Field
Lab ID number:	414001	414002	414003	414004	414005
Sample date:	6/5/92	6/5/92	6/5/92	6/5/92	6/5/92
Sample type:	Water	Water	Water	Water	Water
Sample depth:	15.16'	15.12'	15.88'	15.02'	N/A
Targeted Base-Neutral Compounds (ppb):					
TOTAL Targeted BN's (ppb)	**N D**	**N D**	**N D**	**N D**	**N D**
Non-Targeted Base-Neutral Compounds (ppb):					
2,3-Dihydro-5-methyl-1H-indene	N D	N D	5.3 J	N D	N D
1-Ethylidene-1H-indene	N D	N D	23.7	N D	N D
TOTAL Non-Targeted BN's (ppb)	**N D**	**N D**	**29.0 J**	**N D**	**N D**
TOTAL Targeted BN's (ppb)	N D	N D	N D	N D	N D
TOTAL Non-Targeted BN's (ppb)	N D	N D	29.0 J	N D	N D
TOTAL BN's (ppb)	**N D**	**N D**	**29.0 J**	**N D**	**N D**

B - Indicates the analyte was found in the blanks and in the sample. It indicates possible sample contamination.
J - Indicates an estimated value. The compound was detected at a value below the minimum detection limit (MDL) and greater than zero.
N D - Indicates the compound was analyzed for, but was NOT detected.
N A - Indicates the compound was not analyzed.

APPENDICES

APPENDIX ONE

Approval Letter

UNDERGROUND STORAGE TANK SYSTEM
CLOSURE APPROVAL

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY

DIVISION OF RESPONSIBLE PARTY SITE REMEDIATION
BUREAU OF UNDERGROUND STORAGE TANKS
CN-029, TRENTON, NJ 08625-0029

TMS # C91-3617 **UST #** 0222194

Lake Side Properties
551 Main Avenue
Wallington, NJ

(Bergen County)

THE ABOVE LISTED FACILITY IS HEREBY GRANTED APPROVAL TO PERFORM THE FOLLOWING ACTIVITY IN ACCORDANCE WITH N.J.A.C. 7:14B-1 et. seq.:

Removal of fourteen (14) 20,000 gallon No. 6 heating oil USTs and take seventy-four (74) soil samples for the tanks and additional samples for the piping (one per 15 feet).

ON-SITE MANAGER: Chris Langewisch TELEPHONE: 201 633-7900

OWNER: Jacob Goldman TELEPHONE: 201 777-2500

EFFECTIVE DATE: November 4, 1991

THIS FORM MUST BE DISPLAYED AT THE SITE DURING THE APPROVED ACTIVITY AND MUST BE MADE AVAILABLE FOR INSPECTION AT ALL TIMES.

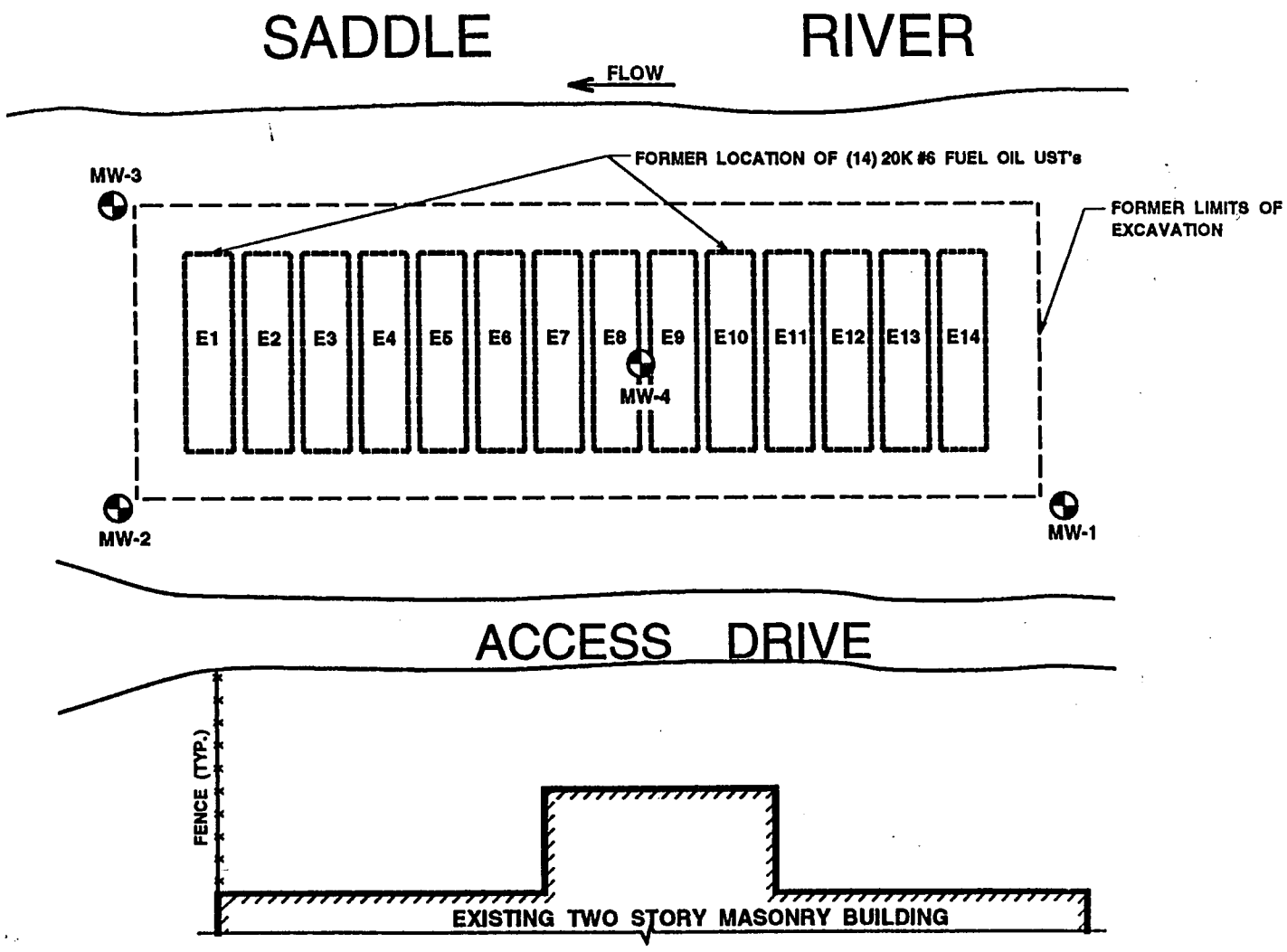
Kenneth Goldstein

KENNETH GOLDSTEIN, P.E., CHIEF
BUREAU OF UNDERGROUND STORAGE TANKS

ST-011 GREEN- APPLICANT COPY- APPLICANT COPY- LCO COPY- TMS COPY- R&B M27

APPENDIX TWO

Site Plan And Topo Map



LEGEND:

EWMA MONITORING WELL LOCATION

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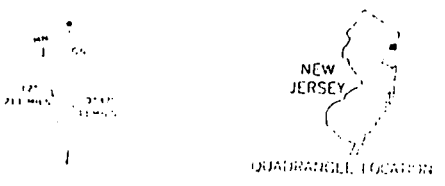
ENVIRONMENTAL WASTE MANAGEMENT ASSOCIATES P.O.BOX 648 Wayne, N.J. 07474 Tel. (201)633-7900	SCALE: 1"=30' DATE: 6/26/92 DRAWN BY: A P CHECKED BY: T A	PROJECT# 90270
SITE MAP LAKE SIDE PROPERTIES 551 MAIN AVENUE WALLINGTON, NEW JERSEY		DRAWING# 1

- SOURCE MAP: USGS Weehawken, NJ 7.5' Topo
- Contour Interval is 20 Feet.
- The Site is indicated by the small circle.
- Geographic North indicated by the top of the page.



ENVIRONMENTAL WASTE MANAGEMENT ASSOCIATES P.O.BOX 648 Wayne, N.J. 07474 Tel. (201)633-7900	SCALE: 1"= 2,000' DATE: 6/25/92 DRAWN BY: I.R. CHECKED BY: T.A.	PROJECT# 90270
Lake Side Properties 551 Main Avenue Wallington, Bergen County New Jersey		DRAWING# 2

M30

APPENDIX THREE

Sample Location Map

M31

APPENDIX FOUR

Waste Removal Documentation

M32

NOT INCLUDED

Have not received from Contractor

M33

APPENDIX FIVE

Clean Fill Documentation

M34

JOE ROYCE INC.

Excavating & Demolition Contractors • Tank Removal • Water & Sewer Lines • Fill

2 BEECHWOOD AVE.
ELMWOOD PARK, N.J. 07407

(201) 797-6107
(201) 684-7428

6/24/92

Environmental Waste Management Associates
1235A Rt. 23 South, P.O. Box 648 Wayne,
NJ 07474

Dear Mr Tom Andrews;

As per our recent discussion, this is to vertify the orgin of the clean fill purchased from us on 1/24/92 for the project at Farmland Daries 550 Main Ave Wallington NJ

The fill was removed from a Virgin bank located at Calvary Cemeteny, Paterson, N.J

Sincerely,

Joseph Royce Jr.

Joseph Royce, Jr.

M35

APPENDIX SIX

Tank Disposal Documentation

TELEPHONE:
(201) 772-5164

LIGHT IRON BALING PRESS
AND GUILLOTINE SHEAR

From 12/19/91

PARKWAY IRON & METAL CO., INC. 00750

SCRAP IRON & METAL BOUGHT
Industrial & Automotive Dismantling Our Specialty

613-639 Route 46 P.O. Box 2049 Clifton, N.J. 07015

12-20 1991

Received from Joe Royce

Descrip.	Steel 4001	Steel 4001	Steel 4001
Gross	58300	58500	58000
Tare 9.24 lbs	37600	37600	37600 9400
Net	20700	20900	20400
Total	369 65	373 20	364 30

Weigher 1107 15

TELEPHONE:
(201) 772-5164

LIGHT IRON BALING PRESS
AND GUILLOTINE SHEAR

PARKWAY IRON & METAL CO., INC. 00744

SCRAP IRON & METAL BOUGHT
Industrial & Automotive Dismantling Our Specialty

613-639 Route 46 P.O. Box 2049 Clifton, N.J. 07015

12-20 1991

Received from Royce 1991

Descrip.	Steel 150	PARKWAY IRON & METAL CO CLIFTON, N.J.	
Gross	38500		
Tare	31500		
Net	7000		
Total	105 72		

Weigher [illegible]

M37

TELEPHONE:
(201) 772-5164

LIGHT IRON BALING PRESS AND GUILLOTINE SHEAR

PARKWAY IRON & METAL CO., INC. 00736

SCRAP IRON & METAL BOUGHT
Industrial & Automotive Dismantling Our Specialty

613-639 Route 46 P.O. Box 2049 Clifton, N.J. 07015

12/19 1991

Received from Joe Royce

Descrip.	Hot Tank	
Gross	57100	
Tare	37200	
Net	20900	
Total	373.20	

Weigher

PARKWAY IRON & METAL CO. CLIFTON, N.J.

TELEPHONE:
(201) 772-5164

LIGHT IRON BALING PRESS AND GUILLOTINE SHEAR

PARKWAY IRON & METAL CO., INC. 03670

SCRAP IRON & METAL BOUGHT
Industrial & Automotive Dismantling Our Specialty

613-639 Route 46 P.O. Box 2049 Clifton, N.J. 07015

12/17 1991

Received from Joe Royce

Descrip.	Oil	
Gross	58200	9:10
Tare	37800	
Net	20400	
Total	364.30	

Weigher

PARKWAY IRON & METAL CO. CLIFTON, N.J.

M38

TELEPHONE:
(201) 772-5164

LIGHT IRON BALING PRESS
AND GUILLOTINE SHEAR

Replaces TK# 00676

PARKWAY IRON & METAL CO., INC. 00712

SCRAP IRON & METAL BOUGHT
Industrial & Automotive Dismantling Our Specialty

613-639 Route 46 P.O. Box 2049 Clifton, N.J. 07015

12-19 1991

Received from Joe Royce

Descrip.	Stul 40ft	Stul 40ft	Stul 40ft
Gross	58000	58000	58000
Tare	37800	37800	37800
Net	20200	20200	20200
Total	360.00	360.00	360.00
			1080.00

Weigher:

TELEPHONE:
(201) 772-5164

LIGHT IRON BALING PRESS
AND GUILLOTINE SHEAR

Replaces TK#00693

PARKWAY IRON & METAL CO., INC. 00715

SCRAP IRON & METAL BOUGHT
Industrial & Automotive Dismantling Our Specialty

613-639 Route 46 P.O. Box 2049 Clifton, N.J. 07015

12-19 1991

Received from D. Joe Royce

Descrip.	Stul 40ft	Stul 40ft	
Gross	57500	57000	
Tare	37900	38000	
Net	19600	19000	
Total	350.00	339.30	689.30

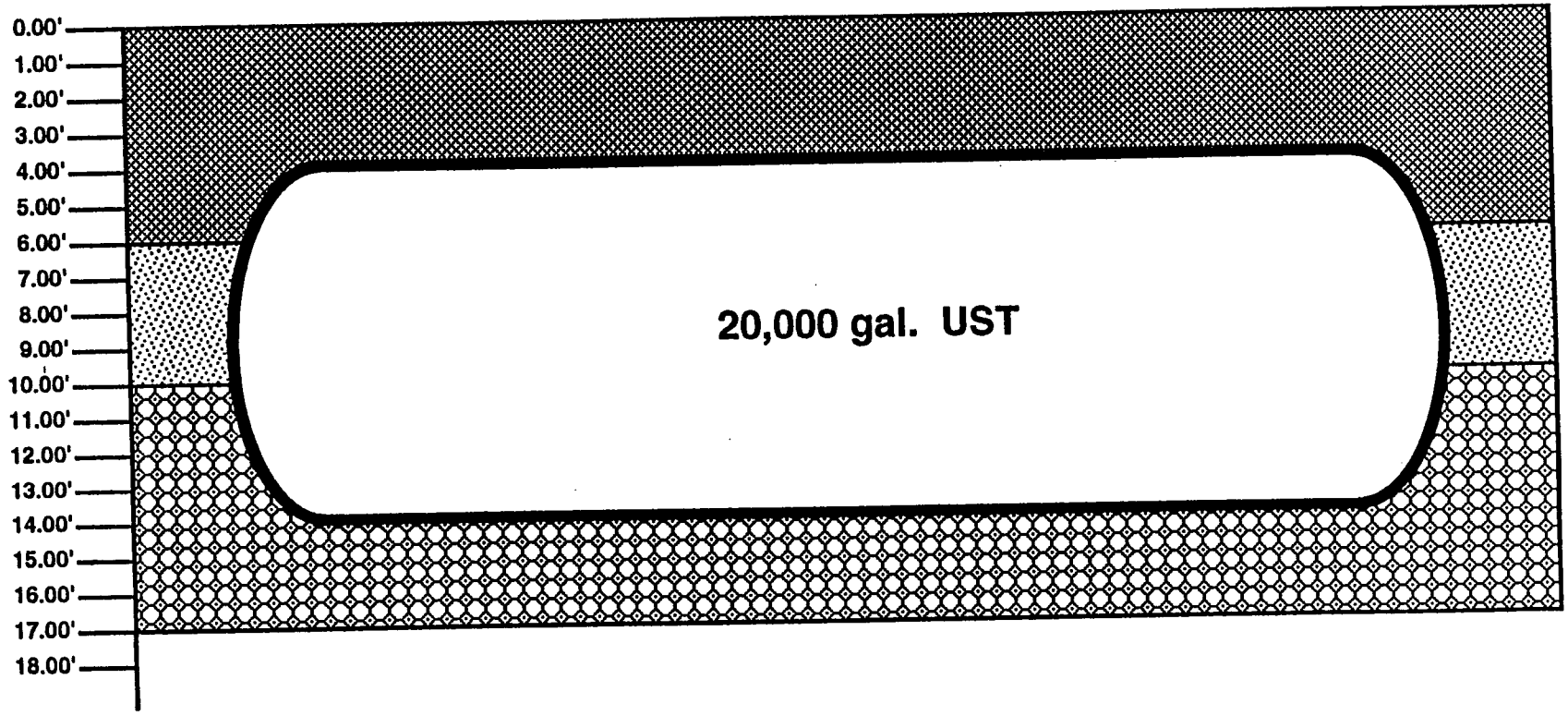
Weigher

M39

APPENDIX SEVEN

Tank Cross Section

M40



LEGEND:

0.00' GRADE LEVEL

URBAN FILL WITH DEBRIS AND ASH

BROWN FINE SAND

GRAY SILTY CLAY

ENVIRONMENTAL WASTE MANAGEMENT ASSOCIATES P.O.BOX 648 Wayne, N.J. 07474 Tel. (201)633-7900	SCALE: 1"=5' DATE: 6/25/92 DRAWN BY: A P CHECKED BY: T A	PROJECT# 90270
CROSS SECTION (20,000 gal. UST) LAKE SIDE PROPERTIES 551 MAIN AVENUE WALLINGTON, NEW JERSEY		DRAWING# 4

MW

APPENDIX EIGHT

Soil Borings And Well Logs

M42

ENVIRONMENTAL WASTE MANAGEMENT ASSOCIATES

1235 A Route 23 S, P.O. Box 648, Wayne, NJ 07474 Phone: (201) - 633 - 7900 Fax: (201) - 633 - 7582
Route 518 Business Park Dr., Skillman, NJ 08558 Phone: (609) - 683 - 7600 Fax: (609) - 683 - 1555

Drilling Permit #26-28-938

BORING LOG

BORING # MW-1 SHEET 1 OF 2

EWMA CASE #:	CLIENT:	PROJECT :
91431	Farmland - Wetlands	BUST

LOCATION:	TOPO SETTING :
551 Main Ave., Block 71, Lot 35 A, Wallington, NJ	moderately flat

DRILLING CONTRACTOR:	DRILLER:	SAMPLER :	INSPECTOR :
SBI	Eric Ellefsen	Eddie Walsh	Alex Arcega/Ida Rosa
DRILLING RIG TYPE:	**SIZE & TYPE OF BIT:**	**DATE STARTED:**	**DATE COMPLETED:**
IRTH 60	8" Dia. - Tricone Bit	3/25/92	3/25/92

SAMPLE TYPE:	HAMMER WT.	DROP	TOTAL DEPTH:	WATER LEVEL: ENCOUNTERED	WATER LEVEL: STABILIZED
2" diameter split spoon	140 lbs.	30"	26.58'	16.00'	15.75'

SAMPLES #	Recovery	Blows	DEPTH	SOIL TYPE	IDENTIFICATION OF SOIL / REMARKS
			1	SM	0- 1.5' : Top Soil and fill materials of brown to dark brown medium grained sand with silt and clay; and little gravels.
S1	18"	8 7 6 5	2, 3	SM	1.5'- 9.5' : Black to dark brown medium to well graded sand with bitunous materials, and some silt. (Dry to moist, loose)
S2	6"	1 2 1 2	4, 5	SM	
S3	6"	2 1 1 1	6, 7	SM	
S4	4"	1 1 1 2	8, 9	SM/ SW	
S5	20"	2 1 1 1	10, 11	SM/ SW	9.5'-15.0' : Dark brown grading to brown fine sand with some silt. (Moist, loose).
S6	20"	2 2 3 4	12, 13	SM/ SW	
S7	18"	5 8 11 10	14, 15	SM	15.0'-20.0' : Brown medium sand with some fines. (Moist to wet @ 16.0', loose).
S8	6"	8 8 6 7	16, 17	SM	
			18, 19, 20	SM	- Brown medium sand with some silt. (Wet, loose).

M43

ENVIRONMENTAL WASTE MANAGEMENT ASSOCIATES

1235 A Route 23 S, P.O. Box 648, Wayne, NJ 07474 Phone: (201) - 633 - 7900 Fax: (201) - 633 - 7582
Route 518 Business Park Dr., Skillman, NJ 08558 Phone: (609) - 683 - 7600 Fax: (609) - 683 - 1555

Drilling Permit #26-28-938

BORING LOG

BORING # MW-1 SHEET 2 OF 2

EWMA CASE #:	CLIENT:	PROJECT :
91431	Farmland - Wetlands	BUST

LOCATION:	TOPO SETTING :
551 Main Ave., Block 71, Lot 35 A, Wallington, NJ	moderately flat

DRILLING CONTRACTOR:	DRILLER:	SAMPLER :	INSPECTOR :
SBI	Eric Ellefsen	Eddie Walsh	Alex Arcega/Ida Rosa

DRILLING RIG TYPE:	SIZE & TYPE OF BIT:	DATE STARTED:	DATE COMPLETED:
IRTH 60	8" Dia. - Tricone Bit	3/25/92	3/25/92

SAMPLE TYPE:	HAMMER WT.	DROP	TOTAL DEPTH:	WATER LEVEL: ENCOUNTERED	WATER LEVEL: STABILIZED
2" diameter split spoon	140 lbs.	30"	26.58'	16.00'	15.75'

SAMPLES #	Recovery	Blows	DEPTH	SOIL TYPE	IDENTIFICATION OF SOIL / REMARKS
			21, 22, 23, 24, 25, 26	SM	- Brown medium sand with some silt. (Wet, loose).
			27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40		MW-1 completed on March 25, 1992, at 26.58' below grade.

M44

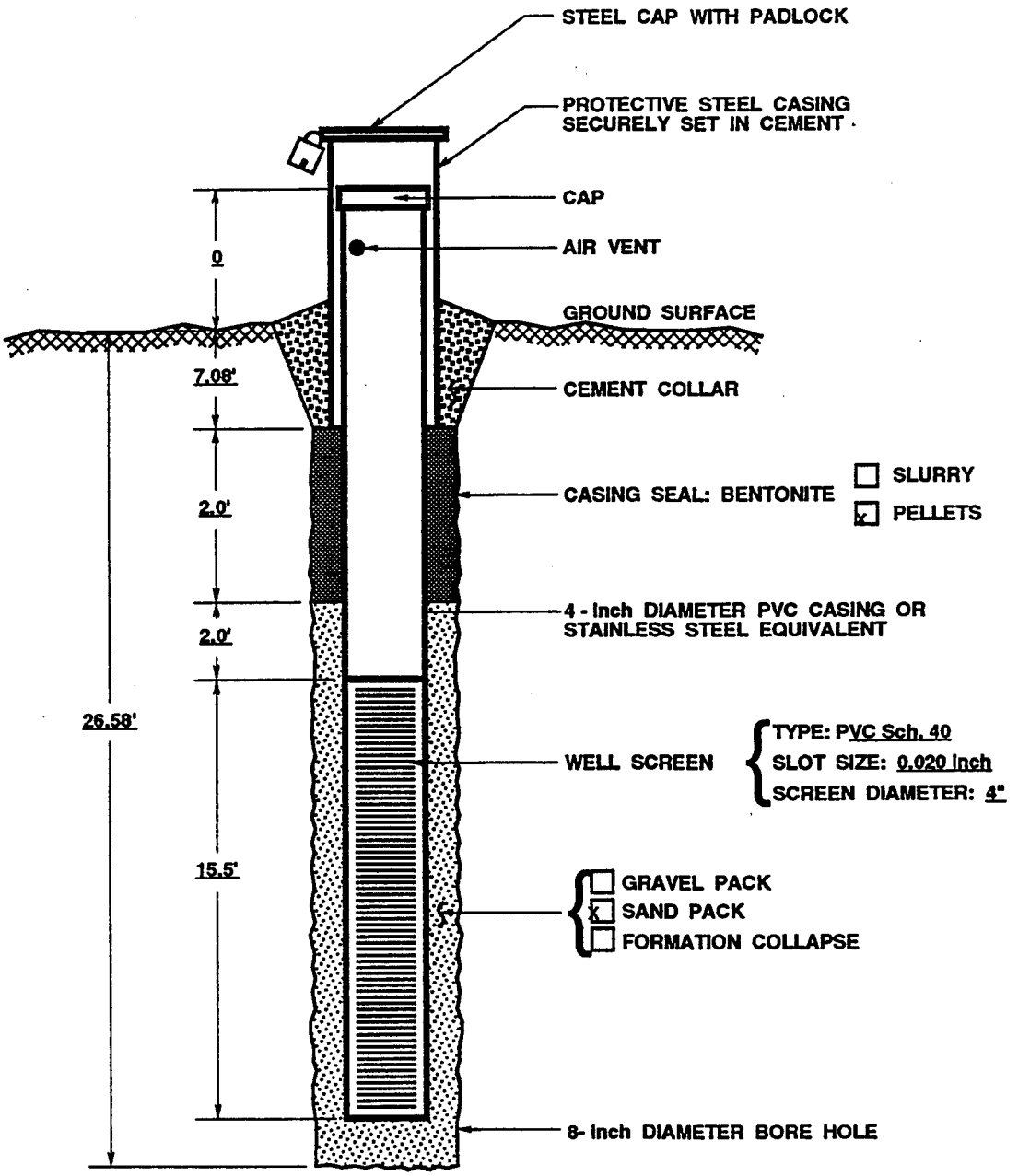
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
MONITORING WELL SPECIFICATION FOR UNCONSOLIDATED FORMATIONS

SITE NAME: FARMLAND LAKESIDE PROPERTIES **MW #:** MW-1

LOCATION: 551 Main Ave.,Blk 71, Lot 35A, Wallington, NJ **PERMIT #:** 26-28-938

DATE: March 25, 1992 **DRILLER:** SBI

EWMA CASE #: 91431 **TOTAL DEPTH:** 26.58'



NOT TO SCALE

M45

ENVIRONMENTAL WASTE MANAGEMENT ASSOCIATES

1235 A Route 23 S, P.O. Box 648, Wayne, NJ 07474
Route 518 Business Park Dr., Skillman, NJ 08558
Phone: (201) - 633 - 7900 Fax: (201) - 633 - 7582
Phone: (609) - 683 - 7600 Fax: (609) - 683 - 1555

Drilling Permit #26-28-939

BORING LOG

BORING # MW-2

SHEET 1 OF 2

EWMA CASE #: 91431	CLIENT: Farmland - Wetlands		PROJECT : BUST
LOCATION: 551 Main Ave., Block 71, Lot 35 A, Wallington, NJ			TOPO SETTING : moderately flat
DRILLING CONTRACTOR: SBI	DRILLER: Eric Ellefsen	SAMPLER : Eddie Walsh	INSPECTOR : Alex Arcega/Ida Rosa
DRILLING RIG TYPE: IRTH 60	SIZE & TYPE OF BIT: 8" Dia. - Tricone Bit	DATE STARTED: 3/25/92	DATE COMPLETED: 3/25/92
SAMPLE TYPE: 2" diameter split spoon	HAMMER WT. 140 lbs. / DROP 30"	TOTAL DEPTH: 26.0'	WATER LEVEL: ENCOUNTERED 16.0' / STABILIZED 15.8'

SAMPLES #	Recovery	Blows	DEPTH	SOIL TYPE	IDENTIFICATION OF SOIL / REMARKS
			1, 2, 3, 4, 5		
S1	8"	1 4 2 2	6, 7	SM/ SW	5.0'- 7.0' : Black medium to well graded sand with bitu-nous materials, and some silt. (Moist, loose)
			8, 9, 10		
S2	2"	5 6 6 6	11, 12	SM/ SW	10.0-12.0' : Black well graded sand with some silt and cinders (?) (Dry, loose).
			13, 14, 15		
S3	6"	1	16, 17	SM	15.0'-17.0' : Black fine sand with silt and clay (with odor and product) (Moist to wet, loose).
			18, 19, 20		- Brown fine sand with some silt. (Wet).

M46

ENVIRONMENTAL WASTE MANAGEMENT ASSOCIATES

1235 A Route 23 S, P.O. Box 648, Wayne, NJ 07474 Phone: (201) - 633 - 7900 Fax: (201) - 633 - 7582
Route 518 Business Park Dr., Skillman, NJ 08558 Phone: (609) - 683 - 7600 Fax: (609) - 683 - 1555

Drilling Permit #26-28-939

BORING LOG

BORING # MW-2 SHEET 2 OF 2

EWMA CASE #: 91431	CLIENT: Farmland - Wetlands		PROJECT : BUST
LOCATION: 551 Main Ave., Block 71, Lot 35 A, Wallington, NJ			TOPO SETTING : moderately flat
DRILLING CONTRACTOR: SBI	DRILLER: Eric Ellefsen	SAMPLER : Eddie Walsh	INSPECTOR : Alex Arcega/Ida Rosa
DRILLING RIG TYPE: IRTH 60	SIZE & TYPE OF BIT: 8" Dia. - Tricone Bit	DATE STARTED: 3/25/92	DATE COMPLETED: 3/25/92
SAMPLE TYPE: 2" diameter split spoon	HAMMER WT. 140 lbs. / DROP 30"	TOTAL DEPTH: 26.0'	WATER LEVEL: ENCOUNTERED 16.0' / STABILIZED 15.8'

SAMPLES #	Recovery	Blows	DEPTH	SOIL TYPE	IDENTIFICATION OF SOIL / REMARKS
			21, 22, 23, 24, 25, 26	SM	- Brown fine sand with some silt. (Wet).
			27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40		MW-2 completed on 3/25/92 at 26.0' below grade.

M47

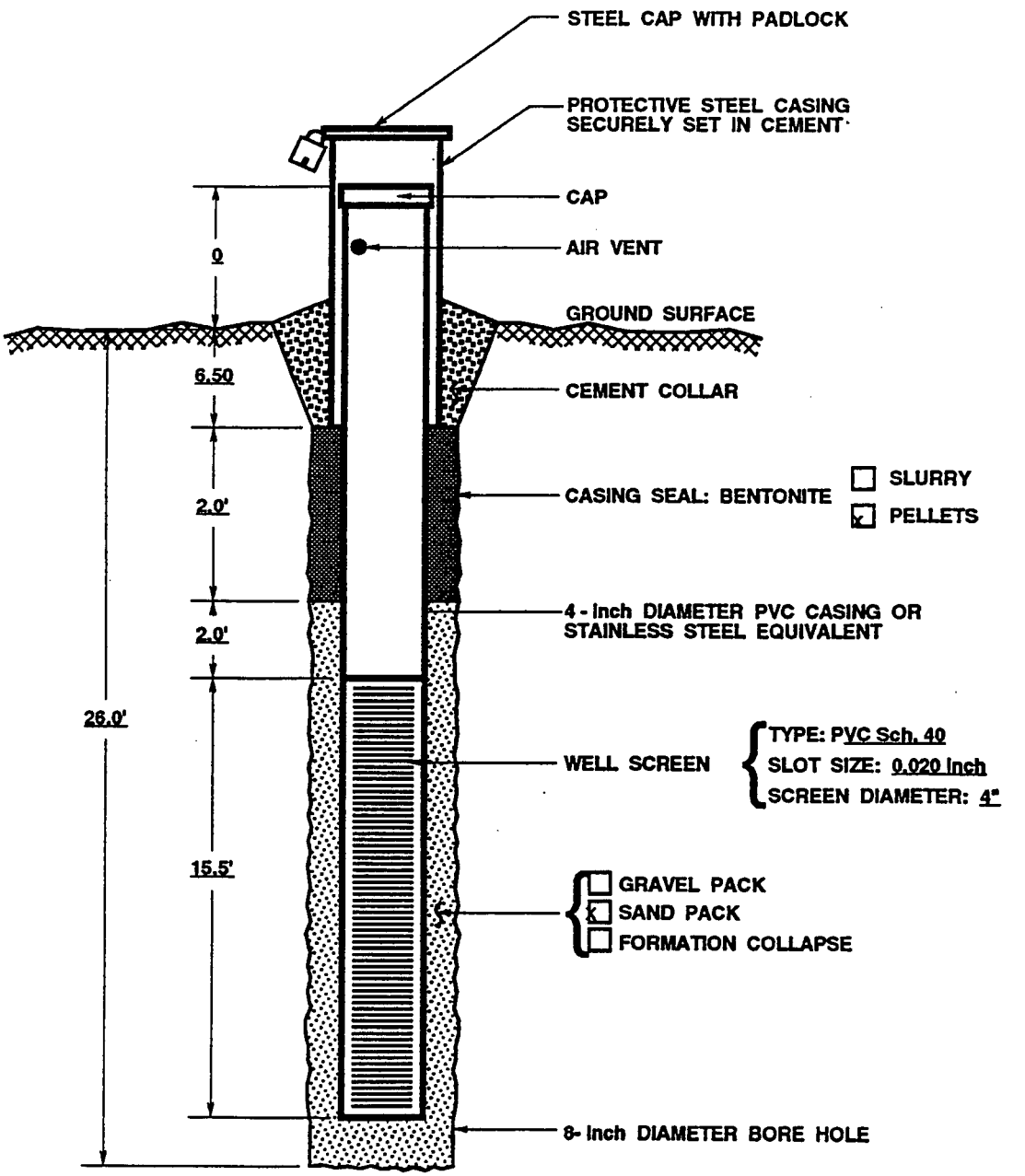
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
MONITORING WELL SPECIFICATION FOR UNCONSOLIDATED FORMATIONS

SITE NAME: FARMLAND LAKESIDE PROPERTIES **MW #:** MW-2

LOCATION: 551 Main Ave.,Blk 71, Lot 35A, Wallington, NJ **PERMIT #:** 26-28-939

DATE: March 25, 1992 **DRILLER:** SBI

EWMA CASE #: 91431 **TOTAL DEPTH:** 26.0'



M48

NOT TO SCALE

ENVIRONMENTAL WASTE MANAGEMENT ASSOCIATES

1235 A Route 23 S, P.O. Box 648, Wayne, NJ 07474
Route 518 Business Park Dr., Skillman, NJ 08558
Phone: (201) - 633 - 7900 Fax: (201) - 633 - 7582
Phone: (609) - 683 - 7600 Fax: (609) - 683 - 1555

Drilling Permit #26-28-940

BORING LOG

BORING # MW-3 SHEET 1 OF 2

EWMA CASE #: 90720	CLIENT: Farmland - Lakeside Properties		PROJECT : BUST
LOCATION: 551 Main Ave., Block 71, Lot 35 A, Wallington, NJ			TOPO SETTING : moderately flat
DRILLING CONTRACTOR: SBI	DRILLER: Eric Ellefsen	SAMPLER : Tom White	INSPECTOR : Alex Arcega
DRILLING RIG TYPE: IRTH 60	SIZE & TYPE OF BIT: 8" Dia. - Tricone Bit	DATE STARTED: 4/20/92	DATE COMPLETED: 4/20/92
SAMPLE TYPE: 2" diameter split spoon	HAMMER WT. 140 lbs. / DROP 30"	TOTAL DEPTH: 27'	WATER LEVEL: ENCOUNTERED 16.5' / STABILIZED 16.25'

SAMPLES #	Recovery	Blows	DEPTH	SOIL TYPE	IDENTIFICATION OF SOIL / REMARKS
			F, 2, 3, 4, 5		0 - 2.0' : Fill materials of coarse gravel, small boulders and brown well graded sand.
S1	1"	1 3 4 2	6, 7	SM/ SW	5.0'- 7.0' : Brown fine to well graded sand with black bituminous materials and some silt. (Moist, loose)
			8, 9, 10		
S2	5"	3 2 1 1	11, 12	SM/ SW	10.0-12.0' : Dark brown well graded sand with black bituminous materials and some silt. (Moist, loose)
			13, 14, 15		
S3	8"	1 1 3 4	16, 17	SW/ SM	15.0'-16.5' : Black well graded sand. (Moist , loose) 16.5' - 17.0': Gray fine sand with silt and clay (with odor and product). (Wet @16.5', loose).
			18, 19, 20		- Gray to brown well graded to medium grade sand with some silt. (Wet).

M49

ENVIRONMENTAL WASTE MANAGEMENT ASSOCIATES

1235 A Route 23 S, P.O. Box 648, Wayne, NJ 07474 Phone: (201) - 633 - 7900 Fax: (201) - 633 - 7582
Route 518 Business Park Dr., Skillman, NJ 08558 Phone: (609) - 683 - 7600 Fax: (609) - 683 - 1555

Drilling Permit #26-28-940

BORING LOG

BORING # MW-3 SHEET 2 OF 2

EWMA CASE #: 90720	CLIENT: Farmland - Lakeside Properties		PROJECT : BUST
LOCATION: 551 Main Ave., Block 71, Lot 35 A, Wallington, NJ			TOPO SETTING : moderately flat
DRILLING CONTRACTOR: SBI	DRILLER: Eric Ellefsen	SAMPLER : Tom White	INSPECTOR : Alex Arcega
DRILLING RIG TYPE: IRTH 60	SIZE & TYPE OF BIT: 8" Dia. - Tricone Bit	DATE STARTED: 4/20/92	DATE COMPLETED: 4/20/92
SAMPLE TYPE: 2" diameter split spoon	HAMMER WT. 140 lbs. / DROP 30"	TOTAL DEPTH: 27'	WATER LEVEL: ENCOUNTERED 16.5' / STABILIZED 16.25'

SAMPLES #	Recovery	Blows	DEPTH	SOIL TYPE	IDENTIFICATION OF SOIL / REMARKS
			21		- Brown well graded to medium grade sand.
			38		
			23		
			24		
			25		
			26		
			27		
			28		MW-3 completed on April 20, 1992, at 27.0' below grade.
			29		
			30		
			31		
			32		
			33		
			34		
			35		
			36		
			37		
			38		
			39		
			40		

M50

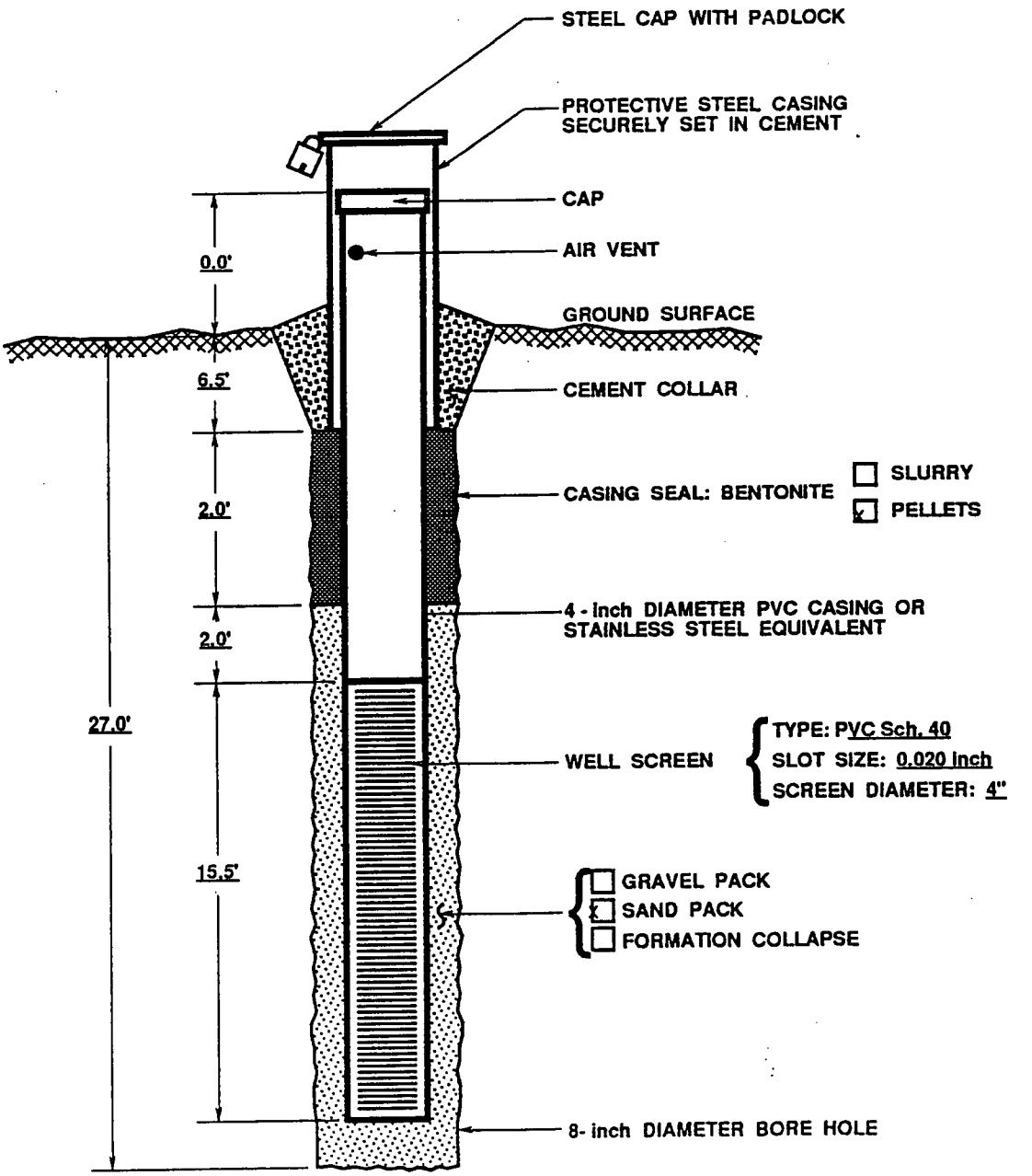
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
MONITORING WELL SPECIFICATION FOR UNCONSOLIDATED FORMATIONS

SITE NAME: FARMLAND LAKESIDE PROPERTIES **MW #:** MW-3

LOCATION: 551 Main Ave., Blk 71, Lot 35A, Wallington, NJ **PERMIT #:** 26-28-940

DATE: April 20, 1992 **DRILLER:** SBI

EWMA CASE #: 90270 **TOTAL DEPTH:** 27.0'



M51

NOT TO SCALE

ENVIRONMENTAL WASTE MANAGEMENT ASSOCIATES

1235 A Route 23 S, P.O. Box 648, Wayne, NJ 07474
Route 518 Business Park Dr., Skillman, NJ 08558
Phone: (201) - 633 - 7900 Fax: (201) - 633 - 7582
Phone: (609) - 683 - 7600 Fax: (609) - 683 - 1555

Drilling Permit #26-28-941

BORING LOG

BORING # MW-4

SHEET 1 OF 2

EWMA CASE #: 90720	CLIENT: Farmland - Lakeside Properties		PROJECT: BUST
LOCATION: 551 Main Ave., Block 71, Lot 35 A, Wallington, NJ			TOPO SETTING: moderately flat
DRILLING CONTRACTOR: SBI	DRILLER: Eric Ellefsen	SAMPLER: Tom White	INSPECTOR: Alex Arcega
DRILLING RIG TYPE: IRTH 60	SIZE & TYPE OF BIT: 8" Dia. - Tricone Bit	DATE STARTED: 4/20/92	DATE COMPLETED: 4/20/92
SAMPLE TYPE: 2" diameter split spoon	HAMMER WT. 140 lbs. / DROP 30"	TOTAL DEPTH: 27'	WATER LEVEL: ENCOUNTERED 16.0' / STABILIZED 15.5'

SAMPLES #	Recovery	Blows	DEPTH	SOIL TYPE	IDENTIFICATION OF SOIL / REMARKS
			F, 2, 3, 4, 5		0 - 2.0' : Fill materials of brown well graded sand with some gravels and silt/clay.
S1	6"	2 1 1 2	6, 7	SW/ SM	5.0'- 7.0' : Fill materials of reddish brown fine sand with fragments of stones (red sandstones) and some silt. (Moist, loose)
			8, 9, 10		
S2	6"	5 10 6 11	11, 12	SM	10.0'-12.0' : Brown fine sand with fragments of red brown stones (red sandstones) and some silt. (Moist, loose)
			13, 14, 15		
S3	8"	4 7 7 30	16, 17	SM	15.0'-16.0' : Brown fine sand with some silt and pieces of wood @ 16' 16.0' - 17.0': Black coarse sand (with odor and product). (Wet @16.0', loose to med. dense).
			18, 19, 20	SW	- Brown well graded to medium grade sand with some silt. (Wet).

M52

ENVIRONMENTAL WASTE MANAGEMENT ASSOCIATES

1235 A Route 23 S, P.O. Box 648, Wayne, NJ 07474 Phone: (201) - 633 - 7900 Fax: (201) - 633 - 7582
Route 518 Business Park Dr., Skillman, NJ 08558 Phone: (609) - 683 - 7600 Fax: (609) - 683 - 1555

Drilling Permit #26-28-941

BORING LOG

BORING # MW-4 SHEET 2 OF 2

EWMA CASE #: 90720	CLIENT: Farmland - Lakeside Properties		PROJECT : BUST
LOCATION: 551 Main Ave., Block 71, Lot 35 A, Wallington, NJ			TOPO SETTING : moderately flat
DRILLING CONTRACTOR: SBI	DRILLER: Eric Ellefsen	SAMPLER : Tom White	INSPECTOR : Alex Arcega
DRILLING RIG TYPE: IRTH 60	SIZE & TYPE OF BIT: 8" Dia. - Tricone Bit	DATE STARTED: 4/20/92	DATE COMPLETED: 4/20/92
SAMPLE TYPE: 2" diameter split spoon	HAMMER WT. 140 lbs. / DROP 30"	TOTAL DEPTH: 27'	WATER LEVEL: ENCOUNTERED 16.0' / STABILIZED 15.5'

SAMPLES #	Recovery	Blows	DEPTH	SOIL TYPE	IDENTIFICATION OF SOIL / REMARKS
			21, 38, 23, 24, 25, 26, 27		- Brown fine sand with silt.
			28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40		MW-4 completed at 27' below grade on April 20, 1992.

M53

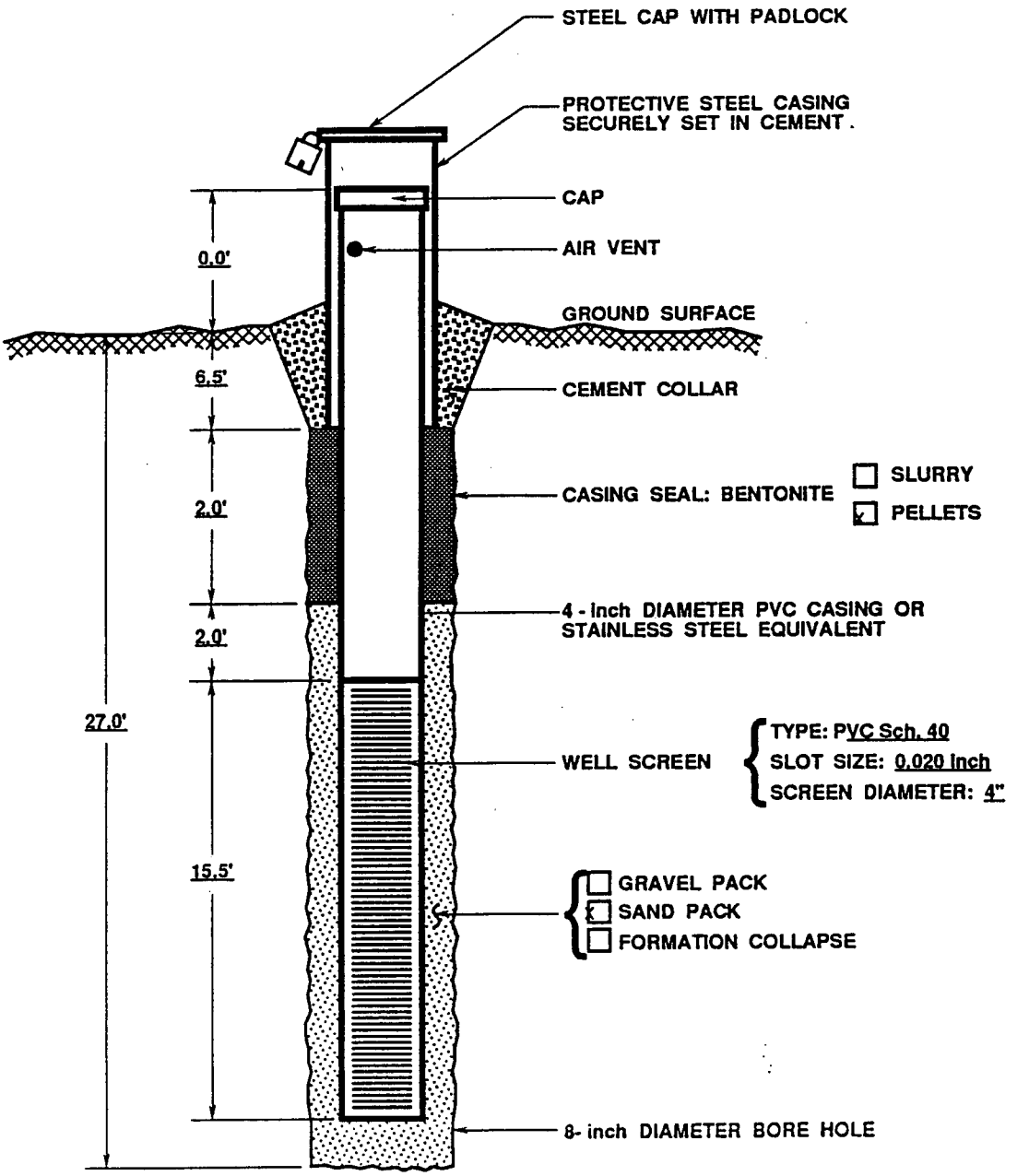
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
MONITORING WELL SPECIFICATION FOR
UNCONSOLIDATED FORMATIONS

SITE NAME: FARMLAND LAKESIDE PROPERTIES **MW #:** MW-4

LOCATION: 551 Main Ave., Blk 71, Lot 35A, Wallington, NJ **PERMIT #:** 26-28-941

DATE: April 20, 1992 **DRILLER:** SBI

EWMA CASE #: 90270 **TOTAL DEPTH:** 27.0'



M54

NOT TO SCALE

APPENDIX NINE

Well Purge Guides

M55

DICAR WELL PURGE GUIDE

JOB NAME: Lakeside Properties WELL NO. 1 DATE: 4/10/92

1. DATE AND TIME OF PURGE: 4/10/92, 9:30 A.M.
2. DEPTH TO WATER BEFORE PURGING: 15.44'
3. PURGE METHOD: Teflon Bailer
4. ESTIMATED VOLUME OF PURGED WATER: 21-22 gallons
5. DEPTH TO WATER AFTER PURGING: 15.46'
6. DATE AND TIME OF SAMPLING: 4/10/92, 10:16 A.M.
7. DEPTH TO WATER BEFORE SAMPLING: 15.44'
8. SAMPLING METHOD: Teflon Bailer
9. TOTAL NUMBER OF SAMPLES: 5
10. SAMPLING PARAMETERS: VO+15, xylenes, MTBE & TBA
11. DEPTH OF WELL: 26.58'
12. VISUAL DESCRIPTION OF WATER: Red/brown silty water, no odor or sheen
13. WELL PERMIT NUMBER: 2628938

DICAR WELL PURGE GUIDE

JOB NAME: Lakeside Properties. WELL NO. 2 DATE: 4/10/92

1. DATE AND TIME OF PURGE: 4/10/92, 9:30 P.M.
2. DEPTH TO WATER BEFORE PURGING: 15.41'
3. PURGE METHOD: Teflon Bailer
4. ESTIMATED VOLUME OF PURGED WATER: 20 gallons
5. DEPTH TO WATER AFTER PURGING: 15.45'
6. DATE AND TIME OF SAMPLING: 4/10/92, 10:07 A.M.
7. DEPTH TO WATER BEFORE SAMPLING: 15.45'
8. SAMPLING METHOD: Teflon Bailer
9. TOTAL NUMBER OF SAMPLES: 5
10. SAMPLING PARAMETERS: VO+15, xylenes, MTBE & TBA
11. DEPTH OF WELL: 26.0'
12. VISUAL DESCRIPTION OF WATER: Red/brown silty water
13. WELL PERMIT NUMBER: 2628939

DICAR WELL PURGE GUIDE

JOB NAME: Lakeside Properties WELL NO. 3 DATE: 5/5/92

1. DATE AND TIME OF PURGE: 5/5/92, 10:00 A.M.
2. DEPTH TO WATER BEFORE PURGING: 16.52'
3. PURGE METHOD: Teflon Bailer
4. ESTIMATED VOLUME OF PURGED WATER: 20-21 gallons
5. DEPTH TO WATER AFTER PURGING: 16.52'
6. DATE AND TIME OF SAMPLING: 5/5/92, 10:20 A.M.
7. DEPTH TO WATER BEFORE SAMPLING: 16.52'
8. SAMPLING METHOD: Teflon Bailer
9. TOTAL NUMBER OF SAMPLES: 5
10. SAMPLING PARAMETERS: VO+15, xylenes, MTBE & TBA
11. DEPTH OF WELL: 27'
12. VISUAL DESCRIPTION OF WATER: Red/brown silty water, no odor or sheen
13. WELL PERMIT NUMBER: 2628940

DICAR WELL PURGE GUIDE

JOB NAME: Lakeside Properties WELL NO. 4 DATE: 5/5/92

1. DATE AND TIME OF PURGE: 5/5/92, 11:00 A.M.
2. DEPTH TO WATER BEFORE PURGING: 15.54'
3. PURGE METHOD: Teflon Bailer
4. ESTIMATED VOLUME OF PURGED WATER: 22-23 gallons
5. DEPTH TO WATER AFTER PURGING: 15.50'
6. DATE AND TIME OF SAMPLING: 5/5/92, 11:20 A.M.
7. DEPTH TO WATER BEFORE SAMPLING: 15.52'
8. SAMPLING METHOD: Teflon Bailer
9. TOTAL NUMBER OF SAMPLES: 5
10. SAMPLING PARAMETERS: VO+15, xylenes, MTBE & TBA
11. DEPTH OF WELL: 27'
12. VISUAL DESCRIPTION OF WATER: Light red/brown silty water, no odor or sheen.
13. WELL PERMIT NUMBER: 2628941

Environmental Waste Management Associates

M59

DICAR WELL PURGE GUIDE

JOB NAME: Lakeside Properties WELL NO. 1 DATE: 6/5/92

1. DATE AND TIME OF PURGE: 6/5/92, 11:52 A.M.
2. DEPTH TO WATER BEFORE PURGING: 15.24'
3. PURGE METHOD: Submersible Wale Pump
4. ESTIMATED VOLUME OF PURGED WATER: 22 gallons
5. DEPTH TO WATER AFTER PURGING: 16.24'
6. DATE AND TIME OF SAMPLING: 6/5/92, 1:25 P.M.
7. DEPTH TO WATER BEFORE/AFTER SAMPLING: 15.16'/15.16'
8. SAMPLING METHOD: Teflon Bailer
9. TOTAL NUMBER OF SAMPLES: 5
10. SAMPLING PARAMETERS: VO+15, xylenes, MTBE & TBA
11. DEPTH OF WELL: 26.2'
12. VISUAL DESCRIPTION OF WATER: clear, some silt
13. WELL PERMIT NUMBER: 2628938

Environmental Waste Management Associates

M60

DICAR WELL PURGE GUIDE

JOB NAME: Lakeside Properties WELL NO. 2 DATE: 6/5/92

1. DATE AND TIME OF PURGE: 6/5/92, 12:46 P.M.
2. DEPTH TO WATER BEFORE PURGING: 15.20'
3. PURGE METHOD: Submersible Wale Pump
4. ESTIMATED VOLUME OF PURGED WATER: 23 gallons
5. DEPTH TO WATER AFTER PURGING: 15.12'
6. DATE AND TIME OF SAMPLING: 6/5/92, 1:50 P.M.
7. DEPTH TO WATER BEFORE/AFTER SAMPLING: 15.12'/15.12'
8. SAMPLING METHOD: Teflon Bailer
9. TOTAL NUMBER OF SAMPLES: 5
10: SAMPLING PARAMETERS: VO+15, xylenes, MTBE & TBA
11. DEPTH OF WELL: 26.0'
12. VISUAL DESCRIPTION OF WATER: clear, some silt, slight sheen, odor
13. WELL PERMIT NUMBER: 2628939

Environmental Waste Management Associates

M61

DICAR WELL PURGE GUIDE

JOB NAME: Lakeside Properties WELL NO. 3 DATE: 6/5/92

1. DATE AND TIME OF PURGE: 6/5/92, 1:08 P.M.
2. DEPTH TO WATER BEFORE PURGING: 16.02'
3. PURGE METHOD: Submersible Wale Pump
4. ESTIMATED VOLUME OF PURGED WATER: 22 gallons
5. DEPTH TO WATER AFTER PURGING: 15.88'
6. DATE AND TIME OF SAMPLING: 6/5/92, 2:00 P.M.
7. DEPTH TO WATER BEFORE/AFTER SAMPLING: 15.88'/15.88'
8. SAMPLING METHOD: Teflon Bailer
9. TOTAL NUMBER OF SAMPLES: 5
10. SAMPLING PARAMETERS: VO+15, xylenes, MTBE & TBA
11. DEPTH OF WELL: 27.0'
12. VISUAL DESCRIPTION OF WATER: clear, some silt, slight sheen, odor
13. WELL PERMIT NUMBER: 2628940

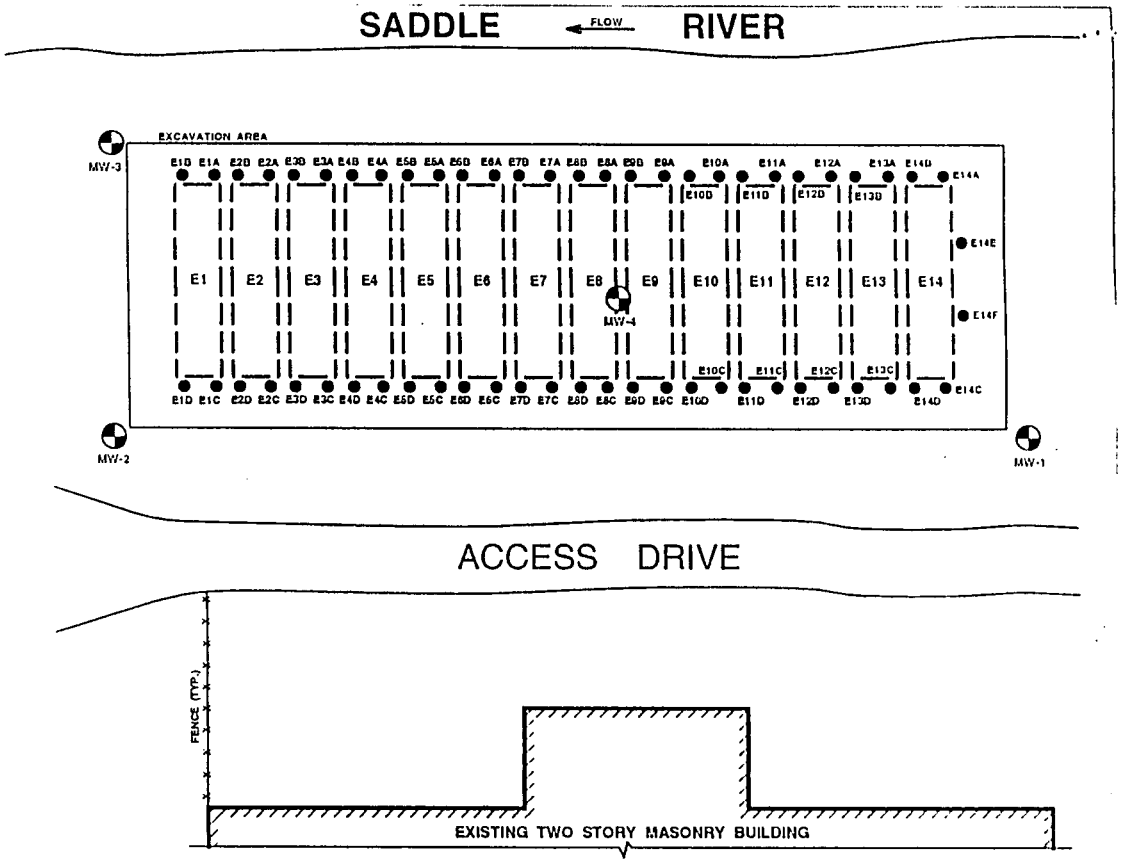
DICAR WELL PURGE GUIDE

JOB NAME: Lakeside Properties WELL NO. 4 DATE: 6/5/92

1. DATE AND TIME OF PURGE: 6/5/92, 12:22 P.M.
2. DEPTH TO WATER BEFORE PURGING: 15.09'
3. PURGE METHOD: Submersible Wale Pump
4. ESTIMATED VOLUME OF PURGED WATER: 22 gallons
5. DEPTH TO WATER AFTER PURGING: 15.02'
6. DATE AND TIME OF SAMPLING: 6/5/92, 1:35 P.M.
7. DEPTH TO WATER BEFORE/AFTER SAMPLING: 15.02'/15.02'
8. SAMPLING METHOD: Teflon Bailer
9. TOTAL NUMBER OF SAMPLES: 5
10: SAMPLING PARAMETERS: VO+15, xylenes, MTBE & TBA
11. DEPTH OF WELL: 27.0'
12. VISUAL DESCRIPTION OF WATER: clear, some silt
13. WELL PERMIT NUMBER: 2628941

Environmental Waste Management Associates

M63



SAMPLE #	SAMPLE DEPTH	TPH (ppm)	Total Targeted BN's (ppb)	TOTAL Non-Targeted BN's (ppb)	TOTAL BN's (ppb)
E1A	15'-17'	1,550	697 J	16,567 J	17,264 J
E1B	15'-17'	3,420	ND	38,700	38,700
E1C	15'-17'	2,310	1,890 J	34,100	35,900 J
E1D	15'-17'	416	4,947 J	3,440	8,387 J
E2A	15'-17'	730	150 J	6,760	6,910 J
E2B	15'-17'	ND	-	-	-
E2C	16'-17'	ND	-	-	-
E2D	15'-17'	28	-	-	-
E3A	16'-17'	ND	-	-	-
E3B	15'-17'	17.8	-	-	-
E3C	15'-17'	19.5	-	-	-
E3D	16'-17'	2,230	3,744 J	20,850 J	24,594 J
E4A	15'-17'	98.2	-	-	-
E4B	15'-17'	52.4	-	-	-
E4C	15'-17'	2,020	123 J	924	1,047 J
E4D	15'-17'	412	656 J	ND	656 J
E5A	15'-17'	45	-	-	-
E5B	15'-17'	630	ND	5,657 JB	5,657 JB
E5C	16'-17'	268	-	-	-
E5D	15'-17'	29.3	-	-	-
E6A	15'-17'	20.6	-	-	-
E6B	15'-17'	257	-	-	-
E6C	15'-17'	1,090	ND	473 J	473 J
E6D	15'-17'	397	-	-	-
E7A	15'-17'	11.2	-	-	-
E7B	15'-17'	138	-	-	-
E7C	15'-17'	313	-	-	-
E7D	15'-17'	2,490	653 J	ND	653 J

SAMPLE #	SAMPLE DEPTH	TPH (ppm)	Total Targeted BN's (ppb)	TOTAL Non-Targeted BN's (ppb)	TOTAL BN's (ppb)
E8A	15'-17'	17	-	-	-
E8B	15'-17'	7.27	-	-	-
E8C	15'-17'	2,540	ND	36,160 J	36,160 J
E8D	15'-17'	2,510	1,328 J	6,913	8,241 J
E9A	15'-17'	1.20 J	-	-	-
E9B	15'-17'	27.7	-	-	-
E9C	15'-17'	74.2	-	-	-
E9D	15'-17'	470	251 J	ND	251 J
E10A	15'-17'	13.2	-	-	-
E10B	15'-17'	7.74	-	-	-
E10C	15'-17'	94.5	-	-	-
E10D	15'-17'	11.8	-	-	-
E11A	15'-17'	11.1	-	-	-
E11B	15'-17'	25.3	-	-	-
E11C	15'-17'	18.9	-	-	-
E11D	15'-17'	12.0	-	-	-
E12A	15'-17'	ND	-	-	-
E12B	15'-17'	25.3	-	-	-
E12C	15'-17'	11.6	-	-	-
E12D	15'-17'	64	-	-	-
E13A	15'-17'	297	-	-	-
E13B	15'-17'	43.8	-	-	-
E13C	15'-17'	67	-	-	-
E13D	15'-17'	13.8	-	-	-
E14A	15'-17'	1,960	3,810 J	6,445 J	10,25[illegible] J
E14B	15'-17'	132	-	-	-
E14C	15'-17'	302	-	-	-
E14D	15'-17'	308	-	-	-
E14E	15'-17'	36.5	-	-	-
E14F	15'-17'	75.8	-	-	-

GROUNDWATER (ROUND 1)

SAMPLE #	Total Targeted BN's (ppb)	TOTAL Non-Targeted BN's (ppb)	TOTAL BN's (ppb)	Total Targeted VO's (ppb)	TOTAL Non-Targeted VO's (ppb)	TOTAL VO's (ppb)
MW-1	37.9 B	ND	37.9 B	2.2 J	ND	2.2 J
MW-2	74.0 BJ	71.6	145.6 BJ	2.9 J	ND	2.9 J
MW-3	7.7 J	48.6 J	56.3 J	ND	84.3	84.3
MW-4	ND	ND	ND	ND	ND	ND

GROUNDWATER (ROUND 2)

SAMPLE #	Total Targeted BN's (ppb)	TOTAL Non-Targeted BN's (ppb)	TOTAL BN's (ppb)	Total Targeted VO's (ppb)	TOTAL Non-Targeted VO's (ppb)	TOTAL VO's (ppb)
MW-1	ND	ND	ND	ND	ND	ND
MW-2	ND	ND	ND	ND	30	30
MW-3	ND	29.0 J	29.0 J	1.8 J	188.6	190.2 J
MW-4	ND	ND	ND	ND	ND	ND

LEGEND:

ND = NOT DETECTED
J = BELOW MINIMUM DETECTION LIMIT
B = FOUND IN BLANK SAMPLES
- = NOT ANALYZED

ENVIRONMENTAL WASTE MANAGEMENT ASSOCIATES
P.O.BOX 648
Wayne, N.J. 07474
Tel. (201)633-7900

SCALE: 1"=20'
DATE: 6/26/92
PROJECT# 91431
DRAWN BY: A P
CHECKED BY: T A

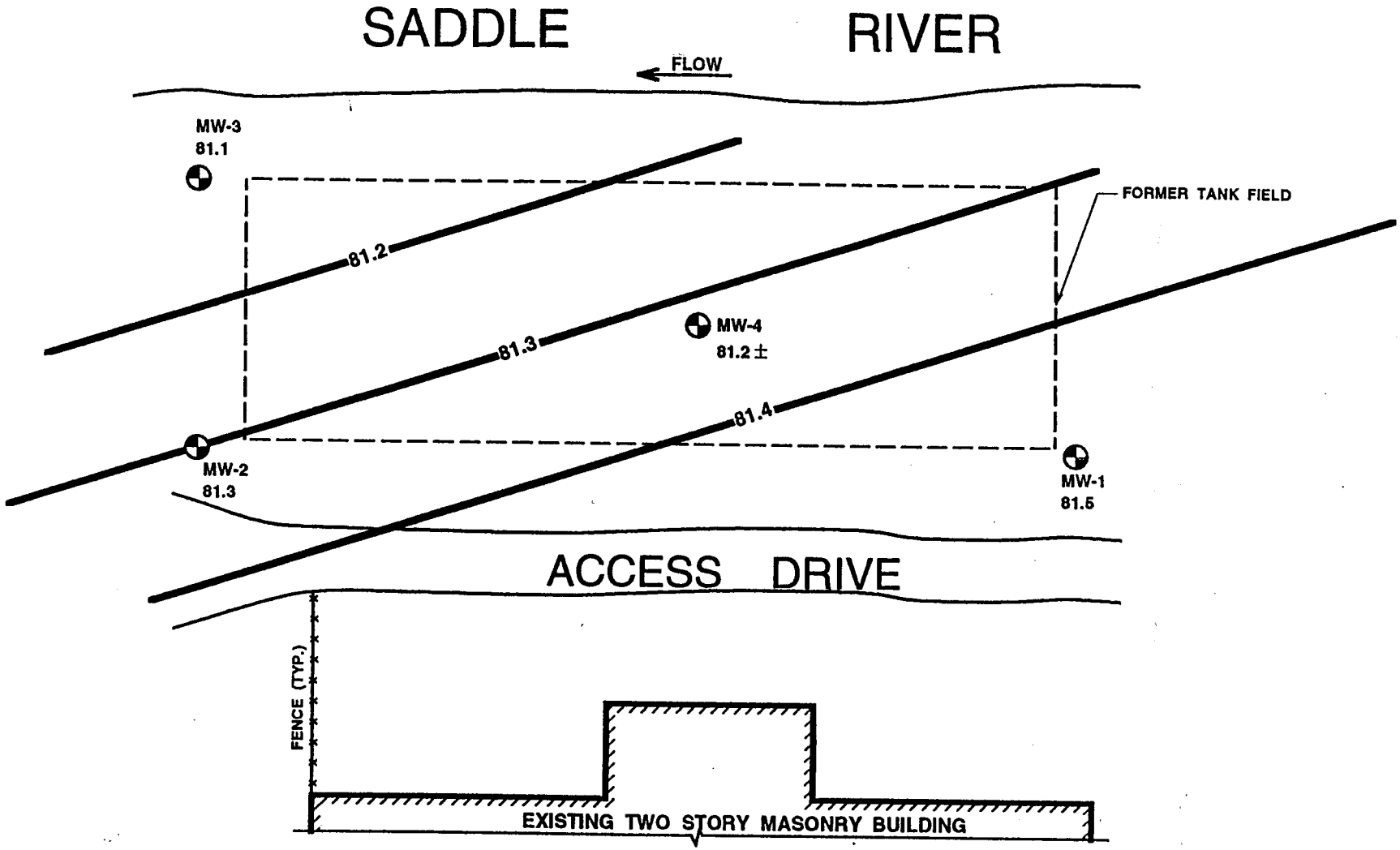
SAMPLE LOCATION MAP
LAKE SIDE PROPERTIES
551 MAIN AVENUE
WALLINGTON, NEW JERSEY

DRAWING# 3

M64

APPENDIX TEN

Groundwater Contour Maps



LEGEND:

MW 1 81.5 — EWMA MONITORING WELL LOCATION WITH WATER TABLE ELEVATION IN RELATION TO RELATIVE DATUM OF 100 FEET.

81.3 — GROUNDWATER CONTOUR LINE WITH RELATIVE WATER TABLE ELEVATION.

ENVIRONMENTAL WASTE MANAGEMENT ASSOCIATES P.O.BOX 648 Wayne, N.J. 07474 Tel. (201)633-7900	SCALE: 1"=30' DATE: 6/26/92 DRAWN BY: A P CHECKED BY: T A	PROJECT# 90270
GROUNDWATER CONTOUR MAP (6/5/92) LAKE SIDE PROPERTIES 551 MAIN AVENUE WALLINGTON, NEW JERSEY		DRAWING# 5

M66

ATTACHMENT N

ATTACHMENT N

ENVIRONMENTAL WASTE
MANAGEMENT ASSOCIATES

CORPORATE
HEADQUARTERS:
1235A Route 23 South
P.O. Box 648
Wayne, New Jersey 07474
Phone: 201/633-7900
Fax: 201/633-7482

September 28, 1992

Mr. John Blankenship, Bergen County Case Manager
NJDEPE/DRPSR/ISEE/BUST
CN 028
401 East State Street
Trenton, New Jersey 08625-0028

RE: **DICAR - Case #91-9-4-0952**
Lake Side Properties, Inc.
551 Main Ave, Wallington, N. J.
TMS #C91-3617/UST Registration #0222194
EWMA Job #90270

Dear Mr. Blankenship:

Environmental Waste Management Associates, Inc. (EWMA) received your letter dated August 17, 1992, in response to the Discharge Investigation and Corrective Action Report (DICAR) submitted on behalf of Lake Side Properties, Inc., at the above referenced facility. Several deficiencies, along with additional measures to be completed, were noted within your letter pursuant to the remedial investigation. EWMA will address each item following the same format as the NJDEPE response:

1. Additional sampling from the excavation floor

EWMA stated that approximately 2,300 cubic yards of contaminated soils were removed from the excavation area during tank closure. In accordance with the NJDEPE "Field Sampling Procedures Manual", no soil samples were obtained from the floor of the excavation area, due to the encounter of ground water at this depth. Four ground water monitoring wells were installed to monitor the ground water: one at the assumed up gradient corner; two on the down gradient corners; and one directly within the excavation area. The location and number of monitoring wells were discussed prior to installation during a telephone conversation on March 5, 1992, with NJDEPE/BUST representative Diane Pupa, to ensure adequate coverage. Ms. Pupa stated that three corner wells would be adequate, however, an additional well within the

MIDATLANTIC
REGION:
Skillman, NJ
Phone: 609/683-7600
Fax: 609/683-1556

WESTERN REGION:
Englewood, CO
Phone: 303/843-9700
Fax: 303/843-9094

excavation area would completely document that soil contamination was properly remediated and to confirm ground water integrity.

The department requests that, "As a minimum, the responsible party shall install and sample eleven (11) additional borings along the center of the overall excavation." Furthermore, the department requests that, "A discrete sample shall be analyzed from a six inch interval in the boring where contamination is most likely." EWMA remediated soils in the area where contamination was most likely in accordance with the approved Closure Plan and backfilled the excavation with certified clean fill. Approximately 2,300 cubic yards of contaminated soil were excavated, stockpiled and covered at the site. EWMA also attached to this correspondence photographic documentation outlining the extent of the area remediated. Since all contaminated soil, including the interval where contamination was most likely, was fully delineated and excavated to ground water, no soil remains which could be further analyzed. The Department's requirement to advance borings through clean fill to ground water will only result in the analysis of clean fill or soil below ground water. Clearly, this requirement is without justification. Furthermore, two rounds of ground water sampling have been completed, with results below the proposed cleanup standards.

EWMA, in accordance with NJDEPE protocol and guidance, completely remediated soil contamination to ground water. Soil sampling results confirmed the successful remediation horizontally; since no bottom samples could be collected, the complete removal of soil to ground water followed by two rounds of clean ground water analysis confirmed the successful remediation vertically. Therefore, EWMA repeats its proposal for no further action for this area.

2. Soil cleanup goals

EWMA submitted soil analytical results indicating levels below the proposed NJDEPE subsurface soil standards. Within the letter of August 17, 1992, the Department utilizes the proposed residential surface soil cleanup standards for the basis of their comments. Samples were collected at depths of 15'-17' below existing grade. The proposed cleanup standards define surface soils as, "the top two feet of soil below grade." Therefore, the use of the residential surface parameters as the basis of determining soil compliance is contrary to the Department's proposed cleanup standards and/or policies.

With respect to the three unacceptable base neutral (BN) sample analyses due to excessively high method detection limits, EWMA contacted the certified laboratory, Integrated Analytical Laboratories (IAL) to clarify this item of concern. IAL stated that it complied with all EPA guidelines with respect to the corresponding minimum detection limits (MDLs), and that elevated MDLs are primarily a function of the contamination level of the sample being analyzed. IAL, as part of the required EPA method procedures, listed estimated values for compounds detected at a value below the minimum detection limits (BMDLs) and greater than zero. These compounds are noted by the symbol "J" within the analytical package and within the summary tables. Since no targeted compounds were detected BMDL and no estimated values were noted, EWMA concludes that these compounds were below the Department's cleanup standards.

Furthermore, EWMA believes that the BN compounds noted are attributed to the corresponding ash/cinder fill and small amounts of bituminous materials noted throughout the site during tank closure and monitoring well installation activities. According to the analytical package, a considerable amount of the BN compounds detected in the scan have high molecular weights, with a very low volatilization capability. These compounds are usually associated with the presence of anthracite (coal) or a by product there of, and are consistent with the surrounding soil conditions within the area.

The proposed cleanup standards state requirements for compliance as noted within 7:26D-3.3. The first parameter noted states that applicable standards shall be established throughout the appropriate zone at the site. EWMA remediated soils from the proposed site to ground water, thereby establishing compliance within the appropriate zone. The second parameter states several arithmetic calculations must be computed if any compound is noted to exceed the applicable standards. All samples noted were below the proposed subsurface limits. In addition, EWMA computed these values using the proposed surface standards. Based on the assumption that all samples would be acceptable, EWMA noted that all compounds would again fall into an acceptable range, meeting compliance levels. These calculations are included within Attachment A. The third parameter states that the sampling be conducted in the area of concern consistent with the remedial investigation requirements approved by the Department. EWMA followed the approved closure plan and conducted its investigation in accordance with Department approved guidelines. The fourth parameter relates to alternate cleanup standards, which is not relevant to this site to. The fifth and final parameter states that compliance can not be achieved by adding two feet of material to

the existing grade, without Departmental approvals. This requirement is also not relevant to this site, as soils were excavated to depths of 15'-17' below existing grade.

Based on the above items, EWMA believes that all soil remediation activities are complete, and that not further delineation and/or sampling is required.

3. Disposal of contaminated soils

EWMA has taken twenty-two (22) soil samples from the on-site stockpile and analyzed them for TCLP Waste Classification parameters. A copy of the analytical results were submitted to the Bureau of Advisement and Manifest for classification as ID #27 dry industrial waste. Approvals were received and forwarded to the Hackensack Meadowlands Development Commission (HMDC) to dispose of this material at their landfill facility. HMDC approved this request, which was forwarded to the Bureau of Landfill Engineering (BLE) for final approvals. EWMA is currently working with the BLE on finalizing disposal of this material. Upon receipt of all approvals, EWMA will dispose of the stockpiled soil and forward all applicable documentation and manifests to the Department.

4. Well search

The Department requests clarification as to the presence of Municipal wells within one mile of the site. The only Municipal well noted is an upgradient well owned by the City of Garfield. As stated within the well search list, Garfield's well is no longer in use due to contamination in that area. Two potable wells are located within one mile of the site. These wells are not believed to be at risk since the area between these wells and the former tank field is being interrupted by a meander and hydrogeologically separated by the Passiac River.

EWMA believes that the removed tanks had minimal impact on the surrounding subsurface environment, and that the extent of the contaminated soil area has been delineated, excavated and properly stockpiled on-site for future disposal. Based on the above factors, EWMA recommends no further action and requests formal closure of Case #91-9-4-0952 pending submittal of soil disposal documentation.

Should you have any additional questions and/or comments regarding this site, please feel free to contact me at our Wayne, New Jersey office (201-633-7900).

Very truly yours,
Environmental Waste Management Associates, Inc.

Thomas Andrews

Thomas Andrews, P.E.

Enclosures

cc: William Black, V.P. Finance, Farmland Dairies
Frank Polizzi, V.P. Operations, Farmland Dairies
Farer Siegal Fersko

PHOTOGRAPHIC RECORD

Client: Lake Side Properties
Location: 551 Main Street, Wallington, New Jersey
Date: December 26, 1991, January 2, 1992

PHOTO 3
Northwest view of excavation

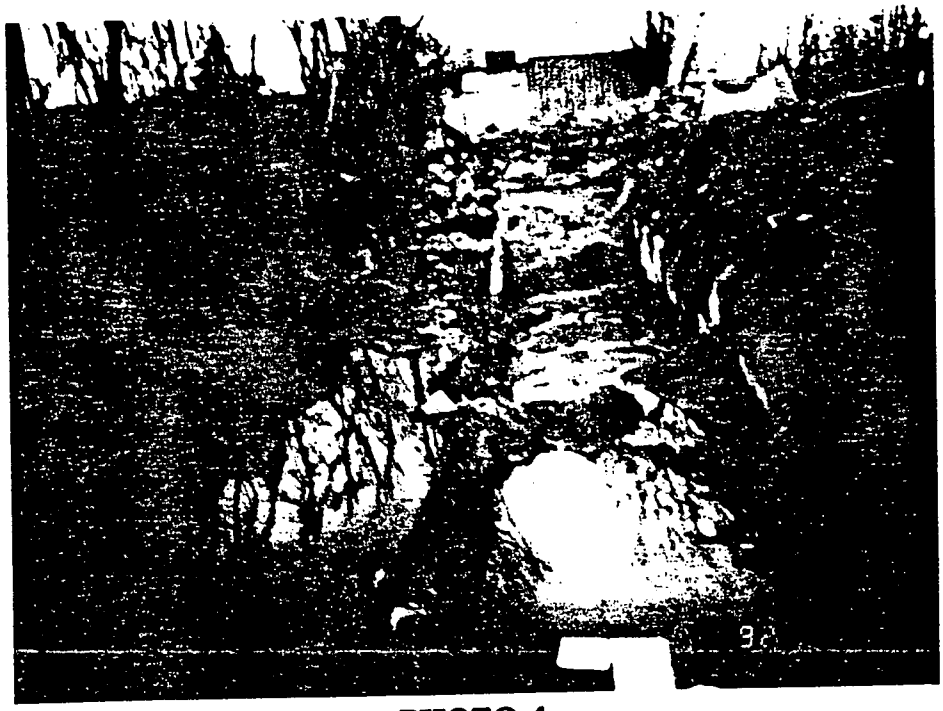


PHOTO 4
North view of excavation

Environmental Waste Management Associates, Inc.

N6

PHOTOGRAPHIC RECORD

Client: Lake Side Properties
Location: 551 Main Street, Wallington, New Jersey
Date: December 26, 1991

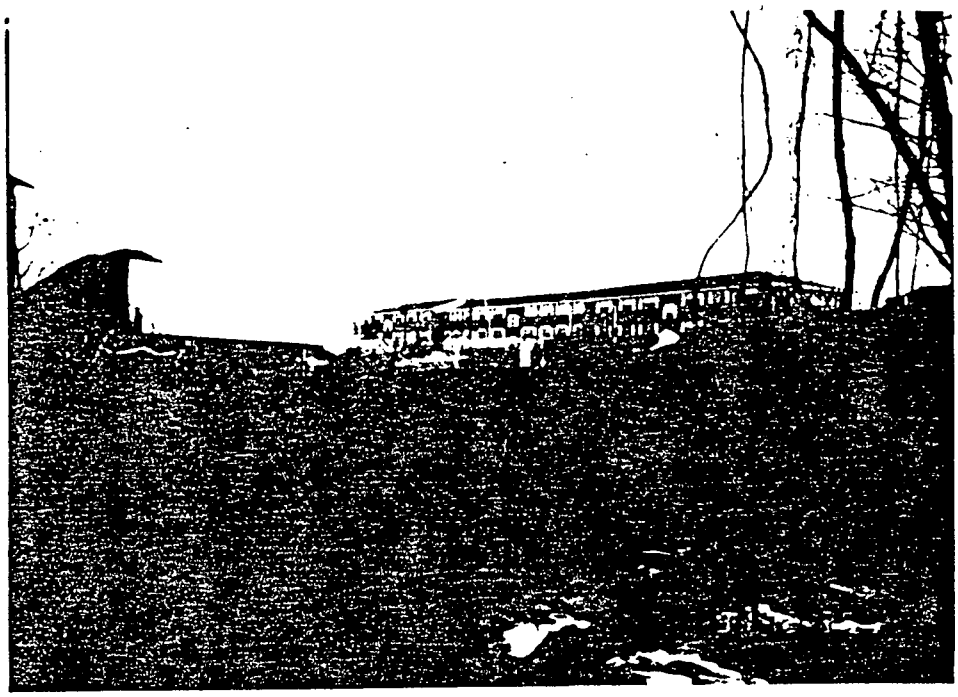


PHOTO 1
Southeast view of excavation

PHOTO 2
Southwest view of excavation

N7

N-Nitrosodiphenylamine

1) Arithmetic Mean (A.M.):
Compound total: 258 ppb
Number of wells: 15
A.M. does not exceed the C.S.

Arithmetic Mean (A.M.): 17.2 ppb
Cleanup Standard (C.S.): 140,000 ppb

2) 10 x 140,000 = 1,400,000 ppb
No sample exceeds the C.S.

3) 10% of 15 = 2 sample limit
Zero (0) samples exceed the C.S.

Di-N-butyl phthalate

1) A.M.:
Compound total: 351 ppb
Number of wells: 15
A.M. does not exceed the C.S.

A.M.: 23.4 ppb
C.S.: 5,700,000 ppb

2) 2 x 5,700,000 = 11,400,000 ppb
No sample exceeds the C.S.

3) 10% of 15 = 2 sample limit
Zero (0) samples exceed the C.S.

Flouranthene

1) A.M.:
Compound total: 2575 ppb
Number of wells: 15
A.M. does not exceed the C.S.

A.M.: 171.6 ppb
C.S.: 2,300,000 ppb

2) 2 x 2,300,000 = 4,600,000 ppb
No sample exceeds the C.S.

3) 10% of 15 = 2 sample limit
Zero (0) samples exceed the C.S.

Pyrene

1) A.M.:
Compound total: 1660 ppb
Number of wells: 15
A.M. does not exceed the C.S.

A.M.: 110.6 ppb
C.S.: 1,700,000 ppb

2) 2 x 1,700,000 = 3,400,000 ppb
No sample exceeds the C.S.

3) 10% of 15 = 2 sample limit
Zero (0) samples exceed the C.S.

Butylbenzyl phthalate

1) A.M.:
Compound total: 219 ppb
Number of wells: 15
A.M. does not exceed the C.S.

A.M.: 14.6 ppb
C.S.: 10,000,000 ppb

2) 2 x 10,000,000 = 20,000,000 ppb
No sample exceeds the C.S.

3) 10% of 15 = 2 sample limit
Zero (0) samples exceed the C.S.

Benzo (a) anthracene

1) A.M.:
Compound total: 1085 ppb
Number of wells: 15
A.M. does not exceed the C.S.

A.M.: 72.3 ppb
C.S.: 660 ppb

2) 10 x 660 = 6,600 ppb
No sample exceeds the C.S.

3) 10% of 15 = 2 sample limit
Zero (0) samples exceed the C.S.

Chrysene

1) A.M.:
Compound total: 1344 ppb
Number of wells: 15
A.M. does not exceed the C.S.

A.M.: 89.6 ppb
C.S.: 660 ppb

2) 10 x 660 = 6,600 ppb
No sample exceeds the C.S.

3) 10% of 15 = 2 sample limit
Zero (0) samples exceed the C.S.

Bis (2-ethylhexyl) phthalate

1) A.M.:
Compound total: 3106 ppb
Number of wells: 15
A.M. does not exceed the C.S.

A.M.: 207.06 ppb
C.S.: 49,000 ppb

2) 10 x 49,000 = 98,000 ppb
No sample exceeds the C.S.

3) 10 % of 15 = 2 sample limit
Zero (0) samples exceed the C.S.

Benzo (b) flouranthene

1) A.M.:
Compound total: 3124 ppb
Number of wells: 15
A.M. does not exceed the C.S.

A.M.: 208.26 ppb
C.S.: 660 ppb

2) 10 x 660 = 6,600 ppb
No sample exceeds the C.S.

3) 10% of 15 = 2 sample limit
Two (2) samples exceed the C.S.

Benzo (a) pyrene

1) A.M.:
Compound total: 1512 ppb
Number of wells: 15
A.M. does not exceed the C.S.

A.M.: 100.8 ppb
C.S.: 660 ppb

2) 10 x 660 = 6,600 ppb
No sample exceeds the C.S.

3) 10% of 15 = 2 sample limit
Zero (0) samples exceed the C.S.

Indeno (1,2,3-cd) pyrene

1) A.M.:
Compound total: 599 ppb
Number of wells: 15
A.M. does not exceed the C.S.

A.M.: 39.93 ppb
C.S.: 660 ppb

2) 10 x 660 = 6,600 ppb
No sample exceeds the C.S.

3) 10% of 15 = 2 sample limit
Zero (0) samples exceed the C.S.

Benzo (g,h,i) perylene

1) A.M.:
Compound total: 660 ppb
Number of wells: 15
A.M. does not exceed the C.S.

A.M.: 44 ppb
C.S.: 660 ppb

2) 10 x 660 = 6,600 ppb
No sample exceeds the C.S.

3) 10% of 15 = 2 sample limit
Zero (0) samples exceed the C.S.

ATTACHMENT O

23 1993
230302

State of New Jersey
Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
CN 028
Trenton, NJ 08625-0028

Scott A. Weiner
Commissioner

Karl J. Delaney
Director

Lawrence F. Jacobs
Farer Siegal Fersko
600 South Avenue
P.O. Box 580
Westfield, NJ 07091-0580

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

AUG 16 1993

Re: Lake Side Properties (Farmland Dairies, Inc.)
551 Main Avenue; Wallington, Bergen County
Case # 91-09-04-0952, TMS # C91-3617, UST # 0222194

Dear Mr. Jacobs:

On September 4, 1991 the Department of Environmental Protection and Energy (Department) received notification of a discharge of hazardous substances from the above referenced facility which are regulated under the Underground Storage of Hazardous Substance Act (**N.J.S.A. 58:10A-21 et seq**). On November 4, 1991 the Department sent a letter stating the requirements for the proper investigation and the initiation of corrective action at the above referenced facility. The Department received remedial investigation reports from the responsible party dated June 30 and September 30, 1992 indicating that the following actions were taken in compliance with our requirements.

1. Fourteen 20,000 gallon No. 6 heating oil USTs were removed in December 1991 pursuant to Closure Approval C91-3617. The excavated soil pile was stockpiled at the site and has a volume of approximately 2300 cubic yards. According to the September 30, 1992 report application to dispose of the stockpiled soil at the Hackensack Meadowlands Development Commission landfill is awaiting final approval from the Department's Bureau of Landfill Engineering.

2. Documentation of the disposal of the residues and sludges from the excavated tanks was not submitted in either of the reports.

3. A total of 58 post-excavation soil samples were collected from the sidewalls of the common excavation due to the presence of ground water in the excavation. The soil samples were analyzed for Total petroleum Hydrocarbons (TPHC) with the results between ND and 3420 ppm. Fifteen of the samples with the highest TPHC levels were analyzed for Base Neutral Compounds, as required. All of the analyses were in compliance with the Department's residential cleanup guidance for the compounds present.

4. Four ground water monitoring wells were installed in March 1992 and documented local flow direction in the shallow ground water to be west-

southwesterly, toward the Saddle River. Two rounds of ground water samples were analyzed by USEPA Methods 624+15 and 625+15 for Volatile and Semi-Volatile Compounds with all of the targeted compounds being non-detect. Non-targeted Volatiles were present at a level of 188.6 ppb while non-targeted Base Neutrals were present a level of 29 ppb in the latest round.

5. The well search located one inactive potable water supply well within one-half mile of the site.

I. Deficiencies/Requirements

Based upon a review of the remedial investigation completed to date, the following deficiencies shall be addressed as required below.

A. Remedial Investigation

1. Soil
If the soils remain stockpiled on-site, pursuant to N.J.A.C. 7:26E-5 et seq., the responsible party shall conduct a remedial alternative analysis and submit a remedial alternative analysis report unless the contaminated media is recycled or one of the following remedies is implemented: a) an on-site permanent remedy; or b) an off site permanent remedy when the total volume of contaminated media taken off site from the entire site, not just the individual area of concern, is less than 100 cubic yards. The methodology to be followed and the information to be included in the remedial alternative analysis report are detailed in N.J.A.C. 7:26E-5. A reprint of this subchapter and the Department's "Management of Excavated Soils" guidance document are enclosed for reference.

2. Ground Water
There are no further requirements at the present time.

3. Receptor Evaluation
There are no further requirements at the present time.

B. Quality Assurance

1. All data submitted shall conform to the "Reduced Laboratory Deliverables Format" consistent with the guidance contained in the rule "Technical Requirements for Site Remediation", N.J.A.C. 7:26E (use the attached quality assurance checklists).

C. General

1. The responsible party shall submit documentation of the disposal of the residues and sludges removed from the tanks.

2. **Notify the assigned case manager at least 14 calendar days prior to implementation of all field activities.** If the responsible party fails to initiate sampling within 30 calendar days of the receipt of this letter, any requests for an extension of the required time frames may be denied.

3. After remediation of the soil and ground water has been completed the responsible party is requested to submit the total capital costs involved in performing and confirming a cleanup as well as the costs associated with the proper disposal of all wastes generated during the cleanup. Costs to be reported include monitoring systems, equipment and mobilization costs; operational and maintenance costs, including all labor, utilities and repairs; consulting and labor costs, and sample costs; all disposal costs, including transport, waste transfer and facility tipping fees as well as regulatory review fees.

II. Reporting Requirements

A written remedial alternatives analysis report shall be submitted to this Bureau at the above address, within 90 days of receipt of this letter, specifying all activities conducted in compliance with the requirements of N.J.A.C. 7:26E-5 et seq., which are cited above. To facilitate processing, please reference the Case number and UST number in the report.

III. Certification

It is important to note that effective April 25, 1992, all persons performing tank services must be certified per N.J.S.A. 58:10A-24.1-8. All work related to any tank service shall now be conducted by, or under the immediate on site supervision of an individual certified in the activity being conducted. All documents (permit applications, reports, proposals) submitted to the Department shall be prepared and signed by a certified individual.

IV. Technical Requirements

The "Technical Requirements for Site Remediation" rules (N.J.A.C. 7:26E) appeared in the June 7, 1993 New Jersey Register and became effective on July 1, 1993. These rules contain the minimum technical requirements concerning the environmental investigation and remediation at contaminated sites or sites at which contamination is suspected. These rules are being used as the Department's primary technical document, replacing the Division of Responsible Party Site Remediation's Remedial Investigation Guide, the ECRA Cleanup Plan Guide, the Bureau of Underground Storage Tanks'(BUST) Scope of Work document (and appendices) and the BUST Technical Guidance Document. A copy of these rules can be obtained from your local library or through the Office of Administrative Law Publications at (609) 588-6606.

It should be noted that technical requirements are included in subchapters 7, 8 and 9 of the regulations implementing the Underground Storage of Hazardous Substances Act (N.J.A.C. 7:14B-1-13 and 15). The responsible person(s) that are conducting an environmental investigation/remediation should be following the "Technical Requirements for Site Remediation" to accomplish the investigation. This will allow for consistent evaluation of any discharges and potential impacts.

V. Cleanup Criteria

The Department's most recent general guidance on contaminant cleanup levels can be found in the enclosed "Site Remediation News" (April 1993). The Department's most recent general guidance on the extent of contaminant cleanup can be found in "Cleanup Standards for Contaminated Sites" which appeared in the February 3, 1992 New Jersey Register. Together, these documents can be used as guidance to help you determine: what concentration of contaminants need to be present at a site to consider the site contaminated; which areas of environmental concern need additional investigation; and, the maximum concentration of a contaminant allowed to remain for a site to be considered "clean". It must be remembered, however, that the actual cleanup goal at a particular site is determined by the Department on a case-by-case basis and may be different than that in the above referenced guidance. This variation may be due to many factors, including, site specific human health and environmental exposure pathways, the presence of site contaminants not addressed in the rule proposal, and site specific physical characteristics. In case specific situations, when a cleanup level is modified from one previously established for that specific site, the Department will make every effort to expeditiously notify the responsible party. Please consult your case manager to discuss any modifications which may impact upon your remedial actions.

If the person conducting a cleanup does not wish to remediate a contaminated site consistent with the guidance, they shall submit a proposal to their Department case manager that details the site specific circumstances and technical rationale for cleanup goals on a case-by-case basis.

Please note that the referenced guidance has been supplemented by the adoption of the Ground Water Quality Standards (N.J.A.C. 7:9- 6) which appeared in the February 1, 1993 New Jersey Register. This rule adoption may impact upon the requirements for ground water remediation and soil cleanup (i.e. where the soil may contribute contaminants to the ground water above the applicable standards) for a particular site and should be referenced and discussed with your case manager.

VI. Compliance

As per N.J.A.C. 7:14B-12.1, the owner and operator of regulated underground storage tanks are joint and severally liable for compliance with these regulations.

Failure to comply with the requirements in this letter may result in the assessment of penalties as provided for by law. Pursuant to the Underground Storage of Hazardous Substances Act, N.J.S.A. 58:10A-21 et seq, violators are liable for penalties of up to $50,000 per day for each day of continuing violation.

If you have any questions, please contact John Blankenship of the Bureau of Underground Storage Tanks, Tank Management Section, Phase

I at (609) 984-3156.

Sincerely,

Kevin F. Kratina, Chief
Bureau of Underground Storage Tanks

ISEE: 391

c: Stephen Tiffinger, Bergen County Department of Health
John Blankenship, Bureau of Underground Storage Tanks
Thomas Andrews, E.W.M.A.

Enclosures: QA/QC Checklist
Site Remediation News (April 1993)
"Management of Excavated Soil" Guidance Document
Reprint of Subchapter 5 of N.J.A.C. 7:26E

ATTACHMENT P

FARER SIEGAL FERSKO
A PROFESSIONAL ASSOCIATION
ATTORNEYS AT LAW
600 SOUTH AVENUE
P.O. BOX 580
WESTFIELD, NEW JERSEY 07091-0580
(908) 789-8550
FAX (908) 789-8660

HENRY FARER
MARTIN F. SIEGAL
JACK FERSKO
DAVID B. FARER
RICHARD J. ERICSSON

ANN M. WAEGER
HEIDI S. MINUSKIN
DANIELE CERVINO
JAY A. JAFFE
BETH D. POLLACK
LAWRENCE F. JACOBS
JOHN P. QUIRKE
HELEN C. COLLIER
MICHAEL G. STINGONE

August 30, 1993

James Taradash, Principal Environmental Specialist
Bergen County Department of Health Services
327 Ridgewood Avenue
Paramus, New Jersey 07652-4895

Re: **Request for Report and Information Concerning Diesel Fuel Spill of July 30, 1993 at Farmland Dairies**
Premises: 520 Main Avenue
Wallington, New Jersey
Our file no.: 230303

Dear Mr. Taradash:

We are environmental counsel for Farmland Dairies ("Farmland"), the owner of the referenced premises.

On behalf of Farmland, we are respectfully requesting a copy of any report, notice of violation and any other information your office may have generated concerning the diesel fuel spill which occurred on July 30, 1993 by Mystic Transportation at the referenced premises.

If you have any questions concerning this request, please contact us immediately by telephone so that we may provide you with a swift response.

Lawrence F. Jacobs
LFJ:kac
cc: Farmland Dairies

Mailed 9/1/93
KL

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ALL-TEST ENVIRONMENTAL LABORATORIES, INC.
60 Railroad Avenue, Hasbrouck Heights, N.J. 07604
(201) 288-0511 FAX: (201) 288-0887

PHC ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

LABORATORY PROJECT NO. - S- 4060

	NO	YES
1.) Blank Contamination - If yes, list the sample and the corresponding concentration in each blank:	X	
2.) Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria;		X
(If not met, list the sample and corresponding recovery which falls outside the acceptance range)		
3.) IR Spectra Submitted For All Standards, Blanks, and Samples;	N/A	
4.) Chromatograms Submitted For All Standards, Blanks and Samples If GC Fingerprinting Was Conducted;	N/A	
5.) Extraction Holding Time Met;		X
If not met, list number of days exceeded for each sample:		
6.) Analysis Holding Time Met;		X
If not met, list number of days exceeded for each sample:		

ADDITIONAL COMMENTS: A fixed wave length I.R. was used to analyze the samples. No IR Spectra or Strip Chart is generated with this instrument, therefore, no IR Spectra or Strip Chart was provided.

LABORATORY MANAGER: [signature] DATE: 8-13-93

CERTIFIED BY NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION, LAB. #02525

MYSTIC BULK CARRIERS, INC.

AUGUST 13, 1993

MR. KEITH LEWANDOSKY
COUNTY OF BERGEN
DEPT. OF HEALTH SERVICES
ENVIROMENTAL DIVISION
327 RIDGEWOOD AVE.
PARAMUS, N.J. 07652-4895

DEAR MR. LEWANDOSKY:

In response to the notice of violation we received regarding the diesel fuel spill, on Friday, July 30, 1993. Ken's Marine Service of Bayonne, N.J. responded to the scene with a boat and the necessary equipment to clean the water, site and drains of the spilled oil. It was determined that about 300 gallons of product were actually lost. Ken's Marine personnel worked until Tuesday, 8-3-93 afternoon, when David Poesl from Ken's called to say that spill has been all cleaned up. The solid and liquid waste as a result of the spill is being disposed of through Ken's Marine Services through the proper procedures for waste of that type.

RESPECTFULLY,

JOHN C. MODZELEWSKI
TERMINAL MANAGER-BAYONNE

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ALL-TEST ENVIRONMENTAL LABORATORIES, INC.

60 Railroad Avenue, Hasbrouck Heights, N.J. 07604
(201) 288-6511 FAX: (201) 288-6887

Client Name: Ken's Marine Service **Date:** August 13th, 1993
Reference: Farmland Dairies
Laboratory Project No. S-4060
Location: Wallington, New Jersey

LABORATORY AUTHENTICATION STATEMENT

I certify that ALL-TEST ENVIRONMENTAL LABORATORIES meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18, 40 CFR Part 136 for Water and Wastewater analyses and SW 846 for Solid Waste Analyses. I have personally examined and am familiar with the information contained in this report, and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, complete, and meets the standards specified in N.J.A.C. 7:18, 40 CFR Part 136, and/or SW 846.

By: I. Berkowitz

Irving Berkowitz
Laboratory Manager

599-6267-fax

ALL-TEST ENVIRONMENTAL LABORATORIES, INC.

60 Railroad Avenue, Hasbrouck Heights, N.J. 07604
(201) 288-6511 FAX: (201) 288-6887

August 13th, 1993

Ken's Marine Service
116-20 East 22nd Street
Bayonne, New Jersey 07002
Attn: Mr. David Posel

Reference : Farmland Dairies - Wallington, NJ

Laboratory Project # S-4060

Date Extracted: 8/12/93 Date Analyzed: 8/13/93

Please note the following results for the water sample received on 8/11/93 and tested for " Total Petroleum Hydrocarbons " . All results are reported mg/l (ppm). Method Detection Limit for this analysis is 0.10 mg/l (ppm).

Sample ID. No.	Results mg/l (ppm)
Discharge Line	<0.10 mg/l (ppm)
Method Blank	<0.10 mg/l (ppm)

By:

Irving Berkowitz
Laboratory Manager

CERTIFIED BY NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION, LAB. #02525

P5

BERGEN COUNTY DEPARTMENT OF HEALTH SERVICES
ENVIRONMENTAL DIVISION

INVESTIGATION REPORT

BCDHS CASE #: 93-07-179 **NJDEP CASE #:** 93.7.30.1000.42
DATE: 7/30/93 **TIME ARRIVED:** 10:44 **TIME DEPARTED:** 16:00

INVESTIGATOR(1): Keith Lewandosky
INVESTIGATOR(2): Jim Taradash, Tom Bischoff, Nate Glotzer
ADDITIONAL PERSONNEL: Chris Gibbons, NJDEPE

INCIDENT LOCATION: Farmland Dairy
STREET ADDRESS: Main Avenue
MUNICIPALITY: Wallington
CONTACT: Lawrence Jacobs **PHONE #(1):** (908) 789-8550
TITLE: Attorney **PHONE #(2):**

RESPONSIBLE PARTY: Mystic Bulk Carrier Inc.
STREET ADDRESS: 5th Street
MUNICIPALITY: Bayonne
CONTACT: John Modzelewski **PHONE #(1):** (201) 339-1202
TITLE: Terminal Manager **PHONE #(2):**

PROPERTY OWNER: Farmland Dairy **PHONE #:**
STREET ADDRESS: Main Avenue
MUNICIPALITY: Wallington
BLOCK #: **LOT#:**

WEATHER CONDITIONS:
WIND DIRECTION: **VELOCITY:** **TEMPERATURE:**

PHOTOGRAPHS: (YES/NO) no **TYPE:** **QUANTITY:**
SAMPLES: (YES/NO) no **TYPE:**

PURPOSE OF INVESTIGATION: Emergency response to reported oil spill.

RECORD OF VIOLATION(S) (CITATION/DESCRIPTION): Issued under NJSA 58:10A-1 et seq., NJSA 58:10-23.11 et seq.

FINDINGS: UPON ARRIVAL AT THE SCENE, BCDHS RESPONDERS FOUND THAT A SPILL OCCURRED WHEN ABRAHAM VOGT, DRIVER FOR MYSTIC BULK CARRIERS, WAS REFILLING AN UNDERGROUND STORAGE TANK WITH DIESEL FUEL AT FARMLAND DAIRY. MR. VOGT STATED THAT WHILE HE WAS PUMPING FUEL INTO FARMLAND'S UST, THE DELIVERY HOSE DISLODGED ITSELF FROM THE TANK RESULTING IN AN ESTIMATED 300 GALLON SPILL. BCDHS FOUND PERSONNEL FROM FARMLAND DAIRY AND MR. VOGT APPLYING SPEEDY-DRY TO FARMLAND'S PARKING LOT. BCDHS RESPONDERS FOUND THAT DIESEL FUEL HAD ENTERED A NEARBY STORM DRAIN AND SUBSEQUENTLY FLOWED THROUGH THE STORM DRAIN SYSTEM AND DISCHARGED INTO THE SADDLE RIVER.

BCDHS RESPONDERS PLACED ABSORBENT BOOM ACROSS THE STORM SEWER'S OUTFALL ONTO THE SADDLE RIVER. BCDHS RESPONDERS THEN PROCEEDED TO INVESTIGATE DOWNSTREAM POINTS IN AN ATTEMPT TO DETERMINE THE EXTENT OF ENVIRONMENTAL IMPACT. BCDHS RESPONDERS NOTED THAT A MAJORITY OF THE FUEL ON THE SADDLE RIVER HAD COLLECTED IN A LAGOON WHICH IS FORMED WHERE THE SADDLE RIVER MAKES A DOGLEG BEND IN ORDER TO MEET THE PASSAIC RIVER. ABSORBENT BOOM WAS DEPLOYED AT TWO LOCATIONS BELOW THIS LAGOON.

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MR. JOHN MODZELEWSKI, TERMINAL MANAGER FOR MYSTIC BULK CARRIERS, SECURED THE SERVICES OF KEN'S MARINE SERVICE INC. TO REMEDIATE THE EFFECTS OF THE SPILL. MR. KEN POESL, PRESIDENT OF KEN'S MARINE WAS PRESENT ON SITE AND ORGANIZED HIS FIRM'S CLEAN UP ACTIVITIES. MR. POESL DIRECTED HIS EMPLOYEES TO LAUNCH A SMALL BOAT ONTO THE LAGOON SO THAT THE FUEL COULD BE SKIMMED OFF THE SURFACE. ANOTHER CREW FROM KEN'S MARINE BEGAN TO PAD OFF THE FUEL WHICH WAS TRAPPED BEHIND THE BOOM AT THE OUT FALL. MYSTIC BULK CARRIERS WAS INSTRUCTED TO FLUSH THE STORM LINE WITH LARGE QUANTITIES OF WATER AND THEN SAMPLE THE LINE FOR TOTAL PETROLEUM HYDROCARBONS. THE LABORATORY RESULTS ARE ATTACHED WITH THIS REPORT.

BCDHS RESPONDERS RETURNED TO THE SADDLE RIVER ON 7/31/93 TO ASSESS THE EFFECTIVENESS OF CLEAN UP ACTIVITIES. RESPONDERS REPORTED THAT CLEAN UP ACTIVITIES WERE PROCEEDING SATISFACTORILY AND NO FURTHER ACTIONS WOULD BE REQUIRED.

DEP-090
3/91

New Jersey Department of Environmental Protection

COMMUNICATIONS CENTER NOTIFICATION REPORT

Received 7/30

Operator JIMS

Reviewed By

TD Log# 12853

Case# 93-7-30-1000-42

Reported By: JOHN MODZELEWSK

Notification Type: Facility

Affiliation: MYSTIC BULK CARRIE

Phone: 201-339-1202

Street Address: FT OF 5 TH ST

Municipality: BAYONNE

State: NJ

Incident Locati: Facility

Site: FARMLAND DARY

Street Adress: MAIN AVE

Municipality: WALLINGTON

Phone

County: BERGEN

State: NJ

Location Type: Commercial

Incident Date: 7/30/93

Time: 0945

Substance Released: DIESEL FUEL

Amount Released (Estimate): 200 TO 300 GALS

ID Known

State: Liquid

CAS#

Additional Substances

Release Is: Terminated

Substance Contained? Y

Hazardous Material? Y

TCPA? N

COMU Code: 0265

Referral Code: 001

A310 Letter? Y

Incident Description: Spill

Injuries? N

Public Evac? N

Facility Evac? N

Public Exposure? N

Police On Scene? N

Firemen On Scene? N

DEP Requested? N

Wind Sp/Dir

Contamination Of: Land

Status at Scene

Receiving Water

SPILL DUE TO HOSE FITTING FAILURE.KEN'S MARINE IS ENROUTE TO DO CLEANUP

Responsible Party: Known

Party: MYSTIC BULK CARRIER

Contact: JOHN MODZELEWSKI

Phone: 201-339-1202

Title: OWNER

Street Address: FT OF 5TH ST

Municipality: BAYONNE

County: HUDSON

State: NJ

OFFICIALS NOTIFIED

	Name	Affiliation	Phone	Date	Time
NJSP					
MUNIC	WALLINGTON BORO	LT ROCK	201-473-1715	7/30/93	1011
OTHER					

	Name	Affiliation	Method	Date	Time	T/M
1	H. CAMAEGO	DRPSR ER1	Office.Fax	7/30/93	1007	T
2						

COMMENTS

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New Jersey Department of Environmental Protection
COMMUNICATIONS CENTER NOTIFICATION REPORT

Received: 7/30/93 TD Log # 12853
Operator:JIMS Case # 93-7-30-1000-42

Notification Type: Facility

Reported By	Affiliation	Phone
JOHN MODZELEWSKI	MYSTIC BULK CARRIE	201-339-1202
Street Address	**Municipality**	**State**
FT OF 5 TH ST	BAYONNE	NJ

Incident Location: Facility
Site FARMLAND DAIRY Phone

Street Address	Municipality	County	State
MAIN AVE	WALLINGTON	BERGEN	NJ

Location Type Commercial Incident Date 7/30/93 Time 0945

Substance Released DIESEL FUEL
Amount Released (Estimate)200 TO 300 GALS
ID:Known State Liquid CAS# Release Is Terminated
Additional Substances
Substance Contained? Y Hazardous Material? Y TCPA? N A310 Letter? Y
COMU CODE: 0265 REF CODE: 001

Incident Description Spill

Injuries? N Public Evac? N Facility Evac? N Public Exposure? N
Police On Scene? N Firemen On Scene? N DEP Requested? N Wind Sp/Dir

Contamination Of Land Receiving Water
Status At Scene SPILL DUE TO HOSE FITTING FAILURE,KEN'S MARINE IS ENROUTE TO DO CLEANUP

Responsible Party Known
Party MYSTIC BULK CARRIER Phone 201-339-1202
Contact JOHN MODZELEWSKI Title OWNER

Street Address	Municipality	County	State
FT OF 5TH ST	BAYONNE	HUDSON	NJ

OFFICIALS NOTIFIED

	NAME	TITLE	PHONE	DATE	TIME
NJSP :					
MUNIC:	WALLINGTON BORO	LT ROCK	201-473-1715	7/30	1011
OTHER:					

	Name	Affiliation		Method	Date	Time	T/M
1.	H. CAMAEGO	DRPSR	ER1	Office,Faxed	7/30	1007	T
2.							
3.							

COMMENTS

CONTACTED JOHN MODZELEWSKI AND RELEASE TERMINATED SPECIAL PLACED OVER AND KEN'S MARINE WERE HIRED TO CONDUCT CLEANUP.

BERGEN COUNTY POLICE HAZMAT NOTIFICATION REPORT

Name of Caller: NATE GLOTZER Call Back#: 599-6222

Town or Agency: BCDHS PARAMUS
(Indicate specific name of the town or agency which the caller represents)

Location of the Incident: FARMLAND DAIRIES
MAIN AVE, WALLINGTON

Incident Type: 200-300 GAL DIESEL FUEL SPILL
(Gasoline spill, air release, open drums, leaking tank, etc.)

Date Occurred: 07-30-93 Time Occurred: 0945

Was NJDEPE Notified by Caller: (YES) NO. DEPE OCA#: 93-07-30-1000-42
(Circle one) (If not furnished, indicate same)

Any Evacuations: YES (NO) If YES, number of people: _____
(Circle one) (If YES, notify OEM per SOP)

OEM Official Contacted: _____ Time: _____
(BCOEM Duty Officer MUST be notified of ALL evacuations per existing SOP)

Remarks: SPILL IS IN PARKING AREA & ONE STORM DRAIN

(Use other side if additional space is needed)

Communications Notified: Date: 07/30/93 Time: 1032

Received by Operator#: 300 BCPD OCA#: 93-8605

Health Personnel Contacted: 3605, 3608 Time: 1032

BCPD HazMat/ESU Contacted: 47 Time: _____
(If applicable, officer's badge #)

NJDEPE Hotline: 1(609) 292-7172
BC Dept Health: 599-6108
BC Health Fax: 599-6270
BC OEM Office: 599-6210
BC OEM Fax: 599-6091

rev: 05/04/93

CEHA

New Jersey Department of Environmental Protection
COMMUNICATIONS CENTER NOTIFICATION REPORT

Received: 7/30/93
Operator: JIMS

TD Log # 12853
Case # 93-7-30-1000-42

Notification Type: Facility

Reported By	Affiliation	Phone
JOHN MODZELEWSKI	MYSTIC BULK CARRIE	201-339-1202
Street Address	**Municipality**	**State**
FT OF 5 TH ST	BAYONNE	NJ

Incident Location: Facility

Site FARMLAND DAIRY Phone

Street Address	Municipality	County	State
MAIN AVE	WALLINGTON	BERGEN	NJ

Location Type Commercial Incident Date 7/30/93 Time 0945

Substance Released DIESEL FUEL
Amount Released (Estimate)200 TO 300 GALS
ID:Known State Liquid CAS# Release Is Terminated
Additional Substances
Substance Contained? Y Hazardous Material? Y TCPA? N A310 Letter? Y
COMU CODE: 0265 REF CODE: 001

Incident Description Spill

Injuries? N Public Evac? N Facility Evac? N Public Exposure? N
Police On Scene? N Firemen On Scene? N DEP Requested? N Wind Sp/Dir

Contamination Of Land Receiving Water
Status At Scene SPILL DUE TO HOSE FITTING FAILURE,KEN'S MARINE IS ENROUTE TO DO CLEANUP

Responsible Party Known
Party MYSTIC BULK CARRIER Phone 201-339-1202
Contact JOHN MODZELEWSKI Title OWNER

Street Address	Municipality	County	State
FT OF 5TH ST	BAYONNE	HUDSON	NJ

OFFICIALS NOTIFIED

	NAME	TITLE	PHONE	DATE	TIME
NJSP :					
MUNIC:	WALLINGTON BORO	LT ROCK	201-473-1715	7/30	1011
OTHER:					

	Name	Affiliation		Method	Date	Time	T/M
1.	H. CAMAEGO	DRPSR	ER1	Office,Faxed	7/30	1007	T
2.							
3.							

COMMENTS

CONTACTED JOHN MODZELEWSKI AND RELEASE TERMINATED SPREDRI PLACED OVER AND KEN'S MARINE WAS HIRED TO CONDUCT CLEANUP.

FAXED TO BERGEN COUNTY H.D. TO INVESTIGATE AND UPDATE

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COUNTY OF BERGEN
DEPARTMENT OF HEALTH SERVICES
ENVIRONMENTAL DIVISION
327 Ridgewood Avenue, Paramus, N.J. 07652-4895 • (201) 599-6171

NOTICE OF VIOLATION

I.D. No.: _____ Date: 9/30/93

Name of Facility: MYSTIC BULK CARRIERS INC.

Location of Facility: 19-01 STEINWAY STREET

Municipality: ASTORIA, NY 11105 Telephone: (718) 956-0707

Facility Representative and Title: JOHN MODZELEWSKI / TERMINAL MGR.

You are hereby **NOTIFIED** that during an inspection of your facility on the above date, the following violations were noted which will require remedial action:

Description of Violation/Remedial Action: DISCHARGE OF DIESEL FUEL INTO THE SADDLE RIVER VIA THE STURM DRAIN SYSTEM.

The above noted violations are in violation of the following N.J. Statutes/Regulations and/or Bergen County Ordinances, and will be recorded as part of the permanent enforcement history of your facility:

- [x] N.J. Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and appropriate Regulations
- [x] N.J. Spill Compensation and Control Act (N.J.S.A. 58:10-23.11 et seq.) and Regulations (N.J.A.C. 7:1E-1 et seq.)
- [ ] N.J. Solid Waste Management Act (N.J.S.A. 13:1E-1 et seq.) and Regulations (N.J.A.C. 7:26-1 et seq.)
- [ ] _____

Remedial action to correct these violations must be initiated immediately. Within five (5) calendar days of receipt of this Notice of Violation, you shall telephone the investigator issuing this notice at the above number with the corrective measures you have initiated to attain compliance. Within fifteen (15) calendar days of receipt of this Notice of Violation, you shall submit in writing, to the investigator issuing this notice at the above address, the corrective measures you have taken to attain compliance. The issuance of this document serves as notice to you that a violation has occurred and does not preclude the State of New Jersey or any of its agencies from initiating further administrative or legal action, or from assessing penalities, with respect to this or other violations. Violations of these regulations are punishable by penalties of up to $50,000 per violation per day.

KEITH M. LEWANDOSKY
Investigator, BCDHS

Violation Received by

SR. ENVIRONMENTAL SPECIALIST
Title

Date

BCDHS
120. 37R
032389

White (BCDHS) Canary (NJDEP) Pink (Person in Violation)

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ATTACHMENT Q

ENVIRONMENTAL WASTE
MANAGEMENT ASSOCIATES

CORPORATE
HEADQUARTERS:
1235A Route 23 South
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November 22, 1993

John Blankenship, Case Manager
NJDEPE/DRPSR/BUST
Tank Management Section, Phase 1
CN 028
Trenton, New Jersey 08625-0028

RE: **Lake Side Properties, Inc.**
551 Main Avenue, Wallington, Bergen County, NJ
Case #91-09-04-0952, TMS #C91-3617, UST #0222194
EWMA Job #90270

Dear Mr. Blankenship:

In response to your letter of August 16, 1993, attached please find the following information as requested with respect to the above-referenced case:

1. Tank cleaning and associated sludge disposal was performed by D&M Tank Cleaning of Wallington, New Jersey. Associated residue and sludge disposal documentation has been requested from this company repeatedly, however to date, EWMA has not received this information. Upon receipt EWMA will forward this information to the Department.

2. Remedial Investigation - EWMA proposes either an on-site permanent remedy or off-site recycling for the stockpiled soil remaining. A remedial alternative analysis is therefore not required, pending approval of the *Soil Reuse Plan*. The *Soil Reuse Plan* was prepared in accordance with the Department's *"Management of Excavated Soils"* guidance document and is attached.

Q1

MIDATLANTIC
REGION:
Skillman, NJ
Phone: 609/683-7600
Fax: 609/683-1556

WESTERN REGION:
Englewood, CO
Phone: 303/843-9700
Fax: 303/843-9094

Pending completion of the Soil Reuse Plan, EWMA, on behalf of Lake Side Properties, requests no further action for this site and formal case closure.

If there are any additional questions or comments, please feel free to contact me at our Wayne office.

Very truly yours,
Environmental Waste Management Associates, Inc.

Thomas Andrews, P.E., Project Manager
UST Certification #E505

attachment

cc: Marc Goldman, President, Lake Side Properties
William Black, VP Finance, Lake Side Properties
Frank Polizzi, VP Operations, Lake Side Properties
Farer Siegal Fersko

Soil Reuse Plan

for

Lake Side Properties, Inc.
551 Main Avenue
Wallington, New Jersey

Case #91-09-04-0952
TMS #C91-3617
UST #0222194

November 22, 1993

Prepared by:

Michael Kleczkowski, E.I.T.
Environmental Engineer
UST Certification #0003304

Approved by:

Thomas Andrews, P.E.
Project Manager
UST Certification #E505

Environmental Waste Management Associates, Inc.
P.O. Box 648, 1235A Route 23 South
Wayne, New Jersey 07474

EWMA Case #90270

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Introduction:

Lake Side Properties, Inc. (Lake Side), is the Owner of commercially zoned property located in the Borough of Wallington, Bergen County, New Jersey. The premises is currently non-operational. The facility consists of a vacant warehouse building and an undeveloped (unpaved) lot. A copy of the USGS Topographic Quadrangle for Weehawken, NJ is included within Appendix #1.

Project Summary:

During a site assessment of the facility a discharge was noted from an underground storage tank (UST) field and reported to the NJDEPE Action Hotline. Subsequently, NJDEPE assigned case #91-9-4-0952 to this discharge. Following closure approval, fourteen (14) 20,000 gallon #6 fuel oil USTs were removed in December 1991. Approximately 2,300 cubic yards (cys) of contaminated soil was excavated and stockpiled on-site. Twenty four (24) soil samples were collected from the stockpile and analyzed for total petroleum hydrocarbons (TPHCs). In addition, twenty three (23) samples were analyzed for a complete TCLP waste classification. The former USTs were officially closed on January 14, 1992. A further description of NJDEPE regulatory activity is presented in the Soil Sample Results section of this report.

The composite excavation for the tanks was located at the west end of the subject facility adjacent to the east bank of the Saddle River. The site was previously abandoned prior to excavation activities and was formerly occupied by a sand blasting company and tree cutting business.

The purpose of this report is to present data associated with the excavation of the contaminated soil from the subject premises with respect to a *Soils Reuse Plan*.

Site Location:

The site is identified as lot 35A, block 71 and is located at 551 Main Avenue in Wallington Borough, Bergen County, New Jersey. A copy of the "Bergen County Road Map," is included as Appendix #2. The approximate Latitude is 40°-51'-42" and Longitude is 74°-06'-05".

Origin and Amount of Soil:

Contaminated soil was removed from a single excavation area that contained fourteen (14) 20,000 gallon #6 oil USTs. The composite excavation area measured approximately 40' wide by 140' long by an average 15' in depth in dimension and was located along a bank adjacent to the Saddle River. Due to the close proximity of the tank field to the Saddle River, a waiver from a stream encroachment permit was requested from the NJDEPE. The waiver was granted on December 16, 1991, by Richard Reilly, Section Chief, Northeast Engineering Section, NJDEPE.

Approximately 2,300 cys of contaminated soil was excavated from the site. The soil was initially placed in one (1) stockpile (see Appendix #4 - April 1992, Sample Location Plan). During subsequent soil screening activities, 2,200 cys of TPHC contaminated soil was arranged in four (4) separate stockpiles on-site, all of which are contained on and covered with 6 mil plastic (see Appendix #3 - Stockpile Location Map). The remaining 100 cys of material was noted to consist of asphalt and other miscellaneous fill debris. The debris stockpile was removed from the site on November 15 and 17, 1993 to a licensed facility, as a X910 unregulated waste material. Manifests will be submitted under separate cover upon receipt.

Soil Sample Results:

Twenty four (24) samples were originally collected in April 1992, from the stockpiled soil which were analyzed for TPHCs. In addition, twenty three (23) samples were analyzed for a complete TCLP waste classification. One sample registered a TPHC

level above 30,000 ppm. The average TPHC level for all samples was 9,700 ppm. Volatile, semi-volatile organic compounds, PCBs, cyanide, sulfide, herbicides and pesticides were not-detected in any TCLP waste classification sample. Soil sample results for the April 1992, sampling event are summarized in Table #1, with the analytical package (excluding QA/QC data) for the first round of sampling included within Appendix #12.

In a letter dated July 24, 1992, 2,200 cys of the soil was classified as ID #27 by the NJDEPE. An additional 100 cys was classified as hazardous waste due to the one TPHC sample exceeding the 30,000 ppm limit. Application for disposal was accepted by the Hackensack Meadowlands Development Commission (HMDC) on August 11, 1992 at its baler facility in North Arlington for 2,200 cys. However, in a letter dated September 2, 1992, the NJDEPE/Bureau of Landfill Engineering (BLE) rejected this soil as cover material at HMDC due to high levels of TPHCs, noting the one sample classified as hazardous and additional areas called "hot spots" located within the stockpile.

EWMA implemented a soil screening and segregation procedure to address the 100 cys of hazardous waste and associated "hot spots" noted throughout the stockpile. Soil from the stockpile was sifted through a three inch (3") soil screener and based on PID results, agitation tests, and general site observations, the soil was stockpiled accordingly. All materials above 3" were stockpiled separately. Screened soils were placed in five separate piles on 6 mil plastic sheeting, based on the field tests performed (see Appendix #3 - Stockpile Location Map).

Following soil screening and segregation, a grid pattern of 20 cy sections was measured and marked onto the stockpiles. Two borings were augured into each 20 cy section and field screened with a PID and recorded. The two highest results from the first 100 cys were collected for analysis, followed by one sample for each additional 100 cys of material. The samples were analyzed for TPHC compounds only, as all other parameters did not detect traceable amounts of contaminants in the previous sampling round.

Analytical results for the second round of sampling in December 1992, registered TPHC levels below 8,000 ppm in all 23 samples collected from the stockpiles. Soil samples were not collected from the remaining debris pile. Soil sample results for the December 1992, sampling event are summarized in Table #2, with the analytical package (excluding QA/QC data) for the second round of sampling included within Appendix #13.

Based on the sample results, EWMA believes that the "hot spots" (high TPHC results) located within the original stockpile were a result of large pieces of asphalt and other miscellaneous urban fill materials (greater than 3") that were noted in the excavated material. Furthermore, the sample results revealed a consistent level of TPHC contamination throughout each stockpile remaining at the site. This would concur with EWMA's previous conclusion that the high TPHC results were due to hydrocarbon compounds noted in asphalt products.

Soil Reuse Plan:

Based upon EWMA's conversation with the NJDEPE Case Manager, John Blankenship, regarding the above summarized sampling results, EWMA is submitting an NJDEPE recommended *Soil Reuse Plan* for the 2,200 cys of TPHC contaminated (ID 27) soil remaining at the site.

As stated earlier within this report, the debris stockpile was removed from the site on November 15 and 17, 1993 to a licensed facility, as a X910 unregulated waste material. Therefore, all elevated TPHCs within the debris stockpile have been removed from the site. Manifests will be submitted under separate cover upon receipt.

EWMA is proposing the following two (2) reuse options for the remaining ID 27 soil:

- Reuse the soil as a sub-base for a proposed asphalt parking area; or

- Reuse the soil as landfill cover at the HMDC facility as previously accepted by HMDC.

The first option proposes to spread the excavated soil into a three foot (3') layer, followed by encapsulating the soil with a layer of four inch (4") bituminous asphalt mix. The proposed parking facility would cover an area of 130 feet by 150 feet in dimension, totaling approximately fifty (50), 10' wide by 20' long parking stalls. The total impervious area created from this project would be less than one half of an acre (0.45 ac.±). In addition, this option would require local planning approvals prior to installation.

The proposed parking lot is depicted within Appendix #9 - Soil Reuse Plan. Handling and transportation of all soils will be from within the property boundaries, along an internal roadway system.

The second option would involve the loading and transportation of the remaining soils to the HMDC facility to be used as landfill cover. The previously received HMDC acceptance letter for this soil is contained within Appendix #10 - Correspondence.

Site Topography and Drainage:

The site is located within the eastern plain of the Passaic River, which is positioned approximately 1,500 feet west of the subject property. The topography surrounding the site is largely composed of moderately flat land with gently sloping hills. A copy of the USGS Topographic Quadrangle for Weehawken, New Jersey, is included within Appendix #1. Poor drainage is noted at the site as surface water run-off flows directly into the Saddle River, seated adjacent to the site. This system flows west discharging directly into the Passaic River. Elevations in the area range from 4 to 25 feet above mean sea level (MSL), with the site situated approximately at 20 feet above MSL. The property's surroundings are used for commercial and industrial development.

Site Geology:

According to the Geologic Map of New Jersey, the site is underlain by stratified glacial drift deposits which cover consolidated bedrock of the Brunswick Formation. The drift consists of stratified gravels, sands, silts and clays deposited during the Pleistocene Age glaciation. The Triassic Age bedrock consists of interbedded shale and sandstone, with minor amounts of conglomerate, characteristically having a red-brown coloration.

The Rutgers University Engineering Soil Survey of New Jersey (Report No. 4, Bergen and Hudson Counties) describes the area as being underlain by glacial ground moraine, mapped as GS-24ig, composed of non-residual, unstratified materials, deposited during the Wisconsin glaciation. The GS portion of the symbol signifies that the area is underlain by ground moraine which is an irregular sheet of unconsolidated sediment deposited primarily by a melting glacier. It is composed mainly of unsorted and unstratified material known as "till", which consists of pebbles, cobbles, and boulders in a mixture of sand, silt and clay. The 24ig portion of the symbol indicates the textural and drainage characteristics of the soil. Specifically, the number "24" in the symbol represents an abbreviated form of the 1946 Highway Research Board classification system for soil types given the symbol A-4 to A-2-4. This indicates a soil type characterized by good internal drainage and moderately low to very low capillarity. Surface drainage may be offset by the flat surfaces of the land and, heavy rains may induce temporary saturation. The "ig" indicates imperfect to good ground water drainage conditions (exact position of the water-table is contingent primarily on the detail and magnitude of local relief).

Tank excavation activities showed the stratigraphic column at the site to be consistent with published geological literature. Soils encountered in the excavation area were as follows: urban fill with debris and ash from 0' to 6'; brown fine sand from 6' to 10'; and gray silty clay from 10' to 17'.

Site Hydrogeology:

A 2,500 foot radius well search was requested from the NJDEPE Bureau of Water Allocation to assess the potential risk to potable water quality in the area immediately surrounding the site. Review of well records contained within the well search revealed that the majority of potable water supply wells in the area withdraw ground water from consolidated bedrock of the Brunswick Formation. Ground water in the Brunswick exists under confined conditions due to the overlying glacial ground moraine deposits (aquitards) and impermeable nature of the bedrock. Typical hydraulic conductivity for the Brunswick bedrock range between 10^{-3} cm/sec to 10^{-11} cm/sec. The wells are not believed to be at risk from the contamination in the former tank field due to their substantial depths below grade and the thickness of the overlying confining units.

No. Saddle River

One potable water supply well was located downgradient and within a 2500 foot radius of the site. This well is not believed to be at risk because the area between the well and the former tank field is interrupted by a meander in the Passaic River. Local potable water supply is provided by the Passaic Valley Water Commission which receives its supply through a network of rivers and reservoirs.

Further review of the well search document shows that numerous industrial supply and monitoring wells are located within the 2500 foot radius of the site. Specifically, seven deep industrial supply wells are located on the Curtis Wright property (ECRA Case #84205). In addition to the seven industrial wells, there are six medium depth (61-82 feet below grade) recovery wells and nine shallow (24-28 feet below grade) monitoring wells on the Curtis Wright property. There are also seven industrial supply wells on the Farmland Dairies property at the rear southeastern corner.

First water at the site was encountered at approximately sixteen feet below grade within a brown sandy stratum. This is documented in well boring logs that are contained within Appendix #11. The water table at the site exists under unconfined

conditions as evidenced by the moist conditions encountered during well installation. Ground water flow for the site is in a west-southwesterly direction.

Potential Adverse Effects:

The potential adverse effects of the first option of the *Soil Reuse Plan* are minimal as the entire sub-base will be encapsulated with an impervious material. Furthermore, to minimize possible infiltration/percolation of surface water runoff through the sub-base material, appropriate drainage and grading was designed into the *Soil Reuse Plan* for the proposed parking area. In addition, ground water is not believed to be at risk due to potable supply wells in the area located at substantial depths below grade and the thickness of the overlying confining units providing a barrier for potential percolation.

The second option involves reusing the soil as cover material for the HMDC baler facility. The soil will be covered with impermeable material at this facility. In addition, the soil was previously classified as ID 27 and was accepted by HMDC (see Appendix #10 - Correspondence) under all applicable state disposal requirements.

To summarize, EWMA believes that the adverse effects on the health and environment of the *Soil Reuse Plan* are minimal.

Preventative Measures:

The placement of the soil as a sub-base material shall be performed in a manner to prevent soil from escaping off-site via wind or surface water flow. Soil will be placed in one foot (1') lifts and shall be compacted thoroughly. Additionally, silt fences shall be placed around the perimeter of the site to protect against potential erosion. Pavement activities will commence immediately following the placement of the soil subsurface to avoid potential adverse effects of the environment (i.e. rain, wind, etc.)

If the second option is chosen, soil will be loaded onto trucks for delivery to HMDC. Weather conditions will be monitored to avoid loading on rainy or windy days.

Site Restoration:

Upon final completion of the project, all silt fences and potential construction debris, including 6 mil plastic coverings will be collected and disposed of properly.

Schedule:

Within one month of the *Soil Reuse Plan* approval by NJDEPE, Lake Side shall either initiate construction activities or schedule for transportation and disposal of the soil to HMDC. Anticipated final completion time for either reuse option shall be approximately two weeks from the corresponding initiation date.

Table #1

April, 1992 TCLP Results

TABLE #1 - Waste Classification Summary

Sample Number:	SP1S1	SP1S2	SP1S3	SP1S4
Lab ID number:	282001	282002	282003	282004
Sample date:	4/10/92	4/10/92	4/10/92	4/10/92
Sample type:	Soil	Soil	Soil	Soil
Sample depth:	Composite	Composite	Composite	Composite
TCLP CLASSIFICATION				
pH-Corrosivity (SU):	8.14	7.85	7.46	7.41
Cyanide (ppm):	N D	N D	N D	N D
Sulfide (ppm):	N D	N D	N D	N D
Ignitability (F):	>140	>140	>140	>140
Total Petroleum Hydrocarbons (ppm):	11200	11600	15400	9980
PCB's (ppm):	N D	N D	N D	N D
TCLP Metals (ppm):				
Arsenic	0.002	0.003	0.003	0.003
Mercury	N D	N D	N D	N D
TOTAL TCLP Metals (ppm)	**0.002**	**0.003**	**0..003**	**0.003**
TCLP ORGANICS				
Herbicides (ppm):				
TOTAL Herbicides (ppm)	**N D**	**N D**	**N D**	**N D**
Pesticides (ppm):				
TOTAL Pesticides (ppm)	**N D**	**N D**	**N D**	**N D**
Volatile Organic Compounds (ppm):				
TOTAL VO Compounds (ppm)	**N D**	**N D**	**N D**	**N D**
Semi Volatile Organic Compounds (ppm):				
TOTAL Semi VO Compounds (ppm)	**N D**	**N D**	**N D**	**N D**

B - Indicates the analyte was found in the blanks and in the sample, and possible sample contamination.
J - Indicates an estimated value. The compound was detected at a value below the minimum detection limit (MDL) and greater than zero.
N D - Indicates the compound was analyzed for, but was NOT detected.

TABLE #1 - Waste Classification Summary

Sample Number:	SP1S5	SP2S1	SP2S2	SP2S3
Lab ID number:	282005	282006	282007	282008
Sample date:	4/10/92	4/10/92	4/10/92	4/10/92
Sample type:	Soil	Soil	Soil	Soil
Sample depth:	Composite	Composite	Composite	Composite
TCLP CLASSIFICATION				
pH-Corrosivity (SU):	7.26	6.37	6.77	6.16
Cyanide (ppm):	N D	N D	N D	N D
Sulfide (ppm):	N D	N D	N D	N D
Ignitability (F):	>140	>140	>140	>140
Total Petroleum Hydrocarbons (ppm):	7170	7700	6780	14300
PCB's (ppm):	N D	N D	N D	N D
TCLP Metals (ppm):				
Arsenic	0.003	0.001	0.001	N D
Mercury	0.0006	N D	0.0005	N D
TOTAL TCLP Metals (ppm)	0.0036	0.001	0.0015	N D
TCLP ORGANICS				
Herbicides (ppm):				
TOTAL Herbicides (ppm)	N D	N D	N D	N D
Pesticides (ppm):				
TOTAL Pesticides (ppm)	N D	N D	N D	N D
Volatile Organic Compounds (ppm):				
TOTAL VO Compounds (ppm)	N D	N D	N D	N D
Semi Volatile Organic Compounds (ppm):				
TOTAL Semi VO Compounds (ppm)	N D	N D	N D	N D

B - Indicates the analyte was found in the blanks and in the sample, and possible sample contamination.
J - Indicates an estimated value. The compound was detected at a value below the minimum detection limit (MDL) and greater than zero.
N D - Indicates the compound was analyzed for, but was NOT detected.

TABLE #1 - Waste Classification Summary

Sample Number:	SP2S4	SP2S5	SP2S6	SP2S7
Lab ID number:	282009	282010	282011	282012
Sample date:	4/10/92	4/10/92	4/10/92	4/10/92
Sample type:	Soil	Soil	Soil	Soil
Sample depth:	Composite	Composite	Composite	Composite
TCLP CLASSIFICATION				
pH-Corrosivity (SU):	6.4	6.4	6.49	6.6
Cyanide (ppm):	N D	N D	N D	N D
Sulfide (ppm):	N D	N D	N D	N D
Ignitability (F):	>140	>140	>140	>140
Total Petroleum Hydrocarbons (ppm):	**6880**	**4150**	**8000**	**4570**
PCB's (ppm):	N D	N D	N D	N D
TCLP Metals (ppm):				
Arsenic	0.001	0.001	N D	N D
Mercury	N D	N D	N D	N D
TOTAL TCLP Metals (ppm)	**0.001**	**0.001**	**N D**	**N D**
TCLP ORGANICS				
Herbicides (ppm):				
TOTAL Herbicides (ppm)	**N D**	**N D**	**N D**	**N D**
Pesticides (ppm):				
TOTAL Pesticides (ppm)	**N D**	**N D**	**N D**	**N D**
Volatile Organic Compounds (ppm):				
TOTAL VO Compounds (ppm)	**N D**	**N D**	**N D**	**N D**
Semi Volatile Organic Compounds (ppm):				
TOTAL Semi VO Compounds (ppm)	**N D**	**N D**	**N D**	**N D**

B - Indicates the analyte was found in the blanks and in the sample, and possible sample contamination.
J - Indicates an estimated value. The compound was detected at a value below the minimum detection limit (MDL) and greater than zero.
N D - Indicates the compound was analyzed for, but was NOT detected.

TABLE #1 - Waste Classification Summary

Sample Number:	SP2S8	SP2S9	SP2S10	SP2S11
Lab ID number:	282013	282014	282015	282016
Sample date:	4/10/92	4/10/92	4/10/92	4/10/92
Sample type:	Soil	Soil	Soil	Soil
Sample depth:	Composite	Composite	Composite	Composite
TCLP CLASSIFICATION				
pH-Corrosivity (SU):	6.13	6.09	7.43	7.12
Cyanide (ppm):	N D	N D	N D	N D
Sulfide (ppm):	N D	N D	N D	N D
Ignitability (F):	>140	>140	>140	>140
Total Petroleum Hydrocarbons (ppm):	2960	3580	5860	5690
PCB's (ppm):	N D	N D	N D	N D
TCLP Metals (ppm):				
Arsenic	N D	N D	N D	N D
Mercury	N D	N D	N D	N D
TOTAL TCLP Metals (ppm)	N D	N D	N D	N D
TCLP ORGANICS				
Herbicides (ppm):				
TOTAL Herbicides (ppm)	N D	N D	N D	N D
Pesticides (ppm):				
TOTAL Pesticides (ppm)	N D	N D	N D	N D
Volatile Organic Compounds (ppm):				
TOTAL VO Compounds (ppm)	N D	N D	N D	N D
Semi Volatile Organic Compounds (ppm):				
TOTAL Semi VO Compounds (ppm)	N D	N D	N D	N D

B - Indicates the analyte was found in the blanks and in the sample, and possible sample contamination.
J - Indicates an estimated value. The compound was detected at a value below the minimum detection limit (MDL) and greater than zero.
N D - Indicates the compound was analyzed for, but was NOT detected.

TABLE #1 - Waste Classification Summary

Sample Number:	SP2S12	SP2S13	SP2S15	SP2S16
Lab ID number:	282017	282018	282020	282021
Sample date:	4/10/92	4/10/92	4/10/92	4/10/92
Sample type:	Soil	Soil	Soil	Soil
Sample depth:	Composite	Composite	Composite	Composite
TCLP CLASSIFICATION				
pH-Corrosivity (SU):	7.38	7.1	8.29	8.16
Cyanide (ppm):	N D	N D	N D	N D
Sulfide (ppm):	N D	N D	N D	N D
Ignitability (F):	>140	>140	>140	>140
Total Petroleum Hydrocarbons (ppm):	2620	6920	14000	24100
PCB's (ppm):	N D	N D	N D	N D
TCLP Metals (ppm):				
Arsenic	N D	N D	N D	N D
Mercury	N D	N D	N D	N D
TOTAL TCLP Metals (ppm)	N D	N D	N D	N D
TCLP ORGANICS				
Herbicides (ppm):				
TOTAL Herbicides (ppm)	N D	N D	N D	N D
Pesticides (ppm):				
TOTAL Pesticides (ppm)	N D	N D	N D	N D
Volatile Organic Compounds (ppm):				
TOTAL VO Compounds (ppm)	N D	N D	N D	N D
Semi Volatile Organic Compounds (ppm):				
TOTAL Semi VO Compounds (ppm)	N D	N D	N D	N D

B - Indicates the analyte was found in the blanks and in the sample, and possible sample contamination.
J - Indicates an estimated value. The compound was detected at a value below the minimum detection limit (MDL) and greater than zero.
N D - Indicates the compound was analyzed for, but was NOT detected.

TABLE #1 - Waste Classification Summary

Sample Number:	SP2S17	SP2S18	SP2S19	Field
Lab ID number:	282022	282023	282024	282025
Sample date:	4/10/92	4/10/92	4/10/92	4/10/92
Sample type:	Soil	Soil	Soil	Soil
Sample depth:	Composite	Composite	Composite	Composite
TCLP CLASSIFICATION				
pH-Corrosivity (SU):	8.86	9.08	8.44	7.01
Cyanide (ppm):	N D	N D	N D	N D
Sulfide (ppm):	N D	N D	N D	N D
Ignitability (F):	>140	>140	>140	>140
Total Petroleum Hydrocarbons (ppm):	22900	25800	890	N D
PCB's (ppm):	N D	N D	N D	N D
TCLP Metals (ppm):				
Arsenic	N D	N D	N D	N D
Mercury	N D	N D	N D	N D
TOTAL TCLP Metals (ppm)	N D	N D	N D	N D
TCLP ORGANICS				
Herbicides (ppm):				
TOTAL Herbicides (ppm)	N D	N D	N D	N D
Pesticides (ppm):				
TOTAL Pesticides (ppm)	N D	N D	N D	N D
Volatile Organic Compounds (ppm):				
TOTAL VO Compounds (ppm)	N D	N D	N D	N D
Semi Volatile Organic Compounds (ppm):				
TOTAL Semi VO Compounds (ppm)	N D	N D	N D	N D

B - Indicates the analyte was found in the blanks and in the sample, and possible sample contamination.
J - Indicates an estimated value. The compound was detected at a value below the minimum detection limit (MDL) and greater than zero.
N D - Indicates the compound was analyzed for, but was NOT detected.

Table #2

December, 1992 TPHC Results

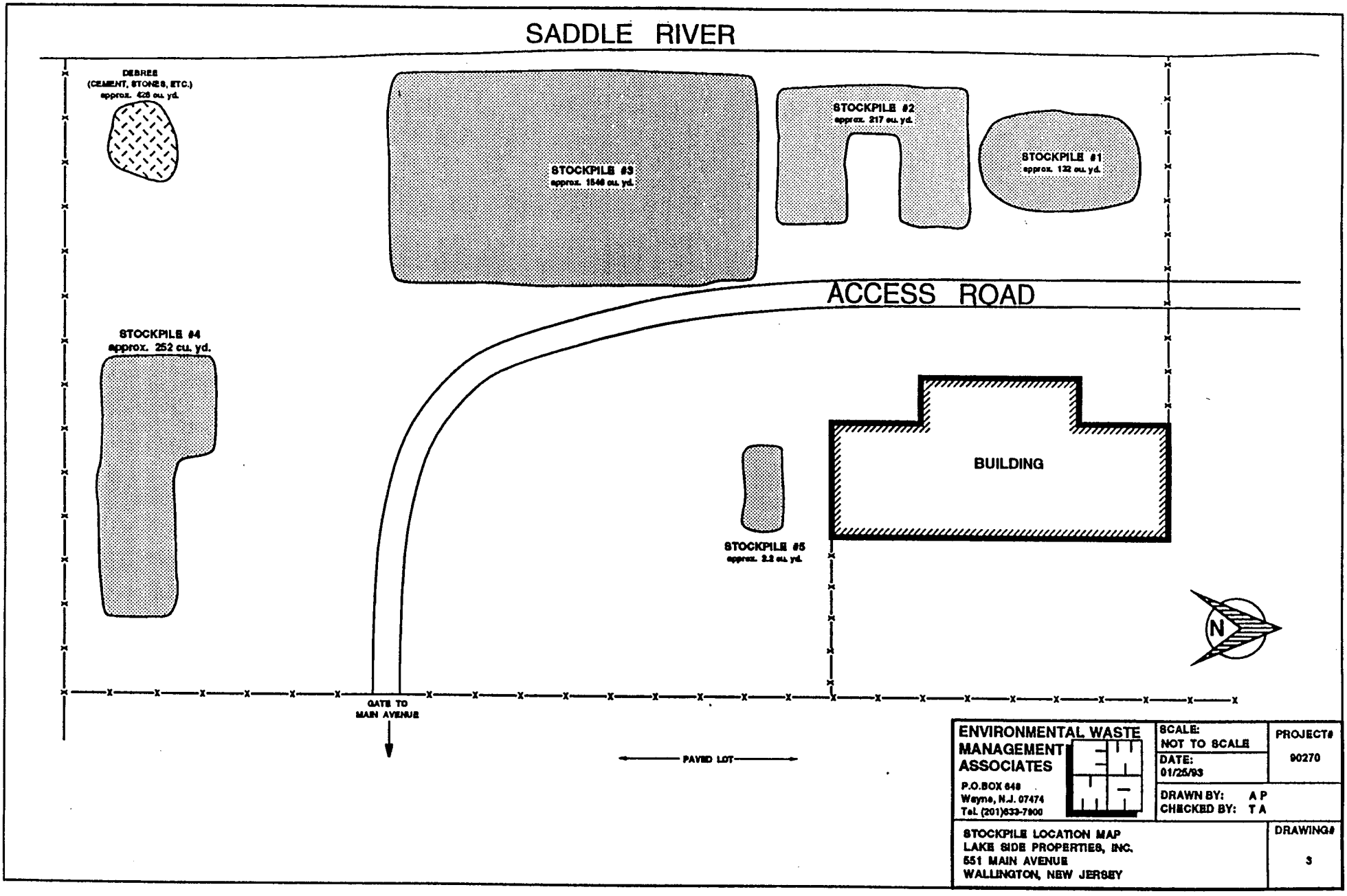
Table #2

December, 1992 TPHC Stockpile Sampling Results

Sample Identification	Total TPHC	Stockpile #
3H1B	4670 ppm	3
3H2B	5100 ppm	2
3I1B	7470 ppm	3
3J1A	7890 ppm	3
3J5B	4640 ppm	3
3K5B	6010 ppm	3
3K6A	6520 ppm	3
2B2B	3170 ppm	2
1B1A	4990 ppm	1
1C2A	3840 ppm	1
3A1B	5170 ppm	3
3A3A	5890 ppm	3
3B1A	3760 ppm	3
3C1B	4880 ppm	3
3C4B	3220 ppm	3
3D4B	6860 ppm	3
3E1B	3800 ppm	3
3E7A	3410 ppm	3
3F1A	4770 ppm	3
3G1B	2710 ppm	3
4A1A	2360 ppm	4
4B4B	5600 ppm	4
5B	7190 ppm	5
FIELD	ND	NA

APPENDIX #3

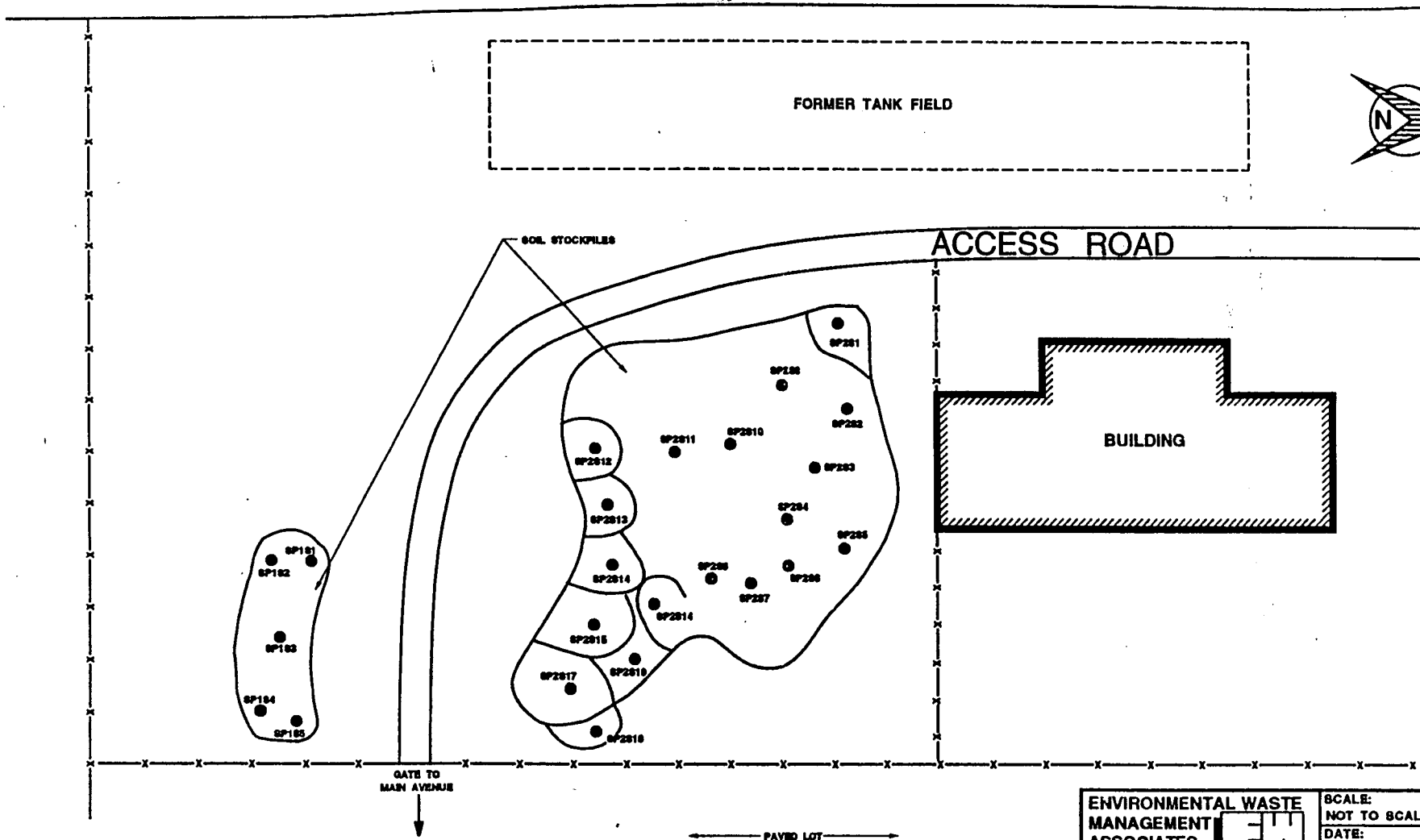
Stock Pile Location Map


SADDLE RIVER
DEBRES
(CEMENT, STONES, ETC.)
approx. 428 cu. yd.
STOCKPILE #3
approx. 1546 cu. yd.
STOCKPILE #2
approx. 217 cu. yd.
STOCKPILE #1
approx. 122 cu. yd.
ACCESS ROAD
STOCKPILE #4
approx. 252 cu. yd.
BUILDING
STOCKPILE #5
approx. 2.2 cu. yd.
N
GATE TO
MAIN AVENUE
PAVED LOT
ENVIRONMENTAL WASTE
MANAGEMENT
ASSOCIATES
P.O.BOX 648
Wayne, N.J. 07474
Tel. (201)633-7800
SCALE:
NOT TO SCALE
DATE:
01/25/93
PROJECT#
90270
DRAWN BY: A P
CHECKED BY: T A
STOCKPILE LOCATION MAP
LAKE SIDE PROPERTIES, INC.
551 MAIN AVENUE
WALLINGTON, NEW JERSEY
DRAWING#
3

Q24

APPENDIX #4

April, 1992 Sample Location Plan



LEGEND:

● SOIL SAMPLE LOCATION

ENVIRONMENTAL WASTE MANAGEMENT ASSOCIATES P.O.BOX 648 Wayne, N.J. 07474 Tel. (201)633-7900	SCALE: NOT TO SCALE DATE: 5/28/92	PROJECT# 90270
	DRAWN BY: A P CHECKED BY: T A	
SOIL SAMPLE LOCATION PLAN LAKE SIDE PROPERTIES, INC. 551 MAIN AVENUE WALLINGTON, NEW JERSEY		DRAWING# 4

Q26

Appendix #9

Soil Reuse Plan

SADDLE RIVER

PROPOSED DRAINAGE SWALE

ACCESS ROAD

BUILDING

148'

128'

PROPOSED ASPHALT PARKING AREA

0.5% GRADE

BUILDING

EXISTING ASPHALT PARKING AREA

MAIN STREET

N

PAVEMENT DETAIL
NOT TO SCALE

CONSTRUCTION NOTES:

1.) All materials and methods of construction shall conform to N.J.D.O.T. Standard Specification for Road and Bridge Construction, 1988, as amended or modified.

2.) All underground utilities shall be marked by the appropriate company prior to excavation. Call Utility Hotline @ 1 - 800 - 272 - 1000.

3.) A 48 hour notice shall be given to the Borough Engineer prior to commencement of construction activities.

ENVIRONMENTAL WASTE MANAGEMENT ASSOCIATES P.O.BOX 648 Wayne, N.J. 07474 Tel. (201)633-7984	SCALE: NOT TO SCALE DATE: 9/8/03 DRAWN BY: A P CHECKED BY: T A	PROJECT# 90270
SOIL REUSE PLAN LAKE SIDE PROPERTIES, INC. 651 MAIN AVENUE WALLINGTON, NEW JERSEY		DRAWING# 8

Q28

ATTACHMENT R

State of New Jersey
Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
CN 028
Trenton, NJ 08625-0028

Jeanne M. Fox
Acting Commissioner

Karl J. Delaney
Director

DEC 17 1993

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
Lawrence F. Jacobs
Farer Siegal Fersko
P.O. Box 580
Westfield, NJ 07091-0580

Re: Lakeside Properties
551 Main Street
Wallington, Bergen County
Closure # C91-2617
Case # 91-09-04-0952
UST # 0222194
Remedial Investigation Report Dated: November 22, 1993

Dear Mr. Jacobs:

The New Jersey Department of Environmental Protection and Energy (Department) has completed a review of the above referenced document. Please be advised that the document is unacceptable due to several administrative and technical deficiencies detailed below.

The document has been deemed unacceptable based upon the following deficiencies:

1) The proposed soil reuse plan is not acceptable. All the required analytical parameters were not performed according to 7:26E 2.1(d) Table 2-3. Lakeside Properties shall either properly dispose of the soil pile or resample and analyzed the sample in accordance with NJAC 7:26E-2.1(d) table 2-3.

2) The disposal documentation for the sludge associated with the tank cleaning must be accompanied with the report.

3) Contaminated soil was shipped as a chemical process solid, NOS (X-910), having TPHC concentrations greater than 30,000 ppm. Lakeside Properties shall clarify why waste which exhibits a hazardous characteristic was manifested and shipped as a nonhazardous waste. Please be advised that Lakeside Properties may be in violation of New Jersey's Hazardous Waste Regulations, NJAC 7:26.

Therefore, Lakeside Properties is out of compliance with N.J.S.A. 58:10A-21 et seq. for having failed to submit a responsive document within the specified time frame. Lakeside Properties shall correct the deficiencies and submit a Remedial Investigation Report Addendum which conforms to the Department's comments within 60 calendar days upon receipt of this letter.

R1

If Lakeside Properties fails to submit the required report within the referenced time frame, this case will be referred to the Bureau of Applicability and Compliance (BAC) for review. The Department may initiate enforcement action including, but not limited to, the assessment of penalties and revocation of tank operating registrations pursuant to N.J.S.A. 58:10A-21 et seq. and N.J.A.C. 7:14B-12.

This letter does not represent an extension or a modification of the time frames for compliance previously set forth. The Department reserves the right to implement all enforcement measures, including the right to revoke tank operating registrations and assess penalties from the original due date.

If the tank(s) at the referenced facility is/are regulated under the federal Hazardous and Solid Waste Amendments of 1984 and Lakeside Properties fails to comply with the above requirements, this case may be referred to the United States Environmental Protection Agency (USEPA) for violations of 40 CFR Part 280.

Please note, pursuant to N.J.S.A. 58:10A-21 et seq. and N.J.A.C. 7:14B et seq., the owner and operator of the regulated underground storage tanks are strictly liable for compliance with these requirements. Violators are liable for penalties of up to $50,000 per day for each day of continuing violation and revocation of tank registrations.

If you should have any questions regarding this matter, please contact Robert Winterburn, Case Manager, of the Bureau of Underground Storage Tanks at (609) 984-3156.

Sincerely,

Joseph Miller, Section Chief
Bureau of Underground Storage Tanks

c: Robert Winterburn, Case Manager, BUST

R2

ATTACHMENT S

ENVIRONMENTAL WASTE
MANAGEMENT ASSOCIATES, INC.

CORPORATE HEADQUARTERS:
1235A Route 23 South
P.O. Box 648
Wayne, New Jersey 07474
Phone: 201/633-7900
Fax: 201/633-7482

Sent Via Certified Mail #033 934 816
Return Receipt Requested

19
230302

January 17, 1994

Robert Winterburn
Case Manager
NJDEPE/DRPSR/BUST
CN 028
Trenton, New Jersey 08625-0028

RE: **Lake Side Properties, Inc.**
551 Main Avenue, Wallington, Bergen County, NJ
Case #91-09-04-0952, TMS #C91-3617, UST #0222194
EWMA Job #90270

Dear Mr. Winterburn:

This letter is intended to address comments made in a letter dated December 17, 1993 from Joseph Miller, Section Chief/BUST and subsequent meeting on December 27, 1993 in regards to the above referenced site. These comments will be addressed as they appear in the aformentioned letter.

1) Properly dispose or resample and analyze in accordance with NJAC 7:26-2.1(d) table 2-3.

EWMA will resample and analyze the soil stockpile in accordance with NJAC 7:26-2.1(d) table 2-3. Twenty-five percent (25%) of the samples previously collected, beginning with those exhibiting the highest TPHC concentrations, will be recollected analyzed for base neutral compounds with a forward library search (BN+15) according to EPA Method 8250 (Semi-volatile organics). Specifically, samples will be collected from the following locations:

1) 3I1B
2) 3J1A
3) 3K5B
4) 3K6A
5) 3D4B
6) 5B

Upon EWMA's receipt, results of the analysis will be forwarded to the Department.

MIDATLANTIC REGION:
Princeton, NJ
Phone: 609/683-7600
Fax: 609/683-1556

WESTERN REGION:
Englewood, CO
Phone: 303/843-9700
Fax: 303/843-9094

S1

RECYCLED

2) Disposal documentation for sludge associated with tank cleaning.

Tank cleaning and associated sludge disposal was performed by D&M Tank Cleaning of Wallington, New Jersey. Associated residue and sludge disposal documentation has been requested from this company repeatedly, however to date, EWMA has not received this information. Upon receipt, EWMA will forward this information to the Department. A follow-up request letter to D&M is enclosed.

3) Why waste which exhibits a hazardous characteristic was manifested and shipped as a nonhazardous waste.

The waste which was shipped as chemical process solid NOS (X-910) had a TPHC concentration of 1,990 ppm and not greater than 30,000 ppm as indicated in the NJDEPE directive letter dated 12/17/93. This is based on results of a waste classification sample analysis performed in September, 1993. Enclosed, is a copy of the complete analytical package for this analysis.

In addition, the above referenced material was a mixture of rocks, debris, and some soil. This material was generated from the screening process of the stockpiled soil still located on site. As a result, an additional waste classification analysis was performed on a sample from this debris pile in order to properly manifest and ship the material.

If there are any additional questions or comments, please feel free to contact me at our Wayne office.

Very truly yours,
Environmental Waste Management Associates, Inc.

Thomas Andrews, P.E., Project Manager
UST Certification #E505

attachment

cc: Marc Goldman, President, Lake Side Properties
William Black, VP Finance, Lake Side Properties
Frank Polizzi, VP Operations, Lake Side Properties
Farer Siegal Fersko

ENVIRONMENTAL WASTE
MANAGEMENT ASSOCIATES, INC.

CORPORATE HEADQUARTERS:
1235A Route 23 South
P.O. Box 648
Wayne, New Jersey 07474
Phone: 201/633-7900
Fax: 201/633-7482

January 14, 1994

Kathy De
D&M Tank Cleaning
194 5th Street
Saddlebrook, New Jersey 07662

RE: **Lake Side Properties, Inc.**
551 Main Avenue, Wallington, Bergen County, NJ
Documentation of Sludge Disposal
EWMA Job #90270

Dear Ms. De:

As environmental consultants for Lake Side Properties, Inc., Environmental Waste Management Associates, Inc. (EWMA) requests documentation of sludge disposal as performed by D&M Tank Cleaning (D&M) for Joe Royce, Inc. (Joe Royce).

In December, 1991, fourteen (14) 20,000 gallon #6 fuel oil underground storage tanks (USTs) were removed from the Lake Side Properties site by Joe Royce. D&M performed all tank cleaning and sludge removal activities associated with this project. In order to facilitate formal closure of this site, NJDEPE is requesting documentation of sludge disposal (see attached letter). EWMA request copies of the disposal receipts to be sent to our Wayne office to my attention.

Thank you in advance for your attention to this matter. If you have any questions, please feel free to contact me at our Wayne office.

Very truly yours,
Environmental Waste Management Associates, Inc.

Thomas Andrews, P.E., Project Manager

TA/pjg

attachment

cc: Frank Polizzi, VP Operations, Lake Side Properties
Farer Siegal Fersko

PG011494-D&M.Cor

MIDATLANTIC REGION:
Princeton, NJ
Phone: 609/683-7600
Fax: 609/683-1556

WESTERN REGION:
Englewood, CO
Phone: 303/843-9700
Fax: 303/843-9094

Integrated Analytical Labs

Integrated Analytical Laboratories, Inc.

150 Railroad Avenue
Paterson, N.J. 07501

201-523-2509
Fax # 201-523-2818

ANALYTICAL DATA REPORT

for

Environmental Waste Management Associates
1235A Route 23 South
Wayne, NJ 07470

Project: Lakeside Properties #90270
Lab Case Number: 10930-749
Date Report Prepared: October 1, 1993

CLIENT SAMPLE ID	LABORATORY SAMPLE #
WC-1	749001

All NJDEPE protocol were followed during analyses. These data have been reviewed and accepted by:

Michael H. Leftin, Ph.D.
Laboratory Director

The liability of Integrated Analytical Laboratories, Inc. is limited to the actual cost of the analyses performed.

INTEGRATED ANALYTICAL LABORATORIES, INC.

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Qualifiers	1
Analytical Results	
Waste Classification	2
Corrosivity	
Reactive Cyanide	
Reactive Sulfide	
Ignitability	
Total Petroleum Hydrocarbons	
TCLP Metals	
PCB's	
TCLP Organics	3
Herbicides	
Pesticides	
Volatile Organics	
Base Neutral Acid Extractables	
Sample Tracking	
Chain of Custodies	4
Laboratory Chronicle	6
Purchase Order	8

MATRIX QUALIFIERS

A - Indicates the sample is an Aqueous.

O - Indicates the sample is an Oil.

S - Indicates the sample is a Soil, Sludge or Sediment.

X - Indicates the sample is an other as indicated by Client Chain of Custody.

DATA QUALIFIERS

B - Indicates the analyte was found in the Blank and in the sample. It indicates possible sample contamination and warns the data user to use caution when applying the results of this analyte.

D - The surrogate was not detected due to the high Dilution of the sample.

J - Indicates an estimated value. The compound was detected at a value below the minimum detection limit and greater than zero. For GC/MS procedures, the mass spectral data meets the criteria required to identify the target compound.

MI - Indicates Compound concentration could not be determined due to Matrix Interferences

NA - Indicates the compound was Not Applicable.

ND - Indicates the compound was analyzed for but was Not Detected.

REPORT QUALIFIERS

All analyses were performed within the required holding time.

TCLP Extract results are actual values and are not based upon bias calculations.

All solid sample analyses were reported on a dry weight basis.

All solid sample values are corrected for original sample size and percent solids.

INTEGRATED ANALYTICAL LABORATORIES, INC.

WASTE CLASSIFICATION

Lab ID: 749001 Matrix: Soil
Client ID: WC-1

GENERAL

Parameter	Result	Unit	MDL
Corrosivity	8.97	S.U.	±0.02
Cyanide, reactive	ND	mg/Kg	0.54
Sulfide, reactive	ND	mg/Kg	23.0
Ignitability	> 140	°F	±5°
TPHC	1990	mg/Kg	54.4
% Solids	91.4	%	

TCLP METALS

Parameter	Result	Unit	MDL
Arsenic	ND	mg/L	0.004
Barium	ND	mg/L	0.50
Cadmium	ND	mg/L	0.02
Chromium	ND	mg/L	0.06
Lead	ND	mg/L	0.04
Mercury	ND	mg/L	0.001
Selenium	ND	mg/L	0.004
Silver	ND	mg/L	0.04

PCB's

Compound	Result	Unit	MDL
Total PCB's	ND	mg/Kg	0.545

INTEGRATED ANALYTICAL LABORATORIES, INC.

TCLP ORGANICS

Lab ID: 749001
Client ID: WC-1

TCLP Matrix: Aqueous
TCLP Units: mg/L

HERBICIDES

Dilution Factor: 25

Compound	Result	MDL
2,4-D	ND	0.0375
Silvex	ND	0.0125

PESTICIDES

Dilution Factor: 2.5

Compound	Result	MDL
Chlordane	ND	0.00003
Endrin	ND	0.00003
Heptachlor	ND	0.00003
Heptachlor epoxide	ND	0.00003
Lindane	ND	0.00003
Toxaphene	ND	0.00003
Methoxychlor	ND	0.00003

VOLATILES

Dilution Factor: 1

Compound	Result	MDL
Benzene	ND	0.005
Carbon tetrachloride	ND	0.005
Chloroform	ND	0.005
Chlorobenzene	ND	0.005
1,4-Dichlorobenzene	ND	0.005
1,2-Dichloroethane	ND	0.005
1,1-Dichloroethane	ND	0.005
Methyl ethyl ketone	ND	0.250
Tetrachloroethene	ND	0.005
Trichloroethene	ND	0.005
Vinyl chloride	ND	0.010

BASE/NEUTRAL ACID EXTRACTABLES

Dilution Factor: 5

Compound	Result	MDL
Cresol, Total	ND	0.150
2,4-Dinitrotoluene	ND	0.050
Hexachlorobenzene	ND	0.050
Hexachloro-1,3-butadiene	ND	0.050
Hexachloroethane	ND	0.050
Nitrobenzene	ND	0.050
Pentachlorophenol	ND	0.100
Pyridine	ND	1.00
2,4,5-Trichlorophenol	ND	0.050
2,4,6-Trichlorophenol	ND	0.050

Case No : 10930-749
Client : EWMA - W
Report TAT : Standard
QC Format : Standard
Rcvd Date : 09/14/93
Rcvd Time : 13:05
Project : Lakeside Properties - 90270

P.O. # L0587
Bill To: 1235A Rt. 23 South
P.O. Box 648
Wayne, NJ 07474
Report To: Aziz Dehkan

# of Containers	3
IAL ID #	749-001
Client ID #	WC-1
Matrix	Soil
Sample Date	09/14/93
Sample Time	12:30
VO, TCLP	√
PCB	√
Pest, TCLP	√
Herb, TCLP	√
BNA, TCLP	√
TCLP Extract	√
TCLP Metals	√
Sulfide, React.	√
Cyanide, React.	√
Ignit./FP	√
TPHC	√
pH	√
% Solids	√

Comments:

59
OK
ML
9/14/93

CLIENT CHAIN OF CUSTODY

Integrated Analytical Laboratories, Inc.
150 Railroad Avenue
Paterson, NJ 07501

Client: EWMA
Address: 1235 A Rt. 23 South PO Box 648
City: Wayne
State/Zip: NJ 07474

Project: Lakeside Properties
Job # 90270
Customer P.O.: L 0587
Contact Person: Aziz Dehkan

Deliverables (Circle One) (Std) Tier I Tier II BUST ECRA Other

Turnaround Time: Normal

Sample #	Field #	M	C	Desc. of Samples	Date/Time	Analytical Requests
749001	WC-1	S	3	stockpile soil	9/14/93/12:30	TCLP Waste Class.

Person(s) Assuming Responsibility for Sampling: Peter Berkhout

Relinquished by:	Received by:	Organization	Date	Time	Reason
Peter Berkhout	M Pizzini	IAL	9-14-93	1305	Analysis

Comments:

M = Matrix: (A) Aqueous, (F) Filter, (O) Oil, (S) Soil/Sludge, (T) Air, (X) Other

C = Number of Containers

S10

ATTACHMENT T

ENVIRONMENTAL WASTE
MANAGEMENT ASSOCIATES, INC.

CORPORATE HEADQUARTERS:
1235A Route 23 South
P.O. Box 648
Wayne, New Jersey 07474
Phone: 201/633-7900
Fax: 201/633-7482

Sent Via Certified Mail #033 934 809
Return Receipt Requested

February 2, 1994

Robert Winterburn
Case Manager
NJDEPE/DRPSR/BUST
CN 028
Trenton, New Jersey 08625-0028

RE: **Lake Side Properties, Inc.**
551 Main Avenue, Wallington, Bergen County, NJ
Case #91-09-04-0952, TMS #C91-3617, UST #0222194
EWMA Job #90270

Dear Mr. Winterburn:

Per EWMA's letter to you dated January 17, 1994, enclosed please find analytical results of soil stockpile samples recollected in accordance with NJAC 7:26-2.1(d) table 2-3 and documentation for sludge disposal associated with tank cleaning activities performed at the above referenced property. In addition, copies of the NJDEPE directive letter dated December 17, 1993 and EWMA's response letter dated January 17, 1994 are enclosed as Attachment 1.

The following paragraphs will address comments as they appeared in your diective letter dated December 17, 1993.

1) Properly dispose or resample and analyze in accordance with NJAC 7:26-2.1(d) table 2-3.

   EWMA resampled and analyzed the soil stockpile in accordance with NJAC 7:26-2.1(d) table 2-3. Twenty-five percent (25%) of the samples previously collected, beginning with those exhibiting the highest TPHC concentrations, were resampled and analyzed for base neutral compounds with a forward library search (BN+15) according to EPA Method 8250 (Semi-volatile organics).

   As indicated in EWMA's response letter, soil was resampled from the following locations:

1) **3I1B**	4) **3K6A**
2) **3J1A**	5) **3D4B**
3) **3K5B**	6) **5B**

MIDATLANTIC REGION:
Princeton, NJ
Phone: 609/683-7600
Fax: 609/683-1556

WESTERN REGION:
Englewood, CO
Phone: 303/843-9700
Fax: 303/843-9094

T1

RECYCLED

Soil stockpile sample results indicate that no BN compounds exceed the NJDEPE Residential Direct Contact Soil Cleanup Criteria. A summary table of results and the complete analytical package are included as Attachment 2.

2) Disposal documentation for sludge associated with tank cleaning.

Tank cleaning and associated sludge disposal was performed by D&M Tank Cleaning of Wallington, New Jersey. Associated residue and sludge disposal documentation has been received and is enclosed as Attachment 3.

3) Why waste which exhibits a hazardous characteristic was manifested and shipped as a nonhazardous waste.

The waste which was shipped as chemical process solid NOS (X-910) had a TPHC concentration of 1,990 ppm and not greater than 30,000 ppm as indicated in the NJDEPE directive letter dated 12/17/93. This is based on results of a waste classification sample analysis performed in September, 1993. A copy of the complete analytical package for this analysis is included as Attachment 4.

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If there are any additional questions or comments, please feel free to contact me at our Wayne office.

Very truly yours,
Environmental Waste Management Associates, Inc.

Thomas Andrews, P.E., Project Manager
UST Certification #E505

Attachments

cc: Marc Goldman, President, Lake Side Properties
William Black, VP Finance, Lake Side Properties
Frank Polizzi, VP Operations, Lake Side Properties
Farer Siegal Fersko

Attachment 1

Correspondence

T3

State of New Jersey
Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
CN 028
Trenton, NJ 08625-0028

Jeanne M. Fox
Acting Commissioner

Karl J. Delaney
Director

DEC 17 1993

RECEIVED
DEC 20 1993

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
Lawrence F. Jacobs
Farer Siegal Fersko
P.O. Box 580
Westfield, NJ 07091-0580

Re: Lakeside Properties
551 Main Street
Wallington, Bergen County
Closure # C91-2617
Case # 91-09-04-0952
UST # 0222194
Remedial Investigation Report Dated: November 22, 1993

Dear Mr. Jacobs:

The New Jersey Department of Environmental Protection and Energy (Department) has completed a review of the above referenced document. Please be advised that the document is unacceptable due to several administrative and technical deficiencies detailed below.

The document has been deemed unacceptable based upon the following deficiencies:

1) The proposed soil reuse plan is not acceptable. All the required analytical parameters were not performed according to 7:26E 2.1(d) Table 2-3. Lakeside Properties shall either properly dispose of the soil pile or resample and analyzed the sample in accordance with NJAC 7:26E-2.1(d) table 2-3.

2) The disposal documentation for the sludge associated with the tank cleaning must be accompanied with the report.

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Therefore, Lakeside Properties is out of compliance with N.J.S.A. 58:10A-21 et seq. for having failed to submit a responsive document within the specified time frame. Lakeside Properties shall correct the deficiencies and submit a Remedial Investigation Report Addendum which conforms to the Department's comments within 60 calendar days upon receipt of this letter.

T4

If Lakeside Properties fails to submit the required report within the referenced time frame, this case will be referred to the Bureau of Applicability and Compliance (BAC) for review. The Department may initiate enforcement action including, but not limited to, the assessment of penalties and revocation of tank operating registrations pursuant to N.J.S.A. 58:10A-21 et seq. and N.J.A.C. 7:14B-12.

This letter does not represent an extension or a modification of the time frames for compliance previously set forth. The Department reserves the right to implement all enforcement measures, including the right to revoke tank operating registrations and assess penalties from the original due date.

If the tank(s) at the referenced facility is/are regulated under the federal Hazardous and Solid Waste Amendments of 1984 and Lakeside Properties fails to comply with the above requirements, this case may be referred to the United States Environmental Protection Agency (USEPA) for violations of 40 CFR Part 280.

Please note, pursuant to N.J.S.A. 58:10A-21 et seq. and N.J.A.C. 7:14B et seq., the owner and operator of the regulated underground storage tanks are strictly liable for compliance with these requirements. Violators are liable for penalties of up to $50,000 per day for each day of continuing violation and revocation of tank registrations.

If you should have any questions regarding this matter, please contact Robert Winterburn, Case Manager, of the Bureau of Underground Storage Tanks at (609) 984-3156.

Sincerely,

Gary Sanderson for

Joseph Miller, Section Chief
Bureau of Underground Storage Tanks

c: Robert Winterburn, Case Manager, BUST

T5

12. 20. 93 12:12PM *Parer Siegal Fersko P03

ENVIRONMENTAL WASTE
MANAGEMENT ASSOCIATES, INC.

CORPORATE HEADQUARTERS:
1235A Route 23 South
P.O. Box 648
Wayne, New Jersey 07474
Phone: 201/633-7900
Fax: 201/633-7482

Sent Via Certified Mail #033 934 816
Return Receipt Requested

January 17, 1994

Robert Winterburn
Case Manager
NJDEPE/DRPSR/BUST
CN 028
Trenton, New Jersey 08625-0028

RE: **Lake Side Properties, Inc.**
551 Main Avenue, Wallington, Bergen County, NJ
Case #91-09-04-0952, TMS #C91-3617, UST #0222194
EWMA Job #90270

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1) 3I1B
2) 3J1A
3) 3K5B
4) 3K6A
5) 3D4B
6) 5B

Upon EWMA's receipt, results of the analysis will be forwarded to the Department.

MIDATLANTIC REGION:
Princeton, NJ
Phone: 609/683-7600
Fax: 609/683-1556

WESTERN REGION:
Englewood, CO
Phone: 303/843-9700
Fax: 303/843-9094

T6

RECYCLED

2) Disposal documentation for sludge associated with tank cleaning.

Tank cleaning and associated sludge disposal was performed by D&M Tank Cleaning of Wallington, New Jersey. Associated residue and sludge disposal documentation has been requested from this company repeatedly, however to date, EWMA has not received this information. Upon receipt, EWMA will forward this information to the Department. A follow-up request letter to D&M is enclosed.

3) Why waste which exhibits a hazardous characteristic was manifested and shipped as a nonhazardous waste.

The waste which was shipped as chemical process solid NOS (X-910) had a TPHC concentration of 1,990 ppm and not greater than 30,000 ppm as indicated in the NJDEPE directive letter dated 12/17/93. This is based on results of a waste classification sample analysis performed in September, 1993. Enclosed, is a copy of the complete analytical package for this analysis.

In addition, the above referenced material was a mixture of rocks, debris, and some soil. This material was generated from the screening process of the stockpiled soil still located on site. As a result, an additional waste classification analysis was performed on a sample from this debris pile in order to properly manifest and ship the material.

If there are any additional questions or comments, please feel free to contact me at our Wayne office.

Very truly yours,
Environmental Waste Management Associates, Inc.

Thomas Andrews, P.E., Project Manager
UST Certification #E505

attachment

cc: Marc Goldman, President, Lake Side Properties
William Black, VP Finance, Lake Side Properties
Frank Polizzi, VP Operations, Lake Side Properties
Farer Siegal Fersko

ATTACHMENT U

File-Emin
cc: FP
Larry Jac
Richard Gree

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State of New Jersey

DEPARTMENT OF ENVIRONMENTAL
PROTECTION AND ENERGY

CHRISTINE TODD WHITMAN
Governor

ROBERT C. SHINN, JR.
Commissioner

Frank Polizzi
Farmland Dairies
520 Main Avenue
Wallington, NJ 07057

MAY 23 1994

Re: Lakeside Properties
551 Main Street
Wallington, Bergen County
Closure # C91-2617
Case #, 91-09-04-0952
UST# 0222194

Dear Mr. Polizzi:

On February 8, 1994, the New Jersey Department of Environmental Protection and Energy (Department) received a report from Lakeside Properties dated February 2, 1994. This report documents the remedial investigation in response to the discharge from Lakeside Properties' underground storage tank system.

Based on a review of the information submitted, the Department finds that Lakeside Properties has complied with the existing requirements regarding the remedial investigation for the underground storage tank systems and the use of the soils currently stockpiled on-site. Therefore, no further action will be required at this time.

Please be advised that this approval only addresses the listed discharge(s) and tank system(s). This approval makes no representation regarding the environmental conditions of any other areas for the referenced property.

Also, the 2,200 cubic yards of soil which were stockpiled on site as of February 2, 1994, were sampled as per the Department's current reuse policy. These soils were found to contain no levels of contaminants above regulatory concern. Therefore, these soils may be used in any manner. Any soil which is to be reused must comply with the following:

A. Pinelands Preservation Area District (PPAD) - Soils generated outside the PPAD that contain contaminants at or below regulatory concern shall not be removed from the site of generation into the PPAD, unless the soils are at or below the receiving site's background levels. Soils generated in the PPAD, that exceed background levels may not remain in the PPAD, but may be used elsewhere.

B. Objectionable Odors - Soils having objectionable odors shall not be used in residential areas or other locations where the public would be exposed.

Specifically, the soils to be used must not violate the air pollution rules, N.J.A.C. 7:28-1 et seq..

C. Regulatory Compliance - The soils must be used in accordance with all applicable federal, state, and local regulations.

Further, Lakeside Properties may be in violation of New Jersey's Hazardous Waste Regulations, N.J.A.C. 7:26. The disposal documentation indicated that contaminated soils from the waste oil excavation, specifically, 100 cubic yards of soil were disposed of as nonhazardous waste (X-910). On July 24, 1992, the Department responded to Lakeside Properties's request to classify the above mentioned 100 cubic yards of soils. Based on the information submitted, the Department classified the soil as hazardous waste. As such, a copy of this letter is being sent to the Regional Office for Water and Hazardous Waste Enforcement for their review and possible further action.

In addition, Lakeside Properties is required to properly seal all abandoned wells. Therefore, all monitoring wells installed as part of the remedial investigation and/or remedial action at Lakeside Property's facility that will no longer be used for ground water monitoring shall be sealed properly in accordance with the requirements of N.J.A.C. 7:9-9.1 et seq. by a licensed well driller certified to seal wells. The well abandonment forms shall be completed and submitted to the Bureau of Water Allocation. Please call (609) 984-6831 for forms and information.

On April 5, 1993, the UST Fee Rule (Amendments and New Rules at N.J.A.C. 7:14B) was proposed. This rule appeared in the February 22, 1994, State Register. Effective February 22, 1994, the Department will be billing you for the Department's oversight of all work conducted at your site. Documents submitted to the Department in accordance with the "Technical Requirements for Site Remediation" (N.J.A.C. 7:26E) will help reduce the time necessary for the Department oversight of your case. At this time, the Department intends to process bills on a semi-annual basis. Please consult the April 5, 1993, and February 22, 1994, State Registers for details. Copies can be obtained by contacting the Office of Administrative Law at (609) 588-6500. Your case manager should be contacted with any additional questions.

Thank you for your cooperation in this matter.

Sincerely,

Glenn F. Gaetano

Wayne C. Howitz, Assistant Director
Industrial Site Evaluation Element

c: Health Department
Judy Bayard
Rick Kropp, Bureau of Water Allocation
Peter Lynch, Water & Hazardous Waste Enforcement-Metro

ATTACHMENT V

RECORD OF TELEPHONE DISCUSSION
BEMQA - SITE ASSESSMENT SECTION

DATE: 6-11-98

REGARDING:

PERSON INITIATING PHONE CONTACT: SODANO

AFFILIATION: NJDEP

PERSON CONTACTED: Emil Sudol, Former Fire Official,

AFFILIATION: Wallington Fire Dept. 973 779 5654

SUMMARY: Emil stated that he responded to fires at the V.K dump. He believed the fires were due to burning Magnesium shavings... they were difficult to extinguish. The fires were at night, so he cannot say that he recalls seeing much of anything at the dump. He explained that in those days, people were mostly concerned about the war (WWII) and not with monitoring envir. hazards.

Emil recalled that ponds at the dump were 40-60' deep, not in excess of 100'.

Emil recalled that at one time, V.K. had stocked the ponds w Fish (< WWII) and charged folk to fish. After the war, there was no fishing due to the fact that the ponds were "filled in". [This point was confusing - we were both talking about the V.K property - NOT Hammersley - but Emil seemed to mean that the ponds were filled in by the end of WWII, when clearly 1953 photos showed ponds. There may have been different ponds or perhaps "filled in" was a loose term, as in mostly filled.] Emil stated that the slopes of the ponds were very steep at one time.

Emil stated that every thing and anything was

M Sodano VI
SIGNATURE

RECORD OF TELEPHONE DISCUSSION
BEMQA - SITE ASSESSMENT SECTION

2

DATE: 6-11-98

REGARDING:

PERSON INITIATING PHONE CONTACT: SODANO

AFFILIATION:

PERSON CONTACTED: Emil Sudol

AFFILIATION:

SUMMARY: put into the dump. He stated that it was common knowledge that C. Wright dumped a large % of the waste into the V.K. property. However, Emil did not recall seeing their trucks going in. He generally did not take notice of it.

He said that in 1969, he was appointed to a Fire Saftey position and he began inspecting sites, but by then, V.K. was filled + Jasontown was built. He noted that the roads at Jasontown have settled + subsided, but that the buildings have only showed some cracking to date.

Regarding the property just north of Jasontown which is now owned by FarmLand. It was previously owned by Hammersly property - they had "concrete bunkers" into which they had oil delivered. they pumped the oil across the Saddle River to their production facility on the other side. Emil stated that the pumpled a "sludge" into the pond which existed on the (V.K. side) eastern side + ran along the RR. It was deep. He said the waste had a "funny odor, see?" and they stayed out of the pond. He said Hammersley was a paper mill. The bldg I see in aerial is 1 story (about 20'-30' tall) with a basement - Didn't know what it was used for. Farmland purchased site from Hammersley.

M Sodano
SIGNATURE

V2

ATTACHMENT W

RECEIVED
JUL 24 1998

State of New Jersey

Christine Todd Whitman
Governor

Department of Environmental Protection
MEMORANDUM

Robert C. Shinn, Jr.
Commissioner

JUL 22 1998

TO: Nick Sodano, Case Manager
DPFSR/Bureau of Environmental Measurements and Quality Assurance

FROM: Frank McLaughlin, Hydrogeologist
DPFSR/Bureau of Ground Water Pollution Abatement

SUBJECT: Wallington Municipal Well Contamination, Wallington Borough, Bergen County
Background Groundwater Investigation and PA/SI Recommendations

As requested, the Bureau of Ground Water Pollution Abatement has completed a review of the background groundwater contamination and hydrogeologic framework for the Wallington Municipal Wells Contamination in Wallington Borough of Bergen County. The background groundwater investigation was conducted to evaluate the potential source(s) of the chlorinated solvents found in Wallington's former water supply wells. This Bureau's discussion, conclusions and recommendations for the Wallington Municipal Well groundwater contamination are provided following the background discussion of the important natural and anthropogenic features including releases of solvents into the local environment.

BACKGROUND: Nature of Groundwater Contamination

The Borough of Wallington formerly operated several municipal supply wells to supply borough residents and industries with potable water. Five of these municipal wells, Main Avenue, Hathaway #5, Hathaway #8, Lester Street, and Johnson Avenue (Dul) are the subject of this report (Figure 1). In the 1970's, the Main Avenue Municipal Well was shut down due to evidence of groundwater contamination. The remaining municipal supply wells Hathaway #5, Hathaway #8, Lester Street and Johnson Avenue (Dul) were taken out of service in 1985. Samples collected in the municipal supply wells in 1986-1987 contain elevated levels of volatile organic compounds including trichloroethene (TCE), 1,2-dichloroethene (DCE, only trans isomer reported), vinyl chloride (VC) and tetrachloroethene (PCE) (Table 1). As evident Table 1, chlorinated solvent contaminants are present in all five municipal wells, with highest concentrations evident in the Main Avenue Well in the northern portion of the borough.

The five municipal supply wells formerly collected water from the Passaic Formation with a total capacity of 650 gallons per minute (gpm, or 936,000 gallons per day) (NJDEP, 1984), reportedly about 75% of the town's water needs (Michalski, 1992). No detailed construction records of the municipal wells were available, but NJDEP (1984) reported that the Main Avenue, Lester Street and Johnson Avenue (Dul) wells are 400 feet deep and the Hathaway #5 and #8 wells are 507 and 503 feet deep respectively. Michalski (1992) reported the five wells to be constructed as open holes in the Passaic Formation bedrock and may extend to a depth of 650 feet.

W1

BACKGROUND: Initial Focus of Wallington Wells Contamination—Main Avenue Well

Numerous environmental investigations have been conducted in and around the Borough of Wallington (Figure 2). Chlorinated solvents in groundwater have been observed at numerous sites in the area, with notably widespread chlorinated contamination found at the Curtiss-Wright facility located just northeast of Wallington in Woodridge. Other sites where elevated levels of chlorinated solvents have been detected in groundwater include Industrial Latex and Cellofilm (Polychrome Chemicals Corporation). Due to the complexity of the geologic setting and the number of contaminated sites in and around Wallington Borough, this report will focus on the Main Avenue Municipal Well because it exhibits the highest concentrations of chlorinated solvents. The Main Avenue Well Study Area is roughly bounded by the Passaic River to the west, Saddle River to the northwest, Passaic Avenue to the northeast, Woodland Drive and Fourteenth Street to the southeast, and Alden Street to the southwest (Figure 3). The other municpal wells, Hathaway #5, Hathaway #8, Lester Street and Johnson Avenue (Dul) are also discussed in this review.

BACKGROUND: Geological Setting in the Wallington Area

The Borough of Wallington is located in the Piedmont Physiographic Province of Central New Jersey along the Passaic River south of the confluence of the Saddle River. The Piedmont Province is characterized by gently rolling lowlands of sedimentary rocks ranging in elevation from sea level to 400 feet above sea level, intersected by hills of igneous rocks, ranging up to 879 feet (Lewis and Kummel, 1940). In the northern section of Wallington Borough, elevations range from over 120 feet above sea level at the Jefferson School on Mount Pleasant Avenue sloping generally southeast to about 40 feet above mean sea level in the vicinity of the Main Avenue Well to near sea level at the confluence of the Passaic and Saddle Rivers.

The Piedmont Province or Newark Basin contains the Newark Supergroup of sedimentary and igneous rocks of Triassic- to Jurassic-age. In Wallington, the Passaic Formation member of the Newark Supergroup is present, with alternating layers of red siltstones, mudstones, and sandstones. Generally, the siltstone and mudstone layers contain few fractures whereas the sandstone layers are highly fractured (Monteverde, 1998). The porosity in these sedimentary layers is mainly due to the fracturing of the parent, so the bedding partings and the highly fractured sandstone layers are the most permeable zones in the Passaic Formation.

The Passaic Formation bedrock in the Wallington area is overlain by Quaternary-age unconsolidated glaciofluvial deposits. These surficial deposits consist of Quaternary-age unconsolidated sediments consisting of sands, gravels, silts and clays, with some areas covered by artificial fill (Stanford, 1993). These unconsolidated sediments were deposited in a glacial and/or fluvial environment and are thinnest (< 20 feet thick) at the bedrock and topographic high along

W2

Mount Pleasant Avenue and the Curtiss-Wright site (Figure 4). The Quaternary glaciofluvial sediments thicken rapidly toward the southeast and are nearly 140 feet thick in the vicinity of the Main Avenue Well and along the present courses of the Passaic and Saddle Rivers. The surficial deposit in the immediate study area is the Quaternary Oradell Terrace Deposits (Qor), an up to 30-feet thick layer of pale- to yellow-brown sands and minor pebble gravel which was mined in the Von Kruiningen pits. Underneath the Oradell Terrace sands are the Glacial Lake Paramus Lake-Bottom Deposits (Qprl) consisting of generally fine-grained reddish brown to gray silts, clays, and fine sands up to 80 feet thick in the vicinity of the Main Avenue Well. The Glacial Lake Paramus Lucustrine-Fan Deposits (Qprf) consisting of coarse-grained brown to red-brown sands and gravels about 20-feet thick in the vicinity of Main Avenue Well underlie the generally fine-grained Lake Paramus Lake-Bottom Deposits. To the east of the study area, the overburden is comprised of Quarternary Rahway Till (Qt) Deposits, generally 10-20 feet thick red-brown to red-yellow silty sands with some gravel, pebbles, cobbles, and boulders.

The underlying sedimentary rock layers of the Passaic Formation, the major water-bearing formation in the area, generally strike northeast-southwest and dip gently (~5-15°) to the northwest (Parker, 1993) (Figure 5). Locally, measurements by the United States Geological Survey and New Jersey Geological Survey at the Woodridge High School about one mile southeast of the study area found a north 35° east strike and a 10° northwest dip (Monteverde, personal communication). Investigations conducted at nearby sites such as the Maywood Superfund Site and the Industrial Latex Superfund Site have found or used these same strike and dip patterns (Bechtel, 1992; CDM Federal Programs, 1995). CA Rich (1994) found similar strike and dip features at the Curtiss-Wright Site with a north 30° east strike and a 10-20° dip to the northwest. Typically, there are two sets of near-vertical joints, a prominent set parallel to strike and a less prominent set parallel to dip (Monteverde, 1998). These vertical joints are typically not as wide or as extensive as the bedding partings (Michalski and Britton, 1997).

BACKGROUND: Hydrogeology of the Main Avenue Study Area

The hydrogeology in the Main Avenue Study Area is complex and is controlled by the geologic framework, topographic features, surface water bodies and local groundwater withdrawals such as at the Curtiss-Wright and Farmland Dairies sites. Groundwater is first encountered in the overburden at depths averaging 10-30 feet below grade in the immediate study area (CA Rich, 1994). Overburden groundwater is fed by precipitation and generally moves horizontally toward local discharge areas such as the Saddle River or moves vertically into the bedrock. In higher elevation or groundwater recharge areas like along Mount Pleasant Avenue, much of the overburden groundwater is likely to move vertically into the bedrock. In lower elevation areas like at the Jasontown Apartments, groundwater in the overburden is expected to primarily flow horizontally toward discharge areas such as the Saddle River. Overall, groundwater flow in the

overburden in the study area is anticipated to be toward the northwest and west following topographic and surface water features (Figure 6).

The weathered bedrock surface is reported to be more permeable than both the overburden and the competent bedrock in the area (CA Rich, 1994), which is generally not observed at other areas of the Passaic Formation (Michalski and Britton, 1997). Irrespective of the relative hydraulic conductivity of the weathered bedrock, groundwater in the overburden moves vertically downward into bedrock in higher elevation recharge areas like along Mount Pleasant Avenue and at the Curtiss-Wright facility. Along the Passaic River in the southwestern portion of Wallington, groundwaters from the bedrock are expected to move vertically upward through the weathered bedrock zone. While the Passaic River receives groundwater from the bedrock through the overburden, the river may not capture all of the groundwater moving to the southwest in the Wallington area.

Groundwater flow within the Passaic Formation is controlled by the orientation of bedding partings and fracture patterns in the bedrock (Michalski and Britton, 1997), which has been observed in bedrock at the nearby Industrial Latex Superfund Site (CDM, 1995). Michalski and Britton (1997) found that groundwater flow in the Passaic Formation is typically along strike, with a minor component downdip. Lacombe (1996) observed that along strike flow rates are generally 1.5 to 10 times greater than downdip rates. Dames and Moore (1991) and CA Rich (1994) found preferential flow along strike direction at the Curtiss-Wright Site. Groundwater flow in the Passaic Formation at the Main Avenue Study Area is expected to the primarily southwest along strike, with a minor flow component northwest (down dip) (Figure 7).

Groundwater contaminant plumes in the Passaic Formation have been observed to migrate thousands of feet along strike and hundreds of feet downdip (Michalski and Britton, 1997). In the region, elevated radionuclides have been observed along strike from Maywood to Wallington (Spayd, 1984), indicating preferential flow along strike in the local area. Dames and Moore (1991) found that chlorinated contaminants associated with the Curtiss-Wright Site have migrated 1500 feet from the contaminant source area(s) southwest along strike, 900 feet downdip (northwest) and 250 feet deep within the Passaic Formation bedrock.

BACKGROUND: Conceptual Hydrogeologic Model for the Main Avenue Study Area

Michalski and Britton (1997) describe the Passaic Formation as a leaky, multiunit aquifer system with an overburden, weathered zone and competent bedrock, where bedding partings in bedrock constitute the major aquifer units (Figure 8). CDM Federal Programs (1995) described the local Passaic Formation as a multi-unit aquifer system that is heterogeneous and anisotropic with preferential flow along the strike of beds rather than simply perpendicular to potentiometric

contours. The conceptual hydrogeologic models developed for the Curtiss-Wright Site (Dames and Moore, 1991) and the Industrial Latex Site (CDM Federal Program, 1995) are consistent with Michalski and Britton's (1997) conceptual model for the Passaic Formation.

The conceptual model for the Main Avenue Well Study Area is based on Michalski and Britton's (1997) conceptual model for the Passaic Formation (Figure 9). Within the overburden, groundwater flow moves from higher elevation areas (east) to lower elevation areas (west) eventually into the Saddle and Passaic Rivers. Groundwater in the overburden also moves vertically downward into the Passaic Formation bedrock especially in higher elevation areas. Groundwater flow in the bedrock is controlled by the orientation of the bedding layers and fractures in the Passaic Formation, with thin highly-transmissive tabular aquifers existing in the bedding partings separated by thick layers of poorly-transmissive vertically-fractured leaky aquitards. The most important groundwater flow direction in the study area is southwest along strike, but flow can also be down dip (northwest) or vertically (upward or downward) within fractures.

BACKGROUND: Natural Groundwater Quality in the Passaic Formation

The natural groundwater quality in the Passaic Formation is generally excellent and is widely used by municipalities, industries, and homeowners for potable purposes (Serfes, 1994). There are a large number of potable-use and industrial-use wells drawing groundwater from the Passaic Formation in the Wallington area (Figure 10). There have been reports of elevated radionuclides in Passaic Formation groundwater at the Maywood US Department of Energy Site (Bechtel, 1992), at the Lodi Municpal Wells Superfund Site, and the region extending from Wallington northeast to Maywood (Spayd, 1984). It is not clear whether the elevated radionuclides are the result of anthropogenic activities or from naturally-occurring ore bodies in the Passaic Formation.

Locally, Wallington's five supply wells, which were last sampled in 1986 and 1987, exhibited elevated levels of chlorinated solvent compounds including trichloroethene, tetrachloroethene, 1,2-dichloroethene (isomers not differentiated), and vinyl chloride. These five municipal wells are unfit for use as potable water sources without proper treatment. The Wallington Municipal Wells have a combined capacity of 650 gpm (936,000 gpd), reportedly about 75% of the borough's water needs (Michalski, 1992).

BACKGROUND: Behavior of Chlorinated Solvents in the Environment

The contaminants observed in Wallington's Municipal Supply Wells are primarily chlorinated alkenes, widely used in industry as solvents. Trichloroethene (TCE) was detected in all five municipal wells and was the found at highest level (4930 parts per billion, ppb) in the Main

Avenue Well (Dames and Moore, 1987). TCE is a common solvent for fats, waxes, resins, oils, rubber, paints, and varnishes and used in degreasing operations, dry cleaning and production of some organic chemicals and pharmaceuticals. Other chlorinated solvents detected in Wallington's Municipal Wells during 1986-1987 include tetrachloroethene (PCE), 1,2-dichloroethene (DCE) and vinyl chloride (VC) (Table 1). It should be noted that 1,2-dichloroethene has two isomers, cis-1,2-dichloroethlylene (cDCE) and trans-1,2-dichloroethylene (tDCE). While tDCE was reported in the municipal wells, it is probable that this contaminant was actually cDCE, which has been frequently found at contaminated sites in the Wallington area (see Section on Contaminated Sites). It should be noted that cDCE and VC are natural degradation products of TCE and PCE (Wiedemeier et al., 1996).

With the exception of vinyl chloride, the compounds found in the Wallington Municipal Wells are classified at dense non-aqueous phase liquids (DNAPLs) when present in product form because they have densities greater than water. Free-phase DNAPLs move downward in the subsurface environment in response to gravitational forces and follow paths of highest permeability until the liquid is exhausted (USEPA, 1992a). The subsurface movement of DNAPLs are controlled substantially by the nature of the release, the DNAPL density, interfacial tension, viscosity, porous media capillary processes, and hydraulic properties (Cohen and Mercer, 1993). DNAPL migration is also influenced greatly by structural and stratigraphic features in the subsurface environment, with movement depending upon the dip of underlying strata (USEPA 1992a; USEPA, 1992b). Overall, the properties of DNAPLs result in little resistance to downward migration in the subsurface environment (Cohen and Mercer, 1993). In fractured bedrock settings, because fracture storage is very low compared to granular porous media, a small quantity of DNAPL can reach greater depths causing extensive damage to bedrock aquifers with the formation of large dissolved contaminant plumes (Michalski, 1995).

Direct visual detection of non-aqueous phase liquids is difficult when the liquids are transparent, present at low saturation or distributed heterogeneously (Cohen et al., 1992). Since the solvents found in the Wallington's Municipal Wells are typically stored as transparent liquids prior to use, other methods of DNAPL detection are required. Typically, dissolved contaminant concentrations greater than one percent of the aqueous solubility limit are suggestive of DNAPL presence (Feenstra et al., 1991; Cohen et al., 1992; USEPA, 1992a; USEPA, 1993). For example, TCE has an aqueous solubility limit of 1100 parts per million (ppm), so any concentrations greater than one percent of 11 ppm (11,000 parts per billion, ppb) would suggest proximate DNAPL sources. Cohen et al. (1992) and USEPA (1992a; 1992b) caution that concentrations less than one percent solubility limit are not necessarily indicative of DNAPL absence. For DNAPL mixtures, the dissolved phase concentration of a constituent or its "effective solubility" can be estimated by multiplying the constituent's aqueous solubility by the mole fraction of that constituent in the original DNAPL mixture. For example, if TCE made up one-tenth of the original DNAPL, the effective solubility would be ten percent of 1100 ppm (110 ppm) and the "source area" defined as

any area proximate to groundwater concentrations in excess of 1.1 ppm (see USEPA 1992a for additional information).

The geologic framework in the Main Avenue Well Study Area is conducive to significant vertical and horizontal DNAPL migration. The surficial overburden soils, river terrace deposits, till and artificial fill, are generally course-grained and would be easily penetrated by DNAPL spills. It is unclear whether the finer-grained Glacial Lake Paramus Deposits, absent to the east of the study area, would act a barrier for further vertical movement of DNAPL. The finer-grained overburden deposits, generally not well characterized in the reviewed reports, could act to direct the DNAPL spill horizontally along the stratigraphic slope of the deposit. While there are likely to be many heterogeneities in the glacial lake deposits, the basic slope of the stratigraphic horizons are expected to approximate the general courses of the present day Saddle and Passaic rivers toward the west and south. The weathered bedrock in the area is not expected to be a barrier to DNAPL migration, as the weathered zone is reported to be fairly permeable. The bedrock geology is favorable for substantial DNAPL migration both in vertical and horizontal directions due to the near-vertical fractures and shallow northwest-dipping bedding plane partings. DNAPL tends to migrate along fractures with the widest apertures, often following the larger bedding plane separations (Michalski, 1995). Overall, DNAPL migration in the bedrock is likely to be extensive, with significant potential for vertical migration and horizontal (northwest) migration along the bedding planes.

BACKGROUND: Natural Degradation of Chlorinated Solvents

Chlorinated organic compounds such as TCE undergo natural biodegradation and transformation through reductive dehalogenation, aerobic and anaerobic biodegradation, and cometabolism (Wiedemeier et al., 1996). The typical biodegradation decay sequence is PCE to TCE to cDCE to VC to ethane or carbon dioxide depending upon the conditions in the aquifer environment (Wiedemeier et al., 1996). In many aquifer environments, the more highly chlorinated compounds (e.g., PCE, TCE) degrade more slowly than the less chlorinated compounds (e.g., VC) (Wiedemeier et al., 1996). In some aquifer environments, some or all of the chlorinated solvents can be recalcitrant to natural biodegradation, persisting in groundwater for many years (Wiedemeier et al., 1996). A review of the reports of contaminated sites in the area did not find any comprehensive effort in determining the natural biodegradation of chlorinated solvents or any collection of the common suite of indicator parameters. Additional information for the natural attenuation of chlorinated solvents can be found in Wiedemeier et al. (1996) report.

DISCUSSION—Potential Source(s) of Contaminants found in Main Avenue Municipal Well:

Curtiss-Wright (ISRA #84205):
Curtiss-Wright is a 146-acre former aerospace manufacturing facility located northeast of the Main Avenue Well (Figure 2). Curtiss-Wright operated from the early 1940's to 1983 and utilized over 87 underground storage tanks reportedly set on top of the bedrock surface (Dames and Moore, 1991). At least seven large (2,000 to 20,000-gallon) underground tanks held solvents used in the Oil Farm Area located in the southwest portion of the site (Figure 11).

Groundwater sampling conducted by Dames and Moore (1988, 1990, 1991) and CA Rich (1994) indicates that groundwater flow in the overburden is generally toward the northwest to west, with vertical flow downward in to the bedrock (Figure 12). Groundwater elevations in the bedrock drop to the northwest (Figure 13), but groundwater flow is likely to be southwest (perpendicular) to the elevation contours as noted by CDM Federal Programs (1995). Pumping tests performed by Dames and Moore (1991) found that there is a direct hydraulic connection between the overburden and bedrock aquifers, with greatest groundwater movement occuring along strike. Dames and Moore (1988, 1990, and 1991) also found free-phase Light Non-Aqueous Phase Liquids (LNAPL) in the overburden wells located in the Oil Tank Farm and the Fuel Tank Farm (Figure 14). LNAPL was also encountered in the bedrock wells in the northwestern portion of the site.

Groundwater contaminant levels in the northwestern portion of the Curtiss-Wright Site strongly suggest that large DNAPL releases occurred in the Oil Farm Area of the site. Groundwater concentrations of one percent or greater of a compound's solubility is indicative of proximate DNAPL wastes. The groundwater quality data from overburden wells OW-3 and OW-6 (Table 2) indicates that TCE and PCE solvents have migrated from the tanks in the Oil Farm and Fuel Tank Farm areas into the overburden. The presence of DNAPL is also suspected in the bedrock as evidenced by RW-14MPZ5 (Table 3) and RW-102 (Table 4). It should be noted that this author believes that the majority of the total 1,2-dichloroethene levels reported in these tables are made up of cDCE as seen in Table 2. It should also be noted that the interwell crossflows may cause misleading groundwater contaminant concentrations in the discrete sampling zones of RW-102. The presence of cDCE and VC are likely the result of natural degradation products of TCE and PCE.

As evidenced by groundwater contaminant levels that exceed one percent of the compound's solubility (Table 4), DNAPL releases from the Curtiss-Wright Site have migrated vertically through the overburden and into the bedrock (Tables 2, 3 and 4). The well construction details for the Curtiss-Wright wells are listed in Table 5. The plan view maps of total volatile organic

concentrations (primarily chlorinated solvents) show that the DNAPL releases in the Oil Tank Farm (Figure 15) moved into bedrock (Figure 16), then migrated northwest along bedding plane partings (Figure 17). The cross-sectional view of this area, which was presented in Michalski's (1992) report, clearly displays the northwest (downdip) migration of the DNAPL (Figure 18). It is apparent that DNAPL has migrated vertically to the stratigraphic horizons approximately -119 to -135 mean sea level (msl, or 154 to 170 feet below grade) in RW-14MPZ5 (Tables 3 and 5). A shallower bedding layer in RW-102 at -27 msl (pump at 66 feet below grade) is also suspected of containing DNAPL (Tables 4 and 5). The stratigraphic horizon as deep as the stratigraphic horizon approximately -223 to -273 (260 to 310 feet below grade) in RW-102 appears to contain DNAPL (Tables 3 and 5). Note that the interwell crossflows may cause misleading groundwater contaminant concentrations in the discrete sampling zones of RW-102. Overall, the DNAPL apparently has migrated nearly 500 feet horizontally northwest from the area of OW-6 to RW-14, near the southwestern border of the Curtiss-Wright site. Overall, the movement of DNAPL released from the Oil Tank Farm on the Curtiss-Wright Site is projected to be at least 300 feet vertically and 500 feet horizontally (see Figure 19) toward the northwest.

While not discussed in the Curtiss-Wright reports, the DNAPL-containing bedding layers are likely to extend off-site toward the northwest. The solvent-contaminated bedding layers can be projected off-site using an equation to determine the depth of the bedding layer at the a distance downdip (northwest) of the source area (Billings, 1972):

$$\text{DEPTH} = \text{TAN DIP (10)} * \text{DISTANCE}$$

According to CA Rich (1994), the center of the screened elevation of RW-14MPZ5 is -127 msl. Based on the above equation, at a distance of 500 feet further downdip (northwest), the same solvent-contaminated bedding layer in RW-14MPZ5 would be encountered at a depth of approximately 88 feet deeper or -215 msl [tan (10) * 500 = 0.176327 * 500 = 88].

According to Parker (1993), Michalski and Britton (1997) and Monteverde (1998), the bedding layers in the Passaic Formation extend typically extend thousands of feet along strike direction to the northeast and southwest. Therefore, the contaminated bedding layers that are present on the Curtiss-Wright Site extend off-site to the northwest and are intersected by wells thousands of feet to the northeast and southwest of this DNAPL layer. DNAPL contained in bedding layers dissolves into groundwater and is transported as dissolved constituents along strike in the same bedding plane. Thus, bedding layers that contain DNAPL on the Curtiss-Wright Site can be a source of dissolved contaminants for wells thousands of feet along strike.

Based on Monteverde's (1998) bedrock orientation (N35°E; dip 10°NW), the DNAPL-contaminated bedding layer present in Curtiss-Wright's RW-14MPZ5 would be encountered at an

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approximate depth of -240 msl in the Main Avenue Municipal Well. Using CA Rich's (1994, 1998) bedrock orientation (N30°E; dip 10-20° NW), the contaminated bedding layer present in Curtiss-Wright's RW-14MPZ5 would be encountered at approximate depth ranging from -250 msl to -380 msl depending on the dip angle. The Main Avenue Well collects groundwater from approximately -80 msl to -360 msl. Therefore, the Main Avenue Well collects groundwater from the same bedding layers that contain DNAPL from releases at the Oil Farm Area and Fuel Farm Area on the Curtiss-Wright Site (Figure 20). Michalski (1992) concluded that "the hydrogeologic framework of the [Wallington] area favors preferential migration of contaminated groundwater from the Curtiss-Wright Site along bedding planes toward the Borough's supply wells."

This author's contention that the Main Avenue Well intersects the DNAPL-contaminated bedding layers encountered at the Curtiss-Wright Site can be tested by conducting a short-term (1-2 hour) pumping test. According to Michalski and Britton (1997), pumping tests provide a hydraulic means of evaluating the continuity of bedding layers. Additionally, if a direct hydraulic connection exists between a pumping well and observation wells along a highly transmissive bedding layer, a fast (minutes) response to pumping should be observed even in distant (1,000+ feet) observation wells. Therefore, while this author believes that the Main Avenue Well intersects DNAPL-contaminated bedding layers present at Curtiss-Wright, a pumping test on this well should be conducted to confirm the suspected hydraulic connection between Curtiss-Wright and the Main Avenue Well.

Former William Van Kruiningen Sand Mine (block 71, lots 3 and 30.01):
The author and Case Manger Nick Sodano conducted aerial photography review of the northern portion of Wallington Borough on 1 June 1998. While there are several areas of disturbed soils in the area, the most significant activities during the 1940, 1951 and 1953 aerial photos was a very large mining operation evident on the northern side of Main Avenue near the Main Avenue Well. Most of the historical mining occurred on the former William Van Kruiningen property, which covered over 31 acres extending from Main Avenue north and west to the Saddle River (block 71, lots 3 and 30.01) (Figure 21). The 1961 areal photo strongly suggests that active landfilling of the Van Kruiningen Mine with various wastes occurred in the late 1950's and early 1960's. Landfilling activities were evident in the 1961 photo, which showed several large areas of waste deposition, disturbed and bermed soils, dark-stained soil areas, active roadways and observation of large trucks and (possibly) tankers (Figure 22). Another large borrow pit developed during this time on the southeast side of Main Avenue, in the vicinity of the current location of Johnson Machine Site. Based on the apparent traffic patterns at Van Kruiningen, the borrow pit may have been used to cover wastes deposited in the former Van Kruiningen Sand Mine.

According to Case Manager Nick Sodano, local residents recall that industrial wastes were dumped into the Van Kruiningen mine. These reports are supported by the aerial photography review, which suggest that extensive landfilling activities occurred prior to and during 1961. The Jasontown Apartment complex was built upon the filled Van Kruiningen mine prior to the 1971.

While the nature and extent of releases into the former Van Kruiningen Sand Mine are not known, the extent of landfilling operations observed in the 1961 photo appear to be substantial. This author estimates that an average of 30 feet of fill material was deposited over a 30+acre area that is now underneath the Jasontown Apartments. The geologic setting is conducive to migration of DNAPL. Large releases of DNAPL wastes into the subsurface coupled with the absence or removal of laterally-extensive fine-grained layers in the overburden would result in a significant vertical migration of solvents through the overburden into bedrock. Any dissolved chlorinated solvents in bedrock underneath the former Van Kruiningen tract would migrate southwest toward the Main Avenue Well, especially under pumping conditions.

Depending upon the nature and extent of landfilling and construction of the apartments, volatile organic vapors in soil gas could enter the Jasontown Apartments. To this author's knowledge, no environmental investigations have been conducted at the former Van Kruiningen Mine or Jasontown Apartments. No evidence of surficial soil contamination was evident at the Jasontown Apartments during the 31 March 1998 Visual Site Inspection. However, some industrial dumping debris (e.g., rusted drums, unknown solid substances) were encountered near the Saddle River portion of the former Van Kruiningen tract that lies outside of a chain-link fence bordering the apartments. This author recommends that the nature and extent of contamination of overburden soils and groundwater be determined at the former Van Kruiningen Sand Mine. Based on the results of the soil and groundwater investigation, an evaluation of the potential migration of solvents into indoor air should be conducted.

Farmland Dairies Western Parcel/Roller Rink (block 71, lot 35.02 / block 71, lot 35.01):
Aerial photography from 1940, 1951 and 1953 indicate some industrial activity, including a building, concrete pad and railroad siding in the western portion of the site north of the Von Kruiningen mine especially near the Saddle River. This parcel (block 71, lot 35.02) is now owned by Farmland Dairies (Figure 21). Some former mining activities, including road tracks, borrow pits and a large (about 3 acres) pond are evident mainly in the eastern portion of the Farmland Dairies Western Parcel and the parcel (block 71, lot 35.01) that is presently a Roller Rink. During the 1961 aerial photo, industrial facilities were still present in the western portion of the Farmland Dairies Western Parcel, but no additional mining activities were evident on either parcel (Figure 22). By the 1971 photo, the industrial activity at the Farmland Dairies Western Parcel had ceased and mining pits appear to be filled in. During the 31 March 1998 Visual Site Inspection, foundations suggesting industrial facilities, some stained soils and landfill debris were evident along the Saddle River in the western portion of the Farmland Dairies Western Parcel. It should be noted that all of the former mining activities at the both parcels were filled sometime after 1961.

Due to the former industrial activities on the Farmland Dairies Western Tract and its location adjacent to the Saddle River, the western portion of the Farmland Dairies tract should be investigated. The former mining operations in the eastern three-quarters of both parcels were

located in an area that would contribute contaminants to the Main Avenue Well if the groundwater in the overburden or bedrock is contaminated. This reviewer is not aware of any environmental investigations conducted at either parcel. Since the nature and extent of filling activities is not known at these parcels, both parcels should be investigated as potential sources of groundwater contamination to the Main Avenue Well.

Joe Feld Dump

During the 1940 aerial photograph, a large (>20 acres) area of disturbed lands extended roughly from the Conrail Line to the southwest, Lodi Avenue to the southeast, the Saint Michael's Cemetery to the northeast, and Saddle River to the northwest. While the soils were evidently disturbed in this entire area, the area did not appear to be active in the 1940 photo. An earlier (1932) photo obtained by Case Manager Nick Sodano also shows this area to be disturbed, but no details of activities could be deciphered (Figure 23). The extent of disturbed soils depicted in Figure 23 is less than reports provided to the Case Manager, so earlier activities may not be evident in the 1932 photo.

According to background research conducted by the case manager, this area is thought to be the Joe Feld Dump that was reportedly active in the 1930's. The former Joe Feld Dump is currently bisected by Saddle River Avenue and is located roughly 1500-2000 feet northeast of the Main Avenue Well. This area is now contains residential, commercial and industrial development. This author believes that no soil or groundwater sampling has been conducted at the former Joe Feld Dump.

Chlorinated solvents (PCE, TCE, cDCE, VC) and benzene have been found in industrial wells located at #176 Saddle River Avenue (Komar Company) near the Joe Feld Dump and #21 Saddle River Avenue (Kwiki Car Wash) (USGS, 1989). It should be noted that these wells may intersect solvent-contaminated bedding layers associated with the Curtiss-Wright Site. The construction details of these wells were not available.

The nature of disposal activities associated with the Joe Feld Dump is uncertain and, as such, the extent of contamination is not known. Based on topography, surface water bodies and data from nearby sites, overburden groundwater flow is expected to be generally west with discharge eventually into the Saddle River or overburden water purveyor. The condition of the thick (>100 feet) overburden deposits expected to be present at the Joe Feld Dump is not known, so the potential for migration of contaminants into bedrock is uncertain. However, the Joe Feld Dump is likely to be in the area of recharge for the Main Avenue Well, so bedrock contaminants could migrate from the area of the Joe Feld Dump to the Main Avenue Well. Additional investigation is necessary to determine the extent of contamination associated with the Joe Feld Dump and its potential impact to wells along Saddle River Avenue, Wallington's Main Avenue Well and the residents and workers in this area.

Farmland Dairies

Farmland Dairies is a 22-acre dairy product manufacturing and distribution facility located on 520 Main Avenue in Wallington, across the Conrail Line (south) of the Curtiss-Wright Site (Figure 2). According to CDM Federal Programs (1995), the site is currently undergoing soil and groundwater remediation activities because of leaking Underground Storage Tanks. Groundwater contaminants, including TCE in MW-8 and MW-10, have been detected in many of the eleven overburden monitoring wells (Table 6). These wells are located adjacent to Curtiss-Wright's Oil Farm Area. The two bedrock wells have historically contained PCE, TCE, and DCE at concentrations less than 150 ppb (NJDEP, 1984). CDM Federal Programs (1995) concluded that the groundwater contaminants associated with the site were benzene, toluene, ethylbenzene and xylene, which have been decreasing in concentration over the facility's sampling history. CDM (1995) also contended that the chlorinated compounds have migrated onto the Farmland Dairies Site from Curtiss-Wright. It should be noted that the original reports for the Farmland Dairies Site were not available for this review.

Based on the known groundwater flow directions in the overburden and bedrock at nearby sites, CDM's contention that Curtiss-Wright's dissolved solvents are entering the Farmland Dairies Site is reasonable. CDM's finding of chlorinated solvents in overburden wells only adjacent to and downgradient of Curtiss-Wright's Oil Farm Area suggests that no significant releases of chlorinated solvents has occurred at the Farmland Dairies Site. However, this author does not know if a complete site investigation has been conducted at the site. At this time, the Farmland Dairies Site does not appear to contribute to the solvents found in the Main Avenue Well or the other municipal wells in Wallington.

Johnson Machine (ISRA #86617):

Originally developed by Curtiss-Wright facility in 1953, the Johnson Machine Site on 460 Main Avenue was used for rebuilding and repair of large industrial presses (Figure 2). The site was investigated under the ISRA Program (#86617) and received a Negative Declaration and no further action letter on 9 January 1990. Three leaking Underground Storage Tanks, Tank A a 1000-gallon fuel tank and Tanks B and C 10,000-gallon detergent-based rinsate tanks (formerly a gasoline tanks) were removed in the late 1980's. A monitoring well installed in the shallow bedrock northwest (downgradient) of the Tank A exhibited tetrachloroethene (PCE) at 3.94 ppb. Based on the brief file review, Johnson Machine does not appear to be a source of chlorinated solvents to the Main Avenue Well.

Drico Industrial Site:

The Drico Industrial Site appears to be an abandoned site located on 480 Main Avenue in Wallington. The site may be part of the former Curtiss-Wright complex. No additional information was available on the former Drico Industrial Site.

DISCUSSION—Potential Source(s) to the Hathaway #5 and Hathaway #8 Wells:

Based on the conceptual hydrogeologic framework developed in this report, Hathaway Street Wells #5 and #8 may be impacted from dissolved chlorinated solvent plume migrating southwestward from the Main Avenue Well area of Wallington. The DNAPL-containing bedding layers associated with the Curtiss-Wright Site may be intersected near the base of the Hathaway Street Wells (Figure 20). The Hathaway #5 and #8 are located in a discharge area of the Passaic Formation, so dissolved solvents may migrate into these wells even if they do not intersect the DNAPL-containing bedding layers.

Further investigation is required to determine the source(s) of contaminants found in #5 and #8 Hathaway Street Wells. The initial investigation should focus on the suspected link between the solvent-contaminated bedding layers in the Main Avenue Well Study Area and the Hathaway Street Wells. In addition to the dissolved solvent contamination northeast of the Hathaway Street Wells, there are several other contaminated sites in the vicinity of these wells on both sides of the Passaic River. Short-term pumping test(s) could be conducted to help evaluate groundwater flow and contaminant migration pathways in the area around Hathaway Street #5 and #8 Wells.

DISCUSSION—Potential Source(s) to the Lester Street Municipal Well:

The source of the contaminants observed in the Lester Street Municipal Well is not clear at this time. This well is located stratigraphically above the DNAPL-containing bedding layers that extend from the Curtiss-Wright Site to the Main Avenue Well Area. The Lester Street Well is located in a discharge area for the Passaic Formation, so dissolved groundwater constituents from northeastern recharge areas may move vertically upward from lower bedding layers into the well.

Additional investigation is required to determine the source(s) of groundwater contamination found in the Lester Street Well. Based on its stratigraphic location and distance from the Main Avenue Well Study Area, the Lester Street Well is less likely to have been impacted by the dissolved chlorinated solvents migrating from the Curtiss-Wright Site. It should be noted that several contaminated sites are present in the vicinity of this well on both sides of the Passaic River.

DISCUSSION—Potential Source(s) to Johnson Avenue (Dul) Municipal Well:

The Johnson Avenue (Dul) Well is located in a stratigraphically updip (southeast) area that is not expected to be associated with the contamination found in the Main Avenue Well (Figure 20). The solvent-contaminated bedding layers at the Curtiss-Wright Site extend upward to the southeast and would not be intersected by the Johnson Avenue Well. While an comprehensive study of contaminated sites near the Johnson Avenue Well was not conducted for this review, the source(s) of dissolved solvents are expected to be northeast of this well. However, under pumping conditions, groundwater flow from all directions would enter this well especially along both strike directions (northeast and southwest). Three sites where chlorinated solvents have been detected in on-site groundwater, Industrial Latex, Polychrome Chemicals Corporation (Cellofilm) and Curtiss-Wright, are discussed below.

Industrial Latex

The Industrial Latex Superfund Site is a 9.67-acre former chemical adhesive and synthetic rubber manufacturer located on 350 Mount Pleasant Avenue in the eastern portion of Wallington (Figure 2). According to CDM Federal Programs (1995), the site operated from 1951-1980 utilizing 30 production vats, 22 USTs and an on-site sanitary system that discharged into the subsurface. The site ceased operation in 1983, leaving about 1200 drums and 200 partially buried drums in 2 areas. The USEPA conducted a removal action at the site in 1986-1987 to remove drums, buried drums and highly contaminated soils.

The most prevalent contaminants associated with Industrial Latex Superfund Site are polychlorinated biphenyls (PCBs) in the on-site soils and sediments. In groundwater, a variety of organic and inorganic compounds were observed, but contaminant levels were typically less than or slightly above the Ground Water Quality Standards. Chlorinated solvents like PCE, TCE, and cDCE have been observed in some of the on-site soil, sediment, drum and groundwater samples. The levels of TCE, the chlorinated solvent found most widely in groundwater, ranged from not detected to 1.9 ppb in the 11 overburden wells (Table 7) and not detected to 3.6 ppb in the five bedrock wells (Table 8).

Because of its location far updip of the Main Avenue Well, the Industrial Latex Site is not suspected of impacting the Main Avenue Well or the other municipal wells in the western portion of Wallington (Hathaway #5, Hathaway #8, Lester St.). The Johnson Avenue (Dul) Well is in a location along strike (southwest) of the Industrial Latex Site, so contaminated groundwater originating from the site could affect the Johnson Avenue Well. The chlorinated solvents found at Industrial Latex are highly mobile in groundwater (CDM Federal Programs, 1995), so off-site migration of contaminants is possible. Additional water quality and movement studies are required to evaluate the potential for migration of contaminants from Industrial Latex to the Johnson Avenue (Dul) Well.

Polychrome Chemicals Corporation (Cellofilm) (ISRA #87155):
The Polychrome Chemicals Corporation or Cellofilm Site is located on Union Avenue in Woodridge about 1500 feet northeast of the Johnson Avenue (Dul) Well (Figure 2). According to CDM Federal Programs, Cellofilm was constructed in 1926 to reclaim silver from motion picture films and later (1955) switched to processing nitrocellulose. The plant ceased operation in 1987, triggering an ISRA Investigation (#87155).

Contaminated soils and solvent-contaminated groundwater were reported at the Cellofilm Site (CDM, 1995). Approximately 2285 cubic yards of ID27-classified soil and approximately 2255 cubic yards of U002-classified soil were removed from the site. Groundwater sampling conducted at the site found TCE, tDCE, cDCE, and VC in the on-site overburden and bedrock wells (Table 9). Under the Industrial Site Recovery Act, the Department issued a no further action letter in 1993, which required continued groundwater monitoring under New Jersey Pollutant Discharge Elimination System (NJPDES) Permit #NJ0082457.

Due to its location of the site far updip of the Main Avenue Well and the western municipal wells (Hathaway #5, Hathaway #8, Lester St.), the Cellofilm Site is not suspected of contributing site-related contaminants into these wells. CDM Federal Programs (1995) cited an IT Corporation (1990) report that concluded that further investigation of groundwater quality is necessary vertically and downgradient of the impacted area. More recent reports or groundwater monitoring data were not available for this review. Additional investigation is required to determine if the groundwater contaminants associated with the Cellofilm site may have contributed chlorinated solvents into the Johnson Avenue (Dul) Well.

Curtiss-Wright (ISRA #84205):
The DNAPL releases from the Oil Farm Area of the Curtiss-Wright Site are suspected of being too far updip to contribute to chlorinated solvents to the Johnson Avenue (Dul) Well especially under non-pumping conditions. However, a smaller area of solvent-contaminated groundwater in the Passaic Formation Bedrock extends from the Building #34 area on the Curtiss-Wright Site southwest to RW-4 (Figure 11). In the absence of a local groundwater recovery system, these contaminants would be expected to migrate southwest along strike toward the Johnson Avenue Well. The Johnson Avenue Well is about 3500 feet southwest of RW-4, but may be somewhat stratigraphically updip (southeast and upgradient) from the eastern groundwater contaminant plume associated with the Curtiss-Wright Site. However, under pumping conditions, the Johnson Avenue Well may be able to draw groundwater from downdip (northwest) locations. Additional investigation into the groundwater movement and quality in the area between the eastern portion of the Curtiss-Wright Site and the Johnson Avenue (Dul) Municipal Well is necessary to determine if Curtiss-Wright may have contributed contaminants into this well.

CONCLUSIONS:

Based on the available pertinent information listed in the references, this Bureau has the following conclusions regarding Wallington's Municipal Well Contamination:

(1) The Main Avenue Well has very likely been impacted from solvent leaks from Curtiss-Wright's Underground Storage Tanks located in the Oil Tank Farm as evidence by the similar contaminants in the source area and municipal wells and the hydrogeologic framework.

(2) DNAPL releases from the Oil Farm Area at the Curtiss-Wright Site extend off-site to the northwest and continue to generate contaminated groundwater that is expected to impact the Main Avenue Well for the foreseeable future.

(3) The Main Avenue Well is suspected of being impacted from the landfilling activities at the former Van Kruiningen Sand Mine, due to the hydrogeological setting, proximity of the dump to the well and the nature and extent of landfilling operations. The Jasontown Apartments were built upon the former Van Kruiningen Sand Mine, which received extensive fill material during the early 1960's. Residents of Jasontown Apartments may be threatened by volatile organic vapors emanating from the industrial wastes suspected to be deposited during landfilling operations. Exposed fill material exists near and along the Saddle River, which is separated from the apartments by a fence.

(4) The Farmland Dairies Western Tract (block 71, lot 35.02) was the location of former mining and industrial activities. Some mining activities were evident at the location that is now a Roller Rink (block 71, lot 35.01). Former mining activities occurred over much of the eastern three-quarters of the parcels, which were later filled to present grade. Former industrial activities occurred in the western portion of the parcel near the Saddle River and exposed fill material exists along the riverbank.

(5) The Joe Feld Dump was active in the early 1930's. The nature and extent of wastes deposited in the Joe Feld Dump is unknown, but this former dump is near or underneath residential, commercial and industrial development, near industrial and potable wells and adjacent to the Saddle River.

(6) Hathaway Street Wells #5 and #8 may be impacted from dissolved chlorinated solvent plume migrating southwestward from the Main Avenue Well Study Area. Information on the construction of these wells and further investigation is required to determine the source(s) of contaminants found in #5 and #8 Hathaway Street Wells.

(7) Lester Street Well is less likely to have been impacted by the dissolved chlorinated solvents found in the Main Avenue Study Area because the well is located stratigraphically above the solvent-contaminated bedding layers intersected by the Main Avenue Well and Curtiss-Wright bedrock wells. However, upward vertical migration of contaminants is possible because the Lester Street Well is located in a discharge area of the Passaic Formation. Information on the construction of this well and further investigation could be conducted to evaluate the contaminant source(s) to the Lester Street Well.

(8) Johnson Avenue (Dul) Well is not impacted by the dissolved chlorinated solvents in the Main Avenue Well Study Area because this well intersects bedding planes far updip (southeast) of the solvent-contaminated bedding planes. The most likely source(s) of these solvents are northeast of the Johnson Avenue (Dul) Well, possibly Industrial Latex, Cellofilm, southeastern portion of Curtiss-Wright or other industries in the northwestern portion of Woodridge Borough. Further study is necessary to evaluate contaminant source(s) and migration pathways.

(9) The northwestern extent of DNAPL originating from Curtiss-Wright's Underground Storage Tanks site may be outside of the present groundwater remediation system. Therefore, some dissolved chlorinated solvents originating from Curtiss-Wright's DNAPL releases are likely to continue to move into the Main Avenue Well Study Area, impacting the Main Avenue Well and possibly other municipal wells.

RECOMMENDATIONS:

This Bureau has the following recommendations for the Wallington Municipal Well Contamination Preliminary Assessment/Site Investigation:

(1) Wallington must submit all available information on the location and construction details of all supply wells and test wells installed in the borough.

(2) Sample all five Wallington Supply Wells, Wallington's test wells, and the Saddle River Avenue wells for priority pollutant compounds plus forty unknown peaks and radiological parameters.

(3) Perform a pump test at the Main Avenue Well to determine if a hydraulic connection exists between the DNAPL-containing layers at Curtiss-Wright and the Main Avenue Well. Continuous water level measurements should be obtained from Curtiss-Wright wells, test wells in the borough, Industrial Latex, and industrial wells along Saddle River Avenue.

(4) Curtiss-Wright should be required to define the extent of DNAPL releases from the Oil Farm Area as the DNAPL represents a continuing source of dissolved solvents in the Passaic Formation Aquifer. This DNAPL-extent investigation should be focused off-site to the northwest of Curtiss-Wright generally oriented along the Erie Railroad (Conrail) Tracks. Curtiss-Wright should continue to delineate their off-site dissolved solvent plume in both the overburden and bedrock aquifers because they may impact local groundwater purveyors or surface water bodies.

(5) Conduct a Geoprobe investigation at the former Van Kruiningen pits to determine the nature and extent of soil and groundwater contamination present. Potential exposures to solvent-contaminated indoor air should also be evaluated at the Jasontown Apartments. Aerial photography and reports from local residents strongly suggests that extensive landfilling of wastes occurred in the former Van Kruiningen sand mine prior to construction of the Jasontown Apartments.

(6) The nature and extent of filling activities at the Farmland Dairies Western Parcel and Roller Rink (block 71, lot 35.02 / block 71, lot 35.01) are not known and industrial activities occurred in the western portion of the Farmland Dairies Western Parcel. Therefore, both parcels should be investigated as potential sources of groundwater contamination to the Main Avenue Well.

(7) Additional investigation is necessary to determine the extent of contamination associated with the Joe Feld Dump and its potential impact to wells along Saddle River

Avenue, Wallington's Main Avenue Well and the residents and workers in this area.

(8) Additional investigation is necessary to determine the source(s) of dissolved solvents in Wallington's other municipal wells. This Bureau recommends that the Hathaway #5 and #8 wells be prioritized for investigation due to the elevated contaminant levels and possible intersection of contaminated bedding layers encountered in the Main Avenue Well Study Area.

(9) Further study is necessary to evaluate contaminant source(s) associated with the Johnson Avenue (Dul) Well as it appears that this well is not impacted by the dissolved chlorinated solvents migrating from the Oil Farm Area of Curtiss-Wright. This Bureau recommends that contaminated sites northeast of the Johnson Avenue Well including Industrial Latex, Cellofilm and the southeastern portion of Curtiss-Wright be initially investigated as potential source areas.

(10) In light of the findings presented in this review, Curtiss-Wright's groundwater extraction system should be reevaluated. Specifically, the off-site extent of the DNAPL releases from the Oil Farm Area should be compared with the capture zone of the groundwater recovery system.

This Bureau believes that activities recommended above are necessary to evaluate the presence of chlorinated solvents in Wallington's Municipal Wells and evaluate the source(s) of contaminants detected in the Passaic Formation Aquifer. Please contact me at (609) 633-8227 if you have any questions or if I can be of further assistance.

c: Renee Bancroft, Geologist, DPFSR/BGWPA
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REFERENCES:

Bechtel International, 1992. Remedial Investigation Report for the Maywood Site. Prepared for US Department of Energy. Publication #DOE/OR/21949-337.

Billings, M.P., 1972. Structural Geology, 3rd edition. Prentice-Hall, 606p.

CA Rich, 1994. Curtiss-Wright Corporation Remedial Action Workplan (2 volumes). Prepared for Curtiss-Wright, 84p.

CDM Federal Programs, 1995. Industrial Latex Area Groundwater Evaluation. Prepared for USEPA Region II, 52p.

Cohen, R.M., Bryda, A.P., Shaw, S.T., and Spaulding, C.P., 1992. Evaluation of Visual Methods to Detect NAPL in Soil and Water. Groundwater Monitoring Review 12(4):132-141.

Cohen, R.M. and Mercer, J.W., 1993. DNAPL Site Evaluation. USEPA Publication EPA/600/SR-93/022, 4p.

Curtiss-Wright (1998). June 1998 Quarterly Progress Report.

Dames and Moore, 1988. Results of Supplementary Site Investigation Curtiss-Wright Corporation, 35p.

Dames and Moore, 1990. Revised Thirty Day Response Document Curtiss-Wright Corporation, 37p.

Dames and Moore, 1991. Final Report—Hydrogeological Investigation Curtiss-Wright Corporation (9 volumes).

Lacombe, P.J., 1996. Hydrogeologic Findings, Site 1, Brine Handling Area, Naval Air Warfare Center, West Trenton, New Jersey. Draft United States Geological Survey Report.

Landle, R.C., 1986. Wallington Municipal Wells - Recommendations for Additional Investigation. NJDEP Internal Memo, 8p.

Lewis, J.V. and Kummel, H.B., 1940. The Geology of New Jersey. New Jersey Geological Survey Bulletin 50, 203p.

Michalski, A., 1992. Preliminary Hydrogeologic Opinion on the Causes of Contamination of the Municipal Supply Wells in the Borough of Wallington. The Whitman Companies, Inc., 8p.

Michalski, A., 1995. DNAPL Site Problems: Search for DNAPL and Effective Remedial Technologies. Environmental Law Section Newsletter (June, 1995), pp 18-21, 30.

Michalski A. and Britton R., 1997. The Role of Bedding Fractures in the Hydrogeology of Sedimentary Bedrock - Evidence from the Newark Basin, New Jersey. Groundwater, v.35, n.2, p.318-327.

Monteverde, D.H., 1998. New Jesrsey Geological Survey. Personal Communication.

Parker, R.A., Stratigraphic Relations of the Sedimentary Rocks Below the Lower Jurassic Orange Mountain Basalt, Northern Newark Basin, New Jersey and New York. United States Geological Survey, Miscellaneous Field Studies Map.

Serfes, M., 1994. Natural Ground-Water Quality in Bedrock of the Newark Basin, New Jersey. New Jersey Geological Survey Report GSR 35, 28p.

Spayd, S., 1984. Lodi Municipal Wells, Bergen County-Radiological Contamination. NJDEP Internal Memo, 10p.

Stanford, S.D., 1993. Surficial Geology of the Weehawken and Central Park Quadrangles, Bergen, Hudson and Passaic Counties, New Jersey. New Jersey Geological Survey Open File Map No. 13.

USEPA, 1992a. Estimating Potential for Occurrence of DNAPL at Superfund Sites. USEPA Publication 9355.4-07FS, 9p.

USEPA, 1992b. Dense Nonaqueous Phase Liquids—A Workshop Summary. USEPA Publication EPA/600/R-92/030, 42p.

USEPA, 1993. Seminar on Characterizing and Remediating Dense Nonaqueous Phase Liquids at Hazardous Sites. USEPA Publication EPA/600/K-93/003.

EXHIBIT B

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TABLE 1:

SUMMARY OF ANALYTICAL RESULTS FOR VOLATILE ORGANIC COMPOUNDS IN SELECTED CURTISS - WRIGHT WELLS AND WALLINGTON MUNICIPAL SUPPLY WELLS (from Michalski, 1992)
(modified by NJDEP, 1998)

	CURTISS - WRIGHT WELLS			MUNICIPAL SUPPLY WELLS					INDUSTRIAL WELLS		
VOLATILE ORGANICS (PPB)	OW-3	RW-6	OS-2	MAIN AVE	NO. 5	NO. 6	JOHNSON AVE.	LESTER ST.	#21 Saddle River Ave.	#176 Saddle River Ave.	Contaminant
BENZENE									1719	5224	benzene
BROMODICHLOROMETHANE					1						
BROMOFORM											
CARBON TETRACHLORIDE											
CHLOROBENZENE											
CHLOROETHANE											
2-CHLOROETHYLVINYL ETHER											
CHLOROFORM											
CHLOROMETHANE											
DIBROMOCHLOROMETHANE											
1,1-DICHLOROETHANE				9							
1,2-DICHLOROETHANE				6							
1,1-DICHLOROETHENE				12	17				26	84	1,1-DCE
TRANS-1,2-DICHLORETHENE	33,100	92,100	4,120	1,110	1,023	333	10	39	3032	8680	DCE
1,2-DICHLOROPROPANE											
CIS-1,3-DICHLOROPROPENE											
TRANS-1,3-DICHLOROPROPENE											
ETHYL BENZENE											
METHYLENE CHLORIDE	6,480										
1,1,2,2-TETRACHLORETHANE											
TETRACHLOROETHENE			2				44	12	30	58	PCE
TOLUENE											
1,1,1-TRICHLORETHANE										37	1,1,1-TCA
1,1,2-TRICHLORETHANE											
TRICHLOROETHENE	117,000		1,310	4,930	126	48	38	20	711	3699	TCE
TRICHLOROFLUOROMETHANE											
VINYL CHLORIDE		9,750	452	81	18	3			91	1950	VC
XYLENES (TOTAL)											
TOTAL TARGET (PPB)	156,580	101,850	5,937	6,500	1,183	385	92	70			
SOURCES OF ANALYTICAL DATA	DAMES & MOORE 1987	DAMES & MOORE 1987	DAMES & MOORE 1987	DAMES & MOORE 1987	GARDEN STATE JAN 1986	GARDEN STATE JAN 1986	GARDEN STATE JAN 1986	GARDEN STATE JAN 1986	USGS, 1989	USGS, 1989	

Willy Davis, 2nd Fl
731-7156 P.S.P. right

TABLE 2

VOLATILE ORGANIC ANALYSIS
ANALYTICAL RESULTS - ROUND I
CURTISS-WRIGHT CORP., WOOD-RIDGE, NJ

Dames and Moore Sample Number:		OW-1	OW-2	OW-3	OW-4	OW-5	OW-6	OW-7	OW-8
Laboratory Sample ID:		8761-01	8761-02	8772-06	8761-03	8761-04	8761-15	8761-05	8761-06
Date Sample Collected:		6/24/91	6/24/91	6/25/91	6/24/91	6/24/91	6/24/91	6/24/91	6/24/91
Dilution Factor:		1 / 50	10	1 / 500	25	25 / 50	25	50	50
Units:	MDL	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
VOLATILE COMPOUNDS									
Chloromethane	10.0	14	U	U	U	U	U	U	U
Bromomethane	10.0	U	U	U	U	U	U	U	U
Vinyl Chloride	10.0	U	120	290 E	U	U	150 J	3500	U
Chloroethane	10.0	U	U	U	U	U	U	U	U
Methylene Chloride	5.0	U	76 B	5 B	84 JB	500 JB	640 B	290 B	1400 B
2-Propanone	10.0	U	U	U	U	U	U	U	U
Carbon Disulfide	5.0	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5.0	U	U	74	U	U	370	U	U
1,1-Dichloroethane	5.0	U	U	2 J	U	U	240	60 J	U
1,2-Dichloroethene (total)	5.0	2 J	270	21000	U	U	19000 E	6100	250
Chloroform	5.0	U	U	U	U	U	U	U	U
1,2-Dichloroethane	5.0	13	U	7	37	U	U	U	U
2-Butanone	10.0	U	U	U	U	U	U	U	U
1,1,1-Trichloroethane	5.0	U	U	5	U	U	5100	U	U
Carbon Tetrachloride	5.0	U	U	U	U	U	U	U	U
Vinyl Acetate	10.0	8 J	U	UJ	U	U	U	U	U
Bromodichloromethane	5.0	U	U	U	U	U	U	U	U
1,2-Dichloropropane	5.0	U	U	U	U	U	U	U	U
cis-1,3-Dichloropropene	5.0	U	U	U	U	U	U	U	U
Trichloroethene	5.0	U	U	UJ	U	U	23000 E	U	U
Dibromochloromethane	5.0	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	5.0	U	U	U	U	U	U	U	U
Benzene	5.0	150	110	U	1500	150 J	14 J	120 J	16 J
trans-1,3-Dichloropropene	5.0	U	U	17000	U	U	U	U	U
Bromoform	5.0	U	U	U	U	U	U	U	U
4-Methyl-2-Pentanone	10.0	U	U	4 J	U	U	U	U	U
2-Hexanone	10.0	U	U	U	U	U	U	U	U
Tetrachloroethene	5.0	U	U	U	U	U	12000 E	U	U
1,1,2,2-Tetrachloroethane	5.0	U	U	U	U	120 J	U	U	U
Toluene	5.0	120	3 J	U	11 J	U	37 J	2700	550
Chlorobenzene	5.0	U	U	U	U	U	U	U	U
Ethylbenzene	5.0	130	U	470 E	590	120 J	50 J	91 J	19 J
Styrene	5.0	U	U	U	U	U	U	U	U
Xylenes (total)	5.0	370	5 J	U	1800	600 J	88 J	1900	320
Acrolein	100.0	U	U	U	U	U	U	U	U
Acrylonitrile	100.0	U	U	U	U	U	U	U	U
2-Chloroethylvinylether	10.0	U	U	U	U	U	U	U	U
Dichlorodiflouromethane	10.0	U	U	U	U	U	U	U	U
Dichlorobenzene (total)	30.0	U	U	U	U	U	U	U	U
Bis(chloromethyl)Ether	nd	U	U	U	U	U	U	U	U
Trichloroflouromethane	10.0	U	U	U	U	U	U	U	U
Total Confident Concentration		797	500	38846	3927	-	59710	14200	1120

U = Not Detected
J = Estimated Value, Below Method Detection Limit
B = Analyte found in Method, Field or Trip Blank at comparable concentrations.
E = Analyte value exceeds linear calibration range.
ug/L = microgram/Liter

(from Dames and Moore, 1991)

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TABLE 3

VOLATILE ORGANIC ANALYSIS
ANALYTICAL RESULTS - ROUND I
CURTISS-WRIGHT CORP., WOOD-RIDGE, NJ

Dames and Moore Sample Number:		RW-11	RW-12	RW-13MP2	RW-14MP1	RW-14MP2	RW-14MP3	RW-14MP4	RW-14MP5
Laboratory Sample ID:		8792-04	8792-05	8810-02	8825-01	8810-07	8810-06	8810-11	8810-04
Date Sample Collected:		6/26/91	6/26/91	6/27/91	6/28/91	6/27/91	6/27/91	6/27/91	6/27/91
Dilution Factor:		1.0	50	50	10	50	50	50	250
Units:	MDL	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
VOLATILE COMPOUNDS									
Chloromethane	10.0	U	U	U	U	U	U	U	U
Bromomethane	10.0	U	U	U	U	U	U	U	U
Vinyl Chloride	10.0	U	830	11000	U	U	U	100 J	U
Chloroethane	10.0	U	U	U	U	U	U	U	U
Methylene Chloride	5.0	U	U	100 JB	55 B	285 B	240 JB	300 B	670 JB
2-Propanone	10.0	2 JB	300 JB	1000	U	U	U	U	4900 B
Carbon Disulfide	5.0	U	U	U	U	U	U	U	U
1,1-Dichloroethene	5.0	U	U	94 J	U	U	U	59 J	U
1,1-Dichloroethane	5.0	U	U	100 J	U	U	U	U	U
1,2-Dichloroethene (total)	5.0	U	U	17000 E	32 J	120 J	110 J	5000	6400
Chloroform	5.0	1 J	U	U	U	U	U	U	U
1,2-Dichloroethane	5.0	U	U	U	U	U	U	U	U
2-Butanone	10.0	U	110 J	U	UJ	U	U	U	U
1,1,1-Trichloroethane	5.0	UJ	U	U	U	U	U	U	U
Carbon Tetrachloride	5.0	U	UJ	U	U	U	U	U	U
Vinyl Acetate	10.0	U	U	U	UJ	UJ	U	U	UJ
Bromodichloromethane	5.0	U	U	U	U	U	U	U	U
1,2-Dichloropropane	5.0	U	U	U	U	U	U	U	U
cis-1,3-Dichloropropene	5.0	U	U	U	U	U	U	U	U
Trichloroethene	5.0	U	110 J	U	1400	1400	1400	35000 E	79000 E
Dibromochloromethane	5.0	U	U	U	U	U	U	U	U
1,1,2-Trichloroethane	5.0	U	U	U	U	U	U	U	U
Benzene	5.0	U	120 J	UJ	UJ	UJ	UJ	UJ	UJ
trans-1,3-Dichloropropene	5.0	U	U	U	U	U	U	U	U
Bromoform	5.0	UJ	UJ	U	U	U	U	U	U
4-Methyl-2-Pentanone	10.0	U	U	U	U	U	U	U	U
2-Hexanone	10.0	U	U	U	U	U	U	U	41000
Tetrachloroethene	5.0	U	U	U	110	2 J	55 J	4900	10000 J
1,1,2,2-Tetrachloroethane	5.0	U	60 J	U	U	U	U	U	U
Toluene	5.0	U	50 J	410	UJ	UJ	UJ	UJ	UJ
Chlorobenzene	5.0	U	UJ	UJ	UJ	UJ	UJ	UJ	UJ
Ethylbenzene	5.0	U	65 J	UJ	UJ	UJ	UJ	UJ	UJ
Styrene	5.0	U	U	U	U	U	U	U	U
Xylenes (total)	5.0	U	400 J	UJ	UJ	UJ	UJ	340 J	1000 J
Acrolein	100.0	U	U	U	U	U	U	U	U
Acrylonitrile	100.0	U	U	U	U	U	U	U	U
2-Chloroethylvinylether	10.0	U	U	U	U	U	U	U	U
Dichlorodiflouromethane	10.0	U	U	U	U	U	U	U	U
Dichlorobenzene (total)	30.0	U	U	U	U	U	U	U	U
Bis(chloromethyl)Ether	nd	U	U	U	U	U	U	U	U
Trichloroflouromethane	10.0	U	U	U	U	U	U	U	U
Total Confident Concentration		-	830	29410	1510	1400	1400	44900	136400

U = Not Detected
J = Estimated Value, Below Method Detection Limit
B = Analyte found in Method, field or Trip Blank at comparable concentrations.
E = Analyte value exceeds linear calibration range.
ug/L = microgram/Liter

(from Dames and Moore, 1991)

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Table 4

Results of Chemical Analyses from RW-102 Packer Tests

Curtiss-Wright Business Complex, Wood-Ridge, New Jersey

Compound or Constituent (All concentrations in µg/ℓ, or parts per billion)	Sample Depth, in Feet							Solubility	
	20 - 80	80 - 130	140 - 190	200 - 250	260 - 310	Geometric Mean	Arithmetic Mean	@25°C mg/L	1% (ppb)
Volatile Organics									
vinyl chloride	910	3,300	1,100	1,300	3,200	1,690	1,960	1,100	11,000
1,1,1-trichloroethane	50 U	770	190	80	120	130	240		
trichloroethene	3,100	39,000	68,000	11,000	14,000	16,620	27,020	1,100	11,000
tetrachloroethene	4,400	32,000	9,000	1,800	1,700	5,220	9,780	150	1,500
toluene	50 U	140	50 U	50 U	50 U	35.3	48		
ethylbenzene	100 U	720	100 U	100 U	100 U	85.2	184		
cis-1,2-dichloroethene	1,400	24,000	7,400	11,000	12,000	8,000	11,160	800	8,000
xylenes (total)	440	3,100	890	50 U	50 U	240	900		
Inorganic Constituents									
Arsenic	8	4 U	4 U	6	4 U	3.3	4.0		
Copper	466	25 U	75	98	25 U	55.7	133		
Lead	1,540	4 U	4 U	6	4 U	9.4	310		
Nickel	78	238	47	86	130	99.5	116		
Zinc	2,780	38	48	107	26	107	600		
Inorganic Parameters									
Total Organic Halogens	40,000	55,000	43,000	16,000	20,000	31,350	34,800		

(from CA Rich, 1994)

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TABLE 5
WELL CONSTRUCTION DETAILS
CURTISS–WRIGHT CORPORATION, WOOD–RIDGE, NEW JERSEY

Well Number	Reference Point Elevation (MSL)	Depth to Water (Feet)	Depth of Well (Feet)	Well Diameter (Inches)	Screened Length (Feet)	Screened Depth (Feet)	Screened Elevation (MSL)	Typical Water Elevation (MSL)	New Jersey State Plane Coordinates Northing	Easting
OW–1	40.81	14.96	19.9	4	10	9.9 – 19.8	30.9 – 21.0	25.9	738,785.3777	2,157,787.6194
OW–2	43.73	15.98	24.6	4	12	12.6 – 24.5	31.1 – 19.2	27.7	738,652.9120	2,157,902.5113
OW–3	40.68	18.52	19.3	4	9	10.3 – 19.2	30.4 – 21.4	22.2	738,949.4999	2,157,539.6340
OW–4	41.55	16.22	20.3	4	8	12.3 – 20.2	29.2 – 21.3	25.3	738,635.0124	2,157,798.9414
OW–5	40.53	15.86	17.0	4	7	10.0 – 17	30.5 – 23.5	24.7	738,689.5833	2,157,671.1857
OW–6 (Dest)	40.62	17.09	26.0	4	16	10.0 – 26	30.6 – 14.6	23.5		
OW–7	41.00	16.90	19.9	4	10	9.9 – 19.8	31.1 – 21.1	24.1	738,860.3114	2,157,695.5145
OW–8	42.24	17.05	24.7	4	14	10.7 – 24.7	31.5 – 17.5	25.2	738,753.5166	2,157,977.6646
OW–9	44.47	9.28	13.0	4	5	8.0 – 13.0	36.4 – 31.4	35.2	738,163.3404	2,158,284.3851
OW–10A	48.49	12.92	17.0	4	12.4	4.6 – 17.0	43.8 – 31.5	35.6	738,156.6963	2,158,431.7306
OW–11	42.89	NA	17.5	4	15	2.5 – 17.5	40.3 – 25.4	NA	738;048.5120	2,158,362.7507
OW–12	40.32	24.96	20.9	4	15	5.9 – 20.8	34.4 – 19.5	15.4	739,195.7498	2,157,349.7267
OW–13	41.40	16.17	20.0	4	15	5.0 – 19.9	36.4 – 21.4	25.2		
OW–14	40.55	9.68	19.1	4	15	4.1 – 19.1	36.4 – 21.4	30.9	738,598.0403	2,157,683.2866
OW–15	50.76	12.88	20.0	4	10	10.0 – 20.0	40.7 – 30.7	37.9	738,094.5862	2,158,537.6882
OW–16	38.27	4.82	5.8	4	3	2.8 – 5.8	35.4 – 32.5	33.5	738,806.1349	2,158,832.6091
OW–17	60.27	16.89	17.1	4	10	7.1 – 17.1	53.1 – 43.1	43.4	737,456.5206	2,158,527.1878
OW–18	59.74	9.62	17.0	4	10	7.0 – 17.0	52.7 – 42.7	50.1	737,438.4830	2,158,622.4180
OW–19	50.75	14.42	21.4	4	11.3	10.1 – 21.3	40.6 – 29.4	36.3	738,087.0047	2,158,516.5143
OW–20	42.08	10.12	14.2	4	10	4.2 – 14.1	37.8 – 27.9	32.0	738,432.3416	2,157,924.4987
OW–22	41.63	8.00	10.0	2	4	6.0 – 10	35.6 – 31.6	33.6	738,686.9718	2,157,959.7836
OW–23	41.31	9.40	13.2	2	2.3	10.9 – 13.1	30.4 – 28.2	31.9	738,484.0240	2,157,746.1234
OW–24	41.21	9.50	11.8	2	2.5	9.3 – 11.8	31.8 – 29.4	31.7	738,674.5606	2,157,798.1285
OW–25	40.35	NA	13.8	2	2.5	11.3 – 13.7	29.0 – 26.6	NA	738,750.2667	2,157,623.0363
OW–26	41.49	17.20	22.1	2	5	17.1 – 22.1	24.3 – 19.4	24.3	738,944.8101	2,157,689.0184
OW–27	40.46	17.50	17.7	2	5	12.7 – 17.7	27.7 – 22.8	23.0	738,998.5694	2,157,511.3409
OW–29	35.84	22.30	25.0	2	2.5	22.5 – 25.0	13.3 – 10.8	13.5	739,392.0872	2,157,503.6959
OW–30	52.22	8.34	13.9	2	6	7.9 – 13.9	44.3 – 38.3	43.9	737,655.0793	2,158,566.8922
OW–31	50.20	9.68	13.6	2	8	5.6 – 13.6	44.5 – 36.6	40.5	738,010.1262	2,158,724.2848
OW–32	58.76	16.55	22.9	2	5	17.9 – 22.9	40.8 – 35.9	42.2	737,606.2625	2,158,539.7990
ECMW–1	52.93	3.57	9.4	4	10	–0.6 – 9.4	53.6 – 43.6	49.4	738,546.3261	2,159,028.1548
OS–1	48.48	13.94	78	6	48	30 – 78	18.5 – –29.5			
OS–2	28.70	15.87	114	6	59	55 – 114	–26 – –85	12.8		
OS–3	31.27	3.25	167	6	55	112 – 167	–81 – –136	28.0		
OS–4S	36.04	21.96	33	4	18	15 – 33	21.0 – 3.0	14.1		
OS–4I	36.53	25.38	70	4	10	60 – 70	–23 – –33	11.2		
OS–4D	36.52	18.55	135	6	50	85 – 135	–48 – –98	18.0		
MW–2A1	60.37	15.28	28.1	4	20	8.1 – 28.1	52.3 – 32.3	45.1		
MW–2G1	38.10	3.70	16.3	4	15	1.3 – 16.3	36.8 – 21.8	34.4		
MW–2G2	38.19	3.57	16.4	4	15	1.4 – 16.4	36.8 – 21.8	34.6		

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TABLE 5 (Continued)
WELL CONSTRUCTION DETAILS
CURTISS–WRIGHT CORPORATION, WOOD–RIDGE, NEW JERSEY

Well Number	Reference Point Elevation (MSL)	Depth to Water (Feet)	Depth of Well (Feet)	Well Diameter (inches)	Screened Length (Feet)	Screened Depth (Feet)	Screened Elevation (MSL)	Typical Water Elevation (MSL)	New Jersey State Plane Coordinates Northing	Easting
RW–1	57.11	0.03	81	4	20	61 – 81	–4 – –24	57.1	739,184.2113	2,159,727.9626
RW–2	80.48	10.04	84	4	20	64 – 84	17 – –3	70.4	737,546.5559	2,159,063.0471
RW–3	39.72	1.30	63	4	22	41 – 63	–1 – –23	38.4	738,329.7196	2,158,391.6352
RW–4	47.97	18.73	85	4	22	63 – 85	–15 – –37	29.2	737,570.1967	2,157,753.4038
RW–5	44.67	15.30	83	4	20	63 – 83	–18 – –38	29.4	738,446.5168	2,157,664.7086
RW–6	41.58	24.68	82	4	22	60 – 82	–18 – –40	16.9	739,036.3944	2,157,497.0239
RW–6SC	40.75	21.75	46	6	20	26 – 46	15 – –5	19.0	739,022.4779	2,157,504.2019
RW–7D	42.49	24.34	201	6	50	151 – 201	–108 – –158	18.2	739,038.2200	2,157,487.7347
RW–7MPZ1	42.22	46.60	247	–	10	237 – 247	–195 – –205	–4.4	739,047.7970	2,157,486.2361
RW–7MPZ2	42.22	38.62	233	–	12	221 – 233	–179 – –191	3.6		
RW–7MPZ3	42.22	31.17	217	–	18	199 – 217	–157 – –175	11.1		
RW–7MPZ4	42.22	30.23	195	–	20	175 – 195	–133 – –153	12.0		
RW–7MPZ5	42.22	14.42	171	–	17	154 – 171	–112 – –129	27.8		
RW–8	42.32	26.49	102	6	75	27 – 102	16 – –59	15.8	739,094.2671	2,157,428.0525
RW–9	40.36	24.30	101	6	75	26 – 101	14 – –61	16.1	739,166.3850	2,157,384.7470
RW–10	30.92	16.46	92	6	63	29 – 92	2 – –61	14.5	739,976.3690	2,158,087.9907
RW–11	46.11	21.96	39	2	10	29 – 39	17 – 7	24.2	740,374.4898	2,158,448.9633
RW–12	26.76	12.02	39	6	20	19 – 39	8 – –12	14.7	739,725.8538	2,157,899.9228
RW–13MPZ1	42.33	27.39	57	–	10	47 – 57	–5 – –15	14.9	739,277.5493	2,157,589.6228
RW–13MPZ2	42.33	26.09	44	–	7	37 – 44	6 – –1	16.2		
RW–14MPZ1	35.21	22.77	249	–	17	232 – 249	–197 – –214	12.4	739,215.8423	2,157,324.2163
RW–14MPZ2	35.21	22.28	228	–	23	205 – 228	–170 – –193	12.9		
RW–14MPZ3	35.21	21.16	201	–	9	192 – 201	–157 – –166	14.1		
RW–14MPZ4	35.21	21.05	188	–	14	174 – 188	–139 – –153	14.2		
RW–14MPZ5	35.21	21.55	170	–	16	154 – 170	–119 – –135	13.7		
RW–15	48.28	10.10	76	6	15	61 – 76	–12 – –27	38.2	737,889.5631	2,158,168.4684
RW–16	49.32	12.46	44	6	18	26 – 44	24 – 6	36.9	738,096.0329	2,158,388.9739
RW–17D	28.12	12.63	200	6	25	175 – 200	–147 – –172	15.5	739,987.7125	2,158,077.0651
RW–18D	26.91	13.56	199	6	25	174 – 199	–147 – –172	13.4	739,717.3835	2,157,893.4401
RW–19D	40.89	20.34	199	6	25	174 – 199	–133 – –158	20.6	739,270.5596	2,157,583.9855
RW–20	52.93	15.15	40	6	20	20 – 40	33 – 13	37.8	738,284.9236	2,158,725.0596
RW–101	44.36	12.00	106	6	75	31 – 106	14 – –61	32.4	738,063.0863	2,158,046.7847
RW–102	38.47	24.75	311	6	277	35 – 311	4 – –273	13.7	739,164.7289	2,157,352.0862
PW–1	43.10	26.60	200	6	182	18 – 200	25 – –157	16.5	739,648.0034	2,157,924.2065
PW–2	43.45	25.43	180	6	142	38 – 180	5 – –137	18.0	739,323.6829	2,157,679.2227
PW–3	43.03	19.86	240	6	222	18 – 240	25 – –197	23.2	738,887.4268	2,157,576.6135
PW–4	43.30	15.79	300	6	282	18 – 300	25 – –257	27.5	738,580.8779	2,157,681.8696
PW–5	44.91	11.87	200	6	172	28 – 200	17 – –155	33.0	738,111.0905	2,157,737.1689
IW–1	44.11	9.77	300	6	282	18 – 300	26 – –256	34.3	738,106.2921	2,158,077.1493
IW–2	42.46	0.00	240	6	222	18 – 240	24 – –198	42.5	738,285.2897	2,158,282.9830
IW–3	40.71	0.00	240	6	222	18 – 240	23 – –199	40.7	738,469.9622	2,158,519.1366
IW–4	41.05	0.00	300	6	282	18 – 300	23 – –259	41.1	738,727.0558	2,158,665.7471
RR–1	35.00	23.00	51	6	15	36 – 51	–1 – –16	12.0		
ROW–1	40.72	16.59	20.05	4	10	10.1 – 20.1	30.7 – 20.7	24.1	738,929.4523	2,157,498.4690
ROW–2	40.08	16.85	20.12	4	10	10.1 – 20.1	30.0 – 20.0	23.2	738,941.6862	2,157,492.0174

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(From CARich 1994)

TABLE 6

INDUSTRIAL LATEX
AREA GROUNDWATER EVALUATION

FARMLAND DAIRIES GROUNDWATER CONTAMINANT SUMMARY

COMPOUND	OVERBURDEN WELLS																		
	MW-1		MW-3		MW-4		MW-5		MW-6		MW-7		MW-8		MW-9		MW-10		MW-11
	2/94	7/94	2/94	7/94	2/94	7/94	2/94	7/94	2/94	7/94	2/94	7/94	2/94	7/94	2/94	7/94	2/94	7/94	2/94
Organics																			
VOCs:																			
Benzene	ND	ND	26.1	4.24	1.05	4.17	220	7.49	10.5	ND	ND	ND	2.09B	ND	ND	ND	ND	3.17	ND
Toluene	ND	ND	1.87	ND	3.33	ND	57.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	10.4	ND	ND	1.4	301	ND	2.78	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	ND	ND	23.9	1.72	3.54	3.54	655	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ND	ND	2.26B	ND	1.96B	1.03JB	2.58B	ND	2.20B	1.16JB	3.37B	ND	ND	ND	1.99B	ND	1.71B	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	3.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	28.4	12.6	ND	ND	4.54	ND	ND
SVOCs:																			
Naphthalene	ND	ND	18.2	ND	ND	4.41	66.9	NA	1.60	NA	ND	NA	ND	NA	ND	NA	ND	NA	NA
Fluorene	ND	ND	1.42J	ND	ND	ND	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	NA
Phenanthrene	ND	ND	0.79J	ND	ND	ND	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	NA
Bis(2-ethylhexyl)phthalate	3.60J *	NA	6.06 *	NA	11.3 *	NA	18.1 *	ND	4.54J *	14.4	3.93J *	2.82J	5.43 *	ND	4.77J *	ND	6.88 *	ND	1.68J
Di-n-butyl-phthalate	ND	NA	ND	NA	ND	NA	ND	ND	ND	ND	ND	ND	1.14J	ND	ND	ND	ND	ND	ND

Concentrations in ppb.
NA Not Analyzed.
ND Compound not detected.
J Concentration near detection limit and has been estimated.
B Similar concentrations detected in blank sample
* 14.5 ppb of bis(2-ethylhexyl)phthalate reported in field blank.

Sources:
EWMA, 1994a. February 1994 samples analyzed by method 624 for VOCs plus 15 TICs and method 625 for SVOCs plus 15 TICs.
EWMA, 1994b. July 1994 samples analyzed by method 624 for VOCs and method 625 for SVOCs.
Parameters analyzed are: MW-1 through MW-4 VOC plus10 TICs, BN plus 10 TICs
MW-5 through MW-7 Priority Pollutants plus 40 TIC
MW-8 through MW-11 VOC plus 10 TICs, BN plus 15 TICs

(from CDM Federal Programs, 1995)

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TABLE 7

INDUSTRIAL LATEX
AREA GROUNDWATER EVALUATION

GROUNDWATER SAMPLING RESULTS SUMMARY
UNCONSOLIDATED AQUIFER

COMPOUND	MCL		MW-1A			MW-1B			MW-5A			MW-5C			MW-4A		
	Federal [1]	State	ESI	RI Round 1	RI Round 3	ESI	RI Round 1	RI Round 3	ESI	RI Round 1	RI Round 3	ESI	RI Round 1	RI Round 3	ESI	RI Round 1	RI Round 3
Organics																	
VOCs																	
Benzene	5	1	ND	ND	ND	1.8	0.6	1.0	ND	ND	ND	ND	ND	ND	1	ND	0.48
tert-Butylbenzene	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	-	-	ND	0.9	ND	ND	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3	1.0	3.8
1,1-Dichloroethene	7	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.6	ND
cis-1,2-Dichloroethene	70	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.7	4.6
1,2-Dichloropropane	5	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7	1.0	ND
Ethylbenzene	700	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	-	-	ND	ND	ND	ND	ND	0.22	ND	ND	ND	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
n-Propylbenzene	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.9	6.09
Toluene	1000	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	1	ND	ND	ND	ND	0.6	ND	ND	ND	ND	ND	ND	ND	ND	1.0	1.8
Trichlorofluoromethane	-	-	ND	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	-	-	ND	ND	ND	ND	ND	0.18	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)	10,000	44	ND	ND	ND	ND	ND	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	-	-	ND	ND	ND	ND	ND	ND	14	ND	ND	3	ND	ND	ND	ND	ND
Trans-1,2-dichloroethene	100	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8	ND	ND
SVOCs																	
Bis(2-ethylhexyl)phthalate	-	-	ND	8	ND	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.8
Pesticides/PCBs																	
Aroclor 1260	0.5	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Inorganics																	
Arsenic	50	-	6.8	24.3	3.4	ND	7.6	7.4	7.4	2.2	ND	29.6	ND	ND	ND	20.2	6.6
Barium	2000	-	637	111	79	401	384	434	310	316	291	443	380	297	274	252	203
Beryllium	4	-	ND	ND	ND	ND	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	5	-	ND	ND	ND	7.1	ND	ND	1.8	ND	ND	8.3	ND	ND	ND	ND	ND
Chromium	100	-	10.6	22	ND	120	ND	21.6	42.6	6	10.1	73.7	11.6	8.6	ND	ND	ND
Cobalt	-	-	ND	9	4.6	8.3	ND	3.2	10	6	ND	19.6	ND	ND	ND	ND	ND
Copper	1300 *	-	37.6	5	6.4	304	ND	10.9	97	15	ND	299	16	ND	23.4	11	ND
Lead	15 *	-	22.6	ND	5.6	64	26.7	16.6	42.7	30.6	6.6	64.6	23.1	7.1	10.7	132	ND
Manganese	50 **	-	1164	1164	1516	1070	1648	2296	816	144	113	1730	71.6	63.1	2776	4209	3604
Mercury	2	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	-	9	ND	6.3	69	ND	13.4	21.7	ND	ND	66.9	ND	ND	ND	ND	ND
Selenium	50	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	100 **	-	ND	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	-	-	ND	ND	ND	14	ND	ND	23	ND	ND	66.5	ND	ND	ND	ND	ND
Zinc	5000 **	-	106	15	34.1	201	7	2.9	291	29	ND	640	21.6	ND	136	17	ND

Concentrations in ppb. Only compounds with positive detects shown.
ND Indicates compound was analyzed for, but not detected
NA Not applicable
- No value available
MCL Maximum Contaminant Level
* Action Levels
** Secondary Maximum Contaminant Levels
Value Exceeds MCL

Notes:
1 The number of samples in which the chemical was detected divided by the total number of samples analyzed.
2 The number of samples in which the chemical was detected above the MCL divided by the total number of samples in which the chemical was detected.

Sources: ICF, 1992. RI samples analyzed for full TCL/TAL parameters through CLP. Volatile organics portion by EPA method 524.2 (lower detection limit analyses).
EPA - FIT, 1988. ESI samples analyzed for low concentration Hazardous Substance List Constituents and total cyanide through the CLP

(From CDM Federal Programs, 1995)

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TABLE 7

INDUSTRIAL LATEX
AREA GROUNDWATER EVALUATION

GROUNDWATER SAMPLING RESULTS SUMMARY
UNCONSOLIDATED AQUIFER

COMPOUND	MW-4B			MW-6A		MW-4B		MW-6A		MW-8B		MW-7B		FREQUENCY OF DETECTION (a)			FREQUENCY OF DETECTION ABOVE MCL (c)		
	ESI	RI Round 1	RI Round 3	RI Round 1	RI Round 3	RI Round 1	RI Round 3	RI Round 1	RI Round 3	RI Round 1	RI Round 3	RI Round 1	RI Round 3	ESI	RI Round 1	RI Round 3	ESI	RI Round 1	RI Round 3
Organics																			
VOCs:																			
Benzene	ND	ND	ND	ND	ND	2.7	3.3	ND	ND	ND	ND	ND	ND	2/6	2/11	3/11	1/2	1/2	2/3
tert-Butylbenzene	ND	ND	ND	ND	ND	ND	0.22	ND	ND	ND	ND	ND	ND	0/6	0/11	1/11	NA	NA	NA
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.3	3.8	ND	ND	0/6	1/11	1/11	NA	NA	NA
Chloromethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0/6	2/11	0/11	NA	NA	NA
1,1-Dichloroethane	3	2.7	4.1	ND	ND	1.8	3.4	ND	ND	7.6	12.0	ND	ND	2/6	4/11	4/11	NA	NA	NA
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0/6	1/11	0/11	0/0	1/1	0/0
cis-1,2-Dichloroethene	ND	3.9	3.6	ND	ND	ND	1.1	ND	ND	1.8	1.2	ND	ND	0/6	3/11	4/11	0/0	0/3	0/4
1,2-Dichloropropane	6	0.8	0.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2/6	2/11	1/11	2/2	0/2	0/1
Ethylbenzene	ND	ND	ND	18	6.6	ND	0.19	ND	ND	ND	ND	ND	ND	0/6	1/11	2/11	0/0	0/1	0/2
Isopropylbenzene	ND	ND	ND	2.8	1.4	ND	0.24	ND	ND	ND	ND	ND	ND	0/6	1/11	3/11	NA	NA	NA
p-Isopropyltoluene	ND	ND	ND	2.8	0.20	ND	ND	ND	ND	ND	ND	ND	ND	0/6	1/11	1/11	NA	NA	NA
n-Propylbenzene	ND	ND	ND	2.8	2.6	ND	0.16	ND	ND	ND	ND	ND	ND	0/6	1/11	3/11	NA	NA	NA
Tetrachloroethene	ND	1.0	0.61	ND	0.20	ND	ND	ND	ND	ND	ND	ND	ND	0/6	2/11	3/11	0/0	1/2	0/3
Toluene	ND	ND	ND	ND	1.3	ND	0.14	ND	ND	ND	ND	ND	ND	0/6	0/11	2/11	0/0	0/0	0/2
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5	ND	ND	ND	0/6	1/11	0/11	0/0	0/0	0/0
Trichloroethene	ND	1.8	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0/6	3/11	2/11	0/0	2/3	2/2
Trichloro(fluoro)methane	ND	ND	ND	ND	ND	ND	ND	0.8	ND	ND	ND	ND	ND	0/6	2/11	0/11	NA	NA	NA
1,2,4-Trimethylbenzene	ND	ND	ND	50	ND	22.1	0.65	ND	ND	ND	ND	ND	ND	0/6	2/11	1/11	NA	NA	NA
1,3,5-Trimethylbenzene	ND	ND	ND	30	20	1.2	ND	ND	ND	ND	ND	ND	ND	0/6	2/11	2/11	NA	NA	NA
Xylenes (total)	ND	ND	ND	78	32.1	ND	1.18	ND	ND	ND	ND	ND	ND	0/6	1/11	3/11	0/0	1/1	0/3
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2/6	0/11	0/11	NA	NA	NA
Trans-1,2-dichloroethene	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2/6	0/11	0/11	0/2	0/0	0/0
SVOCs:																			
Bis(2-ethylhexyl)phthalate	ND	ND	4	67	19	8	3	ND	ND	ND	ND	ND	ND	1/6	3/11	4/11	NA	NA	NA
Pesticides/PCBs:																			
Aroclor 1260	ND	ND	ND	4.2	0.7	27.4	0.19	ND	ND	ND	ND	ND	ND	0/6	2/11	2/11	0/0	2/2	1/2
Inorganics																			
Arsenic	ND	20.70	ND	23.3	ND	11.5	5.4	7.3	ND	1.6	ND	1.4	ND	3/6	10/11	4/11	0/3	0/10	0/4
Barium	400	270	203	1070	383	1705	1340	844	81.4	545	680	372	209	6/6	11/11	11/11	0/6	0/11	0/11
Beryllium	ND	ND	ND	6	ND	2	ND	ND	ND	ND	ND	ND	ND	0/6	3/11	0/11	0/0	1/3	0/0
Cadmium	ND	ND	ND	19	ND	3	ND	3	ND	ND	ND	ND	ND	3/6	3/11	0/11	3/3	1/3	0/0
Chromium	22.4	ND	ND	168	28.3	44	ND	84	ND	ND	23	26	ND	5/6	7/11	5/11	1/3	1/7	0/3
Cobalt	6.6	ND	17.2	65	18.8	16.5	15.2	29	15.4	6	16.6	11	ND	4/6	7/11	7/11	NA	NA	NA
Copper	29.8	16	ND	336	63.2	65.5	ND	105	ND	25	55.6	71	ND	6/6	10/11	4/11	0/6	0/10	0/4
Lead	9.65	4.5	ND	358	47.10	48.3	ND	(14.5)	ND	8.1	(11.6)	16.7	ND	6/6	10/11	6/11	4/6	7/10	2/6
Manganese	1,300	1340	4090	11,900	12,430	2250	790	1774	1270	902	888	919	81.3	6/6	11/11	11/11	6/6	11/11	11/11
Mercury	ND	ND	ND	0.58	ND	ND	ND	ND	0.38	ND	ND	ND	0.38	0/6	1/11	2/11	0/0	0/1	0/2
Nickel	19	ND	ND	211	ND	75	ND	184	ND	ND	ND	ND	ND	4/6	3/11	2/11	0/4	2/3	0/2
Selenium	ND	ND	ND	ND	ND	ND	ND	1.1	ND	ND	ND	ND	ND	0/6	1/11	0/11	0/0	0/0	0/0
Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0/6	1/11	0/11	0/0	0/0	0/0
Vanadium	ND	6	ND	161	27.5	35.6	ND	86	ND	7	14.8	26	ND	3/6	6/11	2/11	NA	NA	NA
Zinc	189	12	ND	1510	232	245	ND	146	ND	25	47.2	60	ND	6/6	11/11	4/11	0/6	0/0	0/0

Concentrations in ppb. Only compounds with positive detects shown.
ND Indicates compound was analyzed for, but not detected
NA Not applicable
- No value available
MCL Maximum Contaminant Level
* Action Level
** Secondary Maximum Contaminant Level
Value Exceeds MCL

Notes:
a The number of samples in which the chemical was detected divided by the total number of samples analyzed
b The number of samples in which the chemical was detected above the MCL divided by the total number of samples in which the chemical was detected.
Sources: ICF, 1992. RI samples analyzed for full TCL/TAL parameters through CLP. Volatile organics portion by EPA method 524.2 (lower detection limit analyses).
EPA-FBT, 1988. ESI samples analyzed for low concentration Hazardous Substance List constituents and total cyanide through the CLP.

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TABLE 8

INDUSTRIAL LATEX
AREA GROUNDWATER EVALUATION

GROUNDWATER SAMPLING RESULTS SUMMARY
BEDROCK AQUIFER

COMPOUND	MCL Federal	MCL State	MW-1C ESI	MW-1C RI Round 1	MW-1C RI Round 2	MW-2BS ESI	MW-2BS RI Round 1	MW-2BS RI Round 2	MW-3C ESI	MW-3C RI Round 1	MW-3C RI Round 2	MW-5B ESI	MW-5B RI Round 1	MW-5B RI Round 2	MW-6C ESI	MW-6C RI Round 1	MW-6C RI Round 2	FREQUENCY OF DETECTION [a] ESI	FREQUENCY OF DETECTION [a] RI Round 1	FREQUENCY OF DETECTION [a] RI Round 2	FREQUENCY OF DETECTION ABOVE MCL [b] ESI	FREQUENCY OF DETECTION ABOVE MCL [b] RI Round 1	FREQUENCY OF DETECTION ABOVE MCL [b] RI Round 2
Organics																							
VOCs																							
Benzene	5	1	ND	[illegible]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	[illegible]	[illegible]	0/5	2/5	1/5	0/0	2/2	1/
Chlorobenzene	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10	ND	ND	1/5	0/5	0/5	NA	NA	N
Chloroform	-	-	ND	ND	ND	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1/5	0/5	0/5	NA	NA	N
1,1-Dichloroethane	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7	1.6	3.3	1/5	1/5	1/5	NA	NA	N
cis-1,2-Dichloroethene	70	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.0	0.7	0/5	1/5	1/5	0/0	0/1	0/
1,2-Dichloropropane	5	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.0	0/5	0/5	1/5	0/0	0/0	0/
Ethylbenzene	700	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.40	0/5	0/5	1/5	0/0	0/0	0/
Isopropylbenzene	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.11	0/5	0/5	1/5	NA	NA	N
Tetrachloroethene	5	1	ND	ND	ND	ND	ND	0.12	ND	ND	0.27	ND	ND	ND	ND	ND	0.13	0/5	0/5	3/5	0/0	0/0	0/
Toluene	1000	-	ND	ND	10	ND	ND	1.0	ND	1.2	4.1	ND	ND	2.3	ND	ND	1.0	0/5	1/5	5/5	0/0	0/1	0/
1,1,1-Trichloroethane	200	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.1	ND	ND	ND	0/5	0/5	1/5	0/0	0/0	0/
Trichloroethene	5	1	ND	[illegible]	ND	ND	ND	ND	ND	ND	0.16	ND	ND	ND	ND	ND	[illegible]	0/5	1/5	2/5	0/0	1/1	1/
1,2,4-Trimethylbenzene	-	-	ND	ND	ND	ND	ND	ND	ND	ND	0.16	ND	ND	ND	ND	ND	0.36	0/5	0/5	2/5	NA	NA	N
1,3,5-Trimethylbenzene	-	-	ND	ND	ND	ND	ND	ND	ND	ND	0.16	ND	ND	ND	ND	ND	0.14	0/5	0/5	2/5	NA	NA	N
Xylenes (total)	10,000	44	ND	1.0	ND	ND	ND	ND	ND	ND	0.16	ND	ND	ND	ND	ND	4.0	0/5	1/5	2/5	0/0	0/1	0/
SVOCs																							
Bis(2-ethylhexyl)phthalate	-	-	ND	ND	ND	ND	ND	ND	ND	ND	0.10	ND	ND	ND	ND	ND	6	0/5	0/5	2/5	NA	NA	N
Inorganics																							
Antimony	6	-	ND	ND	ND	ND	ND	ND	47	ND	ND	ND	ND	ND	ND	ND	ND	1/5	0/5	0/5	1/1	0/0	0/
Arsenic	50	-	6.9	2.1	ND	10.1	2.6	ND	ND	ND	ND	ND	1.1	ND	ND	3.0	ND	2/5	4/5	0/5	0/2	0/4	0/
Barium	2000	-	1,020	367	ND	384	506	ND	267	340	ND	191	343	223	966	1240	941	5/5	5/5	2/5	0/5	0/5	0/
Beryllium	4	-	ND	ND	ND	ND	3	ND	ND	ND	ND	ND	ND	ND	ND	1	ND	0/5	2/5	0/5	0/0	0/2	0/
Cadmium	5	-	ND	ND	ND	ND	ND	ND	4	ND	ND	ND	ND	ND	4.3	ND	ND	2/5	0/5	0/5	0/2	0/0	0/
Chromium	100	-	46.2	31	10.8	87.9	87	634	21.6	810	ND	19.9	ND	86.6	17	16	11.3	5/5	4/5	4/5	0/3	1/4	1/
Cobalt	-	-	9.4	ND	ND	11	19	13.8	ND	ND	ND	ND	ND	ND	ND	10	10.2	2/5	2/5	2/5	NA	NA	N
Copper	1300 *	-	50	10	2.2	84.7	16	ND	34.1	17	ND	104	9	10.2	72.1	234	73.6	5/5	5/5	3/5	0/3	0/3	0/
Lead	15 *	-	[illegible]	20	11.3	30.4	17.6	ND	13.3	17	ND	16.6	ND	ND	22	12.7	9.8	5/5	4/5	2/5	4/3	2/4	0/
Manganese	50 **	-	[illegible]	[illegible]	[illegible]	[illegible]	1190	[illegible]	[illegible]	[illegible]	10.8	[illegible]	29	18.1	[illegible]	[illegible]	[illegible]	5/5	5/5	5/5	3/3	4/3	3/
Mercury	2	-	ND	ND	ND	ND	ND	0.34	ND	ND	0.46	ND	ND	ND	ND	ND	ND	0/5	0/5	2/5	0/0	0/0	0/
Nickel	100	-	18.7	17	6.9	36.3	64	44.2	ND	20	ND	7.8	ND	ND	33.1	63	ND	4/5	4/5	2/5	0/4	0/4	0/
Selenium	50	-	ND	1.1	ND	ND	ND	ND	ND	1.3	ND	ND	ND	ND	ND	ND	ND	0/5	2/5	0/5	0/0	0/2	0/
Vanadium	-	-	ND	6	ND	32.6	34	ND	ND	7	ND	ND	ND	ND	23	18	ND	2/5	4/5	0/5	NA	NA	N
Zinc	5000 **	-	87.1	28	6.2	333	73	ND	114	29	ND	84.8	6	ND	147	74	12.6	5/5	5/5	2/5	0/3	0/3	0/

Concentrations in ppb. Only compounds with positive detects shown

ND Indicates compound was analyzed for, but not detected.
NA Not Applicable
MCL Maximum Contaminant Level
- No Value Available
[illegible] Value exceeds MCL

* Action Level
** Secondary Maximum Contaminant Level

Notes:

[a] The number of samples in which the chemical was detected divided by the total number of samples analyzed.
[b] The number of samples in which the chemical was detected above the MCL divided by the total number of samples in which the chemical was detected

Source:

ICF, 1992 RI samples analyzed for full TCL/TAL parameters through CLP Volatile organics portion by EPA Method 624.2 (lower detection limit analyses)
EPA-FIT, 1988 ESI samples analyzed for low concentration Hazardous Substance List constituents and total cyanide analyses through the CLP

(from CDM Federal Programs, 1995)

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TABLE 9

INDUSTRIAL LATEX
AREA GROUNDWATER EVALUATION

CELLOFILM SITE
GROUNDWATER CONTAMINANT SUMMARY

	OVERBURDEN WELLS											BEDROCK WELLS																		
COMPOUNDS	CCMW-3S	MW-7S			CCMW-1S		CCMW-2S			MW-8S	MW-10S	MW-1D		MW-10D		MW-11D		CCMW-3D			MW-8D		MW-9D		MW-12D			MW-13D		
Round	3/90	3/90	3/93	8/94	3/90	3/92	3/90	3/92	8/94	3/90	3/90	3/90	3/92	3/90	3/92	3/90	3/92	3/90	3/92	8/94	3/90	3/92	3/90	3/92	3/90	3/92	8/94	3/90	3/92	8/94
Organics																														
Methylene Chloride	6	49	ND	3.5	6	ND	47	ND	4.3	7JB	6B	9	ND	6B	ND	3JB	ND	13	ND	ND	2JB	ND	3JB	ND	4JB	ND	ND	4JB	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	32	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1J	ND	1.0
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.6	ND	ND	ND	ND	ND	2J	ND	ND
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6J	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	210	63	ND	ND	ND	ND	ND	ND	ND	ND	ND	49	160	7.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	2	ND	ND	ND	ND	16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	ND	990	4.4	2.6	ND	ND	680	220	2.7	ND	ND	ND	ND	ND	ND	ND	ND	180	390	0.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	49	ND	ND	ND	ND	ND	ND	2.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.7	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	4.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8J	ND	2	ND	ND	ND	ND	ND	ND	ND	3J	ND	ND
Toluene	ND	6J	ND	1.4	ND	ND	ND	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenze	ND	ND	ND	49	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)	ND	ND	ND	11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Inorganics																														
Manganese	14,700	14,500	8,190	NS	10,400	4,610	14,800	8,680	NS	15,900	11,600	1,560	1,590	4,820	3,070	2,060	1,880	7,990	9,740	NS	16.3	ND	4.8	ND	7.2	ND	NS	264	ND	NS

Concentrations in ppb.
NA Not Analyzed
ND Indicates parameter analyzed for, but not detected.
B Indicates compound also detected in blank samples.
J Indicates value near detection limit and has been estimated.
NS Not sampled

Notes:
CCMW-3S, MW-8S, and MW-10S were not sampled during both 1992 and 1994 sampling rounds.
CCMW-1S, MW-1D, MW-10D, MW-11D, MW-8D, and MW-9D were not sampled during the 1994 sampling round.

Sources:
IT Corporation 1990 and 1992. March 1990 and March 1992 data sampled analyzed for priority pollutant VOC plus first 15 TICs, acetone, MEK, MIBK, total xylenes, TDS, manganese, pH, specific conductance and temperature. Organics analyzed using EPA 600 Series methods and manganese analyzed using EPA methods 6010 (1990) and 243 (1992).
Groundwater Monitoring Report, August 25, 1994. August 1994 data analyzed for priority pollutant VOCs plus first 15 TICs.

(from CDM Federal Programs, 1995)

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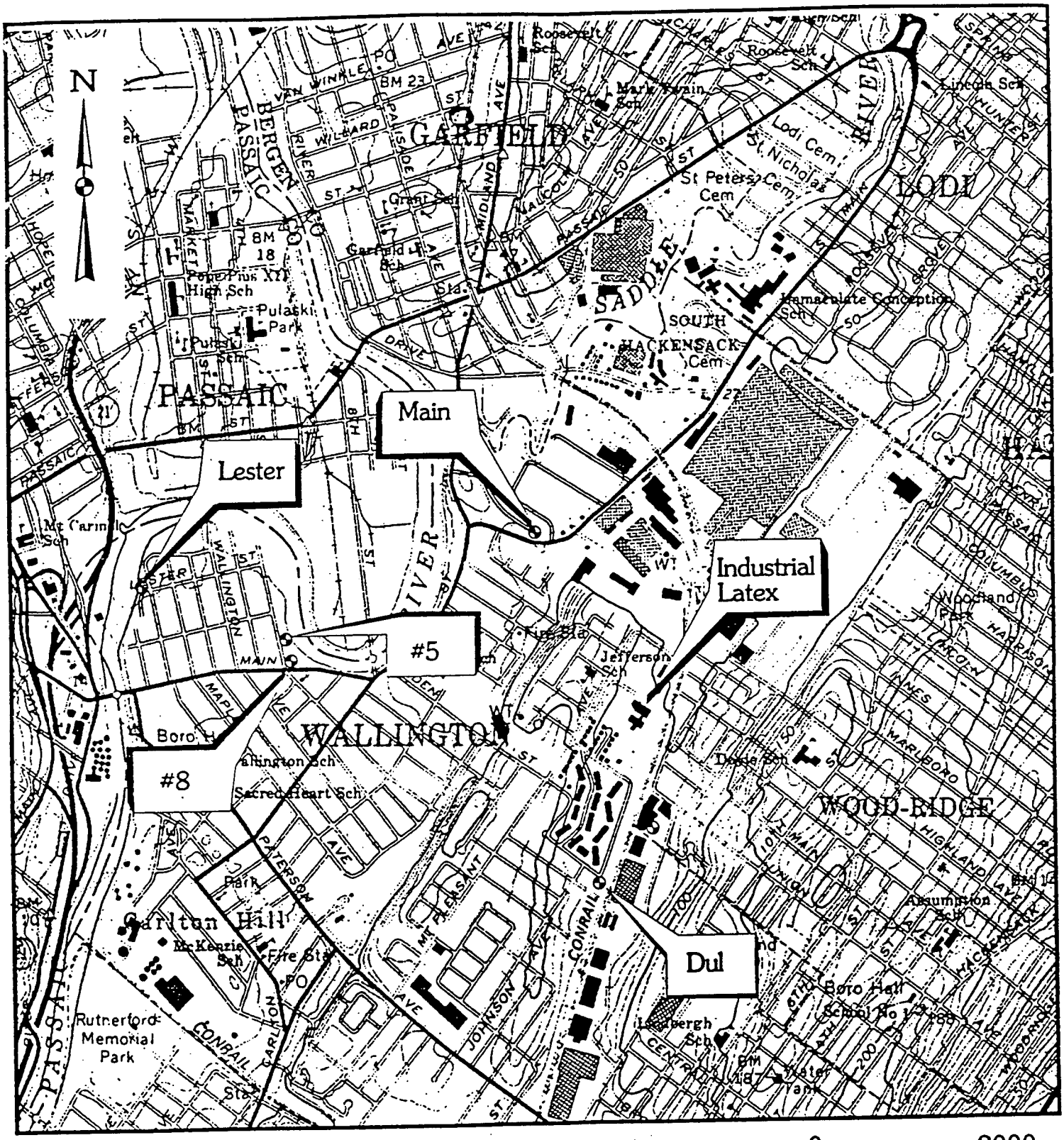
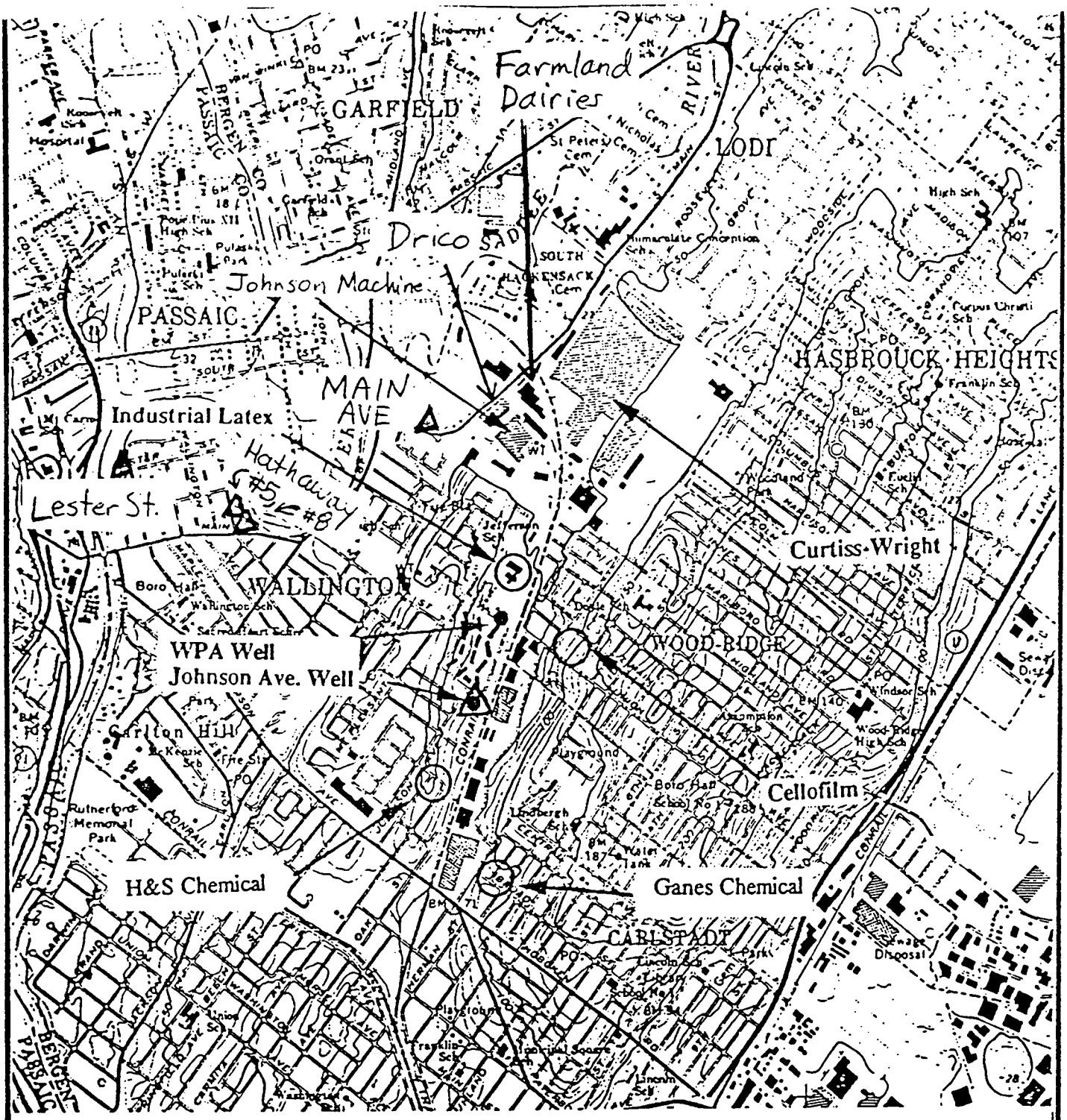


Figure 1: Locations of Wallington Municipal Wells

(from CDM, 1995)

W34



Source: United States Geological Survey (1981)

CDM FEDERAL PROGRAMS CORPORATION

INDUSTRIAL LATEX AREA GROUNDWATER EVALUATION

Some Known Contaminated Sites near Wallington Wells

Figure 2

(from CDM, 1995)

△ = municipal wells

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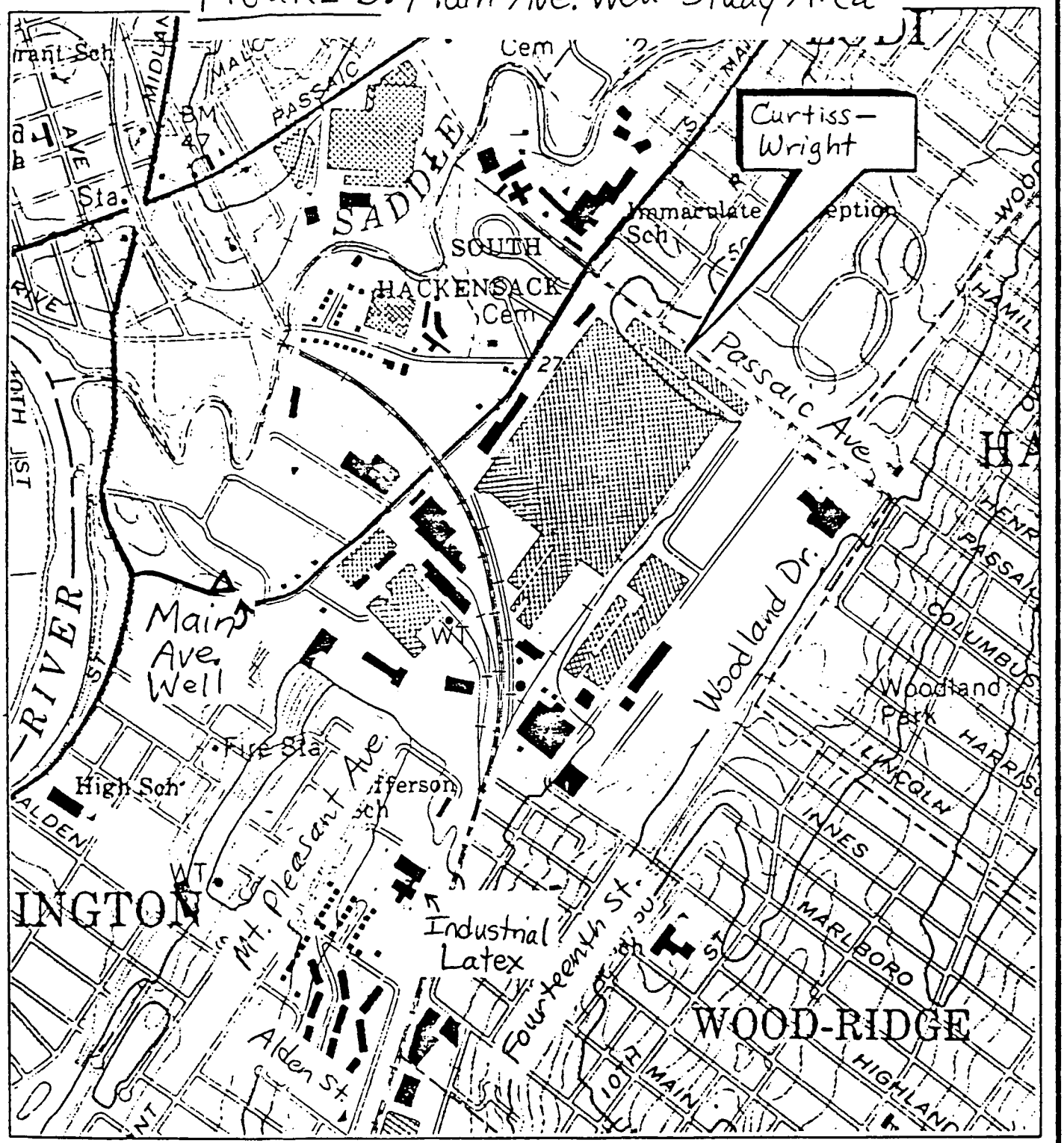
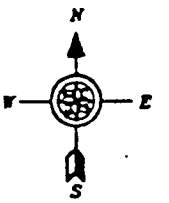
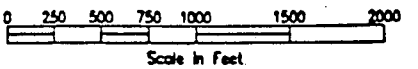
FIGURE 3: Main Ave. Well Study Area



QUADRANGLE LOCATION





SOURCE: USGS TOPOGRAPHIC MAP – WEEHAWKEN, NEW JERSEY–NEW YORK QUADRANGLE 1967 PHOTOREVISED 1984

CA RICH CONSULTANTS, INC.
Certified Ground-Water and Environmental Specialists
404 Glen Cove Avenue, Sea Cliff, NY 11579

TITLE: SITE LOCATION MAP		DATE: 10/21/93
		SCALE: AS SHOWN
FIGURE: 1	CURTISS-WRIGHT CORP. 1 PASSAIC STREET WOOD RIDGE, NEW JERSEY	DRAWN BY: J.J.S.
DRAWING NO: 3218-01A		APPR. BY: T.R.H.

(from CA Rich, 1994)

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FIGURE 4.

SCALE 1:24000

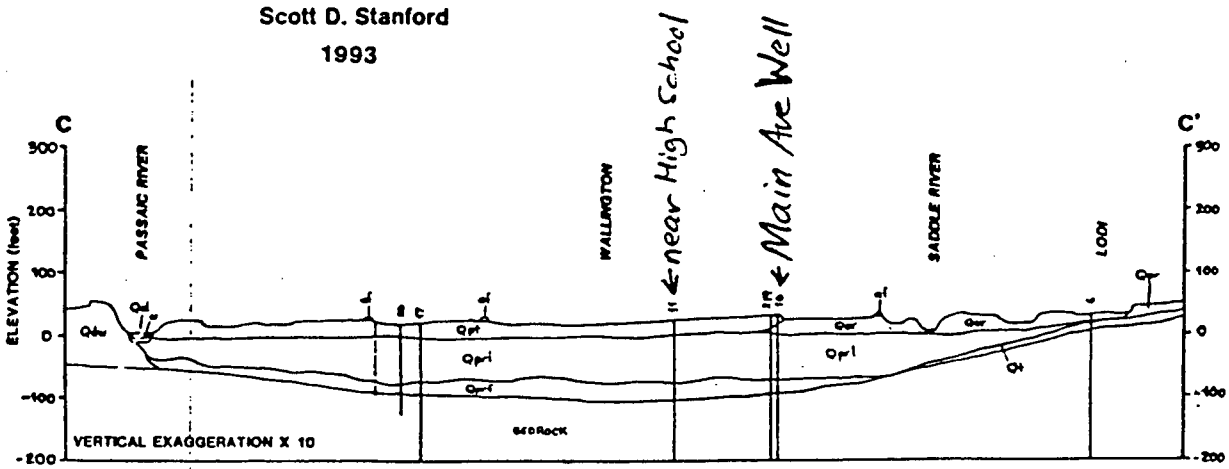
0 1000 5000 FEET

0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER

SURFICIAL GEOLOGY OF THE WEEHAWKEN AND CENTRAL PARK QUADRANGLES, BERGEN, HUDSON, AND PASSAIC COUNTIES, NEW JERSEY

by
Scott D. Stanford
1993



W37

FIGURE 5: Bedrock Geology Map of the Newark Basin (from Parker, 1993)

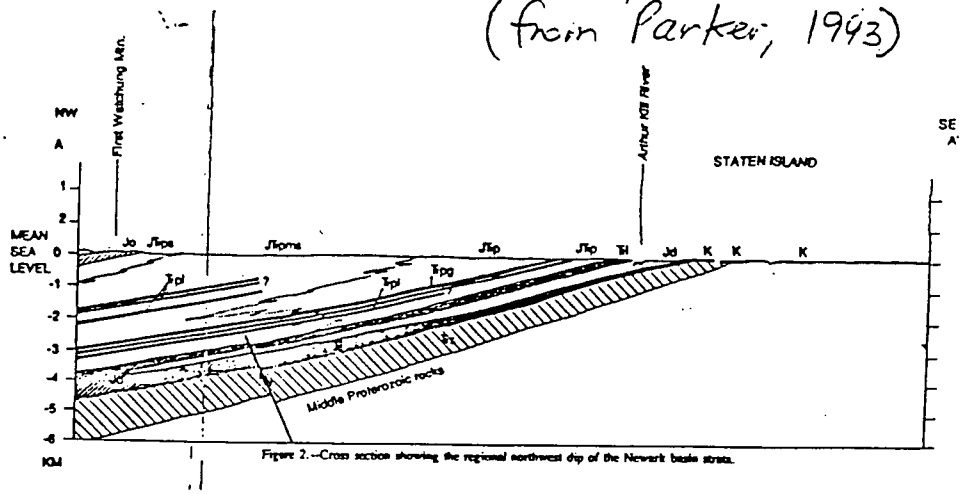


Figure 2.—Cross section showing the regional northwest dip of the Newark basin strata.

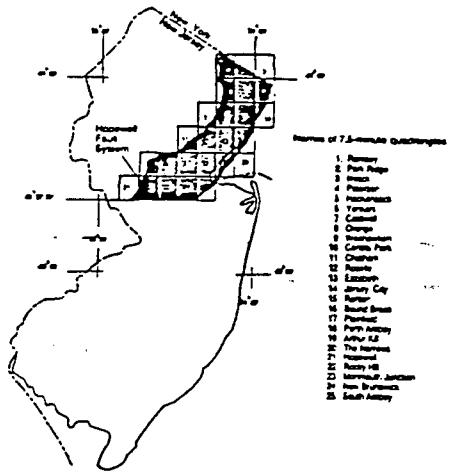


Figure 1.—Index map showing 7.5-min quadrangle coverage. Red indicates mapped area.

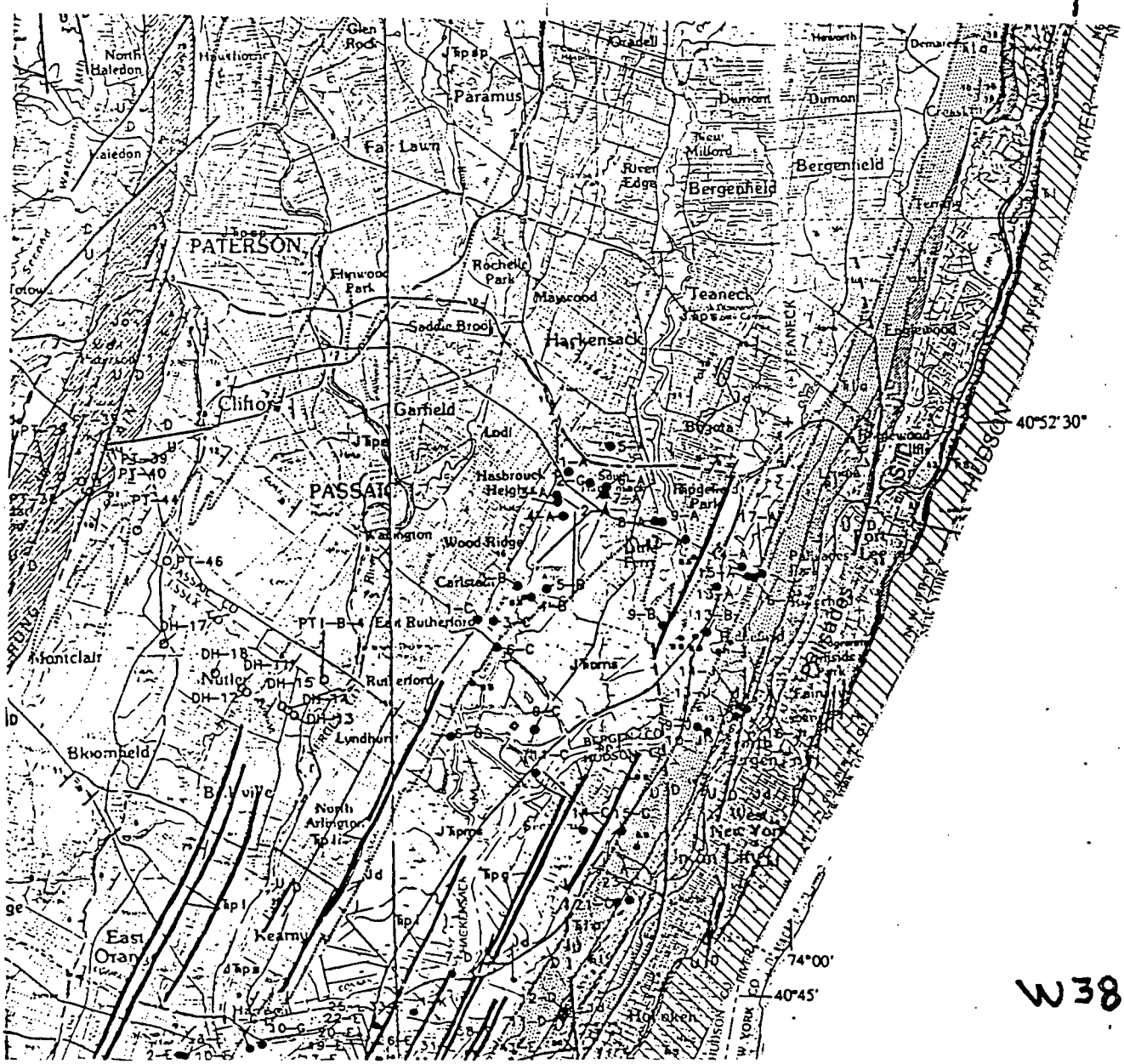
SCALE 1:100 000

1 CENTIMETER ON THE MAP REPRESENTS 1 KILOMETER ON THE GROUND

CONTOUR INTERVAL 20 METERS

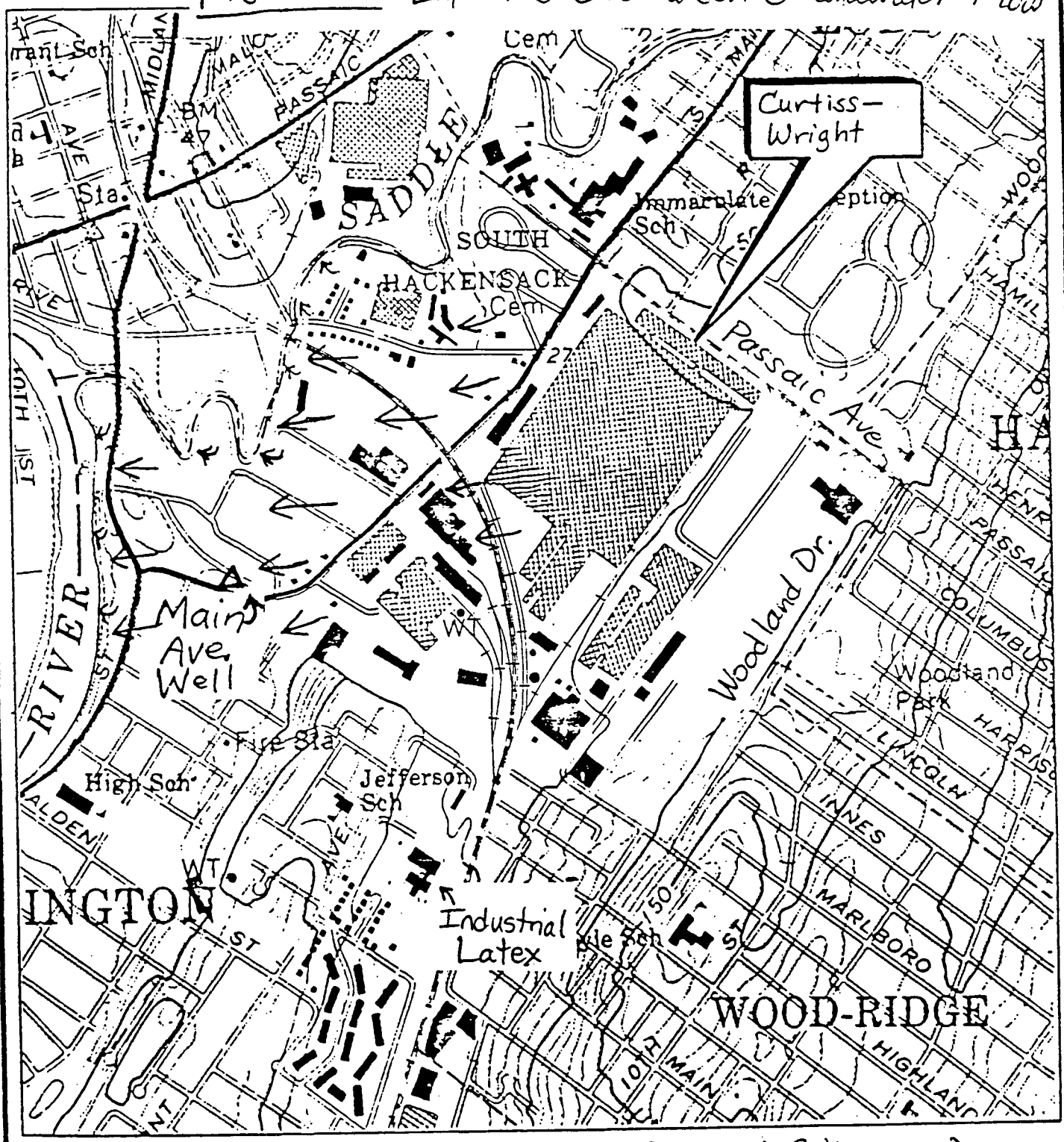
KILOMETERS 1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

MILES 1 0 1 2 3 4 5 6 7 8 9 10 11 12 13



W38

FIGURE 6: Expected Overburden Groundwater Flow



(from CA Rich, 1994)

QUADRANGLE LOCATION

→ = expected groundwater flow direction

↺ = discharge areas

N W E S

0 250 500 750 1000 1500 2000

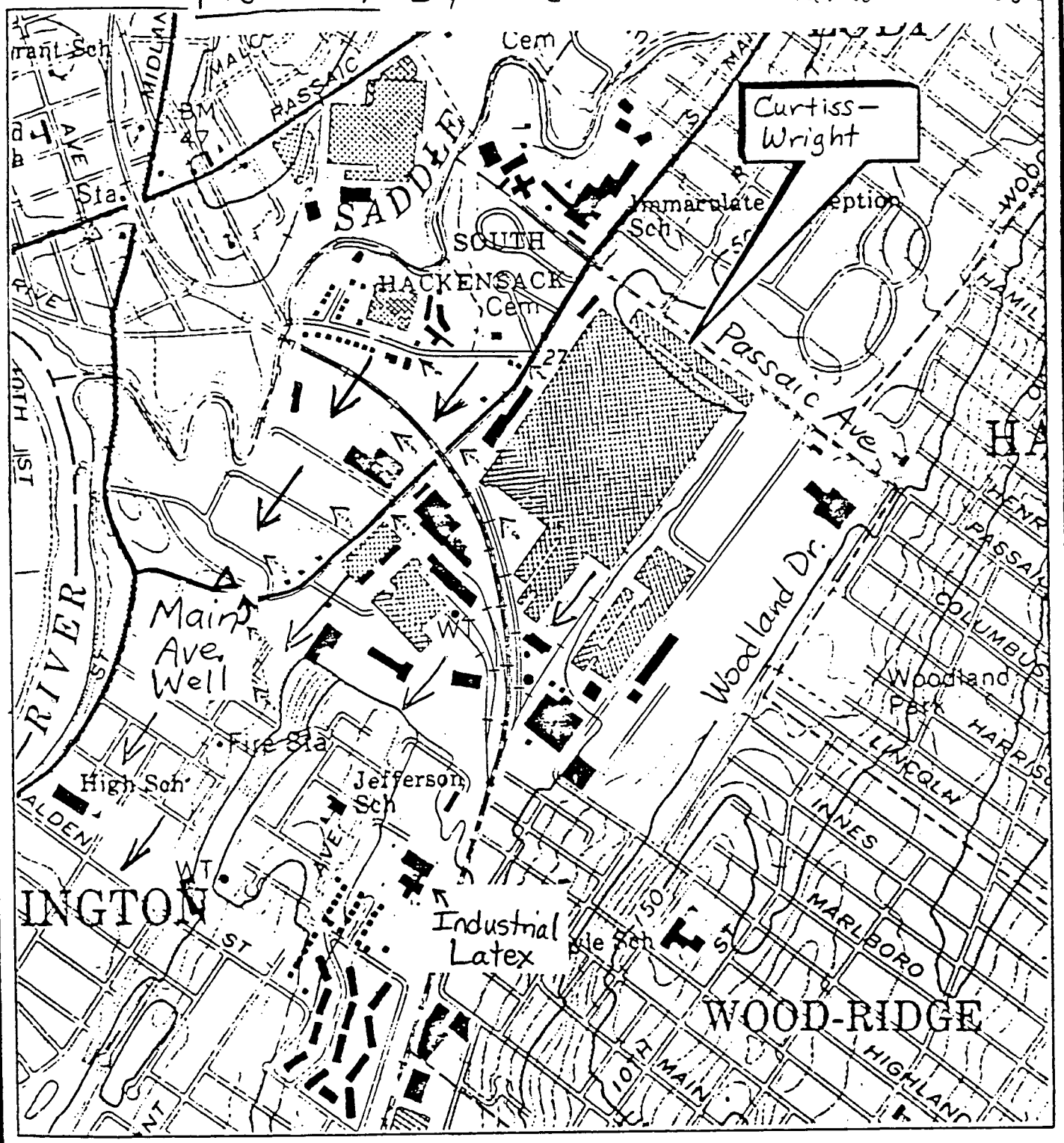
Scale in Feet

SOURCE: USGS TOPOGRAPHIC MAP – WEEHAWKEN, NEW JERSEY–NEW YORK QUADRANGLE 1967 PHOTOREVISED 1984

CA RICH CONSULTANTS, INC. Certified Ground-Water and Environmental Specialists 404 Glen Cove Avenue, Sea Cliff, NY 11579		
TITLE: SITE LOCATION MAP		DATE: 10/21/93 SCALE: AS SHOWN
FIGURE: 1 DRAWING NO.: 3218-01A	CURTISS-WRIGHT CORP. 1 PASSAIC STREET WOOD RIDGE, NEW JERSEY	DRAWN BY: J.J.S. APPD. BY: T.R.H.

W39

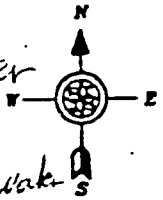
FIGURE 7: Expected Bedrock Groundwater Flow

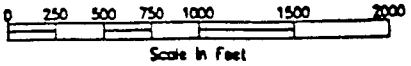


QUADRANGLE LOCATION

→ = primary groundwater flow direction

--> = minor groundwater flow direction





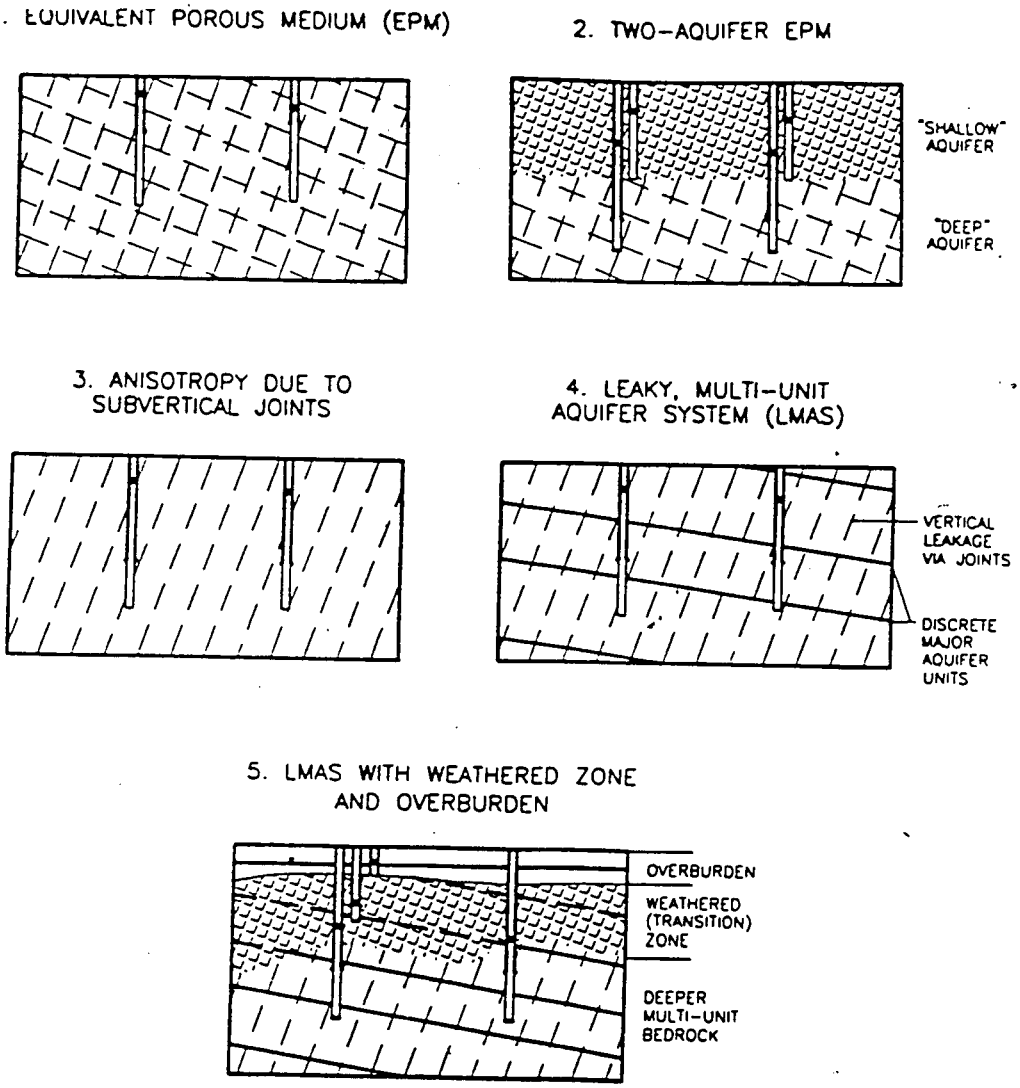
SOURCE: USGS TOPOGRAPHIC MAP – WEEHAWKEN, NEW JERSEY-NEW YORK QUADRANGLE 1967 PHOTOREVISED 1984

CA RICH CONSULTANTS, INC.

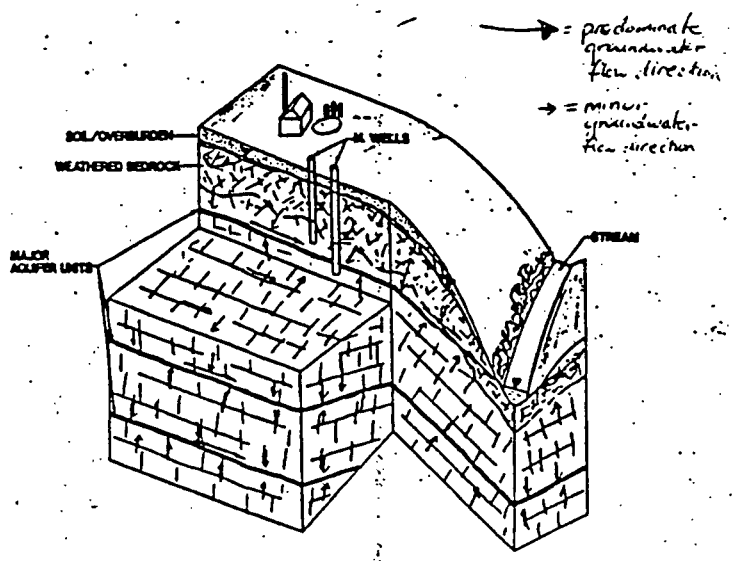
Certified Ground-Water and Environmental Specialists
404 Glen Cove Avenue, Sea Cliff, NY 11579

TITLE: SITE LOCATION MAP W40		DATE: 10/21/93
		SCALE: AS SHOWN
FIGURE: 1	CURTISS-WRIGHT CORP. 1 PASSAIC STREET WOOD RIDGE, NEW JERSEY	DRAWN BY: J.J.S.
DRAWING NO.: 3218-01A		APPR. BY: T.R.H.

Figure 8: Conceptual Hydrogeologic Model for Passaic Fm. in Wallington (adapted from Michalski, 1997)



Various past and present conceptual ground-water flow models used for sites in Newark Basin.



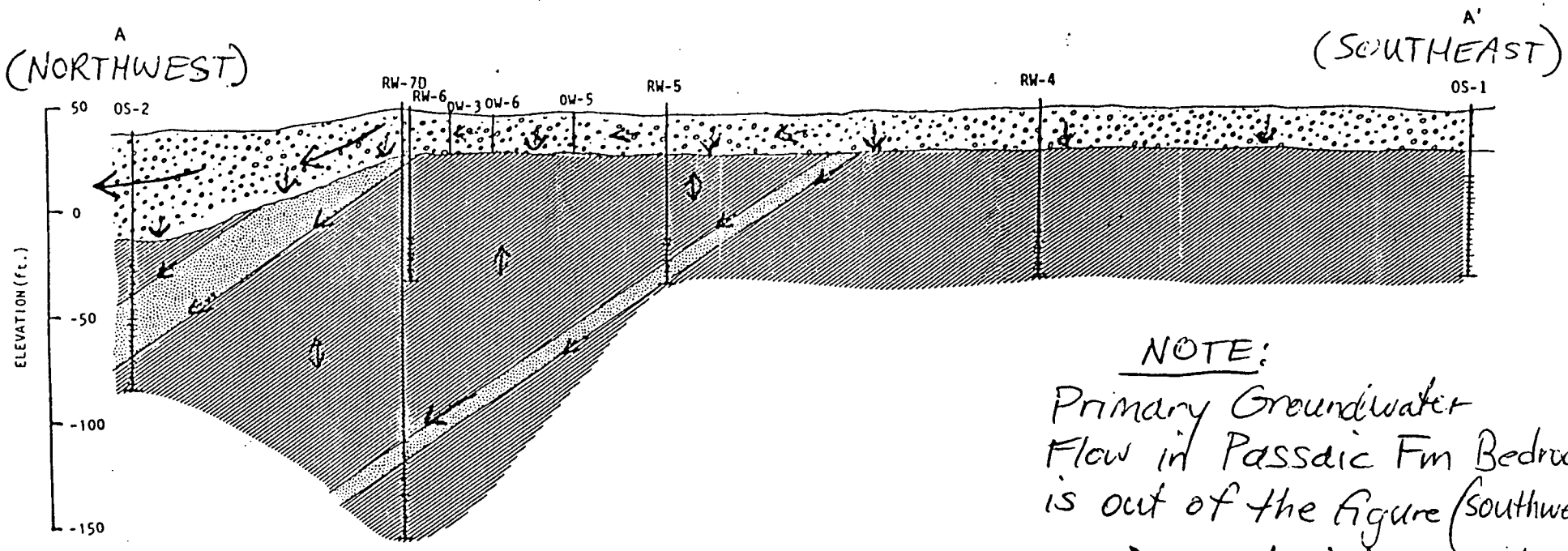
GROUNDWATER IN THE PASSAIC/BRUNSWICK FORMATION

A. Michalski

W41

FIGURE 9: Conceptual Hydrogeologic Model for the Main Ave Well Study Area

W42



NOTE:
Primary Groundwater Flow in Passaic Fm Bedrock is out of the figure (southwest)

→ = predominate groundwater flow pathways

⇢ = minor groundwater flow

GENERALIZED GEOLOGIC CROSS-SECTION
CURTISS-WRIGHT CORPORATION
WOOD-RIDGE, NEW JERSEY

0 200 400
HORIZONTAL SCALE

KEY:
- GROUND MORAINE
- REDDISH BROWN SHALE/SILTSTONE
- REDDISH BROWN FINE TO MEDIUM SANDSTONE

} BRUNSWICK FORMATION BEDROCK

Note 1: The subsurface sections shown represent our evaluation of the most probable conditions based upon interpretation of presently available data. Some variations from these conditions must be expected.

Reference: Results Of Site Investigation, July 30, 1987

DAMES & MOORE

FIGURE 9

W43

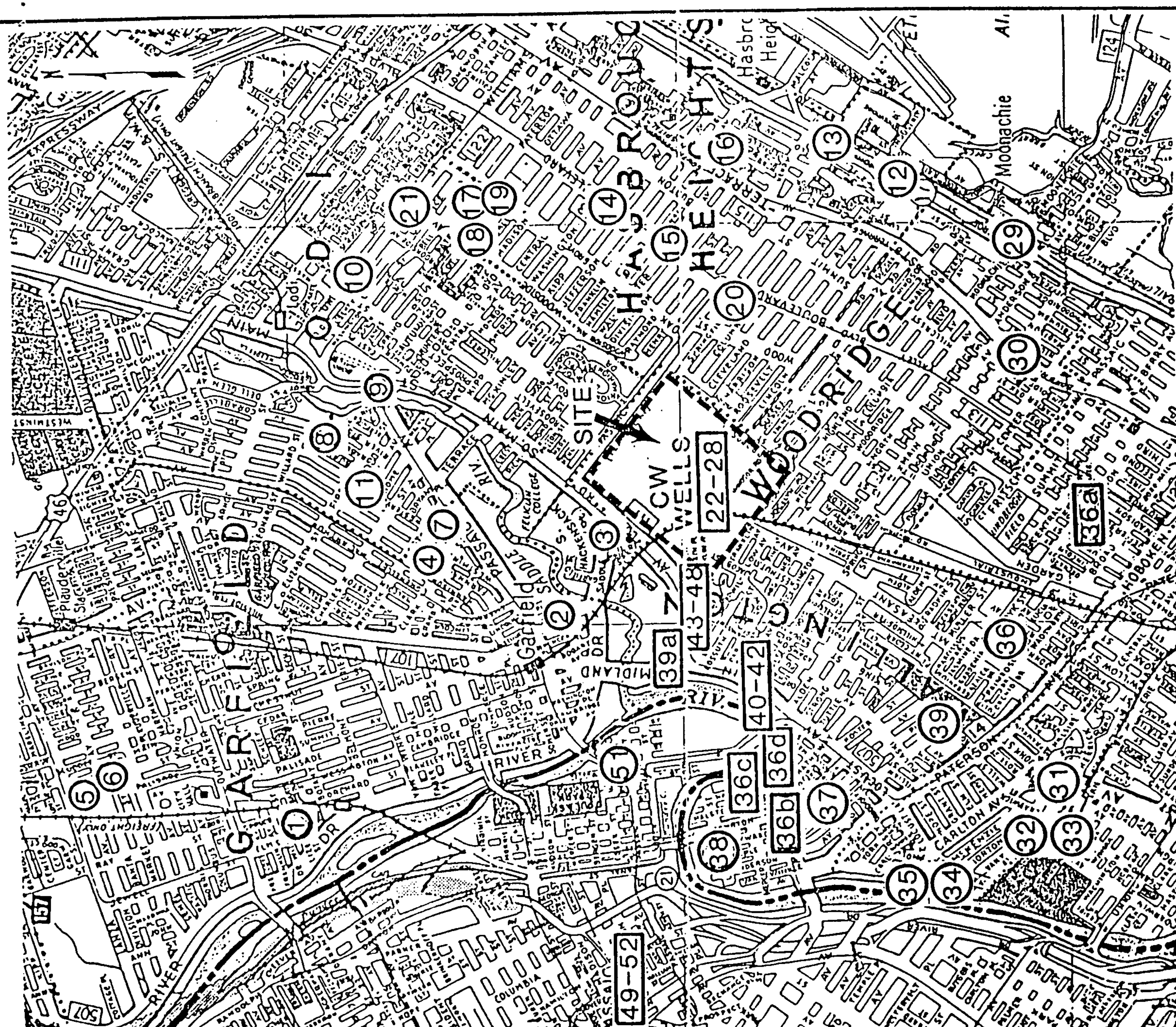


Figure 10:

APPROXIMATE LOCATIONS OF WATER WELLS IN VICINITY OF CURTISS-WRIGHT FACILITY WOODRIDGE, N.J.

KEY:

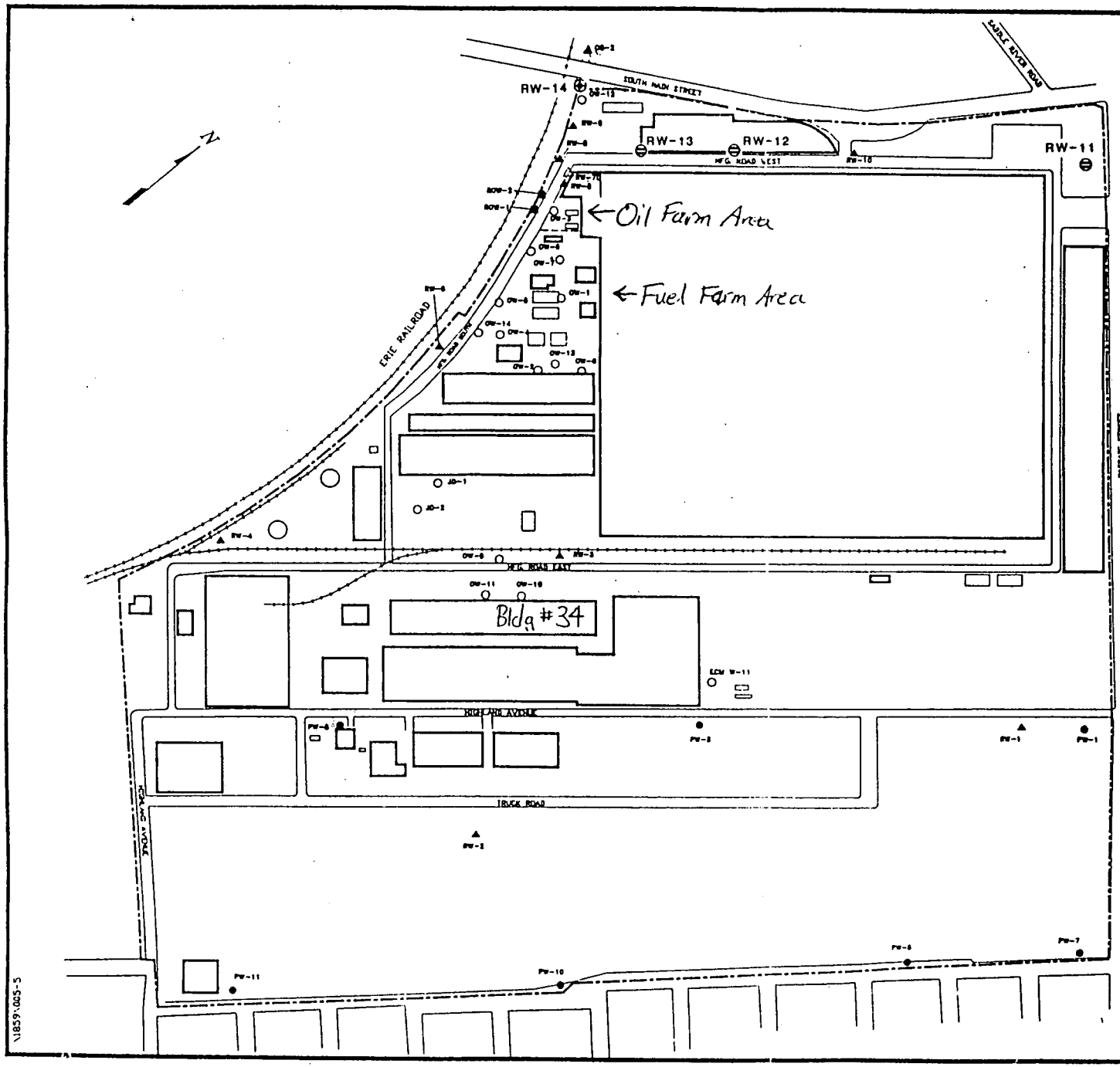
(7) INDICATES WELL NUMBER

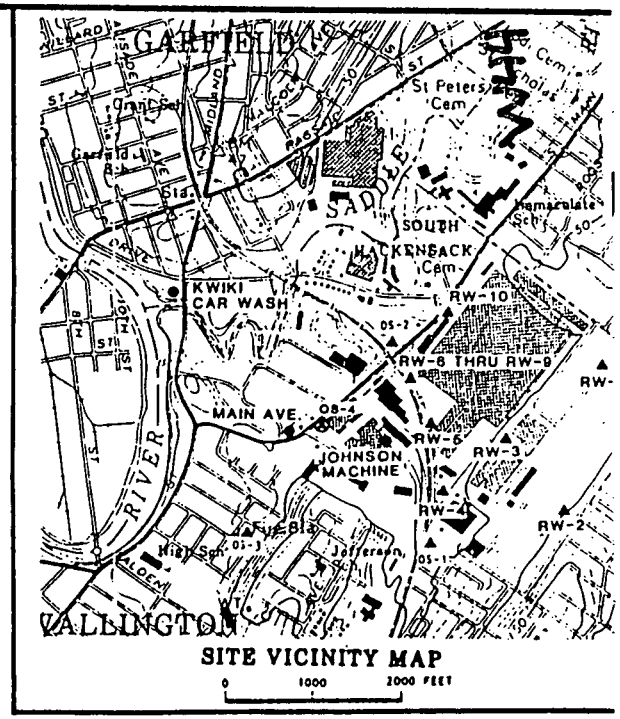
NOTE:
FOR WELL DESIGN AND DESCRIPTION SEE TABLE 1

0 2000 4000 FEET

DAMES & MOORE

FIGURE





- ● PRODUCTION WELL
- ▲ BEDROCK MONITORING WELL
- △ DEEP BEDROCK MONITORING WELL
- ○ OVERBURDEN MONITORING WELL
- ■ OVERBURDEN TEST WELLS
- ◐ OFFSITE WELL CLUSTER LOCATION
- ⊖ PROPOSED BEDROCK MONITORING WELL
- ⊕ PROPOSED DEEP BEDROCK MONITORING WELL

0 100 200 FEET

CURTISS-WRIGHT CORPORATION
WOOD-RIDGE, NEW JERSEY

SITE MAP
SHOWING MONITORING WELL LOCATIONS

DATE: 4/27/90	JOB NO: 1859-005	FIGURE
Dames & Moore (1990) CRANFORD, NEW JERSEY		11

1859-005-5

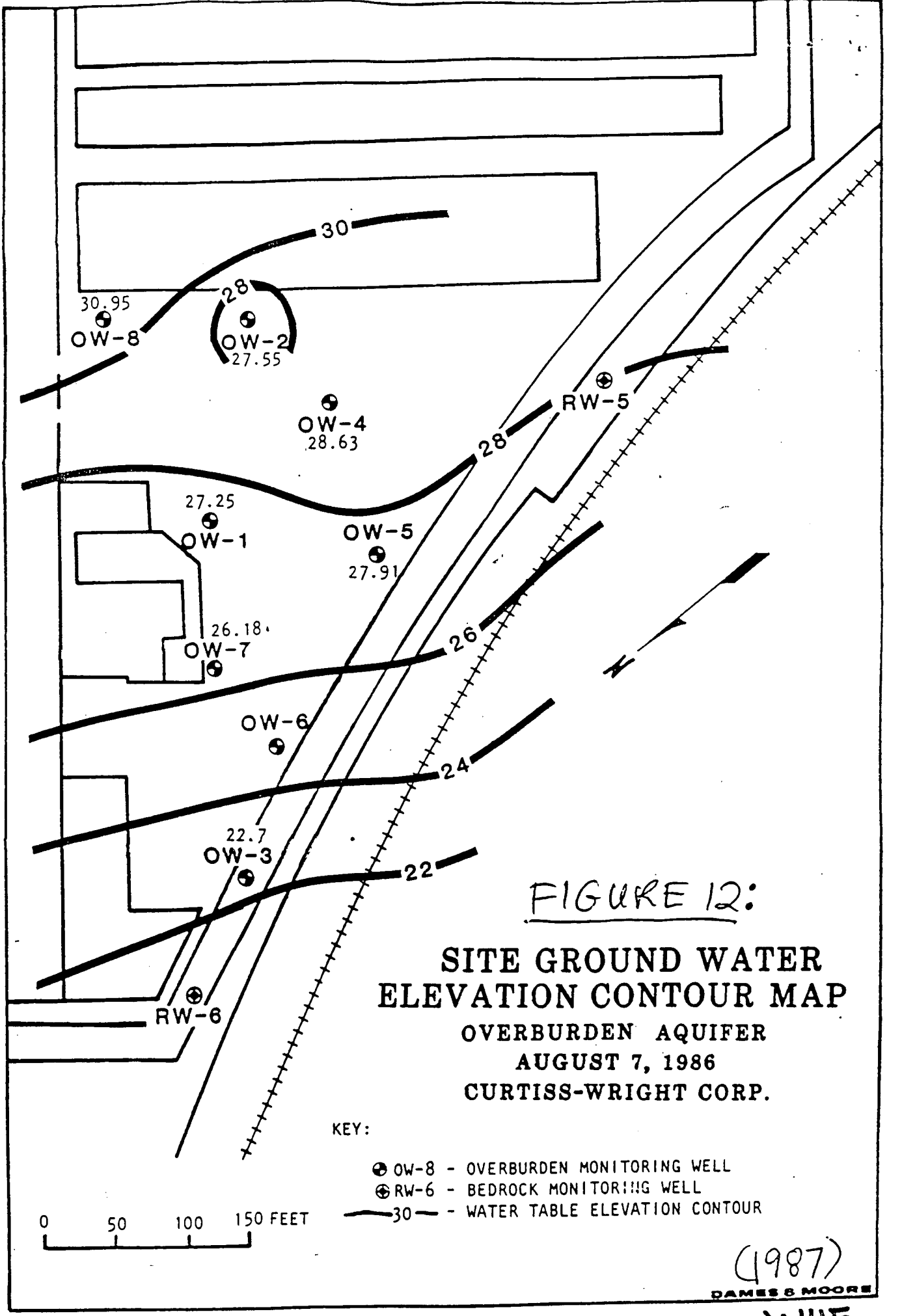


FIGURE 12:

SITE GROUND WATER ELEVATION CONTOUR MAP

OVERBURDEN AQUIFER
AUGUST 7, 1986
CURTISS-WRIGHT CORP.

W45

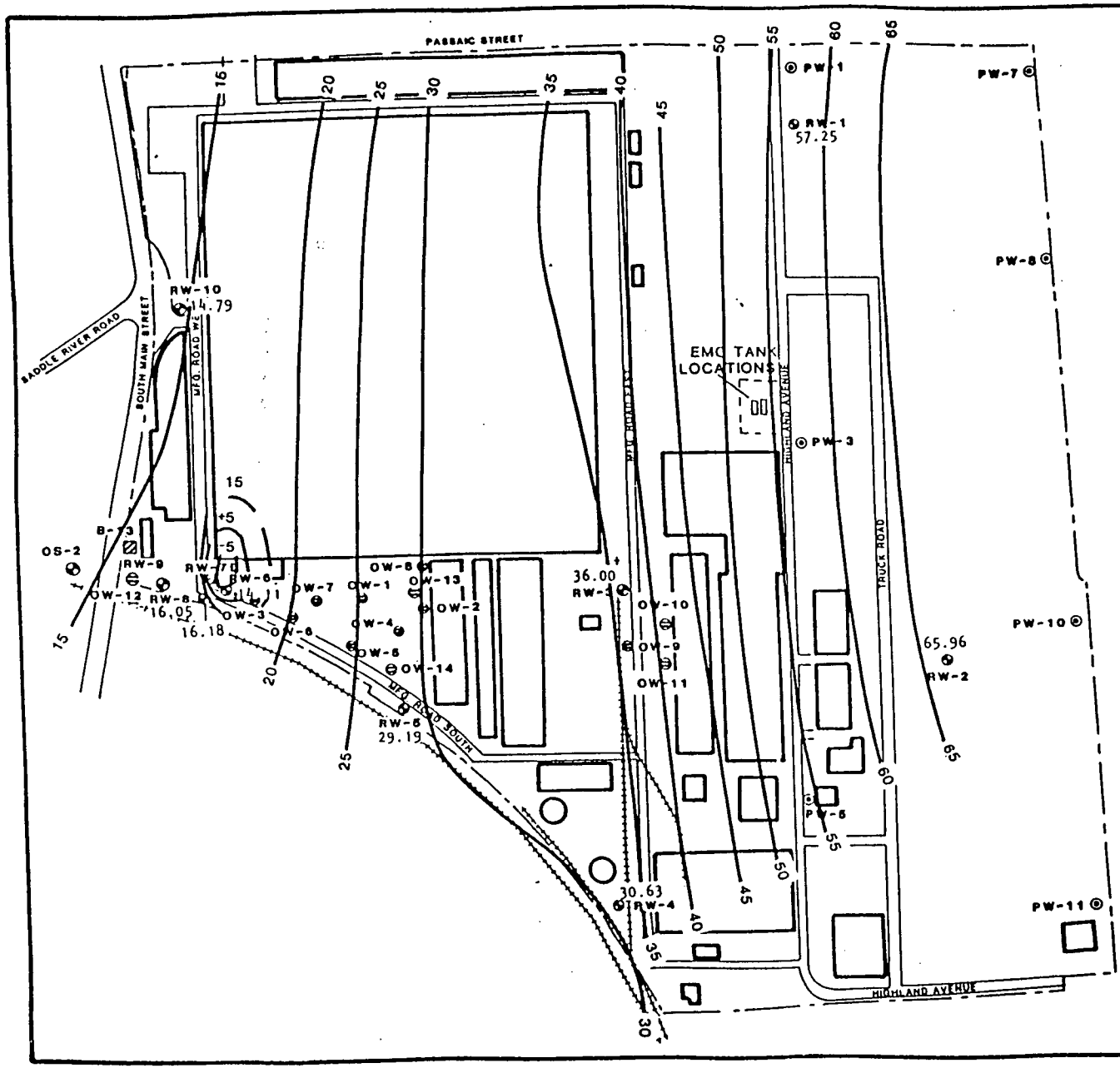


FIGURE 13:

GROUNDWATER ELEVATION CONTOUR MAP BEDROCK AQUIFER MAY 17, 1988

CURTISS WRIGHT CORP.
WOOD-RIDGE, N.J.

0 50 100 200 300 400 FEET

KEY:

- PW-11 ⊙ PRODUCTION WELL
- RW-2 ⊗ BEDROCK MONITORING WELL
- RW-7D ⊗ DEEP BEDROCK MONITORING WELL
- OW-9 ⊖ OVERBURDEN MONITORING WELL
- B-13 ▨ SOIL BORING
- 50 ▬ GROUNDWATER ELEVATION CONTOUR LINE (FEET ABOVE MSL)

Note: Groundwater Flow Directions are typically parallel to elevation contours in Passaic Fm Bedrock (Michalski and Britton, 1997)

(1988)

DAMES & MOORE

W46

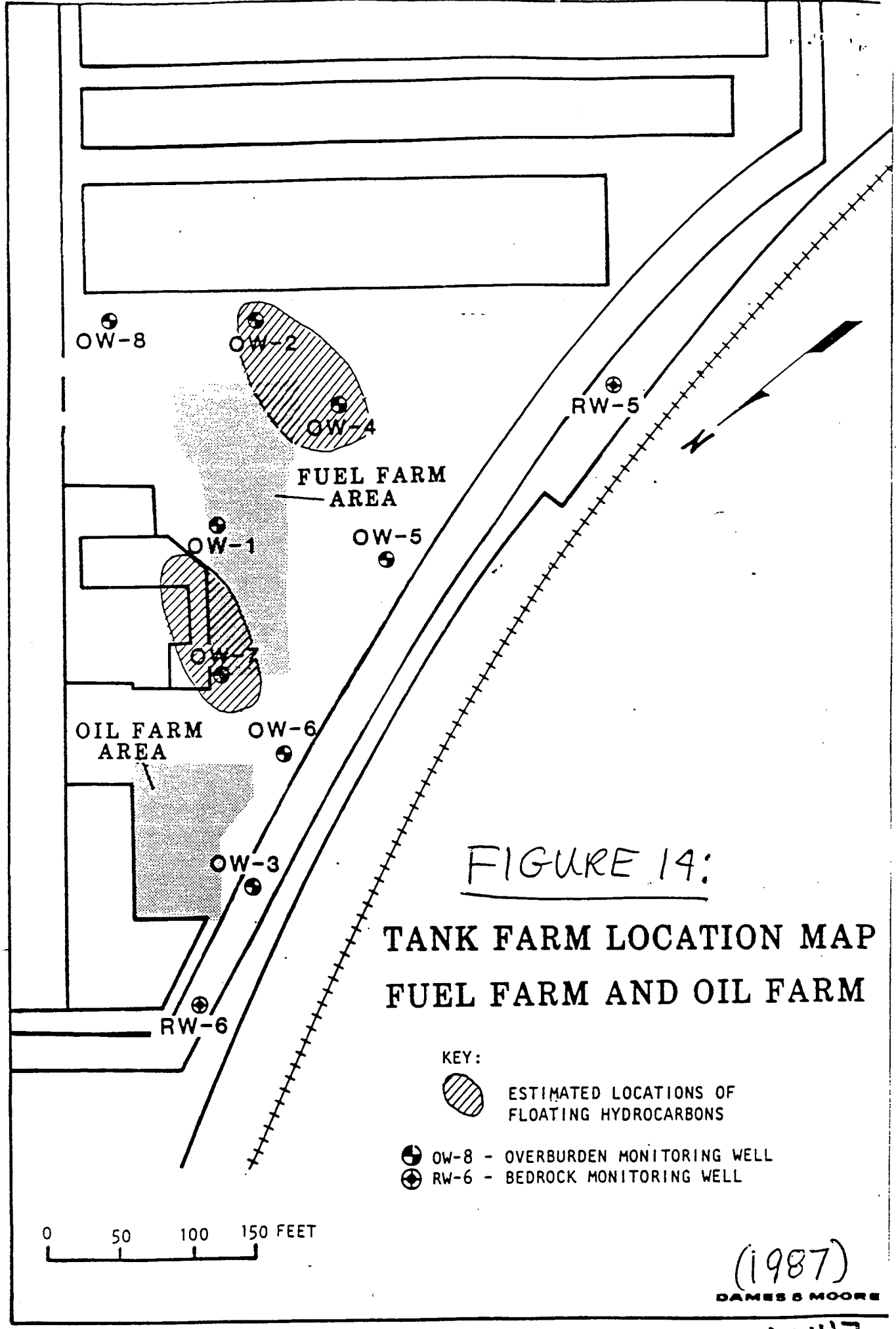
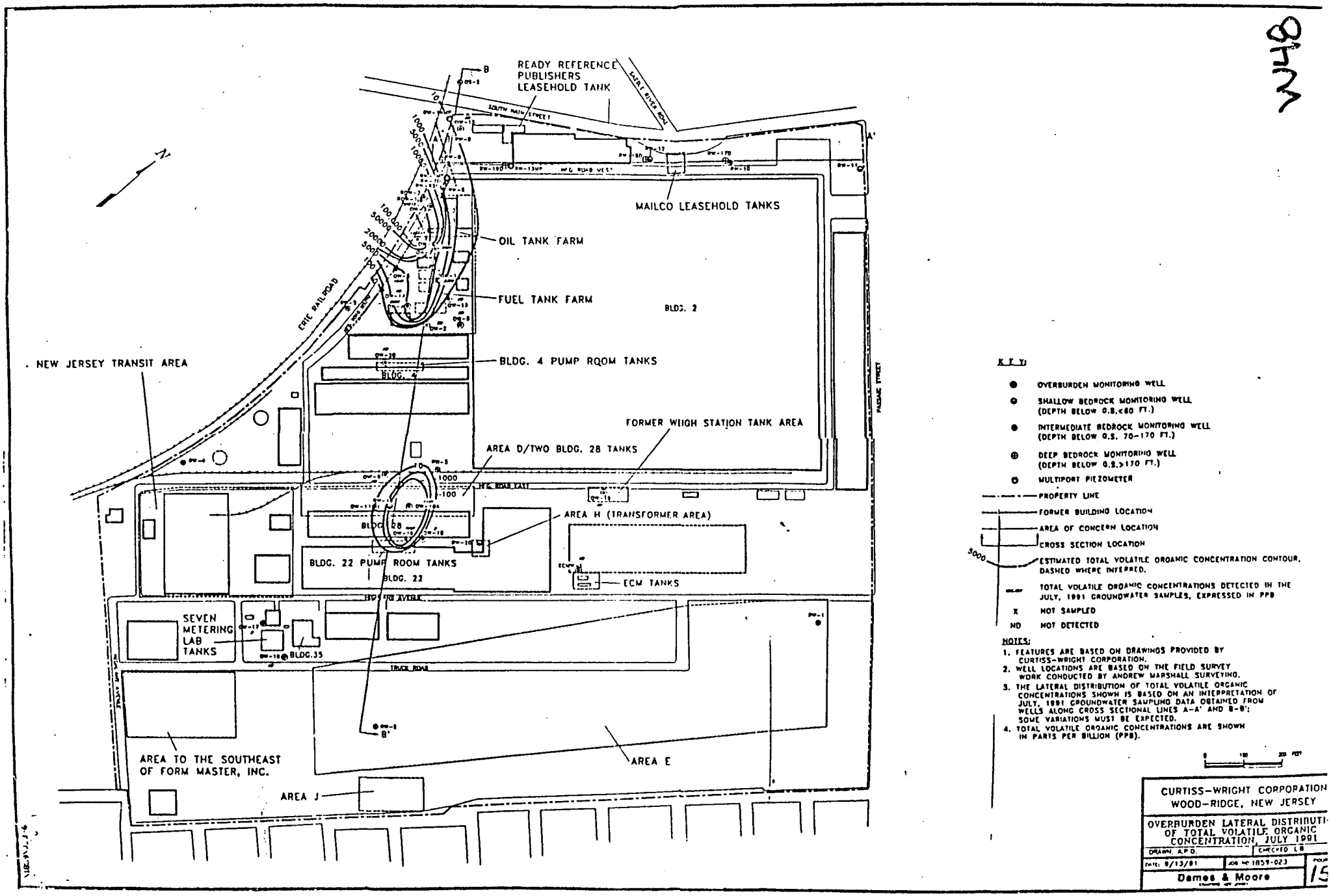
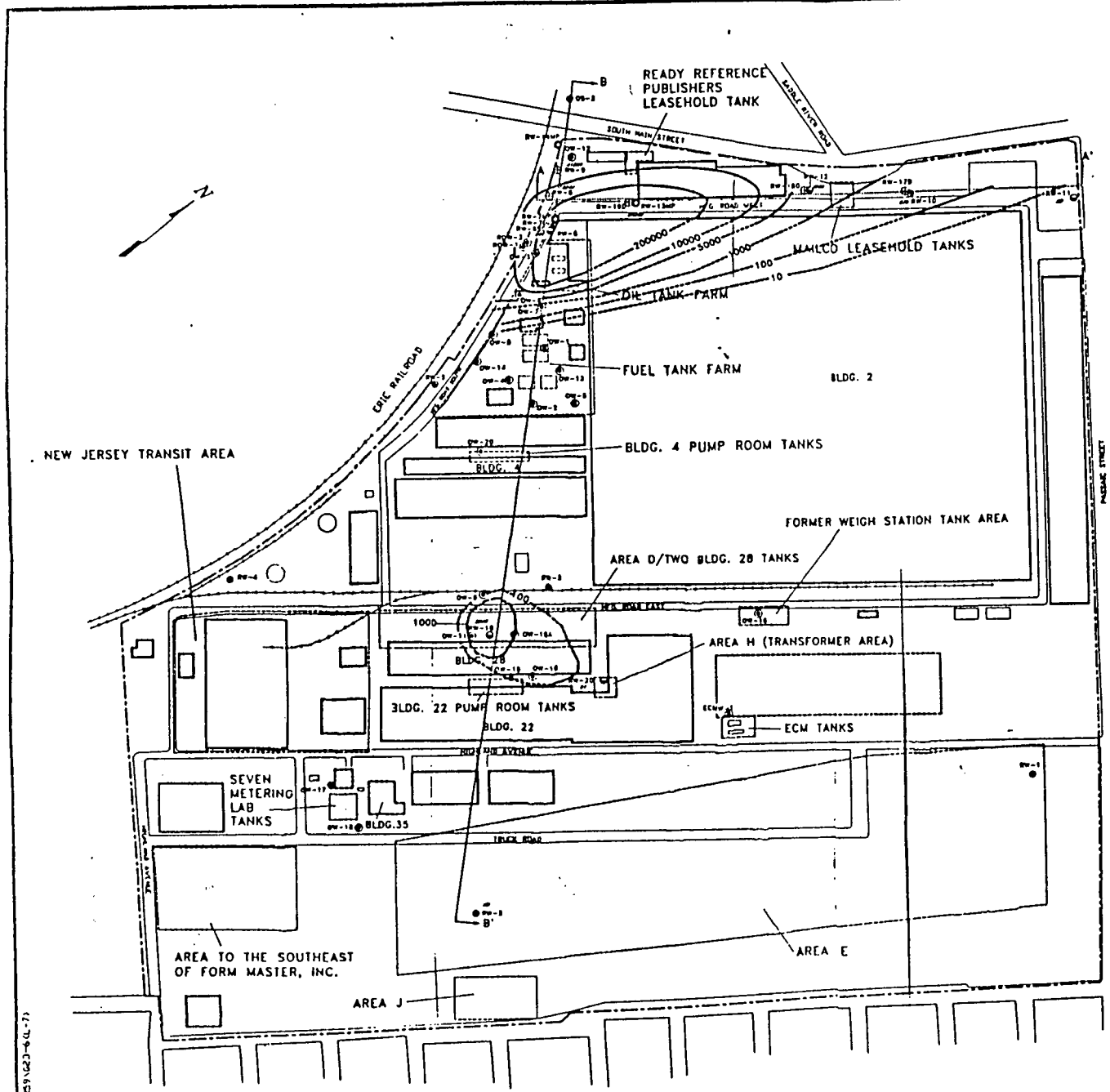


FIGURE 14:

TANK FARM LOCATION MAP
FUEL FARM AND OIL FARM

W47


READY REFERENCE PUBLISHERS LEASEHOLD TANK
SOUTH MAIN STREET
PASSAIC RIVER ROAD
MAILCO LEASEHOLD TANKS
OIL TANK FARM
FUEL TANK FARM
BLDG. 2
BLDG. 4 PUMP ROOM TANKS
BLDG. 4
ERIE RAILROAD
NEW JERSEY TRANSIT AREA
FORMER WEIGH STATION TANK AREA
AREA D/TWO BLDG. 28 TANKS
AREA H (TRANSFORMER AREA)
BLDG. 28
BLDG. 22 PUMP ROOM TANKS
BLDG. 22
ECM TANKS
SEVEN METERING LAB TANKS
BLDG.35
TRUCK ROAD
AREA TO THE SOUTHEAST OF FORM MASTER, INC.
AREA J
AREA E
PASSAIC STREET
KEY:
OVERBURDEN MONITORING WELL
SHALLOW BEDROCK MONITORING WELL (DEPTH BELOW G.S.<60 FT.)
INTERMEDIATE BEDROCK MONITORING WELL (DEPTH BELOW G.S. 70-170 FT.)
DEEP BEDROCK MONITORING WELL (DEPTH BELOW G.S.>170 FT.)
MULTIPORT PIEZOMETER
PROPERTY LINE
FORMER BUILDING LOCATION
AREA OF CONCERN LOCATION
CROSS SECTION LOCATION
ESTIMATED TOTAL VOLATILE ORGANIC CONCENTRATION CONTOUR, DASHED WHERE INFERRED.
TOTAL VOLATILE ORGANIC CONCENTRATIONS DETECTED IN THE JULY, 1991 GROUNDWATER SAMPLES, EXPRESSED IN PPB
X NOT SAMPLED
ND NOT DETECTED
NOTES:
1. FEATURES ARE BASED ON DRAWINGS PROVIDED BY CURTISS-WRIGHT CORPORATION.
2. WELL LOCATIONS ARE BASED ON THE FIELD SURVEY WORK CONDUCTED BY ANDREW MARSHALL SURVEYING.
3. THE LATERAL DISTRIBUTION OF TOTAL VOLATILE ORGANIC CONCENTRATIONS SHOWN IS BASED ON AN INTERPRETATION OF JULY, 1991 GROUNDWATER SAMPLING DATA OBTAINED FROM WELLS ALONG CROSS SECTIONAL LINES A-A' AND B-B'; SOME VARIATIONS MUST BE EXPECTED.
4. TOTAL VOLATILE ORGANIC CONCENTRATIONS ARE SHOWN IN PARTS PER BILLION (PPB).
CURTISS-WRIGHT CORPORATION
WOOD-RIDGE, NEW JERSEY
OVERBURDEN LATERAL DISTRIBUTION OF TOTAL VOLATILE ORGANIC CONCENTRATION, JULY 1991
DRAWN: A.P.D.
CHECKED: L.B.
DATE: 9/13/91
JOB NO. 1859-023
Dames & Moore
15



KEY:

- OVERBURDEN MONITORING WELL
- SHALLOW BEDROCK MONITORING WELL (DEPTH BELOW O.S.<60 FT.)
- INTERMEDIATE BEDROCK MONITORING WELL (DEPTH BELOW O.S. 70–170 FT.)
- DEEP BEDROCK MONITORING WELL (DEPTH BELOW O.S.>170 FT.)
- MULTIPORT PIEZOMETER
- PROPERTY LINE
- FORMER BUILDING LOCATION
- AREA OF CONCERN LOCATION
- CROSS SECTION LOCATION
- 3000 ESTIMATED TOTAL VOLATILE ORGANIC CONCENTRATION CONTOUR, DASHED WHERE INFERRED.
- 4400 TOTAL VOLATILE ORGANIC CONCENTRATIONS DETECTED IN THE JULY, 1991 GROUNDWATER SAMPLES, EXPRESSED IN PPB
- X NOT SAMPLED
- ND NOT DETECTED

NOTES:

1. FEATURES ARE BASED ON DRAWINGS PROVIDED BY CURTISS-WRIGHT CORPORATION.
2. WELL LOCATIONS ARE BASED ON THE FIELD SURVEY WORK CONDUCTED BY ANDREW MARSHALL SURVEYING.
3. THE LATERAL DISTRIBUTION OF TOTAL VOLATILE ORGANIC CONCENTRATIONS SHOWN IS BASED ON AN INTERPRETATION OF JULY, 1991 GROUNDWATER SAMPLING DATA OBTAINED FROM WELLS ALONG CROSS SECTIONAL LINES A–A' AND B–B'; SOME VARIATIONS MUST BE EXPECTED.
4. TOTAL VOLATILE ORGANIC CONCENTRATIONS ARE SHOWN IN PARTS PER BILLION (PPB).

0 100 200 FEET

CURTISS-WRIGHT CORPORATION
WOOD-RIDGE, NEW JERSEY

BEDROCK LATERAL DISTRIBUTION OF TOTAL VOLATILE ORGANIC CONCENTRATION, JULY, 1991
ELEVATION = 0 FEET M.S.L.

DRAWN: APD	CHECKED: L.B.	
DATE: 8/13/91	JOB NO 1859-023	FIGURE 16

Dames & Moore

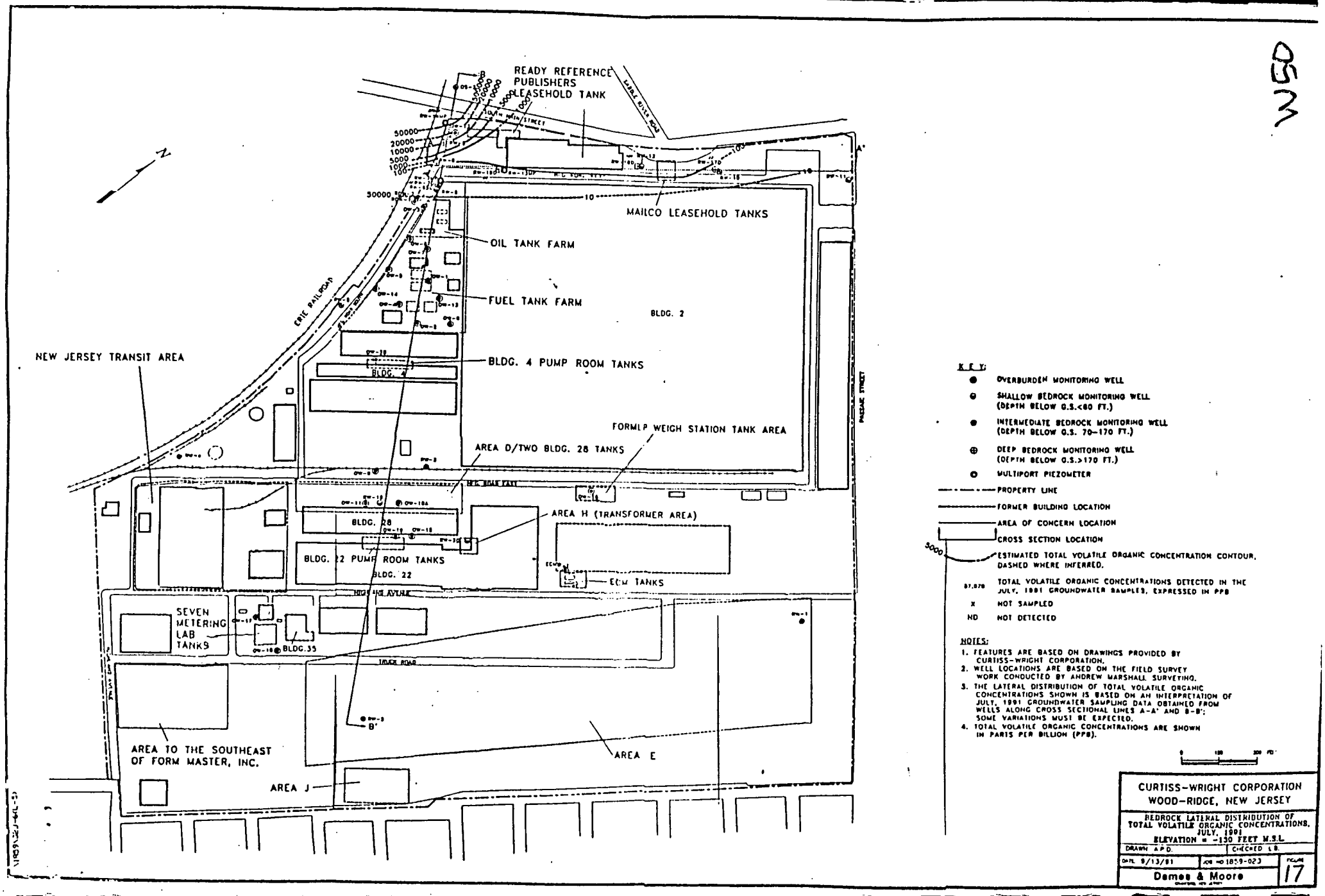
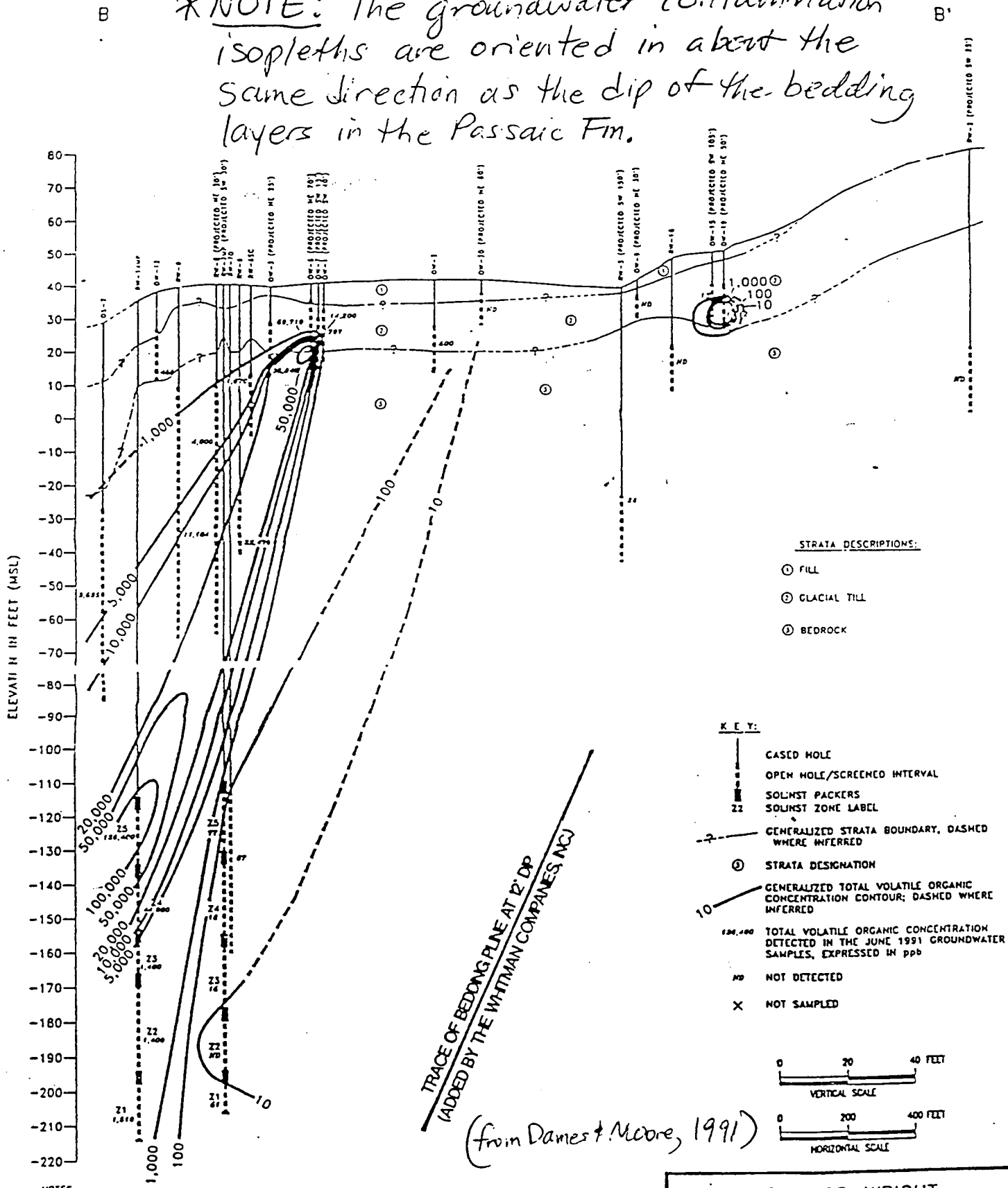

READY REFERENCE PUBLISHERS LEASEHOLD TANK
MAILCO LEASEHOLD TANKS
OIL TANK FARM
FUEL TANK FARM
BLDG. 2
BLDG. 4 PUMP ROOM TANKS
BLDG. 4
NEW JERSEY TRANSIT AREA
ERIE RAILROAD
FORMLP WEIGH STATION TANK AREA
AREA D/TWO BLDG. 28 TANKS
AREA H (TRANSFORMER AREA)
BLDG. 28
BLDG. 22 PUMP ROOM TANKS
BLDG. 22
ECW TANKS
SEVEN METERING LAB TANKS
BLDG.35
TRUCK ROAD
AREA TO THE SOUTHEAST OF FORM MASTER, INC.
AREA J
AREA E
PASSAIC STREET
KEY:
OVERBURDEN MONITORING WELL
SHALLOW BEDROCK MONITORING WELL (DEPTH BELOW G.S.<80 FT.)
INTERMEDIATE BEDROCK MONITORING WELL (DEPTH BELOW G.S. 70-170 FT.)
DEEP BEDROCK MONITORING WELL (DEPTH BELOW G.S.>170 FT.)
MULTIPORT PIEZOMETER
PROPERTY LINE
FORMER BUILDING LOCATION
AREA OF CONCERN LOCATION
CROSS SECTION LOCATION
ESTIMATED TOTAL VOLATILE ORGANIC CONCENTRATION CONTOUR, DASHED WHERE INFERRED.
TOTAL VOLATILE ORGANIC CONCENTRATIONS DETECTED IN THE JULY, 1991 GROUNDWATER SAMPLES, EXPRESSED IN PPB
X NOT SAMPLED
ND NOT DETECTED
NOTES:
1. FEATURES ARE BASED ON DRAWINGS PROVIDED BY CURTISS-WRIGHT CORPORATION.
2. WELL LOCATIONS ARE BASED ON THE FIELD SURVEY WORK CONDUCTED BY ANDREW MARSHALL SURVEYING.
3. THE LATERAL DISTRIBUTION OF TOTAL VOLATILE ORGANIC CONCENTRATIONS SHOWN IS BASED ON AN INTERPRETATION OF JULY, 1991 GROUNDWATER SAMPLING DATA OBTAINED FROM WELLS ALONG CROSS SECTIONAL LINES A-A' AND B-B'; SOME VARIATIONS MUST BE EXPECTED.
4. TOTAL VOLATILE ORGANIC CONCENTRATIONS ARE SHOWN IN PARTS PER BILLION (PPB).
CURTISS-WRIGHT CORPORATION
WOOD-RIDGE, NEW JERSEY
BEDROCK LATERAL DISTRIBUTION OF TOTAL VOLATILE ORGANIC CONCENTRATIONS, JULY, 1991
ELEVATION = -130 FEET M.S.L.
DRAWN A.P.D.
CHECKED L.B.
DATE 9/13/91
JOB NO 18519-023
FIGURE 17
Dames & Moore

FIGURE 18: Cross-Section of Groundwater Contamination at the Curtiss-Wright Site

EXHIBIT C

*NOTE: The groundwater contamination isopleths are oriented in about the same direction as the dip of the bedding layers in the Passaic Fm.



(from Dames & Moore, 1991)

NOTES:

1. THE SUBSURFACE CROSS SECTION SHOWN IS BASED ON INTERPRETATION OF DATA OBTAINED AT LOCATIONS OF THE MONITORING WELLS. SOME VARIATIONS MUST BE EXPECTED.
2. ELEVATION REFERENCED TO USGS VERTICAL DATUM (MSL).
3. FOR LOCATIONS OF CROSS SECTIONS REFER TO THE SITE MAP SHOWING LOCATIONS OF MONITORING WELLS AND GENERALIZED SUBSURFACE CROSS SECTIONS.
4. TOTAL VOLATILE ORGANIC CONCENTRATIONS ARE SHOWN IN PARTS PER BILLION (ppb).
5. THE VERTICAL DISTRIBUTION OF TOTAL VOLATILE ORGANIC CONCENTRATIONS SHOWN IS BASED ON AN INTERPRETATION OF JUNE 1991 DATA OBTAINED FROM WELLS ALONG THE CROSS SECTION LINE B-B' AND DOES NOT ACCOUNT FOR CONTRIBUTIONS FROM WELLS NOT SHOWN ABOVE, THEREFORE SOME VARIATIONS MUST BE EXPECTED.
6. VERTICAL LOCATIONS OF THE TOTAL VOLATILE ORGANIC CONCENTRATIONS HAVE BEEN ARBITRARILY

CURTISS-WRIGHT
WOOD-RIDGE, NEW JERSEY

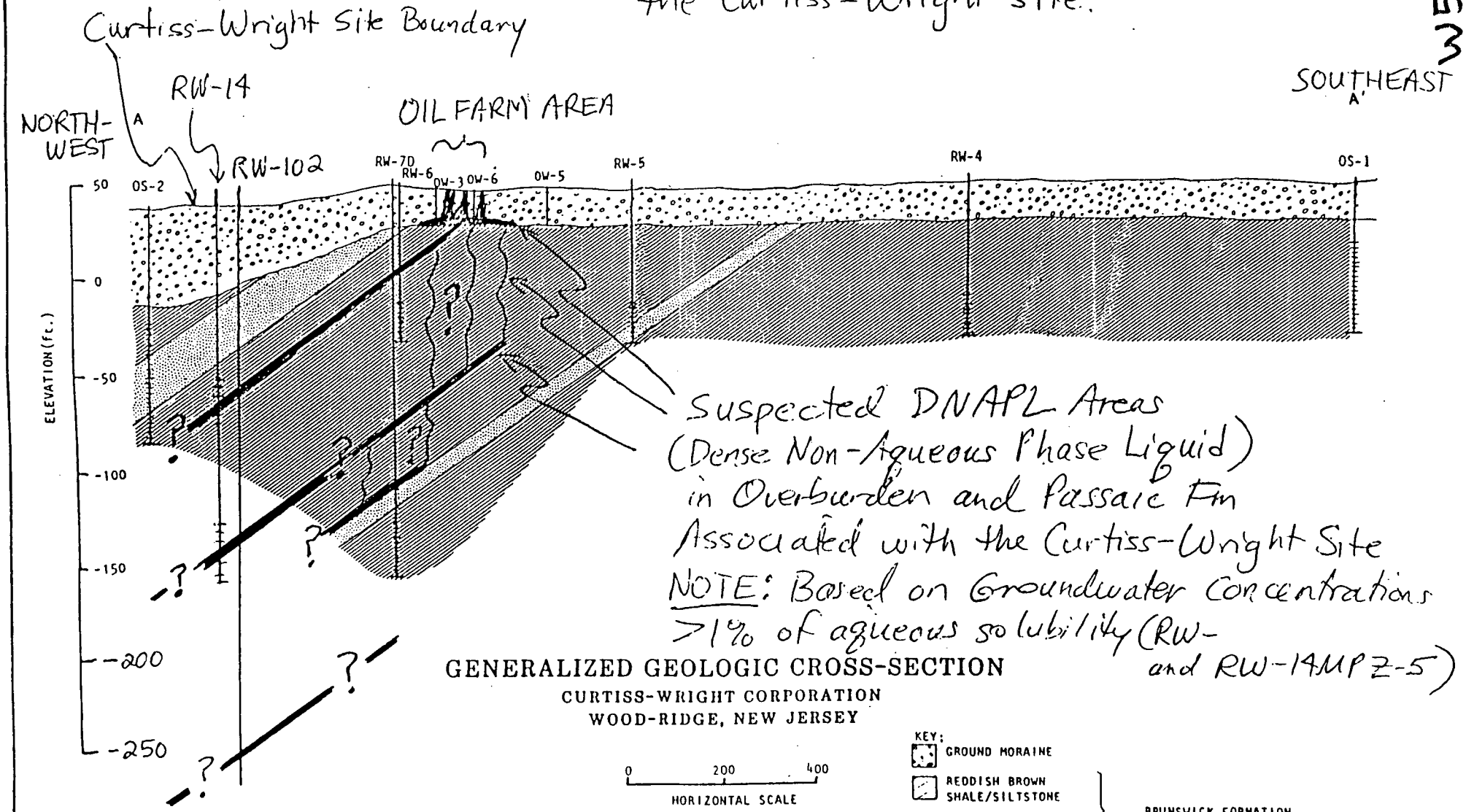
VERTICAL DISTRIBUTION OF THE TOTAL VOLATILE ORGANIC CONCENTRATION (JUNE 1991)
CROSS SECTION B-B'

DRAWN BY: J.N. | CKD. BY: L.B.

W51

9\023-12

FIGURE 19 : Suspected DNAPL releases from the Oil Farm Area of the Curtiss-Wright Site.



GENERALIZED GEOLOGIC CROSS-SECTION

CURTISS-WRIGHT CORPORATION

WOOD-RIDGE, NEW JERSEY

Note 1: The subsurface sections shown represent our evaluation of the most probable conditions based upon interpretation of presently available data. Some variations from these conditions must be expected.

Reference: Results Of Site Investigation, July 30, 1987

DAMES & MOORE

FIGURE 9

W52

FIGURE 20: Stratigraphic Relationship Between Wallington's Main Ave and Hathaway #5, #8 Wells and Curtiss-Wright's Oil Farm Area.
(NOTE: DNAPL suspected at OW-3, OW-6, RW-102 and RW-14MP25)

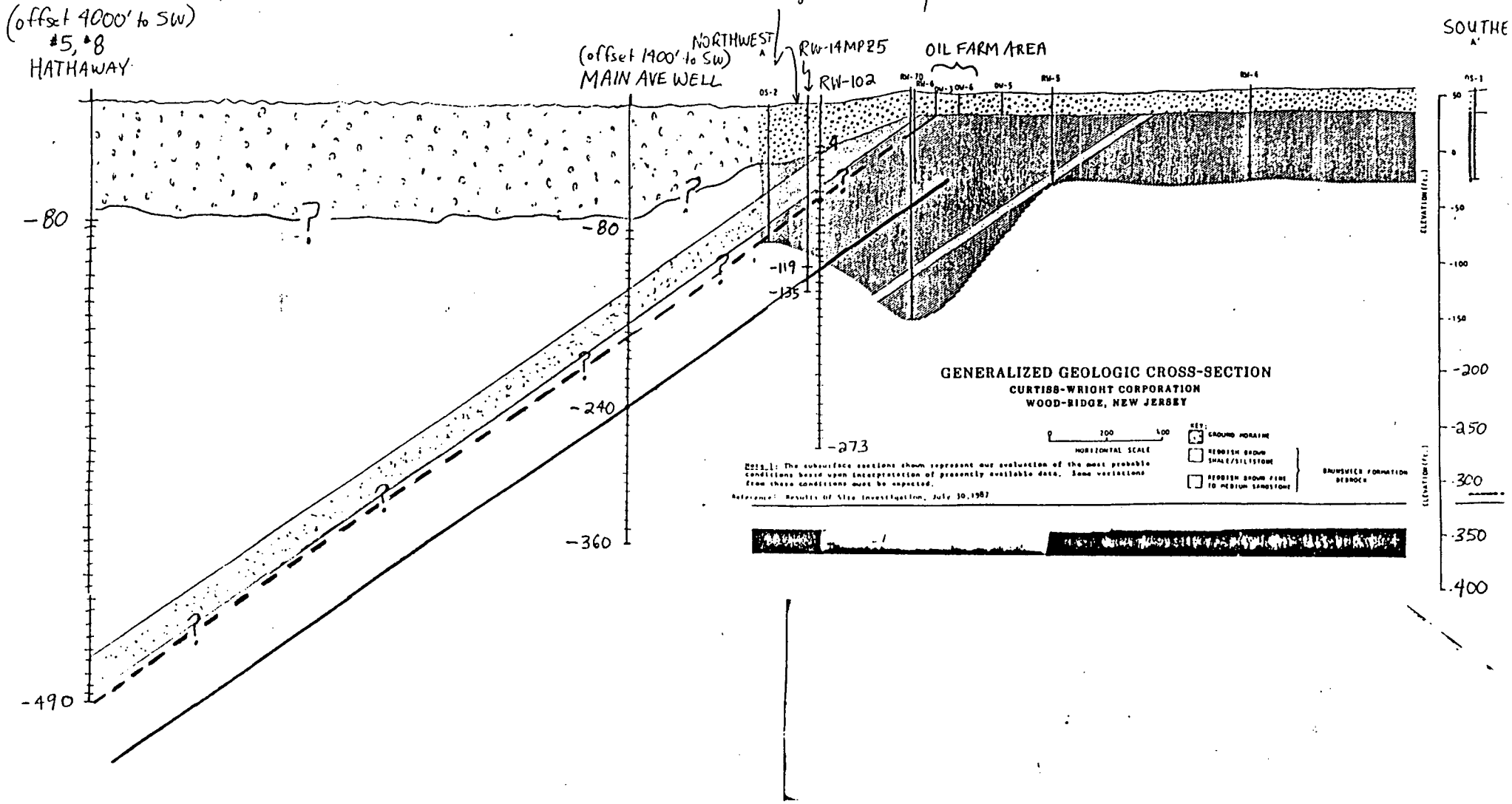
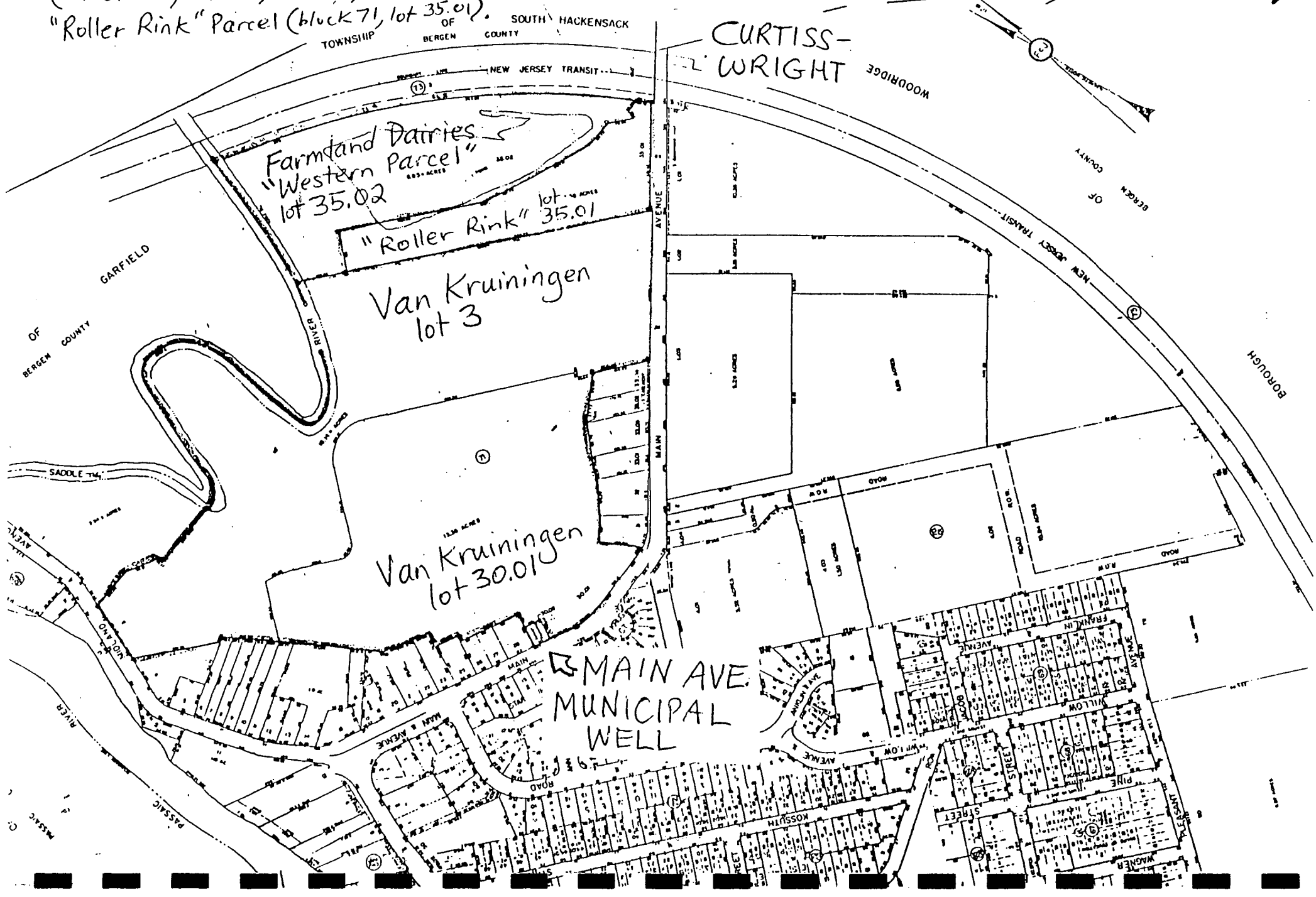
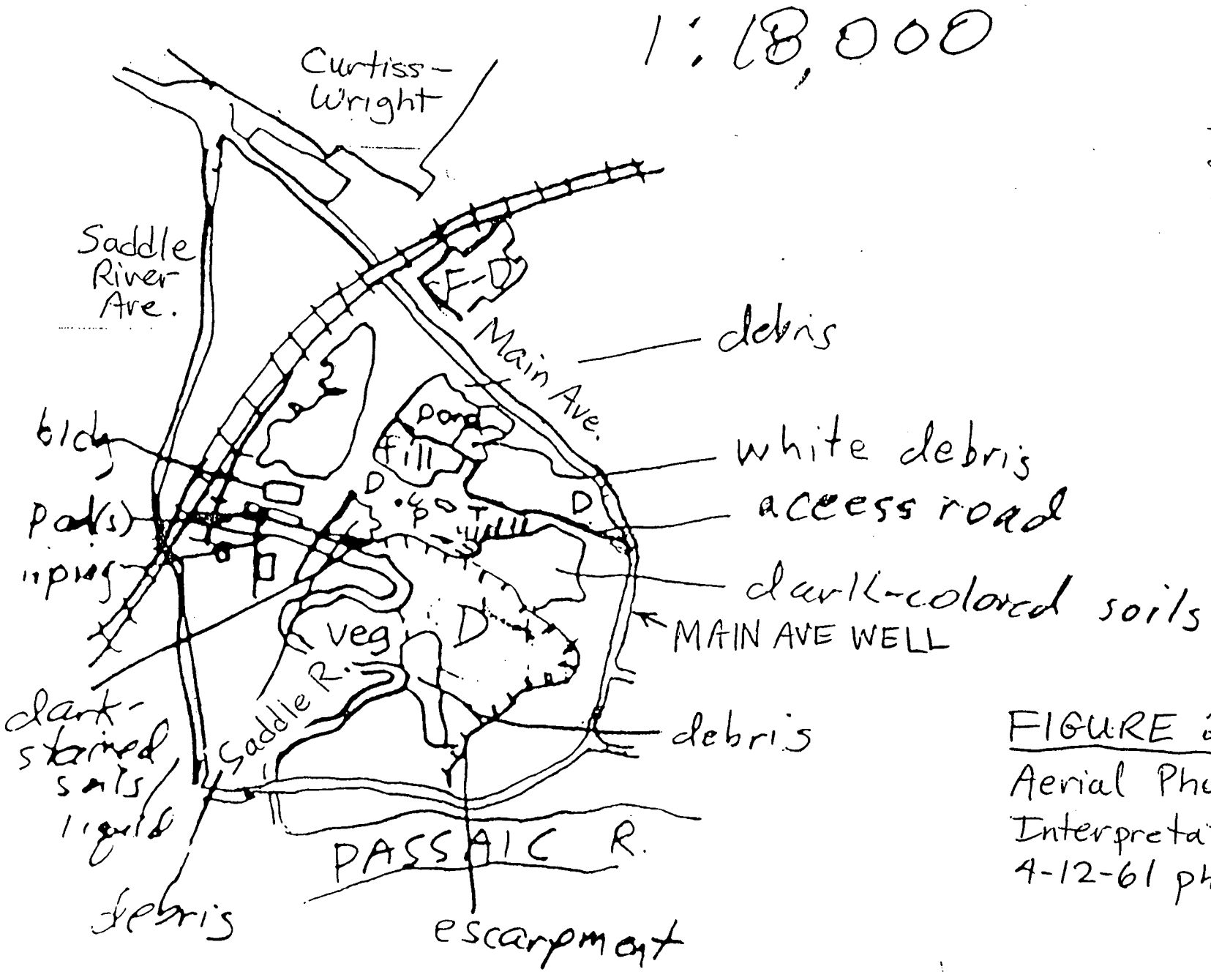


FIGURE 21: Wallington Tax Map depicting Van Kruiningen parcels (block 71, lots 3, 30.01), Farmland Dairies "Western Parcel" (block 71, lot 35.02) and "Roller Rink" Parcel (block 71, lot 35.01).





KEY:

D = dist

P = pits

T = tree

FIGURE 22: Aerial Photography Interpretation from 4-12-61 photo

FIGURE 23: Approximate Location of Active Portion of Joe Feld Dump in 1932 (total extent reported to be larger)

W56

ATTACHMENT X

State of New Jersey

Christine Todd Whitman
Governor

Department of Environmental Protection
Division of Publicly Funded Site Remediation
PO Box 407
Trenton, New Jersey 08625-0407
(609) 584-4280

Robert C. Shinn, Jr.
Commissioner

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

November 17, 1998

Larry Jacobs
Farer & Fersko
600 South Ave
PO Box 580
Westfield, NJ 07091

Re: A finding by New Jersey Department of Environmental Protection (NJDEP) that Block 71, Lot 35.02 may be a Former Hazardous Waste Disposal Site

Dear Mr. Jacobs:

Based upon your representations during our telephone conversation this date, it is my understanding that you are council for Farmland Dairy, which is owner of the above noted site and that Farmland Dairy has retained your firm for environmental matters regarding the above noted site.

As we discussed this date, my office is endevoring to determine what source or sources of contamination are responsible for chlorinated solvent compounds that were discovered in the Borough of Wallington's municipal wells. The wells were rendered non-potable due to this contamination and are no longer in use. Of special interest to us at this time is the source(s) of contamination which impacted Wallington's well on the north side of Main Avenue where it meets "Krug Court" (see attached map).

For your information, the New Jersey Department of Environmental Protection (Department) is charged with responding to the release or threatened release of hazardous substances and with the enforcement responsibilities set forth under the Spill Compensation and Control Act (N.J.S.A. 58:10-23 et seq.). The Department suspects the release of hazardous substances at the parcel noted above. Investigative findings indicate that The Hamersley Manufacturing Company formerly operated a

wastewater lagoon at the property and that it has since been filled, possibly with wastes. Therefore, this site, along with other contiguous sites in the area, are suspected sources of regional ground water contamination in the above noted Wallington Wells Unknown Source Case.

The enclosed "Request for Information" has been sent to you for response relative to Farmland Dairy's involvement with, and any information it may have about the subject site. Please note that the word "you" in this Request for Information is referring to Farmland Dairy.

Your response to the Request for Information should be postmarked, or received at the below address within thirty (30) calendar days of your receipt of this letter. The response should be mailed to my attention at the following address:

NJDEP/BEMQA,
300 Horizon Center
PO Box 407
Trenton, NJ 08625

Your response should contain the notarized signature of a Farmland Dairy corporate officer on the enclosed "Certification of Answers to Request for Information", which is to be submitted with your response. Please familiarize yourself with the instructions for responding to the Request for Information and adhere to its guidance when responding. Failure to respond to the Request for Information may result in the issuance of an Administrative Subpoena (N.J.S.A. 26:1a-47 and N.J.S.A. 13:1D-7a).

Should you have any questions regarding this letter or the proper procedures for completion of the Request for Information, you may contact me at 609-584-4275.

Very truly yours,

Nick Sodano

Nick Sodano, HSMS 2
Bureau of Environmental
Measurements & Quality
Assurance

x2

INSTRUCTIONS FOR RESPONDING TO REQUEST FOR INFORMATION

1. A separate response should be given for each question.

2. Precede each answer with the number of the question to which it is addressed.

3. In answering each question, identify all contributing sources of information.

4. If you contend that any answer to any question contained herein has already been submitted to the Department, indicate the date the submission and the name of the specific group to whom the submission was sent.

5. Interpret "and" as well as "or" to include within the scope of the question as much information as possible. It two interpretations of a question are possible, use the one that provides more information.

6. Interpret the terms spill, release and/or discharge to include any intentional or unintentional act or omission which resulted in the releasing, spilling, leaking, pumping, pouring, emitting, emptying, dumping or disposal of hazardous substances onto the lands or into the waters of the State.

7. If you are unable to give a detailed and complete answer or to provide any of the information or documents requested, indicate the reason for your inability to do so.

8. If you have reason to believe that any individual may be able to provide additional details in this matter, or may be able to confirm the details provided by you, state that person's name, address, phone number and the reasons for your belief.

9. If a document is requested but not available, state the reason for its unavailability. To the best of your ability, identify the document by author, date, subject matter, number of pages and all recipients of the document with their addresses.

X3

10. For each document produced in response to the Request for Information, indicate on the document, or in some other reasonable manner, the question to which it applies.

11. If anything is omitted from a document produced in response to the Request for Information, state the reason why you cannot be more specific.

12. If you cannot provide a precise answer to a question, you may approximate, but in any such instance, state the reason why you cannot be more specific.

13. For each individual identified, provide their full name, last known employer, permanent home address and telephone number.

REQUEST FOR INFORMATION

1. Identify the names of each entity (corporations, partnerships, tradenames, proprietorships, etc) under which Farmland Dairy conduct(ed) business activities at the subject site.

a. If the company(ies) identified above are or were subsidiaries or affiliates of other corporations or have subsidiaries, identify these related companies.

b. Specify the type of organization (corporations, partnerships, trade name, proprietorships, joint venture) for each company identified in questions 1 and 1a. As appropriate, identify the state of incorporation or county of registration, and current status for each company identified.

c. State the legal names, titles, current addresses, and telephone numbers for all past and present officers, partners, managers, etc. of each company identified in questions 1 and 1a. Provide the dates these individuals served at the subject site.

2. Provide the exact dates Farmland Dairy owned the subject site.

   a. Provide copies of all deeds, contracts, permits, licenses, agreements, leases, etc. that relate to your ownership of the site.

3. Provide the exact dates Farmland Dairy (Farmland) operated at the site.

   a. Identify the owner(s) of the property during Farmland's tenancy.

   b. Provide copies of all deeds, contracts, permits, licenses, agreements, leases, etc. that relate to Farmland's operation at the site.

4. In detail, describe all activities undertaken by Farmland at the site. Please provide the following when responding:

   a. The exact dates these activities were conducted at the site.

   b. The specific department, division, associate, affiliate, subsidiary, etc. which conducted these activities.

   c. Describe all processes associated with these activities.

X5

d. Identify all raw materials, catalysts, feed stocks, products (including motor fuels used for on-site consumption or resale), etc. used for each activity and process as described in questions 4 and 4c. Provide the proper chemical name, CAS number, trade name (if applicable), and hazardous characteristics (i.e. explosive, flammable, toxic, radioactive, etc) for each substance identified above. Provide copies of Material Safety Data Sheets (MSDS) and Right to Know survey reports for each substance.

e. Specify the method of storage (i.e. containers [specific type], tanks, bins, stock piles, etc) for each substance identified in question 4d.

f. Identify all off-spec products, spent and/or waste materials and byproducts (catalyst, feed stock, solvents, lubricants, grindings etc) generated from each activity and process described in questions 4 and 4c. Any material identified should be followed by a basic description of its physical and or chemical properties (flammable, toxic, corrosive, liquid, solid, chlorinated, non-chlorinated, etc) unless that material is a commonly know, e.g., "spent solvent 23" would not be a commonly known material and would need some description as to its physical and chemical nature. Indicate the quantity of any such material generated on a monthly or yearly basis.

g. Specify the treatment (incineration, neutralization, stabilization, etc), storage (drums, tanks, bins, lagoons, piles, etc), transports (trucks, pipes, etc) and disposal methods (landfill, injection well, septic/sewer, discharge to surface water/ground water, etc) used at the site to in any way manage, handle or address all materials identified in 4f. If any material was treated, stored or disposed of at an off-site location, identify these locations by name, address and phone number. Identify all persons who transported these materials off-site. Provide copies of all manifests, bills of lading, trip tickets, disposal tickets, receipts, etc. for each waste shipment.

5 Did Farmland lease , rent, or permit other parties to operate at, or otherwise utilize the subject site at any time from the date of Farmland's ownership to date? Provide the following information for each lessee, tenant, occupant, operator, etc.

a. Provide copies of all deeds, contracts, permits, licenses, agreements, leases, etc. and the effective dates of each.

b. Specify exact dates each tenant leased, rented or occupied the site.

c. Describe the activities (processes, operations, waste disposal/handling practices) undertaken by each lessee, occupant, tenant, operator, etc. at the site.

d. Identify all raw materials, catalysts, feed stocks, products (including motor fuels used for on-site consumption or resale), etc. used for each activity and process as described in question 5c. Provide the proper chemical name, CAS number, trade name (if applicable), and hazardous characteristics (i.e. explosive, flammable, toxic, radioactive, etc) for each substance identified above. Provide copies of Material Safety Data Sheets (MSDS) and Right to Know survey reports for each substance.

e. Specify the method of storage (i.e. containers [specific type], tanks, bins, stock piles, etc) for each substance identified in question 5d.

f. Identify all off-spec products, spent and/or waste materials and byproducts (catalyst, feed stock, solvents, lubricants, grindings etc) generated from each activity and process described in question 5c. Any material identified should be followed by a basic description of its physical and or chemical properties (flammable, toxic, corrosive, liquid, solid, chlorinated, non-chlorinated, etc) unless that material is a commonly know, e.g., "spent solvent 23" would not be a commonly known material and would need some description as to its physical and chemical nature. Indicate the quantity of any such material generated on a monthly or yearly basis.

g. Specify the treatment (incineration, neutralization, stabilization, etc), storage (drums, tanks, bins, lagoons, piles, etc), transports (trucks, pipes, etc) and disposal methods (landfill, injection well, septic/sewer,

discharge to surface water/ground water, etc) used at the site to in any way manage, handle or address all materials identified in 4f. If any material was treated, stored or disposed of at an off-site location, identify these locations by name, address and phone number. Identify all persons who transported these materials off-site. Provide copies of all manifests, bills of lading, trip tickets, disposal tickets, receipts, etc. for each waste shipment.

6. Identify and describe all current and former areas of environmental concern on the property including, but not limited to, ***buildings***, above and below ground tanks, pipes, (above and below ground), above and below ground containment/storage vessels, storage areas, wells, floor drains/troughs, cesspools, leach pits, septic tanks/disposal fields, parts cleaning/washing stations, shot blasting or grinding areas, sumps, disposal areas (landfills, landfarms, sprayfields, etc.), pits, ***lagoons/impoundments***, drainage troughs/swales/culverts, dry wells, chemical loading/off-loading areas, visibly stained/discolored soils, areas of dead or stressed vegetation, discharge locations/outfalls, etc.

7. Identify each area of concern on a scaled site plan. Provide the following information for each area of concern:

   a. The uses and functions of each area of concern.

   b. The dates each area of concern came into existence. Identify the person(s) responsible for the construction/installation of each area of concern.

   c. Identify the materials handled, processed, stored ,disposed of, etc. in each area of concern.

   d. Specify the current status of each area of concern. Identify all persons responsible for the removal, demolition, excavation, disposal, etc. of each structure. Provide copies of all reports, permits, certifications, approvals, etc. relating to the demolition, excavation or disposal of each area of concern.

8. Provide the following for each underground tank system identified in question 6:

   a. The owners of each tank system and the dates of ownership

   b. The operators of each tank system and the dates of operation

   c. Indicate whether each tank system was used for on-site consumption, private use, retail or wholesale business activities

   d. Identify the suppliers and brand names of the products stored in and distributed from each tank

   e. Provide copies of all product inventory records (including but not limited to daily inventory sheets, monthly inventory records)

   f. Specify the current status of each tank system. Provide copies of all reports, permits, certification, approvals, etc. for each tank which has been removed, abandoned or closed. Provide copies of the current registration for each active tank system which is subject to the requirements of the New Jersey Underground Storage of Hazardous Substances Act.

9. Provide a detailed history of landfill/disposal activities conducted at the site. Include the exact dates the landfill/disposal activities were conducted, the names of the operators of the landfill/disposal activities, the names of the property owners at the time landfill/disposal activities occurred, etc. Provide the following information for all fill/waste material deposited at the site:

   a. Identify the specific source/origin of each shipment of fill material which was disposed of at the site. Provide the current or last known addresses and telephone numbers for each source. Include the following information for each shipment from each source:

      i.Describe the processes/operations from which the fill/waste material was generated.

      ii. Identify all raw materials, catalysts, feed stocks, products (including motor fuels used for on-site consumption or resale), etc.

used for each activity and process as described in question 9a.i. Provide the proper chemical name, CAS number, trade name (if applicable), and hazardous characteristics (i.e. explosive, flammable, toxic, radioactive, etc) for each substance identified above. Provide copies of Material Safety Data Sheets (MSDS) and Right to Know survey reports for each substance.

iii. Identify all off-spec products, spent and/or waste materials and byproducts (catalyst, feed stock, solvents, lubricants, grindings etc) generated from each activity and process described in question 9a.i. Any material identified should be followed by a basic description of its physical and or chemical properties (flammable, toxic, corrosive, liquid, solid, chlorinated, non-chlorinated, etc) unless that material is a commonly know, e.g., "spent solvent 23" would not be a commonly known material and would need some description as to its physical and chemical nature. Indicate the quantity of any such material generated on a monthly or yearly basis.

iv. Specify total quantity of fill/waste material each source identified in question 9a deposited at the site.

b. Provide the names, current addresses and telephone numbers of each entity which transported fill material to the site. Provide copies of all disposal tickets, trip tickets, manifests, shipping papers, bills of lading, receipts, etc. for each shipment of fill/waste material transported to the site. Specify the total quantity of fill/waste each entity identified transported to the site.

c. Provide copies of all analyses, test results or other determinations for each shipment of fill/waste disposed of at the site. Include the names and telephone numbers of the persons performing the analyses, tests or determinations, and the dates of each.

10. Provide a chronological history of known spills/releases discharges at the site during the period which Farmland owned and/or operated at the site. Provide the following information for each spill/release/discharge:

a. Provide a description of each incident including duration, location, substances involved and quantity of material spilled/released/discharged.

b. Indicate whether the NJDEP Environmental Hotline and/or the USEPA were notified of the spill/release/discharge. Provide the case and/or incident number assigned to each spill/release/discharge.
c. Describe remedial activities undertaken to address each spill/release and/or discharge.
d. To the best of your ability, identify the parties responsible for each spill/release/discharge. Provide documentation supporting how each party is considered responsible

11. To the best of your ability, identify and describe all activities conducted at the site prior and subsequent to Farmland's ownership/tenancy at the site.

12. Submit the names of all representatives, employees, or contractors who have knowledge of operations at the subject site. Identify each such person or company by name, address and phone number. Include their job title, a description of their responsibilities, and the years they were associated with, or employed by Farmland.

13. Provide copies of all reports relating to the subject site. Specific documents requested include, but are not limited to, environmental investigation/assessment reports; internal inspection reports; regulatory compliance inspection reports; contractor generated reports; reports regarding removal, closure or abandonment of above and below ground storage tanks; reports regarding the renovation, expansion or demolition of on-site structures; and all analytical data collected to date.

14. Describe any relationship or association the following individuals or companies have had with you and/or the site. To the best of your ability, provide the current or last known addresses and telephone numbers for each: a. Curtiss Wright Corp, b. Joseph Feld and Company, c. South Hackensack, d. Wallington Borough, e. Passaic

15. State whether there exists any agreement or contract (including insurance policies) which may indemnify you against any liability that may result under the New Jersey Spill Compensation and Control Act for any release or threatened release of hazardous substances that may have occurred at the subject site. If so, please provide a copy of the agreement. Identify any agreement or contract that you are unable to locate or obtain.

16. Did you obtain the property through a mortgage? What is the name of the mortgage company and what town do they do business from? Did the mortgage company require **<u>any</u>** kind of property assessment to be done? If so, send a copy of same.

17. Explain what current uses any buildings on the subject property may have, for example, vehicle service area, transformer room, office space, raw material storage, etc.

X 12

CERTIFICATION OF ANSWERS TO REQUEST FOR INFORMATION

STATE OF _____

COUNTY OF_____

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document (response to NJDEP, Request for Information) and all documents submitted herewith, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, complete, and that all documents submitted herewith are complete and authentic unless otherwise indicated. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

_____
NAME (PRINT OR TYPE)

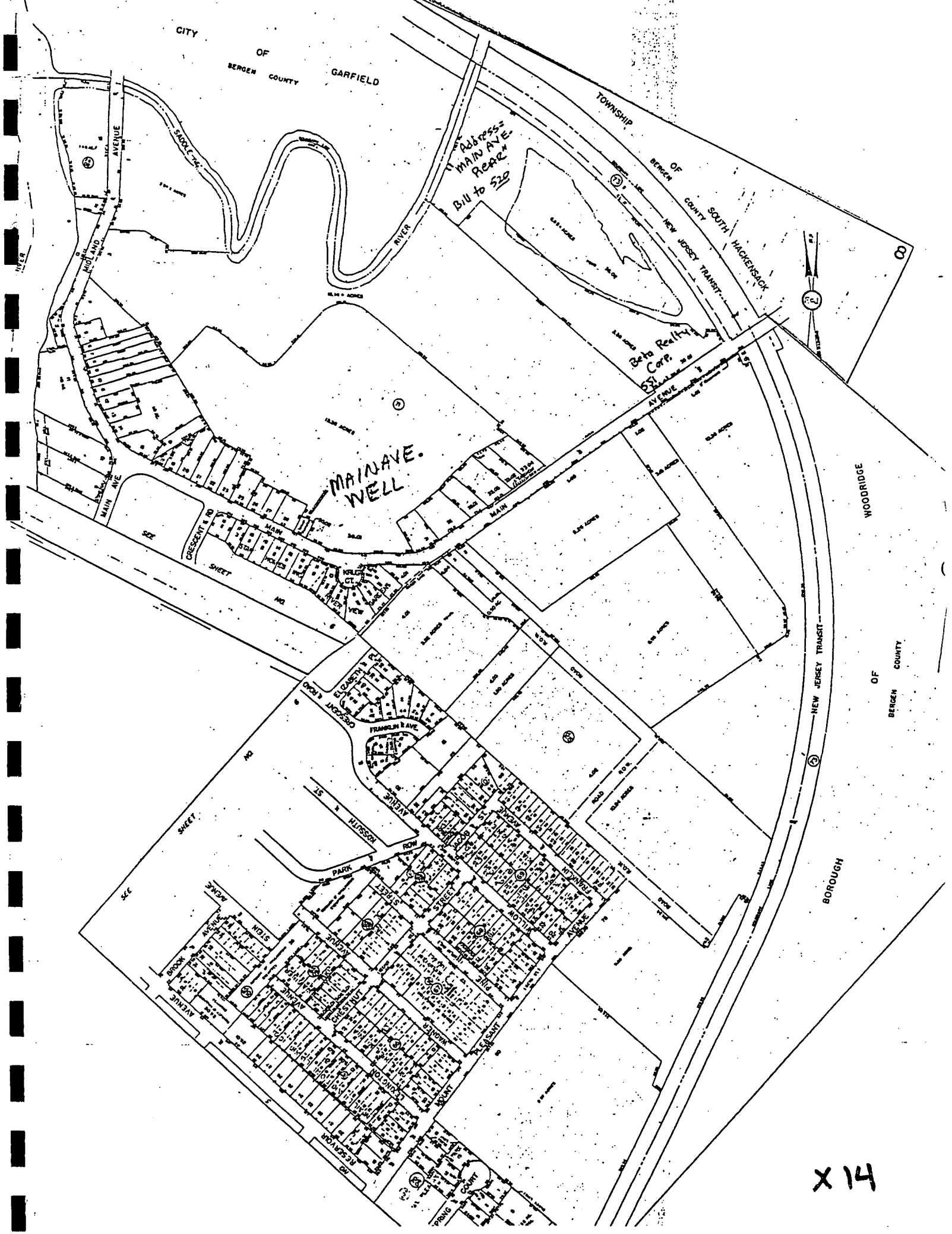
_____
TITLE (PRINT OR TYPE)

_____
SIGNATURE

SWORN TO BEFORE ME THIS _____ DAY OF _____, 1998.

_____
NOTARY PUBLIC

X13


CITY OF GARFIELD
BERGEN COUNTY
TOWNSHIP OF SOUTH HACKENSACK
BERGEN COUNTY
NEW JERSEY TRANSIT
Address= MAIN AVE. REAR"
Bill to 520
Beta Realty Corp.
551
MAIN AVE. WELL
MAIN AVE
MIDLAND AVENUE
SADDLE RIVER
SEE SHEET NO.
CRESCENT RD
MAIN
KRUG CT.
RIVER VIEW
ELIZABETH PL.
FRANKLIN AVE.
KOSSUTH ST.
PARK ROW
STREET
JACOB ST.
FRANKLIN AVENUE
WILLOW AVENUE
PINE
CHESTNUT
WAGNER
PLEASANT
MOUNT
LEXINGTON
RESERVOIR
BROOK AVENUE
STEIN AVENUE
WOODRIDGE
BOROUGH OF
BERGEN COUNTY
NEW JERSEY TRANSIT
X 14

ATTACHMENT Y

Record of Telephone Discussion
11/17/98

Spoke with Larry Jacobs, Farer and Fersko this date. He stated that the site, Block 71, Lot 35.02 was the site of a BUST investigation during 1991 or 1992. He stated that 10 to 12 steel 10,000 – 15,000 gallon USTs erupted out of the banks of the Saddle River on the site. They contained #4 and #6 fuel oil for the Hamersley Paper mill across the Saddle River. They were removed along with some contaminated soil and BUST closed the case. He said they may have had concrete containment. He stated that the site had a "sand blaster" as a tenant and that the site was used for employee parking, but other wise, Farmland has never operated at the site.

He stated that there is a Water Allocation order against Farmland to seal 80 year old wells at the site.

He stated that the site was owned by Hamerlsey, then by "Pennrall", then by Anthony Labue and then by Farmland.

Record of Telephone Discussion – Larry Jacobs
11/19/98

Utilities – none of Farmland's work required any consideration of utility other than the county storm drain. That is the only utility out there as far as he knows. But he will send me whatever site plans he finds. He said that Farmland will want to see a plan that shows them were we want to sample before they agree to let us on.

Y

ATTACHMENT Z

rev. 11/98 **WORK PLAN FOR SITE INVESTIGATION**

NAME OF SITE: Hamersley Manufacturing Company Landfill
JOB NUMBER: ~~[illegible]~~ A051330P
AKA: Farmland Dairy Property
ADDRESS: No Street Address, Tax records list as "Main Street-rear"

MUNICIPALITY: Wallington Borough COUNTY: Bergen

EPA ID NUMBER: None yet

ACCESS GRANTED ? Not yet

SITE CONTACT(S): Larry Jacobs PHONE: 908-789-8550
(Attorney for Farmlad Dairy) Farer & Fersko

AERIAL PHOTOS REVIEWED ? Yes

BACKGROUND INFORMATION:

The New Jersey Department of Environmental Protection, Site Assessment Section has investigated the above noted parcel and determined is was the site of a waste lagoon and of numerous underground storage tanks which held petroleum products. According to Larry Jacobson, the USTs were removed during the early 1990s along with an unspecified amount of contaminated soil. Mr. Jacobs stated that there were 10-12 10,000 to 15,000 gallon USTs. The tanks were located at the central part of the sites frontage with the Saddle River. The 1961 aerial photo revealed that a pipeline came from this area to the Hamersley manufacturing facility on the other side of the Saddle River.

Review of aerial photos reveals that the lagoon was filled in starting sometime after 1961. The 1974 aerial photo shows that the lagoon was partially filled. The 1995 aerial photo shows that the lagoon was completely filled. The 1961 photo also reveals what appears to be a concrete pad at the southwest corner of the site.

A undated petition sent to the Borough of Wallington indicates that the noted parcel was the subject of conflict regarding proposed landfilling by the Hamersley Company. A letter to George Hamersley, dated 1918 which apparently refers to the noted petition (the documents were found together by Nick Sodano) states that, with "regrets" the Borough cannot "take action" in this matter. Based on these documents, it appears that the Hamersley company had hoped to create a landfill at the site.

Direct visual observations of the site by Nick Sodano during 1998 indicated that it is covered with demolition rubble and that both crushed and whole drums are deposited on top of the rubble. The content of the drums is unknown, and they may have been placed there illegally since the site is not secured.

AREA OF CONCERN	SAMPLE ID	AREA OR VOLUME OF AOC	NUMBER OF SAMPLES	SAMPLE JUSTIFICATION
Whole site landfill materials	Samples will be collected at various depths determined in the field. The location of the samples will correspond with the specific areas of concern noted below.	6.65 acres	10 are planned, but contingency for 14 based upon field observations - all TCL/TAL	Direct contact And Ground water threats
Lagoon	GW6-GW12, S1-S5	~3 acres	7 ground water 5 soil	Direct contact Ground water
Pad	GW13, S6	Southwest Corner - ~200 sq ft	1 ground water 1 soil	Direct contact Ground water
USTs	GW14, S7, S8	mid point of frontage with river 1,000 sq ft	1 ground water	Direct contact Ground water
Saddle River	Sed1-Sed5 SW1-SW5	1,000 linear feet of surface water	5 sediment and 5 surface water samples	Surface water directly adjacent
Background	GW1-GW5, S9,S10	Northern side of site	5 ground water 2 soil	Attribution

Geoprobe will be utilized for sample collection and borings are proposed to be approximately 100 or less feet deep. Permit applications have been submitted. See attache site map with the sampling locations identified and highlighted.

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I. PRE-SAMPLING ASSESSMENT

DATE: March 31, 1998

WEATHER CONDITIONS: Unseasonably warm, sunny

NJDEP PERSONNEL: Frank McLaughlin TITLE: Geologist
Nick Sodano, HSMS 2

SITE REPRESENTATIVES: None, walked along stream, along Jasontown side and along Railroad.

OVA DECAL # Not taken HNu DECAL #

SITE DESCRIPTION: (mention stained soil, stressed vegetation, topography , surrounding area, waste management units).

The site is mostly covered with demolition waste. Drums were visible out on the middle portion of the site. One is crushed and laying on its side. The entire site appears to have recently undergone a regrading effort with the demolition waste. Bails of hay are apparent as soil erosion control measures. Vehicular traffic can come onto this site freely on this date.

MONITORING WELLS There are no wells at the site.

CONVERSION FACTORS (CF): 2"= .16 6"= 1.46
4"= .65 8"= 2.6

ACCESS TO KEYS?

MW#	DIAMETER	DEPTH TO WATER	DEPTH TO BOTTOM	WELL VOLUME (USE CF)	VOLUME TO PURGE (3x)	NEW LOCK # IF CHANGED	COMMENTS

POTABLE WELLS - will be sampled in conjunction with Jasontown sampling event to be done after this sampling event.

OWNERS NAME	ADDRESS	OWNER NOTIFIED

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II. SAMPLING PLAN

AQUEOUS SAMPLE

SAMPLE TYPE	LAB 1	LAB 2
MONITORING WELL	NA	
GROUND WATER	14 locations X 4 depths = 56 samples	
SURFACE WATER	5	
POTABLE WATER	0	
DUPLICATE	34	
TOTAL	645	

NON-AQUEOUS SAMPLE

SAMPLE TYPE	LAB 1	LAB 2
SOIL	14	
SEDIMENT	5	
DUPLICATE	1	
TOTAL	20	

AQUEOUS BLANKS

SAMPLE TYPE	LAB 1	LAB 2
FIELD BLANK (TCL, TAL)	5	
FIELD BLANK (VOA)	15	
TRIP BLANK	7	
AMBIENT BLANK	5	

LABORATORY INFORMATION

	LABORATORY #1	LABORATORY #2
NAME		
ANALYZING PARAMETER(S)	5 ground water locations (see map) will receive TCL (No TAL) at the first groundwater interval only. All other ground water location & depth intervals will be VOCs only. All soil samples are TAL/TCL. Sediment samples are TAL/TCL,TOC & sediment size Surface water - TAL/TCL, pH & CaCo4	

EPA	JENNIFER FERANDA/DENI TAVERAS	732-321-6687/906-6870
DYNACORP CLASS	NICOLE COENE	703-264-9280
ITS	KIRK YOUNG	802-655-1203
DOH	JOE WALLIN	292-7749

III. CHAIN-OF-COMMAND

A. DIVISION ORGANIZATION

DIVISION OF PUBLICLY FUNDED SITE REMEDIATION (DPFSR)

ANTHONY FARRO
DIRECTOR
DPFSR

BARRY FRASCO
ASSISTANT DIRECTOR
HAZARDOUS SITE SCIENCE ELEMENT (HSSE)

WILLIAM LOWRY
BUREAU CHIEF
BUREAU OF ENVIRONMENTAL MEASUREMENTS
AND QUALITY ASSURANCE (BEMQA)

KENNETH KLOO
SECTION CHIEF
ENVIRONMENTAL MEASUREMENTS AND
SITE ASSESSMENT SECTION

B. PROJECT ORGANIZATION:

	CASE COORDINATOR
FRANK SORCE	SAMPLING MANAGER
KENNETH KLOO	PROJECT MANAGER
FRANK SORCE	ENVIRONMENTAL MEASUREMENT AND SITE ASSESSMENT SECTION QA COORDINATOR
JOSEPH SANGUILLIANO	QA PERFORMANCE AUDITOR
FLOYD GENICOLA	QAMP SYSTEMS AUDITOR

C. FIELD SAMPLING TEAM

CYR	4276	DIBBLEE	4294	SMARSH	4274
SODANO	4275	SORCE	4287	TRIGGS	4289
USMIANI	4277	Van VELDHUISEN	4284		
CARUSO	7312	DENNIS	7308	EVENSON	7313
FOWLER	7314	RUDE	7309	SCHOENLEBER	7310
SPRINGER	7307	VAN SCIVER	7311	ZARRILLO	7302

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D. Will Field GC be utilized for field screening? If yes, please please list the compounds required for screening.

IV. QUALITY ASSURANCE PLAN

A. OBJECTIVE AND SCOPE STATEMENT: To characterize contaminants at the site and to determine the hazards these substances may pose to the environment and public health.

B. DATA USAGE: The data collected on this site inspection will be used to (1) determine if it is a hazardous waste site and, if so (2) prioritize it for future action.

C. SAMPLING RATIONALE: The need for sampling is based on information gathered during the Preliminary Assessment. Areas of concern identified in the Preliminary Assessment are confirmed during the Pre-sampling Assessment. The use of field monitoring instruments and visual observations help to determine sample locations. The minimum number of samples collected is based on the New Jersey Technical Requirements for Site Remediation, N.J.A.C. 7:26 E.

D. DATA COMPARABILITY: The sample data collected on-site is compared to the NJDEP Soil Cleanup Criteria and Ground Water Quality Standards.

E. SAMPLING PROCEDURES: Lab cleaned and dedicated stainless steel trowels and augers will be used to collect soil samples. Groundwater samples will be collected using lab cleaned and dedicated teflon bailers. All sample containers will be provided by the laboratory prior to sampling. NJDEP/BEMQA/Environmental Measurements and Site Assessment Section sampling procedures and protocol will be followed as per the NJDEP Field Sampling Procedures Manual, May, 1992 and Technical Requirements for Site Remediation, N.J.A.C. 7:26 E.

F. SHIPPING AND HANDLING:
Samples will be chain-of-custody sealed in coolers supplied by the laboratory and returned via express carrier on the same day as sample collection. All samples will be kept at $4^{o}C$ at all times.

G. QA/QC SAMPLES:

NON-AQUEOUS MATRIX
One field blank per day is to be collected only when volatile organics constitute a parameter being investigated. The field blank should only be analyzed for volatile organics. The field blank will be prepared by pouring lab demonstrated analyte free water over dedicated stainless steel and/or teflon sample equipment. This sample serves as a quality control of the sample collection procedures and the equipment cleaning process, ensuring contaminants are not being transferred to the sample via the sample collection equipment.

Trip blanks are not required for the non-aqueous matrix.

AQUEOUS MATRIX
One field blank per day is required. The field blank must be analyzed for all the same parameters as samples collected that day.

Trip blanks are required for aqueous sampling events. The trip blank will be filled with demonstrated analyte free water at the lab prior to shipment and will not be opened until it arrives back at the lab with the samples. This sample will serve as a quality control to ensure contaminants are not being transferred between containers during shipments, nor occurring as a result of laboratory contamination.

H. DOCUMENTATION: Documentation procedures are outlined in the NJDEP Field Sampling and Procedures Manual, Section 13, May, 1992.

I. DATA DELIVERABLES AND REPORTING: Data is reported under State Contract according to the lab deliverable package X-22651.

J. DATA VALIDATION: The validation of MSCA Grant data is the assigned responsibility of BEMQA; QA Section Chief, Reference BEMQA SOP on data validation.

K. PERFORMANCE AND SYSTEMS AUDITS: The laboratory is participating in the lab audit program conducted by NJDEP - OQA.

L. REPORTS TO MANAGEMENT

i. Site investigation report filed with Region II EPA (Responsibility of Project Manager).
ii. Sampling Report filed with Sampling Manager on completion of sampling (Case Coordinator).
iii. Data Validation report filed with Sampling Manager and sampling file on completion of data review from BEMQA.
iv. Recommendations for site disposition will be made by case coordinator through the Section Chief and according to the Department's Case Management Strategy.

V. HEALTH AND SAFETY

A. SITE/WASTE CHARACTERISTICS

WASTE TYPE: LIQUID X SOLID SLUDGE GAS

CHARACTERISTICS:

CORROSIVE	IGNITABLE		RADIOACTIVE
VOLATILE	TOXIC	X	REACTIVE
UNKNOWN	OTHER		

DESCRIPTION OF POSSIBLE SAFETY HAZARDS:

Possibility of buried hazardous wastes and vapors causing breathing zone hazard. Only known utility at this time is a large concrete storm water discharge pipe which runs from Main Avenue to Saddle River.

B. SITE SAFETY PLAN

LEVEL OF PROTECTION: (PLEASE INDICATE BELOW)

NJDEP Protocol Level D will be employed by all personnel on site unless otherwise demonstrated to be inapplicable from the results of the field survey or changes in field conditions. Upgrading or downgrading will depend upon the factors encountered at the site.

Modifications: Strict contamination avoidance procedures are to be followed at all times. Contamination avoidance procedures include the following precautionary measures.

- Hands, arms and face must be washed before eating, smoking or drinking.
- No equipment will be removed from the work site until the sampling team leader verifies that the equipment has been satisfactorily decontaminated.
- Clean protective clothing will be used daily, non-disposable equipment such as boots, gloves, goggles and hard hats will be cleaned daily.
- Gross contact with skin irritants and other contaminants will be avoided by site personnel.
- Where gross contact occurs, immediate flushing of the area with water will be performed.
- Wind direction will be monitored during all activities.

C. DRILL RIG AND GEOPROBE SAFETY PROCEDURES

Safety Equipment for Drillers, Sampling Crew and Visitors to Drilling Operations

1. Hard Hat
2. Steel toe/shank safety shoes
3. Eye protection - in any situation where fragments of wood, metal or hazardous substances may injure the eye.
4. Hearing protection

Safety Equipment for Drillers and Sampling Crew

1. Work Gloves - must not have loose cuff
2. Work Clothing - must not have loose clothing that may become caught in moving machinery

Precautions for Working Around Drill Rig and Geoprobe

1. Unit must never be moved with mast or foot in a raised position
2. Unit must never be left unattended while running

3. Avoid walking under drill pipe/augers or casing when being raised or lowered

4. Stay clear of rotating augers or other rotating components. Never reach behind or around a rotating auger or drill bit for any reason

5. Cuttings should be removed with a long handled shovel. Clean augers only when rig is in neutral and augers have stopped rotating

6. As a rule of thumb, stand clear of an area equal to the height of the mast while observing drilling activities

Drilling Safety

1. Prior to starting any drilling operation call for a under ground utility markout at least three days in advance at 800-272-1000

2. Always maintain at least 20 feet of clearance from overhead wires

   a. note that both hoist lines and overhead power lines can be moved toward each other by the wind

D. COLD WEATHER

1) For work performed continuously at an Equivalent Chill Temp (ECT) of 19.4°F or below, heated warming shelters should be available and workers should use these regularly. A heated car would serve as a shelter. The onset of heavy shivering, frostbite and feelings of excessive fatigue, drowsiness, irritability or euphoria are indications that immediate return to shelter is necessary.

2) Take care not to become dehydrated. This is often overlooked in cold temperatures and it increases susceptibility to cold injury due to change of blood flow to extremities. Warm, sweet liquids should be available for this purpose (but not coffee as it has a diuretic effect).

3) Air temperature at or below 35.6°F - wet clothing must be changed.

4) For prevention of contact frostbite: Workers should wear gloves. If air temp is below 0°F hands should be protected by mittens. Tools and machines should be designed so that they can be used without removing mittens.

5) Workers handling evaporative liquids such as alcohol, gasoline or cleaning fluids at air temperatures below 39°F should take special precautions to avoid soaking clothes or gloves with these liquids because of the added danger of cold injury due to evaporative cooling.

E. MONITORING

Ambient monitoring will be conducted on a continuous basis during all sampling operations. An HNu, OVA or TIP will be employed for organic vapor monitoring and a Biosystems Combustible Gas and O_2 Meter will be employed for O_2 depletion % LEL Levels. Air quality monitoring action levels, as determined by an organic vapor monitor, are as follows:

Background	-	Level D
* 0-5 ppm	-	Level C
* 5-500 ppm	-	Level B
* 500-1000 ppm	-	Level A
* Concentrations above background		

For the combustible gas and O_2 meter the action levels are as follows:

O_2 - <19.5% or >23.5%, Leave Site, normal background 20.8%
Combustible Gas 15% LEL, Leave Site

For radioactive measurements the action level is as follows:

Greater than 1 mR/hr limited access, consult health physicist
Normal background 8 uR/hr

E. DECONTAMINATION PROCEDURES

Personnel: Wash, rinse boots and gloves in Alkonox and water, rinse again paying special attention to the soles of the boots. Remove gloves, remove coveralls, respirator, then surgical gloves. Wash hands and face.

Equipment: Equipment will be washed in an Alkonox and water mix, rinsed w/tap H_2O, rinsed w/deionized water, rinsed w/acetone, air dry and rinsed w/deionized water.

Investigation - Derived Material Disposal: Disposable protective clothing, respirator cartridges and similar items will be bagged for disposal, and decontamination solutions will be drummed. These drums will be labeled and secured for proper disposal.

Safety Equipment: Portable eyewash stations and first aid kits will be readily available.

Site Access: The hazardous site will be considered a restricted area accessible only to personnel involved in site activities.

F. EMERGENCY INFORMATION

Ambulance: 1-973-288-7179
Poison Control Center: 1-800-962-1253
Police: 1-973-473-1715
Fire Department: Call police
CompSource Hospital Name: Hackensack Medical Center
Phone #: 201-996-2000

NOTE: Attach a map of the CompSource "preferred" participating hospital and the closest emergency hospital if different.

Highlight the route to the hospital from the site and include a written description of the directions.

DIRECTIONS TO HOSPITAL

Main Ave north to Essex St. (just after you pass under the Bergen - Passaic Expressway. Right onto Essex to Prospect (1 or 2 miles)

DIRECTIONS TO SITE FROM HORIZON CENTER

Turnpike to Exit 16W. Take 3 West to 17 North. Take Patterson Plank Road exit, turn left at top of ramp (light) towards Wallington. This is Patterson "Avenue" which will merge after about a mile with Patterson Plank. You will have to stop and make a difficult left turn when the roads merge. Take Patterson Plank into Wallington to Locust St. Right on Locust. Locust merges with Main Ave. Continue on Main which meets Midland and then makes a 90 degree turn to the right. If you go straight, you will be on Midland. Turn right where Main makes the turn and go .25 miles to the site on your left.

G. EMERGENCY PROCEDURES

Team members will always work in groups of a minimum of two while at the site. Visual contact distance among team members must be maintained at all times.

A backup team member will be ready at all times when site work is ongoing in case of an emergency in the exclusion zone. The person will be dressed out in the same level of protection as people in the exclusion zone.

Under no circumstances will entry into confined spaces be performed by NJDEP personnel unless approved by the agency safety and health officer.

I. INJURIES WHILE ON THE JOB

For billing purposes the treating facility should be given the following information:

1. The injury/illness is occupationally related
2. The person requiring treatment is a NJDEP employee
3. Bill to: N. J. Department of Treasury
   Bureau of Risk Management
   CN 620
   1 West State Street
   Trenton, N.J. 08625
   609-292-3475

NOTE: DO NOT RELEASE ANY PERSONAL INSURANCE OR ANY OTHER PERSONAL INFORMATION TO THE TREATING FACILITY.

1. EMERGENCY CARE

a. Should emergency medical assistance/treatment be necessary make a reasonable effort to go to the CompSource Treatment Facility selected, however if the emergency is life threatening , then proceed directly to the nearest emergency hospital.

b. Report your injury to your supervisor

c. Your supervisor should contact the Employee Services Unit immediately.

d. A case number and compensation ID card will be issued to you.

2. NON-EMERGENCY CARE

a. Should non-emergency medical assistance/treatment be necessary go to the CompSource Treatment Facility selected.

b. Report your injury to your supervisor

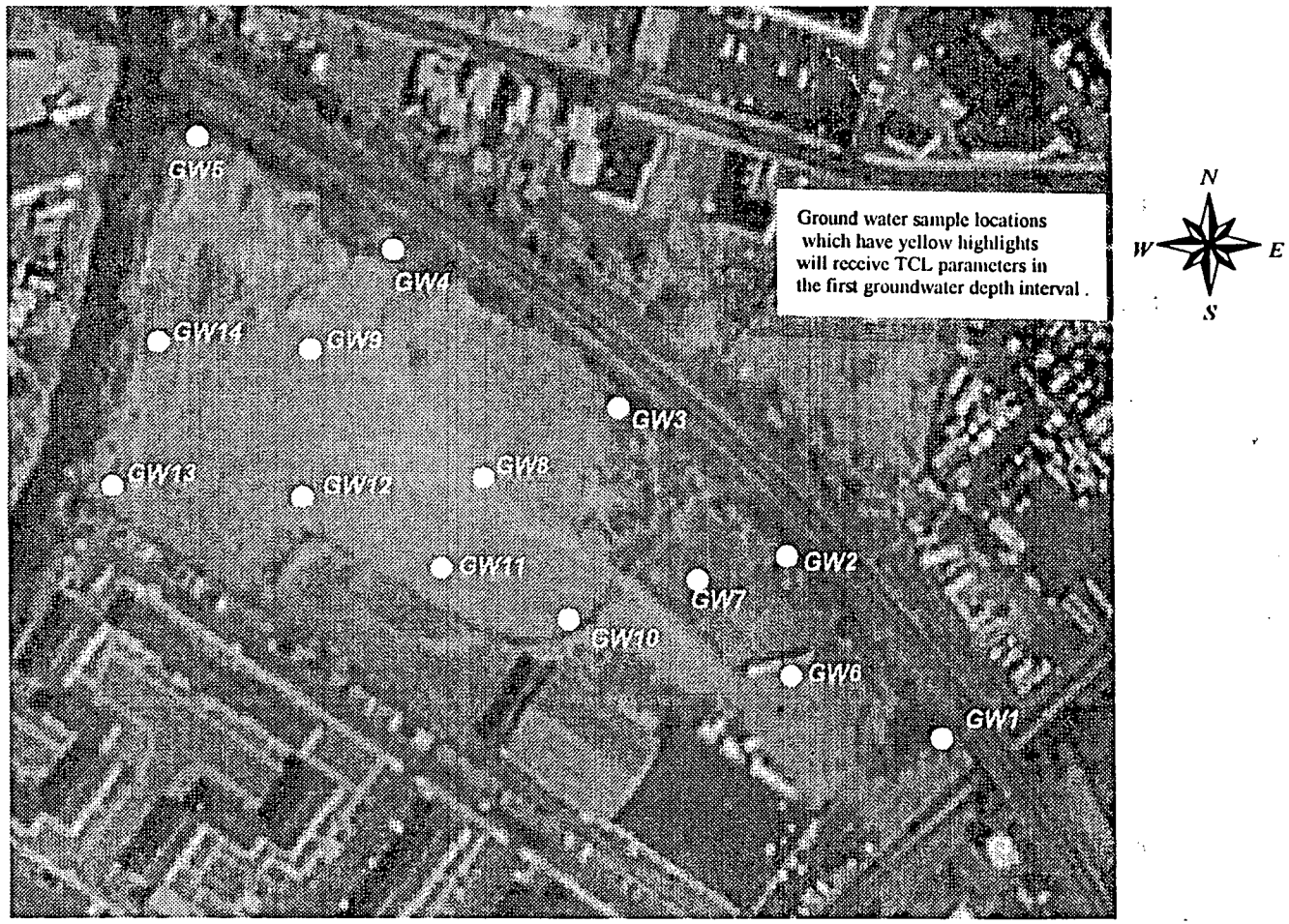
c. Your supervisor should contact the Employee Services Unit immediately

d. A case number and compensation ID card will be issued to you.

Employee Services Unit	609-984-9777
Office of Site Safety and Health	609-984-9779
Environmental Equipment Service Center	609-448-8688

WORK PLAN APPROVAL SIGNATURES		DATE
CASE COORDINATOR	[signature]	12/3/98
PROJECT MANAGER	[signature]	12-3-98
SAMPLING MANAGER		

Hamersley Landfill - Wallington, Bergen County
Ground Water Sample Locator Map



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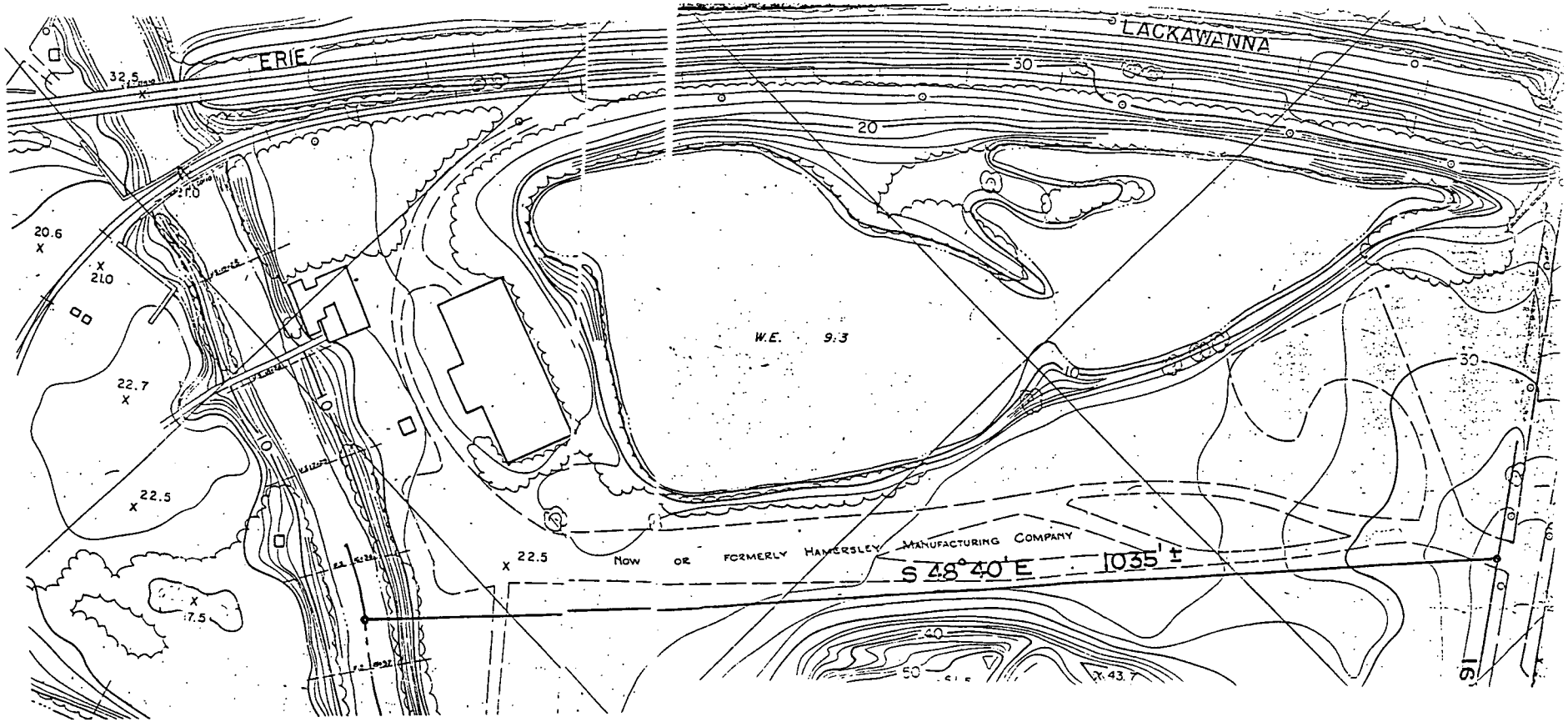
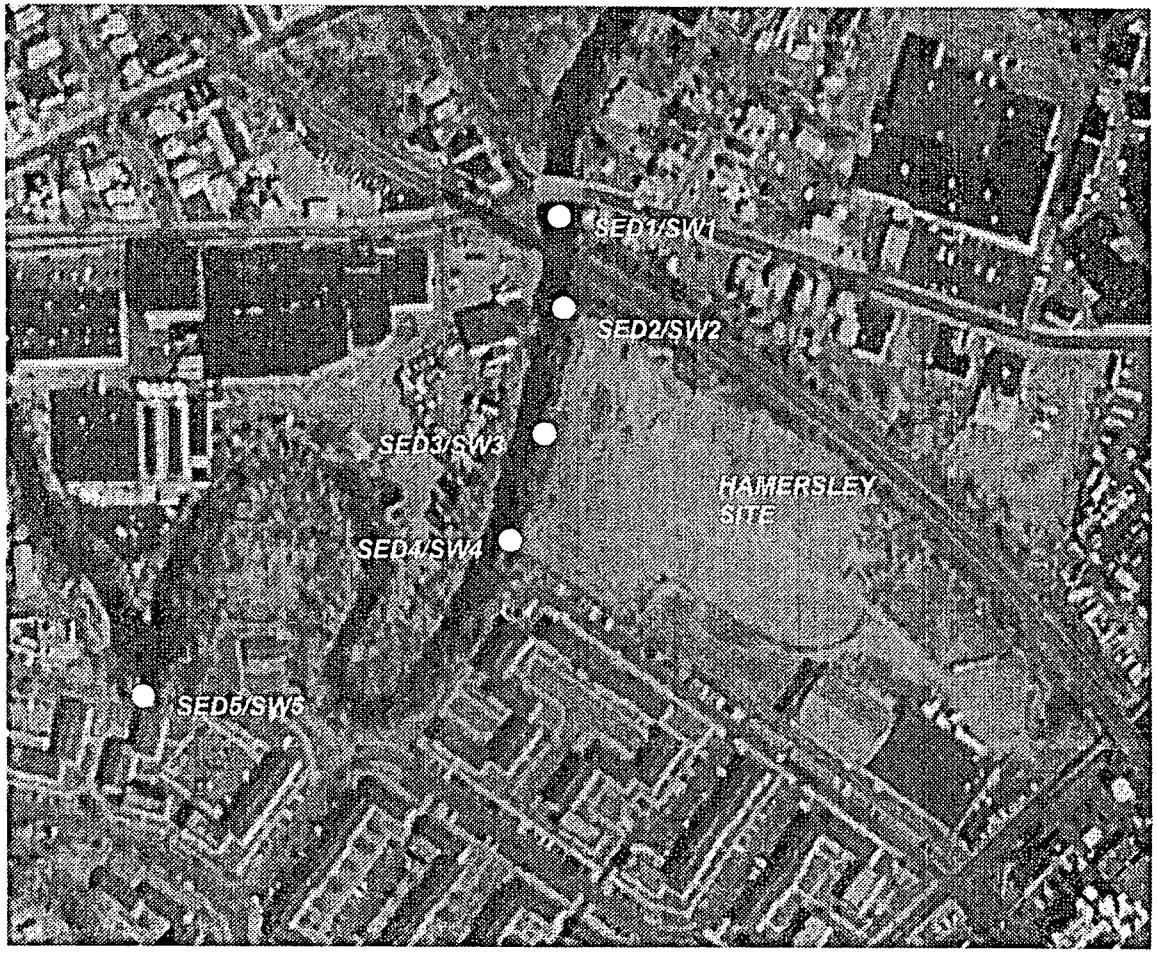
Hamersley -
Diagram of site as it was circa 1960



HAMERSLEY LANDFILL, WALLINGTON, BERGEN COUNTY
SURFACE WATER AND SEDIMENT SAMPLE LOCATOR MAP



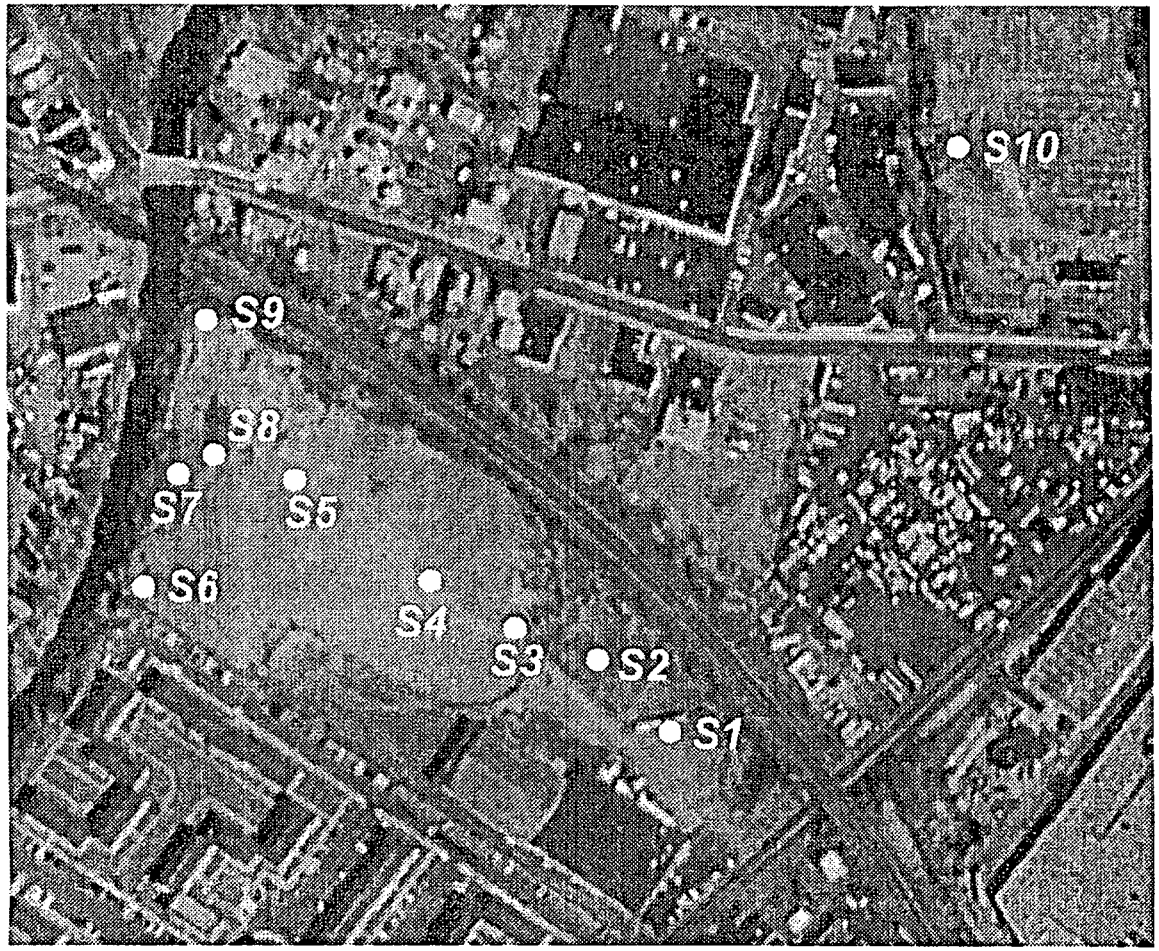
N
W E
S

Surface water is tidal here

500 0 500 1000 1500 Feet

215

Hamersley Landfill - Wallington, Bergen County
Soil Sample Locator Map



700 0 700 1400 Feet

Note: Samples S1, S2,S4,S5,S7&S9 are to be collected within the borings of GW6,GW7,GW8,GW9, GW14 & GW5 respectively Other soil samples may be taken based upon field observations

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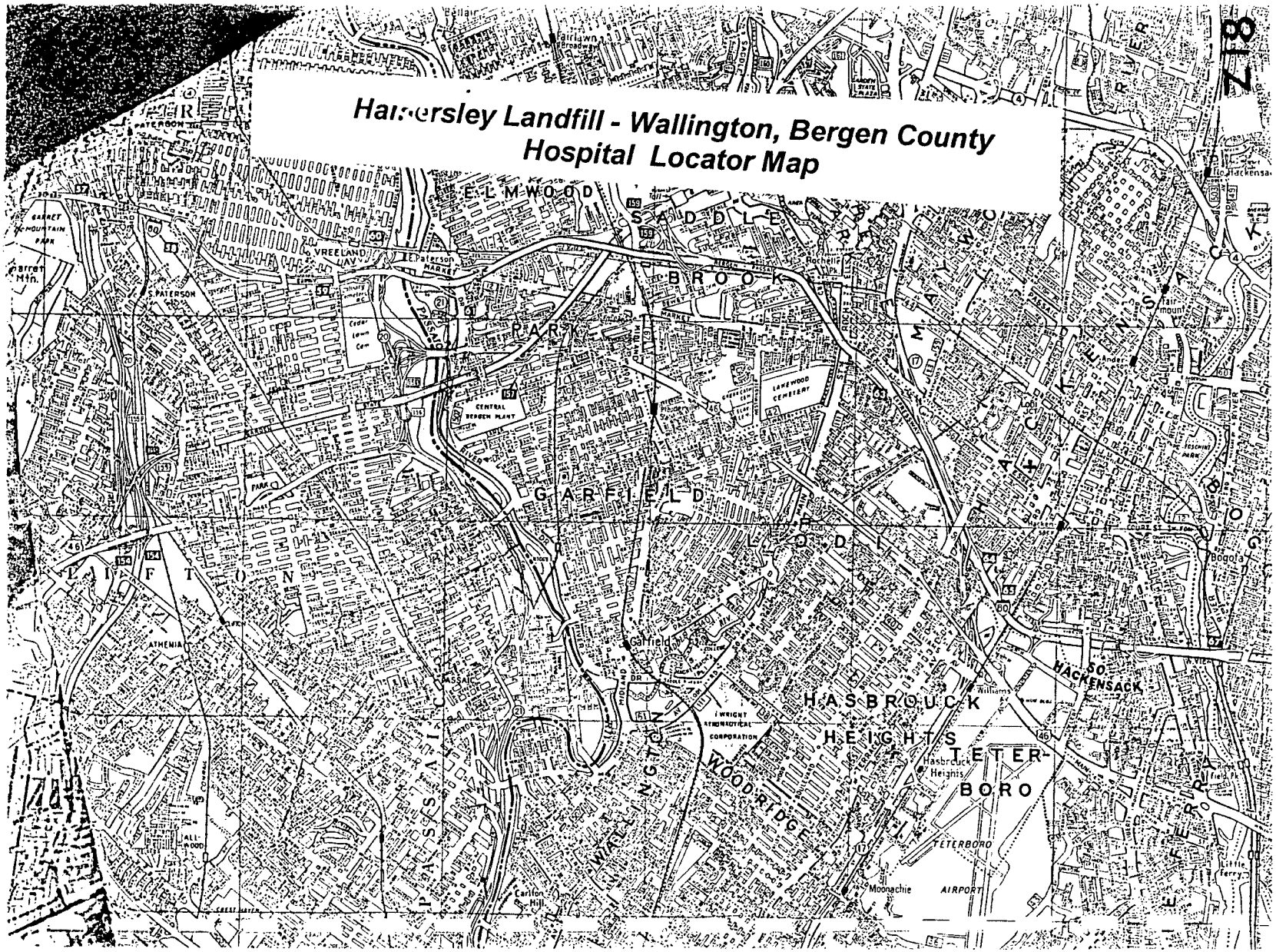
Hartersley Landfill - Wallington, Bergen County
Hospital Locator Map



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ATTACHMENT AA

State of New Jersey

Christine Todd Whitman
Governor

Department of Environmental Protection
Division of Publicly Funded Site Remediation
PO Box 407
Trenton, New Jersey 08625-0407
(609) 584-4280

Robert C. Shinn, Jr.
Commissioner

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

December 7, 1998

Larry Jacobs
Farer & Fersko
600 South Ave
PO Box 580
Westfield, NJ 07091

Re: NJDEP's Sampling Plan for Block 71, Lot 35. Disposal Site

Dear Mr. Jacobs:

As per our last telephone discussion, please find attached the above noted sampling plan. This document describes the sampling NJDEP hopes to accomplish in the field at the site. It is subject to change based upon utility positions and other physical obstacles or logistical matters, but sampling is otherwise carried out exactly as noted in the plan.

Please advise this office if Farmland Dairy finds this plan to be acceptable. We hope to begin sampling in the latter part of January 1999. Any information you provide prior to sampling would be of great assistance to us. Information regarding utilities is especially needed since it is one of our greatest safety concerns. We will need to conduct our own utility markout on the property sometime in early January 1999.

Very truly yours,

NSodano

Nick Sodano, HSMS 2
609-584-4275

ATTACHMENT BB

State of New Jersey

Christine Todd Whitman
Governor

Department of Environmental Protection
Division of Publicly Funded Site Remediation
PO Box 407
Trenton, New Jersey 08625-0407
(609) 584-4280

Robert C. Shinn, Jr.
Commissioner

January 11, 1999

1/13/99
Marvin Amsterdam
Said go ahead.
M Sodano

Beta Realty Corp.
295 Montgomery St.
Bloomfield, NJ 07003
973-429-8900

Re: Drilling and Gate Access at Block 71, Lot 35.01, Wallington

Dear Sir:

As per our conversation this date, please be advised that this office is investigating the source or sources of ground water contamination which forced the Borough of Wallington to shut down its potable well on Main Avenue. Block 71, Lot 35.02, which is owned by Farmland Dairy, is one of the potential sources of contamination that we are investigating. Lot 35.02 was a part of a facility that was formerly owned by the Hamersley Manufacturing Company. Hamersley operated underground storage tanks and a wastewater disposal lagoon at the lot, and eventually filled this lagoon in with unknown materials. NJDEP plans to conduct environmental sampling at lot 35.02 to assess what, if any, contamination may be emanating from the site.

Be advised that my review of historic aerial photos from the 1940s, 1950s and 1960s has revealed that the Hamersley facility appeared to encompass both lots 35.02 (Farmland) and lot 35.01 (Beta Realty). The vast majority of the lagoon appeared to be on Lot 35.02, and the underground tanks were entirely at lot 35.02. You can see from the attached tax map that the outline of the lagoon does cross over **somewhat** onto lot 35.01 and the aerial photos generally supports this depiction of the lagoon location. Nevertheless, it **appears** that lot 35.01 was primarily comprised of empty lot and of access

road for the original Hamersley site (see attached 1960 map from engineers who constructed adjacent apartment complex). Based on the above and upon limited resources to investigate this matter, NJDEP has determined that Site Investigation of lot 35.01 is not warranted at this time.

However, as I discussed with you, we would very much like to place one sampling location on lot 35.01. This location is at the most northeastern tip of lot 35.01 where the Erie Railroad siding meets Main Avenue. Again, NJDEP's intent for this sample is to assess the possible southwestern migration of contamination from the Curtiss Wright facility. As I said, contamination at Curtiss Wright is known to have migrated off Curtiss Wright property, and the NJDEP hopes to determine whether that contamination has migrated toward lot 35.01. We will have to collect soil and ground water samples at this location in order to properly attribute the source of any contamination which may be found.

Since we plan to start work next week and continue same until approximately first week in February, I would appreciate it if you could get back to me soon at 609-584-4275 or 584-4298 (fax).

Also, to confirm our conversation regarding a lock on the rear gate of your property (lot 35.01), you stated that you had no objections to our equipment passing over lot 35.01 and through said gate. You stated that I should be able to gain access through the In Line Skating of America company if the gate is locked.

Very truly yours,

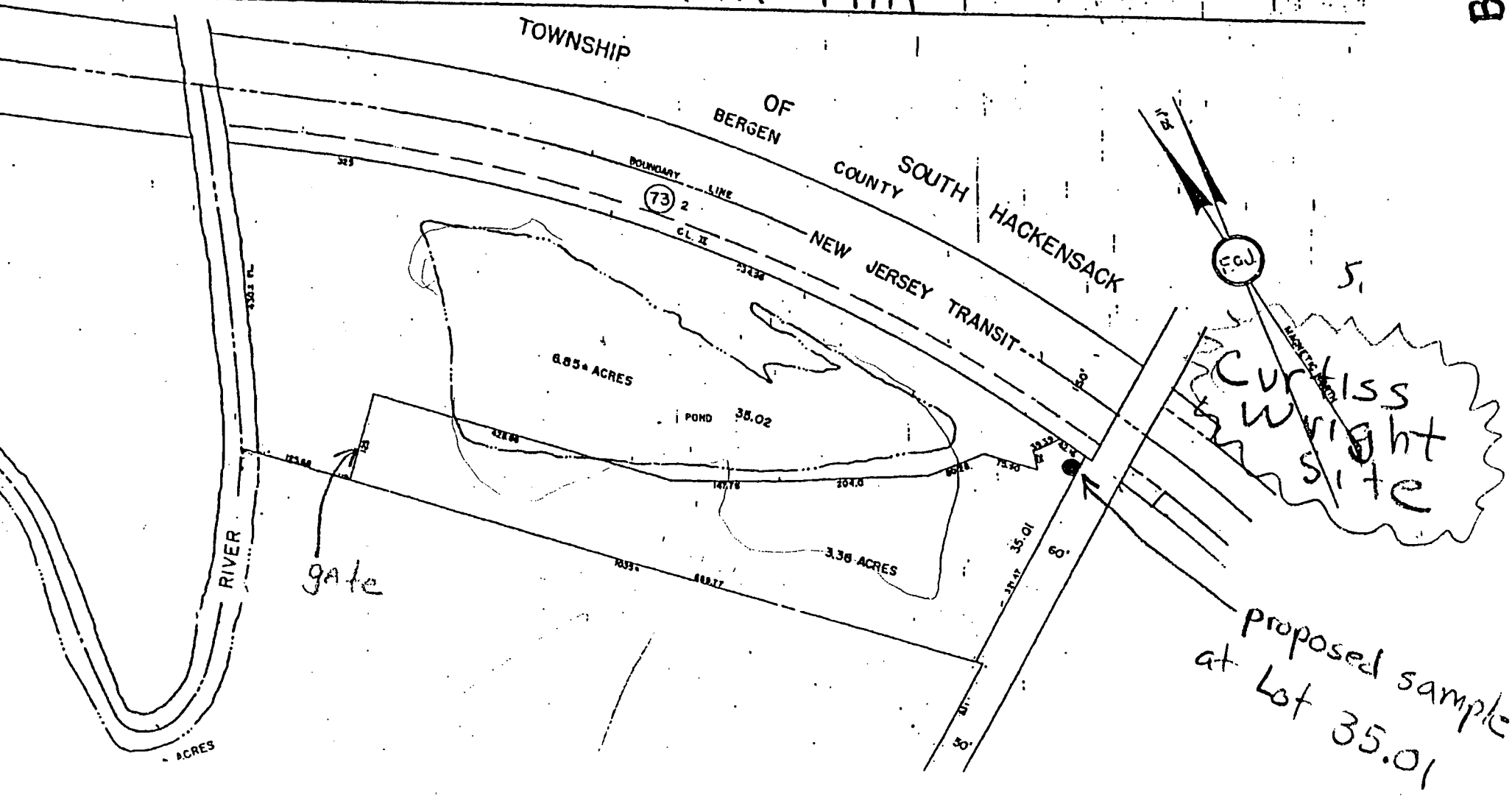
Nick Sodano

Nick Sodano, HSMS 2

VIA FACSIMILE 973-429-8920 to Beta Realty
attachments

BB2

TAX MAP


TOWNSHIP OF SOUTH HACKENSACK
BERGEN COUNTY
NEW JERSEY TRANSIT
BOUNDARY LINE
73 2
C.L. II
6.85± ACRES
POND 38.02
3.36 ACRES
35.01
60'
50'
RIVER
ACRES
gate
Curtiss Wright site
proposed sample at Lot 35.01

BB3

ATTACHMENT CC

FARER FERSKO

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January 12, 1999

Via Federal Express

Nicholas Sodano, HSMS 2
New Jersey Department of Environmental Protection
Division of Publicly Funded Site Remediation
300 Horizon Center
Robbinsville, NJ 08691

Re: **Documents Concerning Site Conditions**
Premises: Vacant Property behind 551 Main Avenue
Borough of Wallington, Bergen County
Our File No.: 230302

Dear Mr. Sodano:

As you know, we represent Farmland Dairies, owner of the vacant property located behind 551 Main Avenue.

As we discussed, we have reviewed Farmland's files concerning the site conditions at the property to assist you in your investigation of the landfill presently occupied by Jasontown Apartments and the landfill formerly used by Curtis Wright located upstream along the Saddle River.

Lake Side Properties, Inc., a predecessor of Farmland Dairies, removed fourteen 20,000 gallon underground storage tanks from the premises in December 1991. These tanks were apparently used by Hammersly Manufacturing as a fuel supply for its paper mill located across the Saddle River. The tanks were located along the stream bank and were situated perpendicular to the Saddle River. As part of the remediation associated with the tank removal, soil was excavated due to the limited presence of petroleum contamination. DEP issued a No Further Action Letter on May 23, 1994.

We are not aware of any other sampling activities at the premises.

We are providing you with copies of the following documents:

1. Underground Storage Tank Closure Plan Approval Application and Closure Plan;

CC1

2. DEP Underground Storage Tank System Closure Approval - dated November 1991;

3. Discharge Investigation and Corrective Action Report ("DICAR") dated June 30, 1992 prepared by Environmental Waste Management Associates ("EWMA");

4. DEP correspondence dated August 17, 1992 providing comments to DICAR;

5. EWMA correspondence to DEP dated September 28, 1992;

6. DEP correspondence dated August 16, 1993;

7. Soil Reuse Plan dated November 22, 1993 prepared by EWMA;

8. DEP correspondence dated December 17, 1993;

9. EWMA correspondence dated January 17, 1994;

10. Soil Re-Use Sampling Results dated February 2, 1994;

11. DEP No Further Action Letter dated May 23, 1994; and

12. Two 1917 Sanborn Maps and 1968 Sanborn Map. The Sanborn Maps do not depict the premises but apparently are the only maps available for the area.

We are presently preparing a response to DEP's Request for Information. We expect to provide you with that response within a few short weeks. In the interim, if you have any further questions or comments concerning the information we are providing you or regarding your investigation of the adjoining landfills, please contact us immediately so that we may provide you with a swift response.

Regards,

Lawrence F. Jacobs
LFJ:gmc
Enclosures

Note: The attachmen are distributed chronologi in this report.

cc2