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12/31/91

(Final AJB 2/11/92)

FINAL DRAFT
SITE INSPECTION REPORT
DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY
VOLUME 1 OF 2

PREPARED UNDER

WORK ASSIGNMENT NO. 019-2JZZ
CONTRACT NO. 68-W9-0051

DECEMBER 31, 1991

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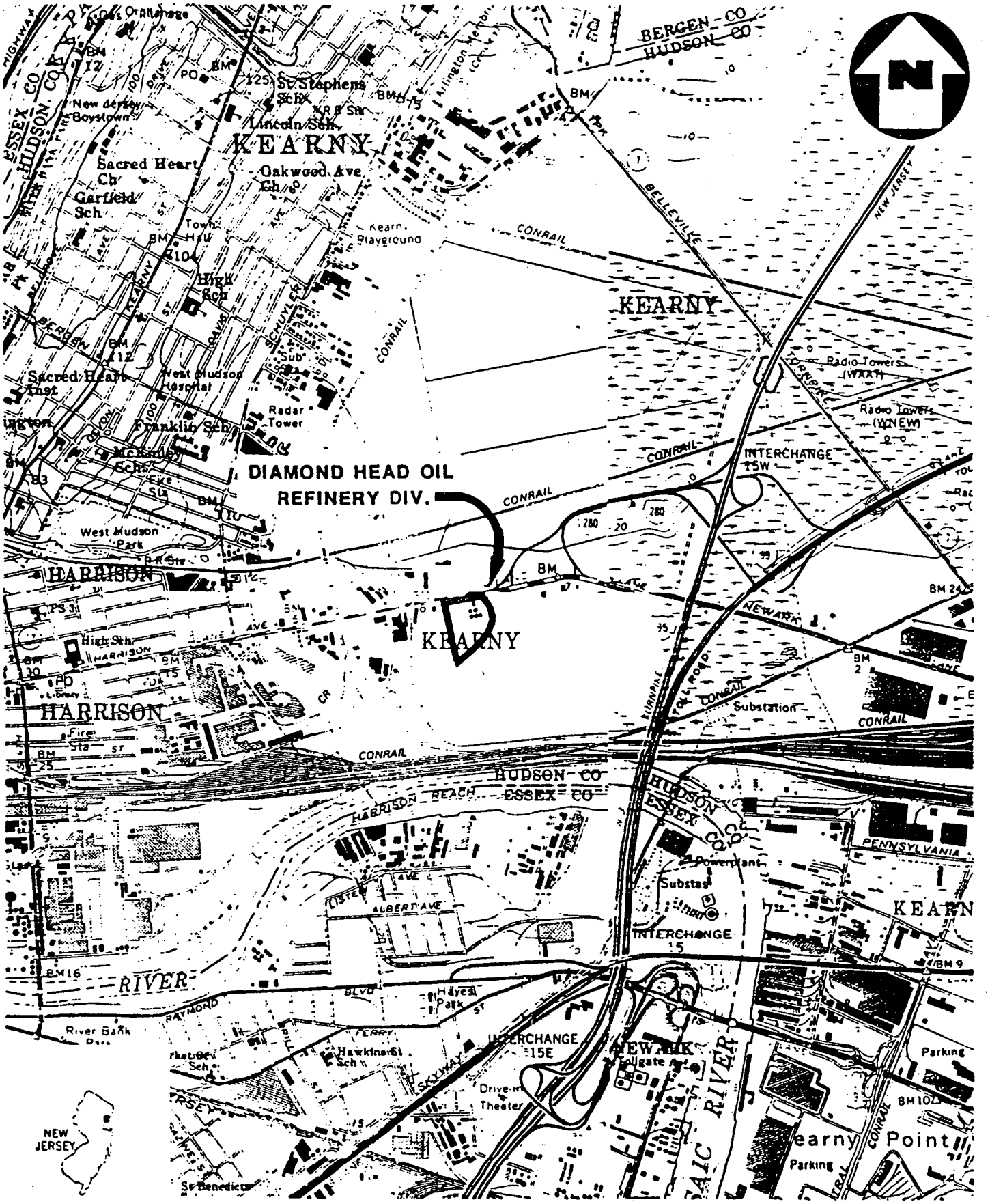
SITE SUMMARY AND RECOMMENDATIONS

The Diamond Head Oil Refinery Div. (Diamond Head) Site is located at 1401 Harrison Avenue in Kearny, Hudson County, New Jersey. The site is also listed on the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Alias Site Listing as Edgewater Terminal (Ref. No. 1). Figures 1 and 2 present a Site Location Map and Site Map, respectively. Currently the site is inactive and consists of approximately 15 acres of undeveloped land that is bordered by Harrison Avenue to the north, entrance ramp M of Interstate 280 to the east, Interstate 280 (I-280) to the south, and the Campbell Distribution Foundry to the west (Ref. No. 9). The site is completely fenced, with the exception of a break in the fence along the eastern border, and the access road is blocked at Harrison Avenue by a dirt berm and concrete debris (Ref. No. 12). The site is comprised of wetland areas and drainage ditches, a small pond, a vegetated landfill area along the western portion of the site, and the remnants of the former Diamond Head Oil Refinery on the eastern portion. The abandoned refinery portion of the site now contains various construction debris including the concrete foundations of the former on-site building and two former aboveground storage tanks (Ref. No. 9).

The site was in operation from February 1, 1946 to early 1979. The Diamond Head Oil Refining Company, Inc. operated an oil reprocessing facility at the site from 1946 until November 1, 1973. From 1973 until November 3, 1976, PSC Resources, Inc., a subsidiary of the Phillips Screw Company, Inc., continued to operate the reprocessing facility on the site under the name Diamond Head Oil Refining Company, Inc., Division of PSC Resources, Inc. In 1976 the facility was purchased by Ag-Met Oil Service, Inc. which continued the collection, refining, and recycling of liquid oily waste into fuel oil and lubrication oil. On November 18, 1976, Ag-Met Oil Service, Inc. changed its name to Newtown Refining Corporation and was issued a one-year NJDEP Temporary Operating Authorization (TOA) to operate a Special Waste Facility under the name Diamond Head Oil Refinery Division as a waste oil reprocessor on the Diamond Head site. Sometime in 1982, Newtown Refining Corporation became a wholly-owned subsidiary of Refinement International Company. The name of the facility remained Diamond Head Oil Refining Division and the expiration date on the TOA was April 30, 1979 or when engineering designs for the facility were submitted and approved or denied (Ref. Nos. 4, 6, 30, 32). It should be noted that all of the above named companies were owned by a Mr. Robert Mahler. In January 1985, Newtown Refining Corporation sold the site to Mimi Urban Development Corporation (Ref. No. 31). On August 23, 1985 Mimi Urban Development Corporation changed its name to Hudson Meadows Urban Renewal Development Corporation (HMURDC) and is the present owner of the site (Ref. No. 32).

During facility operations, two aboveground storage tanks (conflicting reports of volumes of 30,000 gallons and 100,000 gallons) and possibly underground pits were used to store oily waste. These



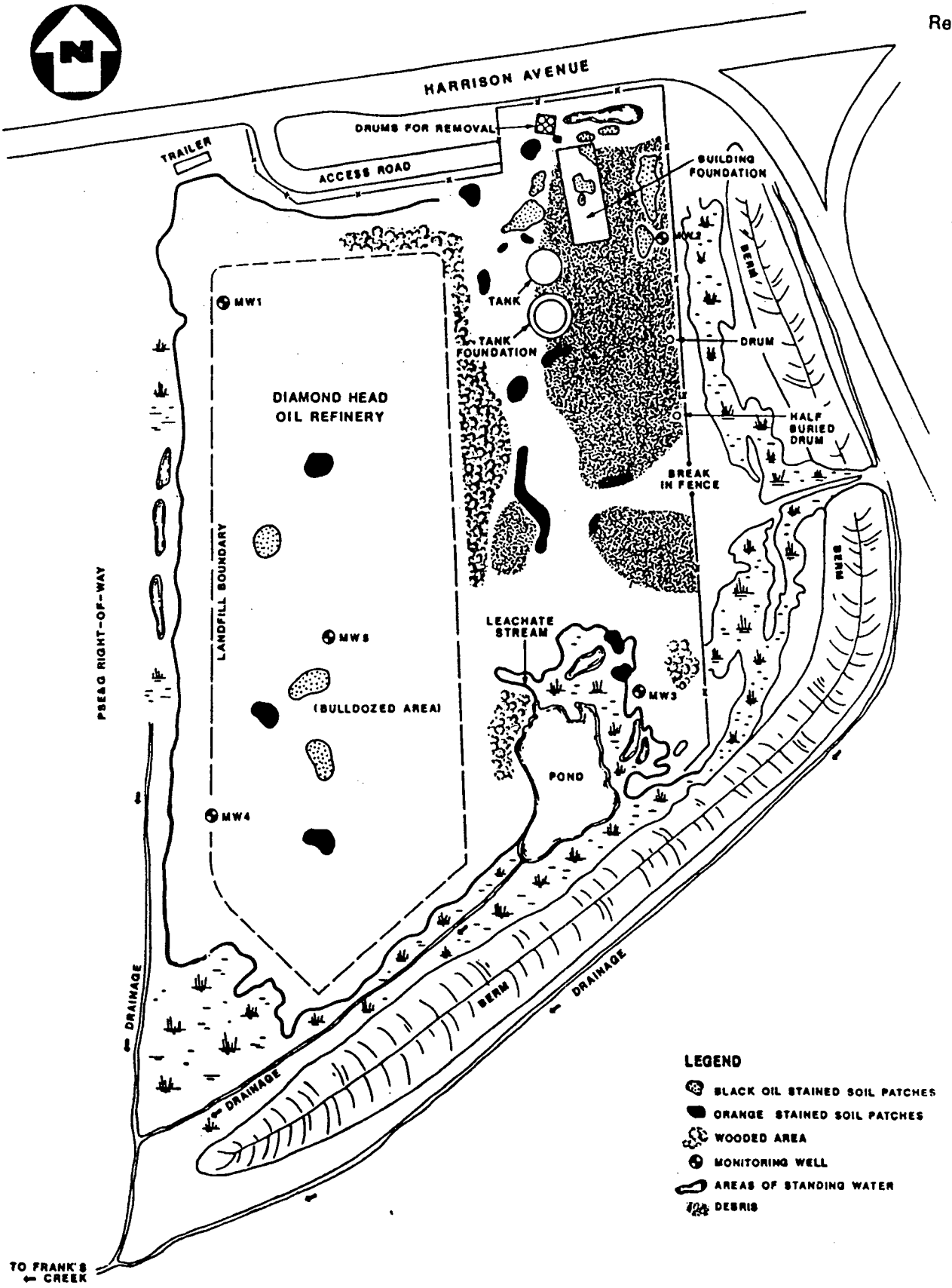
(QUAD) ELIZABETH, N.J.-N.Y.

SITE LOCATION MAP

DIAMOND HEAD OIL REFINERY DIV., KEARNY, N.J.

FIGURE 1

SCALE: 1" = 2000' (3)



SITE MAP

DIAMOND HEAD OIL REFINERY DIV., KEARNY, N.J.

NOT TO SCALE

FIGURE 2

wastes were intermittently discharged directly to adjacent properties, including the wetland area to the south of the site, creating an "oil lake." The New Jersey Department of Transportation (NJDOT) acquired the property to the south of the site on March 6, 1968. In 1977, NJDOT began construction of I-280 and was reported to have removed 9 million gallons of oil-contaminated water and 5 to 6 million cubic yards of oily sludge from the lake. This material was reportedly taken to Newtown's facility on Long Island to be recycled; however, there are no reports stating that this recycling process occurred. NJDOT filed suit against PSC Resources, Inc. on September 14, 1977 to recover the cost of the clean-up. It is also reported that during the construction of I-280, an "underground lake" of oil contaminated groundwater was found extending from the eastern limits of the NJDOT right-of-way to Frank's Creek on the west (Ref. Nos. 4, 25, 26). It is reported that, prior to abandoning the site, Diamond Head cleaned out the two aboveground tanks; however, there is no known documentation of this activity. From the close of operations in 1979 until 1982 the abandoned site was not completely fenced. During this time, it is reported that dumping of waste oils and other debris took place on site. Refinement International Co. hired Eastern Chemical Cleaning Co. to clean up the site in May 1982. In order to do so, the material in the tanks was analyzed and was found to contain 206 parts per million (ppm) of polychlorinated biphenyls (PCBs). Later analyses revealed levels of PCBs to be over 3,100 ppm. Approximately 7,500 gallons of material was pumped out of the tanks and disposed of off site by a Resource Conservation and Recovery Act (RCRA) permitted Treatment, Storage, and Disposal Facility (TSDF) by Resource Technology Service. Environmental Transport also removed approximately 27 tons of contaminated soil in May 1982. Analysis of a sample collected from this soil indicated the presence of lead at a concentration of 32 ppm. As of February 28, 1978, a reported $13,600 in fines had been levied against Robert Mahler, the president of Diamond Head (Ref. Nos. 5, 22, 25). It is unknown if these fines were ever paid or if any other enforcement actions have taken place concerning the site.

Soil and groundwater in the area of the site have been impacted by past site operations. During the HALLIBURTON NUS Environmental Corporation on-site reconnaissance, carried out under the U.S. EPA Field Investigation Team (FIT) Contract, extensive areas of orange and black stained soil was observed to be present at various locations across the site. HALLIBURTON NUS Environmental Corporation conducted a sampling site inspection, under the FIT contract, at the facility on July 1 and 2, 1991, during which four groundwater, three surface water, three sediment, seven surface soil, one subsurface soil, three liquid waste, and two solid waste samples were collected. Analyses of the soil samples indicated the presence of significantly elevated concentrations of numerous volatile and semivolatile organic compounds, pesticides, PCBs, and metals in the areas of the stained soil and the oil lake. Results of the groundwater samples collected from the monitoring wells located in the eastern portion of the site, indicated the presence of volatile and semivolatile organics, and PCBs similar to those found in the soil and the sediment samples collected from the site. Visual observation of

samples collected from monitoring well 3 indicated that a layer of contamination was present on top of the groundwater in the well. Analytical results of samples collected from this layer of contamination indicate the presence of various contaminants not normally associated with petroleum products. Since groundwater in the area of the site is reported to flow in a westerly direction, no upgradient well was available to be sampled; therefore, a release of contaminants from the site to groundwater cannot be definitively concluded. Soil samples collected from the wetland area in the southern portion of the site indicate actual contamination of this wetland area by contaminants attributable to the site. Since the contaminants are present in surface soils on site and access to the site is not completely controlled (i.e., the break in the fence to the east), a potential for direct contact with on-site contaminants does exist; however, there is little potential for fire or explosion to occur at the site (Ref. Nos. 12, 34-37).

The site is located in the Hackensack Meadowlands, which act as a habitat for transient Federal and state listed endangered or threatened species. The Meadowlands also consist of numerous wetland areas which exist along the coastal tidal waters in the area of the site. There are no known wells used for drinking purposes within 4 miles of the site, nor are there any known drinking water intakes and fisheries located in any of the surface waters within 15 miles downstream of the site. There is no residence, school, or day care facility within 200 feet of the site property (Ref. Nos. 8, 17, 20, 33).

HIGHER PRIORITY FOR FURTHER ACTION is recommended for the Diamond Head Oil Refinery Div. Site. Contamination of an on-site wetland area by hazardous substances attributable to the site has been observed. Although groundwater under the site has been impacted by contaminants attributable to the facility's past operations, there are no known wells used for drinking purposes within 4 miles of the site. A release of contaminants from the facility to surface water is suspected; however, there are no fisheries within 15 miles downstream of the site. Since the site is located in the Hackensack Meadowlands, a release to air of these contaminants poses a threat to the habitats of Federal endangered or state threatened species and wetlands located within the Meadowlands. The elevated levels of contaminants in on-site surface soils, along with unrestricted site access, also pose a potential for direct contact with these contaminants.

SITE ASSESSMENT REPORT: SITE INSPECTION

PART I: SITE INFORMATION

1. Site Name/Alias Diamond Head Oil Refinery Div./Edgewater Terminal

   Street 1401 Harrison Turnpike (Route 508)

   City Kearny State New Jersey Zip 07032

2. County Hudson County Code 017 Cong.Dist. 14

3. EPA ID No. NJD092226000

4. Block No. 285 Lot No. 3*

   * The original lot number for the Diamond Head Oil Refinery was lot number 3 of block number 285. This lot was purchased by HMURDC. However, lot numbers 14 and 15 have been leased by HMURDC from the Town of Kearny. Because these lots have also been impacted by previous site operations, all three lots will be evaluated as one site.

5. Latitude 40° 44′ 56" N Longitude 74° 07′ 57" W

   USGS Quad. Elizabeth, NJ-NY

6. Owner Hudson Meadows Urban Renewal Development Corporation Tel. No. (201) 383-6200

   Street 525 Riverside Avenue

   City Lyndhurst State New Jersey Zip 07071

7. Last Operator Refinement International Company Tel. No. Unknown

   Street 162 Main Street

   City Woonsocket State Rhode Island Zip 02895

8. Type of Ownership

   X Private _ Federal _ State

   _ County _ Municipal _ Unknown _ Other

9. Owner/Operator Notification on File

   _ RCRA 3001 Date _____ _ CERCLA 103c Date _____

   _ None X Unknown

10. Permit Information

Permit	Permit No.	Date Issued	Expiration Date	Comments
Temporary Operating Authorization	6907B	7-14-78	4-30-79	NJDEP Temporary authorization to operate a Special Waste Facility as a waste oil and oil sludge reprocessor.

11. **Site Status**

_ **Active** X **Inactive**

12. **Years of Operation** February 1, 1946 **to** Early 1979

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

(a) Waste Sources

Waste Unit No.	Waste Source Type	Facility Name for Unit
1.	Landfill	Landfill Area
2.	Aboveground Tanks	Aboveground Tanks
3.	Surface Impoundment	Oil Lake
4.	Contaminated Soil	Contaminated Soil
5.	Underground Pits	Underground Pits

(b) Other Areas of Concern

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

From the close of operations in 1979 until 1982 the abandoned site was not completely fenced. During this time it is reported that illegal dumping of waste oils and other debris took place on site. The amount of waste dumped on site is unknown. On Wednesday, December 14, 1977 heavy rains caused an unknown amount of oil to move from the site on to Harrison Avenue. This caused an area of Harrison Avenue approximately 100 feet long to be covered with an oil and water mixture, causing hazardous driving conditions. By the following day the water level had receded leaving oil on the roadway which had been spread over the roadway by passing traffic. It is reported that the Crescent Construction Co., the Hudson County Road Department, and the Kearny Fire Department corrected the situation.

Ref. Nos. 1-6, 22, 23

14. **Information available from**

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

Preparer Richard M. Settino **Agency** HALLIBURTON NUS Environmental Corporation

Date December 31, 1991

PART II: WASTE SOURCE INFORMATION

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

Waste Unit 1 - Landfill Area

Source Type

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

Description:

Little information is known about the disposal practices relating to the landfill area. It is reported that the western part of the site was used as a landfill in the past. Operators of the landfill are unknown as are the exact substances deposited there. Soil borings taken in the area of the landfill indicate that fill consisting of brick fragments, glass, plastic, wood, cinders, and other miscellaneous materials typical of an area used for landfilling of domestic solid waste.

Hazardous Waste Quantity

The exact size of the landfill area, as well as the amount of material deposited there, is unknown. Based on a scaled site map made by Killam Associates (Ref. No. 9), the area of the landfill is estimated at 7 acres.

Hazardous Substances/Physical State

There are no known reports of hazardous substances being deposited in the landfill. However, a surface soil sample collected by the New Jersey Department of Environmental Protection (NJDEP), Division of Waste Management from the landfill area on May 1, 1985 indicated the presence of various semivolatile organic compounds including anthracene, chrysene, fluoranthrene, naphthalene, phenanthrene, and pyrene. This sample also indicated antimony and nickel at levels above those detected in a background sample collected during the same sampling event. Samples from soil borings collected by Killam in October 1989 indicated the presence of antimony, arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc above NJDEP guidelines. During the HALLIBURTON NUS Environmental Corporation sampling site inspection, a solid caramel colored, translucent material was observed to be located on the ground surface in the landfill area between monitoring wells 4 and 5. This substance was assumed to be a resin of some type. Analytical results from a sample of this material indicated that no contaminants were detected in the material.

Ref. Nos. 9, 12, 24, 34-36

PART II: WASTE SOURCE INFORMATION

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

Waste Unit 2 - Aboveground Tanks

Source Type

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

Description:

During the facility operations there were two aboveground storage tanks that were used to store waste oil for reprocessing. It was reported that Diamond Head had cleaned out the two tanks before they moved but did not remove the tanks. There are a number of reports stating that during facility operations, these tanks were drained repeatedly and its contents were discharged to the wetlands and surrounding properties. It was also reported that after the facility ceased operations, site access was not controlled and unknown amounts of oil sludge were being deposited in the tanks by unknown parties. These abandoned tanks were also reported to be rusted out and leaking and the soil surrounding the tanks was reported to be stained. These abandoned tanks were cleaned out by Newtown Refining Corporation (the site owner at that time) and removed from the site in 1982.

Hazardous Waste Quantity

There are conflicting reports as to the actual volume of the tanks. A memorandum from the Hackensack Meadowlands Development Commission (HMDC) indicates one 30,000 gallon tank existed on site. A Hazardous Waste Investigation conducted by NJDEP indicated that two tanks were on site, each having a volume of 100,000 gallons. The exact amount of material stored in these tanks over the years that the facility was in operation, along with the amount of illegally dumped sludge, is unknown. It is reported that approximately 7,500 gallons of material was pumped out of the tanks in May 1982.

Hazardous Substances/Physical State

In order for the oil and sludge in the tanks to be transported off site, a sample was collected to determine if any hazardous constituents were present. Samples from the tanks collected in 1982 were analyzed by Princeton Aquascience and indicated that the material in tank 1 contained less than 50 ppm of PCBs. However, the material in tank 2 contained 206 ppm of PCBs. After shipping the material (from both tanks mixed) was sampled again and found to contain over 3,300 ppm PCBs. Soil samples collected by HALLIBURTON NUS Environmental Corporation from stained soil at the base of the tank foundations indicate the presence of various volatile and semivolatile organic compounds including phenanthrene and pyrene and the PCB Aroclor-1260.

Ref. Nos. 12, 25, 34-36

PART II: WASTE SOURCE INFORMATION

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

Waste Unit 3 - Oil Lake

Source Type

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

Description:

It is reported that during its years of operation, material was intermittently discharged from the two aboveground storage tanks directly to surrounding on-site and off-site properties, including a wetland area to the south of the facility, causing this wetland area to become an "oil lake." This lake was located on property owned by NJDOT and is currently adjacent to I-280 West. The owners of Diamond Head claim that this lake was created by the leaching of oil and sludge from the adjacent MSLA landfill to the south; however, surrounding topography and geology suggest that this is unlikely to have occurred.

Hazardous Waste Quantity

In 1977, approximately 9 million gallons of liquid and 5 to 6 million cubic yards of sludge were reportedly removed from the lake. The exact quantity of material discharged to the lake during the time of operations, as well as the exact quantity of material that remains in the lake, are unknown.

Hazardous Substances/Physical State

A soil sample collected by NJDEP on May 1, 1985 from the perimeter of the lake indicated that a number of contaminants were present including 1,1-dichloroethane, toluene, bis (2-ethylhexyl) phthalate, benzo(k)fluoranthene, acenaphthalene, benzo(a)pyrene, fluoranthene, pyrene, phenanthrene, chromium, copper, zinc, and total phenolics. A surface water sample collected during the same sampling event from the lake itself indicated the presence of 1,1-dichloroethane, tetrachloroethylene, toluene, phenol, arsenic, copper, lead, and zinc. A surface water sample collected by Killam in October 1989 from a ponded area near the lake indicated the presence of antimony, arsenic, chromium, copper, nickel, lead, zinc, 1,1,1-trichloroethane, toluene, xylenes, phenol, naphthalene, phenanthrene, and Aroclor-1260. A soil sample collected by HALLIBURTON NUS Environmental Corporation from the bank of the lake indicated the presence of a number of volatile organic compounds including benzene, 1,1,1-trichloroethane, toluene, ethylbenzene, and xylenes.

Ref. Nos. 12, 24, 26, 34-36

PART II: WASTE SOURCE INFORMATION

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

Waste Unit 4 - Contaminated Soil

Source Type

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

Description:

A number of reports indicate that stained soil was observed at various locations throughout the site. The HALLIBURTON NUS Environmental Corporation on-site reconnaissance revealed that black stained soil existed along the northeast portion and the eastern border of the site. Patches of orange stained soil were also observed at various locations across the site during the reconnaissance.

Hazardous Waste Quantity

The exact amount of contaminated soil on site is unknown. It was reported that 27 tons of contaminated soil were removed from the site in 1982 by Environmental Transport and taken to the facilities of Cecos International, Inc. The area of the site is 15 acres.

Hazardous Substances/Physical State

Soil samples collected by HALLIBURTON NUS Environmental Corporation at various locations around the site indicate the presence of various volatile organics including benzene, 2-hexanone, tetrachloroethene, toluene, ethylbenzene, and xylenes, various semivolatile organics including naphthalene, 2-methylnaphthalene, and pyrene, various pesticides including 4,4' DDT, endrin, and the PCB Aroclor-1260.

Ref. Nos. 5, 12, 27, 28, 34-36

PART II: WASTE SOURCE INFORMATION

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

Waste Unit 5 - Underground Pits

Source Type

_	Landfill	_	Contaminated Soil
_	Surface Impoundment	_	Pile
_	Drums	_	Land Treatment
_	Tanks/Containers	X	Other (Unlined Pits)

Description:

During an NJDEP Hazardous Waste Facility Inspection on February 6, 1979, it was noted that two underground storage pits were observed. These pits were reported to contain "a dark liquid resembling contaminated oil," which was explained to be a thin film of oil on top of some water that may have seeped into the pits. These pits were also referred to as underground storage tanks in an NJDEP memorandum on November 1, 1982; however, the information about these underground tanks in this memorandum conflicts with other information contained in Ref. No. 25, which states that aboveground tanks were located on site. No other information is known about these pits.

Hazardous Waste Quantity

The size or volume of these pits, as well as the amount of material contained in the pits, is unknown.

Hazardous Substances/Physical State

Any substances, with the exception of the contaminated oil referred to above, that were contained in the pits are unknown. These pits were not observed during the HALLIBURTON NUS Environmental Corporation on-site reconnaissance or sampling site inspection.

Ref. Nos. 4, 12, 25, 29

PART III: SAMPLING RESULTS

EXISTING ANALYTICAL DATA

The New Jersey Department of Environmental Protection (NJDEP), Division of Waste Management collected six surface soil samples and two surface water samples from areas of visual contamination at the site on May 1, 1985. These samples were analyzed for volatile organics, acid compounds, pesticides, PCBs, metals, cyanides, and phenols. The analytical results for selected compounds are presented in Table 1. A full presentation of the NJDEP analytical results along with a sample location map, is included as Ref. No. 24.

TABLE 1

ANALYTICAL RESULTS FOR SELECTED CONTAMINANTS DETECTED IN SURFACE SOIL SAMPLES COLLECTED BY NJDEP AT THE DIAMOND HEAD OIL REFINERY DIV. SITE ON MAY 1, 1985

Sample Number/Contaminant Concentration

Hazardous Substance	SBACK	S1	S2	S3	S4	S5
Toluene	ND	36.3	94.9	40,520.4	ND	2,355.7
Benzene	ND	BMDL	45.8	16,960.7	ND	252.7
1,1-Dichloroethane	ND	10.1	20.6	942.1	ND	335.9
Ethylbenzene	ND	18.5	14.2	6,020.4	ND	BMDL
Phenanthrene	7,130	410	BMDL	1,487,000	13,114	36,200
Fluoranthrene	12,025	236	55,100	601,000	16,645	13,800
Pyrene	9,346	349	178,000	1,130,000	13,200	39,100

Results in micrograms per kilogram (ug/kg)
BMDL = Below Minimum Detection Limit
ND = Compound Not Detected

Hudson Meadows Urban Renewal Development Corporation (HMURDC) retained Killam Associates to conduct an environmental site characterization of the Diamond Head Site. During this investigation five soil borings and five monitoring wells were installed at various locations throughout the site between October 23 and 31, 1989. Samples were collected during the soil boring process and analyzed for petroleum hydrocarbons and U.S. EPA Priority Pollutants plus 40 library search compounds to characterize subsurface contamination. Analytical results from these samples do not indicate the presence of any contaminant significantly above the contaminant levels obtained from the NJDEP surface soil samples. Killam Associates also sampled four of the five monitoring wells in November 1989 and again in January 1990. These samples were also analyzed for the parameters listed above plus cyanide and phenols. During these sampling events monitoring well 3 was not sampled due to the presence of "free product (oil)" in the well. A complete copy of the Killam Associates report, including boring and monitoring well locations and analytical results of the samples collected, is included as Ref. No. 9.

SITE INSPECTION RESULTS

HALLIBURTON NUS Environmental Corporation, under the U.S. EPA FIT contract, conducted a sampling site inspection at the Diamond Head Oil Refinery on July 1 and 2, 1991 during which four groundwater, three surface water, three sediment, seven surface soil, one subsurface soil, three liquid waste, and two solid waste samples were collected. The groundwater sample collected from monitoring well 3 had a layer of free product on top of the water. This layer was sampled as a high concentration liquid waste sample (NJJB-LIQW 1, 2). After purging 9 gallons of material from the well (almost 3 well volumes) this product was unable to be cleared from the well. After allowing the well to stand for approximately 40 minutes after purging, it was determined that a third high concentration liquid waste sample (NJJB-LIQW 3) would be collected from the well. Upon standing undisturbed, sample NJJB-LIQW 3 exhibited two phases. Both of these phases were analyzed independently. All samples were sent to U. S. EPA Contract Laboratory Program (CLP) laboratories and analyzed for Target Compound List (TCL) organic and inorganic compounds at both low and high concentrations. The high concentration inorganic analysis also included cyanide analysis. Figure 3 presents a Sample Location Map and Table 2 presents a summary of the analytical data for these samples. The complete data package for the samples collected are presented as Ref. Nos. 34-36. These samples were collected in order to determine the presence of contaminants, if any, on site and assess the potential of these contaminants to migrate off site through groundwater, surface water, and/or air.

Ref. Nos. 12, 34-36

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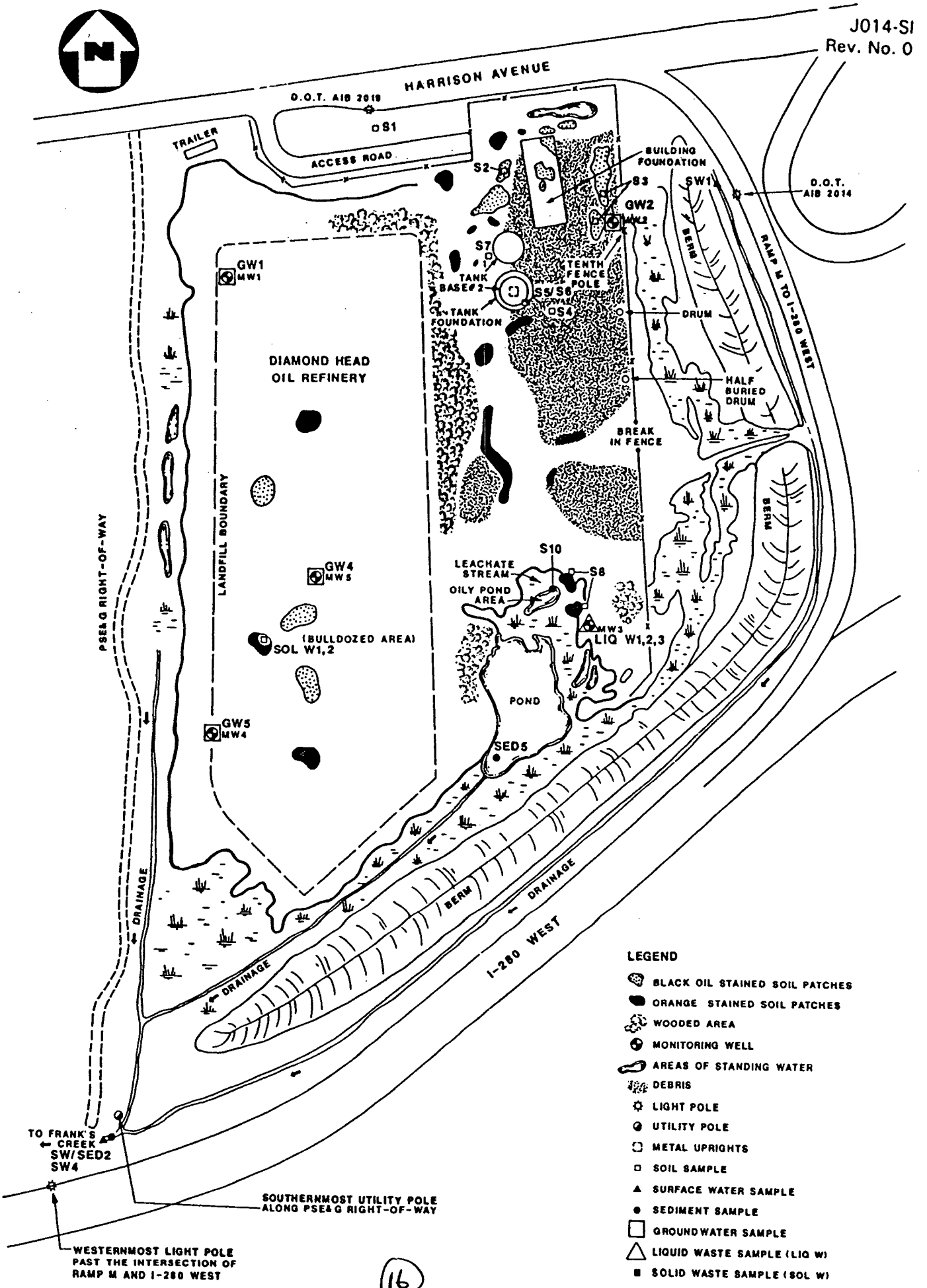

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SAMPLE LOCATION MAP

DIAMOND HEAD OIL REFINERY DIV., KEARNY, N.J.

NOT TO SCALE

FIGURE 3

TABLE 2
SITE INSPECTION SAMPLE RESULTS
DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY

SITE NAME: DIAMOND HEAD OIL REFINERY
PROJECT#: 8002-41-1
SAMPLING DATES: 7/1/91-7/2/91
EPA CASE NO.: 16762 LAB: S-CUBED

VOLATILES	NJJB-SW1	NJJB-SW2(DUP)	NJJB-SW4(MS/MSD)	NJJB-SED2	NJJB-SED5	NJJB-S10	NJJB-S1	NJJB-S2	NJJB-S3
Sample ID No.	BKD01	BKD02	BKD04	BJY78	BJY96	BJY76	BJY67	BJY68	BJY69
Traffic Report No.	AQUEOUS	AQUEOUS	AQUEOUS	SEDIMENT	SEDIMENT	SEDIMENT	SOIL	SOIL	SOIL
Matrix	ug/L	ug/L	ug/L	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Units	1	1	1	1	1	1	1	1	1
Dilution Factor	--	--	--	24	51	53	10	9	17
Percent Moisture									
Chloromethane	3 J								
Bromomethane									
Vinyl Chloride									
Chloroethane		3 J	4 J						
Methylene Chloride									
Acetone	44 E	15 E			140 E			59 E	
Carbon Disulfide		3 J	2 J		7 J				
1,1-Dichloroethene						66 E			
1,1-Dichloroethane						410 E		12 E	
Trans-1,2-Dichloroethene (total)						260 E		24 E	
Chloroform									
1,2-Dichloroethane									
2-Butanone									
1,1,1-Trichloroethane						3200 E			
Carbon Tetrachloride									
Vinyl Acetate									
Bromodichloromethane									
1,2-Dichloropropane									
trans-1,3-Dichloropropene									
Trichloroethene						2200 E			
Dibromochloromethane									
1,1,2-Trichloroethane									
Benzene		1 J	1 J			890 E		10 E	
cis-1,3-Dichloropropene									
Bromoform									
2-Hexanone						6100 E		210 E	
4-Methyl-2-Pentanone						3600 E		110 E	
Tetrachloroethene						25000 E		21 E	
1,1,2,2-Tetrachloroethane									
Toluene		6 E	4 J			48000 E		300 E	
Chlorobenzene									
Ethylbenzene						24000 E		39 E	
Styrene									
Xylenes (Total)						100000 E		590 E	

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

TABLE 2
SITE INSPECTION SAMPLE RESULTS
DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY
(cont'd)

SITE NAME: DIAMOND HEAD OIL REFINERY DIV.
PROJECT#: 02-9102-02
SAMPLING DATES: 7/1/91-7/2/91
EPA CASE NO.: 16762
LAB NAME: IT ANALYTICAL

INORGANICS	NJJB-SW1	NJJB-SW2(DUP)	NJJB-SW4(MS/MSD)	NJJB-SED2	NJJB-SED5	NJJB-S10	NJJB-S1	NJJB-S2	NJJB-S3	NJJB-S4(MS/MSD)	NJJB-S5
Sample ID No.	MBHB56	MBHB57	MBHB59	MBHB64	MBHB92	MBHB75	MBHB66	MBHB67	MBHB68	MBHB69	MBHB70
Traffic Report No.											
Matrix	WATER	WATER	WATER	SEDIMENT	SEDIMENT	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Units	ug/L	ug/L	ug/L	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Dilution Factor											
Aluminum	R	R	R	1600	8200	1940	5720	6000	3980	10000	7170
Antimony	J	J	106 E	J	J	53.7 E	16.2 E	17.3 E	41.7 E	39.4 E	54.3 E
Arsenic	J	J	20	2.7	15.4	10.9	7.6	58.7	10.4	7.4	12.5
Barium	J	305 E	711 E	J	327	2440	114	114	609	464	4630
Beryllium					J		J	J		J	
Cadmium	J	J	16 E	J	5.7	31	9.3	2.6 E	4.3	4.9	21.7
Calcium	39800 E	111000 E	147000 E	2520	4740	27500	12500	35600	1750	66000	20600
Chromium	14.8 E	27 E	94.1 E	11.6 E	92 E	147 E	56.8 E	407 E	91.1 E	1390 E	562 E
Cobalt	J	J	J	J	J	J	J	17.7	J	58.5	51.2
Copper	44.9 E	59.9 E	293 E	35.1	339	480	137	119	162	107	1080
Iron	7330 E	22400 E	90600 E	7250	19300	7870	21300	18300	64400	32400	45200
Lead	24	59.7	324	38.1	905	76200	205	271	4720	5140	53300
Magnesium	14300 E	34100 E	38500 E	J	2470	7340	2310	6810	1410	23400	13100
Manganese	281 E	762 E	1560 E	79.7	318	351	263	381	74.5	1040	417
Mercury				R	R	R	R	R	R	R	R
Nickel	J	J	J	J	53.2	19.3	22.7	63.3	38.8	207	197
Potassium	6430 E	19600 E	21100 E	J	J	J	J	J	J	J	J
Selenium	J		J		J		J	J	J	J	J
Silver					J	J	J	J		4.2	86.6
Sodium	33000 E	125000 E	126000 E	J	J	4770 E	J	J	J	J	J
Thallium								J			J
Vanadium	J	J	J	J	32.1 E	J	25.4 E	143 E	22.4 E	515 E	291 E
Zinc	167 E	229 E	1210 E	88.2	770	18400	559	564	166	2010	5550
Cyanide		12	12			1	J	J	1.5	0.92	2.9

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

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Rev. No. 0.1

TABLE 2
SITE INSPECTION SAMPLE RESULTS
DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY
(cont'd)

SITE NAME: DIAMOND HEAD OIL REFINERY
PROJECT#: 02-9102-02
SAMPLING DATES: 7/1/91-7/2/91
EPA CASE NO.: 16762
LAB NAME: NYTEST

INORGANICS	NJJB-SOL-W1(MS/MSD)	NJJB-SOL-W2(DUP)	NJJB-RIN7	NJJB-LIQ-W1(MS/MSD)	NJJB-LIQ-W2(DUP)	NJJB-LIQ-W3	NJJB-RIN6
Sample ID No.	MBHB89	MBHB90	MBHB95	MBHB86	MBHB87	MBHH02	MBHB88
Traffic Report No.	SOLID	SOLID	WATER	LIQUID	LIQUID	LIQUID	WATER
Matrix	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Units							
Aluminum	33635	63595		R	R	R	91.1 E
Antimony	34.3						
Arsenic	25.5	26	3.1 J	3 J	2.3 J	R	1.9 J
Barium	515	717		831.4	778	882	6.7 J
Beryllium	61.1 E			7.2 E	9.8	1 J	
Cadmium	57.8 E			6.9 J	10.2 E		
Calcium	7462	5328		1528	1958	2357	168 E
Chromium	156	113		83.1 E	74.3 E	78.3 E	
Cobalt	15 J				8.3 J		
Copper	523 E	283 E		29.2 J	30.2 J	63.4 E	
Iron	19691	31227		333	302	518	
Lead	511	616		390	380	621	6.5 J
Magnesium	5570	6706		187 E	94.8 E	212 E	
Manganese	296	299		25.7	29.3	21.4	0.9 J
Mercury	1.4 E	1.58 E					
Nickel	111 E	108 E					
Selenium							
Silver	51.9 E			6.2 J	5.3 J	12.2 E	
Sodium	10618	8222		304	203	470	137 E
Thallium							
Vanadium	106 E	44 E		47	46	80.7	
Zinc	853	740		17.5 J	33	197	7.3 J
Cyanide				R	R	R	
Cyanide (oil phase)	N/A	N/A	N/A	N/A	N/A	R	N/A

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

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TABLE 2
SITE INSPECTION SAMPLE RESULTS
DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY
(cont'd)

SITE NAME: DIAMOND HEAD OIL REFINERY
PROJECT#: 8002-41-1
SAMPLING DATES: 7/1/91-7/2/91
EPA CASE NO.: 16762 LAB: S-CUBED

VOLATILES	NJJB-GW2	NJJB-GW4	NJJB-GW5	NJJB-RIN5	NJJB-TBLK3	NJJB-TBLK4
Sample ID No.	BJY81	BJY83	BJY84	BJY89	BKD10	BKD11
Traffic Report No.	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS
Matrix	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Units	1	1	1	1	1	1
Dilution Factor	--	--	--	--	--	--
Percent Moisture						
Chloromethane					9 J	23
Bromomethane						
Vinyl Chloride	12					
Chloroethane						
Methylene Chloride				2 BJ	2 BJ	2 BJ
Acetone	940 E	43 B				
Carbon Disulfide						
1,1-Dichloroethene	1 J					
1,1-Dichloroethane	21					
Trans-1,2-Dichloroethene (total)	18					
Chloroform						
1,2-Dichloroethane						
2-Butanone	170 E					
1,1,1-Trichloroethane	1 J					
Carbon Tetrachloride						
Vinyl Acetate						
Bromodichloromethane						
1,2-Dichloropropane						
trans-1,3-Dichloropropene						
Trichloroethene	11					
Dibromochloromethane						
1,1,2-Trichloroethane						
Benzene	30		20			
cis-1,3-Dichloropropene						
Bromoform						
2-Hexanone	25					
4-Methyl-2-Pentanone	98					
Tetrachloroethene	3 J					
1,1,2,2-Tetrachloroethane						
Toluene	160		1 J			
Chlorobenzene		10	160			
Ethylbenzene	23					
Styrene						
Xylenes (Total)	140		5 J			

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

TABLE 2
SITE INSPECTION SAMPLE RESULTS
DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY
(cont'd)

SITE NAME: DIAMOND HEAD OIL REFINERY
PROJECT#: 8002-41-1
SAMPLING DATES: 7/1/91-7/2/91
EPA CASE NO.: 16762 LAB: S-CUBED

SEMI-VOLATILES	NJJB-GW2	NJJB-GW4	NJJB-GW5	NJJB-RIN5	NJJB-TBLK3	NJJB-TBLK4
Sample ID No.	BJY81	BJY83	BJY84	BJY89	BKD10	BKD11
Traffic Report No.	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS
Matrix	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Units	1	1	1	1	N/A	N/A
Dilution Factor/GPC Cleanup (Y)	--	--	--	--	N/A	N/A
Percent Moisture						
Phenol					NR	NR
bis(2-Chloroethyl)ether					NR	NR
2-Chlorophenol					NR	NR
1,3-Dichlorobenzene					NR	NR
1,4-Dichlorobenzene			6 J		NR	NR
Benzyl alcohol					NR	NR
1,2-Dichlorobenzene	7 J				NR	NR
2-Methylphenol	310				NR	NR
bis(2-Chloroisopropyl)ether					NR	NR
4-Methylphenol	900				NR	NR
N-Nitroso-di-n-dipropylamine					NR	NR
Hexachloroethane					NR	NR
Nitrobenzene					NR	NR
Isophorone					NR	NR
2-Nitrophenol					NR	NR
2,4-Dimethylphenol	390				NR	NR
Benzoic acid	130				NR	NR
bis(2-Chloroethoxy)methane					NR	NR
2,4-Dichlorophenol					NR	NR
1,2,4-Trichlorobenzene					NR	NR
Naphthalene	39		2 J		NR	NR
4-Chloroaniline					NR	NR
Hexachlorobutadiene					NR	NR
4-Chloro-3-Methylphenol					NR	NR
2-Methylnaphthalene	22				NR	NR
Hexachlorocyclopentadiene					NR	NR
2,4,6-Trichlorophenol					NR	NR
2,4,5-Trichlorophenol					NR	NR
2-Chloronaphthalene					NR	NR
2-Nitroaniline					NR	NR
Dimethylphthalate					NR	NR
Acenaphthylene					NR	NR
2,6-Dinitrotoluene					NR	NR
3-Nitroaniline					NR	NR
Acenaphthene	4 J		2 J		NR	NR
2,4-Dinitrophenol					NR	NR
4-Nitrophenol					NR	NR
Dibenzofuran					NR	NR
2,4-Dinitrotoluene					NR	NR
Diethylphthalate					NR	NR
4-Chlorophenyl-phenyl ether					NR	NR
Fluorene					NR	NR
4-Nitroaniline					NR	NR
4,6-Dinitro-2-methylphenol					NR	NR
N-nitrosodiphenylamine					NR	NR
4-Bromophenyl-phenyl ether					NR	NR
Hexachlorobenzene					NR	NR
Pentachlorophenol					NR	NR
Phenanthrene	3 J	3 J			NR	NR
Anthracene					NR	NR

TABLE 2
SITE INSPECTION SAMPLE RESULTS
DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY
(cont'd)

SITE NAME: DIAMOND HEAD OIL REFINERY
PROJECT#: 8002-41-1
SAMPLING DATES: 7/1/91-7/2/91
EPA CASE NO.: 16762 LAB: S-CUBED

SEMI-VOLATILES						
Sample ID No.	NJJB-GW2	NJJB-GW4	NJJB-GW5	NJJB-RIN5	NJJB-TBLK3	NJJB-TBLK4
Traffic Report No.	BJY81	BJY83	BJY84	BJY89	BKD10	BKD11
Matrix	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Dilution Factor/GPC Cleanup (Y)	1	1	1	1	N/A	N/A
Percent Moisture	--	--	--	--	N/A	N/A
Di-n-butylphthalate					NR	NR
Fluoranthene		3 J			NR	NR
Pyrene		3 J			NR	NR
Butylbenzylphthalate					NR	NR
3,3'-Dichlorobenzidine					NR	NR
Benzo(a)anthracene					NR	NR
Chrysene					NR	NR
bis(2-Ethylhexyl)phthalate		5 J			NR	NR
Di-n-octylphthalate					NR	NR
Benzo(b)fluoranthene					NR	NR
Benzo(k)fluoranthene					NR	NR
Benzo(a)pyrene					NR	NR
Indeno(1,2,3-cd)pyrene					NR	NR
Dibenz(a,h)anthracene					NR	NR
Benzo(g,h,i)perylene					NR	NR

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

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TABLE 2
SITE INSPECTION SAMPLE RESULTS
DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY
(cont'd)

SITE NAME: DIAMOND HEAD OIL REFINERY
PROJECT#: 8001-41-1
SAMPLING DATES: 7/1/91-7/2/91
EPA CASE NO.: 16762 LAB: AATS

VOLATILES	NJJB-SOL-W1(MS/MSD)	NJJB-SOL-W2(DUP)	NJJB-RIN7	NJJB-LIQ-W1(MS/MSD)	NJJB-LIQ-W2(DUP)	NJJB-LIQ-W3	NJJB-LIQ-W3	NJJB-RIN6
Sample ID No.	BJY93	BJY94	BJY99	BJY90	BJY91	BKD17	BKD17	BJY92
Traffic Report No.	SOLID	SOLID	WML	WIL	WIL	WIL	WML	WML
Matrix	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Units	NA	NA	NA	NA	NA	NA	NA	NA
Dilution Factor	NA	NA	NA	NA	NA	NA	NA	NA
Percent Moisture								
Chloromethane								
Bromomethane								
Vinyl Chloride								
Chloroethane								1 J
Methylene Chloride	2 J	1 J						
Acetone		2 J						
Carbon Disulfide								
1,1-Dichloroethene								
1,1-Dichloroethane								
Trans-1,2-Dichloroethene (total)								
Chloroform								
1,2-Dichloroethane								
2-Butanone								
1,1,1-Trichloroethane								
Carbon Tetrachloride								
Vinyl Acetate								
Bromodichloromethane								
1,2-Dichloropropane								
cis-1,3-Dichloropropene								
Trichloroethene								
Dibromochloromethane								
1,1,2-Trichloroethane								
Benzene				6 J		6 J		
trans-1,3-Dichloropropene								
Bromoform								
4-Methyl-2-Pentanone								
2-Hexanone								
Tetrachloroethene								
1,1,2,2-Tetrachloroethane								
Toluene				105 E	97	105		
Chlorobenzene				92 E	90	90		
Ethylbenzene								
Styrene				542 E	514	208		
Xylenes (Total)								

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

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TABLE 2
SITE INSPECTION SAMPLE RESULTS
DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY
(cont'd)

SITE NAME: DIAMOND HEAD OIL REFINERY
PROJECT#: 8001-41-1
SAMPLING DATES: 7/1/91-7/2/91
EPA CASE NO.: 16762 LAB: AATS

SEMI-VOLATILES	NJJB-SOL-W1(MS/MSD)	NJJB-SOL-W2(DUP)	NJJB-RIN7	NJJB-LIQ-W1(MS/MSD)	NJJB-LIQ-W2(DUP)	NJJB-LIQ-W3	NJJB-LIQ-W3	NJJB-RIN6
Sample ID No.	BJY93	BJY94	BJY99	BJY90	BJY91	BKD17	BKD17	BJY92
Traffic Report No.	SOLID	SOLID	WML	WIL	WIL	WIL	WML	WML
Matrix	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Units	NA	NA	NA	NA	NA	NA	NA	NA
Dilution Factor/GPC Cleanup (Y)	NA	NA	NA	NA	NA	NA	NA	NA
Percent Moisture								
Phenol								
bis(2-Chloroethyl)ether								
2-Chlorophenol								
1,3-Dichlorobenzene								
1,4-Dichlorobenzene								
Benzyl alcohol				34 J	37 J	30 J		
1,2-Dichlorobenzene								
2-Methylphenol								
bis(2-Chloroisopropyl)ether								
4-Methylphenol								
N-Nitroso-di-n-dipropylamine								
Hexachloroethane								
Nitrobenzene								
Isophorone								
2-Nitrophenol								
2,4-Dimethylphenol								
Benzoic acid								
bis(2-Chloroethoxy)methane								
2,4-Dichlorophenol								
1,2,4-Trichlorobenzene				229	232	226		
Naphthalene								
4-Chloroaniline								
Hexachlorobutadiene								
4-Chloro-3-Methylphenol				427	406	427		4 J
2-Methylnaphthalene								
Heptachlor epoxide								
2,4,6-Trichlorophenol								
2,4,5-Trichlorophenol								
2-Chloronaphthalene								
2-Nitroaniline								
Dimethylphthalate								
Acenaphthylene								
2,6-Dinitrotoluene	R	R	R	R	R	R	R	R
3-Nitroaniline				23 J	23 J			
Acenaphthene								
2,4-Dinitrophenol								
4-Nitrophenol								
Dibenzofuran								
2,4-Dinitrotoluene								
Diethylphthalate								
4-Chlorophenyl-phenyl ether								

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TABLE 2
SITE INSPECTION SAMPLE RESULTS
DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY
(cont'd)

SITE NAME: DIAMOND HEAD OIL REFINERY
PROJECT#: 8001-41-1
SAMPLING DATES: 7/1/91-7/2/91
EPA CASE NO.: 16762 LAB: AATS

SEMI-VOLATILES								
Sample ID No.	NJJB-SOL-W1(MS/MSD)	NJJB-SOL-W2(DUP)	NJJB-RIN7	NJJB-LIQ-W1(MS/MSD)	NJJB-LIQ-W2(DUP)	NJJB-LIQ-W3	NJJB-LIQ-W3	NJJB-RIN6
Traffic Report No.	BJY93	BJY94	BJY99	BJY90	BJY91	BKD17	BKD17	BJY92
Matrix	SOLID	SOLID	WML	WIL	WIL	WIL	WML	WML
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Dilution Factor/GPC Cleanup (Y)	NA	NA	NA	NA	NA	NA	NA	NA
Percent Moisture	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene					32 J			
4-Nitroaniline				R	R	R	R	
4,6-Dinitro-2-methylphenol								
N-nitrosodiphenylamine								
4-Bromophenyl-phenyl ether								
alpha-BHC						132		
Hexachlorobenzene								
beta-BHC								
Pentachlorophenol								
gamma-BHC (Lindane)								
Phenanthrene				124	117	106		
Anthracene								
delta-BHC								
Heptachlor								
Aldrin								
Di-n-butylphthalate								
Fluoranthene				119	91 J	111		
Heptachlor Epoxide								
Monochlorobiphenyl								
Dichlorobiphenyl								
Trichlorobiphenyl								
Tetrachlorobiphenyl								
Pyrene				100	109	105		
gamma-Chlordane								
Endosulfan I	R	R	R	R	R	R	R	R
alpha-Chlordane								
Pentachlrobiphenyl								
4,4'-DDE								
Dieldrin								
Hexachlorobiphenyl								
Endrin								
Endosulfan II	R	R	R	R	R	R	R	R
Heptachlorobiphenyl								
Butylbenzylphthalate								
Endosulfan sulfate								
4,4'-DDT								
Endrin ketone	R	R	R	R	R	R	R	R
Benzo(a)anthracene								
Methoxychlor								
Chrysene						68 J		
Octachlorobiphenyl								

TABLE 2
SITE INSPECTION SAMPLE RESULTS
DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY
(cont'd)

SITE NAME: DIAMOND HEAD OIL REFINERY
PROJECT#: 8001-41-1
SAMPLING DATES: 7/1/91-7/2/91
EPA CASE NO.: 16762 LAB: AATS

SEMI-VOLATILES								
Sample ID No.	NJJB-SOL-W1(MS/MSD)	NJJB-SOL-W2(DUP)	NJJB-RIN7	NJJB-LIQ-W1(MS/MSD)	NJJB-LIQ-W2(DUP)	NJJB-LIQ-W3	NJJB-LIQ-W3	NJJB-RIN6
Traffic Report No.	BJY93	BJY94	BJY99	BJY90	BJY91	BKD17	BKD17	BJY92
Matrix	SOLID	SOLID	WML	WIL	WIL	WIL	WML	WML
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Dilution Factor/GPC Cleanup (Y)	NA	NA	NA	NA	NA	NA	NA	NA
Percent Moisture	NA	NA	NA	NA	NA	NA	NA	NA
3,3'-Dichlorobenzidine								
bis(2-Ethylhexyl)phthalate								
Nonachlorobiphenyl								
Decachlorobiphenyl								
Di-n-octylphthalate								
Benzo(b)fluoranthene								
Benzo(k)fluoranthene								
Benzo(a)pyrene								
Indeno(1,2,3-cd)pyrene								
Dibenz(a,h)anthracene								
Benzo(g,h,i)perylene								

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

TABLE 2
SITE INSPECTION SAMPLE RESULTS
DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY
(cont'd)

SITE NAME: DIAMOND HEAD OIL REFINERY
PROJECT#: 8002-41-1
SAMPLING DATES: 7/1/91-7/2/91
EPA CASE NO.: 16762 LAB: S-CUBED

PESTICIDES	NJJB-GW2	NJJB-GW4	NJJB-GW5	NJJB-RIN5	NJJB-TBLK3	NJJB-TBLK4
Sample ID No.	BJY81	BJY83	BJY84	BJY89	BKD10	BKD11
Traffic Report No.	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS
Matrix	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Units	1	1	1	1	N/A	N/A
Dilution Factor/GPC Cleanup (Y)	--	--	--	--	N/A	N/A
Percent Moisture						
alpha-BHC		R			NR	NR
beta-BHC					NR	NR
delta-BHC					NR	NR
gamma-BHC (Lindane)		R			NR	NR
Heptachlor		R			NR	NR
Aldrin		R			NR	NR
Heptachlor epoxide		R			NR	NR
Endosulfan I		R			NR	NR
Dieldrin					NR	NR
4,4'-DDE					NR	NR
Endrin		R			NR	NR
Endosulfan II					NR	NR
4,4'-DDD					NR	NR
Endosulfan sulfate					NR	NR
4,4'-DDT					NR	NR
Methoxychlor					NR	NR
Endrin ketone					NR	NR
alpha-Chlordane					NR	NR
gamma-Chlordane					NR	NR
Toxaphene					NR	NR
Aroclor-1016					NR	NR
Aroclor-1221					NR	NR
Aroclor-1232					NR	NR
Aroclor-1242					NR	NR
Aroclor-1248					NR	NR
Aroclor-1254					NR	NR
Aroclor-1260					NR	NR

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

TABLE 2
SITE INSPECTION SAMPLE RESULTS
DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY
(cont'd)

SITE NAME: DIAMOND HEAD OIL REFINERY
PROJECT#: 8001-41-1
SAMPLING DATES: 7/1/91-7/2/91
EPA CASE NO.: 16762 LAB: AATS

PESTICIDES	NJJB-SOL-W1(MS/MSD)	NJJB-SOL-W2(DUP)	NJJB-RIN7	NJJB-LIQ-W1(MS/MSD)	NJJB-LIQ-W2(DUP)	NJJB-LIQ-W3	NJJB-LIQ-W3	NJJB-RIN6
Sample ID No.	BJY93	BJY94	BJY99	BJY90	BJY91	BKD17	BKD17	BJY92
Traffic Report No.	SOLID	SOLID	WML	WIL	WIL	WIL	WML	WML
Matrix	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Units	NA	NA	NA	NA	NA	NA	NA	NA
Dilution Factor/GPC Cleanup (Y)	NA	NA	NA	NA	NA	NA	NA	NA
Percent Moisture								
Toxaphene								
Aroclor-1016				16 E	16 E	16 E		
Aroclor-1221								
Aroclor-1232								
Aroclor-1242								
Aroclor-1248								
Aroclor-1254								
Aroclor-1260				21 E	20 E	21 E		

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

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TABLE 2
SITE INSPECTION SAMPLE RESULTS
DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY
(cont'd)

SITE NAME: DIAMOND HEAD OIL REFINERY
PROJECT#: 8002-41-1
SAMPLING DATES: 7/1/91-7/2/91
EPA CASE NO.: 16762 LAB: S-CUBED

VOLATILES	NJJB-S4(MS/MSD)	NJJB-S5	NJJB-S6(DUP)	NJJB-S7	NJJB-S8	NJJB-RIN1	NJJB-RIN2	NJJB-RIN3	NJJB-TBLK1	NJJB-GW1
Sample ID No.	BJY70	BJY71	BJY72	BJY73	BJY74	BJY85	BJY86	BJY87	BKD08	BJY80
Traffic Report No.	SOIL	SOIL	SOIL	SOIL	SOIL	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS
Matrix	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/L	ug/L	ug/L	ug/L	ug/L
Units	1	1	1	1	1	1	1	1	1	1
Dilution Factor	16	36	31	23	7	--	--	--	--	--
Percent Moisture										
Chloromethane						2 J	6 J	1 J	19	
Bromomethane								R		
Vinyl Chloride	10 J							R		
Chloroethane								R		
Methylene Chloride						1 BJ	2 BJ	2 BJ	2 BJ	
Acetone		1100 E					6 BJ	R		
Carbon Disulfide								R		
1,1-Dichloroethene								R		
1,1-Dichloroethane	22 J							R		
Trans-1,2-Dichloroethene (total)	53	8 J	14 J					R		
Chloroform								R		
1,2-Dichloroethane								R		
2-Butanone	71 E	81 E	100 E					R		
1,1,1-Trichloroethane	9 J							R		
Carbon Tetrachloride								R		
Vinyl Acetate								R		
Bromodichloromethane								R		
1,2-Dichloropropane								R		
trans-1,3-Dichloropropene								R		
Trichloroethene	46							R		
Dibromochloromethane								R		
1,1,2-Trichloroethane								R		11
Benzene	550							R		
cis-1,3-Dichloropropene								R		
Bromoform								R		
2-Hexanone		1800 E	1500 E					R		
4-Methyl-2-Pentanone	230							R		
Tetrachloroethene	99	170 E	270 E					R		
1,1,2,2-Tetrachloroethane								R		
Toluene	840			26 J	3 J			R		18
Chlorobenzene		71 E						R		
Ethylbenzene	830	17 E		46	3 J			R		
Styrene								R		
Xylenes (Total)	2700	120 E		320	31 E			R		

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

TABLE 2
SITE INSPECTION SAMPLE RESULTS
DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY
(cont'd)

SITE NAME: DIAMOND HEAD OIL REFINERY
PROJECT#: 8002-41-1
SAMPLING DATES: 7/1/91-7/2/91
EPA CASE NO.: 16762 LAB: S-CUBED

SEMI-VOLATILES	NJJB-S4(MS/MSD)	NJJB-S5	NJJB-S6(DUP)	NJJB-S7	NJJB-S8	NJJB-RIN1	NJJB-RIN2	NJJB-RIN3	NJJB-TBLK1	NJJB-GW1
Sample ID No.	BJY70	BJY71	BJY72	BJY73	BJY74	BJY85	BJY86	BJY87	BKD08	BJY80
Traffic Report No.	SOIL	SOIL	SOIL	SOIL	SOIL	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS
Matrix	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/L	ug/L	ug/L	ug/L	ug/L
Units	1	1	1	1	1	1	1	1	N/A	1
Dilution Factor/GPC Cleanup (Y)	16	36	31	23	7	--	--	--	N/A	--
Percent Moisture										
Phenol									NR	
bis(2-Chloroethyl)ether									NR	
2-Chlorophenol									NR	
1,3-Dichlorobenzene									NR	
1,4-Dichlorobenzene									NR	2 J
Benzyl alcohol									NR	
1,2-Dichlorobenzene									NR	
2-Methylphenol									NR	
bis(2-Chloroisopropyl)ether									NR	
4-Methylphenol									NR	
N-Nitroso-di-n-dipropylamine									NR	
Hexachloroethane									NR	
Nitrobenzene									NR	
Isophorone									NR	
2-Nitrophenol									NR	
2,4-Dimethylphenol									NR	
Benzoic acid									NR	
bis(2-Chloroethoxy)methane									NR	
2,4-Dichlorophenol									NR	
1,2,4-Trichlorobenzene									NR	
Naphthalene		660000 E	330000 J						NR	22
4-Chloroaniline									NR	
Hexachlorobutadiene									NR	
4-Chloro-3-Methylphenol									NR	
2-Methylnaphthalene		370000 E	160000 J						NR	5 J
Hexachlorocyclopentadiene									NR	
2,4,6-Trichlorophenol									NR	
2,4,5-Trichlorophenol									NR	
2-Chloronaphthalene									NR	
2-Nitroaniline									NR	
Dimethylphthalate									NR	
Acenaphthylene		180000 J	110000 J						NR	
2,6-Dinitrotoluene									NR	
3-Nitroaniline									NR	
Acenaphthene		68000 J							NR	10 J
2,4-Dinitrophenol									NR	
4-Nitrophenol									NR	
Dibenzofuran									NR	
2,4-Dinitrotoluene									NR	
Diethylphthalate									NR	
4-Chlorophenyl-phenyl ether									NR	
Fluorene		110000 J							NR	3 J
4-Nitroaniline									NR	
4,6-Dinitro-2-methylphenol									NR	
N-nitrosodiphenylamine									NR	
4-Bromophenyl-phenyl ether									NR	
Hexachlorobenzene									NR	
Pentachlorophenol									NR	
Phenanthrene	24000 J	400000 E	190000 J						NR	5 J
Anthracene	24000 J	120000 J	59000 J						NR	

(3D)

TABLE 2
SITE INSPECTION SAMPLE RESULTS
DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY
(cont'd)

SITE NAME: DIAMOND HEAD OIL REFINERY
PROJECT#: 8002-41-1
SAMPLING DATES: 7/1/91-7/2/91
EPA CASE NO.: 16762 LAB: S-CUBED

SEMI-VOLATILES	NJJB-S4(MS/MSD)	NJJB-S5	NJJB-S6(DUP)	NJJB-S7	NJJB-S8	NJJB-RIN1	NJJB-RIN2	NJJB-RIN3	NJJB-TBLK1	NJJB-GW1
Sample ID No.	BJY70	BJY71	BJY72	BJY73	BJY74	BJY85	BJY86	BJY87	BKD08	BJY80
Traffic Report No.	SOIL	SOIL	SOIL	SOIL	SOIL	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS
Matrix	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/L	ug/L	ug/L	ug/L	ug/L
Units	1	1	1	1	1	1	1	1	N/A	1
Dilution Factor/GPC Cleanup (Y)	16	36	31	23	7	--	--	--	N/A	--
Percent Moisture										
Di-n-butylphthalate									NR	
Fluoranthene		210000 J	140000 J						NR	
Pyrene	55000 J	410000 E	290000 J						NR	
Butylbenzylphthalate									NR	
3,3'-Dichlorobenzidine									NR	
Benzo(a)anthracene		97000 J							NR	
Chrysene		93000 J							NR	
bis(2-Ethylhexyl)phthalate		110000 J							NR	
Di-n-octylphthalate									NR	
Benzo(b)fluoranthene		58000 J							NR	
Benzo(k)fluoranthene		70000 J							NR	
Benzo(a)pyrene		140000 J	93000 J						NR	
Indeno(1,2,3-cd)pyrene		49000 J							NR	
Dibenz(a,h)anthracene									NR	
Benzo(g,h,i)perylene		78000 J								

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

TABLE 2
SITE INSPECTION SAMPLE RESULTS
DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY
(cont'd)

SITE NAME: DIAMOND HEAD OIL REFINERY
PROJECT#: 8002-41-1
SAMPLING DATES: 7/1/91-7/2/91
EPA CASE NO.: 16762 LAB: S-CUBED

PESTICIDES	NJJB-S4(MS/MSD)	NJJB-S5	NJJB-S6(DUP)	NJJB-S7	NJJB-S8	NJJB-RIN1	NJJB-RIN2	NJJB-RIN3	NJJB-TBLK1	NJJB-GW1
Sample ID No.	BJY70	BJY71	BJY72	BJY73	BJY74	BJY85	BJY86	BJY87	BKD08	BJY80
Traffic Report No.	SOIL	SOIL	SOIL	SOIL	SOIL	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS	AQUEOUS
Matrix	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/L	ug/L	ug/L	ug/L	ug/L
Units	10	10	10	1	1	1	1	1	N/A	1
Dilution Factor/GPC Cleanup (Y)	16	36	31	23	7	--	--	--	N/A	--
Percent Moisture										
alpha-BHC					210 E				NR	
beta-BHC	1100 E								NR	
delta-BHC			220 E						NR	
gamma-BHC (Lindane)									NR	
Heptachlor									NR	
Aldrin									NR	
Heptachlor epoxide									NR	
Endosulfan I									NR	
Dieldrin									NR	
4,4'-DDE									NR	
Endrin	220 E	2000 E	1900 E	61 E					NR	
Endosulfan II					260 EN				NR	
4,4'-DDD									NR	
Endosulfan sulfate	1300 E				30 E				NR	
4,4'-DDT									NR	
Methoxychlor									NR	
Endrin ketone	630 J								NR	
alpha-Chlordane									NR	
gamma-Chlordane									NR	
Toxaphene									NR	
Aroclor-1016									NR	
Aroclor-1221									NR	
Aroclor-1232									NR	
Aroclor-1242									NR	
Aroclor-1248									NR	
Aroclor-1254	28000 E	110000 E	110000 E						NR	
Aroclor-1260										

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

TABLE 2
SITE INSPECTION SAMPLE RESULTS
DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY
(cont'd)

SITE NAME: DIAMOND HEAD OIL REFINERY
PROJECT#: 8002-41-1
SAMPLING DATES: 7/1/91-7/2/91
EPA CASE NO.: 16762 LAB: S-CUBED

SEMI-VOLATILES	NJJB-SW1	NJJB-SW2(DUP)	NJJB-SW4(MS/MSD)	NJJB-SED2	NJJB-SED5	NJJB-S10	NJJB-S1	NJJB-S2	NJJB-S3
Sample ID No.	BKD01	BKD02	BKD04	BJY78	BJY96	BJY76	BJY67	BJY68	BJY69
Traffic Report No.	AQUEOUS	AQUEOUS	AQUEOUS	SEDIMENT	SEDIMENT	SEDIMENT	SOIL	SOIL	SOIL
Matrix	ug/L	ug/L	ug/L	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Units	1	1	1	1	1	1	1	1	1
Dilution Factor/GPC Cleanup (Y)	--	--	--	24	51	53	10	9	17
Percent Moisture									
Phenol									
bis(2-Chloroethyl)ether									
2-Chlorophenol									
1,3-Dichlorobenzene									
1,4-Dichlorobenzene									
Benzyl alcohol									
1,2-Dichlorobenzene									
2-Methylphenol									
bis(2-Chloroisopropyl)ether									
4-Methylphenol									
N-Nitroso-di-n-dipropylamine									
Hexachloroethane									
Nitrobenzene									
Isophorone									
2-Nitrophenol									
2,4-Dimethylphenol									
Benzoic acid									
bis(2-Chloroethoxy)methane									
2,4-Dichlorophenol									
1,2,4-Trichlorobenzene						130000 J			
Naphthalene									
4-Chloroaniline									
Hexachlorobutadiene									
4-Chloro-3-Methylphenol						310000 J			
2-Methylnaphthalene									
Hexachlorocyclopentadiene									
2,4,6-Trichlorophenol									
2,4,5-Trichlorophenol									
2-Chloronaphthalene									
2-Nitroaniline									
Dimethylphthalate							140 J		
Acenaphthylene									
2,6-Dinitrotoluene									
3-Nitroaniline									
Acenaphthene									
2,4-Dinitrophenol									
4-Nitrophenol									
Dibenzofuran									
2,4-Dinitrotoluene									
Diethylphthalate									
4-Chlorophenyl-phenyl ether									
Fluorene									
4-Nitroaniline									
4,6-Dinitro-2-methylphenol									
N-nitrosodiphenylamine									
4-Bromophenyl-phenyl ether									
Hexachlorobenzene									
Pentachlorophenol							490 J		
Phenanthrene							140 J		
Anthracene									

TABLE 2
SITE INSPECTION SAMPLE RESULTS
DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY
(cont'd)

SITE NAME: DIAMOND HEAD OIL REFINERY
PROJECT#: 8002-41-1
SAMPLING DATES: 7/1/91-7/2/91
EPA CASE NO.: 16762 LAB: S-CUBED

SEMI-VOLATILES	NJJB-SW1	NJJB-SW2(DUP)	NJJB-SW4(MS/MSD)	NJJB-SED2	NJJB-SED5	NJJB-S10	NJJB-S1	NJJB-S2	NJJB-S3
Sample ID No.	BKD01	BKD02	BKD04	BJY78	BJY96	BJY76	BJY67	BJY68	BJY69
Traffic Report No.	AQUEOUS	AQUEOUS	AQUEOUS	SEDIMENT	SEDIMENT	SEDIMENT	SOIL	SOIL	SOIL
Matrix	ug/L	ug/L	ug/L	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Units	1	1	1	1	1	1	1	1	1
Dilution Factor/GPC Cleanup (Y)	--	--	--	24	51	53	10	9	17
Percent Moisture									
Di-n-butylphthalate							880 E		
Fluoranthene							790 E		
Pyrene									
Butylbenzylphthalate									
3,3'-Dichlorobenzidine							480 J		
Benzo(a)anthracene							540 J		
Chrysene							160 J		
bis(2-Ethylhexyl)phthalate		9 J	6 J						
Di-n-octylphthalate							620 J		
Benzo(b)fluoranthene							660 J		
Benzo(k)fluoranthene							630 J		
Benzo(a)pyrene							390 J		
Indeno(1,2,3-cd)pyrene							160 J		
Dibenz(a,h)anthracene							460 J		
Benzo(g,h,i)perylene									

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

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TABLE 2
SITE INSPECTION SAMPLE RESULTS
DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY
(cont'd)

SITE NAME: DIAMOND HEAD OIL REFINERY
PROJECT#: 8002-41-1
SAMPLING DATES: 7/1/91-7/2/91
EPA CASE NO.: 16762 LAB: S-CUBED

PESTICIDES	NJJB-SW1	NJJB-SW2(DUP)	NJJB-SW4(MS/MSD)	NJJB-SED2	NJJB-SED5	NJJB-S10	NJJB-S1	NJJB-S2	NJJB-S3
Sample ID No.	BKD01	BKD02	BKD04	BJY78	BJY96	BJY76	BJY67	BJY68	BJY69
Traffic Report No.	AQUEOUS	AQUEOUS	AQUEOUS	SEDIMENT	SEDIMENT	SEDIMENT	SOIL	SOIL	SOIL
Matrix	ug/L	ug/L	ug/L	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Units	1	1	1	1	1	1	1	1	100
Dilution Factor/GPC Cleanup (Y)	--	--	--	24	51	53	10	9	17
Percent Moisture									
alpha-BHC					56 E				
beta-BHC					130 E				
delta-BHC									
gamma-BHC (Lindane)									
Heptachlor									
Aldrin									
Heptachlor epoxide									
Endosulfan I									
Dieldrin					100 EN			140 EN	
4,4'-DDE									
Endrin									
Endosulfan II				28 EN	390 EN				
4,4'-DDD									
Endosulfan sulfate				R	260 E		25 E	R	
4,4'-DDT									
Methoxychlor									
Endrin ketone					190 E				
alpha-Chlordane									
gamma-Chlordane									
Toxaphene									
Aroclor-1016									
Aroclor-1221									
Aroclor-1232									
Aroclor-1242									
Aroclor-1248									
Aroclor-1254							700 E		
Aroclor-1260									

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

TABLE 2
SITE INSPECTION SAMPLE RESULTS
DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY
(cont'd)

SITE NAME: DIAMOND HEAD OIL REFINERY DIV.
PROJECT#: 02-9102-02
SAMPLING DATES: 7/1/91-7/2/91
EPA CASE NO.: 16762
LAB NAME: IT ANALYTICAL

INORGANICS Sample ID No. Traffic Report No. Matrix Units Dilution Factor	NJJB-S6(DUP) MBHB71 SOIL mg/kg	NJJB-S7 MBHB72 SOIL mg/kg	NJJB-S8 MBHB73 SOIL mg/kg	NJJB-RIN1 MBHB81 WATER ug/L	NJJB-RIN2 MBHB82 WATER ug/L	NJJB-RIN3 MBHB83 WATER ug/L	NJJB-GW1 MBHB76 WATER ug/L	NJJB-GW2 MBHB77 WATER ug/L	NJJB-GW4 MBHB79 WATER ug/L	NJJB-GW5 MBHB80 WATER ug/L	NJJB-RIN5 MBHB85 WATER ug/L
Aluminum	8190	22900	4430	R	R	R	R	R	R	R	R
Antimony	69.1 E	19.6 E	J	J	J	J	109 E	J	99.6 E	111 E	J
Arsenic	12	J	11.5				J	46	14	J	
Barium	4280	54.3	2000				J	J	970 E	583 E	
Beryllium			J								
Cadmium	23	2.4	4.9	J	J	J	5.5 E	J	7.6 E	6.4 E	J
Calcium	25600	33100	8790	J	J	J	135000 E	J	133000 E	78300 E	J
Chromium	776 E	986 E	103 E	J	J	R	29 E	4720 E	81.2 E	R	R
Cobalt	63.5	51.8	J	J	J	J	J	J	J	J	J
Copper	1020	31.1	161	J	J	J	J	39.1 E	170 E	J	J
Iron	63500	21600	11600	J	J	J	34100 E	714 E	35200 E	41200 E	J
Lead	52300	161	8110		J		22	274	319	25.1	
Magnesium	17500	20300	2310	J	J	J	99400 E	J	73400 E	92900 E	J
Manganese	515	200	191				624 E	J	182 E	191 E	
Mercury	R	R	R						2.2 E		
Nickel	266	190	25.6		J	J	J	123 E	61.6 E	J	J
Potassium	J	J	J	J	J	J	46100 E	15900 E	47000 E	96400 E	J
Selenium			J					J	J		
Silver	88.5		J		J	J			J	J	J
Sodium	J	J	J	J	J	J	190000 E	636000 E	238000 E	363000 E	J
Thallium											
Vanadium	411 E	639 E	23.6 E		J	J	J	1870 E	J	J	J
Zinc	4940	171	1040	J	J	J	43.7 E	646 E	588 E	141 E	J
Cyanide	2.7	4.2	J				7.5	15.5	30		

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

36

PART IV: HAZARD ASSESSMENT

GROUNDWATER ROUTE

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

A release of contaminants is suspected from the facility to groundwater. Groundwater is reported to flow to the west and no upgradient wells were available for sampling; therefore, a release of contaminants to groundwater can not be definitively concluded at this time. Contaminants attributable to the facility's past operations were detected in both on-site soils and groundwater below the site. A number of volatile and semivolatile organics, including benzene, toluene, naphthalene, ethylbenzene, xylenes, phenanthrene, pyrene and Aroclor-1260 were detected in both soil and groundwater samples collected by HALLIBURTON NUS Environmental Corporation on July 1 and 2, 1991. Visual observation of a groundwater sample collected from monitoring well 3 indicated the presence of a contamination layer on top of the groundwater. Analytical results of a liquid waste sample of this layer indicated the presence of contaminants not normally associated with petroleum products. These contaminants were also detected in samples collected by NJDEP on May 1, 1985, and by Killam in October 1989.

Ref. Nos. 9, 12, 34-36

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

The aquifer of concern is the Passaic Formation, which was formerly known as the Brunswick Formation. The formation is composed of thin-bedded shales, mudstones, and sandstones which range in thickness from 6,000 to 8,000 feet. Groundwater in this formation occurs along joints and fracture zones which decrease in volume with depth. Groundwater in the area exists under confined and unconfined conditions resulting in both artesian and water table aquifers, respectively. The confining layers usually consist of silt and clay beds. The permeability of shale is approximately 10^{-7} cm/sec. Overlying a majority of the Passaic Formation is a stratum of unconsolidated glacial sediments consisting of clay, silt, sand, gravel, and boulders. The permeability of these unconsolidated deposits is approximately 10^{-6} to 10^{-7} cm/sec. There is direct hydraulic connection between the glacial deposits and the bedrock since glacial deposits in the area of the site are reported to recharge the bedrock.

The site is located on marsh deposits consisting of organic silt and mud with inclusions of peat ranging in depth from 7.5 to 20 feet. Underlying these are the glacial sediments consisting mainly of sands and gravels, with lenses of silt and clay. The storage capacity of these is apparently high; however, the quality of groundwater in these sediments is very poor. Underlying these deposits is the red shale and sandstone of the Passaic Formation. The deepest on-site boring, completed at 20 feet below the ground surface, did not reach the bedrock. Groundwater was observed by HALLIBURTON NUS Environmental Corporation personnel to exist at approximately 12 inches below the ground surface at the site. Groundwater in the area of the site is reported to flow to the west.

Ref. Nos. 9, pp. 2-6; 10; 11; 12, p. 4B; 14

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

New Jersey has not yet submitted a final well head protection plan for U.S. EPA approval. However, no known wells used for public or private drinking water supply are known to exist within 4 miles of the site.

Ref. Nos. 7, 8

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

The highest seasonal level of the saturated zone was observed at 12 inches below the ground surface. However, analytical results and visual observation indicate that hazardous substances from the site are in contact with groundwater.

Ref. Nos. 12,p. 4B; 34-36

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

The permeability of the unconsolidated deposits underlying the site, consisting of sands and gravels with lenses of silt and clay, ranges from 10^{-6} to 10^{-7} cm/sec.

Ref. No. 14

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

There are no known wells used for public or private drinking water supply located within 4 miles of the site.

Ref. No. 8

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

Although a release of contaminants from the site to groundwater is suspected, there are no known wells used for public or private drinking water supply located within 4 miles of the site.

Ref. No. 8

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

Distance	Population
0 - ¼ mi	0
> ¼ - ½ mi	0
> ½ - 1 mi	0
> 1 - 2 mi	0
> 2 - 3 mi	0
> 3 - 4 mi	0

State whether groundwater is blended with surface water or with groundwater from other wells. Also provide an explanation on how each ring population was determined.

All water used for drinking purposes by communities within 4 miles of the site is obtained from sources located outside of a 4 mile radius of the site. Drinking water is supplied by the Hackensack Water Company, Jersey City Water Company, Elizabeth Water Company, Kearny Water Company, Passaic Valley Water Commission, and the East Orange Water Company, all of which use surface water sources that are not located within the migration pathway of the site.

Ref. No. 8

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

Groundwater within 4 miles of the site is used for commercial and industrial purposes only.

Ref. No. 8

SURFACE WATER ROUTE

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

There is a suspected release of contaminants from the site to surface water. Surface water and sediment samples were collected from a drainage pathway that originates in the northeast corner of the site, runs along the southern border of the site, and eventually discharges to Frank's Creek off site. Surface water samples collected from the origin of the drainage pathway and from the location where the drainage pathway leaves the site indicate the presence of acetone, toluene, benzene, and bis(2-ethylhexyl)phthalate, which were also detected in on-site soils and groundwater. Soil and sediment samples collected from a wetland area on site indicate the presence of various volatile and semivolatile organic compounds and pesticides. A sediment sample collected from the drainage ditch immediately before it leaves the site property also indicated the presence of 4,4'-DDD. Drainage ditches on site lead from the wetland to Frank's Creek Culvert which leads to Frank's Creek. Oil slicks are reported to have been observed floating on the surface of Frank's Creek. Frank's Creek empties into the Passaic River which is approximately 2,300 feet from the site.

Ref. Nos. 12, 17, 18, 34-36

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

The nearest downslope surface water is Frank's Creek. Drainage from the site is through the drainage ditches to a wetland area to the south which drains to the west into Frank's Creek Culvert which leads to Frank's Creek. Frank's Creek flows into the Passaic River which merges with the Hackensack River where they both empty into the Newark Bay, which in turn empties into the Arthur Kill.

Ref. Nos. 13, 15, 17, 18

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

The distance to Frank's Creek through the wetland area via the on-site drainage ditches is approximately 700 feet.

Ref. No. 13

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

Approximately 30 percent of the site, the northern and eastern portion, is located within the 100-year flood zone. Approximately 20 percent of the site, the central portion, is located in the 500-year flood zone. Approximately 50 percent of the site, the southern and western portion, is located outside of the 500-year flood zone.

Ref. No. 19

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

There are no known drinking water intakes located in any surface waters within 15 miles downstream of the site.

Ref. No. 8

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

Fishery Name	Water Body Type	Flow (cfs)	Saline/Fresh/Brackish
Passaic River	Coastal Tidal Water	N/A	Fresh to Brackish
Newark Bay	Coastal Tidal Water	N/A	Brackish
Arthur Kill	Coastal Tidal Water	N/A	Brackish

Sediments from these surface waters are reported to contain contaminants such as PCBs, dioxin, and chlordane; therefore, it is prohibited to sell or consume fish caught in these waters. However, access to these waters is not known to be controlled and they are reported to be used as recreational fisheries.

Ref. No. 33

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

Environment	Water Body Type	Flow (cfs)	Wetland/Frontage(miles)
On-site Wetland	N/A	N/A	3,000 feet (perimeter)
Coastal Wetland	Coastal Tidal Water	N/A	11
Federal Endangered and State Threatened Species Habitat	Coastal Tidal Water	N/A	N/A

Ref. Nos. 17, 20

17. **If a release to surface water is observed or suspected, identify any intakes, fisheries, and sensitive environments from question Nos. 16-18 that are or may be located within the contamination boundary of the release.**

Intake: Not Applicable

Fishery: Not Applicable

Sensitive Environment: Wetlands on the site has been observed to contain contaminants attributable to the site. Elevated levels of various volatile and semivolatile organic compounds were detected in soil and sediment samples collected in this wetland area. The perimeter of the contaminated wetland is approximately 3,000 feet.

Ref. Nos. 12, 17, 34-36

SOIL EXPOSURE PATHWAY

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

There is no residence, school, or day care facility located within 200 feet of the site property.

Ref. Nos. 16, 21

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

There are no people that work on or within 200 feet of the site property. The site is bordered by Harrison Avenue to the north, Ramp M to I-280 to the east, I-280 to the south, and a PSE&G right-of-way to the west.

Ref. Nos. 3, 16

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

There are no known terrestrial sensitive environments located within 200 feet of the site property.

Ref. No. 20

AIR ROUTE

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

There is a suspected release of contaminants from the site to air. During the HALLIBURTON NUS Environmental Corporation site inspection, large areas of stained surface soils were observed and readings above background were obtained on the organic vapor analyzer (OVA) flame ionization detector and the HNu photoionization detector directly above this soil while it was being disturbed. Analytical data from the surface soil samples collected at various locations throughout the site indicate the presence of volatile organic compounds such as trichloroethene, benzene, 2-hexanone, tetrachloroethene, toluene, ethylbenzene, and total xylenes. The contaminated surface soil also presents a potential for a particulate release to

air. A number of pesticides and PCBs were detected in soil samples collected from the site including endrin, 4,4'-DDD, 4,4'-DDT, and Aroclor-1260.

Ref. Nos. 12, 34-36

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

Distance	Population
0 - ¼ mi	0
>¼ - ½ mi	0
>½ - 1 mi	6,040
>1 - 2 mi	60,500
>2 - 3 mi	132,480
>3 - 4 mi	250,110

Ref. No. 21

23. **Identify sensitive environments and wetlands acreage within ½ mile of the site.**

0 - ¼ mile	¼ - ½ mile
Sensitive Environments/Wetland Acreage	Sensitive Environments/Wetland Acreage
Approximately 18 acres of on-site and coastal wetlands	Approximately 50 acres of coastal wetlands Potential habitat for Federal endangered or state threatened species

Ref. Nos. 17, 20

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

There are no people that reside within the area of air contamination from a potential release to air from the facility.

Ref. Nos. 16, 21

25. **If a release to air is observed or suspected, identify any sensitive environments, listed in question No. 23, that are or may be located within the area of air contamination from the release.**

Approximately 14 acres of the wetlands identified above are within the contamination boundary of the air release. These wetlands are shown to be part of the actual site. The remainder of the wetlands and Federal endangered or state threatened species habitat identified in question No. 23 are not suspected to be within the area of air contamination from the suspected release of contaminants to air from the site.

Ref. Nos. 17, 20

ATTACHMENT 1

EXHIBIT A

PHOTOGRAPH LOG

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, HUDSON COUNTY, NEW JERSEY

ON-SITE RECONNAISSANCE: MAY 3, 1991

J014-SI
Rev. No. 0

PHOTOGRAPH INDEX

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY
MAY 3, 1991

ALL PHOTOGRAPHS TAKEN BY A. GARIBALDI

PHOTO NUMBER	DESCRIPTION	TIME
1P-1	Western edge of the building foundation, facing east.	1050
1P-2	Orange-stained soil patch inside of the site boundary just past the end of the paved access road.	1052
1P-3	Standing water and oil-stained soil patches north of the building foundation, with Harrison Ave. in background.	1100
1P-4	Black, oil-stained soil patches to the north of the building foundation, facing southwest.	1100
1P-5	Orange-brown algae in the standing water to the north of the building foundation.	1101
1P-6	Debris and black stained soil patch with the eastern edge of the building foundation in the background, facing northeast.	1106
1P-7	Drum and debris along eastern fenceline, facing east.	1119
1P-8	Half-buried drum along the eastern fenceline, facing northeast.	1021
1P-9	Gap in eastern fenceline with bermed area in near background, facing southeast.	1026
1P-10	Orange-stained soil and bare patch near the southeastern corner of the site noting possible stressed vegetation.	1030
1P-11	On-site wetlands vegetation near the southeastern corner of the site, facing southwest.	1030
P-12	Leachate-stained soil patches and possible stressed vegetation approximately 100 feet northwest of monitoring well MW-3.	1035
13	Small pond containing milky, gray colored water in the southeast portion of the site, facing southeast. Wetlands vegetation and trees surround the pond.	1140
	Leachate stream flowing southeast to the small pond, facing east.	1145

PHOTO NUMBER	DESCRIPTION	TIME
1P-15	Rusty, square patch located in the large stained soil area in the middle of the former Diamond Head property.	1430
1P-16	Tank base number 2 with outer concrete foundation, facing northeast.	1438
1P-17	Tank base number 1, facing southeast.	1438

PHOTOGRAPH LOG

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY

1P-1 May 3, 1991 1050
Western edge of the building foundation, facing east.

1P-2 May 3, 1991 1052
Orange-stained soil patch inside of the site boundary just past the end of the paved access road.

PHOTOGRAPH LOG

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY

1P-3 May 3, 1991 1100
Standing water and oil-stained soil patches north of the building foundation, with Harrison Ave. in background.

1P-4 May 3, 1991 1100
Black, oil-stained soil patches to the north of the building foundation, facing southwest.

PHOTOGRAPH LOG

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY

1P-5 May 3, 1991 1101
Orange-brown algae in the standing water to the north of the building foundation.

1P-6 May 3, 1991 1106
Debris and black stained soil patch with the eastern edge of the building foundation in the background, facing northeast.

PHOTOGRAPH LOG

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY

1P-7 May 3, 1991 1119
Drum and debris along eastern fenceline, facing east.

1P-8 May 3, 1991 1021
Half-buried drum along the eastern fenceline, facing northeast.

PHOTOGRAPH LOG

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY

1P-9 May 3, 1991 1026
Gap in eastern fenceline with bermed area in near background, facing southeast.

1P-10 May 3, 1991 1030
Orange-stained soil and bare patch near the southeastern corner of the site noting possible stressed vegetation.

PHOTOGRAPH LOG

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY

1P-11 May 3, 1991 1030
On-site wetlands vegetation near the southeastern corner of the site, facing southwest.

1P-12 May 3, 1991 1035
Leachate-stained soil patches and possible stressed vegetation approximately 100 feet northwest of monitoring well MW-3.

PHOTOGRAPH LOG

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY

1P-13 May 3, 1991 1140

Small pond containing milky, gray colored water in the southeast portion of the site, facing southeast. Wetlands vegetation and trees surround the pond.

PHOTOGRAPH LOG

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY

1P-14 May 3, 1991 1145
Leachate stream flowing southeast to the small pond, facing east.

1P-15 May 3, 1991 1430
Rusty, square patch located in the large stained soil area in the middle of the former Diamond Head property.

PHOTOGRAPH LOG

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY

1P-16 May 3, 1991 1438
Tank base number 2 with outer concrete foundation, facing northeast.

1P-17 May 3, 1991 1438
Tank base number 1, facing southeast.

EXHIBIT B

PHOTOGRAPH LOG

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, HUDSON COUNTY, NEW JERSEY

SAMPLING SITE INSPECTION: JULY 1 AND 2, 1991

PHOTOGRAPH INDEX

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY
JULY 1 AND 2, 1991

PHOTO NUMBER	DESCRIPTION	TIME
	July 1, 1991	
2P-1*	C. Jimenez collects soil sample S-3.	1219
2P-2*	B. Yaeger collects soil sample S-2.	1227
2P-3*	B. Yaeger collects soil sample S-7.	1241
2P-4*	C. Jimenez collects soil sample S-4 (MS/MSD).	1251
2P-5*	R. Settino collects soil sample S-8.	1358
2P-6*	B. Yaeger collects soil/sediment sample S-10.	1410
2P-7*	R. Settino collects sediment sample SED-5.	1436
2P-8*	B. Yaeger collects solid waste samples SOLW-1 and SOLW-2 (duplicate sample).	1451
2P-9*	Photo of resin material.	1457
	July 2, 1991	
2P-10*	B. Yaeger collects groundwater sample GW-2 from monitoring well MW-2.	1147
2P-11*	B. Yaeger collects liquid waste samples LIQW-1 and LIQW-2 (duplicate sample) from monitoring well MW-3.	1326
2P-12*	Photo of liquid waste sample jar.	1337
2P-13*	C. Jimenez and B. Yaeger collect liquid waste sample LIQW-3 from monitoring well MW-3.	1548
	July 1, 1991	
3P-1	B. Croft collects downstream surface water samples SW-2 (duplicate sample) and SW-4 (MS/MSD) from the outer drainage ditch.	1335
3P-2	B. Croft collects downstream sediment sample SED-2 from the outer drainage ditch.	1415
3P-3	B. Croft collects upstream surface water sample SW-1 from the outer drainage ditch.	1445

PHOTO NUMBER	DESCRIPTION	TIME
3P-4	B. Croft collects background soil sample S-1 from the area between the site access road and Harrison Avenue.	1512
3P-5	B. Croft collects surface soil samples S-5 and S-6 (duplicate sample) from inside tank base No. 2.	1537
	July 2,1991	
3P-6	B. Croft and R. Settino collect groundwater sample GW-4 from monitoring well MW-5.	1155
3P-7	B. Croft and R. Settino collect groundwater sample GW-5 from monitoring well MW-4.	1425
3P-8	B. Croft and R. Settino collect groundwater sample GW-1 from monitoring well MW-1.	1714

Note: All sample numbers above are preceded by NJJB-.
* Photographs taken by R. Feinberg; all other photographs taken by A. Garibaldi.

PHOTOGRAPH LOG

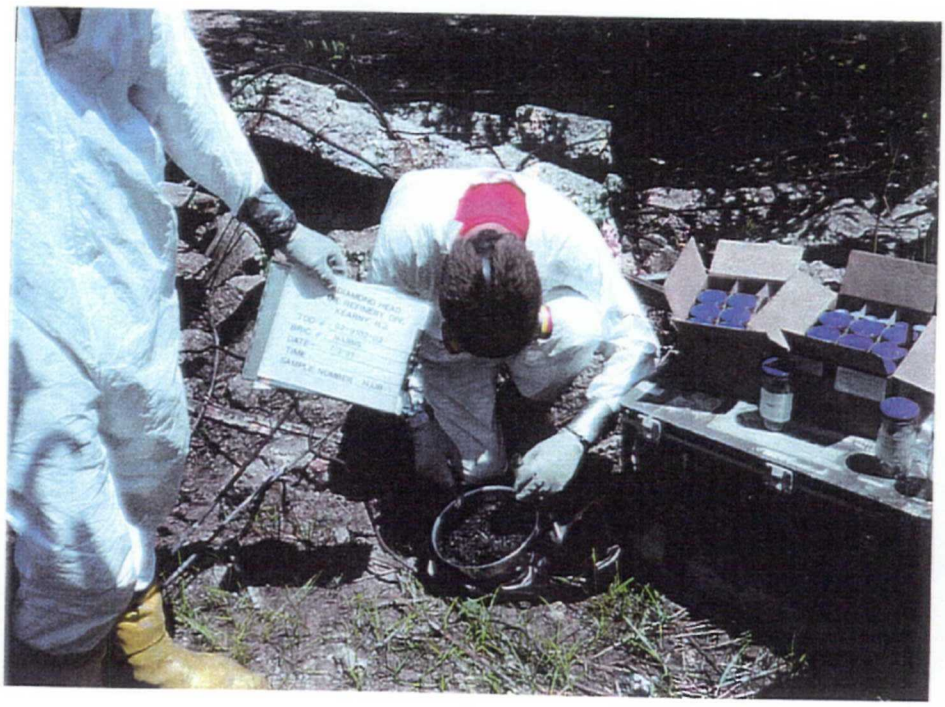
DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY

2P-1* July 1, 1991 1219
C. Jimenez collects soil sample S-3.

2P-2* July 1, 1991 1227
B. Yaeger collects soil sample S-2.

PHOTOGRAPH LOG

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY



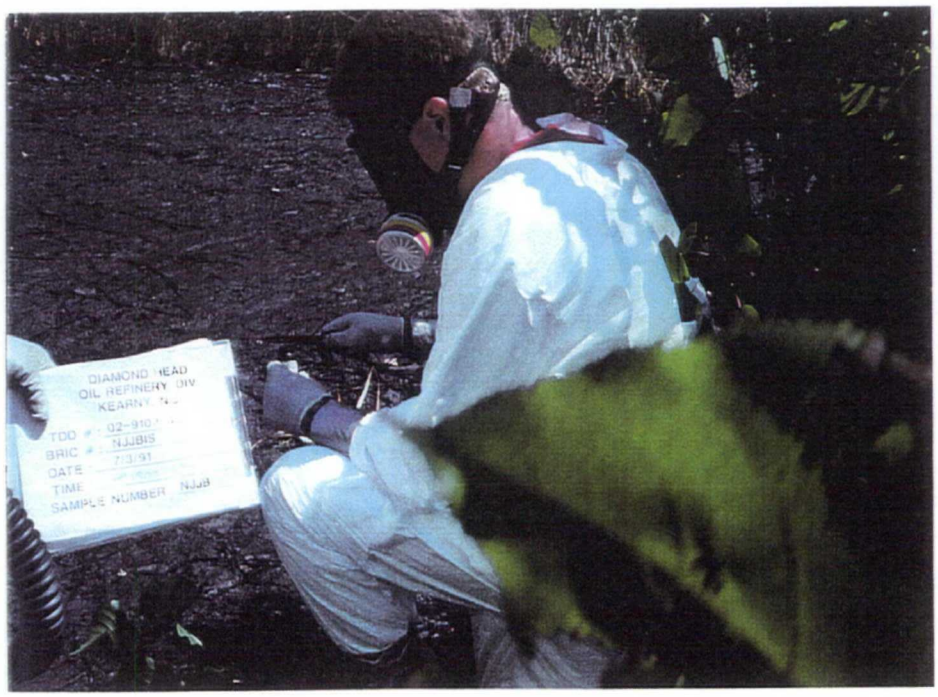
2P-3* July 1, 1991 1241
B. Yaeger collects soil sample S-7.

2P-4* July 1, 1991 1251
C. Jimenez collects soil sample S-4 (MS/MSD).

PHOTOGRAPH LOG

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY

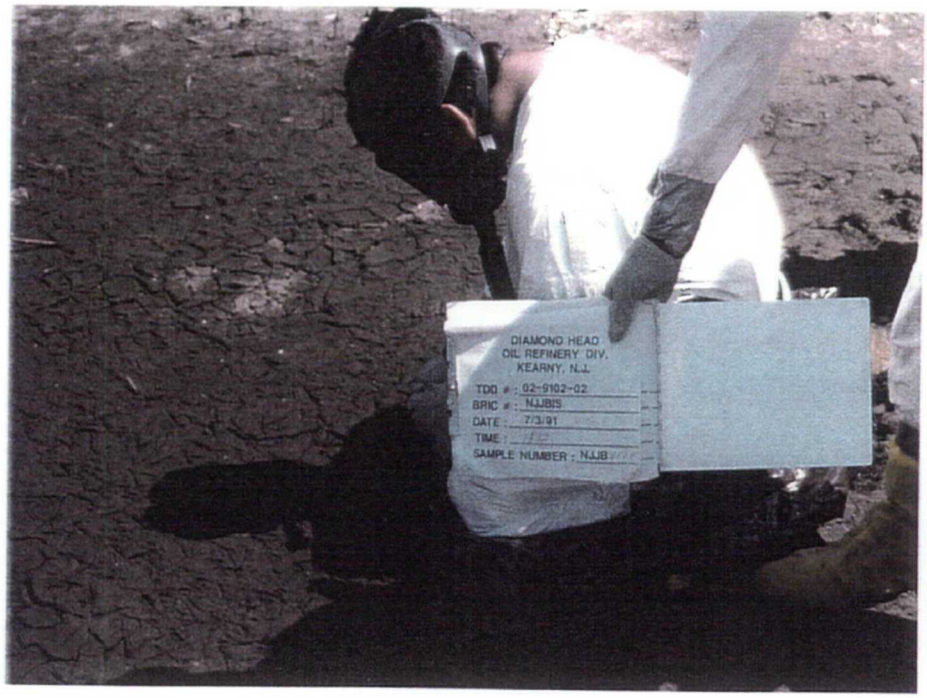
2P-5* July 1, 1991 1358
R. Settino collects soil sample S-8.



2P-6* July 1, 1991 1410
B. Yaeger collects soil/sediment sample S-10.

PHOTOGRAPH LOG

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY



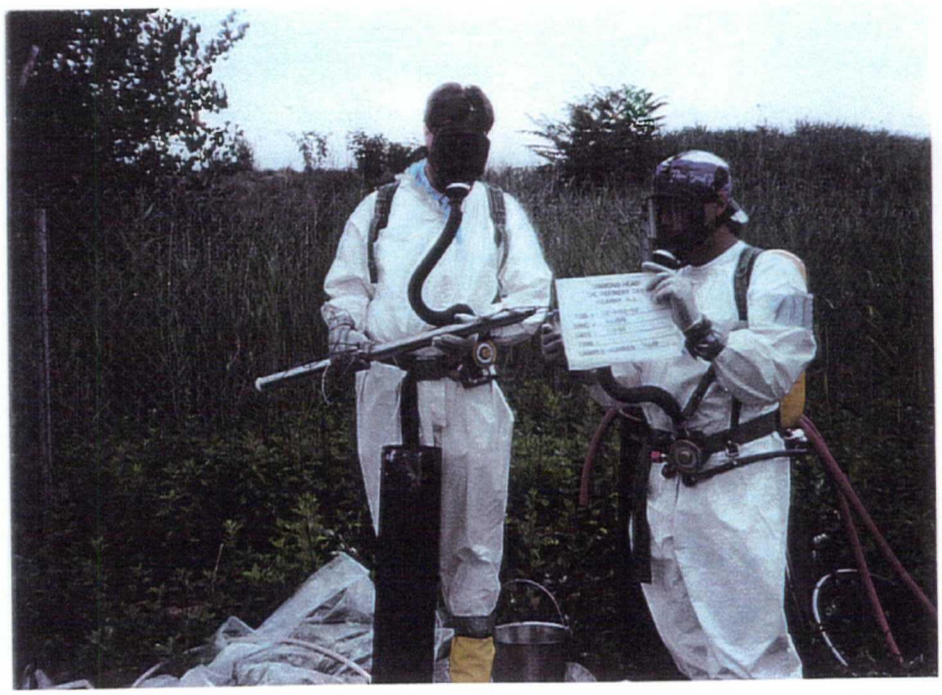
2P-7* July 1, 1991 1436
R. Settino collects sediment sample SED-5.

2P-8* July 1, 1991 1451
B. Yaeger collects solid waste samples
SOLW-1 and SOLW-2 (duplicate sample).

PHOTOGRAPH LOG

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY

2P-9* July 1, 1991 1457
Photo of resin material.



2P-10* July 2, 1991 1147
B. Yaeger collects groundwater sample GW-2 from monitoring well MW-2.

PHOTOGRAPH LOG

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY

2P-11* July 2, 1991 1326
B. Yaeger collects liquid waste samples LIQW-1 and LIQW-2 (duplicate sample) from monitoring well MW-3.

PHOTOGRAPH LOG

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY

2P-12* July 2, 1991 1337
Photo of liquid waste sample jar.

2P-13* July 2, 1991 1548
C. Jimenez and B. Yaeger collect liquid waste sample LIQW-3 from monitoring well MW-3.

PHOTOGRAPH LOG

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY

3P-1 July 1, 1991 1335
B. Croft collects downstream surface water samples SW-2 (duplicate sample) and SW-4 (MS/MSD) from the outer drainage ditch.

PHOTOGRAPH LOG

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY

3P-2 July 1, 1991 1415
B. Croft collects downstream sediment sample
SED-2 from the outer drainage ditch.

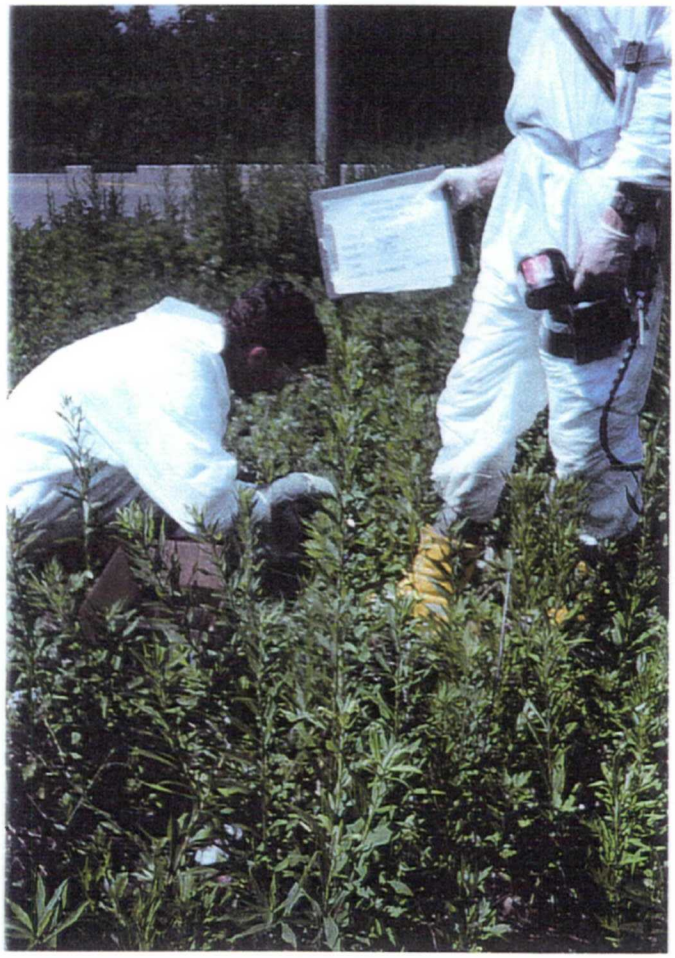
PHOTOGRAPH LOG

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY

3P-3 July 1, 1991 1445
B. Croft collects upstream surface water sample
SW-1 from the outer drainage ditch.

PHOTOGRAPH LOG

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY



3P-4 July 1, 1991 1512
B. Croft collects background soil sample S-1 from the area between the site access road and Harrison Avenue.

PHOTOGRAPH LOG

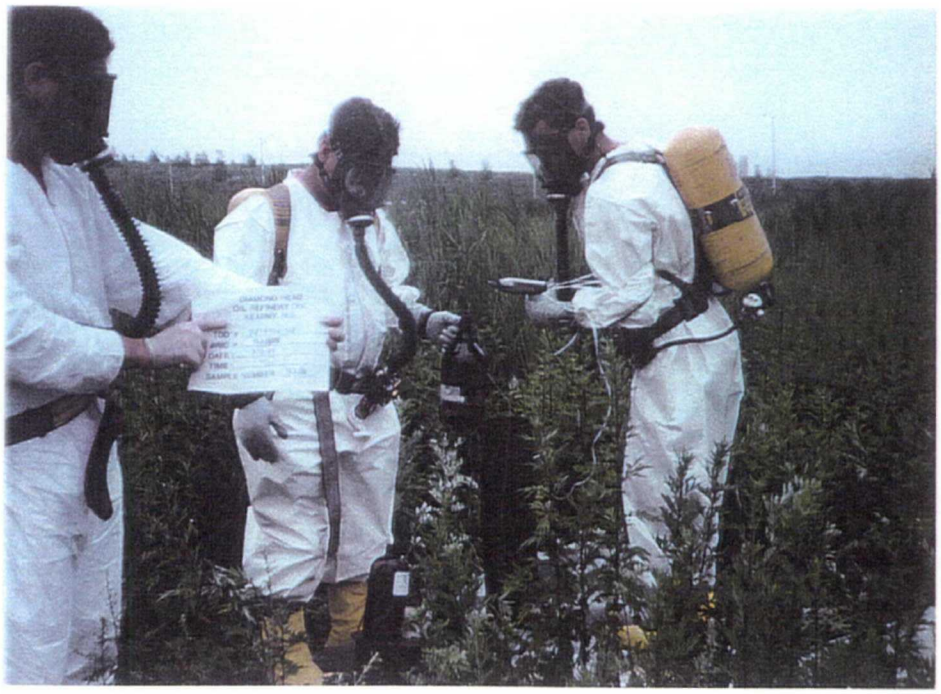
DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY

3P-5 July 1, 1991 1537
B. Croft collects surface soil samples S-5 and
S-6 (duplicate sample) from inside tank base No. 2.

PHOTOGRAPH LOG

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY

3P-6 July 2, 1991 1155
B. Croft and R. Settino collect groundwater sample GW-4 from monitoring well MW-5.



3P-7 July 2, 1991 1425
B. Croft and R. Settino collect groundwater sample GW-5 from monitoring well MW-4.

PHOTOGRAPH LOG

DIAMOND HEAD OIL REFINERY DIV.
KEARNY, NEW JERSEY

3P-8 July 2, 1991 1714
B. Croft and R. Settino collect groundwater sample GW-1 from monitoring well MW-1.

Note: All sample numbers above are preceded by NJJB-.
* Photographs taken by R. Feinberg; all other photographs taken by A. Garibaldi.

ATTACHMENT 2

REFERENCES

1. U.S. EPA Superfund Program, Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), List 8: Site/Event Listing, p. 48, and List 4: Site Alias Location Listing, pp. 73-74, November 1, 1991.

2. Election Division, New Jersey Department of State, CN 304, Trenton, NJ, Congressional Districts, January, 1987.

3. Tax Map, Town of Kearny, Hudson County, New Jersey, November 1, 1964, revised 1982.

4. New Jersey Department of Environmental Protection (NJDEP) memorandum from Susan Savoca to Barbara Greer (both of NJDEP), Subject: Diamond Head Oil Refining. November 1, 1982.

5. Letter from Daniel L. Martin, Dwyer, Connel, & Lisbona, Counsellors at Law, to Anthony McMahon, Chief, Bureau of Industrial Site Evaluation, NJDEP. November 26, 1984.

6. NJDEP, Solid Waste Administration, Temporary Operating Authorization issued to Diamond Head Oil Refining Division, Special Waste Facility No. 6907B. July 14, 1978, expired April 30, 1979.

7. Letter from Maureen Krudner, Geologist, Groundwater Management Section, U.S. EPA, to Rich Feinberg, HALLIBURTON NUS Environmental Corporation. March 14, 1991.

8. Project Note: From R. Settino, HALLIBURTON NUS Environmental Corporation to Diamond Head Oil Refinery Division Site File, Subject: Wells within 4 miles of the Diamond Head Site. November 19, 1991.

9. Environmental Site Characterization Report of Block 285 Lots 3, 14, & 15, Kearny, New Jersey prepared by Killam Associates for Hudson Meadows Urban Renewal Development Corporation, August 1990.

10. Miller, D.W. The New Jersey Ground-Water Situation, A Gerahty and Miller Special Report, August 1979.

11. Olsen, Paul E. The Latest Triassic and Early Jurassic Formations of the Newark Basin (Eastern North America, Newark Subgroup): Stratigraphy, Structure, and Correlation, Bingham Laboratories, Department of Biology, Yale University, New Haven, CT, 1980.

12. Field Notebook Nos. 0774 and 0803, Diamond Head Oil Refinery Div., TDD No. 02-9102-02, HALLIBURTON NUS Environmental Corporation, Edison, New Jersey, May 3, 1991 and July 1-2, 1991.

13. Aerial Photograph for Diamond Head Oil Refinery Division, Robinson Aerial Photos, Sparta, New Jersey, March 8, 1990. Original Scale: 1" = 200', Reduced Scale: 1" ≈ 312.5'.

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17. Fifteen-mile Surface Water Pathway Map for Diamond Head Oil Refinery Div. based on the U.S. Dept. of the Interior, Fish and Wildlife Service National Wetland Inventory Maps for: "Elizabeth, NJ" Quadrangle, "Arthur Kill, NY-NJ" Quadrangle, "Jersey City, NJ" Quadrangle, "Weehawken, NJ" Quadrangle, and "Orange, NJ" Quadrangle, all based on aerial photographs taken on October 29, 1976.

18. Environmental Impact Assessment for Interstate Route 280: Proposed Frank's Creek Culvert Under Main-Line, Proposed Penn-Central Spur Over Relocated Frank's Creek, Town of Kearny, Hudson County, New Jersey. New Jersey Department of Transportation (NJDOT), January 1986.

19. Flood Insurance Rate Map (FIRM), Hackensack Meadowlands District, New Jersey, Bergen and Hudson Counties, Panel 9 of 10, Community Panel Number 340570 0009 A, National Flood Insurance Program Federal Emergency Management Agency, December 15, 1982.

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24. Project Note: From R. Settino, HALLIBURTON NUS Environmental Corporation, to Diamond Head Oil Refinery Div. File, Subject: NJDEP Sample Analysis Data from Diamond Head Site. December 16, 1991.

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27. NJDEP memorandum from Dave Oster through David Beeman (both of NJDEP), to Spill File, Subject: File update-Diamond Head Oil Site DHWM # 09-07-40, March 17, 1988.

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REFERENCES (CONT'D)

30. Application for an Amended Certificate of Authority for Newtown Refining Corporation (formerly Ag-Met Oil Service, Inc.), undated.

31. NJDEP memorandum from Helen Kornitas, NJDEP, to File. December 5, 1985.

32. NJDEP memorandum from Dave Oster through Dave Beeman, MFO Spill Supervisor, to Karl Delaney, Chief B.C.T.S., through Anthony J. Cavalier, Metro Region Chief (all of NJDEP), Subject: Responsible Party Search Help-Diamond Head Oil Site, Kearny-DHWM # 09-07-40. March 15, 1988.

33. Telecon Note: Conversation between Robert Soldwedel, New Jersey Department of Environmental Protection and Energy (NJDEPE)-Fisheries Division, and Claire Baruxis, HALLIBURTON NUS Environmental Corporation, November 18, 1991. Re: Fishery Data.

34. U.S. EPA Contract Laboratory Program, S-Cubed, Low Concentration Organic Analyses, Case No. 16762, Laboratory Analyses from HALLIBURTON NUS Environmental Corporation Region 2 FIT site inspection conducted on July 1 and 2, 1991.

35. U.S. EPA Contract Laboratory Program, American Analytical & Technical Services, High Concentration Organic Analyses, Case No. 16762, Laboratory Analyses from HALLIBURTON NUS Environmental Corporation Region 2 FIT site inspection conducted on July 1 and 2, 1991.

36. U.S. EPA Contract Laboratory Program, Nytest Environmental, High Concentration Inorganic Analyses, Case No. 16762, Laboratory Analyses from HALLIBURTON NUS Environmental Corporation Region 2 FIT site inspection conducted on July 1 and 2, 1991.

REFERENCE NO. 1

EPA ID NO.	SITE NAME / STREET / CITY / COUNTY CODE AND NAME	STATE	ZIP / CONG DIST.	OPRBLE UNIT	EVENT TYPE	NFA FLAG	ACTUAL START DATE	ACTUAL COMPL DATE	CURRENT EVENT LEAD
NJD047318043	DETREX CHEMICAL INDUSTRIES, INC.			00	DS1			02/06/86	STATE(FUND)
	835 INDUSTRIAL HIGHWAY				PA1			03/01/86	STATE(FUND)
	CINNAMINSON	NJ	08077		SI1	NFA	01/01/90	03/30/90	STATE(FUND)
	005 BURLINGTON								
NJD054064142	DIAGNOSTIC ISOTOPES, INC.			00	DS1			09/18/86	STATE(FUND)
	225 BELLEVILLE AVE				PA1	NFA	09/18/86	09/29/86	STATE(FUND)
	BLOOMFIELD	NJ	07003						
	013 ESSEX								
NJD049644438	DIAMOND AEROSOL CORP			00	DS1			05/01/81	EPA (FUND)
	WOODGLEN & ANTHONY ROADS				PA1		05/01/85	06/01/85	STATE(FUND)
	GLEN GARDNER	NJ	08826		SI1		06/30/89	09/29/89	STATE(FUND)
	019 HUNTERDON								
NJD980528998	DIAMOND ALKALI CO.			00	DS1			11/01/79	EPA (FUND)
	80 LISTER AVE				PA1			06/01/80	EPA (FUND)
	NEWARK	NJ	07105		NP1			09/01/83	EPA (FUND)
	013 ESSEX				NF1			09/01/84	EPA (FUND)
					SI1		06/01/83	09/01/83	EPA (FUND)
NJD092226000	DIAMOND HEAD OIL REFINERY DIV.			00	DS1			10/01/85	STATE(FUND)
	1401 HARRISON TURNPIKE (RT.508				PA1		10/01/85	11/01/85	STATE(FUND)
	KEARNY	NJ	07032						
	017 HUDSON								
NJD001583459	DIAMOND SHAMROCK CORP			00	DS1			01/01/81	EPA (FUND)
	651 TONNELE AVE				PA1			01/01/81	EPA (FUND)
	JERSEY CITY	NJ	07307		SI1		01/01/81	02/01/81	EPA (FUND)
	017 HUDSON								
NJD002012219	DIAMOND SHAMROCK CORP			00	DS1			06/01/81	EPA (FUND)
	BERRY AVE AT RTE 17				PA1	NFA	07/29/87	08/07/87	STATE(FUND)
	CARLSTADT	NJ	07072						
	003 BERGEN								
NJD002442408	DIAMOND SHAMROCK CORP			00	DS1			02/01/80	EPA (FUND)
	BELLEVILLE TPKE				PA1			04/01/80	EPA (FUND)
	KEARNY	NJ	07032		PA2	NFA	03/01/89	05/22/89	STATE(FUND)
	017 HUDSON								

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LEVEL: REGION 02
SELECTION: INTEGRATED

U.S. EPA SUPERFUND PROGRAM
** C E R C L I S **
LIST-4: SITE ALIAS LOCATION LISTING

VERSION 2.00
RUN DATE: 11/01/91
RUN TIME: 17:02:46

SEQUENCE: REG, ST, SITE NAME
REGION: 02

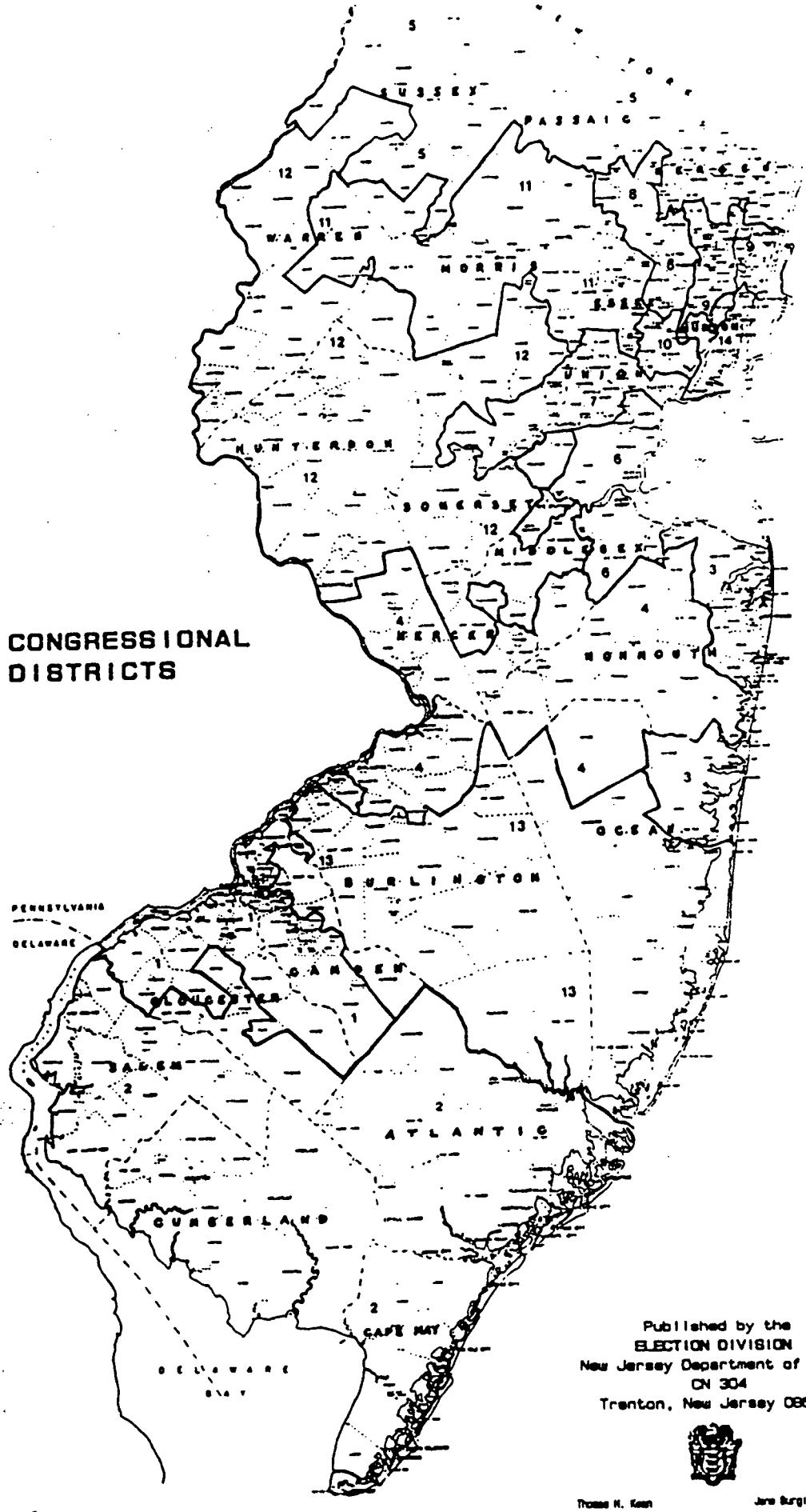
EPA ID	SITE/ALIAS NAME STREET CITY COUNTY NAME	STATE COUNTY	ZIP CODE	ALIAS SEQ. #	NAME SOURCE	FED FAC
NJD005440342	DESOTO, INCORPORATED 8600 RIVER ROAD PENNSAUKEN CAMDEN	NJ 007	08110		EPA	N
NJD047318043	DETREX CHEMICAL INDUSTRIES, INC. 835 INDUSTRIAL HIGHWAY CINNAMINSON BURLINGTON	NJ 005	08077		EPA	N
	DETREX CHEMICAL INDUSTRIES, INC. BURLINGTON	NJ		01		
NJD054064142	DIAGNOSTIC ISOTOPES, INC. 225 BELLEVILLE AVE BLOOMFIELD ESSEX	NJ 013	07003		EPA	N
NJD049644438	DIAMOND AEROSOL CORP WOODGLEN & ANTHONY ROADS GLEN GARDNER HUNTERDON	NJ 019	08826		EPA	N
	DIAMOND AEROSOL CORP ANTHONY & WOODGLEN RDS HUNTERDON	NJ	08826	01		
NJD980528996	DIAMOND ALKALI CO. 80 LISTER AVE NEWARK ESSEX	NJ 013	07105		STS	N
	DIAMOND ALKALI CO. ESSEX	NJ		01		
NJD092226000	DIAMOND HEAD OIL REFINERY DIV. 1401 HARRISON TURNPIKE (RT.508 KEARNY HUDSON	NJ 017	07032		EPA	N

SEQUENCE: REG, ST, SITE NAME
REGION: 02

EPA ID	SITE/ALIAS NAME STREET CITY COUNTY NAME	STATE COUNTY	ZIP CODE	ALIAS SEQ. # NAME SOURCE	FED FAC
NJD092226000 (CONTINUED)	EDGEWATER TERMINAL			01	
NJD001583459	DIAMOND SHAMROCK CORP 651 TONNELE AVE JERSEY CITY HUDSON	NJ 017	07307	EPA	N
	DIAMOND SHAMROCK SILICATE PT			02	
NJD002012219	DIAMOND SHAMROCK CORP BERRY AVE AT RTE 17 CARLSTADT BERGEN	NJ 003	07072	EPA	N
	DIAMOND SHAMROCK CORP BERRY AVE BERGEN	NJ	07072	02	
	OXY PROCESS CHEMICALS, INC.			03	
	BERGEN	NJ			
NJD002442408	DIAMOND SHAMROCK CORP BELLEVILLE TPKE KEARNY HUDSON	NJ 017	07032	EPA	N
NJD986603686	DIETRICH INDUSTRIAL SITE DIETRICH ST LITTLE FERRY BERGEN	NJ 003	07643		N
NJD980771315	DISPOSAL AREAS, INC LANDFILL KAPKOWSKI RD./THE GREAT DITCH PORT ELIZABETH UNION	NJ 039	07201	EPA	N

REFERENCE NO. 2

CONGRESSIONAL DISTRICTS



Published by the
ELECTION DIVISION
New Jersey Department of State
CN 304
Trenton, New Jersey 08625

Thomas H. Kean
Governor

Jane Burgio
Secretary of State

CONGRESSIONAL DISTRICTS

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

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

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

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

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

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

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

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

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

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

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

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

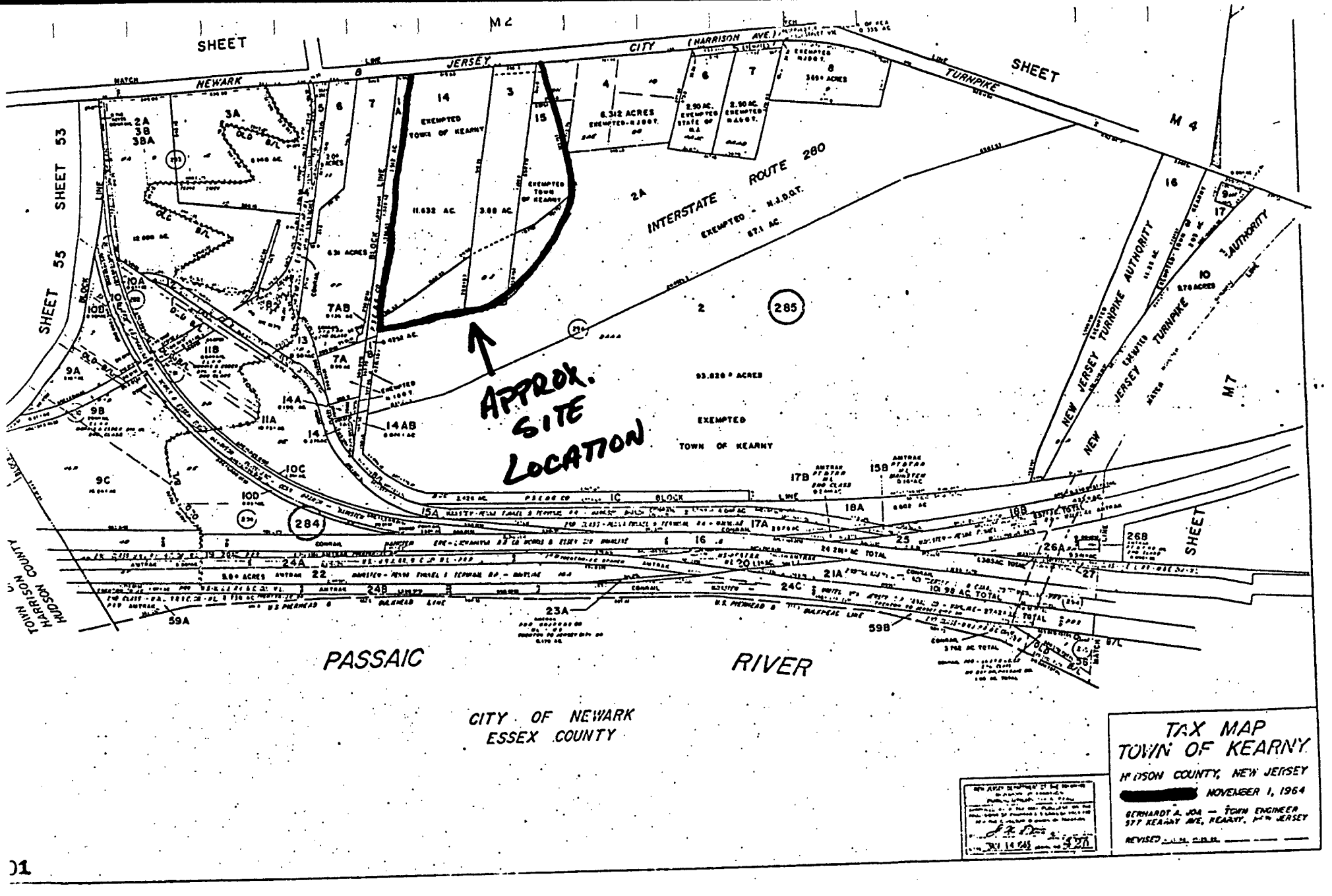
DISTRICT THIRTEEN: **Part of Burlington County** (Bass River Twp., Beverly City, Cinnaminson Twp., Delanco Twp., Delran Twp., Edgewater Park Twp., Evesham Twp., Mainsport Twp., Lumberton Twp., Medford Lakes Borough, Medford Twp., Moorestown Twp., Mount Holly Twp., Mount Laurel Twp., New Hanover Twp.,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

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

Published by: **ELECTION DIVISION, NEW JERSEY DEPARTMENT OF STATE**
CN 304 Trenton, New Jersey 08625

January 1987

REFERENCE NO. 3



SHEET
M 2
NEWARK
JERSEY
CITY
(HARRISON AVE.)
TURNPIKE
SHEET
M 4
SHEET 53
SHEET 55
EXEMPTED TOWN OF KEARNY
11.632 AC.
3.88 AC.
6.312 ACRES
INTERSTATE ROUTE 280
EXEMPTED - N.J.D.O.T.
67.1 AC.
285
93.828 ACRES
EXEMPTED
TOWN OF KEARNY
APPROX. SITE LOCATION
NEW JERSEY TURNPIKE AUTHORITY
NEW JERSEY TURNPIKE AUTHORITY
M 7
SHEET
284
TOWN OF HARRISON
HUDSON COUNTY
PASSAIC
RIVER
CITY OF NEWARK
ESSEX COUNTY
TAX MAP
TOWN OF KEARNY
HUDSON COUNTY, NEW JERSEY
NOVEMBER 1, 1964
GERHARDT A. JOA — TOWN ENGINEER
577 KEARNY AVE, KEARNY, NEW JERSEY
REVISED

01

REFERENCE NO. 4

MEMO

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

TO Barbara Greer

FROM Susan Savoca DATE November 1, 1982

SUBJECT Diamond Head Oil Refining

CONFIDENTIAL

Due to my involvement with the Quanta Resources Corporation case, I have had occasion to review information concerning the above-referenced matter. The following is a summary, by source, of this information and recommendations regarding the site.

SUMMARY

From Diamond Head Files

From in-house files, it is known that Ag-Met Oil Service, Inc. (a New York corporation) filed an Application for Certificate of Authority with the New Jersey Department of State on October 8, 1976. This document indicates that the company was incorporated in New York on September 27, 1976 and that its corporate office was located at 37-80 Review Avenue, Long Island City, New York. (Note that this is the same address as Quanta's Long Island City site which, due to the abandonment by Quanta's trustee, is now undergoing a cleanup operation by NYC.) Its stated business in New Jersey was for the collecting, refining and recycling of liquid oily waste into fuel oil and lube oil. On November 18, 1976, the name was changed to Newtown Refining Corporation and the address for the corporate headquarters was changed to Landmark Tower, One Landmark Square, Suite 303, Stanford, Connecticut. The New Jersey corporate No. was 0100-0270-66.

On June 7 or 8, 1978, the Department received a "Special Waste Facility Application for Temporary One Year Registration" to operate a waste oil reprocess system. The "applicant" was listed as Newtown Refining Corporation and the "company" was listed as Diamond Head Oil Refining Division. The application indicated that the New Jersey corporate number was the same as for Newtown Refining Corporation. The facility's name was listed as Diamond Head Oil Refining. The "Person to Have Prime Administrative Authority" was listed as Russell Mahler. Lloyd Mahler signed the application as Vice President. On July 15, 1978, Diamond Head Oil Refining Division, 1401 Harrison Turnpike, Kearny, New Jersey (Block 285, Lot 3, Hudson County) was issued a TOA (Facility No. 6907B) as a waste oil reprocessor. The expiration date of the TOA was April 30, 1979 and it was conditional on the submission of an engineering design by November 1978.

From the early inspection reports (11/28/78, 2/6/79, 4/12/79), it appears that the site ceased operating in early 1979, possibly due to litigation involving New Jersey Department of Transportation (see discussion infra). There were two underground storage tanks containing an oily substance. These early inspection reports noted oil spills throughout the property. On April 12, 1979, the inspector was informed that "material is being sent to Edgewater."

(Note that, during this time, Edgewater Terminals were in operation in Edgewater.)

On March 19, 1980, a site inspection revealed that the location appeared to be used for illegal dumping of waste oils, although there was no indication that the site was operating as a facility. The inspector was told that Modern Transportation had been contracted (by EPA?) to clean up the site, but that clean up had not yet commenced. (Note that Modern's waste oil TOA expired on April 30, 1979.)

On April 4, 1980, an inspector was told that the standing oil was periodically vacuumed up by Modern Transportation.

On May 19, 1982, the Bureau of Hazardous Waste received a telephone complaint from John Sarnas of the Kearny Health Department. Mr. Sarnas observed trucks pumping liquid from storage tanks into drums. This resulted in inspections on May 20, 1982, May 21, 1982, May 24, 1982; June 3, 1982, June 15, 1982, and August 13, 1982. The inspectors learned that Newtown Refining Corporation is now a wholly-owned subsidiary of Refinement International Company, 162 Main Street, Woonsocket, Rhode Island. Steven Gutfeld of Refinement stated that Refinement had purchased the site from a company who had bought it from Russell Mahler. Refinement hired Eastern Chemical Cleaning Co., 100 Plaza Center, Secaucus, New Jersey to clean up the site. As part of the clean up, the two underground tanks were analyzed: one of them contained oil and water with less than 50 ppm PCB's and the other had 206 PCB's, according to Eastern. (Although requested, neither Eastern nor Refinement have submitted the analyses to DEP.) About 7,500 gallons of material was pumped out and placed in 147 drums. The drums were to be hauled by Resource Technology Services, 6 Berkeley Road, Devon, PA to the Chemical Waste Management's Landfill in Emelle, Alabama by truck in two shipments. From there, it was allegedly planned to be incinerated on CWM's ship, the Vulcanus. Not all manifests reflecting these transfers have been received. In addition, the inspection reports indicate that there is oil-contaminated soil on this site that needs to be cleaned up. Although the inspector was informed of Refinement's intent to clean it up, it does not appear to have been done. EP Toxicity analysis of a soil sample indicated 32 ppm lead, which exceeds the 5 ppm limit.

From Kearny

On October 29, 1982, I telephoned the Kearny Tax Assessors Office (201-991-2700) to request ownership information on Block 285, Lot 3 (site of Diamond Head).

According to their records, Diamond Head Oil Refining Company, Inc. sold the site to PSC Resources, Inc., a Delaware Corporation, successor to Phillips Resources, Inc. on November 1, 1973. On November 3, 1976, the site was purchased by Ag-Met Oil Service, Newtown Refining Corporation. There was no record of an owner prior to Diamond Head, nor of an owner subsequent to Ag-Met-Newtown.

From New Jersey Department of Transportation v. PSC Resources, Inc., et al.

In September 1977, NJDOT sued PSC Resources, Inc., Diamond Head Oil Refining Company, Inc., and Newtown Refining Corporation due to the discharge of petroleum products and other material onto NJDOT's property and into the waters of the State.

The facts of this case indicate that Diamond Head Oil Refining Company, Inc. operated the facility from February 1, 1946 to November 1, 1973. During this time period, Diamond Head discharged oily waste water onto adjacent property which NJDOT acquired on March 6, 1968. PSC Resources, Inc. was incorporated as a subsidiary of Phillips Screw Company, Inc. in Delaware on October 23, 1973 and received a certificate of authority to transact business in New Jersey on October 31, 1973. PSC was incorporated for the purpose of acquiring the stock and/or assets of Diamond Head, which purpose was effectuated on October 26, 1973. From November 1, 1973 to November 3, 1976, PSC continued to operate the plant at 1401 Harrison Turnpike under the name of "Diamond Head Oil Refining Company, Division of PSC Resources, Inc." NJDOT alleged that PSC continued Diamond Head's practice of pumping waste onto DOT's property. On November 3, 1976, the facility was purchased by Ag-Met Oil Service, Inc. In 1977, NJDOT began construction of Interstate 280 and had to remove and dispose of more than 10 million gallons of oil-contaminated water and more than 200,000 cubic yards of oily sludge at a cost of nearly five million dollars. NJDOT filed suit on September 14, 1977 .

The issue before the Superior Court, Hudson County in NJ Transportation Department v. PSC Resources, Inc., 175 NJ Super.447 (Law Div.1980) was whether a corporation which acquires all the assets of a predecessor corporation for cash and continues essentially the same operation as the predecessor corporation, the successor is liable for damages resulting from the environmental tort (discharge of a hazardous substance) of its predecessor. The Court found that PSC was the successor to Diamond Head and was subject to liability for any claims against it arising from the discharge of pollutants onto NJDOT's property.

RECOMMENDATIONS

1. I suggest that this memo be submitted to an appropriate agency to investigate allegations that, not only did companies run by Russell Mahler cause the "oil lake" at this site but that companies owned by Mahler were contracted by the State to clean up the site. There was testimony to this effect given to the New York State Senate Select Committee on Crime. I have requested a copy of the transcript of Ken Mansfield's and William Carracino's testimony.

2. As this case needs no legal input at this time, I recommend that the case be referred to the Division of Waste Management for close monitoring and that the following steps be taken:

a. Obtain all manifests used to transport the storage tank oil to Alabama.

b. Ensure that the oil-contaminated soil is cleaned up and properly disposed of, as well as the oil lagoon and tank 2 (see inspection report June 3, 1982).

c. Monitor the site for illegal disposal of solid and hazardous waste.

Susan Savoca
Office of Regulatory Services

mw

c: Quanta File
Modern File
Jon Berg
Steven Carfora

REFERENCE NO. 5

Dwyer, Connell & Lisbona
COUNSELLORS AT LAW

RAYMOND C. CONNELL (1934-1974)
EDMOND J. DWYER, JR
RAYMOND R. CONNELL◊
ALBERT C. LISBONA◊

DONALD T. OKNER◊
WILLIAM T. CONNELL◊◊
DENNIS F. CAREY, III
KENNETH F. MULLANEY, JR.
PIERCE L. BUTLER
MICHAEL R. CASALE

427 BLOOMFIELD AVENUE
P.O. BOX 1997
MONTCLAIR, N.J. 07042

(201) 746-0512

OF COUNSEL
DANIEL L. MARTIN••
RICHARD S. CORTESE

•MEMBER OF N.J. AND D.C. BARS
••MEMBER OF N.J. AND N.Y. BARS
◊CERTIFIED CIVIL TRIAL ATTORNEY

ID 22-2106499

November 26, 1984

Bureau of Industrial Site Evaluation
Division of Waste Management
N.J. Dept. of Environmental Protection
65 Prospect St.
Trenton, N.J. 08625

Attention: Anthony J. McMahon, Chief
Barbara Strollo

Re: Newtown Refining Corporation
(Sale of 1401 Harrison Ave., Kearny, N.J.
(Block 285, Lot 3) to Mimi Urban Development Corporation)

Dear Sirs:

Newtown Refining Corporation, a New York corporation qualified to do business in New Jersey, has contracted to sell the above-described property at 1401 Harrison Avenue, Town of Kearny, County of Hudson, consisting of approximately four acres of vacant land, to Mimi Urban Development Corporation, a New Jersey corporation.

Until May, 1978, a waste oil re-refinery operation was conducted at 1401 Harrison Ave., Kearny. At that time the operation was discontinued, and thereafter the buildings and other facilities on the land were removed. In 1982, two remaining oil storage tanks were dismantled and removed, after the remaining contents thereof and certain surrounding soil had been removed pursuant to New Jersey Department of Environmental Protection procedures described in the enclosed affidavit.

The enclosed affidavit of the facts involved in the removal operation in May and October, 1982, including copies of NJDEP Hazardous Waste Manifests, was executed by Mr. Steven A. Gutfeld, Assistant Vice President of Newtown in 1982.

Since NJDEP procedures were followed in 1982, and since the land at 1401 Harrison Ave., Kearny, has been vacant since that time, it is respectfully submitted that the Environmental Cleanup Responsibility Act is not applicable to the transaction pending in which Newtown will sell the vacant land to Mimi Urban Renewal Development Corporation. We respectfully request your confirming the non-applicability of ECRA to this transaction.

Thank you for your attention to this matter. Please feel free to call the undersigned (at the above number or at 201-994-2033).

Respectfully,

Daniel L. Martin, Attorney for Newtown

AFFIDAVIT

STATE OF NEW YORK)
COUNTY OF ERIE)

THE UNDERSIGNED, Steven A. Gutfeld being duly sworn, does hereby depose and say:

1. I reside at 76 Heath Terrace, Kenmore, New York 14223 and am currently employed as Sales Manager of Software Distribution Services, Buffalo, New York.

2. In 1982 and prior thereto I was employed as Assistant Vice President of Newtown Refining Corporation ("Newtown"), whose address at that time was, and still is, 162 Main Street, Woonsocket, Rhode Island 02895.

3. Newtown owns a certain parcel of real property located at 1401 Harrison Avenue, Kearny, New Jersey, consisting of approximately four acres of vacant land. Upon information and belief said land and buildings then standing thereon were acquired by Newtown by Deed, dated November 3, 1976, recorded on November 3, 1976 in the Hudson County Register's Office in Book 3216, Page 479. Further, I have been informed that Newtown has contracted to sell said vacant land to Mimi Urban Renewal Development Corp.

4. Upon information and belief, said land contained buildings and related facilities used for the re-refining of waste oil, and said operations were terminated in approximately May, 1978. Thereafter, and prior to 1982, the buildings and other facilities on said land were demolished and removed, except for two large steel storage tanks.

1, 1981, the buildings and other ... May, 1978. Thereafter,
demolished ...

5. In 1982 I was instructed to take whatever steps were necessary to obtain New Jersey Department of Environmental Protection approval to remove the remaining contents of the two large storage tanks and thereafter to see to the dismantling and removal of the tanks from 1401 Harrison Avenue, Kearny, New Jersey. Newtown was assigned EPA Identification No. NJT098062177. I made arrangements with Resource Technology Service, Inc. (EPA Identification No. PAT000604108) for the removal of the contents of the two storage tanks.

6. On May 24, 1982 Resource Technology Service, Inc. removed 4,235 gallons of waste polychlorinated biphenyls in seventy-seven fifty-five gallon containers. See New Jersey DEP Hazardous Waste Manifest No. NJ0086257, attached hereto as Exhibit A.

7. On May 25, 1982 Resource Technology Service, Inc. removed 3,850 gallons of waste polychlorinated biphenyls in seventy fifty-five gallon containers. See New Jersey DEP Hazardous Waste Manifest No. NJ0024019, attached hereto as Exhibit B.

8. Thereafter the two steel storage tanks were dismantled and removed from 1401 Harrison Avenue, Kearny, New Jersey. At or about the same time it was determined that a quantity of oil contaminated soil should be removed from the premises, which were then vacant as described above.

9. I made arrangements with Environmental Transport Corp. (EPA Identification No. NJD000692061) for the removal of the contaminated soil. Attached hereto as Exhibit C is a copy of New Jersey DEP Hazardous Waste Manifest No. NJ0135037, showing the removal of 14 tons of such soil by Environmental Transport to the facilities of Cecos International, Inc. (EPA Identification No. NYD087336241). Attached hereto as Exhibit D

is a copy of New Jersey DEP Hazardous Waste Manifest No. NJ0138038, showing the removal of 13 tons of such soil by Environmental Transport to the facilities of Cecos International, Inc.

10. I signed each of the above-described New Jersey DEP Hazardous Waste Manifests (Exhibits A, B, C and D attached hereto) as Assistant Vice President of Newtown.

Steven A. Gutfeld

STATE OF NEW YORK)
ss:
COUNTY OF ERIE)

On this 20th day of November, 1984, before me personally came Steven A. Gutfeld to me known, and known to me to be the individual described herein, and who executed the foregoing instrument, and acknowledged to me that he executed the same.

Notary Public

...HIA A. WILSON
NOTARY PUBLIC, STATE OF NEW YORK
QUALIFIED IN ERIE COUNTY
My Commission Expires March 30, 19...

Form VHW-001 (10/80)

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
HAZARDOUS WASTE MANIFEST

246-4-82

Please TYPE all information.

PART A: GENERATOR'S COPY

DOCUMENT NO. NJ 0086257

GENERATOR NAME: NEWTOWN REFINING CORP.	PHONE (INCLUDE AREA CODE): 401-765-3000	EPA ID NO.: NJD980642127
ADDRESS (STREET - CITY - STATE - ZIP CODE): HARRISON AVE KEARNEY NJ. 07032		
TRANSPORTER NO. 1: Resource Tech SERVICES INC.	PHONE (INCLUDE AREA CODE): 215-687-4592	EPA ID NO.: PAT000604108
ADDRESS (STREET - CITY - STATE - ZIP CODE): 6 BERKELEY RD DEVON PA, 19333		
TRANSPORTER NO. 2:	PHONE (INCLUDE AREA CODE):	EPA ID NO.:
~~ADDRESS (STREET - CITY - STATE - ZIP CODE)~~: CHEMICAL WASTE MANAGEMENT, INC.		
TREATMENT, STORAGE OR DISPOSAL (TSD) FACILITY: EMELLE, ALABAMA PO. BOX 55 35459	PHONE (INCLUDE AREA CODE): 205-652-9531	EPA ID NO.: ALT000622464
SITE ADDRESS (STREET - CITY - STATE - ZIP CODE):		

IF MORE THAN TWO TRANSPORTERS ARE TO BE UTILIZED, FILL OUT THE FOLLOWING AS APPROPRIATE
THIS FORM IS NO. ____ OF A TOTAL OF ____. THE FIRST MANIFEST DOCUMENT NO. IS NJ→

	PROPER US DOT SHIPPING NAME	US DOT HAZARD CLASS	UN NUMBER	FORM	NET QUANTITY	WASTE	CONTAINERS NO.	CONTAINERS TYPE	EPA HAZ CODE	WASTE TYPE
1.	WASTE POLYCHLORINATED BIPHENYLS	ORM-E	2315		4235		77	05		
2.										
3.										
4.										
5.										
6.										

TO BE TYPED IN BY GENERATOR

SPECIAL HANDLING INSTRUCTIONS INCLUDING CONTAINER EXEMPTION (i.e. IDENTIFICATION OF ADDITIONAL WASTES INCLUDED IN SHIPMENT OF A NONHAZARDOUS NATURE WHICH DO NOT HAVE TO BE MANIFESTED)

GENERATOR'S CERTIFICATION. This is to certify that the above named materials are properly classified, described, packaged, marked and labelled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation, U.S. EPA and the State. The wastes described above were consigned to the Transporter named. The Treatment, Storage or Disposal Facility can and will accept the shipment of hazardous waste, and has a valid permit to do so. I certify that the foregoing is true and correct to the best of my knowledge.

GENERATOR'S SIGNATURE - ALSO PRINT SIGNATURE	TITLE	DATE SHIPPED (MO. DAY YR.)	EXPECTED ARRIVAL DATE (MO. DAY YR.)
[signature] STEVEN LETEL	ASST V Corp	05 24 82	

TRANSPORTER NO. 1 SIGNATURE AND CERTIFICATION OF RECEIPT OF SHIPMENT - ALSO PRINT SIGNATURE	TRANSPORTER NO. 1 SWA REGISTRATION NO.	DATE RECEIVED (MO. DAY YR.)
John Campbell	SWA# 57815	05 24 82

TEAR AT THIS PERFORATION

Exhibit A

VHW-001 (10/80)

See cover sheet for instructions.
Please TYPE all information.

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
HAZARDOUS WASTE MANIFEST

246-4-82

PART A: GENERATOR'S COPY

DOCUMENT NO. NJ 0024019

GENERATOR NAME: Newfoundland Refining Corp
PHONE (INCLUDE AREA CODE): (201) 963-8000
EPA ID NO.: NJT 000106127
ADDRESS (STREET · CITY · STATE · ZIP CODE): Harrison Ave Kearney N.J. 07032

TRANSPORTER NO. 1: Resource Tech Service Inc
PHONE (INCLUDE AREA CODE): (215) 687-4392
EPA ID NO.: PAT 000604101
ADDRESS (STREET · CITY · STATE · ZIP CODE): 6 Berkley Rd Devon PA 19333

TRANSPORTER NO. 2:
PHONE (INCLUDE AREA CODE):
EPA ID NO.:
ADDRESS (STREET · CITY · STATE · ZIP CODE):

TREATMENT, STORAGE OR DISPOSAL (TSD) FACILITY: Resource Tech Service Inc
PHONE (INCLUDE AREA CODE): 215-754-6
EPA ID NO.: PAD 000604101
SITE ADDRESS (STREET · CITY · STATE · ZIP CODE): 10 Oak St Conshohocken PA 19428

IF MORE THAN TWO TRANSPORTERS ARE TO BE UTILIZED, FILL OUT THE FOLLOWING AS APPROPRIATE
THIS FORM IS NO 1 OF A TOTAL OF 1. THE FIRST MANIFEST DOCUMENT NO. IS NJ → 0024019

	PROPER US DOT SHIPPING NAME	US DOT HAZARD CLASS	UN NUMBER	FORM	NET QUANTITY	UNITS	CONTAINERS NO.	CONTAINERS TYPE	EPA HAZ CODE	EPA WASTE TYPE
1.	Waste Polychlorinated Biphenyls	ORM-E	NA3082	2	03850	1	070	DT	-	- - - -
2.										
3.										
4.										
5.										
6.										

SPECIAL HANDLING INSTRUCTIONS INCLUDING CONTAINER EXEMPTION (s), IDENTIFICATION OF ADDITIONAL WASTES INCLUDED IN SHIPMENT OF A NONHAZARDOUS NATURE WHICH DO NOT HAVE TO BE MANIFESTED:

GENERATOR'S CERTIFICATION: This is to certify that the above named materials are properly classified, described, marked and labelled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation, U.S. EPA and the State. The waste described above were consigned to the Transporter named. The Treatment, Storage or Disposal Facility can and will accept this shipment of hazardous waste, and has a valid permit to do so. I certify that the foregoing is true and correct to the best of my knowledge.

GENERATOR'S SIGNATURE: [signature] TITLE: [illegible] DATE SHIPPED: 12 25 82 (MO. DAY YR.) EXPECTED ARRIVAL DATE: 12 25 82 (MO. DAY YR.)

TRANSPORTER NO. 1 SIGNATURE AND CERTIFICATION OF RECEIPT OF SHIPMENT: John Tuckson [signature] TRANSPORTER NO. 1 VEHICLE ID NO.: [illegible] DATE RECEIVED: 12 25 82 (MO. DAY YR.)

Exhibit B

VHW-001 (5/82)

Please TYPE all information.

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
HAZARDOUS WASTE MANIFEST

TK-2

PART A: SEND TO GENERATOR'S STATE

DOCUMENT NO. NJ 0135037

GENERATOR NAME: NEWTOWN REFINING INC
[redacted] NEWTOWN
PHONE (INCLUDE AREA CODE): (716) 880-5353
EPA ID NO.: NYD986[illegible]
ADDRESS (STREET · CITY · STATE): 162 MAIN WESTERLY, RHODE ISLAND
ZIP CODE:

TRANSPORTER NO. 1: ENVIRONMENTAL TRANSPORT NJ
PHONE (INCLUDE AREA CODE): (201) 751-3580
EPA ID NO.: NJ3000069206
ADDRESS (STREET · CITY · STATE): P.O. BOX 596 FLANDERS, NEW JERSEY 07836
ZIP CODE:

TRANSPORTER NO. 2: N/A
PHONE (INCLUDE AREA CODE): N/A
EPA ID NO.: N/A
ADDRESS (STREET · CITY · STATE):
ZIP CODE:

TREATMENT, STORAGE OR DISPOSAL (TSD) FACILITY: CECOS INTL INC
PHONE (INCLUDE AREA CODE): 716-633-1300
EPA ID NO.: NYD[illegible]
SITE ADDRESS (STREET · CITY · STATE): 56 & PINE NIAGARA FALLS NEW YORK
ZIP CODE:

IF MORE THAN TWO TRANSPORTERS ARE TO BE UTILIZED, FILL OUT THE FOLLOWING AS APPROPRIATE
THIS FORM IS NO. ____ OF A TOTAL OF ____. THE FIRST MANIFEST DOCUMENT NO. IS NJ →

	PROPER US DOT SHIPPING NAME	US DOT HAZARD CLASS	UN NUMBER	FORM	NET QUANTITY	UNITS	CONTAINERS NO.	CONTAINERS TYPE	EPA WASTE CODE	EPA WASTE TYPE
1.	PCB CONTAMINATED SOIL	O.R.M.-E	2315	2	00004	4	002	03		[illegible]
2.										
3.										
4.										
5.										
6.										

SPECIAL HANDLING INSTRUCTIONS INCLUDING CONTAINER EXEMPTION (i.e. IDENTIFICATION OF ADDITIONAL WASTES INCLUDED IN SHIPMENT OF A NONHAZARDOUS NATURE WHICH DO NOT HAVE TO BE MANIFESTED)
SHIP FROM ADDRESS: NEWARK NEW JERSEY.
NO PLACARDS REQUIRED, NOT REGULATED BY RCRA.
P.C. 6817-A W.O. 51764 W.T. 1.3.86

GENERATOR'S CERTIFICATION: This is to certify that the above named materials are properly classified, described, marked and labelled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation, U.S. EPA and the State. The wastes described above were consigned to the Transporter named. The Treatment, Storage or Disposal Facility can and will accept the shipment of hazardous waste, and has a valid permit to do so. I certify that the foregoing is true and correct to the best of my knowledge.

GENERATOR'S SIGNATURE · ALSO PRINT SIGNATURE: [signature]
TITLE: ASST. V.P. ENV.
DATE SHIPPED: MO. DAY YR.
EXPECTED ARRIVAL DATE: MO. DAY YR.

TRANSPORTER NO. 1 SIGNATURE AND CERTIFICATION OF RECEIPT OF SHIPMENT · ALSO PRINT SIGNATURE: [signature]
TRANSPORTER NO. 1 VEHICLE ID NO.: NJSWAS
DATE RECEIVED: MO. DAY YR.

TEAR AT THIS PERFORATION

Exhibit C

Form VHW-001 (5/82)

TK-1

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
HAZARDOUS WASTE MANIFEST

Please TYPE all information.

PART A: SEND TO GENERATOR'S STATE

DOCUMENT NO. NJ 0135038

GENERATOR NAME: NEWTOWN REFINING INC
PHONE (INCLUDE AREA CODE): 716) 933 5353
EPA ID NO.: NYD 988 616 121 1313
ADDRESS (STREET · CITY · STATE): 162 MAIN WYRINSOCKET, RHODE ISLAND
ZIP CODE:

TRANSPORTER NO. 1: ENVIRONMENTAL TRANSPORT
PHONE (INCLUDE AREA CODE): 201) 534-8380
EPA ID NO.: NJD 000 606 811
ADDRESS (STREET · CITY · STATE): PO BOX 206 FLANDERS, NEW JERSEY
ZIP CODE:

TRANSPORTER NO. 2: N/A
PHONE (INCLUDE AREA CODE): N/A
EPA ID NO.: N/A
ADDRESS (STREET · CITY · STATE): N/A
ZIP CODE: N/A

TREATMENT, STORAGE OR DISPOSAL (TSDI FACILITY): CECOS INTL, INC
PHONE (INCLUDE AREA CODE): 716-923-1360
EPA ID NO.: NYD 097 133 624
SITE ADDRESS (STREET · CITY · STATE): SG & PINE NIAGARA FALLS, NEW YORK
ZIP CODE:

IF MORE THAN TWO TRANSPORTERS ARE TO BE UTILIZED, FILL OUT THE FOLLOWING AS APPROPRIATE
THIS FORM IS NO. ____ OF A TOTAL OF ____. THE FIRST MANIFEST DOCUMENT NO. IS NJ →

	PROPER US DOT SHIPPING NAME	US DOT HAZARD CLASS	UN NUMBER	FORM	NET QUANTITY	UNITS	CONTAINERS NO.	CONTAINERS TYPE	EPA HAZ CODE	EPA WASTE TYPE
1.	P.C.B. CONTAMINATED SOIL	O.R.M.-E	2315	2	000 28	4	001	03		SEE BELOW
2.										
3.										
4.										
5.										
6.										

SPECIAL HANDLING INSTRUCTIONS INCLUDING CONTAINER EXEMPTION (i.e. IDENTIFICATION OF ADDITIONAL WASTES INCLUDED IN SHIPMENT OF A NONHAZARDOUS NATURE WHICH DO NOT HAVE TO BE MANIFESTED)

SHIP FROM ADDRESS: NEWARK NEW JERSEY
NO PLACARDS REQUIRED, NOT REGULATED BY RCRA
P.C. 6817-A W.O. 91763 WT. 1.3 KG

GENERATOR'S CERTIFICATION: This is to certify that the above named materials are properly classified, described, marked and labelled and are in proper condition for transportation according to the applicable regulations of th. Department of Transportation, U.S. EPA and the State. The wastes described above were consigned to the Transporter named. The Treatment, Storage or Disposal Facility can and will accept the shipment of hazardous waste, and has a valid permit to do so. I certify that the foregoing is true and correct to the best of my knowledge.

GENERATOR'S SIGNATURE · ALSO PRINT SIGNATURE: Gaetano A. Cirillo
TITLE: Asst Div Mgr
DATE SHIPPED: MO. 04 DAY 13 YR. 83
EXPECTED ARRIVAL DATE: MO. 04 DAY 14 YR. 83

TRANSPORTER NO. 1 SIGNATURE AND CERTIFICATION OF RECEIPT OF SHIPMENT · ALSO PRINT SIGNATURE: Gary Miller GARY C. MILLER
TRANSPORTER NO. 1 VEHICLE ID NO.: NJ8WA80110BW
DATE RECEIVED: MO. 04 DAY 14 YR. 83

TEAR AT THIS PERFORATION

Exhibit D

REFERENCE NO. 6

10-07

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOLID WASTE ADMINISTRATION
TRENTON, 08625

BEATRICE S. TYLUTKI
DIRECTOR

TEMPORARY OPERATING AUTHORIZATION

Under provisions of N.J.S.A. 13:1E-11, a section of the Solid Waste Management Act, this temporary authorization is issued to:

Diamond Head Oil Refining Division
1401 Harrison Turnpike
Kearny, New Jersey 07032

for the purpose of operating a:	Special Waste Facility
of the following type	Reprocesser
on LOT NO.(S)	3
BLOCK NO.(S)	285
in the municipality of	Kearny
county	Hudson
under Special Waste Facility No.	6907B

This authorization is subject to compliance with all conditions specified herein and all regulations promulgated by the Department of Environmental Protection.

This Temporary Operating Authorization expires on April 30, 1979 and is non-transferable. It is NOT a Certificate of Approved Registration to operate a special waste facility. It authorizes only temporary operation of said facility until April 30, 1979 or until Engineering Designs for said facility are reviewed and approved or denied by the Solid Waste Administration, whichever may first occur. No registration for said facility as required pursuant to the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq., can be issued until the Engineering Design, as required in accordance with the Conditions set forth within this Temporary Operating Authorization are approved by the Solid Waste Administration.

This temporary authorization shall not prejudice any claim the State may have to Riparian land, nor does it permit the applicant to fill or alter, or allow to be filled or altered, in any way, lands that are deemed to be Riparian, Wetlands, stream encroachment or flood plains, or within the Coastal Areas Facility Review Act (CAFRA) zone without first acquiring the necessary grants, permits or approvals from the Department of Environmental Protection. The operation of this facility is subject to the facility obtaining all necessary State permits.

This Temporary Operating Authorization is conditioned upon compliance with and implementation of the following:

1. PERMITTED WASTE TYPES:

Only the following Special Waste Type(s) as specifically listed below shall be accepted by this facility:

ID	WASTE
70. Waste Oil and Oil Sludge	Waste oil, used crank oil

This Facility is <u>not</u> authorized to accept PCB waste.

2. ENGINEERING DESIGN

An engineering design per Solid Waste Administration requirements shall be submitted within four (4) months of the date of this document.

Failure to comply with any or all limitations heretofore mentioned or any rule or regulation of the Department of Environmental Protection may result in the Department seeking relief under N.J.S.A. 13:1E-1 et seq., the Solid Waste Management Act. Failure to comply shall constitute grounds for withdrawal of this temporary authorization.

Date July 14, 1978

Director
Solid Waste Administration

REFERENCE NO. 7

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, NEW YORK 10278

MAR 14 1991

Rich Feinberg
NUS Corporation
1090 King Georges Post Road
Suite 1103
Edison, NJ 08837

Dear Mr. Feinberg:

As discussed on March 12, 1991, the status of New Jersey's Wellhead Protection Plan is as follows:

New Jersey has not yet submitted a final Wellhead Protection Plan for EPA approval. The document is currently in draft form and is being circulated for public comment. EPA expects that a final plan will be submitted by this summer.

If you need further assistance, you may contact me at 212-264-4124.

Sincerely,

Maureen Krudner

Maureen Krudner, Geologist
Ground Water Management Section

REFERENCE NO. 8

NUS CORPORATION
SUPERFUND DIVISION

PROJECT NOTES

TO: Diamond Head Oil Refinery Div. File

DATE: 11/19/91

FROM: R. Semivo

COPIES: —

SUBJECT: Wells within 4 miles of the Diamond Head Site

REFERENCE: Attached telecons

-- Attached are telecons from municipalities within 4 miles of the Diamond Head site documenting that all public supply / private drinking water is obtained from sources located outside of the 4 mile radius of the site. No known private potable wells are known to exist in any of these communities. Also, no known potable intakes exist in any surface waters located within 15 miles downstream of the site. Any wells or intakes that do exist are reported to be used only for commercial or industrial purposes.

11/19/91

NUS 443A 58 1182

NUS CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

CONTROL NO.:	DATE:	TIME:
J014	11/19/91	1407

DISTRIBUTION:

— Diamond Head Oil Refinery Div. File

BETWEEN:	OF:	PHONE:
Dept. of Public Works	SECAUCUS	(201)330-2080

AND: RICHARD SETTINO (NUS)

DISCUSSION:

Asked where Secaucus got public supply water from -- All water in Secaucus comes from the Hackensack Water Company. No private drinking wells are known to exist.

11/19/91

ACTION ITEMS:

NUS CORPORATION TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-8904-06	4-11-89	1050

DISTRIBUTION:

TO FILE - EIGHTH STREET SITE

BETWEEN:	OF:	PHONE:
BOB LORFINK	PRINCIPAL ENGINEER FOR WATER ENGINEERING DEPT.	X (201) 547-4390

AND:

ED KNYFD (NUS)

DISCUSSION:

Mr. Lorfink stated that drinking water for Jersey City is supplied by Boonton Reservoir and that 100% of their drinking water supply is from surface water. He indicated that there are now public water wells in Jersey City, although he didn't know if there are any private wells in use for drinking. He also indicated that Jersey City has an in-city reservoir located just south of Troy Street between Summit Ave and Central Ave. This reservoir is an open-air reservoir that is used for an excess supply of drinking water; it is filled and drained each day as water ~~needs~~ (EK) needs dictate.

Elmund Knyfd Jr. 4-11-89

ACTION ITEMS:

NUS CORPORATION — **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
02-8904-06	5-18-89	1055

DISTRIBUTION:

TO FILE - EIGHTH STREET SITE

BETWEEN:	OF:	PHONE:
BOB LORFINK PRINCIPAL ENGINEER	JERSEY CITY WATER DEPT.	(201) 547-4414

AND: EDMUND KNYFD JR. (NUS)

DISCUSSION:

I asked Bob about the uses of surface water in the Jersey City area. He believed that the poor water quality and high chloride content restricted the local surface water uses. The Hudson River is used for commercial shipping and some secondary contact recreation such as boating. The upper Newark Bay is used for commercial shipping. In this area the Hackensack River is generally unused. He felt no surface water in this area is suitable for drinking water.

Edmund Knyfd Jr. 5-18-89

ACTION ITEMS:

NUS 067 REVISED 0581

02-8904-30

NUS CORPORATION — **TELECON NOTE**

CONTROL NO: 02-8904-30 NJPSPA	DATE: May 4, 1989	TIME: 1000

DISTRIBUTION:
file: Amtec Enterprises, Inc.

BETWEEN: Mr. Anthony DeBarros	OF: Newark Water Supply (in Little Falls)	PHONE: (201) 256-4965

AND: Sue Lerczyk (NUS)

DISCUSSION:

The drinking water supply for Newark comes from the Pequannock watershed in West Milford Township and from the Wanaque Reservoir. These are located in Passaic County. There is a capability of interconnections with the Hackensack, Jersey City, and Elizabeth water companies.

The only use for groundwater that Mr. De Barros is aware of is for industrial purposes, as there are some private wells in Newark.

As for surface water intakes along the Passaic River, it is possible that there are some used for cooling, as there are some chemical companies along the river. However, Mr. DeBarros was not certain of this.

ACTION ITEMS:

NUS CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
02-9001-11 / NJDH	January 23, 1990	0910

DISTRIBUTION:
Edson Tool & Manufacturing

BETWEEN:	OF:	PHONE:
Mr. Anthony DeBarros	Newark Water Supply	(201) 256-4965

AND:
Sue Lenczyk

DISCUSSION:
I asked Mr. DeBarros about the Newark Reservoir located in Belleville. He said that it is a balancing reservoir used to alleviate substantial flow. For example, if there were a large fire and a substantial amount of water would be needed to fight it, unless there were such reservoirs holding water that can be used, the normal water system would not be able to handle it. Newark also has such a reservoir in Cedar Grove, also used by the City of Newark Fire Department. The reservoir in Cedar Grove holds water from the Pequannock Watershed, while the one in Belleville contains water from the Wanaque system. He said that the water in the reservoirs is drinking water and is used as such.

ACTION ITEMS:

Sue Lenczyk 1/23/90

NUS CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
02-9002-04	February 16, 1990	9:15 am

DISTRIBUTION: Harrison Gas Plant
$475 NJDXSI

BETWEEN:	OF:	PHONE:
Bruce Sanders	Kearney H₂O Dept. 402 Kearney Ave.	(201) 991-2671

AND: Carol Donnelly

DISCUSSION:

I called the Kearney Water Department to check on an old Telecon. Carol stated that Kearney does not operate any ground water wells or intakes wells in the Passaic River. Kearny does own 12% of the Wanaque Reservoir and draws its Municipal water from that location in Passaic County. She stated that there are some wells around Harrison Avenue but these are used for industrial purposes.

ACTION ITEMS:

NUS CORPORATION — **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
02-8604-12	05/01/86	1:45 PM

DISTRIBUTION:

B & L Oil Corporation
Kearny N.J.

BETWEEN:	OF:	PHONE:
Sylvia	Harrison Water Co	(201) 268-2431

AND: Jeff Sosephson (201) 225-6160 ext. 208 (NUS)

DISCUSSION:

Water Supply for Harrison Residents. Harrison Water Supply is provided by Passaic Valley Co. The water comes from Clifton Region. There are no residential or municipal water wells in Harrison. All water wells are for industrial purposes.

ACTION ITEMS:

NUS CORPORATION AND SUBSIDIARIES

TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-9002-04	February 16, 1990	11:30

DISTRIBUTION: Harrison Gas Plant

$ 475 NJDXSI

BETWEEN:	OF:	PHONE:
Bruce Sanders	East Orange H_2O Company	(201) 266-5180

AND: Jim Scillia

DISCUSSION:

There are no surface water intakes in the Passaic River that are used by East Orange water department. They do not use any wells in the area for drinking water either. All wells in the area are used for industrial purposes only. East Orange taps into the Livingston and Short Hills ~~water~~ reservoir for drinking water purposes.

ACTION ITEMS:

NUS 067 REVISED 0686

UMBC
02-9001-

NUS CORPORATION AND SUBSIDIARIES

TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-9001-11 / NJDH$I	January 18, 1990	1000

DISTRIBUTION:

Edson Tool & Manufacturing

BETWEEN:	OF:	PHONE:
(1) Belleville Public Works (Frank) (2) Belleville Water Meter Dept. (3) " Health Dept.		(201) 450-3419 450-3339 450-3390

AND:

Sue Lenczyk

DISCUSSION:

Based on conversations with three different departments, it was determined that the water supply for Belleville comes from the Hanague Reservoir. There are no public supply wells for Belleville, but there are wells used for industrial purposes. Some wells were put in during the drought, but they were not used for drinking. Rather, they were used for watering lawns.

ACTION ITEMS:

Sue Lenczyk 1/18/90

NUS CORPORATION AND SUBSIDIARIES

TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-9001-11 / NJDHFI	January 18, 1990	1025

DISTRIBUTION:

Edson Tool & Manufacturing

BETWEEN:	OF:	PHONE:
Bob	North Arlington Public Works	(201) 955-5665

AND:

Sue Lenczyk

DISCUSSION:

North Arlington receives its drinking water from the Passaic Valley Water Commission, which uses reservoir water. Bob did not know which reservoir, but suggested I call the Commission. He also told me that there are no wells in North Arlington used for drinking.

ACTION ITEMS:

Sue Lenczyk 1/18/90

NUS 087 REVISED 0886

NUS CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

CONTROL NO.:	DATE:	TIME:
02-9011-28	12/4/90	1435

DISTRIBUTION:

Flexon Industries

BETWEEN:	OF:	PHONE:
Bloomfield H₂o Dep't		(680) 4051

AND:

Denise O'Donoghue (NUS)

DISCUSSION:

The source of drinking water for Bloomfield is the Pequanock Reservoir. There are no wells used for drinking.

ACTION ITEMS:

BR

NUS CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
02-9001-11/NJDHSI	January 18, 1990	10,4 02-9001-11

DISTRIBUTION:
Edson Tool & Manufacturing

BETWEEN:	OF:	PHONE:
Lyndhurst Public Works Dept.		(201) 438-5478

AND:
Sue Lenczyk

DISCUSSION:
The water supply for Lyndhurst comes from the Jersey City Water Company, which draws water from the Boonton Reservoir. All drinking water for Lyndhurst comes from the reservoir — none comes from wells.

ACTION ITEMS:

Sue Lenczyk 1/18/90

NUS 087 REVISED 0688

REFERENCE NO. 9

HMUR Site Characterization

Environmental Site Characterization of Block 285 Lots 3,4 &15 Kearny, New Jersey

Prepared for:

Hudson Meadows Urban Renewal Development Corporation
Kearny, NJ 07032

AUGUST 1990

Prepared by:

E.Killam
Associates a Consulting Engineers

Killam

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1.0 INTRODUCTION

Hudson Meadows Urban Renewal Development Corporation (HMURDC) retained Killam Associates (Killam) to conduct an environmental site characterization of their property located in Kearny, Hudson County, New Jersey. This investigation was undertaken at the request of the Hackensack Meadowlands Development Commission (HMDC), which required characterization of the site conditions with respect to potential contaminants prior to approving future development of the site.

The scope of the investigation centered on ascertaining what impacts the former uses of the subject site have had to on-site soils, ground water and surface water. Former known uses at the site have included landfill operations (western portion of the site) and an oil recycling facility (eastern portion of the site). In general the investigation included an initial physical investigation (Phase 1), the installation of soil borings and monitoring wells (Phase 2) and the laboratory analysis of soil, ground water and surface water samples (Phase 3). The purpose of this report is to convey our findings.

2.0 ENVIRONMENTAL SETTING

2.1 Site Location and Description

The site is located along Harrison Avenue in Kearny, Hudson County, New Jersey. The site is situated between Harrison Avenue to the north, entrance ramp M of New Jersey State Highway Route 280 to the east, Route 280 to the

south, and the Campbell foundry (distribution) to the west. The site is comprised of approximately 15 acres of currently undeveloped land and is listed as Block 285, Lots 3, 14 and 15 on the municipal tax maps of Kearny. The site's general location is shown on Figure 1, found in Appendix A.

The site is comprised of marsh areas and drainage ditches, a small pond, a former landfill area covered by vegetation and an the location of the former Diamondhead Oil Refinery (Diamondhead). The refinery section of the site contains various types of construction debris including the concrete foundation for the former building and two concrete pads of the former above ground storage tanks. The site's general layout is depicted on Figure 2, found in Appendix A.

2.2 Geologic Information

2.2.1 Regional

The subject site is situated in the Piedmont Plain Physiographic province which comprises the eastern half of northern New Jersey. The site lies wholly within the section of the province underlain by shale, siltstone, sandstone, conglomerate, basalt and diabase of the Triassic Period's Newark Group. These rocks form a belt extending from the Hudson River across central New Jersey, Pennsylvania, and Maryland, and into Virginia.

The total thickness of the rocks of the Triassic age in the Newark area is unknown but is estimated at about 6000 to 7000 feet. The Brunswick Formation,

consisting of soft red shale and red sandstone, is the bedrock present throughout the Newark Area.

Glacial sediments deposited during the Pleistocene Epoch form a mantle of glacial till (unconsolidated, unstratified, heterogeneous mixture of clay, boulders and sand) and stratified glacial drift (which is composed of mainly gravel and sand). The thickness of these deposits varies greatly ranging from ten feet to greater than 300 feet in the Harrison area.

A general rise of sea level at the close of the Pleistocene Epoch flooded the low areas adjacent to the coast, forming Newark Bay at the junction of the Hackensack and Passaic Rivers. Holocene deposits are also found, mainly in the eastern part of the Newark area. They have been deposited on top of the Pleistocene sediments as a result of stream deposition and also occur in the tidal marshes or meadow lands along the Passaic River and bordering Newark Bay. They consist largely of unconsolidated mud and silt with inclusions of peat and other organic materials, with occasional lenses of sand and gravel. The Holocene deposits range in thickness from less than one foot to 35 feet.

2.2.2 Site Specific

The HMURDC site has been extensively regraded and altered as a result of the construction and demolition of the former Diamondhead Oil Refinery and the construction of a landfill within the western section of the site. As a result, the surficial geologic conditions and soil lithologies present are

masked by alterations over the majority of the site. As determined during the installation of the monitoring wells and soil borings, the site's soil lithologies indicate that the site was influenced by stream deposition and/or tidal deposition of sediments during the Holocene Epoch. This is known as a veneer of Holocene deposits exists ranging in depth from 7.5 feet to 20 feet below grade. Miscellaneous fill material rests unconformably on top of these native deposits. Underlying the Holocene deposits, stratified sands of the Pleistocene Epoch are apparent.

2.3 Hydrogeologic Information

2.3.1 Regional

Hydrogeologically, the Holocene deposits are of relatively little importance except as they may transmit or exclude water to the underlying soils. Their permeability is relatively low and they usually occur in areas exposed to salt water.

The Pleistocene deposits are one of the two major aquifers in the area. Their hydrologic function is twofold. First, under favorable circumstances, the deposits yield water in substantial quantities directly to wells. Where the deposits are thick enough and extensive enough, they yield large quantities of water. Second, they absorb and store water from precipitation and transmit it to underlying rocks. In areas where the Pleistocene deposits are thick and moderately porous and permeable, they can generally supply the underlying low storativity bedrock with the necessary recharge it needs to sustain withdrawal.

The second major aquifer in this region involves the Triassic age Brunswick shale formation. The storage capacity of the shale bedrock is relatively low, and these rocks can only be adequately recharged from the porous, permeable overlying deposits. The primary porosity in the Brunswick shale bedrock is essentially so small that water moves through at a very slow rate. In fact, were it not for the formation containing a secondary porosity created by cracks and fractures, the formation would yield very little water. The various systems of cracks and fractures intersect so that water moves directionally according to the orientation of the prevalent fracture system (generally trending northeast/southwest). As greater depths are reached, the weight of the overlying materials increase and tends to close the cracks thereby reducing the capacity of the formation to store and transmit water.

2.3.2 Site Specific

The site is situated on Holocene marsh deposits, which consist of organic silt and mud with inclusions of peat. Underlying these deposits are the glacio-fluvial Pleistocene deposits which consist mainly of sands and gravels. Included in these deposits are lenses of silts and clays. Storage capacity of the fluvial deposits is apparently high. Underlying these deposits is the red shale and sandstone bedrock of the Brunswick formation. The ground water storage capacity of this Triassic bedrock is relatively low.

Five monitoring wells are located on the site. Water levels taken from the wells indicate a ground water flow from east to west with moderate

perturbations due to site-specific areas of recharge. The ground water table exists from an approximate depth of four to five feet below grade along the perimeter of the site to an approximate depth of twelve to fourteen feet in the middle portion of the site (landfill area). The hydraulic gradient across the site ranges from 0.005 to 0.015 feet/foot.

3.0 PHASE I INVESTIGATION

Efforts to characterize the environmental quality of the site without disruption to the subsurface were undertaken during the Phase I aspect of the investigation. Two methods of subsurface investigative surveys were employed to screen the site for indications of the presence or absence of buried metallic objects (terrain conductivity survey) and/or the presence of gases composed of volatile organic compounds (soil gas survey). These surveys were conducted to screen the site for indications of significant areas of concern. Overall the surveys did not reveal such areas of concern other than the presence of methane. Note, however, that the techniques employed in this phase are "screening" methodologies; the results should not be construed as absolute confirmation that no metallic objects are present or that volatile organic compounds are not present at higher concentrations.

To conduct these surveys, a 100′ by 100′ grid system was established on the site. The grid extended 600 feet along Harrison Avenue (A0+00 to A6+00) and extended 800 feet towards Route 280 (Station A to Station I). Refer to Figure 3, found in Appendix A, for a visual representation of the survey grid. The results of each survey are described below.

3.1 Terrain Conductivity Survey

On June 19, 1989 a terrain conductivity survey was performed on the site to determine whether any anomalies exist which could indicate the presence of buried metallic objects (e.g. drums, tanks etc.). The survey was performed using an EM-31 Terrain Conductivity Meter manufactured by Geonics, Ltd. of Mississuaga, Ontario, Canada. The survey utilized an expanded grid with measurements procured on 25 foot increments. The terrain conductivity values have been contoured and are found on Figure 4, in Appendix A.

3.1.1 Discussion

To understand the results of this survey, a brief discussion as to the operation of the EM-31 is necessary. Terrain conductivity measures the electrolytic conductivity contained in the pore spaces of an insulated material such as soil and rock. The conductivity is mainly dependent on the porosity, moisture content, concentration of ferrous-containing materials and concentration of dissolved electrolytes in the moisture. The terrain conductivity is measured by inducing an alternating current, time-varying magnetic field through a transmitter coil into the earth. The earth creates a secondary magnetic field that is detected by a receiving coil. The secondary magnetic field is a function of the transmitter-receiver (T-R) spacing, the operating frequency and the ground conductivity. By controlling the T-R spacing and frequency, the instrument is able to derive a direct reading of terrain conductivity.

Given that the EM-31 has a fixed spacing of 3.66 meters, and using the instrument in the vertical operational mode, the effective investigative depth of the instrument was approximately 6 meters. The EM-31 has a measurement precision of 2 percent of full scale, an accuracy of 5 percent at 20 millimhos/meter (mS/m) and a noise level of less than 0.1 mS/m.

3.1.2 Interpretation

Interpretation of the data was accomplished through analysis of the conductivity variations laterally across the site. As the water table across the site is fairly shallow (approximately 4-14 feet), and as the landfill was developed over marsh deposits, the conductivity values were expected to and do reveal fairly high readings.

As for detection of anomalies which would indicate the possible presence of buried metallic objects, no such anomalies were evident. However, two areas of the site did reveal extremely low conductivity values. These values were attributed to the presence of surficial concrete pads for the former above ground storage tanks located within the area of the former Diamondhead facility. Other than those two survey areas, the terrain conductivity survey proved unremarkable.

3.2 Soil Gas Survey

On June 19, 1989, a soil gas survey was conducted to investigate the potential for the presence of volatile organic gases as a result of materials landfilled

on-site. Using the 100′ by 100′ grid, a survey was conducted using an impact probe to first create a 1/2" diameter by 30" deep borehole. The borehole was then screened utilizing a flame ionization detector (OVA 108) and a photoionization detector (HNU PI-101).

3.2.1 Discussion

To understand the results of this phase of the investigation, a brief discussion as to the operation of the Century Systems OVA-108 and the Hnu Systems PI-101 is necessary. The OVA-108 utilizes the principle of hydrogen flame ionization for the detection and measurement of organic vapors. It has a sensitivity of 1 part per million (ppm) and a range up to 10,000 ppm (1%). This instrument measures organic vapor concentration by producing a response to an unknown sample, which is then compared to a gas of known composition to which the instrument has previously been calibrated (i.e. methane).

During the operation, a continuous sample is drawn into the probe and ultimately into the detector chamber. Inside this chamber, the sample is exposed to a hydrogen flame which ionizes the organic vapors. When the organic vapors burn, they leave positively-charged carbon-containing ions which are collected by a negative ion-collecting electrode in the chamber. A current is generated corresponding to the collection rate of the ions on this electrode. This current is then measured with a logarithmic electrometer which, once amplified, is sent to the external monitor display.

One significant feature of the OVA-108 system is that the unit is calibrated to methane gas. Therefore, during operation the unit detects all carbon-containing volatile compounds in addition to methane. By utilizing a charcoal filter to remove the volatile organic compounds other than the methane fraction, the unit can determine whether methane is being produced. This proves especially useful for landfill areas as the values give a rough indication whether the installation of venting systems could potentially be necessary.

The second type of organic vapor detector utilized during this survey was the Hnu Systems Trace Gas Analyzer, Model PI-101. This type of analyzer also detects and measures the presence of trace gases, however this unit uses the process of photoionization. Photoionization occurs when an atom or molecule absorbs a photon of sufficient energy to release an electron and then becomes a positive ion. This occurs when the ionization potential of the molecule in electron volts is less than the energy of the photon. The source of the photon is an ultraviolet lamp with an energy of 10.2 eV.

As with the OVA-108, the Hnu PI-101 draws a continuous sample into an ion chamber where the sample is exposed to photons from the ultraviolet lamp. Ionization occurs for those molecules having ionization potentials near to or less than that of the lamp. The positively-charged ions then collect on an electrode which in turn creates an electrical current which is amplified and displayed on the meter. This is proportional to the concentration of the trace gas present in the ion chamber which is compared to a gas of known composition

to which the unit has previously been calibrated (i.e. isobutylene). The unit has a sensitivity of 1 ppm and a range up to 2000 ppm.

The predominant feature of the Hnu PI-101 detector is that it does not detect the presence of methane. Therefore. the use of this unit in conjunction with the OVA-108 allows for the approximate differentiation of methane from other organic gases, if present.

3.2.2 Interpretation

As both instruments indicate total organic vapors as opposed to specific compounds, interpretation of the soil gas data was accomplished by analyzing the relative variations in the data throughout the site. Analysis of the the OVA-108 data indicates that methane is currently being produced due to the natural and/or landfill materials on-site. The readings obtained from the OVA-108 with a charcoal filter, which represent the methane fraction (predominately methane gas), have been contoured and is presented on Figure 5, in Appendix A.

Methane values ranged from 0 ppm to greater than 10,000 ppm (upper limit of the OVA-108) with the highest levels of methane concentrations located in the southwest quadrant of the site. In addition, the higher values were usually detected along the edges of the landfill area which coincides with a thinner layer of cover material (i.e. miscellaneous fill material covered by a veneer of sandy/silty soils).

Analysis of the information generated from the photoionization survey indicated that volatile organic compounds other than methane are present in the southeast quadrant of the site (i.e. nearest the pond; values ranging from 2-10 ppm), the northwest corner of the site (one reading at 20 ppm), the middle of the landfill area (one reading at 3 ppm), and the northeast corner of the site (values ranging from 7 to 250 ppm). All other areas revealed no detectable levels of volatile organic compounds. The values obtained from the Hnu, which predominantly represent volatile organic compounds, have been contoured and is presented on Figure 6, in Appendix A.

It appears from the data generated during this phase of the investigation that volatile organic compounds are predominantly composed of methane. However, isolated areas of the site appear to contain other volatile organic compounds as determined by the survey utilizing the Hnu.

4.0 PHASE II INVESTIGATION

Efforts to characterize the environmental quality of the site's subsurface were undertaken during the second phase of the investigation. This was accomplished through the installation of five soil borings and five ground water monitoring wells. Through the installation of the aforementioned a physical as well as visual assessment of the subsurface medium could be undertaken. In addition soil samples and groundwater samples were procured for analysis.

4.1 Installation of Soil Borings and Monitoring Wells

Five soil borings and five groundwater monitoring wells were installed by The Warren George Drilling Company throughout the subject site. The latter occurred from October 23 through 31, 1989. In an effort to ascertain soil lithology and to procure subsurface soil samples for analysis, continuous split spoon samples were obtained. The approximate locations of the soil borings and the groundwater monitoring wells are shown on the Site Plan (Figure 2, Appendix A). Three of the soil borings (SB-1, SB-2 and SB-3) and three of the groundwater monitoring wells (MW-1, MW-4 and MW-5) were installed in the portion of the site which had been previously utilized as a landfill Two soil borings (SB-4 and SB-5) and two groundwater monitoring wells (MW-2 and MW-3) were installed in the portion of the site which had been previously utilized by Diamondhead. Soil boring and well construction logs are presented in Appendix B.

4.2 Discussion

Soil borings SB-1, SB-2 and SB-3 and groundwater monitoring wells MW-1, MW-4 and MW-5 were installed in the portion of the site which had been previously utilized as a landfill. As stated previously continuous split spoon soil samples were collected to ascertain soil stratigraphy and lithology. Two soil samples per boring were collected and submitted for analysis. The results of the soil analysis is discussed in Section 5.0 of this report.

This phase of the investigation revealed that miscellaneous fill material has been placed over native soils ranging in depth from approximately 7.5 feet (northern side of site) to approximately 18 feet (southern side of site). The fill generally consisted of brick fragments, glass, plastic, wood, cinders, and other miscellaneous materials all of which one would typically expect to encounter in an area utilized for landfilling of domestic solid waste. However, visual and olfactory indications of extensive petroleum contamination were also noted to be present throughout this portion of the site. Also noted, based on OVA readings obtained during this phase of the investigation, were indications of the presence of methane gas as well as low levels of volatile organic compounds. This further confirms the findings of the soil gas survey (Section 3.2).

Soil borings SB-4 and SB-5 and ground water monitoring wells MW-2 and MW-3 were installed in the portion of the site which had been previously utilized by Diamondhead. As stated previously continuous split spoon soil samples were collected to ascertain soil stratigraphy and lithology. One soil sample was obtained from each boring, SB-4 and SB-5, and submitted for analysis. The results of these analysis are also discussed in Section 5.0 of this report.

This phase of the investigation also revealed the presence of fill material on the Diamondhead portion of the site. This fill material, however, appears unrelated to the disposal of municipal refuse, rather it is indicative of the placement of non-native soils. This likely occurred previously to fill in low lying land so that the area could be developed and utilized for commercial

purposes. Visual and olfactory indications of extensive petroleum contamination were also noted to be present throughout this portion of the site. Also noted, based on OVA readings obtained during this phase of the investigation, were indications of the presence of methane gas as well as low levels of volatile organic compounds. This further confirms the findings of the soil gas survey (Section 3.2).

5.0 PHASE III INVESTIGATION

This phase of the investigation involved the analysis of soil, ground water and surface water samples. In summary nine soil samples, two surface water samples and eight groundwater samples (two rounds) were procured and submitted for analysis, with additional quality assurance/quality control samples. The samples were analyzed by the Killam Associates Laboratory, New Jersey Department of Environmental Protection (NJDEP) Certification No. 07059, and Envirotech Research, Inc., NJDEP Certification No. 12543. The soil samples were analyzed for petroleum hydrocarbons (PHCs) and the United States Environmental Protection Agency (USEPA) Priority Pollutants plus 40 library search compounds (PP+40). The groundwater samples were analyzed for cyanide and phenols in addition to the aforementioned parameters. It should be noted that each surficial soil sample was subject to PP+40 analysis except for the volatile organic (VO+15) fraction which was performed on soil from the 18 to 24 inch interval. The results of the analyses are presented as Table 1 in Appendix C and are discussed in the following sections of this report.

5.1 Standards for Comparison

Analyses of the samples collected from the subject site have resulted in the detection of specific compounds and compound groups in the soils and waters analyzed. In order to determine the significance of the data produced, Killam has compared the analytical results with existing reference guidelines and regulatory standards for the subject compounds, where such standards exist. The "reference concentrations" used most often in this report are those guidelines levels typically utilized by the NJDEP. It should be noted that these concentrations are guidelines and are not regulatory standards. Guidelines are applied to actual sites on a case-by-case basis and are utilized in this report for comparison purposes only. Table 2, presented in Appendix C, lists the guidelines utilized for comparison of the analytical data.

The discussion below includes the terms "targeted" in reference to volatile organic and semivolatile organic analyses. The term targeted refers to those compounds specifically named on the USEPA Priority Pollutants List. These are compounds which have been identified by the USEPA as most likely to be encountered during hazardous waste site investigations. For the purposes of this report and the data herein, comparison is made between the regulatory guidelines typically utilized by the NJDEP and the total of targeted compounds detected in the samples.

5.2 Results of Soil Analyses

Soil borings were installed and soil samples collected at the subject site in October of 1989. These samples were submitted to the Killam Associates Laboratory, and were analyzed for PP+40 and PHCs. For the purposes of the presentation of these results, these parameters are discussed as the following analytical fractions: PHCs; priority pollutant metals; volatile organics (VOs); semivolatile organics (which includes the the acid extractable (AE) and base neutral extractable (BN) compounds); and the Pesticides/ Polychlorinated Biphenyls (PCBs). The analytical results are listed by fractions in Table 1, Appendix C.

5.2.1 Petroleum Hydrocarbons

PHC analysis was performed on all of the soil samples collected. PHCs were not detected in SB-1, SB-4, or SB-5. PHCs were detected in SB-2 and SB-3. The concentrations detected in these samples varied with depth, and ranged from 130 to 2400 parts per million (ppm). The guideline for PHCs in soil is 100 ppm; all of the samples from SB-2 and SB-3 exceeded this guideline.

5.2.2 Priority Pollutant Metals

Analysis of the same soils for priority pollutant metals (of which there are thirteen) provided the following results:

Antimony was detected in excess of the guideline of 2 ppm in samples retrieved from SB-1 6.0-6.5 feet (6.8 ppm) and SB-3 7.0-7.85 feet (2.9 ppm). None of the remaining soils samples exhibited concentrations of antimony in excess of the guideline.

Arsenic was detected in excess of the guideline of 20 ppm in soil samples from SB-1, SB-2, and SB-3. SB-1 exhibited a concentration of 38.1 ppm at a depth of 6.0-6.5 feet. SB-2 exhibited concentrations of arsenic at 20.9 ppm at a depth of 0-0.5 feet, and at a concentration of 25.0 ppm at a depth of 10.4-10.9 feet. SB-3 exhibited a concentration of arsenic of 28.9 ppm at a depth of 7.0-7.85 feet. None of the remaining soil samples exhibited concentrations of arsenic in excess of the guideline.

The guideline for cadmium in soil is 3 ppm. All of the soil samples from SB-2 and SB-3 exhibited concentrations of cadmium in excess of this guideline, with concentrations ranging from 3.6 to 6.2 ppm. None of the remaining samples exhibited concentrations of cadmium in excess of this guideline.

The guideline for chromium in soils is 100 ppm. All but three of the samples (SB-1 0-0.5 feet, SB-2 0-0.5 feet and SB-5) exhibited concentrations of chromium in excess of the guideline. The concentrations for the remaining samples ranged from 158 ppm to 4000 ppm.

The guideline for copper in soils is 170 ppm. All but three of the samples (SB-1 0-0.5 feet, SB-4, and SB-5) exhibited concentrations of copper in excess

of this guideline. The concentrations of copper detected in the remaining samples range from 264 ppm to 767ppm.

The conservative guideline for lead in soils is 250 ppm (depending upon site use, other levels have been employed as guidelines). All but two of the samples (SB-1 6.0-6.5 feet and SB-4) exhibited concentrations of lead in excess of this guideline. The concentrations of lead in the remaining samples ranged from 359 ppm to 1350 ppm.

The guideline for mercury in soils is 1 ppm. All of the samples from SB-2, SB-3, and SB-5 exhibited concentrations of mercury in excess of this guideline, with concentrations ranging from 1.36 to 2.28 ppm. The remainder of the samples did not exhibit concentrations of mercury in excess of the guideline.

The guideline for nickel in soils is 100 ppm. Four of the samples (SB-2, SB-3 0-0.5 feet, and SB-4) exhibited concentrations of nickel in excess of this guideline, with concentrations ranging from 104 ppm to 644 ppm. The remainder of the samples did not exhibit concentrations of nickel in excess of this guideline.

The guideline for zinc in soils is 350 ppm. Seven of the nine samples exhibited concentrations of zinc ranging from 508 ppm to 1140 ppm. Samples from SB-4 and SB-5 did not exhibited zinc at concentrations in excess of this guideline.

None of the soil samples exceeded the guideline values for beryllium, selenium, silver and thallium.

5.2.3 Volatile Organics

The guideline for VOs in soil is 1.00 ppm. One sample, SB-5, exhibited a total concentrations of targeted VOs in excess of this guideline (1.039ppm). The remainder of the samples did not exhibit total concentrations of targeted VOs in excess of this guideline.

5.2.4 Semivolatile Organics

The standard for semivolatile organics in soils is 10 ppm. Two samples (SB-1 6.0-6.5 feet, and SB-4) did not exhibit total concentrations of semivolatile in excess of this guideline. The remaining seven samples exceeded the guideline concentrations of semivolatile with values ranging from 13.249 to 272.57 ppm.

5.2.5 Pesticide/PCBs

None of the soil samples exhibited concentrations of Pesticides or PCBs in excess of the guideline values.

5.3 Results of Groundwater Sampling - November 1989

Groundwater samples were collected from monitoring wells MW-1, MW-2, MW-4, and MW-5 during November of 1989. A duplicate sample was collected from MW-4

(which is referenced as MW-4D in the summary table). No sample was collected from MW-3 due to the presence of a free product (oil) in the well. The groundwater samples collected were submitted to Envirotech Research, Inc. for subsequent analysis. Analytical parameters included all of the fractions of the USEPA PP+40, as well as, PHCs, cyanide and phenols. The semi-volatiles fraction is presented in this section as acid extractable (AE) and base neutral extractable (BN) organics fractions. The results of these analyses are discussed below.

5.3.1 Petroleum Hydrocarbons, Cyanide and Phenols

The NJDEP guideline for PHCs in groundwater is 1 ppm. PHCs were detected in excess of this guideline in MW-2 and MW-5 at concentrations of 2.8 ppm and 14.0 ppm, respectively. PHCs were not detected in the remaining samples.

The NJDEP guideline for cyanide in groundwater is 0.2 ppm. Cyanide was not detected in any of the groundwater samples in excess of this guideline.

The NJDEP guideline for phenols in groundwater is 3.5 ppm. Only the sample collected from MW-2 exceeded the guideline with a concentration of 4.66 ppm of phenols. None of the other groundwater samples collected at this time exhibited concentrations of phenols in excess of this standard.

5.3.2 Priority Pollutant Metals

None of the groundwater samples collected at this time exhibited concentrations of antimony, beryllium, cadmium, copper, nickel, selenium, silver or thallium in excess of applicable guidelines or standards.

The NJDEP guideline for arsenic in groundwater is 0.050 ppm. Groundwater collected from MW-5 exhibited a concentration of 0.051 ppm of arsenic. None of the remaining groundwater samples collected at this time exhibited concentrations of arsenic in excess of this standard.

The NJDEP guideline for chromium in groundwater is 0.050 ppm. Samples from MW-2 and MW-5 exhibited concentrations of chromium of 19.3 ppm and 0.403 ppm respectively. None of the remaining groundwater samples collected at this time exhibited concentrations of chromium in excess of this guideline.

The NJDEP guideline for lead in groundwater is 0.050 ppm. Samples collected from MW-1, MW-3, and MW-5 exhibited concentrations of lead at concentrations of 0.075 ppm, 2.86 ppm, and 1.52 ppm, respectively. The presence of lead was not detected in MW-4.

The NJDEP guideline for mercury in groundwater is 0.002 ppm. Samples collected from MW-2 and MW-5 exhibited concentrations of mercury at 0.003 ppm and 0.016 ppm, respectively. The remaining groundwater samples did not exhibit concentrations of mercury in excess of this guideline.

5.3.3 Volatile Organics

The guideline for VOs in groundwater includes two values. No targeted VO compound should be present in groundwater at a concentration in excess of 0.005 ppm, and the total of all of the targeted VO compounds detected in a sample of groundwater should not exceed 0.010 ppm. Regarding the former guideline, the following compounds were detected in the groundwater samples collected in excess of 0.005 ppm: benzene - MW-1, MW-2, MW-4; chlorobenzene - MW-1, MW-4, MW-5; 1,1-dichloroethane - MW-2; trans-1,2-dichloroethene - MW-2; ethyl benzene - MW-2; tetrachloroethene - MW-2; toluene - MW-2; trichloroethene - MW-2; xylenes - MW-2. Regarding the latter standard, all of the groundwater samples collected exhibited concentrations of VOs in excess of 0.010 ppm.

5.3.4 Acid Extractable Organics

The NJDEP guideline for AE compounds in groundwater is 0.050 ppm for a total of targeted compounds. The groundwater sample collected from MW-2 exceeded this guideline with a total concentration of targeted compounds of 2.23 ppm. None of the other samples collected at this time exhibited concentrations of acid extractable organics in excess of this guideline.

5.3.5 Base Neutral Extractable Organics

The NJDEP guideline for BN compounds in groundwater also includes two values. No targeted BN compounds should be present in excess of 0.005 ppm, and the

total of all targeted BN compounds should not exceed 0.050 ppm. Regarding the former guideline, the following targeted BN compounds were detected in excess of 0.005 ppm: 1,4-dichlorobenzene, MW-4; 1,2-dichlorobenzene, MW-2; naphthalene, MW-1, MW-2, MW-4; acenaphthene, MW-1, MW-2; diethylphthalate, MW-4; phenanthrene, MW-2, MW-5; pyrene, MW-2, MW-5. Regarding the latter guideline, three wells, MW-2, MW-4, and MW-5, exhibited total concentrations of targeted BNs in excess of 0.050 ppm.

5.3.6 Pesticide/PCBs

None of the samples collected exhibited detectable concentrations of compounds in the pesticides/PCBs analytical fraction.

5.4 Results of Groundwater Sampling - January 1990

Groundwater samples were collected from monitoring wells MW-1, MW-2, MW-4, and MW-5 during January of 1990. A duplicate sample was collected from MW-1 (which is referenced as MW-1D in the summary table). No sample was collected from MW-3 due to the presence of a free product (oil) in the well. The groundwater samples collected were submitted to the Killam Associates Laboratory for subsequent analysis. Analytical parameters included all of the fractions of the USEPA PP+40, as well as, PHCs, cyanide and phenols. The semi-volatiles fraction is presented in this section as acid extractable (AE) and base neutral extractable (BN) organics fractions. The results of these analyses are discussed below.

5.4.1 Petroleum Hydrocarbons, Cyanide and Phenols

The NJDEP guideline for PHCs in groundwater is 1 ppm. PHCs were detected in excess of this guideline in MW-2 only at a concentrations of 5 ppm. PHCs were not detected in the remaining samples.

The NJDEP guideline for cyanide in groundwater is 0.2 ppm. Cyanide was not detected in any of the groundwater samples in excess of this guideline.

The NJDEP standard for phenols in groundwater is 3.5 ppm. The sample collected from MW-2 exceeded the guideline with a concentration of phenols of 4.00 ppm. None of the other groundwater samples collected at this time exhibited concentrations of phenols in excess of this standard.

5.4.2 Priority Pollutant Metals

None of the groundwater samples collected at this time exhibited concentrations of antimony, beryllium, cadmium, copper, nickel, selenium, silver, thallium, or zinc in excess of applicable guidelines or standards.

The NJDEP guideline for arsenic in groundwater is 0.050 ppm. Groundwater collected from MW-2 exhibited a concentration of 0.060 ppm of arsenic. None of the remaining groundwater samples collected at this time exhibited concentrations of arsenic in excess of this standard.

The NJDEP guideline for chromium in groundwater is 0.050 ppm. Samples from MW-2 exhibited a concentration of chromium of 23 ppm. None of the remaining groundwater samples collected at this time exhibited concentrations of chromium in excess of this guideline.

The NJDEP guideline for lead in groundwater is 0.050 ppm. Samples collected from MW-2 and MW-5 exhibited concentrations of lead of 0.76 ppm and 0.70 ppm, respectively. The presence of lead was not detected in MW-1 or MW-4.

The NJDEP guideline for mercury in groundwater is 0.002 ppm. One sample collected from MW-5 exhibited a concentration of mercury at 0.008 ppm. The remaining groundwater samples did not exhibit concentrations of mercury in excess of this guideline.

5.4.3 Volatile Organics

The NJDEP guideline for VOs in groundwater is composed of two values. No targeted VO compound should be present in groundwater at a concentration in excess of 0.005 ppm, and the total of all of the targeted VO compounds detected in a sample of groundwater should not exceed 0.010 ppm. Regarding the former guideline, the following compounds were detected in the groundwater samples collected in excess of 0.005 ppm: benzene - MW-1, MW-2, MW-4; chlorobenzene - MW-1, MW-4, MW-5; 1,2-dichloroethane - MW-2; trans-1,2-dichloroethene - MW-2; ethyl benzene - MW-2; xylenes - MW-2, MW-4. Regarding the latter standard, all of the groundwater samples collected exhibited concentrations of VOs in excess of 0.010 ppm.

5.4.4 Acid Extractable Organics

The NJDEP guideline for AE compounds in groundwater is 0.050 ppm for a total of targeted compounds. The groundwater sample collected from MW-2 exceeded this guideline with a total concentration of targeted compounds of 2.5 ppm. None of the other samples collected at this time exhibited concentrations of AE compounds in excess of this guideline.

5.4.5 Base Neutral Extractable Organics

The NJDEP guideline for BN compounds in groundwater also includes two values. No targeted BN compounds should be present in excess of 0.005 ppm, and the total of all targeted BN compounds should not exceed 0.050 ppm.

Regarding the former guideline, the following targeted BN compounds were detected in excess of 0.005 ppm: 1,2-dichlorobenzene, MW-2; diethylphthalate, MW-1, MW-4, MW-5; di-n-butyl phthalate - MW-2; 2-methylnaphthalene - MW-2; naphthalene - MW-2; phenanthrene - MW-2. Regarding the latter guideline, two wells, MW-1 and MW-2, exhibited total concentrations of targeted BNs in excess of 0.050 ppm.

5.4.6 Pesticide/PCBs

None of the samples collected exhibited detectable concentrations of compounds in the pesticides/PCBs analytical fraction.

5.5 Surface Water Sampling

Surface water samples were collected from two location son the subject site in November of 1989. These locations are depicted on the Site Plan (Figure 2, Appendix A). Parameters employed for analyses of these samples included PHCs, cyanide, phenols, priority pollutant metals, VOs, AEs, BNs, and pesticides/ PCBs. The results of the analyses of these surface water samples are discussed as follows.

5.5.1 Petroleum Hydrocarbons, Cyanide and Phenols

PHCs were detected to be present in SW-1 at a concentration of 36.2 ppm. PHCs were not detected in SW-2.

Cyanide was not detected to be present in either sample analyzed. Phenols were detected to be present in SW-1 at a concentration of 0.644 ppm.

5.5.2 Priority Pollutant Metals

Beryllium, cadmium, selenium, silver and thallium were not detected at either location. Antimony , arsenic, chromium, copper, nickel and zinc were detected but at low levels. Only lead, at both locations, and mercury. at SW-2, were above standard guideline values.

5.5.3 Volatile Organics

Analysis of SW-1 for the presence of targeted VOs indicated that trans-1,2-dichloroethene, ethyl benzene, toluene, 1,1,1-trichloroethane, and xylenes were present at concentrations of 0.012, 0.010, 0.075, 0.006, and 0.055 ppm, respectively. Additional targeted compounds were detected to be present at trace concentrations. No VO compounds were detected to be present in SW-2.

5.5.4 Acid Extractable Organics

Two AE compounds were detected to be present in SW-1. The compounds detected were 2-nitrophenol and phenol at concentrations of 0.082 and 0.180 ppm, respectively. No compounds of this group were detected to be present in SW-2.

5.5.5 Base Neutral Extractable Organics

Two BN compounds, naphthalene and phenanthrene, were detected in SW-1 at trace concentrations. No BN compounds were detected in SW-2.

5.5.6 Pesticides/PCBs

Both SW-1 and SW-2 exhibited the presence of beta-BHC, a pesticide compound, at concentrations of 0.006 and 0.003 ppm, respectively. SW-1 also exhibited the presence of Arochlor-1260, a PCB, at a concentration of 0.0069 ppm. No additional pesticide/PCB compounds were detected to be present within these samples.

6.0 CONCLUSIONS

Based upon the conductance of an environmental site characterization of the HMURDC property, located in Kearny, NJ, the following has been revealed:

*The conductance of a terrain conductivity survey revealed no anomalies which would suggest or indicate the presence of buried metallic objects (e.g. drums, tanks etc.).

*The conductance of a soil gas survey indicated that methane is currently being produced at the site. The highest levels of methane were detected in the southwest quadrant of the site. Isolated areas of the site, also appear to contain other volatile organic compounds.

*Through the installation of soil borings and the obtaining of soil samples it has been revealed that eastern portion of the site (previously utilized for landfill operations) has had miscellaneous fill material placed over the original soils ranging in depth from approximately 7.5 feet to approximately 18 feet. The fill was noted to generally consist of brick fragments, glass, plastic wood cinders and other miscellaneous materials one would typically expect to encounter in an area utilized for landfilling of domestic solid waste. Also noted , however, were visual and olfactory indications of extensive petroleum contamination. The western portion of the site (location of an oil recycling facility) was also noted to contain the presence of fill material. This fill material, however, appears unrelated to the disposal of municipal refuse, rather it is indicative of the placement of non-native soils. The presence of extensive petroleum contamination was also noted on this portion of the site.

*Through the laboratory analysis of soil samples, collected from the site, PHCs, several priority pollutant metals, total volatile organics and total semivolatile organics were all noted, at various locations throughout the site, to be above NJDEP guideline values. None of the soil samples analyzed exhibited concentrations of pesticides or PCBs above the NJDEP guideline values.

*Through the laboratory analysis of two rounds of groundwater samples, collected from the site, PHCs, phenols, several priority pollutant metals, total and individual concentrations of volatile organics, total acid extractable organics and total and individual concentrations of base neutral compounds were all noted, at various locations throughout the site, to be above NJDEP guideline values. None of the ground water samples analyzed exhibited concentrations of cyanide, pesticides or PCBs above the NJDEP guideline values.

*Free product (oil) was noted to be present in MW-3.

*Through the laboratory analysis of surface water samples, collected from the site, PHCs, phenols, several priority pollutant metals, volatile organic compounds, acid extractable organics compounds, base neutral compounds, pesticides and PCBs were all noted to be present at various concentrations. Cyanide was not detected to be present on the surface water samples.

*Based upon the noted ground water depths, recorded at the time of the two sampling episodes, the general ground water flow direction has been determined to be flowing through the site in a north west direction. Two conceptual ground water contour maps, Figures 7 and 8, have been generated and are found in Appendix A.

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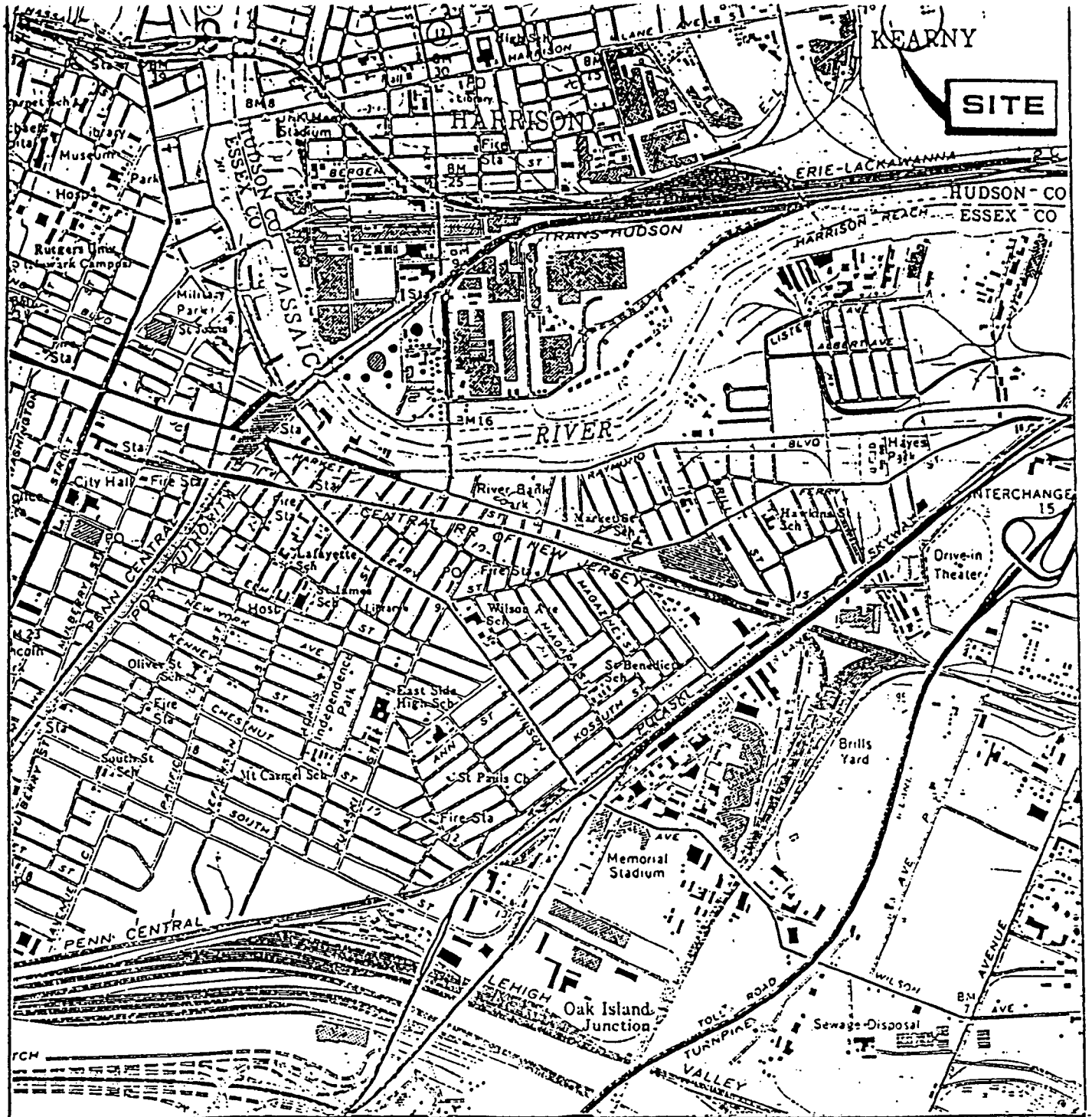
APPENDIX A - FIGURES



SOURCE: U.S.G.S. 7.5' Series
Elizabeth Quadrangle

SCALE: 1" = 2000'±

SITE LOCATION

Hudson Meadows Urban
Renewal Development Corp.
Kearny, New Jersey

FIGURE 1

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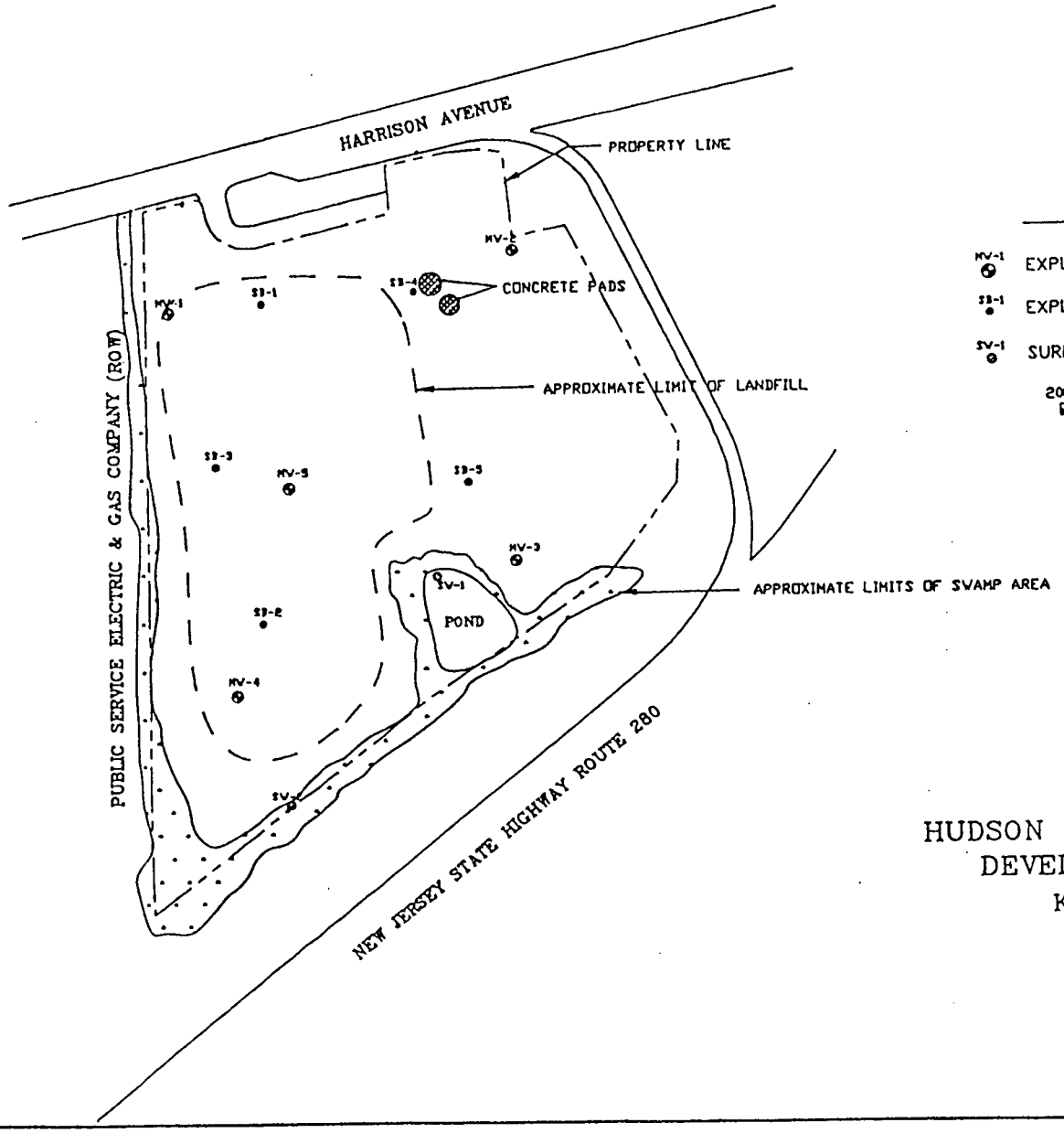
Associates Consulting Engineers



LEGEND

- EXPLORATORY GROUNDWATER MONITORING WELL
- EXPLORATORY SOIL BORING
- SURFACE WATER SAMPLING LOCATION

200 0 200
SCALE IN FEET

HUDSON MEADOWS URBAN RENEWAL
DEVELOPMENT CORPORATION
KEARNY, NEW JERSEY

SITE PLAN

FIGURE 2

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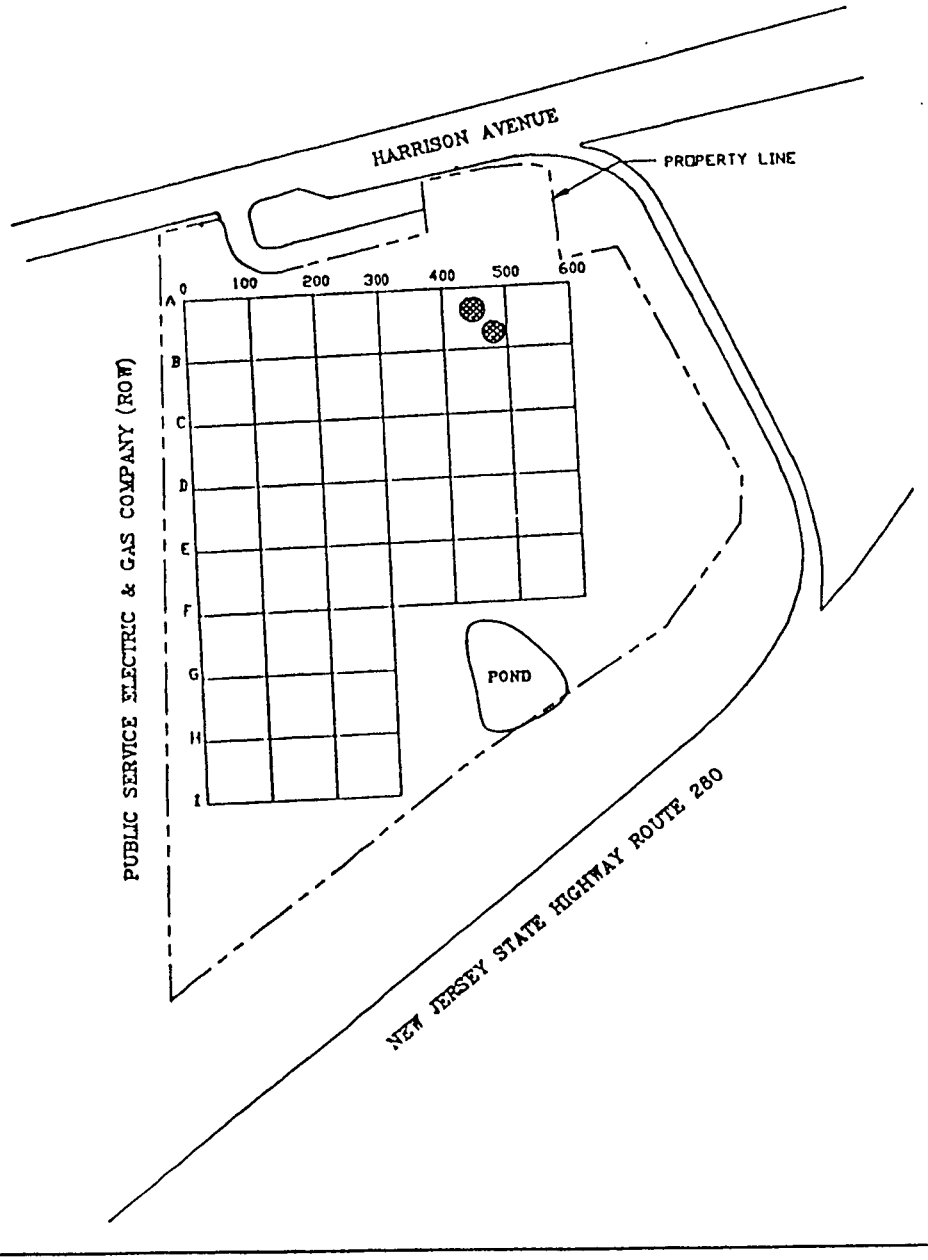
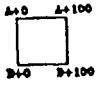
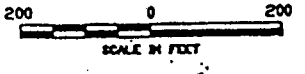


LEGEND



SURVEY GRID WITH TYPICAL STATION NUMBERS

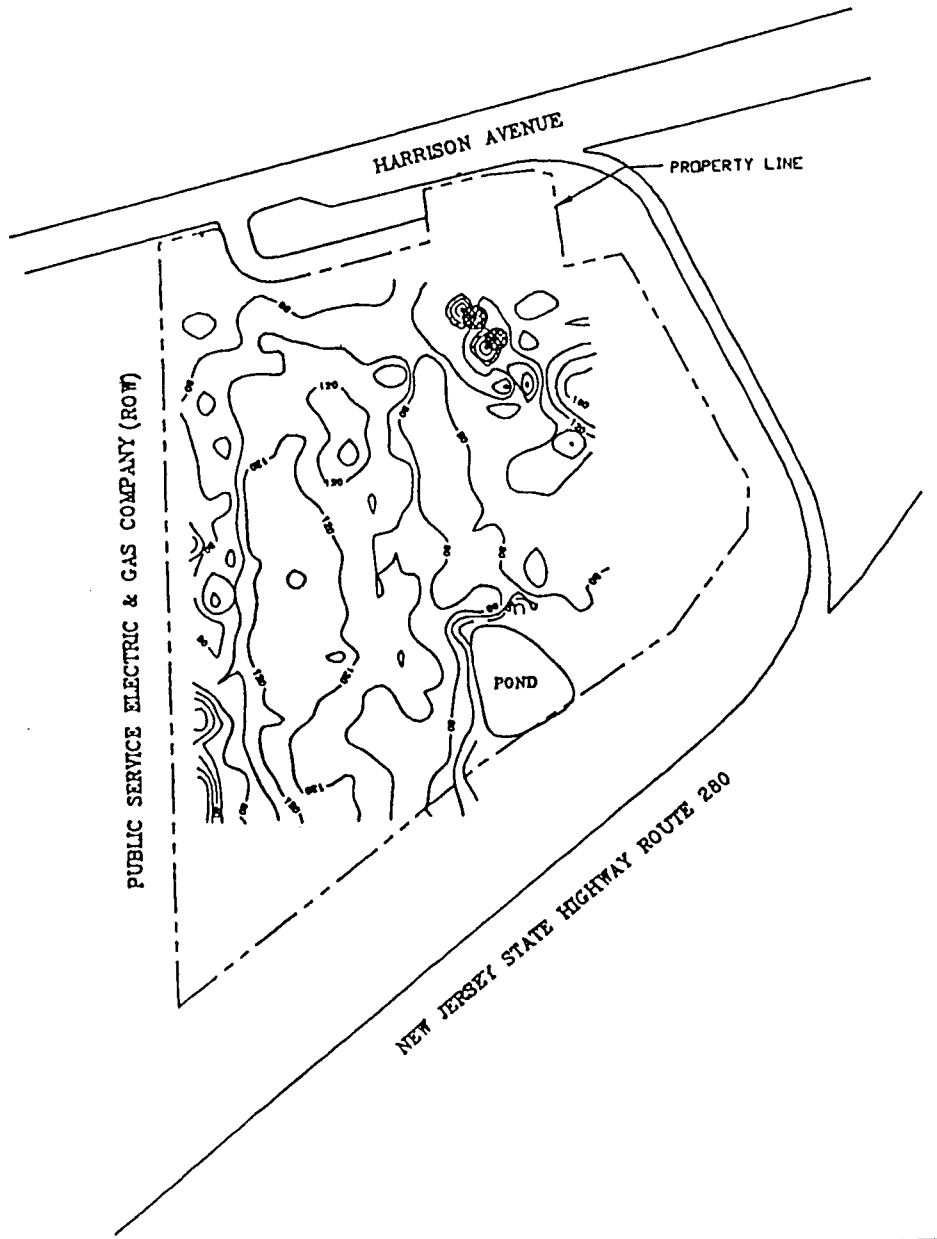
CONCRETE PAD



HUDSON MEADOWS URBAN RENEWAL
DEVELOPMENT CORPORATION
KEARNY, NEW JERSEY

TERRAIN CONDUCTIVITY/SOIL GAS
SURVEY GRID
FIGURE 3

Killam



LEGEND

80 — TERRAIN CONDUCTIVITY CONTOUR LINE (millimhos/meter)

CONCRETE PAD

CONTOUR INTERVAL = 20 millimhos/meter

200 0 200

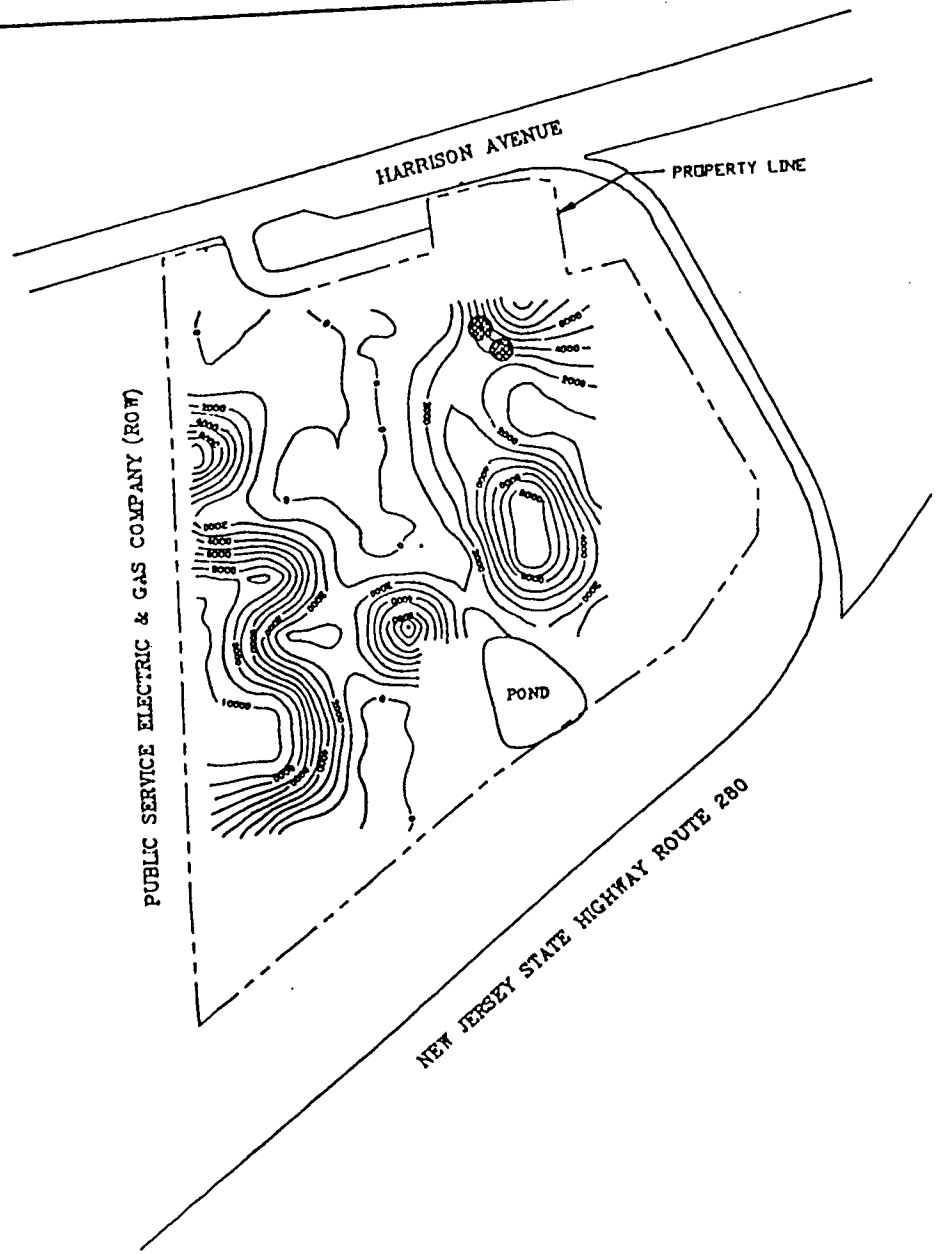
SCALE IN FEET

HUDSON MEADOWS URBAN RENEWAL
DEVELOPMENT CORPORATION
KEARNY, NEW JERSEY

TERRAIN CONDUCTIVITY SURVEY

FIGURE 4

Killam



LEGEND

4000 METHANE ISOCONCENTRATION CONTOUR LINE (PARTS PER MILLION)

CONCRETE PAD

CONTOUR INTERVAL = 1000 PARTS PER MILLION

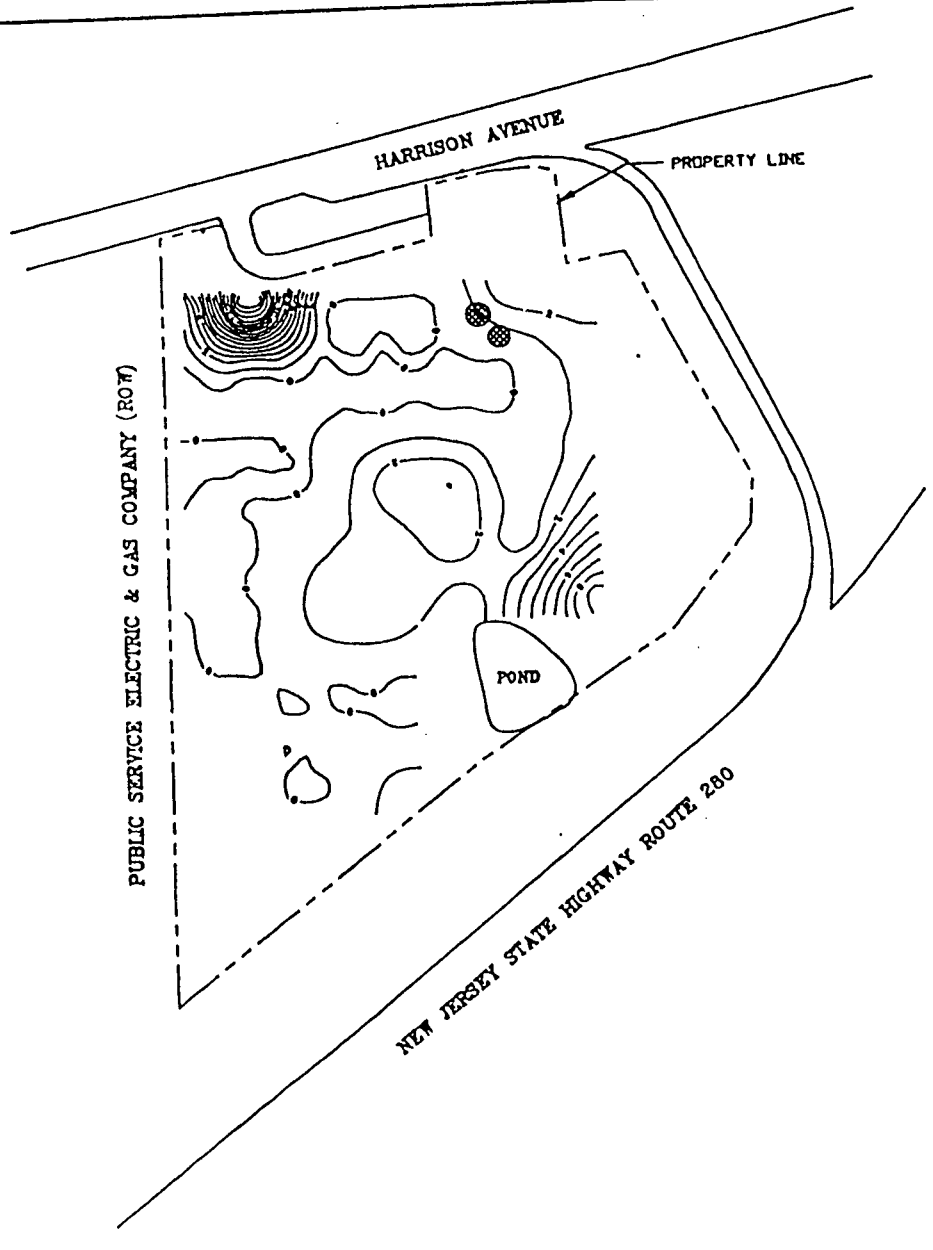
200 0 200
SCALE IN FEET

HUDSON MEADOWS URBAN RENEWAL DEVELOPMENT CORPORATION
KEARNY, NEW JERSEY

SOIL GAS SURVEY
CONCEPTUAL METHANE GAS CONTOUR MAP

FIGURE 5

Killam



LEGEND

2 VOLATILE ORGANIC COMPOUNDS ISOCONCENTRATION CONTOUR LINE (ppm)

CONCRETE PAD

CONTOUR INTERVAL = 1 PART PER MILLION

200 0 200

SCALE IN FEET

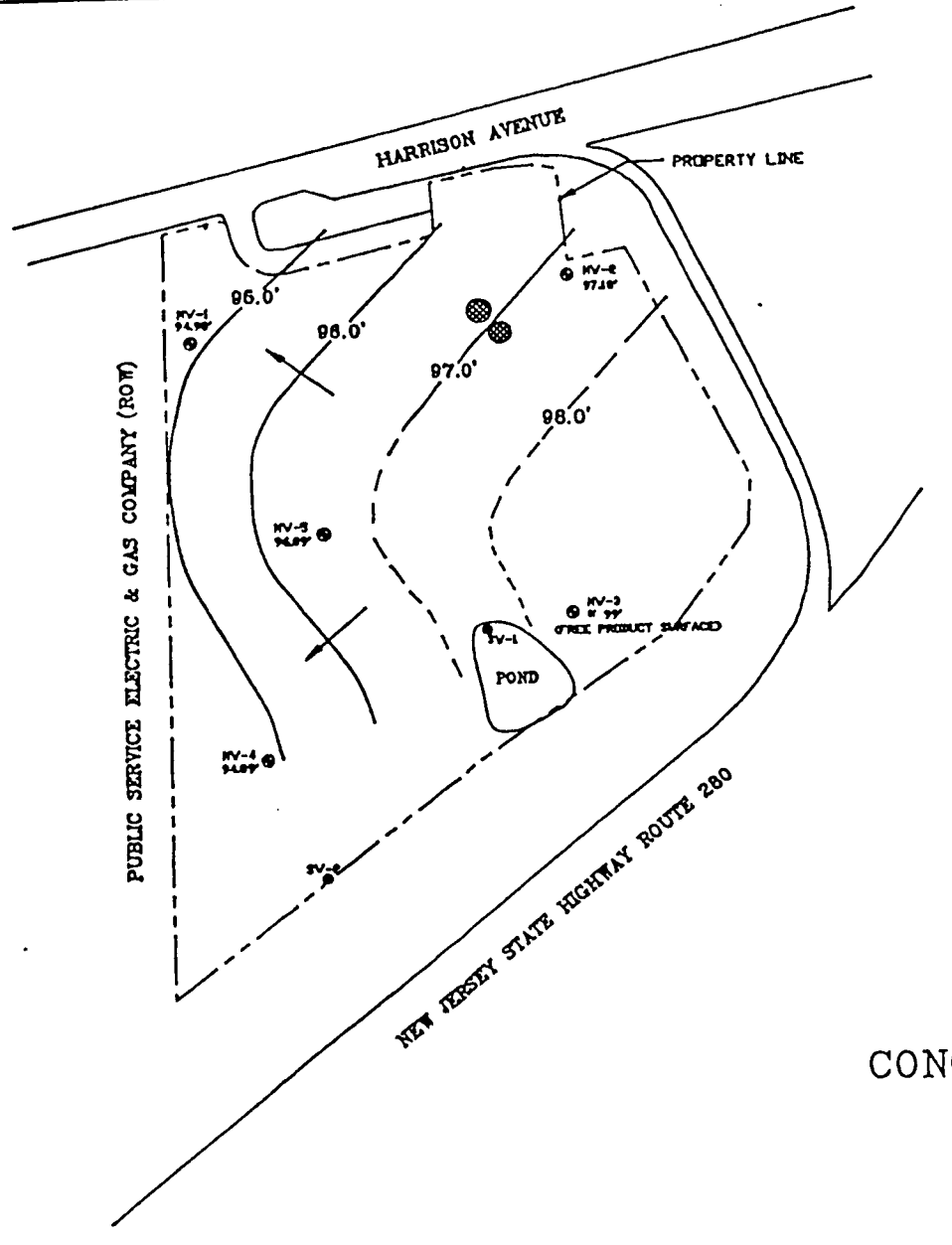
HUDSON MEADOWS URBAN RENEWAL DEVELOPMENT CORPORATION

KEARNY, NEW JERSEY

SOIL GAS SURVEY
CONCEPTUAL VOLATILE ORGANIC COMPOUNDS CONTOUR MAP

FIGURE 6

Killam



LEGEND

- EXPLORATORY GROUNDWATER MONITORING WELL
- SURFACE WATER SAMPLING LOCATION
- LINE OF EQUAL POTENTIOMETRIC HEAD
- GROUNDWATER FLOW DIRECTION
- CONCRETE PAD

CONTOUR INTERVAL = 1 FOOT
(DASHED WHERE INFERRED)

ELEVATIONS RELATIVE TO
SITE SPECIFIC DATUM = 100 FEET

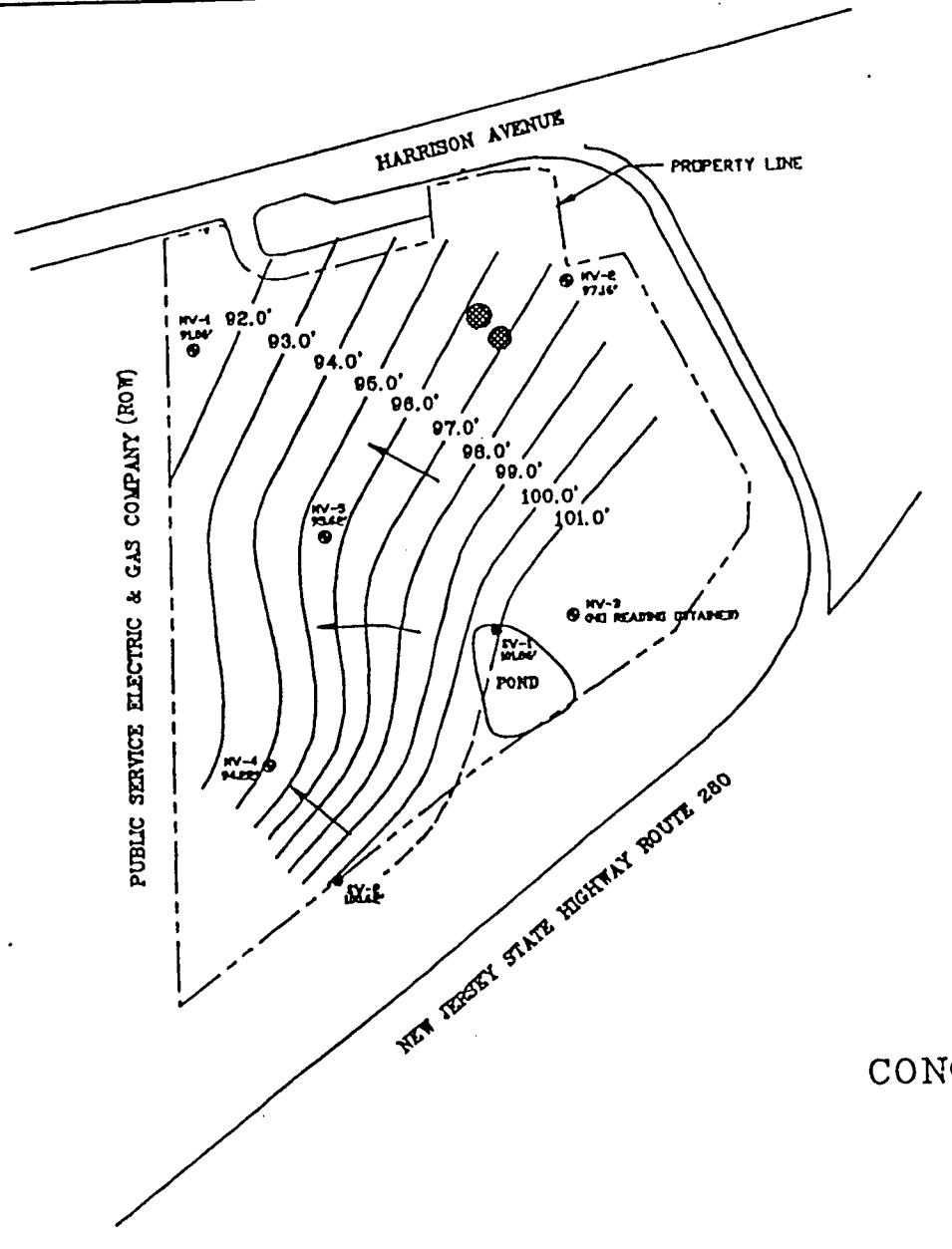
200 0 200
SCALE IN FEET

HUDSON MEADOWS URBAN RENEWAL
DEVELOPMENT CORPORATION
KEARNY, NEW JERSEY

CONCEPTUAL GROUNDWATER CONTOUR MAP
NOVEMBER 14, 1989

FIGURE 7

Killam



LEGEND

- EXPLORATORY GROUNDWATER MONITORING WELL
- SURFACE WATER SAMPLING LOCATION
- LINE OF EQUAL POTENTIOMETRIC HEAD
- GROUNDWATER FLOW DIRECTION
- CONCRETE PAD

CONTOUR INTERVAL = 1 FOOT
(DASHED WHERE INFERRED)

ELEVATIONS RELATIVE TO
SITE SPECIFIC DATUM = 100 FEET

200 0 200
SCALE IN FEET

HUDSON MEADOWS URBAN RENEWAL
DEVELOPMENT CORPORATION
KEARNY, NEW JERSEY

CONCEPTUAL GROUNDWATER CONTOUR MAP

JANUARY 18, 1990

FIGURE 8

Killam

Killam

APPENDIX B - WELL & BORING LOGS

Killam Associates • Consulting Engineers

EXPLORATORY DRILLING LOG

LOCATION: MW-1

PROJECT: Hudson Meadows Urban Renewal Development Corp.

PROJECT NO: 155801

SHEET 1 OF 1

	CASING	SAMPLER	SCREEN	RISER	SAND
TYPE	HSA	SS	PVC /40	PVC /40	MORIE #2
DIAMETER	6.25 IN.	2.0 IN.	4.0 IN.	4.0 IN.	
WEIGHT		140 LBS			
FALL/SLOT		30 IN.	0.02 IN.		
LENGTH			15 FT	5.14 FT	15.5 FT

GROUND WATER DATA

DEPTH	DATE	TIME	REFERENCE PT.
5.02'	11-14-89	1151	Notch in PVC
5.36'	1-25-90	1100	Notch in PVC

DATE COMPLETED: October 23, 1989

GROUND SURFACE ELEV: 97.86'

CASING ELEV: 100.00' DATUM: Site Specific = 100.00'

DRILLER: Greg Manrey (#1218), Warren George

KILLAM REP: Paul D. Norian

PERMIT NO.: 26-17148

COMMENTS: Stick-up construction

WELL CONSTRUCTION	DEPTH (FT)	STRATIGRAPHY	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	BLOW COUNTS	RECOVERY (INCHES)	FID READINGS (PPM) (Above Backgound*) Without Charcoal Filter	With Charcoal Filter	STRATIGRAPHIC SAMPLE NO.	REMARKS
	0		FILL	Br $, s S, s G with brick and plastic fragments	2, 3, 4, 6	12	0	0	S-1	
	1, 2			Bk Cy$, s fS, t O.M. tire fragments	5, 2, 5, 8	12	5	5	S-2	PHC Odor
	3, 4			Misc. Landfill Material						
	4, 5			Dk Br Cy$, sfmS, l fmG Br fS, s $, with metal fragments	7, 12, 21, 27	12	5	5	S-3	Moist+
	6, 7			Bk & Wht mcS, l fmG	20, 13, 15, 12	13	5	5	S-4	Wet @ 6'
	8		OH	Br $ a fS, s C, l fG, t Organic Material(O.M.) Bk Cy$, t O.M.	2, 1, 1, 1	12	5	0	S-5	PHC Odor & Appearance Medium Plasticity
	9, 10, 11			No Recovery	1, 1, 1, 1	NR	-	-	-	No Recovery
				Dark Brown-Black Sandy to Clayey Organic SILT						
	12, 13			Bk Cy$, t O.M.	2, 2	14	25 - 275	25 - 275	S-6	PHC Odor
	14, 15		SW	Br mcS, t fG	7, 3, 7, 13	16	75 - 975	25 - 675	S-7	Slight PHC Odor
				Gray Brown well graded SANDS						
	16, 17			Gr Br fmS, t cS, t fmG, seams of CyfS & Cy$	10, 12, 6, 11, 15, 18	14	15 - 275	5 - 125	S-8	
	18			End of Boring @ 18'						
	19, 20, 21, 22			* OVA background readings ranged from 24 ppm to 45 ppm.						

Killam Associates • Consulting Engineers

EXPLORATORY DRILLING LOG

LOCATION: MW-2

PROJECT: Hudson Meadows Urban Renewal Development Corp.

PROJECT NO: 155801

SHEET 1 OF 1

	CASING	SAMPLER	SCREEN	RISER	SAND
TYPE	HSA	SS	PVC /40	PVC /40	MORIE #1
DIAMETER	6.25 IN.	2.0 IN.	4.0 IN.	4.0 IN.	
WEIGHT		140 LBS			
FALL/SLOT		30 IN.	0.01 IN.		
LENGTH			10 FT	3.83 FT	11.5 FT

DATE COMPLETED: October 26, 1989

GROUND SURFACE ELEV: 98.93'

CASING ELEV: 101.26' DATUM: Site Specific = 100.00'

DRILLER: Greg Manrey (#1218), Warren George

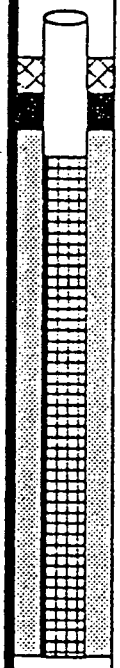
KILLAM REP: Paul D. Norian

PERMIT NO.: 26-17149

COMMENTS: Stick-up construction

GROUND WATER DATA

DEPTH	DATE	TIME	REFERENCE PT.
4.08'	11-14-89	1200	Notch in PVC
3.74'	1-25-90	1120	Notch in PVC



DEPTH (FT)	STRATIGRAPHY	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	BLOW COUNTS	RECOVERY (INCHES)	FID READINGS (PPM) (Above Background*) Without Charcoal Filter	With Charcoal Filter	STRATIGRAPHIC SAMPLE NO.	REMARKS
0									
1		FILL	Dk Br S a G, I C, I O.M.	4, 100/2	4	0	0	-	
2				-					
3			Br S, s $, I C; Br S, I fmG, I C	8, 5, 6	20	65 - 480	40 - 180	S-24	Strong PHC Odor Wet @ 2.5'
4			Br fS, s $, IC, I fG — Misc. Fill Material	6, 2, 3	9	180	45	S-25	
5				5					
6				6					
7			Br fS, s $, IC, I fG	3, 1, 5	23	140 - 240	80 - 170	S-26	
8		OH	Bk Cy$, sfS, IfG	9, 2	14	180 - 3000	40 - 490	S-27	PHC Odor & Appearance
9			Bk fS a C, s $; Bk Cy$ — Dark Brown to Black Clayey Organic SILT	1, 1					
10			Bk Cy$, I fS	wh, wr	9	90 - 3990	65 - 690	S-28	Medium to High Plasticity
11				wr, wh					
12			Br Cy$; Bk $vC	wh, 1	12	190 - 2990	90 - 990	S-29	PHC Odor & Appearance
13				2					
14		pt	Br-Bk peat — Brown PEAT	4, 6					
15			End of Boring @ 14'						
16									
17									
18									
19									
20									
21									
22									

* OVA background readings ranged from 45 ppm to 10 ppm.

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EXPLORATORY DRILLING LOG

LOCATION: **MW-3**

PROJECT: Hudson Meadows Urban Renewal Development Corp.

PROJECT NO: 155801

SHEET 1 OF 1

	CASING	SAMPLER	SCREEN	RISER	SAND
TYPE	HSA	SS	PVC /40	PVC /40	MORIE #1
DIAMETER	6.25 IN.	2.0 IN.	4.0 IN.	4.0 IN.	
WEIGHT		140 LBS			
FALL/SLOT		30 IN.	0.01 IN.		
LENGTH			13 FT	3.37 FT	13.5 FT

GROUND WATER DATA

DEPTH	DATE	TIME	REFERENCE PT.
Free Product	11-14-89	-	Notch in PVC
Free Product	1-25-90	-	Notch in PVC

DATE COMPLETED: October 27, 1989

GROUND SURFACE ELEV: 101.88'

CASING ELEV: 104.25' DATUM: Site Specific = 100.00'

DRILLER: Greg Manrey (#1218), Warren George

KILLAM REP: Paul D. Norian

PERMIT NO.: 26-17150

COMMENTS: Stick-up construction

WELL CONSTRUCTION	DEPTH (FT)	STRATIGRAPHY	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	BLOW COUNTS	RECOVERY (INCHES)	FID READINGS (PPM) (Above Backgound*) Without Charcoal Filter	With Charcoal Filter	STRATIGRAPHIC SAMPLE NO.	REMARKS
	0									
	1		FILL	Dk Br fmS, l $, lC, t fG Dk Br $, s fmS, s C, l fG	1, 5, 6, 8	14	0	0	S-30	
	2			Bk Br Cy$, s S, l fmG Ceramic and Wood Fragments	100/4", -, -	3	300	50	S-31	PHC Odor & Appearance
	3									
	4			Br Cy$, s S, l O.M. Misc. Fill Material	3, 2, 4	12	100 - 900	20 - 150	S-32	Wet @ 2.5'
	5									
	6			Bk Br S a fmG, s C, l $ Bk S a G, with concrete fragments Rd Br S a G, s C, l $	40, 57, 28, 16	24	400 - 2700	100 - 1000	S-33	PHC Odor & Appearance
	7									
	8			Bk fmG, l S	12, 7, 6	6	400-1000	100-300	S-34	PHC Odor & Appearance
	9									
	10		OH	Bk Cy$, l fS, t O.M.	2, 2, 4, 1	14	65 0-1450	150 - 1450	S-35	PHC Odor & Appearance
	11									
	12			Bk-Dk Br Cy$, l fS, t O.M. Dark Brown to Black Clayey Organic SILT	1, 1, 2, 2	14	50 - 3500	50 - 950	S-36	PHC Odor & Appearance
	13									
	14			Dk Br Cy$, l O.M.	4, 2, 1, 1, 1	18	50 - 250	50 - 250	S-37	PHC Odor & Appearance
	15									
	16			End of Boring @ 16'						
	17									
	18			* OVA background readings ranged from 5 ppm to 45 ppm.						
	19									
	20									
	21									
	22									

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EXPLORATORY DRILLING LOG

LOCATION: MW-4

PROJECT: Hudson Meadows Urban Renewal Development Corp.

PROJECT NO: 155801

SHEET 1 OF 1

	CASING	SAMPLER	SCREEN	RISER	SAND
TYPE	HSA	SS	PVC /40	PVC /40	MORIE #1
DIAMETER	6.25 IN.	2.0 IN.	4.0 IN.	4.0 IN.	
WEIGHT		140 LBS			
FALL/SLOT		30 IN.	0.01 IN.		
LENGTH			15 FT	7.31 FT	16 FT

DATE COMPLETED: October 25, 1989

GROUND SURFACE ELEV: 105.19'

CASING ELEV: 107.50' DATUM: Site Specific = 100.00'

DRILLER: Greg Manrey (#1218), Warren George

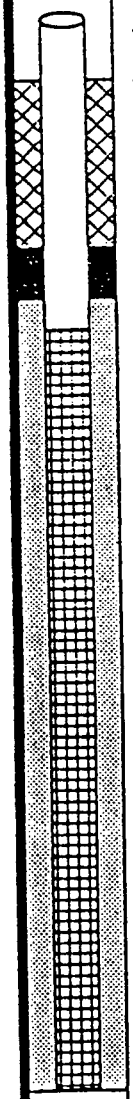
KILLAM REP: Paul D. Norian

PERMIT NO.: 26-17151

COMMENTS: Stick-up construction

GROUND WATER DATA

DEPTH	DATE	TIME	REFERENCE PT.
12.45'	11-14-89	1226	Notch in PVC
12.79'	1-25-90	1315	Notch in PVC



DEPTH (FT)	STRATIGRAPHY	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	BLOW COUNTS	RECOVERY (INCHES)	FID READINGS (PPM)* (Above Backgound*) Without Charcoal Filter	With Charcoal Filter	STRATIGRAPHIC SAMPLE NO.	REMARKS
0			Misc. fill material, brick fragments	2, 6	10	50-70	50	S-17	Moist+
1			Dk Br S, sC, lS, lC, tO.M.	4, 5					
2			Bk CyS w glass fragments, plastic, O.M., l S, lfG	1, 3	9	100-300	100-300	S-18	Moist+ PHC Odor
3				3, 6					
4			Dk Br - Bk CyS w wood cinders, l fG	4, 3	5	100-180	100-150	S-19	Moist- Slight PHC Odor
5				7, 17					
6			Plastic trash bags (2 mil +/-), wood fragments	26, 100/2"	2	60-100	60-80	S-20	Moist- Slight PHC Odor
7				–					
8			Plastic trash bags (2 mil +/-), wood fragments	11, 5	2	40-60	40-60	-	
9		FILL	Misc. Landfill Material	4, 12					
10			Bk CyS, t O.M., t of plastic trash bags	3, 2	3	+	+	S-21	Wet @ 10.5' PHC Odor
11				2, 4					
12			Bk CyS, t O.M., brick and plastic fragments	4, 4	20	+	+	S-22	PHC Odor
13			Br peat Bk CyS, t O.M., plastic & glass fragments	5, 7					
14			Br CyS w Rd - Br CyS & G, plastic	2, 2	2	+	+	-	
15				8, 7					
16			Bk S w unknown white specs	15, 16	3	2000	Hnu 2ppm	S-23	Water resembles clear heavy syrup
17				13, 16					
18		OH	Bk S, Bk -Br lS	12, 10	3	150	Hnu 2.5ppm	S-23	
19			Brown to Black Organic SILT	14, 10					
20			End of Boring @ 20'						
21			+ = No Reading Obtained						
22			*OVA background readings ranged from 5ppm to 50 ppm.						

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EXPLORATORY DRILLING LOG

LOCATION: **MW-5**

PROJECT: Hudson Meadows Urban Renewal Development Corp.

PROJECT NO: 155801

SHEET 1 OF 1

	CASING	SAMPLER	SCREEN	RISER	SAND
TYPE	HSA	SS	PVC /40	PVC /40	MORIE #2
DIAMETER	6.25 IN.	2.0 IN.	4.0 IN.	4.0 IN.	
WEIGHT		140 LBS			
FALL/SLOT		30 IN.	0.02 IN.		
LENGTH			15 FT		15.5 FT

DATE COMPLETED: October 24, 1989

GROUND SURFACE ELEV: 98.03'

CASING ELEV: 100.00' DATUM: Site Specific = 100.00'

DRILLER: Greg Manrey (#1218), Warren George

KILLAM REP: Paul D. Norian

PERMIT NO.: 26-17152

COMMENTS: Stick-up construction

GROUND WATER DATA

DEPTH	DATE	TIME	REFERENCE PT.
5.02'	11-14-89	1151	Notch in PVC
5.36'	1-25-90	1100	Notch in PVC

DEPTH (FT)	STRATIGRAPHY	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	BLOW COUNTS	RECOVERY (INCHES)	FID READINGS (PPM) (Above Backgound*) Without Charcoal Filter	With Charcoal Filter	STRATIGRAPHIC SAMPLE NO.	REMARKS
0			Br - Dk Br\misc. fill material$sS, sC, lfG	3, 3, 5, 6	13	20-50	20-25	S-9	Moist+ Moist
2			Bk CyfS & $ w plastic fill material	6, 6, 4, 6	12	50-800	50-300	S-10	PHC Odor
4			Br Cy$ & fS, G w concrete and brick fragments	5, 5, 5, 5	4	30-300	30-200	S-11	
6			Rd - Br c, tfmS, l$ O.M. & Br S, $ & G, lC Bk Cy$, lO.M., plastic, glass fragments	5, 9, 13, 9	8	25, 2000, 2000	25, 1500, 1500	S-12	PHC Odor
8		FILL	No Recovery — Misc. Landfill Material	10, 7, 8	NR	-	-	-	
10			Rubber tire, plastic	20, 12, 12	1	-	-	S-13	Slight PHC Odor
12			Gravel fill	8, 7, 4, 2	1	-	-	-	Wet @ 12'
14			Bk G & S w glass, lO.M.	2, 4, 3, 3	4	30, 50	30, 50	S-14	Slight PHC Odor
16			Bk G & S w glass	8, 3, 4	4	250	175	S-15	Slight PHC Odor
17		OH	Bk $ — Black Organic SILT	4, 11, 2					PHC Odor
18		SM	Bk lS,a$, lmS,sC — Black Silty SAND	2, 1	21	100, 1000	100, 1000	S-16	Strong PHC Odor
19		OL	Br to Bk C, Bk Cy$ — Bk-Br Organic CLAY	1					
20			End of Boring @ 20'						

*OVA background readings ranged from 12 ppm - 20 ppm.

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EXPLORATORY DRILLING LOG

LOCATION: SB-1

PROJECT: Hudson Meadows Urban Renewal Development Corp.

PROJECT NO: 155801

SHEET 1 OF 1

	CASING	SAMPLER	SCREEN	RISER	SAND
TYPE		SS			
DIAMETER		2.0 IN.			
WEIGHT		140 LBS			
FALL/SLOT		30 IN.			
LENGTH					

GROUND WATER DATA

DEPTH	DATE	TIME	REFERENCE PT.

DATE COMPLETED: October 30, 1989

GROUND SURFACE ELEV: 101.02'

CASING ELEV: _____ DATUM: Site Specific = 100.00'

DRILLER: Greg Manrey (#1218), Warren George

KILLAM REP: Paul D. Norian

PERMIT NO.: _____

COMMENTS: Boring sealed with Bentonite

WELL CONSTRUCTION	DEPTH (FT)	STRATIGRAPHY	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	BLOW COUNTS	RECOVERY (INCHES)	FID READINGS (PPM) (Above Background*) Without Charcoal Filter	With Charcoal Filter	STRATIGRAPHIC SAMPLE NO.	REMARKS
	0			Dk Br S & fG, lSIC, plastic Dk Br - Br - RD S, sfG, IC, glass, plastic, corrugated metal, brick fragments	3, 7, 17, 27	20	12	12	6004	
	1									
	2			Dk Br - Bk - Rd S & G, IC, concrete fragments, brick, wood	20, 40, 61, 100/3"	5	40-180	40-150		
	3									
	4			Rd Brick, Bk S & G, concrete	67, 6	6	300	300		Moist+ Slight PHC Odor
	5		FILL	Misc. Landfill Material	11, 14					
	6			Grey - Bk S & G, tC	6, 4	10	40-120	40-100	6005	Wet @ 6.5' Slight PHC Odor
	7				3, 8					
	8			Bk S, tC, Br mS w Bk $ lenses	5, 4	8	180-200	30-300		PHC Odor
	9		SM	Black to Brown Silty SAND	3, 5		50-2000	30-300		PHC Odor
	10			Bk $, IC	2, 2	3	50-100	30-100		PHC Odor
	11		OH	Black to Brown Clayey Organic SILT	1, 1					
	12			Br Cy$	wh, wh	13	100-3000	50-200		PHC Odor
	13			Br Cy$ w O.M.	2, 4					
	14			End of Boring @ 14'						
	15			*OVA background reading 8 ppm						
	16									
	17									
	18									
	19									
	20									
	21									
	22									

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EXPLORATORY DRILLING LOG

LOCATION: **SB-2**

PROJECT: Hudson Meadows Urban Renewal Development Corp.

PROJECT NO: 155801

SHEET 1 OF 1

	CASING	SAMPLER	SCREEN	RISER	SAND
TYPE		SS			
DIAMETER		2.0 IN.			
WEIGHT		140 LBS			
FALL/SLOT		30 IN.			
LENGTH					

GROUND WATER DATA

DEPTH	DATE	TIME	REFERENCE PT.

DATE COMPLETED: October 31, 1989

GROUND SURFACE ELEV: 104.86'

CASING ELEV: _____ DATUM: Site Specific = 100.00'

DRILLER: Greg Manrey (#1218), Warren George

KILLAM REP: Paul D. Norian

PERMIT NO.: _____

COMMENTS: Boring sealed with Bentonite

WELL CONSTRUCTION	DEPTH (FT)	STRATIGRAPHY	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	BLOW COUNTS	RECOVERY (INCHES)	FID READINGS (PPM) (Above Backgound*) Without Charcoal Filter	With Charcoal Filter	SAMPLE NO.	REMARKS
	0			Br CyS, O.M., glass	5	22	40	40	6009	Moist+
	1			Br CyS lfmG, tO.M. brick fragments, glass	4					
				Br - Bk Cy$ & S lfG, brick, glass, plastic	4		200-300	100-250		
	2				7					
				Bk Cy$ & S, plastic, glass	5	6	100-500	40-140		Moist PHC Odor
	3				7					
					11					
	4				12					
				Br Cy$ & S, lC, brick, glass, plastic, wood	4	6	100-300	50-250		Moist PHC Odor
	5				5					
					27					
	6				40					
				Bk Cy$ & S lfG, wood, plastic, glass.	18	4	40-130	40-100		Moist Slight PHC Odor
	7				21					
					17					
	8				15					
			FILL	Misc. Landfill Material	4	NR				
	9				5					
					11					
	10				3					
				Bk Cy$ tO.M.	5	10	700	300	6010	Moist+ PHC Odor
	11				3					Wet @ 11.5'
					3					
	12				5					
					2	NR				
	13				3					
					6					
	14				13					
				Bk Cy$ w glass, brick, O.M.	8	14	100-200	100-200		PHC Odor
	15				2					
				Br CyS & fG, glass, plastic, brick fragments, O.M.	5		700	600		
	16				10					
				Br CyS & fG, glass, plastic, O.M.	7	8	350	200		PHC Odor
	17				8					
					12					
	18				21					PHC Odor
				Bk Cy$ w O.M.	14	12	300-500	300-500		
	19		OH	Black Organic SILT	5					
					2					
	20				2					
				End of Boring @ 20'						
	21			*OVA background reading 12 ppm						
	22									

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EXPLORATORY DRILLING LOG

LOCATION: SB-3

PROJECT: Hudson Meadows Urban Renewal Development Corp.

PROJECT NO: 155801

SHEET 1 OF 1

	CASING	SAMPLER	SCREEN	RISER	SAND
TYPE		SS			
DIAMETER		2.0 IN.			
WEIGHT		140 LBS			
FALL/SLOT		30 IN.			
LENGTH					

GROUND WATER DATA

DEPTH	DATE	TIME	REFERENCE PT.

DATE COMPLETED: October 31, 1989

GROUND SURFACE ELEV: 104.14'

CASING ELEV: _____ DATUM: Site Specific = 100.00'

DRILLER: Greg Manrey (#1218), Warren George

KILLAM REP: Paul D. Norian

PERMIT NO.: _____

COMMENTS: Boring sealed with Bentonite

WELL CONSTRUCTION	DEPTH (FT)	STRATIGRAPHY	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	BLOW COUNTS	RECOVERY (INCHES)	FID READINGS (PPM) (Above Background*) Without Charcoal Filter	With Charcoal Filter	SAMPLE NO.	REMARKS
	0		FILL	Br CyS, lfG, glass	1	20	25	25	6006	Moist
				Br pt (disturbed)	1		25-50	25-50		
	1			Br CyS, lfG, plastic	3		75	25		
				Bk CyS w plastic, wood	5		85	50		
	2				2	NR				Moist PHC Odor
					2					
	3				3					
					11					
	4			Br CyS lO.M. t fill	1	2	275	90		Moist PHC Odor
					2					
	5				3					
					8					
	6			Br CyS, lO.M., t fill	4	22	1000	300	6007	Moist
				Br CyS, sfG, plastic	8		1100	300	6008	Slight PHC Odor
	7			Bk CyS, wood fragments	6		500	350	Dup.	
					8					Wet @ 8.0'
	8				14	NR				PHC Odor
				Misc. Landfill Material	3					
	9				7					
					11					
	10			Bk oily appearing wood, plastic	7	2	75	25		PHC Odor
					100/5"					
	11				-					
					-					
	12			Bk oily appearing wood, plastic	99	13	50	25		PHC Odor
					99					
	13				56					
					24					
	14			Tire and wood fragments	42	1	-	-		PHC Odor
					5					
	15				3					
					6					
	16			Bk S, fG, $, glass fragments	3	16	150	50		Slight PHC Odor
				Bk CyS, Br $yC lens	3		30-50	30-50		
	17		OH	Bk CyS w O.M. Black Organic SILT	5					
					12		70	50		
	18			End of Boring @ 18'						
	19			*OVA background readings ranged from 4 ppm-28 ppm.						
	20									
	21									
	22									

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EXPLORATORY DRILLING LOG

LOCATION: SB-4

PROJECT: Hudson Meadows Urban Renewal Development Corp.

PROJECT NO: 155801

SHEET 1 OF 1

	CASING	SAMPLER	SCREEN	RISER	SAND
TYPE		SS			
DIAMETER		2.0 IN.			
WEIGHT		140 LBS			
FALL/SLOT		30 IN.			
LENGTH					

GROUND WATER DATA

DEPTH	DATE	TIME	REFERENCE PT.

DATE COMPLETED: October 30, 1989

GROUND SURFACE ELEV: 97.97'

CASING ELEV: _____ DATUM: Site Specific = 100.00'

DRILLER: Greg Manrey (#1218), Warren George

KILLAM REP: Paul D. Norian

PERMIT NO.: _____

COMMENTS: Boring sealed with Bentonite

WELL CONSTRUCTION	DEPTH (FT)	STRATIGRAPHY	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	BLOW COUNTS	RECOVERY (INCHES)	FID READINGS (PPM) (Above Backgound*) Without Charcoal Filter	With Charcoal Filter	SAMPLE NO.	REMARKS
	-0-			Bk $, S & fG, !O.M.	3	12	125	25-50	6001	Slight PHC Odor Wet @ 12"
	-1-				6					
				Br S & fG, s$, tC Misc. Fill Material	3					
	-2-		FILL		4					
					8	16	25-275	25-85	6002	
	-3-				8					
					6					
	-4-				7					
	-5-			End of Boring @ 4'						
	-6-			*OVA background reading 25 ppm						
	-7-									
	-8-									
	-9-									
	-10-									
	-11-									
	-12-									
	-13-									
	-14-									
	-15-									
	-16-									
	-17-									
	-18-									
	-19-									
	-20-									
	-21-									
	-22-									

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EXPLORATORY DRILLING LOG

LOCATION: SB-5

PROJECT: Hudson Meadows Urban Renewal Development Corp.

PROJECT NO: 155801

SHEET 1 OF 1

	CASING	SAMPLER	SCREEN	RISER	SAND
TYPE		SS			
DIAMETER		2.0 IN.			
WEIGHT		140 LBS			
FALL/SLOT		30 IN.			
LENGTH					

GROUND WATER DATA

DEPTH	DATE	TIME	REFERENCE PT.

DATE COMPLETED: October 30, 1989

GROUND SURFACE ELEV: 100.46'

CASING ELEV: _____ DATUM: Site Specific = 100.00'

DRILLER: Greg Manrey (#1218), Warren George

KILLAM REP: Paul D. Norian

PERMIT NO.: _____

COMMENTS: Boring sealed with Bentonite

WELL CONSTRUCTION	DEPTH (FT)	STRATIGRAPHY	UNIFIED SOIL CLASSIFICATION	DESCRIPTION	BLOW COUNTS	RECOVERY (INCHES)	FID READINGS (PPM) (Above Backgound*) Without Charcoal Filter	With Charcoal Filter	SAMPLE NO.	REMARKS
	0			Dk Br CyS & fG, fS	12	17	0-10	0-10	6003	Wet @ 12"
					29					
	1				28					
			FILL	Br - RdBr CyS &fG Misc. Fill Material	39					
	2			Concrete	52	5	10-160	10-160		PHC Odor
					100/2"					
	3			End of Boring @ 3'						
	4			*OVA background reading 18 ppm						
	5									
	6									
	7									
	8									
	9									
	10									
	11									
	12									
	13									
	14									
	15									
	16									
	17									
	18									
	19									
	20									
	21									
	22									

UNIFIED SOIL CLASSIFICATION

MAJOR DIVISIONS			SYMBOLS		TYPICAL NAMES
COARSE-GRAINED SOILS More than half is larger than No. 200 sieve	GRAVELS More than half coarse fraction is larger than No.4 sieve size	Clean gravels with little or no fines	GW	RED	Well-Graded Gravels, Gravel - Sand Mixtures
			GP		Poorly-Graded Gravels, Gravel - Sand Mixtures
		Gravels with over 12% fines	GM	YELLOW	Silty Gravels, Poorly-Graded Gravel - Sand Silt Mixtures
			GC		Clayey Gravels, Poorly-Graded Gravel, - Sand-Clay Mixtures
	SANDS More than half coarse fraction is smaller than No.4 sieve size	Clean sands with little or no fines	SW	RED	Well-Graded Sands, Gravelly Sands
			SP		Poorly-Graded Sands, Gravelly Sands
		Sands with over 12% fines	SM	YELLOW	Silty Sands, Poorly-Graded Sand - Silt Mixtures
			SC		Clayey Sands, Poorly-Graded Sand - Clay Mixtures
FINE-GRAINED SOILS More than half is smaller than No. 200 sieve	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		ML	GREEN	Inorganic Silts and Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands, or Clayey Silts with Slight Plasticity
			CL		Inorganic Clays of Low to Medium Plasticity, Gravelly Clays, Sandy Clays, Silty Clays, Lean Clays
			OL		Organic Clays and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50		MH	BLUE	Inorganic Silts, Micaceous or Diatomaceous Fine, Sandy or Silty Soils, Elastic Silts
			CH		Inorganic Clays of High Plasticity, Fat Clays
			OH		Organic Clays of Medium to High Plasticity Organic Silts
	HIGHLY ORGANIC SOILS		pt	ORANGE	Peat and Other Highly Organic Soils

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I. Definition of Soil Components and Fractions

Material	Symbol	Fraction	Sieve Size	Definition
Boulders	Bldr	---	9"=	Material retained on 9" sieve.
Cobbles	Cbl	---	3" to 9"	Material passing the 9" sieve.
Gravel	G	coarse (c) medium (m) fine (f)	1" to 3" 3/8" to 1" No. 10 to 3/8	Material passing the 3" sieve and retained on the No. 10 sieve.
Sand	S	coarse (c) medium (m) fine (f)	No. 30 to No.10 No. 60 to No.30 No. 200 to No.60	Material passing the No. 10 sieve and retained on the No. 200 sieve.
Silt	S	---	Passing No. 200 (0.075mm)	Material passing the No. 200 sieve that is non-plastic in character and exhibits little or no strength when air-dried.
Organic Silt	OS			

Material passing the No. 200 sieve which exhibits plastic properties within a certain range of moisture content, and has fine granular and organic characteristics.

		Plasticity	Plasticity Index	
Clayey Silt	CyS	Slight (Sl)	1 to 5	Clay-soil
Silt & Clay	S&C	Low (L)	5 to 10	Material passing the No. 200 sieve which can be made to exhibit plasticity and clay qualities within a certain range of moisture content, and which exhibits considerable strength when air-dried.
Clay & Silt	C&S	Medium (M)	10 to 20	
Silty & Clay	SyC	High (H)	20 to 40	
Clay	C	Very High (VH)	40 plus	

II. Definition of Component Proportions

Component	Written	Proportions*	Symbol	Percentage Range by Weight*
Principal	CAPITALS	---		50 or more
Minor	Lower Case	and	a.	35 to 50
		some	s.	20 to 35
		little	l.	10 to 20
		trace	t.	1 to 10

* Minus sign (-) lower limit, plus sign (+) upper limit, no sign middle range. Signs used with proportions, words or symbols to indicate lower or upper end of percentage range.

Killam

APPENDIX C - TABLES

TABLE 1
NOVEMBER 1989 SOIL ANALYSES

BKUSDC
Harrison Avenue
Kearny, New Jersey

CONSTITUENTS	SB-1 6004	SB-1 6005	SB-2 6009	SB-2 6010	SB-3 6006	SB-3 6007	SB-3 6008	SB-4 6001	SB-5 6003	FB 1002	TB 1001
PHCs	-	-	1540	130	1595	320	2400	-	-	-	*
METALS											
Antimony	-	6.8	-	1.2	1.3	1.8	2.9	-	-	-	*
Arsenic	11.2	54.5	26.5	25.0	17.0	15.2	28.5	12	6.1	-	*
Beryllium	0.45	0.24	0.41	0.56	0.33	0.49	0.47	-	-	-	*
Cadmium	2.7	8.9	6.2	5.2	5.6	3.9	3.6	-	1.3	-	*
Chromium	32	248	48	240	190	181	210	4050	66.4	-	*
Copper	264	49.9	325	525	510	767	340	15.7	124	-	*
Lead	457	272	604	594	614	355	470	54.0	1350	-	*
Mercury	0.46	0.26	2.26	1.89	0.53	1.42	1.79	0.20	1.36	-	*
Nickel	57.6	22.1	644	104	163	35	63	597	24	-	*
Selenium	-	-	-	-	-	-	-	1.65	-	-	*
Silver	1.8	-	1.3	2.7	2.6	2.9	3.3	-	1.0	-	*
Thallium	-	-	-	-	-	-	-	-	-	-	*
Zinc	486	449	526	1240	440	476	779	244	310	-	*
VOLATILE ORGANICS											
Chloromethane	-	-	-	-	-	-	-	-	-	-	-
Bromomethane	-	-	-	-	-	-	-	-	-	-	-
Vinyl Chloride	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	-	-	-	-	-	-	-	-	-	-	-
Methylene Chloride	0.0148	0.0156	0.0735	0.1606	0.0346	0.0348	0.1556	0.0166	0.0248	0.0106	0.0705
Acetone (TCL)	-	-	0.279	-	-	-	-	0.956	0.547	0.561	0.186
Carbon Disulfide (TCL)	-	-	-	-	-	-	-	-	-	-	-
Acrolein	-	-	-	-	-	-	-	-	-	-	-
Acrylonitrile	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-
Chloroform	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloroethane	-	-	-	-	-	-	-	-	-	-	-
2-Butanone (TCL)	-	-	0.0442	0.048	-	0.050	-	-	0.0112	-	-
1,1,1-Trichloroethane	-	-	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride	-	-	-	-	-	-	-	-	-	-	-
Vinyl Acetate (TCL)	-	-	-	-	-	-	-	-	-	-	-
Bromodichloromethane	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichloropropane	-	-	0.0415	-	0.0416	0.045	-	0.0053	0.0142	0.00520	-
cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-	-	-	-
Trichloroethene	-	-	-	-	-	-	-	-	-	-	-
Dibromochloromethane	-	-	-	-	-	-	-	-	-	-	-
1,1,2-Trichloroethane	-	-	-	-	-	-	-	-	-	-	-
Benzene	-	-	0.0103	0.0141	-	-	-	-	0.026	-	-
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	-	-	-
2-Chloroethyl Vinyl Ether	-	-	-	-	-	-	-	-	-	-	-
Bromoform	-	-	-	-	-	-	-	-	-	-	-
4-Methyl-2-Pentanone (TCL)	-	-	-	-	-	-	-	0.0043	-	-	-
2-Hexanone (TCL)	-	-	-	-	-	-	-	-	0.0152	-	-
Tetrachloroethene	-	-	-	-	-	-	-	0.0053	-	-	-
1,1,2,2-Tetrachloroethane	-	-	-	-	-	-	-	0.0023	-	-	-
Toluene	-	-	-	-	-	-	0.0122	0.0053	0.019	-	-
Chlorobenzene	0.010	-	0.062	0.0303	0.0173	-	0.0303	0.0053	0.460	-	-
Ethylbenzene	-	-	-	-	-	0.0153	0.046	0.0043	0.020	-	-
Styrene (TCL)	-	-	-	-	-	-	-	-	-	-	-
Xylene (total) (TCL)	-	-	0.0253	0.080	-	0.043	0.230	0.069	0.340	-	-
Total Targeted VOs	0.010	-	0.4153	0.2123	0.0173	0.2113	0.5663	0.0443	1.0353	0.0613	0.1063
Total Non-Targeted VOs	0.0203	0.0423	0.0573	1.0383	0.2463	0.2713	0.4973	0.0363	0.0313	-	-
Total VOs	0.0363	0.0423	0.5383	1.2423	0.3013	0.4823	0.8253	0.1263	1.0733	0.0613	0.1063

NOTES:
PHC = Petroleum Hydrocarbons; VO = Volatile Organic Compounds; ASN = Acid Base Neutral Extractable Organic
- = Not Detected; * = Not Analyzed; J = Detected Below Method Detection Limit
B = Compound Detected in Method Blank; TCL = Target Compound List

TABLE 1
NOVEMBER 1986 SOIL ANALYSES

NNGZDC
Harrison Avenue
Kearny, New Jersey

CONSTITUENTS	SB-1 6001	SB-1 6005	SB-2 6009	SB-2 6010	SB-3 6006	SB-3 6007	SB-3 6008	SB-4 6001	SB-5 6003	FB 1002	TB 1001
SEMIVOLATILE ORGANICS											
N-nitrosodimethylamine	-	-	-	-	-	-	-	-	-	-	-
Phenol	-	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethyl)Ether	-	-	-	-	-	-	-	-	-	-	-
2-Chlorophenol	-	-	-	-	-	-	-	-	-	-	-
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	-	-	-
1,4-Dichlorobenzene	-	-	-	-	-	-	-	-	-	-	-
Benzyl Alcohol (TCL)	-	-	-	-	-	-	-	-	-	-	-
1,2-Dichlorobenzene	-	-	-	-	-	-	-	-	-	-	-
2-Methylphenol (TCL)	-	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroisopropyl)Ether	-	-	-	-	-	-	-	-	-	-	-
4-Methylphenol (TCL)	-	-	-	0.670J	-	-	-	-	-	-	-
N-nitroso-di-n-propylamine	-	-	-	-	-	-	-	-	-	-	-
Hexachloroethane	-	-	-	-	-	-	-	-	-	-	-
Nitrobenzene	-	-	-	-	-	-	-	-	-	-	-
Isophorone	-	-	-	-	-	-	-	-	-	-	-
2-Nitrophenol	-	-	-	-	-	-	-	-	-	-	-
2,4-Dimethylphenol	0.1250	-	-	-	-	-	-	-	-	-	-
Benzoic Acid (TCL)	-	-	-	-	-	-	-	-	-	-	-
bis(2-Chloroethoxy)Methane	-	-	-	-	-	-	-	-	-	-	-
2,4-Dichlorophenol	-	-	-	-	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	-	0.1950	-	-	-	-	-	-	-	-	-
Naphthalene	1.100J	0.2950	5.300J	4.400J	2.600J	41.000	5.300J	-	0.700J	-	-
4-Chloroaniline (TCL)	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobutadiene	-	-	-	-	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	-	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene (TCL)	0.270J	-	1.900J	5.900J	1.400J	9.400	3.700J	-	0.540J	-	-
Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	-	-	-	-	-	-	-	-	-	-	-
2,4,5-Trichlorophenol (TCL)	-	-	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	-	-	-	-	-	-	-	-	-	-	-
2-Nitroaniline (TCL)	-	-	-	-	-	-	-	-	-	-	-
Dimethyl Phthalate	-	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	0.250J	-	0.360J	3.200J	1.000J	1.000J	3.600J	-	0.250J	-	-
3-Nitroaniline (TCL)	-	-	-	-	-	-	-	-	-	-	-
Acenaphthene	0.340J	-	1.700J	14.000	7.300	18.250	13.000	-	-	-	-
2,4-Dinitrophenol	-	-	-	-	-	-	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-	-	-	-	-	-	-
Dibenzofuran (TCL)	0.075J	-	0.430J	1.400J	0.710J	5.100	1.100J	-	0.240J	-	-
2,4-Dinitrotoluene	-	-	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	-	-	-	-	-	-	-	-	-	-	-
Diethyl Phthalate	0.310JB	0.150JB	-	-	-	0.350JB	-	0.170JB	-	-	-
4-Chlorophenyl-Phenylether	-	-	-	-	-	-	-	-	-	-	-
Fluorene	0.100J	-	1.100J	11.000	4.500J	8.200	9.200J	-	0.390J	-	-
4-Nitroaniline (TCL)	-	-	-	-	-	-	-	-	-	-	-
4,6-Dinitro-2-methylphenol	-	-	-	-	-	-	-	-	-	-	-
N-nitrosodiphenylamine	0.130J	0.120J	-	-	-	-	-	0.140J	-	-	-
1,2-Diphenylhydrazine	-	-	-	-	-	-	-	-	-	-	-
4-Bromophenyl-Phenylether	-	-	-	-	-	-	-	-	-	-	-
Hexachlorobenzene	-	-	-	-	-	-	-	-	-	-	-
Pentachlorophenol	-	-	-	-	-	-	-	-	-	-	-
Phenanthrene	1.200J	0.360J	3.600J	47.000	18.000	25.000	34.000	0.840J	2.600J	-	-
Anthracene	0.310J	-	0.470J	15.000	6.300J	7.400J	12.000	-	0.450J	-	-
Di-n-Butyl Phthalate	1.200JB	0.630JB	1.400JB	-	1.100JB	1.500JB	1.450JB	0.400JB	1.200JB	-	-
Fluoranthene	1.400J	0.420J	3.200J	31.000	13.000	16.000	21.000	0.420J	2.200J	-	-
Benzidine	-	-	-	-	-	-	-	-	-	-	-
Pyrene	1.600J	0.330J	3.500J	32.000	15.000	15.000	26.000	0.270J	1.600J	-	-
Butylbenzylphthalate	-	-	-	-	2.800J	-	-	-	-	-	-
3,3'-Dichlorobenzidine	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)Anthracene	1.100J	0.260J	1.800J	22.000	6.000	6.500	14.000	0.160J	1.200J	-	-
bis(2-ethylhexyl)Phthalate	3.550JB	0.430JB	1.700JB	11.000B	4.400JB	0.780JB	1.500JB	13.000B	0.840JB	0.170BJ	-
Chrysene	1.100J	0.240J	1.900J	21.000	9.300	7.700	14.000	0.180J	1.100J	-	-
Di-n-Octyl Phthalate	-	-	-	-	-	-	-	-	-	-	-
Benzo(b)Fluoranthene	1.400J	0.340J	3.000J	-	-	5.300	-	0.160J	1.500J	-	-
Benzo(k)Fluoranthene	-	-	-	27.000	12.000	-	18.000	-	-	-	-
Benzo(a)Pyrene	0.950J	0.240J	1.600J	18.000	8.300	6.400	13.000	-	1.100J	-	-
Indeno(1,2,3,c,d)Pyrene	0.650J	0.150J	-	5.100J	2.600J	2.700J	4.900J	-	1.100J	-	-
Dibenz(a,h)Anthracene	0.170J	-	-	2.500J	1.200J	1.000J	1.800J	-	-	-	-
Benzo(g,h,i)Perylene	0.560J	-	-	5.000J	2.500J	2.300J	3.600J	-	1.100J	-	-
Total Targeted ABNs	13.240J	2.800J	36.100J	272.500J	120.210J	177.300J	146.100J	1.417J	16.510J	-	-
Total ABN TICs	26.050J	13.300J	561.200J	345.600JB	225.400J	93.200J	222.100J	19.710J	61.300J	0.010J	-
Total ABNs	39.335J	16.100J	597.300J	618.170JB	350.610J	272.400J	412.200J	21.122J	57.810J	0.010J	-

NOTES:
PHC = Petroleum Hydrocarbons; VO = Volatile Organic Compounds; ABN = Acid Base Neutral Extractable Organic
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B = Compound Detected in Method Blank; TCL = Target Compound List

TABLE 1
NOVEMBER 1984 SOIL ANALYSES

NSWPDC
Harrison Avenue
Kearny, New Jersey

CONSTITUENTS	SB-1 6004	SB-1 6005	SB-2 6009	SB-2 6010	SB-3 6006	SB-3 6007	SB-3 6008	SB-4 6001	SB-5 6003	FB 1002	TB 1001
PESTICIDES/PCBs											
Alpha-BHC	-	-	-	-	-	-	-	-	-	-	*
Gamma-BHC (Lindane)	-	-	-	-	-	-	-	-	-	-	*
Beta-BHC	-	-	-	-	-	-	-	-	-	-	*
Heptachlor	-	-	-	-	-	-	-	-	-	-	*
Delta-BHC	-	-	-	-	-	-	-	-	-	-	*
Aldrin	-	-	-	-	-	-	-	-	-	-	*
Heptachlor Epoxide	-	-	-	-	-	-	-	-	-	-	*
Endosulfan I (Alpha)	-	-	-	-	-	-	-	-	-	-	*
4,4'-DDE	-	-	-	-	-	-	-	-	-	-	*
Dieldrin	-	-	-	-	-	-	-	-	-	-	*
Endrin	-	-	-	-	-	-	-	-	-	-	*
4,4'-DDD	-	-	-	-	-	-	-	-	-	-	*
Endosulfan II (Beta)	-	-	-	-	-	-	-	-	-	-	*
4,4'-DDT	-	-	-	-	-	-	-	-	-	-	*
Endrin Aldehyde	-	-	-	-	-	-	-	-	-	-	*
Endosulfan Sulfate	-	-	-	-	-	-	-	-	-	-	*
Methoxychlor (TCL)	-	-	-	-	-	-	-	-	-	-	*
Endrin Ketone (TCL)	-	-	-	-	-	-	-	-	-	-	*
Toxaphene	-	-	-	-	-	-	-	-	-	-	*
T. Chlordane	-	-	-	-	-	-	-	-	-	-	*
Aroclor-1016	-	-	-	-	-	-	-	-	-	-	*
Aroclor-1221	-	-	-	-	-	-	-	-	-	-	*
Aroclor-1232	-	-	-	-	-	-	-	-	-	-	*
Aroclor-1242	-	-	-	-	-	-	-	-	-	-	*
Aroclor-1248	-	-	-	-	-	-	-	-	-	-	*
Aroclor-1254	2.140	-	-	-	-	-	-	0.335	-	-	*
Aroclor-1260	-	-	-	-	-	-	-	-	0.335	-	*
Mirex	-	-	-	-	-	-	-	-	-	-	*

NOTES:
PHC = Petroleum Hydrocarbons; VO = Volatile Organic Compounds; ABN = Acid Base Neutral Extractable Organic
- = Not Detected; * = Not Analyzed; J = Detected Below Method Detection Limit
B = Compound Detected in Method Blank; TCL = Target Compound List

TABLE 1
NOVEMBER 1990 GROUNDWATER SAMPLING

NKURDC
Harrison Avenue
Kearny, New Jersey

CONSTITUENT	MW-1 2000	MW-2 2001	MW-4 2002	MW-4D 2006	MW-5 2003	SW-1 2004	SW-2 2005	FB 1001	TB 1000
PHCs	-	2.8	-	-	16.8	38.2	-	-	-
VOC CHEMISTRY									
pH	6.48	11.37	6.62	6.52	6.45	6.56	6.85	7.17	-
Conductivity	1458	3440	2440	2640	1760	750	1340	70	-
Cyanide	-	0.102	-	-	-	-	-	-	-
Phenols	-	4.66	-	-	-	0.644	-	-	-
METALS									
Antimony	-	0.030	-	-	0.017	-	0.012	-	-
Arsenic	0.056	0.050	-	-	0.041	0.037	0.056	-	-
Beryllium	-	-	-	-	-	-	-	-	-
Cadmium	-	-	-	-	0.006	-	-	-	-
Chromium	0.033	14.2	-	-	0.103	0.012	0.044	-	-
Copper	0.143	0.176	-	-	0.677	0.150	0.267	-	-
Lead	0.375	1.66	0.055	0.034	1.57	1.57	0.476	-	-
Mercury	0.001	0.005	-	-	0.016	0.001	0.003	-	-
Nickel	-	0.150	-	-	0.195	-	0.049	-	-
Selenium	-	-	-	-	-	-	-	-	-
Silver	-	-	-	-	-	-	-	-	-
Thallium	-	-	-	-	-	-	-	-	-
Zinc	0.183	1.209	0.091	0.025	0.23	0.197	0.052	-	-
VOLATILE ORGANICS									
Benzene	0.023	0.056	0.024	0.026	-	0.0063	-	-	-
Bromodichloromethane	-	-	-	-	-	-	-	-	-
Bromoform	-	-	-	-	-	-	-	-	-
Bromomethane	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride	-	-	-	-	-	-	-	-	-
Chlorobenzene	0.045	-	0.049	0.050	0.017	-	-	-	-
Chloroethane	-	-	-	-	-	-	-	-	-
2-Chloroethylvinyl Ether	-	-	-	-	-	-	-	-	-
Chloroform	-	-	-	-	-	-	-	-	-
Chloromethane	-	-	-	-	-	-	-	-	-
Dibromochloromethane	-	-	-	-	-	-	-	-	-
1,1-Dichloroethane	-	0.0013	-	-	-	0.0053	-	-	-
1,2-Dichloroethane	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	0.0063	-	-	-	0.072	-	-	-
1,2-Dichloropropane	-	-	-	-	-	-	-	-	-
cis-1,3-Dichloropropene	-	-	-	-	-	-	-	-	-
trans-1,3-Dichloropropene	-	-	-	-	-	-	-	-	-
Ethyl Benzene	-	0.056	-	-	-	0.010	-	-	-
Methylene Chloride	-	0.00139	-	-	-	0.00125	-	-	-
1,1,2,2-Tetrachloroethane	-	-	-	-	-	-	-	-	-
Tetrachloroethene	-	0.0113	-	-	-	0.0043	-	-	-
Toluene	-	0.400	-	-	-	0.075	-	-	-
1,1,1-Trichloroethane	-	-	-	-	-	0.016	-	-	-
1,1,2-Trichloroethane	-	-	-	-	-	-	-	-	-
Trichloroethene	-	0.0243	-	-	-	0.0033	-	-	-
Trichlorofluoromethane	-	-	-	-	-	-	-	-	-
Vinyl Chloride	-	-	-	-	-	-	-	-	-
Xylenes (Total)	-	0.400	0.0043	0.0043	-	0.055	-	-	-
Total Targeted VOs	0.073	1.0253	0.1663	0.2503	0.012	0.1753	-	-	-
Total Non-Targeted VOs	0.0123	0.1743	0.0553	0.3853	0.0043	0.0623	-	-	-
Total VOs	0.0853	1.2263	0.2213	0.3753	0.0163	0.2373	-	-	-
ACID EXTRACTABLES									
2-Chlorophenol	-	-	-	-	-	-	-	-	-
2-Nitrophenol	-	-	-	-	-	-	-	-	-
Phenol	-	1.70	-	-	-	0.042	-	-	-
2,4-Dimethylphenol	-	0.550	-	-	-	0.150	-	-	-
2,4-Dichlorophenol	-	-	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	-	-	-	-	-	-	-	-	-
4-Chloro-3-Methylphenol	-	-	-	-	-	-	-	-	-
2,4-Dinitrophenol	-	-	-	-	-	-	-	-	-
2-Methyl-4,6-Dinitrophenol	-	-	-	-	-	-	-	-	-
Pentachlorophenol	-	-	-	-	-	-	-	-	-
4-Nitrophenol	-	-	-	-	-	-	-	-	-
Total Acid Extractables	-	2.23	-	-	-	0.192	-	-	-

NOTES: All units are ppm.
PHC = Petroleum Hydrocarbons; VO = Volatile Organic Compound; ABN = Acid Base Neutral Extractable Organic; BN = Base Neutral Extractable Organic; - = Not Detected; * = Not Analyzed;
J = Detected Below Method Detection Limit; B = Compound Detected in Method Blank;
TCL = Target Compound List

TABLE 1
NOVEMBER 1990 GROUNDWATER SAMPLING

HRUPDC
Harrison Avenue
Kearny, New Jersey

CONSTITUENT	MW-1 2000	MW-2 2001	MW-4 2002	MW-10 2006	MW-5 2003	SW-1 2004	SW-2 2005	FB 1001	TB 1000
BASE NEUTRAL EXTRACTABLES									
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	*
1,4-Dichlorobenzene	0.[illegible]	-	0.0053	0.0053	0.001J	-	-	-	*
Hexachloroethane	-	-	-	-	-	-	-	-	*
Bis (2-Chloroethyl) Ether	-	-	-	-	-	-	-	-	*
1,2-Dichlorobenzene	-	0.015	-	0.001J	-	-	-	-	*
Bis(2-Chloroisopropyl) Ether	-	-	-	-	-	-	-	-	*
N-Nitroso-di-n-propylamine	-	-	-	-	-	-	-	-	*
Nitrobenzene	-	-	-	-	-	-	-	-	*
Hexachlorobutadiene	-	-	-	-	-	-	-	-	*
1,2,4-Trichlorobenzene	-	-	-	-	-	-	-	-	*
Isophorone	-	-	-	-	-	-	-	-	*
Naphthalene	0.[illegible]J	0.[illegible]	0.0073	0.0073	0.003J	0.011J	-	-	*
Bis(2-Chloroethoxy)methane	-	-	-	-	-	-	-	-	*
Hexachlorocyclopentadiene	-	-	-	-	-	-	-	-	*
2-Chloronaphthalene	-	-	-	-	-	-	-	-	*
Acenaphthylene	-	-	-	-	0.001J	-	-	-	*
Acenaphthene	0.[illegible]J	0.007J	-	0.003J	0.[illegible]J	-	-	-	*
Dimethyl Phthalate	-	-	-	-	-	-	-	-	*
2,6-Dinitrotoluene	-	-	-	-	-	-	-	-	*
Fluorene	0.007J	-	-	-	0.007J	-	-	-	*
4-Chlorophenyl-phenylether	-	-	-	-	-	-	-	-	*
2,4-Dinitrotoluene	-	-	-	-	-	-	-	-	*
Diethylphthalate	-	-	0.01J	0.005J	-	-	-	-	*
N-Nitrosodiphenylamine	-	-	-	-	-	-	-	-	*
Hexachlorobenzene	-	-	-	-	-	-	-	-	*
4-Bromophenyl phenyl ether	-	-	-	-	-	-	-	-	*
Phenanthrene	0.[illegible]J	0.[illegible]J	0.002J	0.003J	0.007J	0.004J	-	-	*
Anthracene	0.[illegible]J	0.[illegible]J	-	-	0.[illegible]J	-	-	-	*
Dibutyl phthalate	0.[illegible]J	-	0.[illegible]J	-	-	-	-	-	*
Fluoranthene	-	-	-	0.001J	0.004J	-	-	-	*
Pyrene	-	0.[illegible]J	-	0.007J	0.[illegible]J	-	-	-	*
Benzidine	-	-	-	-	-	-	-	-	*
Butyl Benzyl Phthalate	-	-	-	-	-	-	-	-	*
Bis (2-Ethylhexyl) Phthalate	-	-	0.004J	0.005J	0.001J	-	-	-	*
Chrysene	-	-	-	0.001J	0.004J	-	-	-	*
Benzo(a)anthracene	-	-	-	-	0.004J	-	-	-	*
3,3'-Dichlorobenzidine	-	-	-	-	-	-	-	-	*
Di-n-octylphthalate	-	-	-	-	-	-	-	-	*
Benzo(b)fluoranthene	-	-	-	-	0.004J	-	-	-	*
Benzo(k)fluoranthene	-	-	-	-	-	-	-	-	*
Benzo(a)pyrene	-	-	-	-	0.003J	-	-	-	*
Indeno(1,2,3-cd)pyrene	-	-	-	-	0.001J	-	-	-	*
Dibenzo(a,h)anthracene	-	-	-	-	-	-	-	-	*
Benzo(g,h,i)perylene	-	-	-	-	0.001J	-	-	-	*
N-Nitrosodimethylamine	-	-	-	-	-	-	-	-	*
Total Targeted BNs	0.026J	0.[illegible]J	0.055J	0.057J	0.056J	0.015J	-	-	*
Total Untargeted ABNs	0.256J	5.[illegible]J	1.[illegible]J	1.[illegible]J	0.[illegible]J	7.310J	-	-	*
Total BNs	0.282J	5.[illegible]J	1.[illegible]J	1.[illegible]J	0.[illegible]J	7.[illegible]J	-	-	*
PESTICIDES/PCBs									
Aldrin	-	-	-	-	-	-	-	-	*
alpha-BHC	-	-	-	-	-	-	-	-	*
beta-BHC	-	-	-	-	-	0.0006	0.0003	-	*
delta-BHC	-	-	-	-	-	-	-	-	*
gamma-BHC (lindane)	-	-	-	-	-	-	-	-	*
Chlordane	-	-	-	-	-	-	-	-	*
4,4'-DDD	-	-	-	-	-	-	-	-	*
4,4'DDE	-	-	-	-	-	-	-	-	*
4,4'DDT	-	-	-	-	-	-	-	-	*
Dieldrin	-	-	-	-	-	-	-	-	*
Endosulfan I	-	-	-	-	-	-	-	-	*
Endosulfan II	-	-	-	-	-	-	-	-	*
Endosulfan sulfate	-	-	-	-	-	-	-	-	*
Endrin	-	-	-	-	-	-	-	-	*
Endrin aldehyde	-	-	-	-	-	-	-	-	*
Heptachlor	-	-	-	-	-	-	-	-	*
Heptachlor epoxide	-	-	-	-	-	-	-	-	*
Toraphene	-	-	-	-	-	-	-	-	*
PCB-1016	-	-	-	-	-	-	-	-	*
PCB-1221	-	-	-	-	-	-	-	-	*
PCB-1232	-	-	-	-	-	-	-	-	*
PCB-1242	-	-	-	-	-	-	-	-	*
PCB-1248	-	-	-	-	-	-	-	-	*
PCB-1254	-	-	-	-	-	-	-	-	*
PCB-1260	-	-	-	-	-	0.0009	-	-	*

NOTES: All units are ppm.
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J = Detected Below Method Detection Limit; B = Compound Detected in Method Blank;
TCL = Target Compound List

TABLE 1
JANUARY 1990 GROUNDWATER SAMPLING

EXXIDC
Harrison Avenue
Kearny, New Jersey

CONSTITUENT	MW-1 2125-1	MW-2 2125-2	MW-4 2125-4	MW-5 2125-5	MW-10 2125-10	TB 2125-T	FB 2125-FB
PHCs	-	5	-	-	-	*	-
METALS							
Antimony	0.002	0.030	0.002	0.010	0.002	*	0.001
Arsenic	0.016	0.060	0.007	0.026	0.013	*	-
Beryllium	0.003	0.005	-	0.007	-	*	-
Cadmium	-	-	-	-	-	*	-
Chromium	-	23	-	-	-	*	-
Copper	-	0.04	-	0.17	-	*	-
Lead	0.012	0.76	0.26	0.70	0.034	*	-
Mercury	-	0.0005	-	0.004	-	*	-
Nickel	-	0.14	-	0.11	-	*	-
Selenium	-	-	-	0.005	-	*	-
Silver	-	-	-	-	-	*	-
Thallium	-	-	-	-	-	*	-
Zinc	0.38	0.58	0.12	1.4	0.21	*	-
VOLATILE ORGANICS							
Acrolein	-	-	-	-	-	-	-
Acrylonitrile	-	-	-	-	-	-	-
Benzene	0.021	0.0003	0.027	0.0012	0.030	-	-
Bromoform	-	-	-	-	-	-	-
Bromomethane	-	-	-	-	-	-	-
Carbon Tetrachloride	-	-	-	-	-	-	-
Chlorobenzene	0.025	-	0.140	0.0012	0.037	-	-
Dibromochloromethane	-	-	-	-	-	-	-
Chloroethane	-	-	-	-	-	-	-
2-Chloroethylvinyl Ether	-	-	-	-	-	-	-
Chloroform	-	-	-	-	-	-	-
Chloromethane	-	-	-	-	-	-	-
Bromodichloromethane	-	-	-	-	-	-	-
1,1-Dichloroethane	-	-	-	-	-	-	-
1,2-Dichloroethane	-	0.0003	-	-	-	-	-
1,1-Dichloroethene	-	-	-	-	-	-	-
trans-1,2-Dichloroethene	-	0.0002	-	-	-	-	-
1,2-Dichloropropane	-	-	-	-	-	-	-
cis-1,3-Dichloropropene	-	-	-	-	-	-	-
trans-1,3-Dichloropropene	-	-	-	-	-	-	-
Ethyl Benzene	-	0.0003	0.0003	-	0.0011	-	-
Methylene Chloride	0.0033	1.1000	0.0058	0.0056	0.0035	0.0003	0.0150
1,1,2,2-Tetrachloroethane	-	-	-	-	-	-	-
Tetrachloroethene	-	-	-	-	-	-	-
Toluene	0.00020	0.00035	0.00020	0.00020	0.00020	-	-
1,1,1-Trichloroethane	-	-	-	-	-	-	-
1,1,2-Trichloroethane	-	-	-	-	-	-	-
Trichloroethene	-	-	-	-	-	-	-
Vinyl Chloride	-	-	-	-	-	-	-
Acetone (TCL)	-	2.0000	-	-	-	-	-
Carbon Disulfide (TCL)	-	-	-	-	-	-	-
2-Hexanone (TCL)	0.0023	-	-	-	-	-	-
2-Butanone (TCL)	0.00020	0.00035	0.0025	0.00020	0.00020	0.0120	0.00020
4-Methyl-2-Pentanone (TCL)	-	0.00020	0.00020	0.00020	0.00020	-	-
Styrene (TCL)	-	-	-	-	-	-	-
Vinyl Acetate (TCL)	-	-	-	-	-	-	-
Total Xylenes (TCL)	0.0033	0.0002	0.0153	-	0.0033	-	-
Total Targetted VOs	0.0553	0.3553	0.1863	0.0223	0.0773	-	-
Total Non-Targetted VOs	0.3153	-	0.1303	0.0473	-	-	-
Total VOs	0.0653	0.3553	0.3163	0.0653	0.0773	-	-
ACID EXTRACTABLES							
Phenol	-	1.200	-	-	-	*	-
2-Chlorophenol	-	-	-	-	-	*	-
2-Nitrophenol	-	-	-	-	-	*	-
2,4-Dimethylphenol	-	0.310	-	-	-	*	-
2,4-Dichlorophenol	-	-	-	-	-	*	-
4-Chloro-3-Methyl Phenol	-	-	-	-	-	*	-
2,4,6-Trichlorophenol	-	-	-	-	-	*	-
2,4-Dinitrophenol	-	-	-	-	-	*	-
4-Nitrophenol	-	-	-	-	-	*	-
2-Methyl-4,6-Dinitrophenol	-	-	-	-	-	*	-
Pentachlorophenol	-	-	-	-	-	*	-
2-Methylphenol (TCL)	-	0.290	-	-	-	*	-
4-Methylphenol (TCL)	-	0.700	-	-	-	*	-
2,4,5-Trichlorophenol (TCL)	-	-	-	-	-	*	-
Total Acid Extractables	-	2.500	-	-	-	*	-

NOTES: All units are ppm.
PHC = Petroleum Hydrocarbons; VO = Volatile Organic Compound; ABN = Acid Base Neutral Extractable Organic; BN = Base Neutral Extractable Organic; - = Not Detected; * = Not Analyzed; J = Detected Below Method Detection Limit; B = Compound Detected in Method Blank; TCL = Target Compound List

TABLE 1
JANUARY 1990 GROUNDWATER SAMPLING

HKURDC
Harrison Avenue
Kearny, New Jersey

CONSTITUENT	MW-1 2125-1	MW-2 2125-2	MW-4 2125-4	MW-5 2125-5	MW-1D 2125-1D	TB 2125-T	FB 2125-FB
BASE NEUTRAL EXTRACTABLES							
Acenaphthene	0.002J	-	0.002J	0.001J	0.004J	*	-
Acenaphthylene	-	-	-	-	-	*	-
Anthracene	-	-	-	-	-	*	-
Benzidine	-	-	-	-	-	*	-
Benzo (a) Anthracene	-	-	-	-	-	*	-
Benzo (a) Pyrene	-	-	-	-	-	*	-
Benzo (b) Fluoranthene	-	-	-	-	-	*	-
Benzo (g,h,i) Perylene	-	-	-	-	-	*	-
Benzo (k) Fluoranthene	-	-	-	-	-	*	-
bis (2-Chloroethoxy) Methane	-	-	-	-	-	*	-
bis (2-Chloroethyl) Ether	-	-	-	-	-	*	-
bis (2-Chloroisopropyl) Ether	-	-	-	-	-	*	-
bis (2-ethylhexyl) Phthalate	0.004JB	0.034JB	0.037B	0.017B	0.012JB	*	0.006JB
4-Bromophenyl-Phenyl Ether	-	-	-	-	-	*	-
Butyl Benzyl Phthalate	-	0.003J	-	-	-	*	-
2-Chloronaphthalene	-	-	-	-	-	*	-
4-Chlorophenyl-Phenyl Ether	-	-	-	-	-	*	-
Chrysene	-	-	-	-	-	*	-
Dibenzo (a,h) Anthracene	-	-	-	-	-	*	-
Dibenzofuran (TCL)	-	-	-	-	-	*	-
1,2-Dichlorobenzene	-	0.017J	-	-	-	*	-
1,3-Dichlorobenzene	-	-	-	-	-	*	-
1,4-Dichlorobenzene	0.002J	-	0.004J	-	0.003J	*	-
3,3'-Dichlorobenzidine	-	-	-	-	-	*	-
Diethyl Phthalate	0.006J	-	0.032	0.012J	0.037	*	-
Dimethyl Phthalate	-	-	-	-	-	*	-
Di-n-Butyl Phthalate	0.001J	0.006J	0.003J	0.001J	0.001J	*	-
2,4-Dinitrotoluene	-	-	-	-	-	*	-
2,6-Dinitrotoluene	-	-	-	-	-	*	-
Di-n-Octyl Phthalate	-	-	-	-	-	*	-
1,2-Diphenylhydrazine	-	-	-	-	-	*	-
Fluoranthene	-	0.002J	-	-	-	*	-
Fluorene	0.001J	-	-	-	0.002J	*	-
Hexachlorobutadiene	-	-	-	-	-	*	-
Hexachlorocyclopentadiene	-	-	-	-	-	*	-
Hexachlorobenzene	-	-	-	-	-	*	-
Hexachloroethane	-	-	-	-	-	*	-
Indeno (1,2,3-cd) Pyrene	-	-	-	-	-	*	-
Isophorone	-	-	-	-	-	*	-
2-Methylnaphthalene (TCL)	0.001J	0.037J	-	-	0.002J	*	-
Naphthalene	0.001J	0.276	0.004J	0.001J	0.001J	*	-
Nitrobenzene	-	-	-	-	-	*	-
N-nitrosodimethyl Amine	-	-	-	-	-	*	-
N-Nitroso-Di-n-Propylamine	-	-	-	-	-	*	-
N-nitrosodiphenylamine	-	-	-	-	-	*	-
Phenanthrene	0.001J	0.006J	-	0.001J	0.002J	*	-
Pyrene	-	0.002J	-	-	-	*	-
1,2,4-Trichlorobenzene	-	-	-	-	-	*	-
Benzoic Acid	-	-	-	-	-	*	-
Benzyl Alcohol (TCL)	-	-	-	-	-	*	-
4-Chloroaniline (TCL)	-	-	-	-	-	*	-
2-Nitroaniline (TCL)	-	-	-	-	-	*	-
3-Nitroaniline (TCL)	-	-	-	-	-	*	-
4-Nitroaniline (TCL)	-	-	-	-	-	*	-
Total Targetted BNs	0.023J	0.154J	0.045J	0.016J	0.053J	*	-
Total Targetted ABNs	0.117J	0.750J	0.597J	0.255J	0.275J	*	-
Total BNs	0.140J	0.564J	0.656JB	0.271J	0.328J	*	-

NOTES: All units are ppm.
PHC = Petroleum Hydrocarbons; VO = Volatile Organic Compound; ABN = Acid Base Neutral Extractable Organic; BN = Base Neutral Extractable Organic; - = Not Detected; * = Not Analyzed;
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TCL = Target Compound List

TABLE 1
JANUARY 1990 GROUNDWATER SAMPLING

NKURDC
Harrison Avenue
Kearny, New Jersey

CONSTITUENT	MW-1 2125-1	MW-2 2125-2	MW-4 2125-4	MW-5 2125-5	MW-10 2125-10	TB 2125-7	FB 2125-8
PESTICIDES/PCBs							
Alpha-BHC	-	-	-	-	-	*	-
Gamma-BHC (Lindane)	-	-	-	-	-	*	-
Beta-BHC	-	-	-	-	-	*	-
Heptachlor	-	-	-	-	-	*	-
Delta-BHC	-	-	-	-	-	*	-
Aldrin	-	-	-	-	-	*	-
Heptachlor epoxide	-	-	-	-	-	*	-
Endosulfan I (alpha)	-	-	-	-	-	*	-
4,4-DDE	-	-	-	-	-	*	-
Dieldrin	-	-	-	-	-	*	-
Endrin	-	-	-	-	-	*	-
4,4-DDD	-	-	-	-	-	*	-
Endosulfan II (beta)	-	-	-	-	-	*	-
4,4-DDT	-	-	-	-	-	*	-
Endrin Aldehyde	-	-	-	-	-	*	-
Endosulfan Sulfate	-	-	-	-	-	*	-
Methoxychlor (TCL)	-	-	-	-	-	*	-
Endrin Ketone (TCL)	-	-	-	-	-	*	-
Toxaphene	-	-	-	-	-	*	-
T. Chlordane	-	-	-	-	-	*	-
Aroclor-1016	-	-	-	-	-	*	-
Aroclor-1221	-	-	-	-	-	*	-
Aroclor-1232	-	-	-	-	-	*	-
Aroclor-1242	-	-	-	-	-	*	-
Aroclor-1248	-	-	-	-	-	*	-
Aroclor-1254	-	-	-	-	-	*	-
Aroclor-1260	-	-	-	-	-	*	-
WET CHEMISTRY							
pH	6.39	10.57	6.40	6.67	-	*	-
CONDUCTIVITY	1663	3150	2442	1567	-	*	-
CYANIDE	-	0.076	-	-	-	*	-
PHENOLS	0.055	1.0	0.057	-	-	*	-

NOTES: All units are ppm.
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J = Detected Below Method Detection Limit; B = Compound Detected in Method Blank;
TCL = Target Compound List

TABLE 2

NJDEP GUIDELINE VALUES

SOIL

COMPOUND	ACTION LEVEL (Mg/Kg)
Antimony (Sb)	2
Arsenic (As)	20
Beryllium (Be)	4
Cadmium (Cd)	3
Chromium (Cr)	100
Copper (Cu)	170
Lead (Pb)	250-1000
Mercury (Hg)	1
Nickel (Ni)	100
Selenium (Se)	4
Silver (Ag)	5
Thallium (Tl)	5
Zinc (Zn)	350
Cyanide (Cn)	12
Total Volatiles	1
Total Base Neutrals	10
Total Acid Extractables	10
PCBs	5
PCB wipe test (indoor)	10ug/100 cm^2
(outdoor)	100 ug/100 cm^2
Petroleum Hydrocarbons (PHC)	100

GROUNDWATER

COMPOUND	ACTION LEVEL (Mg/Kg)
Arsenic (As)	0.05
Barium (Ba)	1.0
Cadmium (Cd)	0.01
Chromium (Cr)	0.05
Lead (Pb)	0.05
Mercury (Hg)	0.002
Selenium (Se)	0.01
Silver (Ag)	0.05
Copper (Cu)	1.0
Zinc (Zn)	5.0
Cyanide (Cn)	0.2
Total Volatiles	0.01
Total Base Neutrals	0.05
Total Acid Extractables	0.05
Specific Volatile or Base Neutral Compound	0.005
PCBs	1.0
Petroleum Hydrocarbons (PHC)	1.0

REFERENCE NO. 10

GERAGHTY & MILLER SPECIAL REPORT

The New Jersey Ground-Water Situation

by David W. Miller

August, 1979 (see Telecon note - 02-8803-32-SI

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THE AQUIFER SYSTEMS

For a general discussion of ground-water conditions in New Jersey, the state can be divided into three broad geographic areas based on the distinctive rock types that occur in each (Figure 1). The Coastal Plain physiographic province is the largest area, and encompasses more than 5,000 square miles in the southern portion of the state. The geology of the Coastal Plain is characterized by a southeasterly dipping and thickening sequence of unconsolidated sediments.

The Triassic Lowlands are underlain by thousands of feet of red shale, with some sandstone, siltstone, conglomerate, basalt and diabase. The geologic formations in the Highlands region consist of hard crystalline rocks such as the Precambrian gneisses and quartzites; carbonates, such as the Kittatinny limestone; and relatively dense sandstones, conglomerates and shales, such as the Martinsburg.

Bedrock in both the Triassic Lowlands and the Highlands is overlain by unconsolidated deposits of glacial origin. In places, these surficial deposits are thick and permeable, and are commonly in direct hydraulic connection with the underlying bedrock and adjacent streams, rivers, and lakes.

THE TRIASSIC LOWLANDS AND THE HIGHLANDS REGION OF NORTHERN NEW JERSEY

The geology and hydrology of northern New Jersey are considerably more complex than the Coastal Plain region. To simplify, it has been divided into two broad areas, the Triassic Lowlands and the Highlands Region (Figure 1). Unlike the Coastal Plain, where the aquifers consist of extensive beds of unconsolidated deposits, the primary water-bearing units in northern New Jersey are sedimentary and crystalline rocks (Figure 11). These vary considerably in their ability to yield water, depending on rock type and location. Both regions are also heavily dependent upon unconsolidated glacial deposits for water supply and where these occur in buried, eroded rock channels and are thick and permeable, the glacial sediments represent the most important source of ground water in both the Triassic Lowlands and the Highlands. Figure 12 shows the general major deposits of glacial origin that may have some ground-water potential.

Geology and Hydrology

Triassic Sediments: The Triassic Lowlands are almost entirely underlain by sedimentary Brunswick Shale. Although its primary permeability is low, appreciable amounts of water are found in joints and fractures. However, unless a significant number of these joints and fractures are penetrated by a well, yields can be relatively small. The direction of highest permeability and of the greatest movement of water in response to pumping tends to parallel the strike of the beds, generally southwest to northeast.

In general, the principal water-bearing zone of the Triassic rocks ranges from less than 200 feet to 600 feet in depth. The median depth of industrial and municipal supply wells in Bergen County is 260 feet. High-yield wells tapping this aquifer in Essex County are between 300 and 400 feet deep. There appears to be a direct relationship between well yield and thickness of overlying unconsolidated glacial deposits. Wells generally produce more where the overlying deposits are relatively thick, stratified, and coarse-grained. These surface deposits are often in direct hydraulic connection with the bedrock, and act as a source of recharge because of their greater capacity to receive and store precipitation (Figure 12).

A number of high capacity wells tap the Triassic rocks. In Essex County, yields of 35 public supply, industrial, and commercial wells range from 35 to 820 gpm (gallons per minute) and average 364 gpm. Wells over 300 feet deep and larger than 8 inches in diameter have a median yield of 230 gpm in Passaic County. However, the ability to develop high capacity wells is not uniform throughout the region. Many wells drilled during exploration programs are never equipped as production wells because of poor yields.

Igneous rocks associated with the sedimentary formations, principally diabase and basalts, are highly resistant to erosion and form the ridges of the Watchung Mountains and the Palisades. They are poor aquifers, tapped primarily for domestic purposes by wells yielding 5 gpm or less.

Precambrian Rocks and Paleozoic Sediments: The Highlands Region is underlain by dense bedrock of limited ground-water potential. Rocks in the area immediately adjacent to the Triassic Lowlands, and situated in a northeast-southwest band through the central portion of northern New Jersey, consist chiefly of Precambrian gneisses (Figure 11). These crystalline rock formations contain ground water in joints and fractures of limited extent and storage capability. Well yields are relatively small, seldom over 150 gpm. In Sussex County, 45 percent of the domestic wells tapping the Precambrian gneiss yield 5 gpm or less.

Several very dense limestone formations containing solution cavities are associated with the Precambrian gneisses. In rare instances where these cavities have been penetrated by wells, yields can exceed several hundred gpm. In most cases, ground water is contained in joints and fractures which typically yield 15 gpm or less to wells.

The northwestern portion of the state is characterized by a parallel series of valleys and ridges composed of Paleozoic age sedimentary rocks (Figure 11). The ridges are resistant limestones, sandstones, and conglomerates. The valleys are underlain by softer shales, siltstones, calcareous shales, and limestones. Although these rocks are not good aquifers, they are an important source of water for domestic wells. The only exception is the Kittatinny Limestone, which underlies portions of Sussex, Warren, and Hunterdon Counties. In Hunterdon County, industrial wells tapping this formation and penetrating solution cavities typically yield 400 gpm; a few produce as much as 1,500 gpm.

Glacial Sediments: Unconsolidated deposits overlying rock in northern New Jersey consist generally of till, clay, or stratified drift. These deposits are thickest in the valleys and thin or absent in upland areas. Permeable sands and gravels contained within the valley fill sediments that are suitable for ground-water development range in thickness from 50 to several hundred feet. Individual beds that can support high capacity wells are not extensive, and lithology may change radically over as little as 100 feet within the same valley. Well yields commonly reported for the glacial sediments represent successful wells located from a program of test drilling and pumping.

Although the rock aquifers have been mapped in some detail throughout both the Triassic Lowlands and the Highlands Region, the areal extent of important glacial aquifers is relatively unknown except in some of the more heavily developed areas of eastern Morris and western Essex Counties, Union County, the Ramapo River subbasin, and the Rockaway River subbasin (Figure 12).

Public supply and industrial wells tapping the more permeable stratified drift are almost uniformly capable of producing several hundred thousand gpd to more than one mgd. For example, yields of wells completed in Union County in 50 to 200 feet of sand and gravel sediments in Kenilworth-Newark Valley, Summit Valley, Union Valley, and Rahway Valley, average approximately 400 gpm. Wells in Essex and Morris Counties tapping glacial sands and gravels adjacent to the Passaic River and its tributaries produce one to 1.5 mgd. Total pumpage from the system of buried valleys in this latter area is about 20 mgd, with the highest yields from formations receiving recharge from adjacent streams.

Relationship Between Ground and Surface Water

Little effort has been devoted to establishing the relationship between ground-water withdrawals and streamflow in northern New Jersey. Many planners and regulatory personnel consider surface water and ground water as different resources. In fact, diversions have been awarded individually for either surface-water rights or ground-water rights in the same basin. The impacts of the aggregate diversion of the two interrelated resources are rarely investigated in detail.

Studies of the Ramapo River subbasin indicate that the Ramapo River is a losing stream during part of the year over a portion of its reach; at times it is a losing stream for its entire length from the state line to Pompton Lake. Generally, this seepage loss extends further downstream as the summer season continues. Much of the loss is attributable to ground-water pumpage along the Ramapo channel, substantiating the ability of ground-water pumpage within the basin to reduce river flow and at times actually cause river water to recharge the aquifer.

The Rockaway River subbasin, like the Ramapo, is an area where ground-water pumpage from the stratified drift along the river has an effect on streamflow during dry periods. Jersey City diverts water for public supply from the Boonton Reservoir on the Rockaway River downstream of these ground-water diversions, and a planned expansion of the area's sewage treatment plant will increase the consumptive use of ground water by 2020. Domestic sewage previously discharged back into the ground-water system via

cesspools and septic tanks will be discharged downstream of the reservoir, and will reduce ground-water recharge and streamflow.

There are several other locations where ground-water pumpage may be contributing to low streamflow. In the Whippany, Upper Passaic, and Lower Passaic River subbasins, the volume of reported public supply and industrial ground-water pumpage, together with grandfather rights pumpage, significantly affect the streams during low flow periods. The problem also is aggravated by the diversion of potential recharge out of the area through sewer systems. Surface-water resources in these basins are extensively developed for supply and receive and dilute waste water.

Other factors also distort the natural water balance between streams and aquifers. Intensive urbanization, e.g., widespread paving of aquifer recharge areas and construction of storm drains, reduces ground-water recharge and makes less water available to streams between periods of rainfall. The interrelationship of all factors must be considered in order to manage ground-water withdrawals where they are likely to impact surface-water resources.

Ground-Water Availability

The recharge of ground-water systems by precipitation in northern New Jersey is highly variable, and depends on factors such as the nature of surficial deposits, topography, rock lithology, and structural features. The storage capacity of rocks of the Triassic Lowlands, as well as most of the Precambrian and Paleozoic age rocks of the Highlands Region is low and

unevenly distributed: these rocks can be dewatered much more easily than the Coastal Plain sands. This is especially true if the water level in the rocks drops below the fractures which serve as major water producing zones.

Under pumping conditions some of the rock aquifers in northern New Jersey exhibit directional hydraulic behavior. At a given distance from a pumping well, water-level drawdowns are usually greater parallel to the strike, or bedding, of the rocks, than perpendicular to it. These factors make the prediction of maximum yields in the northern part of the state more difficult: detailed site-specific data are necessary in most areas.

Natural recharge rates to valley fill sediments may be as high as one mgd per square mile and additional recharge may be induced from an adjacent stream. Since many streams in northern New Jersey are utilized for community supply, and much of their flow is already committed to present or future river intake systems and impoundments, management decisions regarding greatly increased pumpage from alluvial deposits must be made with great care on an individual case-by-case basis.

Although the glacial deposits represent a major aquifer system and can generally yield larger quantities of water than rock aquifers, they are relatively thin and limited in extent. Thus, where recharge from surface-water bodies is not sufficient to meet the demands of local heavy pumpage, dewatering of these aquifers can take place, resulting in lowered water levels and declining yields.

Ground-water availability and problems resulting from excessive withdrawals are usually discussed in terms of an aquifer's "safe yield". Studies done for various counties have attempted to estimate this value for each county. However, from a planning viewpoint, safe yield should be considered as the greatest amount of ground water that can be used consumptively over a long term without causing undesirable effects. Depending on the area, these effects may include reducing streamflow, lowering lake levels, and dewatering shallow wells as a result of a falling water table.

Most reports equate safe yield with the pumpage which will approach, but not exceed, the average recharge rate for the study area. While maintaining the amount of pumpage below the average recharge rate will not cause ground-water mining (loss of ground water from storage for an indefinite period), it can result in a temporary loss of storage and in water-level declines until a new equilibrium elevation is reached. Actually, maximum potential yield depends on a wide range of prevailing hydrologic and environmental relationships in a particular area.

Another complicating factor in the intelligent management of the resource is consumptive use of ground water, i.e., where water is not returned to the ground-water system from which it was removed. On-lot septic systems and wells which recharge industrial process or cooling waters return water to the ground and do not represent consumptive uses. Wastewater discharges to sewers, which in turn discharge to surface waters, are assumed to be consumptive, and are an important factor in reducing ground-water availability, especially in northeastern New Jersey (Figure 13).

special concern, and severe water-level declines will continue unless effective water management plans are implemented.

Hudson County: Water quality is a major constraint on ground-water development in Hudson County. Ground-water quality in the unconsolidated deposits in the Hackensack Meadows is greatly influenced by the poor quality of the Hackensack River, and by tidal flooding of the meadows. Heavy pumping at Hackensack and near North Bergen has induced poor quality water from the Hackensack River into the sand and gravel aquifers. High chloride water in the lower Hackensack River is unsuitable for most municipal and industrial processes except cooling.

Hunterdon County: Northwestern portions of Hunterdon County rely heavily on surface water from the Musconetcong and Delaware Rivers, while ground water supplies most of the remaining area. About 25 percent of all the public utilities obtain their supplies from surface-water bodies, 40 percent rely on ground water, and the remainder use a combination of both.

Public supply and industrial pumpage is distributed unevenly throughout Hunterdon County. The greatest local consumption occurs in the southeastern portion, principally from rock aquifers. Glacial drift deposits along the Delaware River have supplied about 10 percent of Hunterdon's groundwater demands, and could supply considerably more in the future.

Mercer County: Approximately 30 mgd of Mercer County's total usage is surface water, derived principally from the Delaware River drainage basin in the western half of the county which includes about 80 percent of its

REFERENCE NO. 11

THE LATEST TRIASSIC AND EARLY JURASSIC FORMATIONS OF THE NEWARK BASIN (EASTERN NORTH AMERICA, NEWARK SUPERGROUP): STRATIGRAPHY, STRUCTURE, AND CORRELATION

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ABSTRACT. *Newark Supergroup deposits of the Newark Basin (New York, New Jersey, and Pennsylvania) are here divided into nine formations called (from the bottom up): Stockton Formation (maximum 1800 m); Lockatong Formation (maximum 1150 m); Passaic Formation (maximum 6000 m); Orange Mountain Basalt (maximum 200 m); Feltville Formation (maximum 600 m); Preakness Basalt (maximum +300 m); Towaco Formation (maximum 340 m); Hook Mountain Basalt (maximum 110 m); and Boonton Formation (maximum +500 m). The latter seven formations are new and result from subdividing the Brunswick Formation and Watchung Basalt of Kümmel and Darton. Each formation is characterized by its own suite of lithologies, the differences being especially obvious in the number, thickness, and nature of their gray and black sedimentary cycles (or lack thereof).*

Newark Basin structure still escapes comprehensive understanding, although it is clear that faults (predominantly normal) and onlaps bound both the eastern and western edges of the basin. The cumulative thickness of formations and the apparent movement of the faults is greater on the western than the eastern side, however.

Fossils are abundant in the sedimentary formations of the Newark Basin and provide a means of correlating the sequence with other early Mesozoic areas. The Stockton, Lockatong, and most of the Passaic Formation are Late Triassic (?Middle and Late Carnian — Rhaetic) while the uppermost Passaic Formation (at least locally) and younger beds appear to be Early Jurassic (Hettangian and Sinemurian) in age. The distribution of kinds of fossils is intimately related to sequences of lithologies in sedimentary cycles.

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INTRODUCTION

Despite well over a century of interest in the early Mesozoic Newark Supergroup of eastern North America, many fundamental aspects of its historical and structural geology remain unexplored. In part, this is due to the complexity of stratigraphic and structural relations in the individual basins, coupled with the rarity of continuous exposures. As a result, much of our accepted understanding of the Newark Supergroup has been based on incomplete observations and opinion. The purpose of this paper is to provide a more thorough observational foundation against which past hypotheses may be assessed and on which future work may be based. Emphasis is placed on the younger beds of the Newark Basin, for they have never been examined in detail, and a new stratigraphic framework is proposed. These younger Newark Basin beds provide us with a key to understanding the entire basin column, which in turn is crucial to the context in which early Mesozoic organic evolution, continental sedimentation, and tectonic development are to be studied.

REGIONAL SETTING

Triassic and Jurassic Newark Supergroup rocks (Figure 1) (Olsen, 1978; Van Houten, 1977) occupy numerous elongate basins in eastern North America and consist of predominantly detrital fill locally more than 10,000 m thick. In most

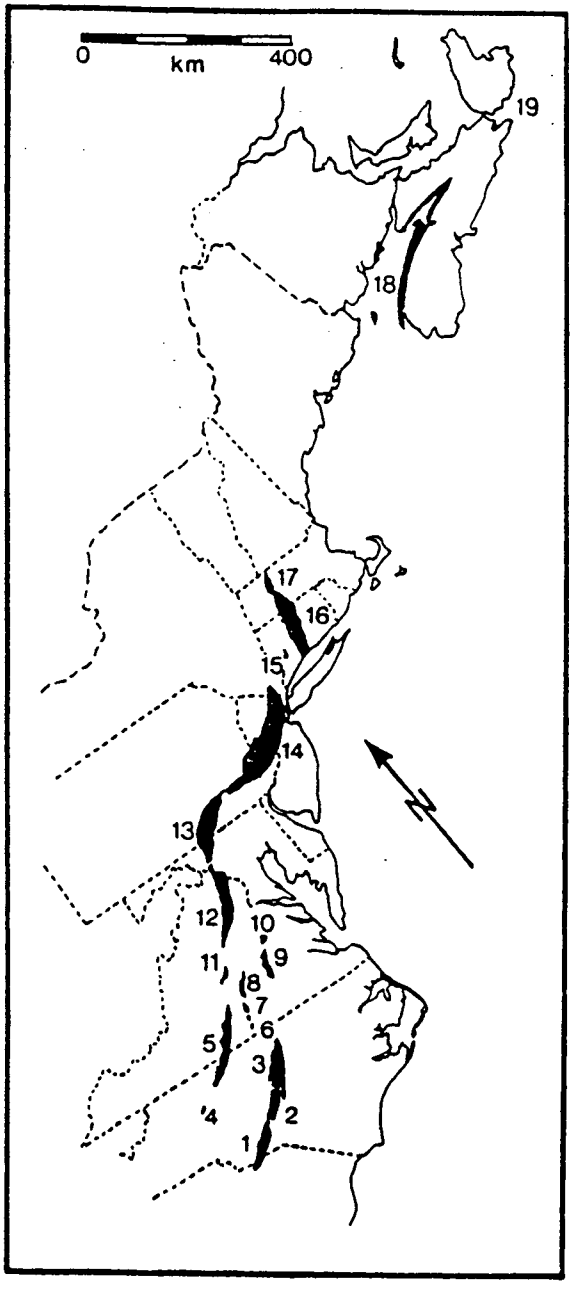

FIG. 1. Newark Supergroup deposits exposed in eastern North America: 1. Wadesboro Basin of Chatham Group; 2. Sanford Basin of Chatham Group; 3. Durham Basin of Chatham Group; 4. Davie County Basin; 5. Dan River — Danville Basins of Dan River Group; 6. Scottsburg Basin; 7. Basins south of the Farmville Basin; 8. Farmville Basin. 9. Richmond Basin; 10. Taylorsville Basin; 11. Scotsville Basin; 12. Culpeper Basin (Culpeper Group; 13. Gettysburg Basin; 14. Newark Basin; 15. Pomperaug Basin; 16. Hartford Basin; 17. Deerfield Basin; 18. Fundy Basin (Fundy Group); 19. Chedabucto Basin (= Orpheus Graben?). Data primarily from Calver, 1963, King, *et al.*, 1944; Van Houten, 1977; and Olsen, 1978.

areas, red clastics are the dominant sedimentary rocks and tholeiitic, intrusive and extrusive diabases and basalts are the most common volcanics. These unconformably overlie (or rarely intrude) Precambrian and Palaeozoic rocks and are overlain by post-Jurassic rocks of the Coastal Plain, or alluvium and soils.

The Newark Basin is the most northerly of three Newark Supergroup basins lying in an arcuate belt stretching from southern New York to central Virginia (Figure 2). The region has attracted the attention of researchers since the beginnings of North American geological work (Kalm, 1753-1761; Schopf, 1783-1784); by about 1890 the deposit had been mapped out (Lyman, 1895; Cook, 1868) and by 1900 the currently used rock-stratigraphic framework was established (Table 1). Kümmel (1897) divided the Newark Basin sequence into three formations: the Stockton, Lockatong, and Brunswick. As recognized by Kümmel, the Stockton Formation (maximum thickness 1800 m) is the basal deposit consisting of thick beds of buff or cream colored conglomerate and sandstone, and red siltstone and sandstone. Throughout the exposed central portion of the Newark Basin, Kümmel recognized the Lockatong Formation (maximum thickness 1150 m) which is made up of gray and black siltstone arranged, as later shown by Van Houten (1969), in distinctive sedimentary cycles (Figure 4). The youngest formation Kümmel called the Brunswick. Throughout the Newark Basin, the lower Brunswick consists of sandstone and conglomerate and clusters of laterally persistent cycles of gray and black siltstone similar to the Lockatong Formation (Kümmel, 1897, 1898; McLaughlin, 1943; Van Houten, 1969). The upper Brunswick, on the other hand, is made up of three major extrusive basalt sheets which Darton (1890) called the Watchung Basalt, two major interbedded sedimentary units, and a thick overlying sedimentary unit. The latter sedimentary sequences have escaped even preliminary lithologic description.

Field work by this author during the past few years has shown that Kümmel's Brunswick For-

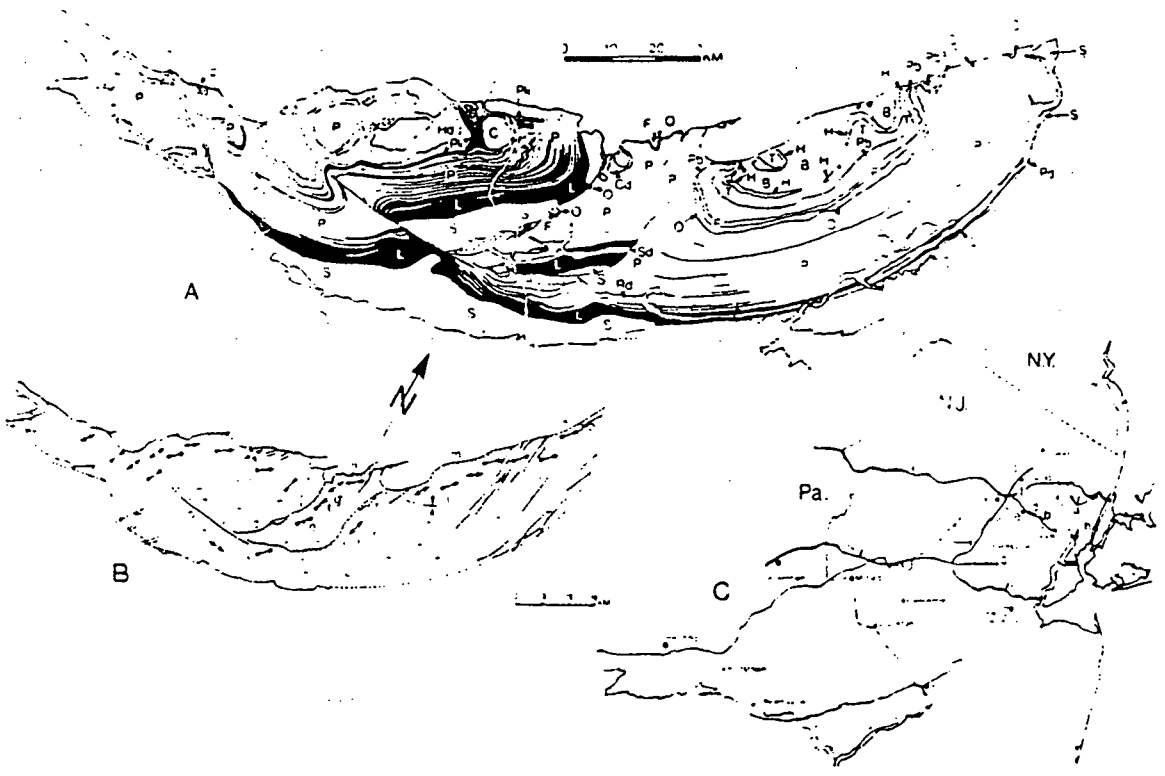

FIG. 2. The Newark Basin. A. geologic map showing distribution of formations, conglomerate facies (irregular stipple), and major clusters of detrital cycles in Passaic Formation (black lines). Abbreviations of formations and intrusive bodies as follows: B. Boonton Formation; C. Coffman Hill Diabase; Cd. Cushetunk Mountain Diabase; F. Feltville Formation; H. Hook Mountain Basalt; Hd. Haycock Mountain Diabase; Jb. Jacksonwald Basalt; L. Lockatong Formation; O. Orange Mountain Basalt; P. Passaic Formation; Pb. Preakness Basalt; Pd. Palisade Diabase; Pk. Perkasie Member of Passaic Formation; Rd. Rocky Hill Diabase; S. Stockton Formation; Sd. Sourland Mountain Diabase; T. Towaco Formation.

B. Structural diagram of Newark Basin (note — parts of basin margin not mapped as faults should be regarded as onlaps, faults with teeth on downthrown side): a. Jacksonwald Syncline; b. Chalfont Fault; c. Hopewell Fault; d. Flemington Fault; e. Sand Brook Syncline; f. Flemington Syncline; g. Cushetunk Mountain Anticline; h. New Germantown Syncline; i. Somerville Anticline; j. New Vernon Anticline; K. Ladentown Syncline; l. Watchung Syncline; m. Ramapo Fault.

C. Geographic map of Newark Basin showing locations of type sections of formations proposed in this paper: a. type section of Passaic Formation; b. type section of Orange Mountain Basalt; c. type section of Feltville Formation; d. type section of Preakness Basalt; e. type section of Towaco Formation in Roseland, New Jersey; f. type section of Hook Mountain Basalt in Pine Brook, New Jersey; g. type section of Boonton Formation in Boonton, New Jersey; h. Lincoln Tunnel, Weehawken, New Jersey.

Data for A, B, and C from original observation and Kümmel, 1897, 1898; Lewis and Kümmel, 1910-1912; Darton, 1890, 1902; Darton *et al.*, 1908; Glaeser, 1963; Sanders, 1962; Van Houten, 1969; McLaughlin, 1941, 1943, 1944, 1945, 1946a, 1946b; Bascom *et al.*, 1909a, 1909b; Bailey *et al.*, 1914; Willard *et al.*, 1959; Manspiezer; pers. comm.

mation consists of a heterogenous mix of major units of differing and distinctive lithology, each as distinct and perhaps originally as widespread as the Stockton or Lockatong; further, each "Watchung Basalt" and the interbedded and overlying sedimentary beds are lithologically distinct from the lower Brunswick. In addition, Cornet, McDonald, and Traverse (1973), Cornet and Traverse (1975), Cornet (1977), and Olsen and Galton (1977) have shown that much of the

upper Brunswick is Early Jurassic rather than Late Triassic as had been assumed. It now seems clear that these Jurassic rocks are in many ways different from the Late Triassic lower Brunswick, Lockatong, or Stockton formations. For these reasons, I propose the terms Brunswick Formation (Kümmel, 1897) and Watchung Basalt (Darton, 1890) be dropped and their components subdivided to form seven new formations (Table 1) in parallel with Lehmann's (1959) widely used divisions of the Hartford Basin and Klein's (1962) divisions of the Fundy Group in accord with the American Code of Stratigraphic Nomenclature and the International Stratigraphic

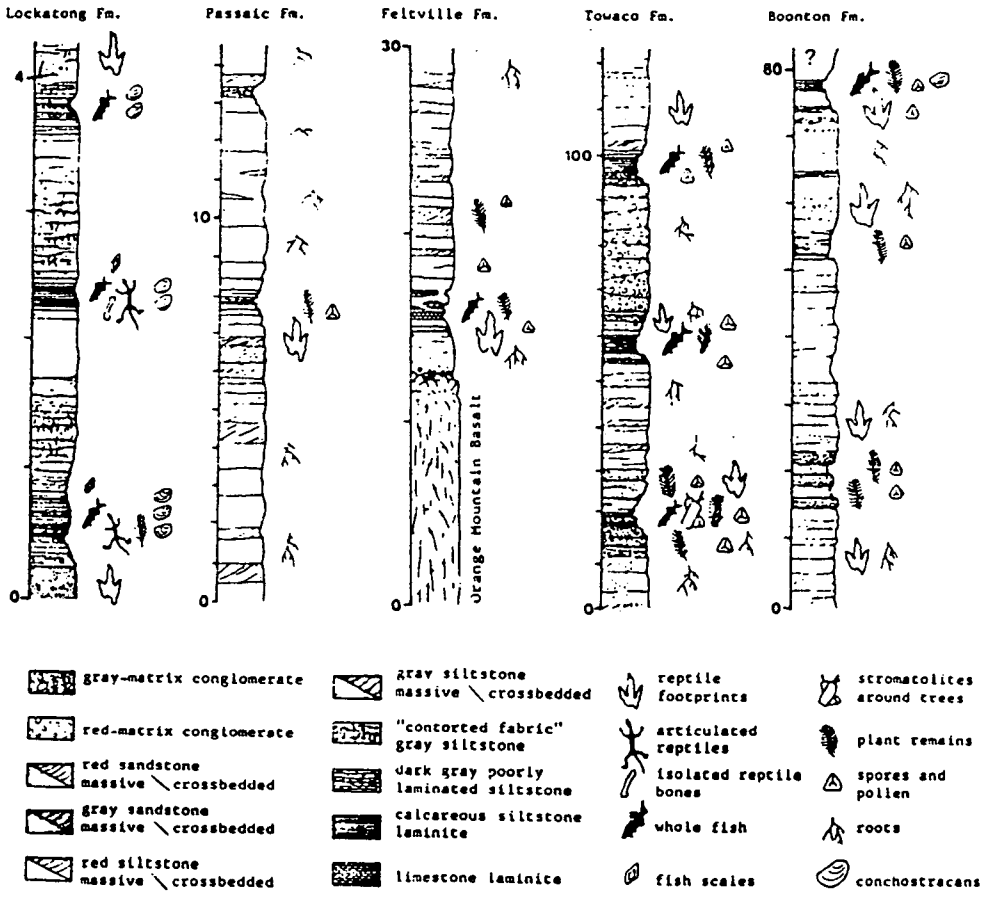

FIG. 3. Major types of sedimentary cycles of the formations of the Newark Basin. Note that the approximate center of the symbols for the major types of fossils is placed about where they occur in the section to the left. Note the change in scale (in meters) from section to section.

Lockatong Formation section measured at Kings Bluff, Weehawken, New Jersey, and represents three detrital cycles. The Passaic Formation section measured along Nishisakawick Creek and Little Nishisakawick Creek, northeast of Frenchtown, New Jersey; the two cycles shown represent the lower portion of McLaughlin's Graters Member (i.e., Member G) and are characteristic of most of the detrital cycles of the Passaic Formation. The upper cycle develops a dark gray siltstone a kilometer to the south. Feltville Formation section measured along East Branch of Middle Brook, Martinsville, New Jersey — there is only one such "cycle" in the Feltville Formation. Towaco Formation section measured along stream 2 km southwest of Oakland, New Jersey; three cycles are shown. Boonton Formation section is upper part of type section (see Figure 12); section not clearly cyclic.

Guide. In this way, nominal status is given to beds critical to the overall pattern of Newark Basin historical geology.

DESCRIPTIVE STRATIGRAPHY OF THE POST-LOCKATONG FORMATIONS

The Passaic Formation

The name Passaic Formation is proposed for the predominantly red siltstone, sandstone, and conglomerate which conformably overlie the Lockatong Formation and which underlie the Orange Mountain and Jacksonwald basalts. It is equivalent to the pre-basalt part of Kümmel's Brunswick Formation (Table 1). The type section (Figure 4) consists of intermittent exposures of red siltstone and sandstone along interstate Route 80 near Passaic, New Jersey (Figure 2 and Appendix).

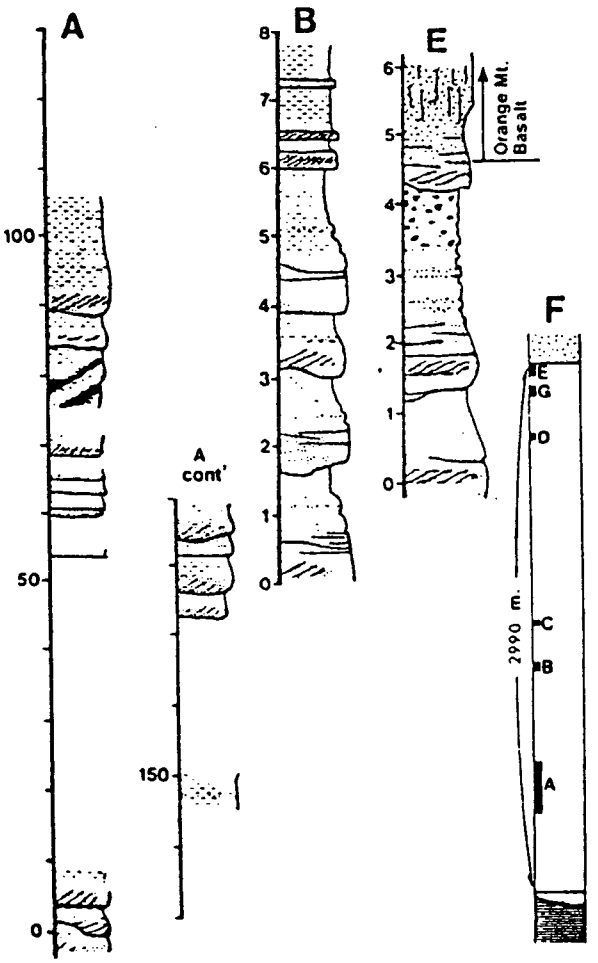

FIG. 4. A - E. type section of Passaic Formation (see Appendix for description); F. diagram showing positions of sections A - E in Passaic Formation.

As is the case for all Newark formations, the estimation of stratigraphic thicknesses in the Passaic Formation is hampered by the presence of a series of faults with variable amounts of dip-slip displacement cutting much of the Newark Basin. The exact distribution of these faults is poorly known and thus many trigonometrically computed thicknesses in the Passaic Formation are probably overestimations. This is especially true in the northern and southern portions of the Newark Basin. The field relationship of mapped gray siltstones in the central Newark Basin, however, shows that in broad areas these smaller faults are missing and the calculated stratigraphic thickness is probably correct (McLaughlin, 1943). Instead of a large number of small faults, the central Newark Basin is cut by several very large faults (Figure 2).

In spite of these mensuration problems, it is clear that the Passaic Formation is the thickest, coherent lithologic unit in the Newark Basin, reaching a maximum calculated stratigraphic thickness of over 6,000 m (Jacksonwald Syncline). The formation outcrops throughout the Newark Basin although its upper beds are preserved only in the Watchung Syncline (Figure 2), in the smaller synclines preserved along the eastern side of the Flemington Fault, and in the Jacksonwald Syncline. In all other areas, the upper Passaic Formation has been removed by post-Newark erosion.

While in most areas the Passaic Formation rests conformably on Lockatong Formation, in several areas on the western margin of the Newark Basin, the Passaic directly onlaps the step-faulted basement without any intervening Stockton or Lockatong. In these areas (see Figure 5), the thickness of upper Passaic Formation present below the Orange Mountain Basalt is comparatively slight. One area where these relationships can be clearly seen is near Cushetunk Mountain (Figure 5) in central New Jersey. In the New Germantown Syncline, the stratigraphic distance from the Palaeozoic basement to the Orange Mountain Basalt is about 800 m. Less than 30 km to the southwest, over 1,000 m of Passaic is

1959). This formation takes its name from the location of the type section (Figure 12) which cuts along Hook Mountain Road and Interstate Route 80 through the southern terminus of Hook Mountain near Pine Brook, New Jersey. About 80% of the total formation is exposed here. The Hook Mountain Basalt differs markedly in trace element composition from the older basalt formations of the Newark Basin with half as much K_2O and Sr, 20% less Rb, and with a much greater FeO/MgO ratio than the Orange Mountain Basalt (Puffer and Lechler, 1980).

The Hook Mountain Basalt is the thinnest of the three major extrusive formations of the Newark Basin; at its type section it is 110 m thick and it retains this thickness throughout the Watchung Syncline. There are gaps in the ridge made by this basalt between Hook Mountain and Riker Hill, and Riker Hill and Long Hill (see Figure 2). That the basalt extends subsurface across these gaps is shown by the bedrock topography as mapped by Nichols (1968) and aeromagnetic data (Henderson, et al., 1966). The maps of Lewis and Kümmel (1910-1912) and all maps since have omitted the Hook Mountain Basalt in the town of Bernardsville, New Jersey, and this is corrected here (Figure 2).

Two flows have been recognized through most of the Watchung Syncline. At the type section, the lower flow is 57 m thick and shows a complete Tomkeiff structural sequence (Figure 12), while the upper flow is 40 m thick but more massive, without clear columnar jointing. As is the case for the flows which make up the two older basalt formations of the Newark Basin, it is not definitely known whether the upper and lower flows of the Hook Mountain Basalt represent continuous sheets over the extent of the whole formation.

The Boonton Formation

Overlying the Hook Mountain Basalt are sedimentary rocks (Baird and Take, 1959) termed the Boonton and Whitehall beds of the Brunswick Formation. The formal name Boonton Formation is suggested for these beds, the type exposure (Figure 13) being along the Rockaway River near Boonton, New Jersey. The Boonton Formation is the youngest sedimentary unit in the Newark Basin and consists of at least 500 m of red, brown, gray, and black fine-to-coarse clastics and minor evaporitic beds.

The stratigraphically lowest beds in the Boonton Formation are well exposed near Bernardsville, New Jersey. Here the formation consists of blocky to finely bedded red, gray, brown, and black, often dolomitic, siltstone. Thin (1 - 4 m) beds riddled with "hopper casts" (pseudomorphs after gypsum, glauberite, and ?halite) are common in sequences of all colors. The different colors or textures of beds do not seem to be arranged in any obvious or consistent cyclic pattern and do not resemble other units in the Newark Basin. Stratigraphically above these beds is a sequence of well bedded red siltstones and sandstone beds (mean thickness 35 m) alternating with thinner beds of gray and gray-green siltstones (mean thickness 2 m). The longest continuous section of these beds is the type section (Figures 3 and 12). The uppermost beds at the type section include a fossil fish-bearing calcareous gray siltstone laminite at least 1 m thick. This is the famous Boonton Fish Bed (Smith, 1900; Schaeffer and McDonald, 1978). Also in this section are gray and brown conglomerate units up to 0.5 m thick. Along the western edge of the Watchung Syncline the Boonton Formation contains thick sequences of red- and gray-matrix conglomerate and breccia. The relationship of these units to the finer portions of the formation is unclear.

NOTES ON THE STRUCTURAL GEOLOGY OF THE NEWARK BASIN

There are very few generalities which can be applied with confidence to Newark Basin structure. It is generally conceded, however, that: 1, Newark sediments rest with a profound unconformity on the basement rocks; 2, Newark rocks are overlain with an angular unconformity by post-Jurassic rocks; 3, most Newark beds dip to the northwest 10° - 20°; 4, there are a series of faults of large displacement which cut the Newark deposits into a series of major fault blocks; 5, there are at least some smaller faults; 6, beds of the west side of fault blocks tend to be folded into a series of anticlines and synclines with their axes perpendicular to the long axes of fault

REFERENCE NO. 12

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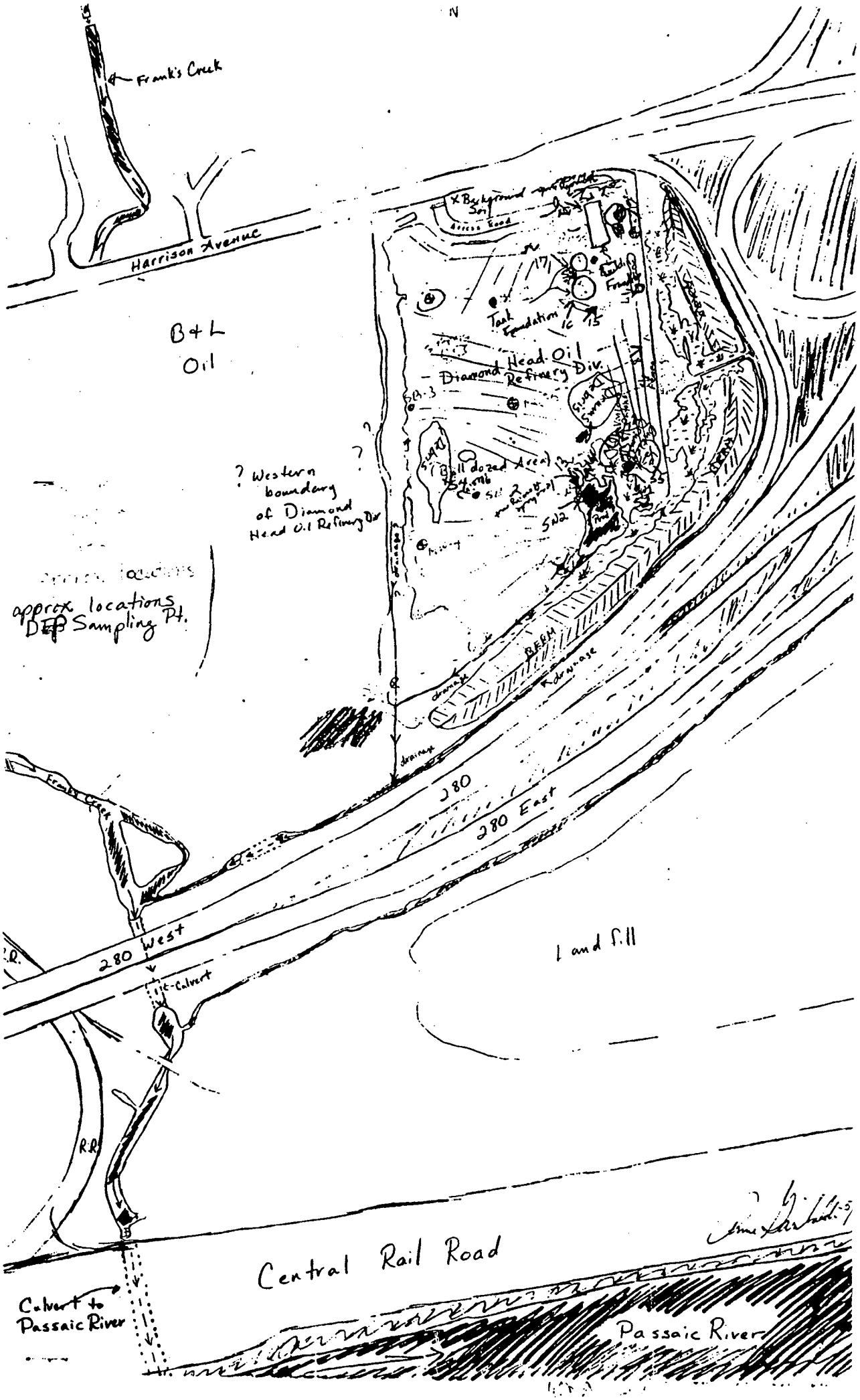
Diamond Head Oil Refinery Div. 02-9102-02 5/3/91 3

Ann Lai initial 5/3/91


N
Frank's Creek
Harrison Avenue
B+L
Oil
Background Soil
Access Road
Tank Foundation
Diamond Head Oil
Refinery Div.
Bulldozed Area
? Western boundary of Diamond Head Oil Refinery Div
approx. locations DEP Sampling Pt.
BERM
drainage
280
280 East
280 West
Land Fill
Culvert
R.R.
Central Rail Road
Culvert to Passaic River
Passaic River

Diamond Head Oil Refinery Div. 02-9102-02 5/3/91
1401 Harrison Ave. (Rt 508), Kearny
Hudson County, New Jersey

On-site Reconnaissance

Time of Arrival: partly cloudy, wind from NW, very wi
0942 ~68°F

Weather:

NUS Personnel on Site

			Duties
Anne Garibaldi	Anne Garibaldi	5/3/91	Site Manager
Rich Feinberg	Rich [illegible]	5/3/91	Site Safety Office
Diane Minsavage	Diane Minsavage	5.3.91	Surveillance/Supp

Other
Robert Zelley - Converse Env. East

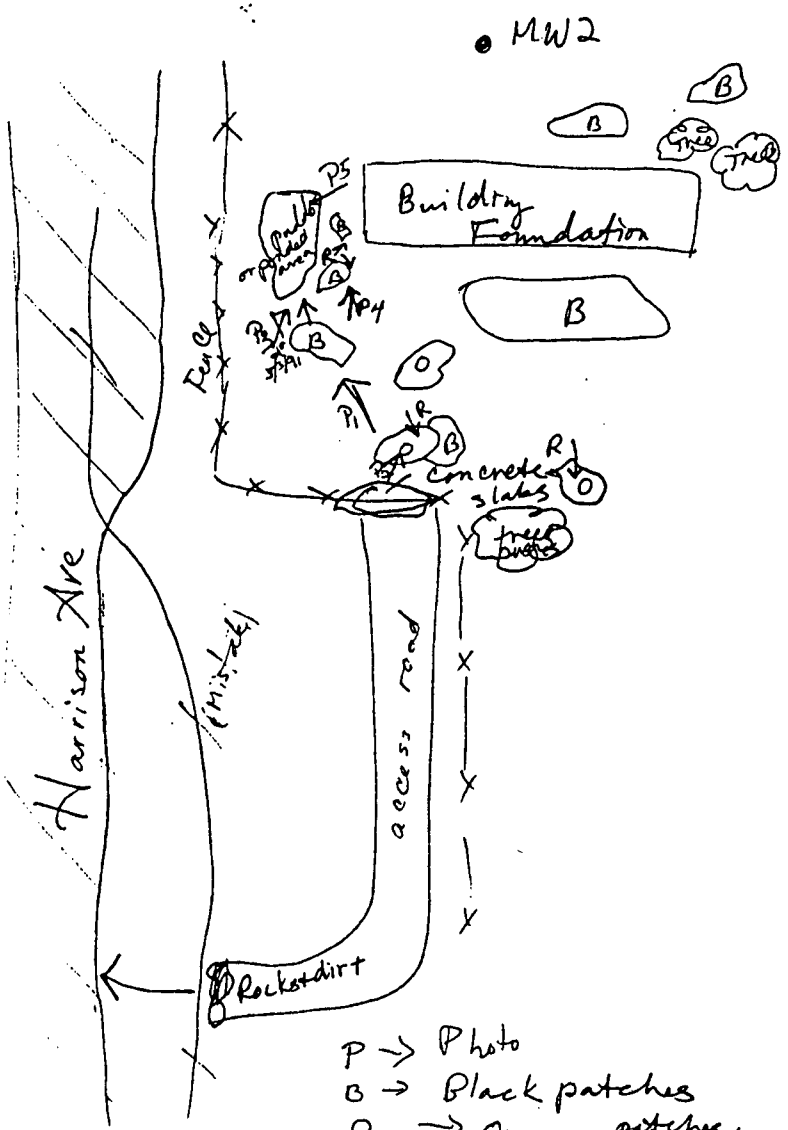
Equiptment	EPA ID No.
camera w/prints	731693
camera w/slides	307128
Compass	684177
Monitor 4	307163
Mercury Sniffer	469786
OVA	469758
HNu	907147

0950 setting up decon area by trailer on Harrison Ave.

1005 B. Zelley arrives on site. B. Zelley asks for copy of safety plan. He can't have one but he is welcome to sit in on our H+S meeting.

[illegible] 7/24/91 Anne Garibaldi 5/3/

5/3/91



P -> Photo
B -> Black patches
O -> Orange patches
R -> Readings above background

Anne Garibaldi 5/3/91

Diamond Head Oil Refin. Div. 2-7 -02 3/9, 5

1015 R. Feinberg is setting up air instruments.

1029 0 mR/hr - Monitor 4 Background readings reported by R. Feinberg: O - mercury sniffer
.5 ppm - OVA HNu - O
traffic

1030 R. Feinberg conducts H+S meeting
(B. ~~Cunniff~~ Zelleg AG 7/24/91 sits in on meeting. AG 7/24/91)

1040 All parties dinning level C

1048 Leaving Decon area. At the Harrison Ave end of access road there is a pile of rocks and dirt, to prevent vehicle access. We can climb over. AG 7/3/91

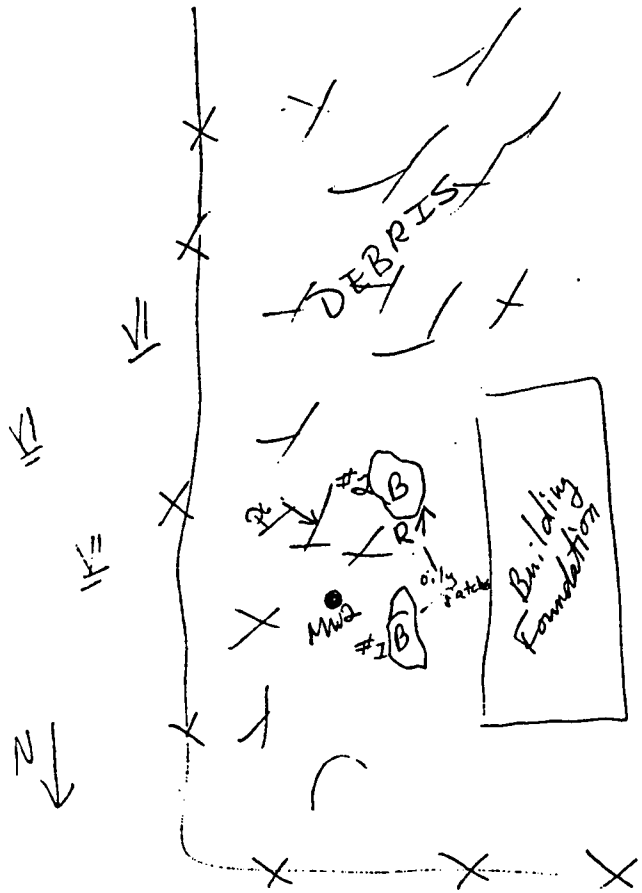
1050 On Diamond Head Property. Concrete slabs - end of road.
OVA - ~2 ppm OHNu .015 mercury sniffer
Just inside site past concrete slabs
Photo of ~~base~~ foundation of building (western edge) facing east.

1052 ~5 ppm OVA ~~.02 mer~~ AG 5/3/91 to right of entrance in orange-stained area
Photo of orange stained soil patch.

1058 by north end of building foundation
mercury sniffer ~ .02 - .022
OVA - 2-3-ppm steady responds to marker

Patches of blackened soil, areas of orange stained soil, all near north end of building foundation.

Anne Garibaldi 5/3/91



(B → black stained soil SAF 7/24/91)

Harrison Ave.

DGA mgp 7/24/91

Anne Garibaldi 7/3/91

1100 Photos of ponded area and black soil patches
Ponded area is shallow - (3-4 inches deep)

1101 Photo of orange brown like globs in ponded area
Globs are some type of algae

1102 R. Feinberg thinks that the readings above background we have been getting (where the needle peaks to about 3 and then drops) are related to traffic on Harrison Ave.

No air readings above background (NARAB 4/24/91) on HNu or OVA in pond/puddle by north end of foundation. (by Harrison Ave.)

1105 Walking along eastern edge of property
debris (construction), tires, etc. Some pipes
Can see wetlands vegetation east of fence.

1106 Black oily patch (#1) ~ 2.5 ppm OVA 0 HNu
2 ppm now background

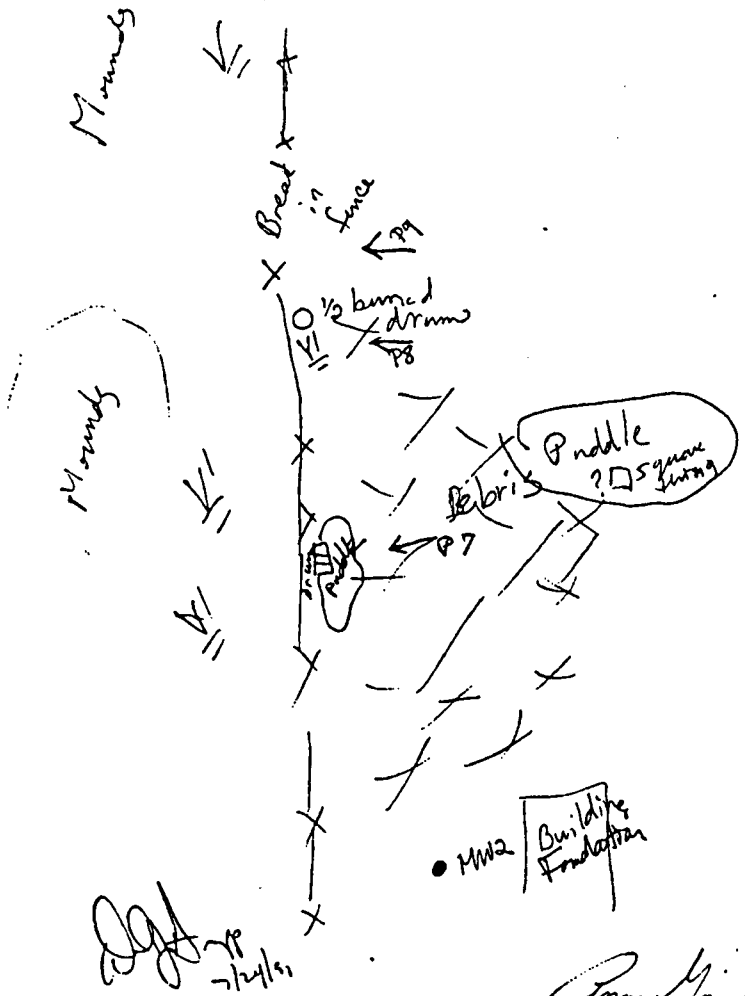
Photo of debris, oil patch, building foundation in background.

1109 Oil patch #2 - after disturbing ~ 2 ppm above background

1115 Puddled area towards middle of Diamond Head property. Numerous puddles throughout site.

DGA mgp 7/24/91

Anne Garibaldi 5/3/91



1119 Drum along eastern edge of property
0 ppm OVA 3 ppm HNu from hole in drum
Photo of drum, facing east

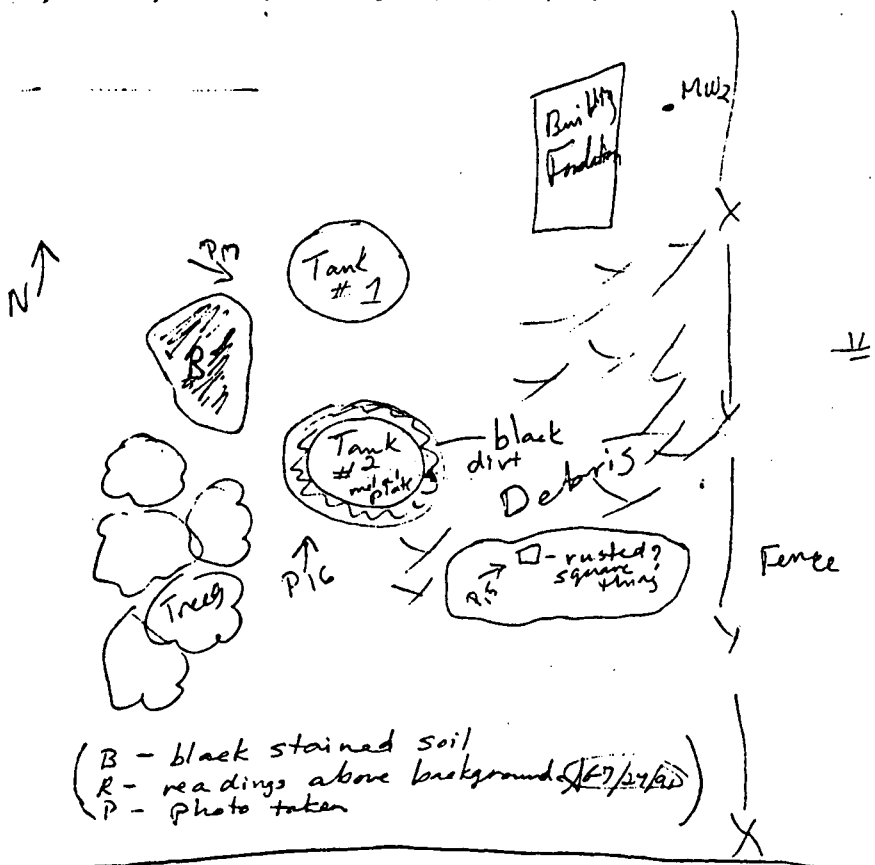
1021 At half buried drum mentioned in 1985 DEP report
No air readings above background level.
Photo of same (1/2 buried drum)
Wetlands vegetation next to drum.

1025 Continuing along E border
many bare patches, more debris, plastic
liquid storage containers (~10 gallon containers)

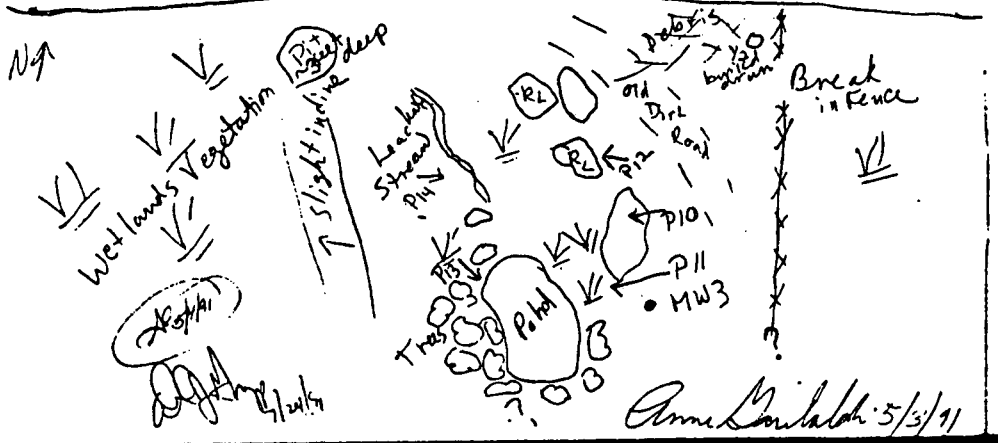
1026 Photo of gap in fence along E border
Bermed area in background.
No air readings above background level.
1030 Photo of orange stained soil / bare patch
Photo of on-site wetlands
No air readings above background in soil
→ ? Stressed vegetation

1035 stained soil patch near (NW) MW3.
Photo of same. Various puddles and
stained soil patches throughout site
Leachate stained patches. Possibly stressed
vegetation. (~100 ft NW MW3)
1137 larger bare soil patch to N of previous
one. Oily sheen on puddle in patch. NARAB

1140 At pond, water is a milky gray color.
Photo of same. Southeast portion of site
Wetlands vegetation and trees surrounding pond.



(B - black stained soil
R - readings above background AG 7/24/91
P - photo taken)



Anne Garibaldi 5/3/91

1145 ~ .5 ppm OVA in damp area to N of pond. ~~Pon~~ Photo of same. A Damp area is a leachate stream flowing SE to pond.

1150 heading back towards decon area.
(Passing old tank bases. AG 7/24/91)

1200 taking a break
(Preparing to screen Monitoring Wells AG 7/23/91)

1255 Wearing Level B

1259 R Feinberg + D. Minsavage on air

1300 Opening MW2 - Screening well
No air readings above background on HNu or OVA

1305 At MW3 - opening + screening well
5 ppm HNu offscale x100 OVA

Anne Garibaldi 5/3/91

1310 Screening MW4 - off scale x100 OVA
No air reading above background HNu

1317 At MW5 screening
No HNu - NARAB
off scale x100 - OVA

1319 R. Feinberg off air
1320 D. Minsavage off air

1325 taking short break at end of road
leading to site

1400 on level C Preparing to take water
level measurements in wells

1404 At MW-2 No air readings
4 ft 4 inches to water level from top of PVC casing
13 ft. 10 inches to bottom of well from top of PVC casing
3 ft. 1 inch from ground surface to top PVC casing
2 ft. 11 inches top outer casing from ground surface
4 inch diameter
M-scope

locked well w/ new lock

1425 At MW-3
~1 ppm HNu OVA off scale (x100)
Will upgrade to level B to take well measurements
3 ft. 1 inch top PVC casing to ground surface ~12 feet to bottom of well.

[illegible] 7/24/11

Anne Grinbald 5/3/11

Difficult to tell bottom - very viscous
~3ft ~~inch~~ from top of PVC casing to water level

1430 Photo of square patch in middle of large stained patch in middle of property. Square patch remains of something rusted in place?

1431 At base of tank 2 No air readings above background within base of tank
Around foundation - .05 mercury sniffer.
Black material within base of tank.

1438 Photos of tank bases

1455 Upgrading to Level B

1456 R. Feinberg on air D. Minsavage on air

1459 At MW-3
50-60ppm OVA

1500 D. Minsavage off air
R. Feinberg also
Quick change to level C

1520 (Taking a break back at decon area ~~[illegible]~~)

1520 R. Feinberg calls B. Carson for permission to downgrade to level D
[illegible]

[illegible] 5/3/91

1535 B. Carson gives permission to downgrade to level D for reconnaisance activities other than screening wells — level B for wells.

1536 Deconning m-scope w/ methanol, DI water. First washed with Alconox.

1605 Preparing to screen/measure MW# 4 & 5

1627 At MW-5
Preparing to take well measurements
1630 R. Feinberg & A. Garibaldi on air

1632 from top PVC to water level 13½ ft
3 ft. 7 inches
from top PVC to bottom 22 ft 8 inches

1639 R. Feinberg & A. Garibaldi off air

B. Zelley asks for key to wells, air readings, measurements.
1645 R Feinberg on air. At MW 4
1650 A. Garibaldi on air

1651 No air readings above background HNu
Off scale (x100) OVA
No air readings above — mercury sniffer

B. Zelley was told that he could not have this information, it was not our policy. He was given a key to the wells. AG 7/23/91

Anne Garibaldi 7/24/91

7/24/91

Anne Garibaldi 5/3/91

1655 Depth: MW4
from top of PVC to water level: 8ft. 3 inches
" " " " " Bottom of well: 22ft 11 inches
from top of PVC to ground level: 2ft. 10 inches

1700 R. Feinberg and A. Garibaldi off air, on level C. - Off level C - permission to downgrade.

1705 Looking for resin. Unable to find resin in tall grass. Resin is located in a clearing somewhere between MW4 and MW5, almost in a line w/them.

1720 mercury sniffer - ~ .03 (almost)
Deconing m-scope.
Not sure if mercury sniffer is working properly.

1748 R. Feinberg and A. Garibaldi on air
Opening MW-1. Cover (inner PVC cap) pushed up against outer casing. Cannot get cap off to screen well.

1800 Back at decon area
R. Feinberg and A. Garibaldi off air

1815 breaking down decon area

1843 Leaving site

[signature] 5/14/91

[signature] 5/3/91

Photograph Log
On-Site Reconnaissance
May 3, 1991

All photos taken by A. Garibaldi.

Film Roll/Slide Roll #	Photo #	Date	Time	Description
1P/1S	1	5/3/91	1050	Western edge of building foundation, facing E.
1P/1S	2	5/3/91	1052	orange-stained soil patch just inside the site past the end of the paved access road
1P/1S	3	5/3/91	1100	standing water, oil stained patches north of building foundation. Harrison Ave in background
1P/1S	4	5/3/91	1100	black, oil-stained patches north of building foundation, Facing SE
1P/1S	5	5/3/91	1101	orange-brown algae in standing water, N of building foundation
1P/1S	6	5/3/91	1106	debris, black stained soil, E edge of building foundation in background Facing NE

Mark Stein 10/11/91

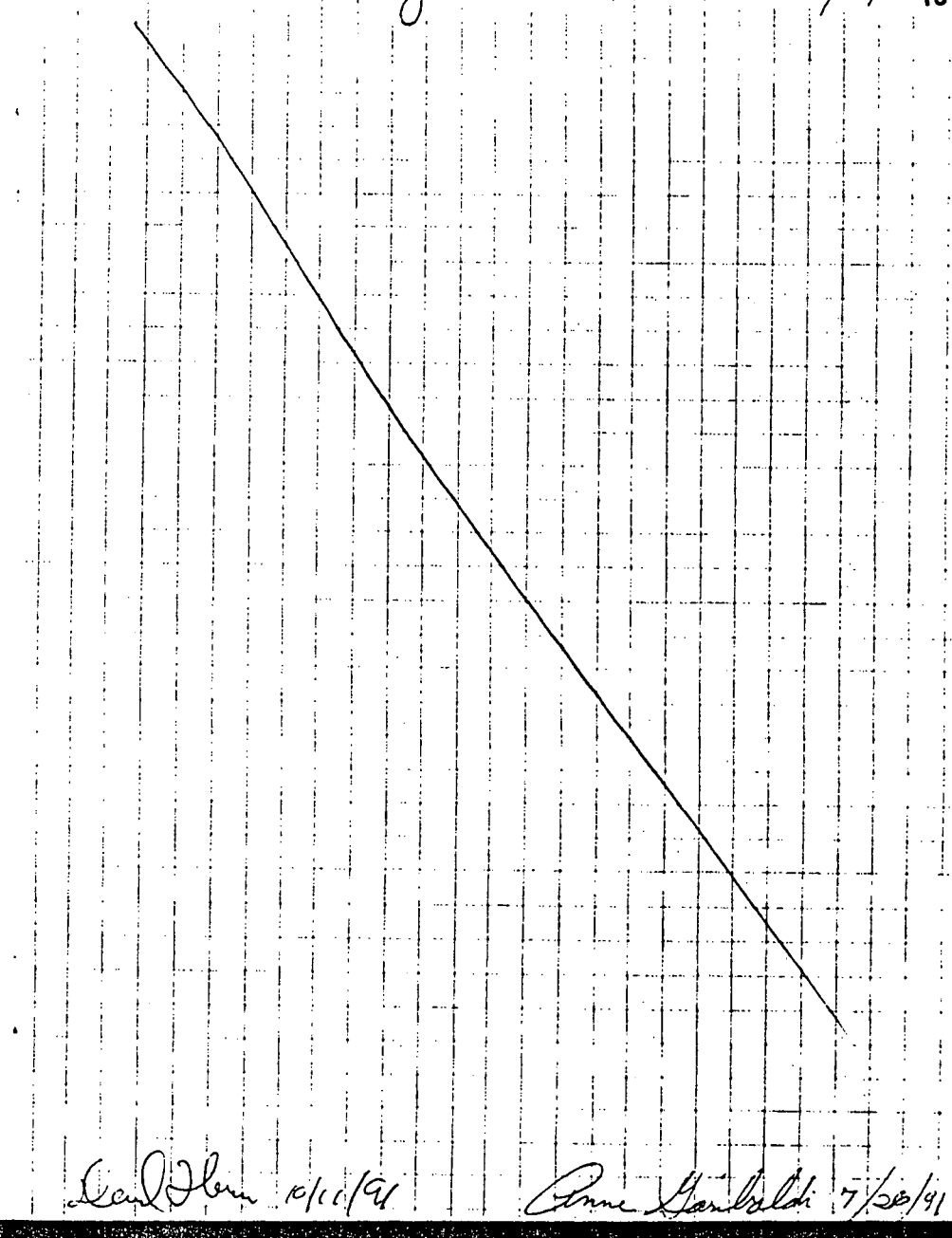
Anne Garibaldi 7/26/91

1P/1S	7	5/3/91	1119	Drum + dedris along eastern fenceline. Facing East
1P/1S	8	5/3/91	1021	Half-buried drum along the eastern fenceline. Facing northeast.
1P/1S	9	5/3/91	1026	Gap in eastern fenceline. Bermed area in near background. Facing SE
1P/1S	10	5/3/91	1030	orange-stained soil and bare patch near SE corner of site. Vegetation possibly stressed.
1P/1S	11	5/3/91	1030	on-site wetlands vegetation, near SE corner of site. Facing SW.
1P/1S	12	5/3/91	1035	Leachate stained soil paths, possibly stressed vegetation, ~100 ft NW of MW 3.
1P/1S	13	5/3/91	1140	small pond containing milky, gray colored water in the SE portion of site Wetlands vegetation and trees surround the pond. Facing southeast.
1P/1S	14	5/3/91	1145	Leachate stream flowing SE to the small pond. Facing east.

David Flum 1/11/91 Anne Garibaldi 7/26/91

1P/15	15	5/3/91	1430	rusty, square patch in large stained soil area in the middle of the Old Diamond Head property.
1P/15	16	5/3/91	1438	tankbase #2, w/outer concrete foundation, facing NE.
1P/16	17	5/3/91	1438	tankbase #1 Facing southe east.

Dan Heim 10/11/91 Anne Garibaldi 7/20/91



Daniel Horn 10/11/91 Anne Garibaldi 7/20/91

1401 Harrison Ave. (Rte 508), Kearny
Hudson County, New Jersey

Sampling Inspection - July 1, 1991

Time of Arrival on Site: 0830
R. Cunniff and B. Franco meet us on site.

Weather: partly cloudy, sunny, light wind from NE
~89°F

NUS Personnel On Site			Duties
Anne Garibaldi	Anne Garibaldi	7/1/91	Site Manager
Richard Feinberg	[illegible]	7/1/91	Asst. Site Manager/Site Safety
David Grupp	[illegible]		Site Safety Officer
Susan Lenczyk	Susan Lenczyk	7/1/91	Sample Management Officer
Joanne Torchia	[illegible]	7/1/91	Asst. Sample Management O.
Richard Settino	[illegible]	7/1/91	Sampler
Bob Yaeger	Bob Yaeger	7/1/91	Sampler
Brian Croft	[illegible]	7/1/91	Sampler
Chris Jimenez	[illegible]	7/1/91	Sampler

The above individuals have read and understood the workplan.

Other Persons On Site	Affiliation
Robert Franco	Attorney
Bob Cunniff	Converse

[illegible] Grupp 7/1/91

Anne Garibaldi 7/1/91

Equipment	EPA ID No.
camera w/prints	731696
camera w/slides	469772
Monitor 4 Radiation Detector	469786
Mercury Sniffer	307163
OVA	
HNu	
Compass	690090

ID No. recorded on safety pt log

0830 D. Grupp is clearing more of the mound at the entrance of the access road away as it was not cleared to provide access sufficiently for our vehicles.

0850 Setting up decon area at far end of access road.

0910 Deconning sampling equiptment. Preparing equipment for sampling. Fencing has been cut by Hudson Meadows Urban Renewal Development Corp to allow our vehicles onto the site.

0925 B. Cunniff tells us he will only be splitting 5 samples with us → 2 soils, 3 aqueous.

0950 D. Grupp, R. Feinberg, A. Caribaldi preparing to go on site to recon sample locations.

Anne Caribaldi 7/1/91

Area of standing water ... the building foundation is dried up. AG 7/1/91

A decision was made to composite these samples. (Similar black-stained soil) AF 7/1/91

These stained soil patches are near MW#2, east of the building foundation.

[illegible] 7/24/91

Anne Garibaldi 7/1/91

1000 A. Garibaldi, R. Feinberg, D. Grupp & B. Cunniff go on site to recon sampling locations. On level C.

1005 At proposed S2 and S3 sampling locations. R. Feinberg and D. Grupp say they can smell a burnt odor.

1014 At tank base area

At S5 & 6 1ppm OVA (black soil within tank base #2) AG 7/1/91

1019 Locating monitoring well #3. Looking for orange-stained soil patches. Patches are dried up. Will take composite sample from two patches. Heading back to decon area.

1045 After a short break, ~~will~~ have resumed reconnaissance of sampling locations. Off level C during break.

1050 At ponded area. Pond has dried up. Small puddled area just N of pond is "bubbling" (fine effervescent bubbles) deer? ~~p~~ footprints around puddle

In pond area - 2ppm HNu
no air readings above background OVA

Bank of pond is very spongey. Surface undulates w/ vibrations.

1110 Surface water draining ~~from~~ ~~p~~ from pond has all evaporated.

Will take sediment samples. Will be unable to tak SW samples in pond and drainage from pond.

[illegible] 7/24/91

Anne Garibaldi 7/1/91

1120 Located MW5 (Actually, located MW4 - AF 7/3/91)

1127 Located ~~resid~~ resin in clearing some where between MW 4 and 5 Cannot find MW4 (Should be MW5 - AF 7/3/91)

1135 Back at Decon area. Taking a short break. R. Feinberg will take crew out to sample soil in northern end of property. D. Grupp and A. Caribaldi will mark out possible SW sampling locations on eastern edge of property.

1155 D. Grupp conducts site safety meeting.

1200 R. Feinberg & sampling crew sets out. D. Grupp & A. G will recon surface water sample locations.

1213 Will take SW-1 in outer drainage ditch along Ramp M to 280. Will not be able to take Sed at this location. Cannot find D.O.T. monitoring well supposed to be in this area. Water in wetland areas dried up.

1235 Looking for a suitable downstream SW sampling location in outer ditch, at end of PSE&G access road.

Anne Garibaldi 7/1/91

1310 Preparing to go take SW2/SW4, Sed2 samples.

1325 Although consultants are not allowed to be in our vehicles for insurance and other reasons, Dave Grupp is permitting Bob Cunniff of Converse to ride with us to SW2/SED2, SW4 location. I voiced an objection, but Dave Grupp insisted.

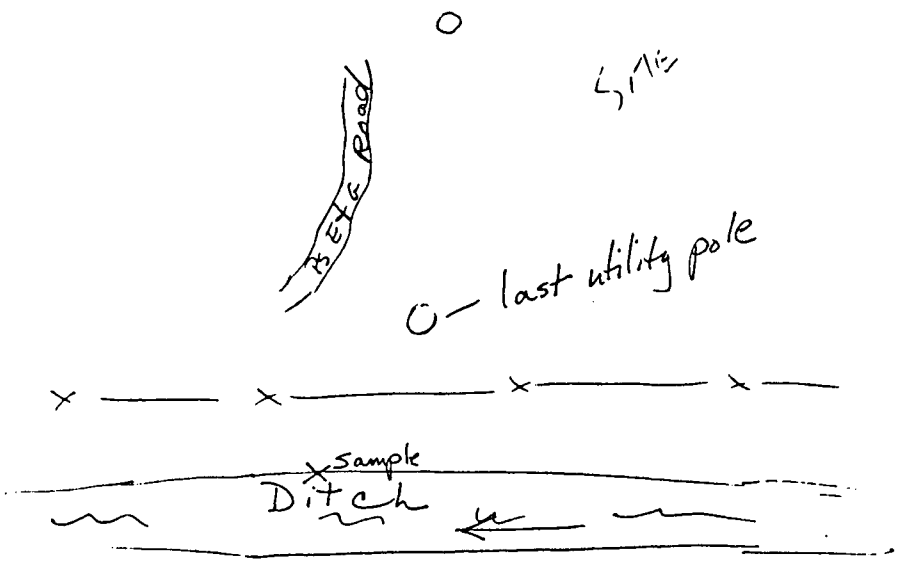
1335 At SW2/SED2, SW4 location.
location:
50' from last light pole at intersection of Ramp M and I80
204' from last utility pole at end of PSE&G right of way
in outer drainage ditch (downstream)
No air readings above background on HNu or OVA.

Sample has pH of seven.
Will spike w/ HCl 24 drops required.

Consultant has left VOA's in car.
D. Grupp will give him some of our extras.

Brian Croft takes sample. (SW2/SW4)
Photo of same.
Duplicate MS/MSD

SW4 — split sample.



light pole Rte I-280

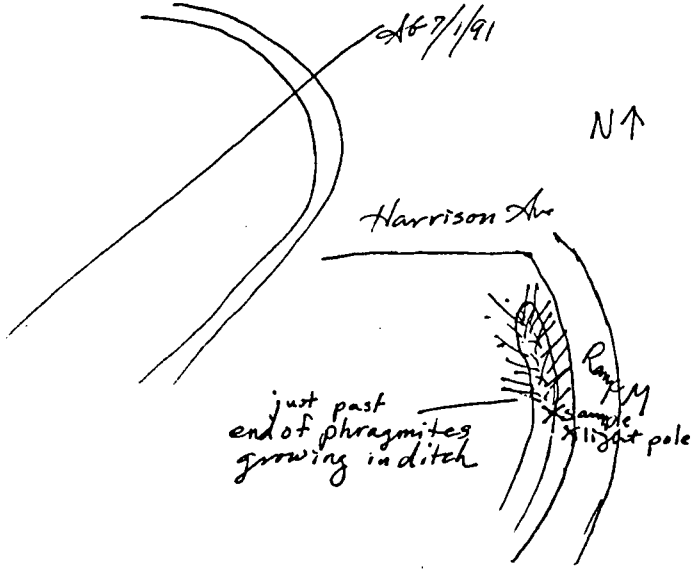
Anne Garibaldi 7/1/91

Anne Garibaldi 7/1/91

1347 While trying to fill VOA's spiked w/acid, bubbles keep forming in the vials. Assume there is a reaction with the acid. Will not preserve VOA samples w/ HCl.

1415 B. Croft collects sed #2. AG 7/1/91
Photo of same.
At same location as SW2/4

Readings of 2ppm on OVA in bowl.
No air readings above background on HNu.
No air readings above background ~~on~~ in the breathing zone.



1438 At SW1 sample location.
Location:
at a bearing of 270° * Some deflection of needle due to proximity of light pole.
and ~ 15 feet from Light Pole "D.O.T. A1B 2014"
from drainage ditch along ramp M near Harrison Ave.
1440 Sample → initial pH of 7
will spike w/ 4 drops HCl

1445 B. Croft collects SW1
Photo of same.
Without breaking surface of water — no air readings above background on OVA
~ 2ppm when surface is broken.
HNu not working.

Anne Garibaldi 7/1/91

Anne Garibaldi 7/1/91

1455 Back at decon area.

[1512] B. Croft collects S1. Photo of same
In area by access road (between access road & Harrison)
~15 feet from light pole "DOT AIB 2019"
at a bearing of 173° from pole
No air readings above background on OVA.
B. Cunniff still with us.

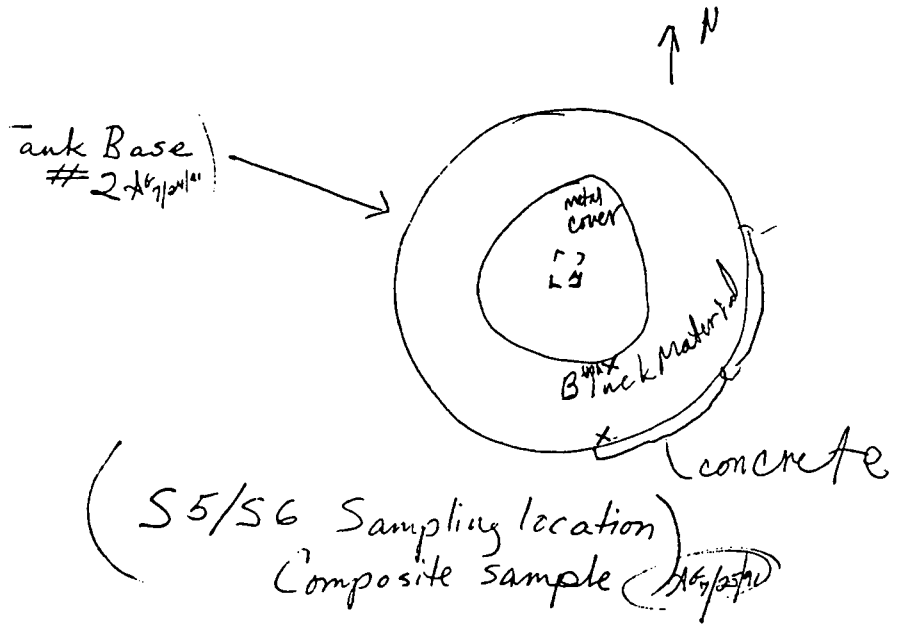
[1537] At S5/S6 sampling location (Duplicate Soil Samples AG 7/25/91)
Inside 5th tank base 2. All on level C.
B. Croft collects sample. Photo of same.
~1 ppm on OVA

Sample location ~10 feet from center of tank base (where 4 metal sticking up)
at a bearing of ~~[illegible]~~ 134°

Making a composite sample from area by concrete
~~[illegible]~~ ~16 feet from center of tank base
~~150~~ 150° from center of tank base.

Reading in bowl of 20 ppm OVA, 50 ppm HNu.

This is a split sample.
1554 At decon area. Off level C.
1600 B. Cunniff leaves site.
Lab for Hex Chrom has been suspended.
(No hexavalent chromium samples shipped. AG 7/25/91)
1615 A. Garibaldi, R. Feinberg, D. Grupp on level C
to check out MW 1. (MW = Monitoring Well AG 7/25/91)



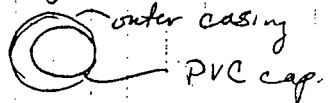
D. Grupp 7/2/91

Anne Garibaldi 7/1/91

D. Grupp 7/2/91

Anne Garibaldi 7/1/91

~~HH~~ AC 7/1/91 1617 At MW 1 location. Cap (PVC) cap is jammed on inner PVC casing.



Attempting to pry off cap (D. Grupp and Rick F.)

1625 upon cracking cap w/ hacksaw, off scale, x100, on OVA.
Able to remove cap. Can re use cap.

1630 Attempting to locate MW 5.
Difficult to find in tall grass.

1643 MW 5 located.

1652 Back at decon area. Off level C.
Cleaning up and packing samples.

Resecuring fencing cut by Hudson Meadows w/ heavy chain and locks.

1750 Leaving site.

1915 Dave Grupp reports samples shipped from FEDEX

DG 7/1/91

Anne Garibaldi 7/1/91

CAPACITIES, IN U. S. GALLONS, OF CYLINDERS OF VARIOUS DIAMETERS AND LENGTHS

Diam. Inches	LENGTH OF CYLINDER 1"	1'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'	15'	16'	17'	18'	20'	22'	24'	Diam. Inches
1	...	0.04	0.20	0.24	0.28	0.32	0.36	0.40	0.44	0.48	0.52	0.56	0.60	0.64	0.68	0.72	0.80	0.88	0.96	1
2	0.01	0.16	0.80	0.96	1.12	1.28	1.44	1.60	1.76	1.92	2.08	2.24	2.40	2.56	2.72	2.88	3.20	3.52	3.84	2
3	0.03	0.37	1.84	2.20	2.56	2.92	3.30	3.68	4.04	4.40	4.76	5.12	5.48	5.84	6.22	6.60	7.36	8.08	8.80	3
4	0.05	0.65	3.26	3.92	4.58	5.24	5.88	6.52	7.18	7.84	8.50	9.16	9.82	10.5	11.1	11.8	13.0	14.4	15.7	4
5	0.08	1.02	5.10	6.12	7.14	8.16	9.18	10.2	11.2	12.2	13.3	14.3	15.3	16.3	17.3	18.4	20.4	22.4	24.4	5
6	0.12	1.47	7.34	8.80	10.3	11.8	13.2	14.7	16.1	17.6	19.1	20.6	22.0	23.6	25.0	26.4	29.4	32.2	35.2	6
7	0.17	2.00	10.0	12.0	14.0	16.0	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0	36.0	40.0	44.0	48.0	7
8	0.22	2.61	13.0	15.6	18.2	20.8	23.4	26.0	28.6	31.2	33.8	36.4	39.0	41.6	44.2	46.8	52.0	57.2	62.4	8
9	0.28	3.31	16.5	19.8	23.1	26.4	29.8	33.0	36.4	39.6	43.0	46.2	49.6	52.8	56.2	60.0	66.0	72.4	79.2	9
10	0.34	4.08	20.4	24.4	28.4	32.6	36.8	40.8	44.8	48.8	52.8	56.8	61.0	65.2	69.4	73.6	81.6	89.6	97.6	10
11	0.41	4.94	24.6	29.6	34.6	39.4	44.4	49.2	54.2	59.2	64.2	69.2	74.0	78.8	83.8	88.8	98.4	104.	118.	11
12	0.49	5.88	29.4	35.2	41.0	46.8	52.8	58.8	64.6	70.4	76.2	82.0	87.8	93.6	99.6	106.	118.	129.	141.	12
13	0.57	6.90	34.6	41.6	48.6	55.2	62.2	69.2	76.2	83.2	90.2	97.2	104.	110.	117.	124.	138.	152.	166.	13
14	0.67	8.00	40.0	48.0	56.0	64.0	72.0	80.0	88.0	96.0	104.	112.	120.	128.	136.	144.	160.	176.	192.	14
15	0.77	9.18	46.0	55.2	64.4	73.6	82.8	92.0	101.	110.	120.	129.	138.	147.	156.	166.	184.	202.	220.	15
16	0.87	10.4	52.0	62.4	72.8	83.2	93.6	104.	114.	125.	135.	146.	156.	166.	177.	187.	208.	229.	250.	16
17	0.98	11.8	59.0	70.8	81.6	94.4	106.	118.	130.	142.	153.	163.	177.	189.	201.	212.	236.	260.	283.	17
18	1.10	13.2	66.0	79.2	92.4	106.	119.	132.	145.	158.	172.	186.	198.	211.	224.	240.	264.	290.	317.	18
19	1.23	14.7	73.6	88.4	103.	118.	132.	147.	162.	177.	192.	206.	221.	235.	250.	265.	294.	324.	354.	19
20	1.36	16.3	81.6	98.0	114.	130.	147.	163.	180.	196.	212.	229.	246.	261.	277.	294.	326.	359.	392.	20
21	1.50	18.0	90.0	108.	126.	144.	162.	180.	198.	216.	238.	252.	270.	288.	306.	324.	360.	396.	432.	21
22	1.65	19.8	99.0	119.	139.	158.	178.	198.	218.	238.	257.	277.	297.	317.	337.	356.	396.	436.	476.	22
23	1.80	21.6	108.	130.	151.	173.	194.	216.	238.	259.	281.	302.	324.	346.	367.	389.	432.	476.	518.	23
24	1.96	23.5	118.	141.	165.	188.	212.	235.	259.	282.	306.	330.	353.	376.	400.	424.	470.	518.	564.	24
25	2.12	25.5	128.	153.	179.	204.	230.	255.	281.	306.	332.	358.	383.	408.	434.	460.	510.	562.	612.	25
26	2.30	27.6	138.	166.	193.	221.	248.	276.	304.	331.	359.	386.	414.	442.	470.	496.	552.	608.	662.	26
27	2.48	29.7	148.	178.	208.	238.	267.	297.	326.	356.	386.	416.	426.	476.	504.	534.	594.	652.	712.	27
28	2.67	32.0	160.	192.	224.	256.	288.	320.	352.	384.	416.	448.	480.	512.	544.	576.	640.	704.	768.	28
29	2.86	34.3	171.	206.	240.	274.	309.	343.	377.	412.	446.	480.	514.	548.	584.	618.	686.	754.	824.	29
30	3.06	36.7	183.	220.	257.	294.	330.	367.	404.	440.	476.	514.	550.	588.	624.	660.	734.	808.	880.	30
32	3.48	41.8	209.	251.	293.	334.	376.	418.	460.	502.	544.	586.	628.	668.	710.	752.	836.	920.	1004.	32
34	3.93	47.2	236.	283.	330.	378.	424.	472.	520.	566.	614.	660.	708.	756.	802.	848.	944.	1040.	1132.	34
36	4.41	52.9	264.	317.	370.	422.	476.	528.	582.	634.	688.	740.	792.	844.	898.	952.	1066.	1164.	1268.	36

THEORETICAL HORSE-POWER REQUIRED TO RAISE WATER TO DIFFERENT HEIGHTS

Feet / Gals. per Min.	5	10	15	20	25	30	35	40	45	50	60	75	90	100	125	150	175	200	250	300	350	400	Feet / Gals. per Min.
5	.006	.012	.019	.025	.031	.037	.044	.06	.06	.06	.07	.09	.11	.12	.16	.19	.22	.25	.31	.37	.44	.50	5
10	.012	.025	.037	.060	.062	.075	.087	.10	.11	.12	.15	.19	.22	.25	.31	.37	.44	.60	.62	.75	.87	1.00	10
15	.019	.037	.066	.075	.094	.112	.131	.15	.17	.19	.22	.28	.34	.37	.47	.56	.66	.75	.94	1.12	1.31	1.50	15
20	.025	.050	.075	.100	.125	.150	.176	.20	.22	.25	.30	.37	.45	.50	.62	.75	.87	1.00	1.25	1.50	1.75	2.00	20
25	.031	.062	.093	.125	.156	.187	.219	.25	.28	.31	.37	.47	.56	.62	.78	.94	1.09	1.25	1.56	1.87	2.19	2.50	25
30	.037	.076	.112	.150	.187	.225	.262	.30	.34	.37	.45	.56	.67	.75	.94	1.12	1.31	1.50	1.87	2.25	2.62	3.00	30
35	.043	.087	.131	.176	.219	.262	.306	.35	.39	.44	.52	.66	.79	.87	1.09	1.31	1.53	1.75	2.19	2.62	3.06	3.50	35
40	.050	.100	.150	.200	.250	.300	.350	.40	.45	.50	.60	.75	.90	1.00	1.25	1.50	1.75	2.00	2.50	3.00	3.50	4.00	40
45	.056	.112	.168	.225	.281	.337	.394	.45	.51	.56	.67	.84	1.01	1.12	1.41	1.69	1.97	2.25	2.81	3.37	3.94	4.50	45
50	.062	.125	.187	.250	.312	.375	.437	.50	.56	.62	.75	.94	1.12	1.25	1.56	1.87	2.19	2.50	3.12	3.75	4.37	5.00	50
60	.075	.150	.225	.300	.375	.450	.525	.60	.67	.75	.90	1.12	1.35	1.50	1.87	2.25	2.62	3.00	3.75	4.50	5.25	6.00	60
75	.093	.187	.281	.375	.469	.562	.656	.75	.84	.94	1.12	1.40	1.69	1.87	2.34	2.81	3.28	3.75	4.69	5.62	6.56	7.50	75
90	.112	.225	.337	.450	.562	.675	.787	.90	1.01	1.12	1.35	1.68	2.02	2.25	2.81	3.37	3.94	4.50	5.62	6.75	7.87	9.00	90
100	.125	.250	.375	.500	.625	.750	.875	1.00	1.12	1.25	1.50	1.87	2.25	2.50	3.12	3.75	4.37	5.00	6.25	7.50	8.75	10.00	100
125	.156	.312	.469	.625	.781	.937	1.094	1.25	1.41	1.56	1.87	2.34	2.81	3.12	3.91	4.69	5.47	6.25	7.81	9.37	10.94	12.50	125
150	.187	.375	.562	.750	.937	1.125	1.312	1.50	1.69	1.87	2.25	2.81	3.37	3.75	4.69	5.62	6.56	7.50	9.37	11.25	13.12	15.00	150
175	.219	.437	.656	.875	1.093	1.312	1.531	1.75	1.97	2.19	2.62	3.28	3.94	4.37	5.47	6.56	7.65	8.75	10.94	13.12	15.31	17.50	175
200	.250	.500	.750	1.000	1.250	1.500	1.750	2.00	2.25	2.50	3.00	3.75	4.50	5.00	6.25	7.50	8.75	10.00	12.50	15.00	17.50	20.00	200
250	.312	.625	.937	1.250	1.562	1.875	2.187	2.50	2.81	3.12	3.75	4.69	5.62	6.25	7.81	9.37	10.94	12.50	15.62	18.75	21.87	25.00	250
300	.375	.750	1.125	1.500	1.875	2.250	2.625	3.00	3.37	3.75	4.50	5.62	6.75	7.50	9.37	11.25	13.12	15.00	18.75	22.50	26.25	30.00	300
350	.437	.875	1.312	1.750	2.187	2.625	3.062	3.50	3.94	4.37	5.25	6.56	7.87	8.75	10.94	13.12	15.31	17.50	21.87	26.25	30.62	35.00	350
400	.500	1.000	1.500	2.000	2.500	3.000	3.500	4.00	4.50	5.00	6.00	7.50	9.00	10.00	12.50	15.00	17.50	20.00	25.00	30.00	35.00	40.00	400
500	.625	1.250	1.875	2.500	3.125	3.750	4.375	5.00	5.62	6.25	7.50	9.37	11.25	12.50	15.62	18.75	21.87	25.00	31.25	37.50	43.75	50.00	500

Anne Garibaldi 7/2/91

July 2, 1991 East meets w.s. morning & afternoon

Attendees:
Site Manager
Assistant Site Manager
Site Safety Officer
Assistant Sample Management Officer
Site Management Officer
Sampler
Sampler
Sampler
Safety Officer

Affiliation
Converse Environmental East

Anne Garibaldi 7/2/91

1401 Harrison Ave. (Rte 508)
Kearny, Hudson County, New Jersey

Sampling Inspection – July 2, 1991

Time of Arrival: 0740
R. Cunniff of Converse Environmental East meets us.

Weather: ~87°F, partly sunny (morning)
~75°F, heavily overcast (late ~~after~~ afternoon)

NUS Personnel On Site		Duties
Anne Garibaldi	Anne Garibaldi 7/2/91	Site Manager
Richard Feinberg	Richard Feinberg 7/2/91	Assistant Site Manager / Site Safety
Joanne Torchio	[illegible] 7/2/91	Assistant Sample Management Officer
Susan Henczyk	Susan Henczyk 7/2/91	Sample Management Officer
Richard Settino	Richard Settino 7/2/91	Sampler
Brian Croft	Brian Croft 7/2/91	Sampler
Chris Jimenez	Chris Jimenez 7/2/91	Sampler
Bob Yaeger	Bob Yaeger 7/2/91	Sampler
Dave Crapp		Site Safety Officer

Other Persons On Site	Affiliation
Bob Cunniff (consultant for Hudson Meadows Urban Renewal Development Corp.)	Converse Environmental East

Anne Garibaldi 7/2/91 — D. Crapp 7/2/91 — Anne Garibaldi 7/2/91

CAPACITIES, IN U. S. GALLONS, OF CYLINDERS OF VARIOUS DIAMETERS AND LENGTHS

Diam. Inches	LENGTH OF CYLINDER 1'	2'	3'	4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'	15'	16'	17'	18'	20'	22'	24'	Diam. Inches
1	0.04	0.08	0.20	0.24	0.28	0.32	0.36	0.40	0.44	0.48	0.52	0.56	0.60	0.64	0.68	0.72	0.80	0.88	0.96			1

Equipment

	EPA ID No.
camera w/prints	731696
camera w/slides	469772
radiation detector (Monitor 4)	469786
mercury sniffer	307163
OVA	IDNo. recorded on health & safety field log.
HNu	
Compass	690090

AG 7/26/91

Anne Garibaldi 7/2/91.

Until 0810, time spent setting up decon area and preparing ~~to take~~ for groundwater sampling. AG 7/2/91

0830 D. Grupp conducts tailgate safety meeting.

0845 R. Feinberg & R. Settino, B. Croft, will distribute drums for collecting purge water at sampling locations. On level C.

AG 7/2/91

0932 At MW I location.
D. Grupp and A. Garibaldi wearing PAPR's.

0933 R. Settino and B. Croft on air.

0940 Opening MW I. Screening well. Initial readings: No air readings above background on the HNu.
OVA not working properly.

Using M-scope 8 feet to water level from top of outer protective casing.
To bottom of well – ~~23~~ feet four inches.
~ 12 feet of water in well.
1V = 7.84 gallons
3V = 22.92 gallons

(Well volumes obtained from attached chart.)

D. Grupp 7/2/91

Anne Garibaldi 7/2/91.

0950 ~~1050~~ pH-initial- 7 → Beginning to purge well
conductivity .724 μmho/cm (Unsure if conductivity meter working properly)

0955 pH after one volume → 7
conductivity → 713 μmho/cm
Well purged dry.

1000 Changing air tanks.
Well recharging. Slowly.
Pumped few inches of recharge until well dry.
pH of 7

1002 Only a few inches of recharge.
R. Settino and B. Croft downgrade to level C.
All purge water is being drummed for disposal.

No air readings above background level on HNu in well or off water in bucket.

1015 Upgrading to level B.
B. Croft and R. Settino on air.

1017 Purging well dry again. ~ 2.5 gallons purged.
pH-7
conductivity-584 μmho/cm

1020 Will come back to sample well in ~ 1 hr.

1025 R. Settino & B. Croft off air
A. Garibaldi & D. Grupp off level C. At command post.
D. Grupp 7/21/11
Anne Garibaldi 7/21/11

1045 At MW5 location
All on level C
Setting up to purge well.

1055 B. Croft and R. Sittino on air, off level C.

1058 Screening MW5.
No air readings above background on HNu
OVA pegged (x100's scale) and then stopped working.
AG 7/3/91

1100 To top of water level 14.5 feet
~~to~~ from top of protective casing.
To ~~top~~ bottom of well 22.5 from top of protective outer casing.
8 feet water
1V = 5.25 gallons 3V = 15.75
(Volumes from chart)

1105 No air readings above background, HNu.
Purging MW5
Initial pH of 7
Conductivity 584 μmho/cm
Milky gray water. Well pumped dry

1111 Changing air tanks. Waiting for well to recharge.

1115 Purging well. 5+ gallons purged.
pH 7
conductivity 751 μmho/cm
[illegible] 7/2/91

Anne Garibaldi 7/2/91

1117 D. Gropp and A. Garibaldi go to Command Post to collect sample bottles and spare air tanks.
R. Settino and B. Croft off air, on level D, in vehicle.

1135 B. Croft & R. Settino on air.
M Water level 14 feet 10 ~~inches~~ tenths inches.

$\boxed{1145}$ Collecting VOA sample, GW5 *
Sample spiked w/16 drops HCl (Initial pH 7)
Sample is grayish to black.
Photo of B. Croft and R. Settino collecting GW5 on level B.

1155 Finish collecting GW5 (*In GW 4 bottles except for one amber: MW5 → GW4)
R. Settino and B. Croft off air
Downgrade to level C

Label on bottle subsequently changed to GW4 7/3/91

1205 At MW1 location
Will measure water level.
13.5 feet to water level from top of protective outer casing. Insufficient recharge.

1212 Off level C (D. Gropp, A. Garibaldi, R. Settino, B. Croft)
Taking a break.

[signature] 7/2/91

Anne Garibaldi 7/2/91

1225 R. Feinberg D. Grupp, B. Yaeger, on level C to shift drums around on site.

1300 Group back from shifting drums to different sampling locations. Off level C.

1310 At MW1 location. No air readings above background on HNu. All on Level C
Measuring water level.
12 feet to water level from top of ~~water~~ protective casing. 7/4/91

Will take VOA's now and will wait for additional recharge before continuing sampling. 7/4/91

$\boxed{1315}$ B. Croft & R. Settino take VOA sample.
Spiked w/ 18 drops HCl.

1320 Off level C. At decon area.
Getting more pH paper. D. Grupp on level C.
D. Grupp getting pH paper from R. Feinberg's group.

1335 D. Grupp, on level C, will walk out in front of vehicle.

1345 At MW ~~1~~ 4 location. Sampling what will now be GW5.
R. Settino and B. Croft on air. A. Garibaldi on level C.
[signature] 10/11/91 Anne Garibaldi 7/2/91

1350 Preparing to open MW4.
Screening MW4. No air readings above background.

14 ft. from top of protective casing to water level
22 feet 8 inches to bottom of well ~~to~~ from AG 7/3/91 top of protective casing.
6 feet 8 inches of water
1V ≈ 4.58 gallons 3V = 13.74

1359 Purging well.
Initial pH 7
Conductivity - 1888 μmho/cm
~~after 1V~~
PH after each V purged - 7. (3V's purged) AG 7/3/91
Final Conductivity. - 1888 μmho/cm

Water from well is frothy and foamy.

No air readings above background on HNu in the bucket.

1405 Finished purging 3V.

1410 B. Croft and R. Settino off air.
R. Feinberg calls over the radio that they have had no success purging MW3 free of product.
B. Cunniff of Converse will split the MW4 sample w/us.

Deul Hein 10/11/91 Anne Gailaldi 7/2/91

NUS CORPORATION
SUPERFUND DIVISION

PROJECT NOTES

TO: File

DATE: July 8, 1991

FROM: Susan Lenczyk and Jim Tosh

COPIES:

SUBJECT: On-Site Visit by Kearny Police and D.O.T.

REFERENCE: Diamond Head Oil Refinery Div. 02-9102-02 / NJJBI$

At approximately 1445 on 7/2/91 four police officers from the Kearny Police Department and one representative of the Department of Transportation (DOT), Walt Lynch, approached us at the command post and inquired as to what was our business there. One of them informed us that they had received a telephone call suggesting that someone was squatting on the property. We identified ourselves as contractors to the EPA conducting routine sampling. A second DOT representative, Robert Sudol, joined the first and expressed puzzlement as to why he was not informed, as the DOT is responsible for securing the small access road to the site. We said that it was possible that the DOT was informed, but that the message had not gotten to him. We were informed that the DOT had placed the dirt piles blocking access to the road on which we had set up the command post. Mr. Sudol asked whether we would be finished on that day (Tuesday), and we replied that we should be. He said he would have his people replace the dirt piles early the next day.

One of the police officers, T. J. Silkie, was curious about the history of the site. We told him that it was the site of an old oil refinery and that it was on the Superfund list. He said that sometimes when the police conduct chases, they have to go back there after someone, and he was concerned about any potential hazards.

Susan Lenczyk 7/8/91 / Jim Tosh 7/8/91

NUS 4434 88 1182

Dave Glenn 10/11/91

Anne Garibaldi 7/2/91 Dave Glenn 10/11/91

Anne Garibaldi 7/2/91

hicle on level D.
on level B.
16 drops HCl.
→ 14 feet from
mple GW45 7/2/91
?sp.
(GW5)
+ off air, on C.
in vehicle.
?
water level
m top of
cyanide portion)
rt to clean up.

B. Croft and R. Settino take break in vehicle on level D.

1420 B. Croft & R. Settino on level B.

1425 will spike sample w/16 drops HCl.
Water level after purging → 14 feet from top of protective casing.

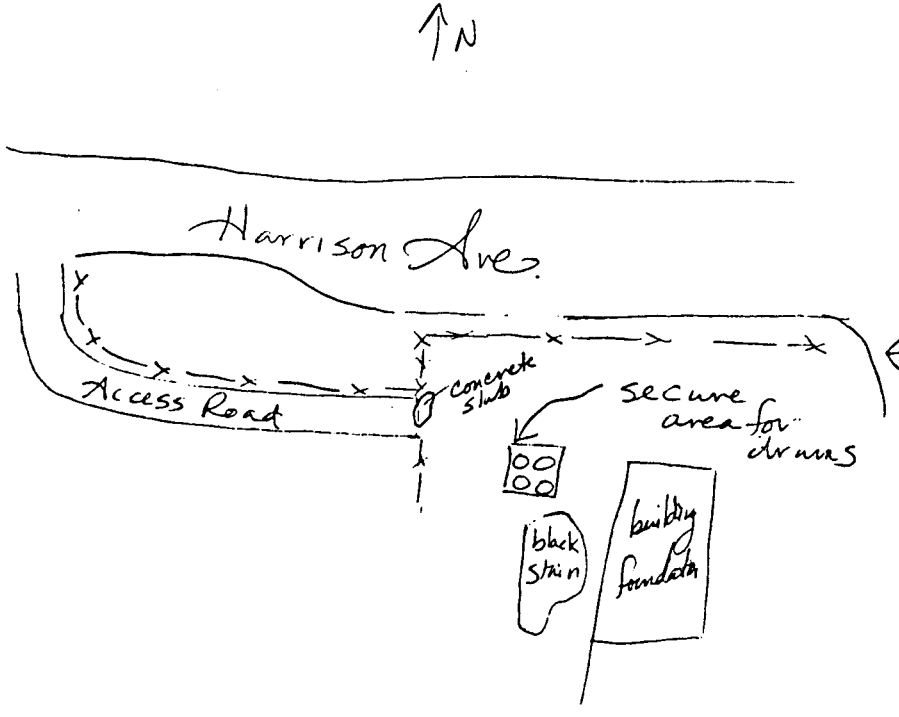
B. Croft and R. Settino sample GW4/5 AF 7/2/91
Photo of same.

Water is clear and sgruppy? sp.

1447 Finished sampling MW4 (GW5)

1450 R. Settino and B. Croft off air, on C.
Very overcast. Cooler.
1455 R. Settino, B. Croft, A. Garibaldi on D in vehicle.
D. Grupp directs vehicle on level C.
1500 At MW1 will take water level measurement.
~11 feet to water level from top of outer protective casing.
All on level C.
Will sample at 1700
(for TCL extractable, total metals, + cyanide portion)
1507 All off C in vehicle.
1510 At decon area. Will start to clean up.

David Horn 10/11/91 Anne Garibaldi 7/2/91 David Horn 10/11/91 Anne Garibaldi 7/2/91



1530 R. Feinberg radios that suburban is stuck.

A. Garibaldi, D. Grupp and R. Settino on level C to pull suburban ~~out of hole~~ 7/2/91 off dirt mound.

1545 Setting up secure area for drums. Labelling drums. Secure area located ~25 feet from end of access road, west of the building foundation.

~1600 Bob Cunniff of Converse leaves site. A. Garibaldi off level C.

1640 R. Feinberg leaves site.

A. Garibaldi gives B. Cunniff water level measurements for MW 1, 4, & 5. AG 7/3/91

Gave B Cunniff keys to locks on chain on fence. AG 7/5/91

1700 Drum storage area completed. All drums are labelled. R. Settino & D. Grupp off C.

Storage area consists of:
- layer of plastic sheeting on ground
- wooden pallet on top of sheeting
- drums on top of wooden pallet
- steel posts in four corners supporting snowfencing (wooden lathe fencing) surrounding the posts.

Taking a break before going back to sample MW1. 7/2/91

[signature] 10/11/91 [signature] 7/2/91 [signature] 10/11/91 [signature] 7/2/91

1714 At MW1 Sample Location
Depth to water level 10 feet
R. Settino, B. Croft, D. Grupp and A. Garibaldi
on level C.

B. Croft & R. Settino sample MW1
Photo of Same (Ambers & polys)
VOA's collected earlier

1720 Finished sampling MW1

1725 Off level C. At command post.

1730 Deconning equiptment with
power sprayer (vehicles also)
R. Settino and A. Garibaldi on level C.

1755 Filling drum w/ decontamination water.

Securing fence cut by Hudson Meadows Urban Renewal
Development Corp. to provide us access with
heavy chain and locks.

Photo of ~~dr~~ chain securing fence.

1805 Photo of secure drum area.

1835 Leaving site.

1920 Samples shipped from FEDEX.

[signature] 10/11/91 Anne Garibaldi 7/2/91

Samples designated as Liq Wst and Sld Wst in the sampling documentation correspond to LIQW and SOLW, respectively, in the field notebooks.

Sample S10 is a sediment sample, not a soil sample.

Rin 1 - trowel rinsate -	collected at	1035	7/1/91
Rin 2 - bowl rinsate -	collected at	1053	7/1/91
Rin 3 - auger rinsate -	collected at	1215	7/1/91
Rin 7 - trowel rinsate -	collected at	1430	7/1/91
Rin 5 - bailer rinsate -	collected at	0900	7/2/91
Rin 6 - bailer rinsate -	collected at	0900	7/2/91

times as recorded on traffic reports (attached)

Dean Hermin 10/11/91 Anne Garibaldi 7/26/91

Photograph Log
Sampling Inspection
July 1-2, 1991

All photos taken by Anne Garibaldi

Film Roll#/Slide Roll#	Photo#	Date	Time	Description
2P/2S	1	7/1/91	1335	B. Croft collects downstream surface water samples (duplicate) SW2/SW4 from the outer drainage ditch. (MS/MSD)
2P/2S	2	7/1/91	1415	B. Croft collects downstream sediment sample from the outer drainage ditch.
2P/2S	3	7/1/91	1445	B. Croft collects upstream surface water sample SW1 from the outer drainage ditch
2P/2S	4	7/1/91	1512	B. Croft collects background soil sample S1 in the area between the site access road and Harrison Ave.
2P/2S	5	7/1/91	1537	B. Croft collects surface soil samples S5 and S6 (duplicates) from inside tank base #2

David [illegible] 10/1/91 Anne Garibaldi 7/26/91

2P/25	6	7/2/91	1145	B. Croft and R. Settino collect groundwater sample GW4 from monitoring well MW5.
2P/25	7	7/2/91	1425	B. Croft and R. Settino collect groundwater sample GW5 from monitoring well MW4.
2P/25	8	7/2/91	~~7/2/91~~ 1714	B. Croft and R. Settino collect groundwater sample GW1 from monitoring well MW1.
2P/25	9	7/2/91	1755	Photo of heavy chain securing fence which ~~wall~~ was rolled back to provide vehicle access.
2P/25	10	7/2/91	1805	Photo of secure drum area. Drums contain personnel and equipment decontamination water and monitoring well purge water.

Note: Some of the sampling placards seen in the photographs show incorrect dates.

[illegible] 10/11/91 [illegible] 10/11/91

US-I IAN NG I .. ORM.....ON

Site Name: Diamond Head Oil Refinery
Case No.: 16762 SAS No.: _____
TDD/BRICS: 02-9102-02 / NJJBI$
Sampling Date(s): 7/1 & 7/2/91

Shipping Date(s): 7/1 & 7/2/91
Laboratories: Organic: S-Cubed
Inorganic: IT Analytical Services
Field SMO: Signature/Date: [signature] / [signature]

Sample Type	NUS Sample No.	Organic CLP No.	Inorganic CLP No.	QC Information	Comments
Soil	NJJB-S2	BJY 68	MBHB67		
Soil	NJJB-S3	BJY 69	MBHB68		
Soil	NJJB-S4	BJY 70	MBHB69	MS/MSD	
Soil	NJJB-S5	BJY 71	MBHB70	Dup of S6	
Soil	NJJB-S7	BJY 73	MBHB72		
Soil	NJJB-S8	BJY 74	MBHB73		
Soil	NJJB-S10	BJY 76	MBHB75		
RINSATE	NJJB-RIN1	BJY 85	MBHB-81	RINSATE-TROWEL	
RINSATE	NJJB-RIN2	BJY 86	MBHB-82	RINSATE-BOWL	
RINSATE	NJJB-RIN3	BJY 87	MBHB-83	RINSATE-AUGER	
Soil	NJJB-S1	BJY 67	MBHB66		
Soil	NJJB-S6	BJY 72	MBHB71	Dup of S5	

List samples in the following order: groundwater (GW), surfacewater (SW), sediment (SED), Soils (S), Rinsate blanks (RIN), Trip blanks (TBLK)

page ___ of ___

NUS-FIT SAMPLING INFORMATION

HIGH CONCENTRATION

Site Name: Diamond Head

Case No.: 16762 SAS No.:

TDD/BRICS: 02-9102-02 / NJJBIB

Sampling Date(s): 7/1/91 & 7/2/91

Shipping Date(s): 7/1 & 7/2/91

Laboratories: Organic: American Analytical & Tech Services — High Con

HIGH Concentration Inorganic: Nytest Environmental — High Conc

Field SMO:

Signature/Date: [signature]

Sample Type	NUS Sample No.	Organic CLP No.	Inorganic CLP No.	QC Information	Comments
Liquid Waste	NJJB-Liq Wst 1	BJY 90	MBHB 86	MS/MSD	
Liquid Waste	NJJB-Liq Wst 2	BJY 91	MBHB 87	Duplicate of Liq Wst 1	
RINSATE	NJJB-RIN 6	BJY 92	MBHB 88	RINSATE - BAILER	
Liquid Waste	NJJB-Liq Wst 3	BKD 17	MBHH 02		
Solid Waste	NJJB-Sld Wst. 1	BJY 93	MBHB 89	MS/MSD	
Solid Waste	NJJB-Sld. Wst. 2	BJY 94	MBHB 90		
RINSATE	NJJB-RIN 7	BJY99	MBHB 95	RINSATE - TROWEL	

List samples in the following order: groundwater (GW), surfacewater (SW), sediment (SED), Soils (S), Rinsate blanks (RIN), Trip blanks (TBLK)

NUS SAMPLING INFORMATION

Site Name: Diamond Head Oil Refinery Div.
Shipping Date(s): July 1 and 2, 1991
Case No.: 16762
SAS No.:
Laboratories: Organic: S-CUBED (low concentration); Amer. Analy. & Tech. Services (high conc.); IT Analytical Services (low conc.)
Inorganic: Nytest Environmental (high conc.)
TDD/BRICS: 02-9102-02 / NJJBI$
Field SMO: Susan Lemezyk 7/3/91
Signature/Date: [signature] 7/8/91
Sampling Date(s): July 1 and 2, 1991

Sample Type	NUS Sample No.	Organic CLP No.	Inorganic CLP No.	QC Information	Comments
Groundwater	NJJB-GW1	BJY80	MBHB76		
Groundwater	-GW2	BJY81	MBHB77		
Groundwater	-GW4	BJY83	MBHB79		
Groundwater	-GW5	BJY84	MBHB80		
Surface Water	-SW1	BKD01	MBHB56		
Surface Water	-SW2	BKD02	MBHB57	duplicate of SW-4	no HCl due to effervescence
Surface Water	-SW4	BKD04	MBHB59	duplicate of SW-2 MS/MSD	no HCl due to effervescence
Sediment	-SED2	BJY78	MBHB64		
Sediment	-SED5	BJY96	MBHB92		
Soil	-S1	BJY67	MBHB66		
Soil	-S2	BJY68	MBHB67		
Soil	-S3	BJY69	MBHB68		
Soil	-S4	BJY70	MBHB69	MS/MSD	
Soil	-S5	BJY71	MBHB70	Duplicate of S6	

List samples in the following order: groundwater (GW), surfacewater (SW), sediment (SED), Soils (S), Rinsate blanks (RIN), Trip blanks (TBLK)

DRAFT PRE RELEASE INFORMATION ONLY

NUS SAMPLING INFORMATION

Site Name: Diamond Head Oil Refinery Div.

Case No.: 16762 SAS No.: _____

TDD/BRICS: 02-9102-02 / NJJBJ$

Sampling Date(s): July 1 + 2, 1991

Shipping Date(s): July 1 + 2, 1991

Laboratories: Organic: S-CUBED (low conc.); Amer. Analy. & Tech. Services (high conc.)

Inorganic: IT analytical Services (low conc.); Mytest Environmental (high conc.)

Field SMO: Susan Lenczyk 7/3/91

Signature/Date: [signature] 7/8/91

Sample Type	NUS Sample No.	Organic CLP No.	Inorganic CLP No.	QC Information	Comments
Soil	NJJB-S6	BJY72	MBHB71	duplicate of S5	
Soil	-S7	BJY73	MBHB72		
Soil	-S8	BJY74	MBHB73		
Soil	-S10	BJY76	MBHB75		
Solid Waste (high conc.)	-SLD. WST. 1	BJY93	MBHB89	MS/MSD duplicate of SLD. WST. 2	
Solid Waste (high conc.)	-SLD. WST. 2	BJY94	MBHB90	duplicate of SLD. WST. 1	
Liquid Waste (high conc.)	-LIQ. WST. 1	BJY90	MBHB86	MS/MSD duplicate of LIQ. WST. 2	
Liquid Waste (high conc.)	-LIQ. WST. 2	BJY91	MBHB87	duplicate of LIQ. WST. 1	
Liquid Waste (high conc.)	-LIQ. WST. 3	~~BJY~~ BKD17	MBHH02		
Blank	-RIN 1	BJY85	MBHB81	rinsate - trowel	This trowel rinsate went to the low conc. lab
Blank	-RIN 2	BJY86	MBHB82	rinsate - bowl	
Blank	-RIN 3	BJY87	MBHB83	rinsate - auger	
Blank	-RIN 5	BJY89	MBHB85	rinsate - bailer	This bailer rinsate went to the low conc. labs
Blank	-RIN 6	BJY92	MBHB88	rinsate - bailer	This bailer rinsate went to the high conc. labs.

List samples in the following order: groundwater (GW), surfacewater (SW), sediment (SED), Soils (S), Rinsate blanks (RIN), Trip blanks (TBLK)

NUS SAMPLING INFORMATION

DRAFT PRE-RELEASE INFORMATION

Site Name: Diamond Head Oil Refinery Div.

Case No.: 16762 SAS No.: _____

TDD/BRICS: 02-9102-02/NJJBJ$

Sampling Date(s): July 1 + 2, 1991

Shipping Date(s): July 1 + 2, 1991

Laboratories: Organic: S-CUBED (low conc.); Ames Analy. & Tech. Services (high conc.)

Inorganic: IT Analytical Services (low conc.); Nytest Environmental (high conc.)

Field SMO: Susan Lenczyk 7/3/91

Signature/Date: Tom Tal 7/8/91

Sample Type	NUS Sample No.	Organic CLP No.	Inorganic CLP No.	QC Information	Comments
Blank	NJJB-RIN7	BJY99	MBHB95	rinsate-trowel	This trowel rinsate went to the high conc. lab
Blank	-TBLK1	BKD08	—	trip blank	
Blank	-TBLK3	BKD10	—	trip blank	
Blank	-TBLK4	BKD11	—	trip blank	

List samples in the following order: groundwater (GW), surfacewater (SW), sediment (SED), Soils (S), Rinsate blanks (RIN), Trip blanks (TBLK)

Page 1

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Organic Traffic Report
(For Organic CLP Analysis)

SAS No. (if applicable)

Case No. 16762

1. Project Code	
Account Code	
2. Region No.	2
Sampling Co.	NUS-FIT
4. Date Shipped	7/1/91
Carrier	F
Regional Information	
Sampler (Name)	SUSAN LENCZYK
Airbill Number	5253894310
Non-Superfund Program	
Sampler Signature	Susan Lenczyk
5. Ship To	S-CUBED 3398 CARMEL MTN. RD. SAN DIEGO, CA 92121 ATTN: ELAINE WALTERS
Site Name	DIAMOND HEAD OIL REFINERY DIV.
City, State	KEARNY, NJ
Site Spill ID	ZZ

3. Type of Activity: ENF ☐ ER ☐ LSI ☐ NPLD ☐ PA ☐ RA ☐ RD ☐ STSI ☐ O&M ☐ RIFS ☐ SSI ☑ ST ☐ STPA ☐ Other ☐

6. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. Na2SO4 4. H2SO4 5. Other (SAS) (Specify) 6. Ice only N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (SAS) 7. Waste (SAS) 8. Other (SAS) (Specify)

Triple volume required for matrix spike/matrix spike duplicate analysis sample. Ship medium and high concentration samples in paint cans. See reverse for additional standard instructions. Please indicate sample to spike/duplicate.

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative from Box 6	E RAS Analysis VOA	BNA	Pest/PCB	High ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	
BKD01	1	L	G	1	✓	✓	✓			NJJB-SW1	7/1/91 1445	sl	MBHB56	
BKD02	1	L	G	1	✓	✓	✓		No HCl due to effervescence	NJJB-SW2	7/1/91 1335	sl	MBHB57	No HCl due to effervescence
~~BKD03~~	~~1~~	~~L~~	~~G~~	~~1~~	~~✓~~	~~✓~~	~~✓~~			NJJB-SW3		sl	MBHB58	
BKD04	1	L	G	1	✓	✓	✓		MS/MSD no HCl due to effervescence	NJJB-SW4	7/1/91 1335	sl	MBHB59	MS/MSD No HCl due to effervescence
~~BKD05~~	~~1~~	~~L~~	~~G~~	~~1~~	~~✓~~	~~✓~~	~~✓~~			NJJB-SW5		sl	MBHB60	
BKD06	1	L	G	1	✓	✓	✓			NJJB-SW6		sl	MBHB61	
BKD07	1	L	G	1	✓	✓	✓			NJJB-SW7		sl	MBHB62	
~~BJY77~~	~~5~~	~~L~~	~~G~~	~~dx~~	✓	✓	✓			NJJB-SED1		sl	MBHB63	
BJY78	5	L	G	dx	✓	✓	✓			NJJB-SED2	7/1/91 1415	sl	MBHB64	
~~BJY79~~	~~5~~	~~L~~	~~G~~	~~dx~~	✓	✓	✓		not collected	NJJB-SED3		sl	MBHB65	
												TR		

Shipment for Case complete? (Y/N) N

continued on page 2 of 3

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Susan Lenczyk	7/1/91 1717				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Received by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature) ☐ Declined

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Organic Traffic Report
(For Organic CLP Analysis)

CAS No. (if applicable)

Case No. 16762

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		2	NUS-FIT	7/1/91	F

Regional Information

Sampler (Name): SUSAN LENCZYK

Airbill Number: 5253894310

Non-Superfund Program

Sampler Signature: Susan Lenczyk

5. Ship To: S-CUBED, 3398 CARMEL MTN. RD., SAN DIEGO, CA 92121, ATTN: ELAINE WALTERS

Site Name: DIAMOND HEAD OIL REFINERY DIV

City, State: KEARNY, NJ

Site Spill ID: ZZ

3. Type of Activity: ENF ☐ ER ☐ LSI ☐ NPLD ☐ PA ☐ RA ☐ RD ☐ STSI ☐ O&M ☐ RIFS ☐ SSI ☑ ST ☐ STPA ☐ Other ☐

6. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. Na_2SO_4 4. H_2SO_4 5. Other (SAS) (Specify) 6. Ice only N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (SAS) 7. Waste (SAS) 8. Other (SAS) (Specify)

Triple volume required for matrix spike/matrix spike duplicate analysis sample. Ship medium and high concentration samples in paint cans. See reverse for additional standard instructions. Please indicate sample to spike/duplicate.

WAS collected

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative from Box 6	E RAS Analysis VOA	BNA	Pest/PCB	High ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	
~~BJY95~~	~~5~~	~~L~~	~~G~~		~~✓~~	~~✓~~	✓		not collected	NJJB-SED4		sl	MBHB91	
~~BJY96~~	~~5~~	~~L~~	~~G~~		~~✓~~	~~✓~~	✓		~~not collected~~ SED5 WAS collected	NJJB-SED5	7/1/91 1432	sl	MBHB92	WAS collected
~~BJY97~~	5	L	G		✓	✓	✓		not collected	NJJB-SED6		sl	MBHB93	
BJY67	5	L	G		✓	✓	✓			NJJB-S1	7/1/91 1512	sl	MBHB66	
BJY68	5	L	G		✓	✓	✓			NJJB-S2	1222	sl	MBHB67	
BJY69	5	L	G		✓	✓	✓			NJJB-S3	1210	sl	MBHB68	
BJY70	5	L	G		✓	✓	✓		MS/MSD	NJJB-S4	1247 ~~1232~~ sl	sl	MBHB69	MS/MSD
BJY71	5	L	G		✓	✓	✓			NJJB-S5	1537 ~~1432~~	sl	MBHB70	
BJY72	5	L	G		✓	✓	✓			NJJB-S6	1537	sl	MBHB71	
BJY73	5	L	G		✓	✓	✓			NJJB-S7	1235	sl	MBHB72	

Shipment for Case complete? (Y/N) N

continued on page 3 of 3

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CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Susan Lenczyk	7/1/91 1717				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Received by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature) ☐ Declined

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Organic Traffic Report

(For Organic CLP Analysis)

SAS No. (if applicable)

Case No. 16762

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		2	NUS-FIT	7/1/91	F

Regional Information

Sampler (Name): SUSAN LENCZYK

Airbill Number: 5253894310

Non-Superfund Program

Sampler Signature: Susan Lenczyk

5. Ship To: S-CUBED, 3398 CARMEL MTN. ROAD, SAN DIEGO, CA 92121, ATTN: ELAINE WALTERS

Site Name: DIAMOND HEAD OIL REFINERY DIV.

City, State: KEARNY, NJ

Site Spill ID: ZZ

3. Type of Activity: ENF ☐ ER ☐ LSI ☐ NPLD ☐ PA ☐ RA ☐ RD ☐ STSI ☐ O&M ☐ RIFS ☐ SSI ☑ ST ☐ STPA ☐ Other ☐

6. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. Na_2SO_4 4. H_2SO_4 5. Other (SAS) (Specify) 6. Ice only N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (SAS) 7. Waste (SAS) 8. Other (SAS) (Specify)

Triple volume required for matrix spike/matrix spike duplicate analysis sample. Ship medium and high concentration samples in paint cans. See reverse for additional standard instructions. Please indicate sample to spike/duplicate.

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative from Box 6	E RAS Analysis VOA	BNA	Pest/PCB	High ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	
BJY74	5	L	G		✓	✓	✓			NJJB-S8	7/1/91 1356	sl	MBHB73	
~~BJY75~~	~~5~~	~~L~~	~~G~~		~~✓~~	~~✓~~	~~✓~~		not collected	~~NJJB-S9~~		sl	MBHB74	
BJY76	5	L	G		✓	✓	✓			NJJB-S10	7/1/91 1407	sl	MBHB75	
BJY85	4	L	G	1	✓	✓	✓		RINSATE-TROWEL	NJJB-RIN1	7/1/91 1035	sl	MBHB81	RINSATE-TROWEL
BJY86	4	L	G	1	✓	✓	✓		BOWL	NJJB-RIN2	7/1/91 1053	sl	MBHB82	RINSATE-BOWL
BJY87	4	L	G	1	✓	✓	✓		AUGER	NJJB-RIN3	7/1/91 1215	sl	MBHB83	RINSATE-AUGER
~~BJY88~~	~~4~~	~~L~~	~~G~~	~~1~~	~~✓~~	~~✓~~	~~✓~~		not collected	~~NJJB-RIN4~~		sl	MBHB84	RINSATE-SCOOP
BKD08	3	L	G	1	✓					NJJB-TBLK1	1020	sl	—	TRIP BLANK
~~BKD12~~	~~5~~	~~L~~	~~G~~		✓	✓	✓		not collected	~~NJJB-S11~~		sl		
~~BKD09~~	~~3~~	~~L~~	~~G~~	~~1~~	~~✓~~				not collected	~~NJJB-TBLK2~~		sl	—	TRIP BLANK

Shipment for Case complete? (Y/N) N

TR

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Susan Lenczyk	7/1/91 1717				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Received by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature) ☐ Declined

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Organic Traffic Report

(For Organic CLP Analysis)

SAS No. (if applicable)

Case No. 16762

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		2	NUS-FIT	7/1/91	F

Regional Information

Sampler (Name): SUSAN LENCZYK

Airbill Number: 8749584270 ~~6253894306~~ sl 6/30

Non-Superfund Program

Sampler Signature: Susan Lenczyk

Site Name: DIAMOND HEAD OIL REFINERY DIV.

City, State: KLARNY, NJ

Site Spill ID: ZZ

3. Type of Activity: ENF ☐ ER ☐ LSI ☐ NPLD ☐ PA ☐ RA ☐ RD ☐ STSI ☐ O&M ☐ RIFS ☐ SSI ☑ ST ☐ STPA ☐ Other ☐

5. Ship To: AMER. ANALY. & TECH. SERVICES, 1700 WEST ALBANY, SUITE C, BROKEN ARROW, OK 74012, ATTN: CHUCK HOOVER

6. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. Na_2SO_4 4. H_2SO_4 5. Other (SAS) (Specify) 6. Ice only N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (SAS) (7) Waste (SAS) (8) Other (SAS) (Specify)

Triple volume required for matrix spike/matrix spike duplicate analysis sample. Ship medium and high concentration samples in paint cans. See reverse for additional standard instructions. Please indicate sample to spike/duplicate.

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative from Box 6	E RAS Analysis VOA	BNA	Pest/PCB	High ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	
~~BJY90~~	~~7*~~	~~H~~	~~G~~	~~N~~	~~✓~~	~~✓~~	~~✓~~	—	~~not collected~~	~~NJJB-LIQ.WST.1~~		~~sl~~	MBHB86	MS/MSD not collected
~~BJY91~~	~~7*~~	~~H~~	~~G~~	~~N~~	~~✓~~	~~✓~~	~~✓~~	—	~~not collected~~	~~NJJB-LIQ.WST.2~~		~~sl~~	MBHB87	
~~BJY92~~	~~4~~	~~L~~	~~G~~	~~N~~	~~✓~~	~~✓~~	~~✓~~	—	~~not collected~~	~~NJJB-RIN 6~~		~~sl~~	MBHB88	RINSATE-BAILER
BJY93	7†	H	G	N	✓	✓	✓		MS/MSD	NJJB-SLD.WST.1	7/1/91 1450	sl	MBHB89	MS/MSD
BJY94	7†	H	G	N	✓	✓	✓			NJJB-SLD.WST.2	↓ 1459	sl	MBHB90	
BJY99	4	L	G	N	✓	✓	✓		RINSATE-TROWEL	NJJB-RIN 7	7/1/91 1430	sl	MBHB95	RINSATE-TROWEL

Shipment for Case complete? (Y/N) N

Page 1 of 1

~~* LIQUID WASTE~~

† SOLID WASTE

TR

CHAIN OF CUSTODY RECORD

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Susan Lenczyk	7/1/91 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Received by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature) ☐ Declined

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Inorganic Traffic Report
(For Inorganic CLP Analysis)

SAS No. (if applicable)

Case No. 16762

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		2	NUS-FIT	7/1/91	F

Regional Information

Sampler (Name): Jeanne Torchia

Airbill Number: 5253894273

Non-Superfund Program

Sampler Signature: [signature]

5. Ship To: IT Analytical Services, 5103 Old William Penn Hwy, Export, PA 15632, Attn: Bob Finlay

Site Name: Diamond Head Oil Refinery

3. Type of Activity: ENF ☐ ER ☐ LSI ☐ NPLD ☐ PA ☐ RA ☐ RD ☐ STSI ☐ O&M ☐ RIFS ☐ SSI ☒ ST ☐ STPA ☐ Other ☐

City, State: Kearny, NJ

Site Spill ID

6. Preservative (Enter in Column D): 1. HNO_3 2. NaOH 3. HCl 4. H_2SO_4 5. Ice only 6. Other (SAS) (Specify) N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (SAS) 7. Waste (SAS) 8. Other (SAS) (Specify)

Double volume required for spike/duplicate analysis sample.

Ship medium and high concentration samples in paint cans.

See reverse for additional standard instructions.

For total or dissolved metals, check only one RAS analysis per each sample.

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp/Grab	D Preservative from Box 6	E - RAS Analysis: Metals Total	Metals Dissolved	Cyanide	Low Conc. Nitrate/Nitrite	Low Conc. Fluoride	High pH	High Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	
MBH356	1	L	G	1	X		X						NJJB-SW1	7/1/91 1445	JT	BKD01	
MBH357	1	L	G	1	X		X						NJJB-SW2	1335	JT	BKD02	
~~MBH358~~	~~1~~	~~L~~	~~G~~	~~1~~	~~X~~		~~X~~						~~NJJB-SW3~~		~~JT~~	~~BKD03~~	
MBH359	1	L	G	1	X		X						NJJB-SW4	1335	JT	BKD04	MS/MSD
~~MBH360~~	~~1~~	~~L~~	~~G~~	~~1~~	~~X~~		~~X~~						~~NJJB-SW5~~		~~JT~~	~~BKD05~~	
~~MBH361~~	~~1~~	~~L~~	~~G~~	~~1~~	~~X~~		~~X~~						~~NJJB-SW6~~		~~JT~~	~~BKD06~~	
~~MBH362~~	~~1~~	~~L~~	~~G~~	~~1~~	~~X~~		~~X~~						~~NJJB-SW7~~		~~JT~~	~~BKD07~~	
~~MBH363~~	~~5~~	~~L~~	~~G~~	~~N~~	~~X~~		~~X~~						~~NJJB-SED1~~		~~JT~~	~~BJY77~~	
MBH364	5	L	G	N	X		X						NJJB-SED2	1415	JT	BJY78	
~~MBH365~~	~~5~~	~~L~~	~~G~~	~~N~~	~~X~~		~~X~~						~~NJJB-SED3~~		~~JT~~	~~BJY79~~	

Shipment for Case complete? (Y/N) N

TR

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	7/1/91 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Received by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature) ☐ Declined

EPA Form 9110-1 (Rev. 11-90) Replaces EPA Form (2075-6), previous edition which may be used

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Inorganic Traffic Report
(For Inorganic CLP Analysis)

SAS No. (if applicable)

Case No. 16762

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		2	NUS-FIT	7/1/91	F

Regional Information

Sampler (Name): Joanne Torchia

Airbill Number: 5253894273

Non-Superfund Program

Sampler Signature: Joanne Torchia

5. Ship To: IT Analytical Services, 5103 Old William Penn. Hwy., Export, PA 15632 Attn: Bob Finlay

Site Name: Diamond Head Oil Refinery

3. Type of Activity: ENF ☐ ER ☐ LSI ☐ NPLD ☐ PA ☐ RA ☐ RD ☐ STSI ☐ O&M ☐ RIFS ☐ SSI ☒ ST ☐ STPA ☐ Other ☐

City, State: Kearny, NJ

Site Spill ID

6. Preservative (Enter in Column D): 1. HNO_3 2. NaOH 3. HCl 4. H_2SO_4 5. Ice only 6. Other (SAS) (Specify) N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (SAS) 7. Waste (SAS) 8. Other (SAS) (Specify)

Double volume required for spike/duplicate analysis sample.

Ship medium and high concentration samples in paint cans.

See reverse for additional standard instructions.

For total or dissolved metals, check only one RAS analysis per each sample.

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp/Grab	D Preservative from Box 6	E - RAS Analysis: Metals Total	Metals Dissolved	Cyanide	Low Conc. Nitrate/Nitrite	Low Conc. Fluoride	High pH	High Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	
~~MBHB91~~	~~5~~	~~L~~	~~G~~	~~N~~	~~X~~		~~X~~						~~NJJB SED4~~	~~7/1/91~~	~~JT~~	~~BJY95~~	
MBHB92	5	L	G	N	X		X						NJJB - SED 5	1432	JT	BJY96	
~~MBHB93~~	~~5~~	~~L~~	~~G~~	~~N~~	~~X~~		~~X~~						~~NJJB SED6~~		~~JT~~	~~BJY97~~	
~~MBHB66~~	~~5~~	~~L~~	~~G~~	~~N~~	~~X~~		~~X~~						~~NJJB S1~~	~~1512~~	~~JT~~	~~BJY67~~	
MBHB67	5	L	G	N	X		X						NJJB - S2	1222	JT	BJY68	
MBHB68	5	L	G	N	X		X						NJJB - S3	1210	JT	BJY69	
MBHB69	5	L	G	N	X		X						NJJB - S4	1245	JT	BJY70	MS/MSD
MBHB70	5	L	G	N	X		X						NJJB - S5	1932	JT	BJY71	
~~MBHB71~~	~~5~~	~~L~~	~~G~~	~~N~~	~~X~~		~~X~~						~~NJJB - S6~~	~~1537~~	~~JT~~	~~BJY72~~	
MBHB72	5	L	G	N	X		X						NJJB - S7	1235	JT	BJY73	

Shipment for Case complete? (Y/N) N

GOOD GOOD

TR

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Joanne Torchia	7/1/91 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Received by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature) ☐ Declined

EPA Form 9110-1 (Rev. 11-90) Replaces EPA Form (2075-6), previous edition which may be used

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PO Box 818 Alexandria, VA 22313
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Inorganic Traffic Report
(For Inorganic CLP Analysis)

S. No. (if applicable)

No. 16762

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		2	NUS-FIT	7/1/91	F

Regional Information

Sampler (Name): Joanne Torchia

Airbill Number: 5253894273

Non-Superfund Program

Sampler Signature: [signature]

Site Name: Diamond Head Oil Refinery

City, State: Kearny, NJ

Site Spill ID

3. Type of Activity: ENF ☐ ER ☐ LSI ☐ NPLD ☐ PA ☐ RA ☐ RD ☐ STSI ☐ O&M ☐ RIFS ☐ SSI ☒ ST ☐ STPA ☐ Other ☐

5. Ship To: IT Analytical Services, 5703 Old William Penn. Hwy., Export, PA 15632, Attn: Bob Finlay

6. Preservative (Enter in Column D): 1. HNO_3 2. NaOH 3. HCl 4. H_2SO_4 5. Ice only 6. Other (SAS) (Specify) N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (SAS) 7. Waste (SAS) 8. Other (SAS) (Specify)

Double volume required for spike/duplicate analysis sample.

Ship medium and high concentration samples in paint cans.

See reverse for additional standard instructions.

For total or dissolved metals, check only one RAS analysis per each sample.

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative from Box 6	E - RAS Analysis: Metals Total	Metals Dissolved	Cyanide	Low Conc. Nitrate/Nitrite	Low Conc. Fluoride	High pH	High Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	
MBHB73	5	L	G	N	X		X						NJJB-58	7/2/91 1356	JT	BJY 74	
~~MBHB74~~	~~5~~	~~L~~	~~G~~	~~N~~	~~X~~		~~X~~						~~NJJB-59~~		~~JT~~	~~BJY 75~~	
MBHB75	5	L	G	N	X		X						NJJB-510	1407	JT	BJY 76	
MBHB81	4	L	G	1/2/3	X		X						NJJB-RIN1	1035	JT	BJY 85	RINSATE-TROWEL
MBHB82	4	L	G	1/2/3	X		X						NJJB-RIN2	1053	JT	BJY 86	RINSATE-BOWL
MBHB83	4	L	G	1/2/3	X		X						NJJB-RIN3	1215	JT	BJY 87	RINSATE-AUGER
~~MBHB84~~	~~4~~	~~L~~	~~G~~		~~X~~		~~X~~						~~NJJB-RIN4~~			~~BJY 88~~	~~RINSATE-SCOOP~~
	~~3~~	~~L~~	~~G~~										~~NJJB-TBLK1~~			~~BKD 08~~	~~TRIP BLANK~~

Shipment for Case complete? (Y/N) N

TR

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	7/1/91 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Received by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature) ☐ Declined

EPA Form 9110-1 (Rev. 11-90) Replaces EPA Form (2075-6), previous edition which may be used

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Inorganic Traffic Report

(For Inorganic CLP Analysis)

SAS No. (if applicable)

Case No. 16762

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		2	NUS-FIT	7/1/91	F

Regional Information

Sampler (Name): Joanne Torchia

Airbill Number: 8749584292 ~~5253844284~~

Non-Superfund Program

Sampler Signature: [signature]

Site Name: Diamond Head Oil Refinery

City, State: Kearny, NJ

Site Spill ID

3. Type of Activity: ENF ☐ ER ☐ LSI ☐ NPLD ☐ PA ☐ RA ☐ RD ☐ STSI ☐ O&M ☐ RIFS ☐ SSI ☒ ST ☐ STPA ☐ Other ☐

5. Ship To: Nytest Environmental, 60 Seaview Blvd., Port Washington, NY 11050. Attn: Chris Supple

6. Preservative (Enter in Column D): 1. HNO_3 2. NaOH 3. HCl 4. H_2SO_4 5. Ice only 6. Other (SAS) (Specify) N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (SAS) 7. Waste (SAS) 8. Other (SAS) (Specify)

Double volume required for spike/duplicate analysis sample.

Ship medium and high concentration samples in paint cans.

See reverse for additional standard instructions.

For total or dissolved metals, check only one RAS analysis per each sample.

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative from Box 6	E - RAS Analysis: Metals Total	Metals Dissolved	Cyanide	Low Conc. Nitrate/Nitrite	Low Conc. Fluoride	High pH	High Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	
~~MBHB86~~	~~8~~	~~H~~	~~G~~	~~N~~	~~X~~		~~X~~						~~NJJB-LIQ WST 1~~	~~7/1/91~~	~~JT~~	~~BJY90~~	~~MS/MSD~~
~~MBHB87~~	~~8~~	~~H~~	~~G~~	~~N~~	~~X~~		~~X~~						~~NJJB-LIQ WST 2~~		~~JT~~	~~BJY91~~	
~~MBHB88~~	~~8~~ 4	~~L~~	~~G~~		~~X~~		~~X~~						~~NJJB-RIN 6~~		~~JT~~	~~BJY92~~	~~RINSATE - BAILER~~
MBHB89	8	H	G	N	X		X						NJJB-SLD WST 1	1450	JT	BJY93	MS/MSD
MBHB90	8	H	G	N	X		X						NJJB-SLD WST 2	1459	JT	BJY94	
MBHB95	~~8~~ 4	L	G	1/2/3	X		X						NJJB-RIN 7	1430	JT	BJY94	RINSATE - TROWEL

Shipment for Case complete? (Y/N) N

TR

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	7/1/91 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Received by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature) ☐ Declined

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Organic Traffic Report

(For Organic CLP Analysis)

SAS No. (if applicable)

Case No. 16762

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		2	NUS-FIT	7/2/91	F

Regional Information

Sampler (Name): SUSAN LENCZYK

Airbill Number: 7212650222

Non-Superfund Program

Sampler Signature: Susan Lenczyk

5. Ship To: S-CUBED, 3398 CARMEL MTN. RD., SAN DIEGO, CA 92121, ATTN: ELAINE WALTERS

Site Name: DIAMOND HEAD OIL REFINERY DIV.

3. Type of Activity: ENF ☐ ER ☐ LSI ☐ NPLD ☐ PA ☐ RA ☐ RD ☐ STSI ☐ O&M ☐ RIFS ☐ SSI ☑ ST ☐ STPA ☐ Other ☐

City, State: KEARNY, NJ

Site Spill ID: ZZ

6. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. Na2SO4 4. H2SO4 5. Other (SAS) (Specify) 6. Ice only N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (SAS) 7. Waste (SAS) 8. Other (SAS) (Specify)

Triple volume required for matrix spike/matrix spike duplicate analysis sample. Ship medium and high concentration samples in paint cans. See reverse for additional standard instructions. Please indicate sample to spike/duplicate.

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative from Box 6	E RAS Analysis VOA	BNA	Pest/PCB	High ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	
BJY80	2	L	G	1	✓	✓	✓			NJJB-GW1	7/2/91 VOA-1215 BNA-1714	sl	MBHB76	
BJY81	2	L	G	1	✓	✓	✓			NJJB-GW2	1146	sl	MBHB77	
~~BJY82~~	~~2~~	~~L~~	~~G~~	~~1~~	~~✓~~	~~✓~~	~~✓~~		not collected	~~NJJB-GW3~~		sl	~~MBHB78~~	
BJY83	2	L	G	1	✓	✓	✓			NJJB-GW4	1145	sl	MBHB79	
BJY84	2	L	G	1	✓	✓	✓			NJJB-GW5	1425	sl	MBHB80	
~~BJY88~~	~~2~~	~~L~~	~~G~~	~~1~~	~~✓~~	~~✓~~	~~✓~~		not collected	~~NJJB-GW6~~		sl	~~MBHB84~~	
BJY89	4	L	G	1	✓	✓	✓		RINSATE-BAILER	NJJB-RIN5	✓ 0900	sl	MBHB85	RINSATE-BAILER

Shipment for Case complete? (Y/N) Y

Page 1 of 1

TR

Ann,
I left the trip blanks off here unintentionally, but the lab was informed. For your info, the numbers are as follows
BKD10 (TBLK 3)
BKD11 (TBLK 4)
Sue

TODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Susan Lenczyk	7/2/91 1745				
Relinquished by: (Signature)	Date / Time		Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Received by: (Signature)	Date / Time		Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature)
☐ Declined

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703-557-2490 FTS 557-2490

Organic Traffic Report
(For Organic CLP Analysis)

[illegible] No. (if applicable)

Case No. 16762

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		2	NUS-FIT	7/2/91	F

Regional Information

Sampler (Name): SUSAN LENCZYK

Airbill Number: 8749584281

Non-Superfund Program

Sampler Signature: Susan Lenczyk

5. Ship To: AMER. ANALY. & TECH. SERVICES, 1700 WEST ALBANY, SUITE C, BROKEN ARROW, OK 74012, ATTN: CHUCK HOOVER

Site Name: DIAMOND HEAD OIL REFINERY DIV.

3. Type of Activity: ENF ☐ ER ☐ LSI ☐ NPLD ☐ PA ☐ RA ☐ RD ☐ STSI ☐ O&M ☐ RIFS ☐ SSI ☑ ST ☐ STPA ☐ Other ☐

City, State: KEARNY, NJ

Site Spill ID

6. Preservative (Enter in Column D): 1. HCl 2. HNO3 3. Na_2SO_4 4. H_2SO_4 5. Other (SAS) (Specify) 6. Ice only N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (SAS) 7. Waste (SAS) 8. Other (SAS) (Specify)

Triple volume required for matrix spike/matrix spike duplicate analysis sample. Ship medium and high concentration samples in paint cans. See reverse for additional standard instructions. Please indicate sample to spike/duplicate.

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp./Grab	D Preservative from Box 6	E RAS Analysis VOA	BNA	Pest/PCB	High ARO/TOX	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.
BJY90	7*	H	G	N	✓	✓	✓		MS/MSD	NJJB-LIQ.WST.1	7/2/91 1326	sl	MBHB86
BJY91	7*	H	G	N	✓	✓	✓			NJJB-LIQ.WST.2	7/2/91 1326	sl	MBHB87
BJY92	4	L	G	N	✓	✓	✓		RINSATE-BAILER	NJJB-RIN 6	7/2/91 0900	sl	MBHB88
BKD17	7*	H	G	N	✓	✓	✓			NJJB-LIQ.WST.3	7/2/91 1547	sl	MBHH02

Shipment for Case complete? (Y/N): Y

* LIQUID WASTE

TR

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Susan Lenczyk	7/2/91 1630				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Received by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature) ☐ Declined

EPA Form 9110-2 (Rev. 10-90) Replaces EPA Form (2075-7), previous edition which may be used

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Contract Laboratory Program Sample Management Office
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Inorganic Traffic Report

(For Inorganic CLP Analysis)

SAS No. (if applicable)

Case No. 16762

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		2	NUS-FIT	7/2/91	F

Regional Information

Sampler (Name): Joanne Torchia

Airbill Number: 9802406025 ~~5253894273~~

Non-Superfund Program

Sampler Signature: [signature]

5. Ship To: IT Analytical Services, 5103 Old William Penn Hwy., Export, PA 15632, Attn: Bob Finley

Site Name: Diamond Head Oil Refinery

City, State: Kearny, NJ

Site Spill ID:

3. Type of Activity: ENF, ER, LSI, NPLD, PA, RA, RD, STSI, O&M, RIFS, SSI, ST, STPA, Other

6. Preservative (Enter in Column D): 1. HNO_3 2. NaOH 3. HCl 4. H_2SO_4 5. Ice only 6. Other (SAS) (Specify) N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (SAS) 7. Waste (SAS) 8. Other (SAS) (Specify)

Double volume required for spike/duplicate analysis sample.

Ship medium and high concentration samples in paint cans.

See reverse for additional standard instructions.

For total or dissolved metals, check only one RAS analysis per each sample.

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp/Grab	D Preservative from Box 6	E - RAS Analysis: Metals Total	Metals Dissolved	Cyanide	Low Conc. Nitrate/Nitrite	Low Conc. Fluoride	High pH	High Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	
MBHB 76	2	L	G	1	X		X						NJJB-GW1	7/2/91 1714	JT	BJY 80	
MBHB 77	2	L	G	1	X		X						NJJB-GW2	1146	JT	BJY 81	
~~MBHB 78~~	~~2~~	~~L~~	~~G~~	~~1~~	~~X~~		~~X~~						~~NJJB-GW3~~		~~JT~~	~~BJY 82~~	
MBHB 79	2	L	G	1	X		X						NJJB-GW4	1145	JT	BJY 83	
MBHB 80	2	L	G	1	X		X						NJJB-GW5	1425	JT	BJY 84	
~~MBHB 84~~	~~2~~	~~L~~	~~G~~	~~1~~	~~X~~		~~X~~						~~NJJB-GW6~~		~~JT~~	~~BJY 88~~	
MBHB 85	4	L	G	1/2/3	X		X						NJJB-RIN 5	0900	JT	BJY 89	RINSATE-BAILER

Shipment for Case complete? (Y/N) N

TR

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	7/2/91 1745				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Received by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature) ☐ Declined

EPA Form 9110-1 (Rev. 11-90) Replaces EPA Form (2075-6), previous edition which may be used

DISTRIBUTION:
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Inorg-1

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Inorganic Traffic Report

(For Inorganic CLP Analysis)

SAS No. (if applicable)

Case No. 16762

1. Project Code	Account Code	2. Region No.	Sampling Co.	4. Date Shipped	Carrier
		2	NUS-FIT	7/2/91	F

Regional Information

Sampler (Name): Joanne Torchia

Airbill Number: 9764255454

Non-Superfund Program

Sampler Signature: [signature]

5. Ship To: Nytest Environmental, 60 Seaview Blvd., Port Washington, NY, Attn: Chris Supple 11050

Site Name: Diamond Head Oil Refinery

City, State: Kearny NJ

Site Spill ID

3. Type of Activity: ENF ☐ ER ☐ LSI ☐ NPLD ☐ PA ☐ RA ☐ RD ☐ STSI ☐ O&M ☐ RIFS ☐ SSI ☒ ST ☐ STPA ☐ Other ☐

6. Preservative (Enter in Column D): 1. HNO_3 2. NaOH 3. HCl 4. H_2SO_4 5. Ice only 6. Other (SAS) (Specify) N. Not preserved

7. Sample Description (Enter in Column A): 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil/Sediment 6. Oil (SAS) 7. Waste (SAS) 8. Other (SAS) (Specify)

Double volume required for spike/duplicate analysis sample.

Ship medium and high concentration samples in paint cans.

See reverse for additional standard instructions.

For total or dissolved metals, check only one RAS analysis per each sample.

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp/ Grab	D Preservative from Box 6	E - RAS Analysis: Metals Total	Metals Dissolved	Cyanide	Low Conc. Nitrate/ Nitrite	Low Conc. Fluoride	High pH	High Conductivity	F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/ Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	
MBHB86	8	H	G	N	X		X						NJJB-LIQWST1	7/2/91 1326	JT	BJY96	MS/MSD
MBHB87	8	H	G	N	X		X						NJJB-LIQ WST2	1326	JT	BJY91	
MBHB88	4	L	G	1/2/3	X		X						NJJB-RIN 6	0900	JT	BJY92	RINSATE-BAILER
MBHH02	8	H	G	N	X		X						NJJB-LIQWST3	1547	JT	BKD17	

Shipment for Case complete? (Y/N)

TR

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	7/2/91 1630				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Received by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Is custody seal intact? Y/N/none	

Split Samples ☐ Accepted (Signature) ☐ Declined

EPA Form 9110-1 (Rev. 11-90) Replaces EPA Form (2075-6), previous edition which may be used

DISTRIBUTION:
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0138F
02-9102-02

NUS CORPORATION

II

0803

18

GUIDANCE FOR PROPER USE OF LOG BOOKS

C-[illegible]-3-[illegible]-125

Purpose

- Serves to document onsite activities and be understandable to an outside reader.
- Provides the basis for later written reports.
- Used as an evidentiary document and may be used in legal proceedings.

Distribution

- Controlled by the project manager and distributed as appropriate to personnel designated by the project manager.

General Procedures

- Record information in language which is objective and factual.
- Use ink. Waterproof ink is recommended.
- Leave first two pages blank. They serve as space for the table of contents to be added when the log book is complete.
- The first written page identifies the date, time, TDD number, site name, location, NUS personnel and their responsibilities, other non-NUS personnel and observed weather conditions.
- Start on a new page at the start of each day's field activities. This page should identify date, time, TDD number, site name and location, NUS personnel and their responsibilities, other non-NUS personnel and observed weather conditions.
- List all persons leaving or entering the site.
- Information recorded in the log book should be in chronological order.
- Sign and date each page, log all entries using a 24 hour clock. Entries should be time logged every 15 to 30 minutes.
- Corrections are to be lined through and initialed. No erroneous notes are to be made illegible.
- Include a sketch or map of the site which can be used to locate photo or sample locations. Note landmarks, indicate north, and if possible include an approximate scale. Include as many sketches and maps as necessary.
- A person not present when field activities were being documented should read each completed page, and countersign and date when satisfied that the written notes are understandable.

Specific Field Activities To Be Documented

- Record the who, what and where of field activities.
- Indicate sampling and photo locations on a site sketch or map.
- As part of the chain of custody procedure, recorded in-situ sampling information must include sample number, date, time, sampling personnel, sample type, designation of sample as a grab or composite, and any preservative used.
- Information for in-situ measurements must include a sample ID number, the date, time, and personnel taking measurements. Pertinent in-situ measurements include but are not limited to pH, temperature, conductivity, flow measurements, continuous air monitoring measurements, and stack gas analysis. If infield calculations are necessary they must be checked and signed by a second team member.
- Create a photo log to document photos taken in the field. These must include date, time, photographer, sample number, roll number, frame number, photo ID number and description. Indicate if the film is for slides or prints in the column for roll number. Photo ID numbers can be added at the time the photo log is assembled.
- Record onsite health and safety measures used. Describe observed potential hazards to health and safety. Document the level of protection used, decontamination procedure used and specific decontamination solutions.
- When sampling is complete, a summary log is to be completed. It must include date, time, sample number, description, field book reference page, and the number and date of the chain of custody from on which the sample is listed. Indicate whether or not the sample was split.
- Record details regarding relevant information obtained during onsite interviews. Include names of persons interviewed, the interest group represented, their address and phone number.
- Record any other relevant information which would be difficult to generate at a later date.

DIAMOND HEAD OIL REFINERY DIV.
02-9102-02
TDD MANAGER - A. GARIBALDI
LOGBOOOK #0803
JUNE 25, 1991

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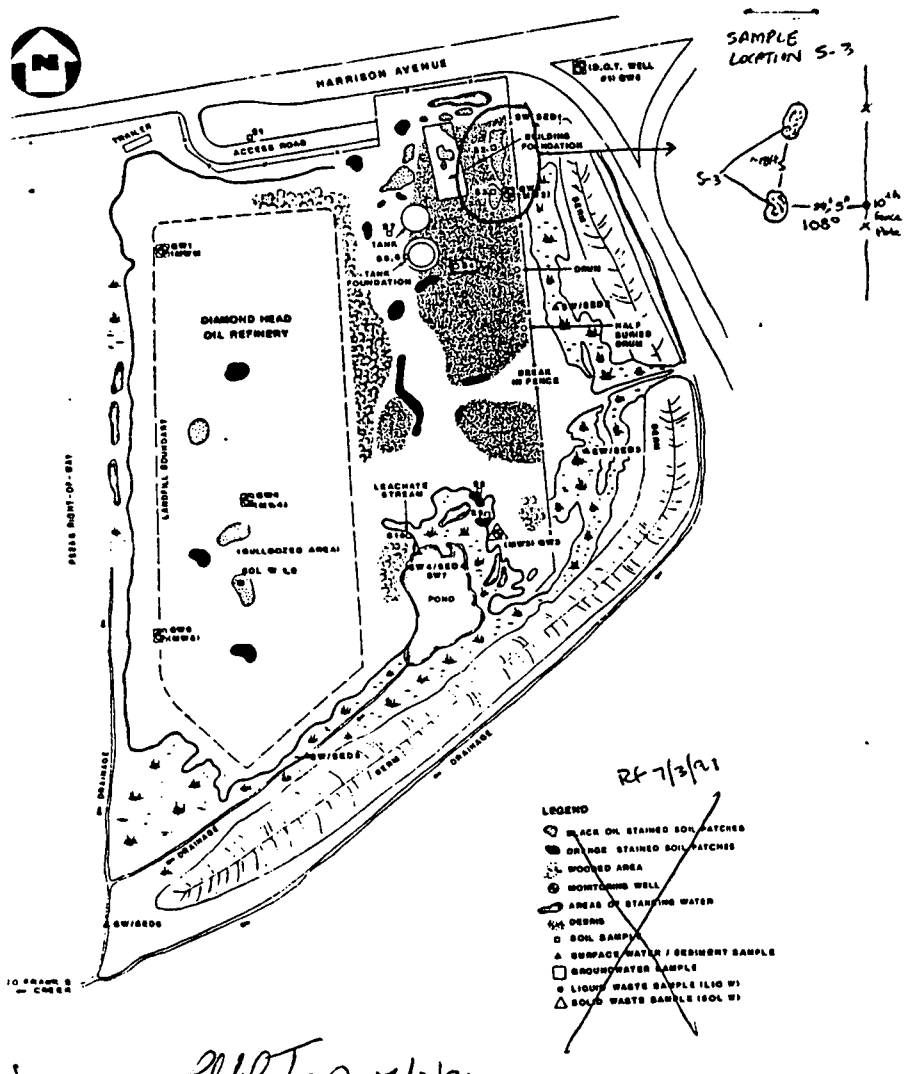
Page - 9	Sampling Activities for 7/2/91
Pages 16-17	Photo Log

02-9102-02 7/1/91



RF 7/3/91

SAMPLE LOCATION MAP

DIAMOND HEAD OIL REFINERY DIV., KEARNY, N.J.

NOT TO SCALE

FIGURE 3

NUS CORPORATION

[signature] 7/3/91

[signature] 10-4-91

11:45 Documentation for this notebook (0503) will be performed by R. Feinberg.
- Weather is noted in notebook #0774.

Air Instruments

		BACKGROUND READINGS
OVA # 469760	"H"	0ppm
HNU # 307139	"B"	0 ppm
Monitor 4 - 731689		20CAN / 002 MR/HR
WEATHERMATIC CAMERA (PRINTS) 731694		
CANON AE1 CAMERA (SLIDES) 307126		

1151 YENGER/SETTINO/JIMENEZ/FEINBERG WILL GO OUT AND SAMPLE S-7 (SUBSURFACE) S-2, S-3, S-5 + S-6 (DUP), S-4

1205 SAMPLING TEAM ON AIR

1210 ARRIVE AT S-3 - WILL COLLECT VOAS FROM THIS LOCATION AND COMPOSITE FROM THIS LOCATION AND (stained soil) PATCH LOCATED 18 FEET TO NE FROM THIS LOCATION. VOAS will be soley collected from southern most soil stain patch. RF 7/3/91

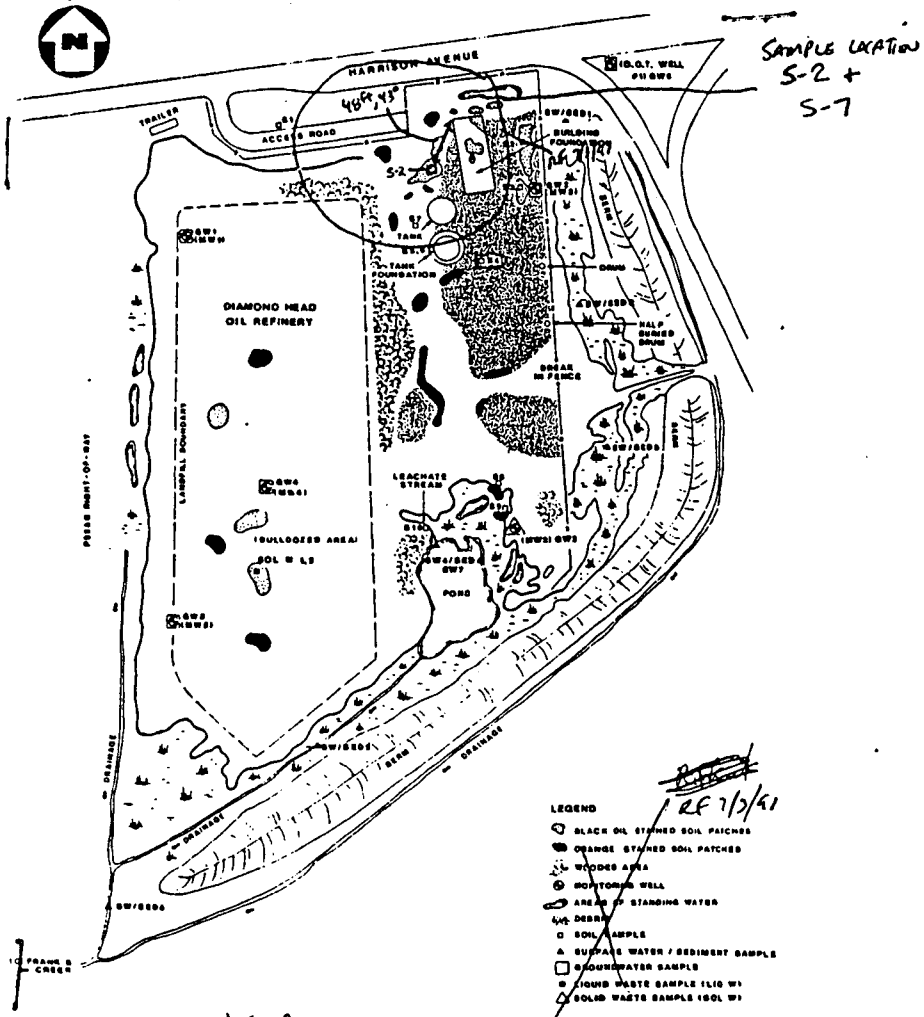
SAMPLE # COLLECTED 108° AND 24'5" ~~from~~ to the 10th fence pole from the NE corner of property. RF 7/3/91

1217 0.8ppm HNU from Sample (above background) RF 7/3/91

1219 Finished at S-3

1P-1 } C. JIMENEZ COLLECTS S-3
1S-1

[signature] 7/1/91 [signature] 10/4/91



SAMPLE LOCATION S-2 + S-7

RF 7/3/91

SAMPLE LOCATION MAP

DIAMOND HEAD OIL REFINERY DIV., KEARNY, N.J.

NOT TO SCALE

FIGURE 3

NUS CORPORATION

Brown 10-4-91

02-4102-02 7/1/91

1220 ARRIVE AT S-2

(bearing can also be interpreted as 223° from the NW of the Concrete foundation RF 7/24/91

1222 YEAGER STARTS SAMPLING S-2 at a bearing 43° and 48 ft ~~from~~ TO the NW corner of the Concrete foundation RF 7/3/91

Soil is blackened stain material (oily) RF 7/2/91

NO READINGS ABOVE BACKGROUND ON ~~HNU~~ RF or OVA.

1227 6 ppm ABOVE BACKGROUND ON HNU

1p-2 } B. YEAGER SAMPLES S-2
1s-2 }

1230 FINISHED AT S-2

1232 ARRIVE AT S-7

1235 JIMENEZ STARTS AUGERING

1236 8 INCHES down OVA off 100x SCALE

HNU 4 ppm ABOVE BACKGROUND

SAMPLE LOOKS BLACK (LIKE BURNT CHARCOAL)

1237 JIMENEZ WILL TAKE SAMPLE NOW @ 8 IN

WATER IN THE HOLE @ ~ 12 IN

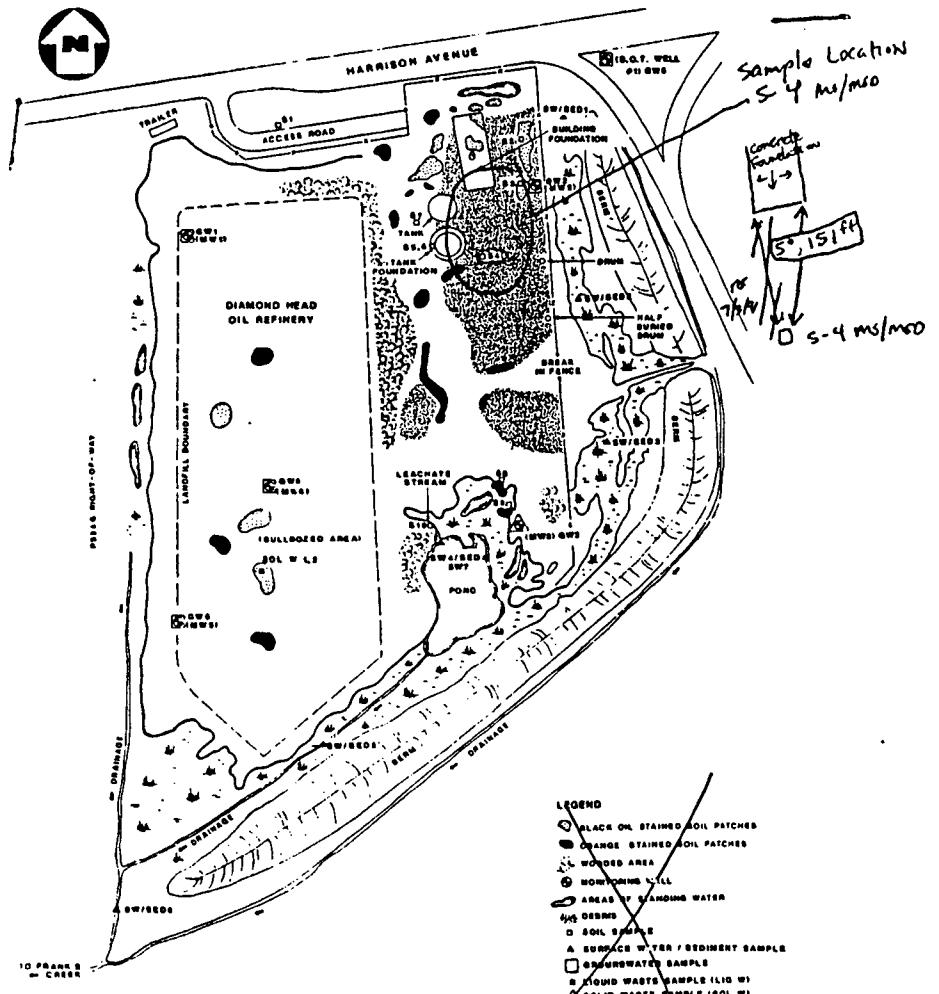
SAMPLE COLLECTED ~~ON~~ RF 7/2/91 SOUTHSIDE OF 1st TANK HOLDER (ADJACENT TO)

FINAL DEPTH IN HOLE 1' 9"

6 ppm on HNU RF 7/3/91 Above background in bowl during homogenization

1241 1p-3 } B. YEAGER COLLECTING SAMPLE S-7
1s-3 }

7/1/91 10/4/91



7/3/91

SAMPLE LOCATION MAP

DIAMOND HEAD OIL REFINERY DIV., KEARNY, N.J.

NOT TO SCALE

FIGURE 3

NUS CORPORATION

10-4-91

02-9102-02 7/1/91

1245 FINISHED AT S-7

1247 ARRIVE AT S-4

~~WILL NOT BE ABLE TO GET A BEARING ON THE SAMPLE LOCATION~~ RF 7/1/91

1249 C JIMENEZ STARTS TAKING SAMPLE.
LOCATION ~~at~~ a bearing of 5° and 151 feet ~~from~~ to the SE corner of the Foundation RF 7/1/91

4 ppm ABG ON Both HNU + OVA WHILE SAMPLING,

1251 AP - 4 } C. JIMENEZ COLLECTING S-4 ms/msd RF 7/1/91
15 - 4 }

- This sampling location was in a square oily spot RF 7/1/91

1302 20 ppm ON OVA } OVER THE BOWL
12 ppm ON HNU }

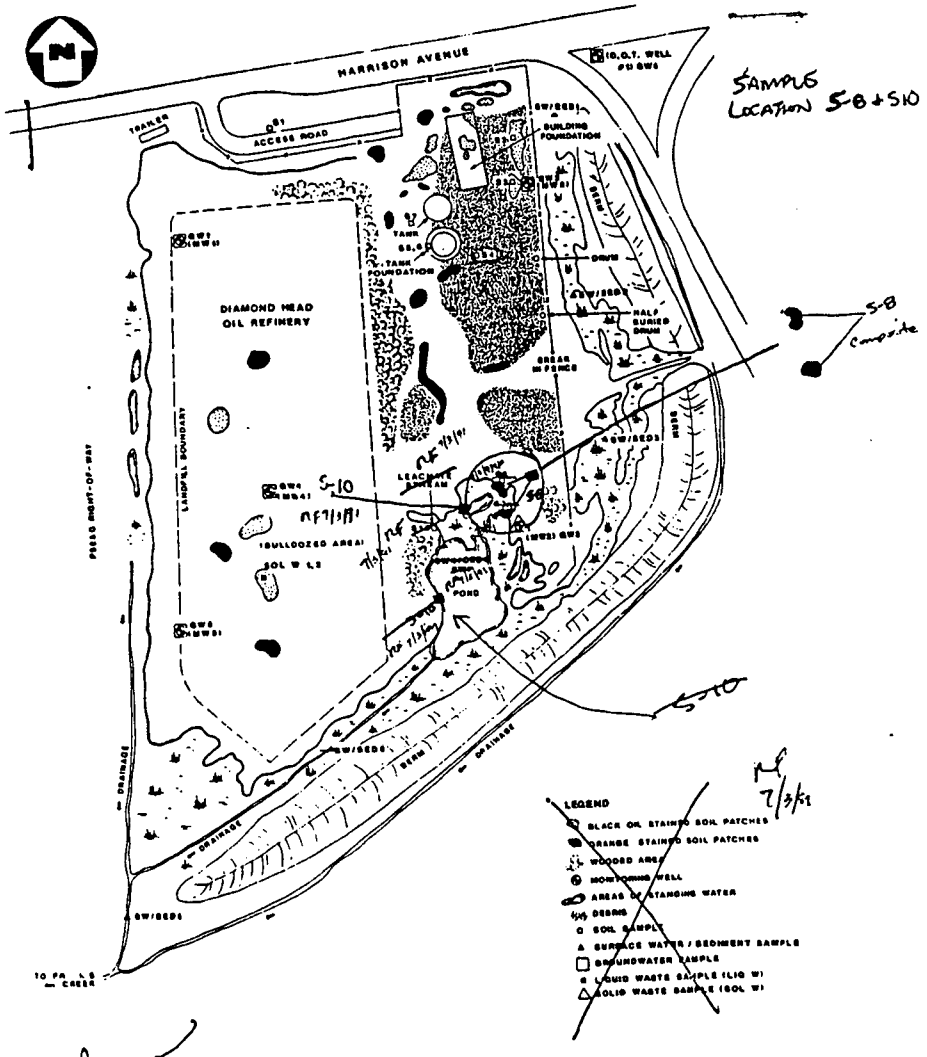
(Both above background)

1305 Finished at this location, head back to Command Post, ~~but~~ RF 7/1/91 we will not collect S-5 + S-6 at this time.

1310 Arrive at Command Post everybody off respirators

1349 - FEINBORG, SETTINO, HEAGAN, JIMENEZ ON RESPIRATORS
HEAD OFF TO SAMPLE S-8, S-9, S-10, S-11, SED-5, SW-1, 2

7/1/91



SAMPLE LOCATION MAP
DIAMOND HEAD OIL REFINERY DIV., KEARNY, N.J.
NOT TO SCALE

FIGURE 3
NUS CORPORATION

7/3/91

10/4/91

02-9102-02 7/1/91 6B

1354 Arrive at S-8 which will be a composite of this location and another ~ 15-20 feet the the north. These are orange stained areas located on the recln. Now these areas are dried up. RF 7/8/91

1356 R. Settino Collects S-8 - VOAs will not be composited and ~~coffee~~ will be collected from the stained area closest to the Monitor Well no. 3. RF 7/1/91
No readings Above background on HNU or OVA

1358 1P-5 } R. Settino collects S-8
1S-5 }

AT This location HARRISON AVE is DUE NORTH ~ 300-400 ft. We are also ~ 25 to the fence line at a bearing of 120° or 300° from Harrison Ave. RF 8/3/91

1402 Finished sampling S-8, off to next sample

1404 Arrived @ S-10 - Sample will be collected from oil lake which is now semi-dry. RF 7/3/91

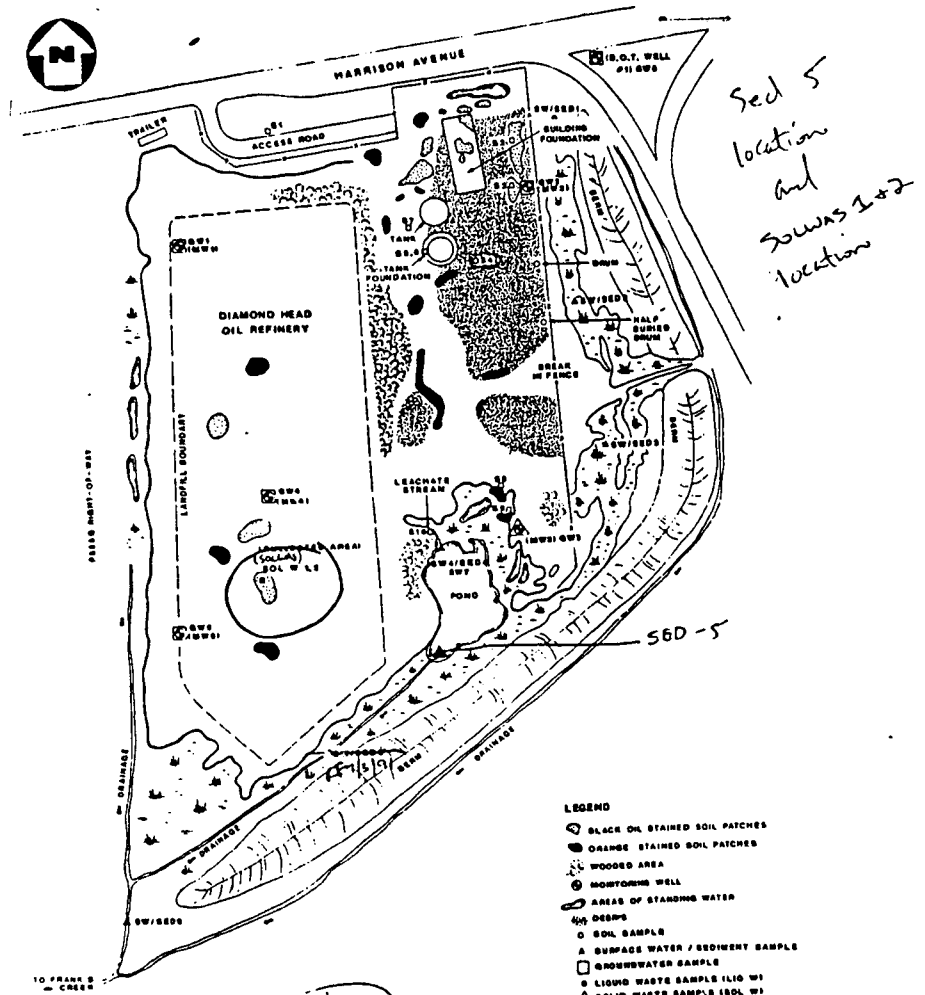
1407 B. YEAGER STARTS COLLECTING S-10
Sample is black (lightweight, like coffee grinds)
30 ppm on HNU and 90 ppm ON OVA above background where yeager was sampling

1410 1P-6 } B YEAGER COLLECTS S-10. this is the "oil lake" area
1S-6 }

At this location we will split with the consultant. The consultant ~~[illegible]~~ RF 7/1/91 accompanied the SW crew we will take his sample for him.
This is actually a sediment sample rather than soil. RF 7/3/91

1417 B. YEAGER FINISHES SAMPLING S-10

7/1/91 10/4/91



Sed 5 location and SOLWAS 1+2 location

7/3/91

SAMPLE LOCATION MAP
DIAMOND HEAD OIL REFINERY DIV., KEARNY, N.J.
NOT TO SCALE

FIGURE 3
NUS CORPORATION

10/4/91

02-9102-02 7/1/91 73

1431 arrive at SED-5

1432 R. SETTINO ~~B. YEAGER~~ RF STARTS COLLECTING SED-5 (DRYED UP SURFACE WATER AREA)

1435 NO READINGS ABOVE BACKGROUND ON AIR INSTRUMENTS

1436 There are no reference points to locate SED-5 (SED-5 is located on the southwest end of the site due west from MW3D and downhill) RF 9/10/91

IP-7 } R. SETTINO COLLECTS SED-5
IS-7 }

~~(RF 2BD and Ramp M area)~~ RF 7/24/91

~~NO FURNITURE IS LOCATED in 100-200 ft due west from this location~~ RF 7/19/91 RF 9/10/91 This sampling location is found due west from RF 2BD and Ramp M (upper lot - west)

1441 R. SETTINO FINISHING SED-5 RF 9/10/91

1446 Arrive at SW-1 + 2(DUP) (SOL W 1+2) RF 7/24/91

1450 B. YEAGER starts to sample SW 1 (~~2 DUP~~) ~~at~~ SOL W 1+2 RF RF a Carmel colored translucent substance located in the middle of the landfill halfway between monitoring wells 4 + 5. RF 7/24/91

Having problems getting resin in sample bottle

Too Difficult to chop it up. RF 7/31/91

1455 No readings on OVA + HNU from Resin

1451 IP-8 } B. YEAGER COLLECTING SAMPLE SW-1/2 (SOL W 1/2)
IS-8 }

1457 IP-9 } PHOTO OF RESIN MATERIAL
IS-9 }

1459 ~~SW 2~~ ~~SW 2~~/DUP RF 9/10/91 was collected by R. Settino

Sol W 2

7/1/91

10/4/91

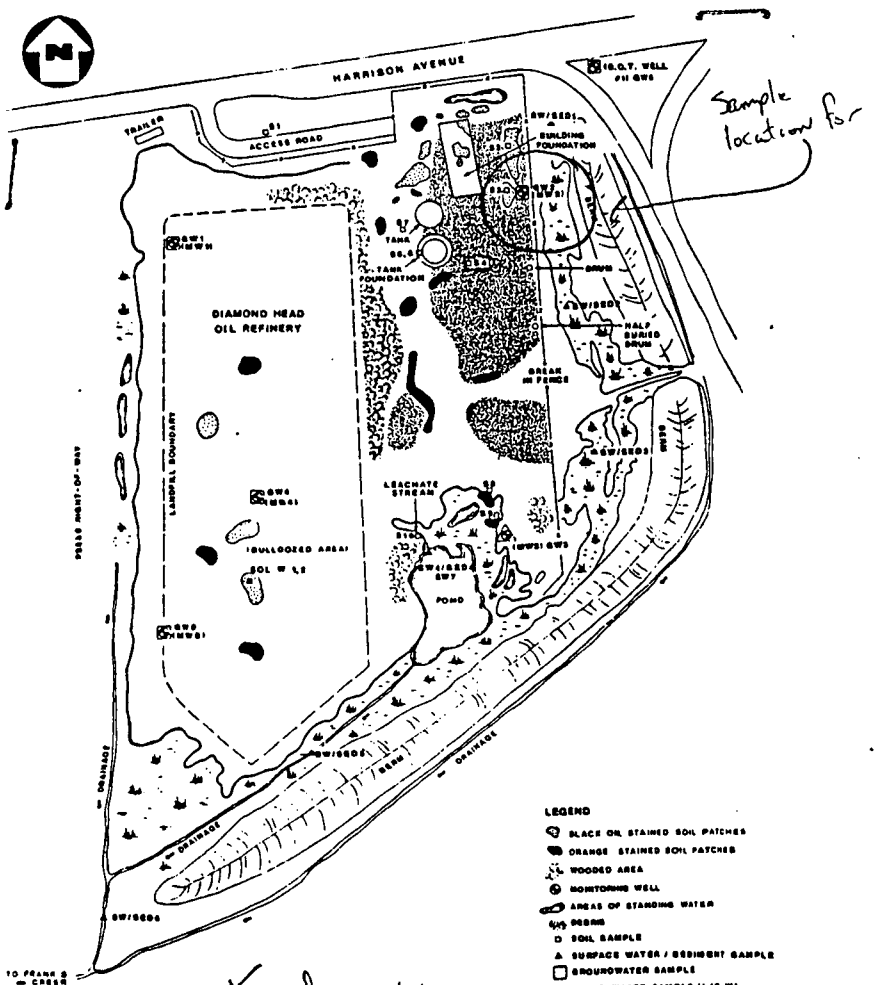
02-9102-02 7/1/91

1507 R. SETTING FINISHES COLLECTING SW 1/2
off to next location

1520 Arrived back at Command Post
Everybody off respirators

1525 Crew will decon samples and start cleaning up

7/1/91 J Brown 10/4/91



Rill L. Feinberg 7/3/91

SAMPLE LOCATION MAP

DIAMOND HEAD OIL REFINERY DIV., KEARNY, N.J.

NOT TO SCALE

FIGURE 3

NUS CORPORATION

CW-9102-02 7/2/91

0915 FEINBERG, YEAGER, JIMENEZ OFF TO SAMPLE WELLS MW 2 + 3

0930 TEAM ARRIVES AT MW 2
SETTING UP. EVERYBODY ON APR

CAMERA - PRINTS	- SAME AS YESTERDAY		BACKGROUND READINGS
" - SLIDES	" " "		
OVA - 307135	"E"		0PPM
HNU - 469753	"6"		0PPM
MONITOR 4 - 730659	"		16 cpm / .002 mR/hr

0939 ~~OFF RESPIRATORS~~ ~~VER~~ RF
YEAGER + JIMENEZ OFF APR'S ON SCBAS. BOB CUNNIFF from Converse Consultants will accompany and split samples with us.

0941 YEAGER OPENS WELL + SCREENS WITH AIR INSTRUMENTS

OVA - 10 PPM Above background
HNU 0 PPM " "

0942 H_2O reading 5ft 11in from TOC
DTBW is 14ft 6in from TOC
Casing height from ground surface is 2ft 6"
(DEPTH TO Bottom of well) RF 7/3/91

8ft 5" Water Column = 1 evacuation volume = 5.5 gallons
3 evacuation volumes 16.5 gallons

1003 ~~RF~~ RF START PUMPING MW-2 PH 8
1004 PUMPED WELL DRY

Rill L. Feinberg 7/2/91 [signature] 10/4/91

02 9102-02 7/2/91 10B

1005 SCBA'S BELLS GO OFF WILL GO TO APR UNTILL WELL RECHARGES. 20 ppm Above background on Purge water.

1006 YEAGER + JIMENEZ GO TO APR.

1007 Oily sheen in purge water

1013 Change Yeager + Jiminez Tanks while wait for well to Recharge.

1020 Will start pump again - YEAGER + JIMENEZ off APR'S ON SCBAS

1022 start pumping again
water has brownish tint to it.

1024 Stop pumping PH 11 14 gallons total (Purged)

1032 Start pumping again

1033 Stop pumping, PH 11 18 gallons total (purged)
will let well recharge and sample

1034 YEAGER OFF SCBA'S and ON APR'S

1050 OFF APR'S ON SCBAS
YEAGER WILL CHECK H_2O level 6ft from TOC.
10-30 ppm aborebackground in well
TEST VIAL TAKEN PH 11 corrected to PH 2
with 9 drops

1105 YEAGER and Jimenez off air will go back to command post for R+R and liquid Replenishment

[signature] 7/2/91 [signature] 10/4/91

02-9102-02 7/2/91 118

1105 heading back to Command post.

1110 EVERY BODY OFF RESPIRATORS BACK AT COMMAND POST

1135 EVERYBODY (YEAGER, FEINBERG, + JIMENEZ) ON RESPIRATORS HEADING OUT TO MW2, INCLUDING O. Cuniff from Converse.

1139 Arrive at MW2.

1142 YEAGER + JIMENEZ OFF APR ON SCBAS, will Sample MW2

Well cap was removed
well is screened by
air instruments. ~~10ppm~~ RF 7/2/91
Ova off 10x scale then flame out
Hnu 2ppm above background

RF 7/2/91

1146 YEAGER SAMPLING GW2/MW2
1147 1P-10 } B. YEAGER SAMPLING MW2
1S-10 }

1203 YEAGER + JIMENEZ Finish Sampling GW2/MW2
Sample is black oily and viscous. RF 7/3/91

Air reading on
OVA off 100x scale
then flame out

RF 7/3/91

1155 JIMENEZ OFF air on APR to change Tanks

1212 EVERYBODY IN VEHICLE AND OFF ~~AIR~~ APRS RF, HEADING BACK TO COMMAND POST

1215 Arrive back at command post.

1300 FEINBERG, JIMENEZ, YEAGER OUT TO MW3/GW3

1306 WE ALL ARRIVE AT MW3/GW3, EVERYBODY ON APRS

1318 YEAGER AND JIMENEZ OFF APRS ON SCBAS
Will Sample Liquid waste MW3 Sample
We will not spike the liquid waste sample
with HCL, as per S. Lenczyk

1320 YEAGER SCREENS WELL ONCE IT IS OPEN
10 ppm above background on OVA Ragged on 10x then OVA died.
2 ppm above background on HNU

1322 B. YEAGER SAMPLES GW3/LIQWST 1 + 2

Reid L Feinberg 7/3/91

Reid L Feinberg 7/2/91

[signature] 10/4/91

1326 IP-11 } B. YEAGER SAMPLING LIQWST 1+2(DUP)
IS-11 }

1331 YEAGER FINISHED SAMPLING CLEANING OFF himself.
YEAGER CLEANING OFF BAILER with hexane

1335 YEAGER & JIMENEZ TAKING BREAK OFF SCBAS ON APRs

1337 IP-12 } PICTURE OF LIQWST SAMPLE BOTTLES.
IP-12 }

1345 JIMENEZ AND YEAGER OFF APR ON SCBA
Will MEASURE PRODUCT LEVEL IN WELL

DT FREE PRODUCT - ~~10'~~ RF 5'10" from TOC
DT TO BOTTOM - 10' 6" from TOC
HEIGHT OF OUTER CASING FROM GROUND SURFACE ~~10'0~~ RF 7/23/91

1 volume would be ~~3½ gallons~~ RF 7/3/91 3½ gallons
3 - 5 volumes would be ~~9-15~~ RF 10½ - 16½ gallons

1358 YEAGER & JIMENEZ START PUMP

1404 YEAGER + JIMENEZ PUMP EVACUATE 9 GALLONS
WE CAN'T GET PH BECAUSE FREE PRODUCT is
STILL IN WELL. YEAGER + JIMENEZ OFF SCBA ON
APR's. Product coats the ph paper and makes it
impossible to read.

1430 YEAGER + JIMENEZ change tanks off APRs
ON SCBAs.

[signature] 7/2/91 J. Brown 10/4/91

1438 START PUMPING MW3 again

1450 Appears as though only prime water is being pumped out of pump, doesn't really count as evacuation water. Substance in well will not pump out anymore.
YEAGER + JIMENEZ off SCBAS ON APRS.

1500 Heading back to Command Post

1505 BACK AT Command Post off APRS
Told S. Lenczyk to prepare high concentration bottoms for next sample RF 7/3/91

1520 Heading back to sample MW3 / LIQWAS 3

1541 Arrive at MW3, with YEAGER, JIMENEZ, FEINBERG, CROFT and will sample the well.

1546 JIMENEZ + YEAGER ON SCBAS

1547 JIMENEZ + YEAGER TAKE SAMPLE LIQWAS 3 FROM MW3

1548 1P-13 } RF JIMENEZ + YEAGER SAMPLE
1S-13 } LIQWAS 3 FROM MW3

This sample appears to be thicker than previous.

1556 YEAGER OFF SCBA ON APR
CROFT ON SCBA off APR
CREW CLEANING PUMP + BAILER

RF 7/3/91

at this point we decided to collect a high concentration sample since it was believed that we could not pump anymore product out of the well.
RF ~~the material~~ 7/3/91
A Gray sticky material was found at the PE tubing. This could possibly be NAPL.

RF 7/3/91

J Brown 10/4/91 Ralph L. Feinberg 7/3/91 Ralph L. Feinberg 7/2/91 J Brown 10/4/91

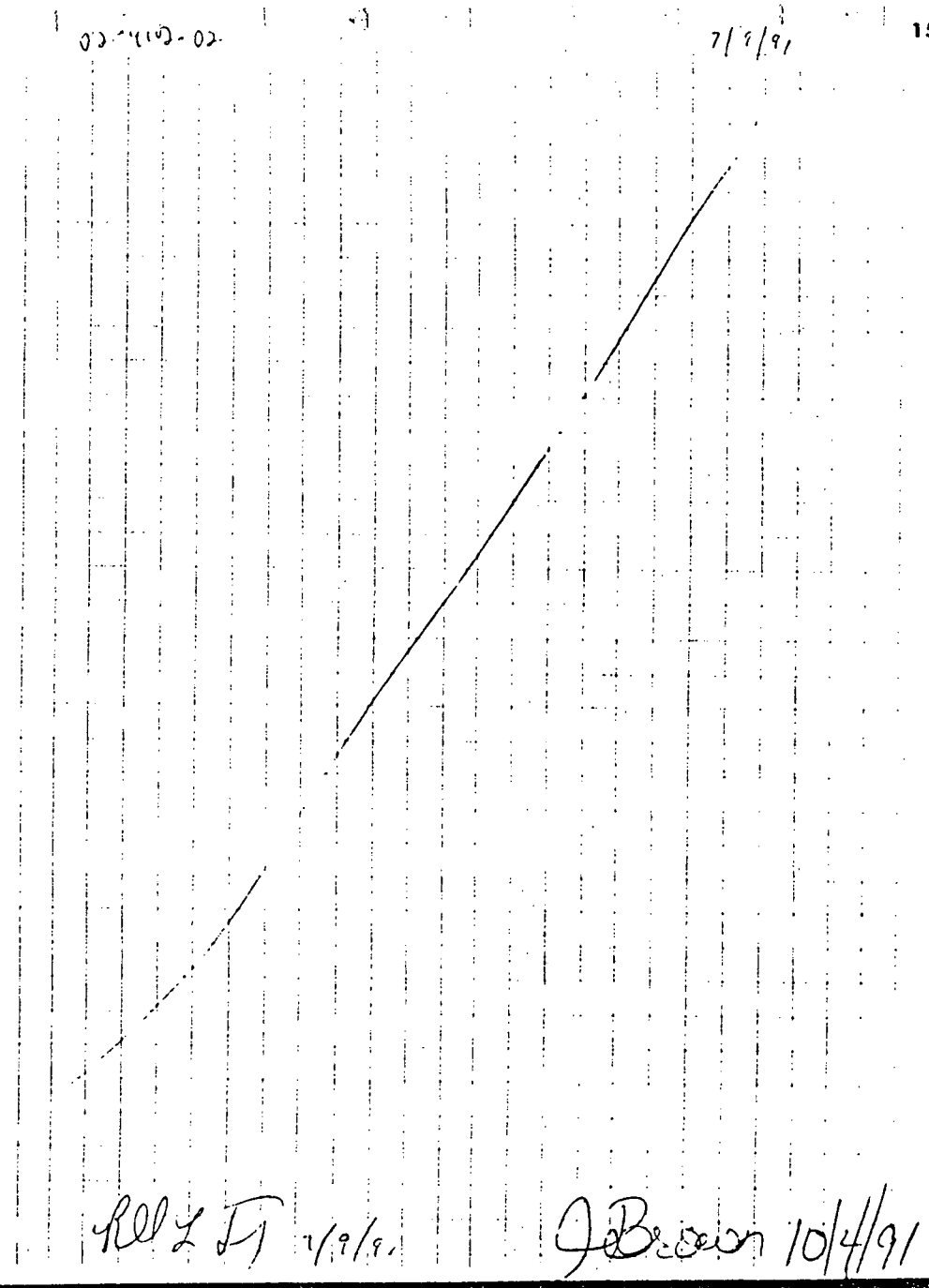
02-9102-03 7/2/91

1600 Crew heads back to to command post (everybody still on APRs)

FEINBERG, CROFT, JIMENEZ, YEAGER

1610 Back ~~at~~ to command post.

[signature] 7/2/91 J Brown 10/4/91


7/9/91
7/9/91
J Brown 10/4/91

Photolog

#	Time	Date	Description
IP-1	1219	7/1/91	C. Jimenez collects soil sample S-3
IS-1	1219	7/1/91	" " " " " "
IP-2	1227	7/1/91	B. YEAGER collects soil sample S-2
IS-2	1227	7/1/91	" " " " " "
IP-3	1241	7/1/91	B. YEAGER COLLECTS Soil Sample S-7
IS-3	1241	7/1/91	" " " " " "
IP-4	1251	7/1/91	C. JIMENEZ COLLECTS SOIL sample S-4/ms/msD
IS-4	1251	7/1/91	" " " " " " "
IP-5	1358	7/1/91	R. Settino Collects soil sample S-8
IS-5	1358	7/1/91	" " " " " "
IP-6	1410	7/1/91	B. YEAGER COLLECTS SOIL/SEDIMENT SAMPLE-S-10
IS-6	1410	7/1/91	
IP-7	1436	7/1/91	R. Settino collects sediment sample SED-5
IS-7	1436	7/1/91	" " " " " "
IP-8	1451	7/1/91	B. YEAGER COLLECTS SOLID WASTE SAMPLES
IS-8	1451	7/1/91	SOLW 1 and SOLW 2 (DUP).
IP-9	1457	7/1/91	Photo of Resin material
IS-9	1457	7/1/91	" " " "
IP-10	1147	7/2/91	B. YEAGER COLLECTS groundwater Sample GW-2
IS-10	1147	7/2/91	from monitor well No. 2

[illegible] 7/9/91 [illegible] 10/4/91

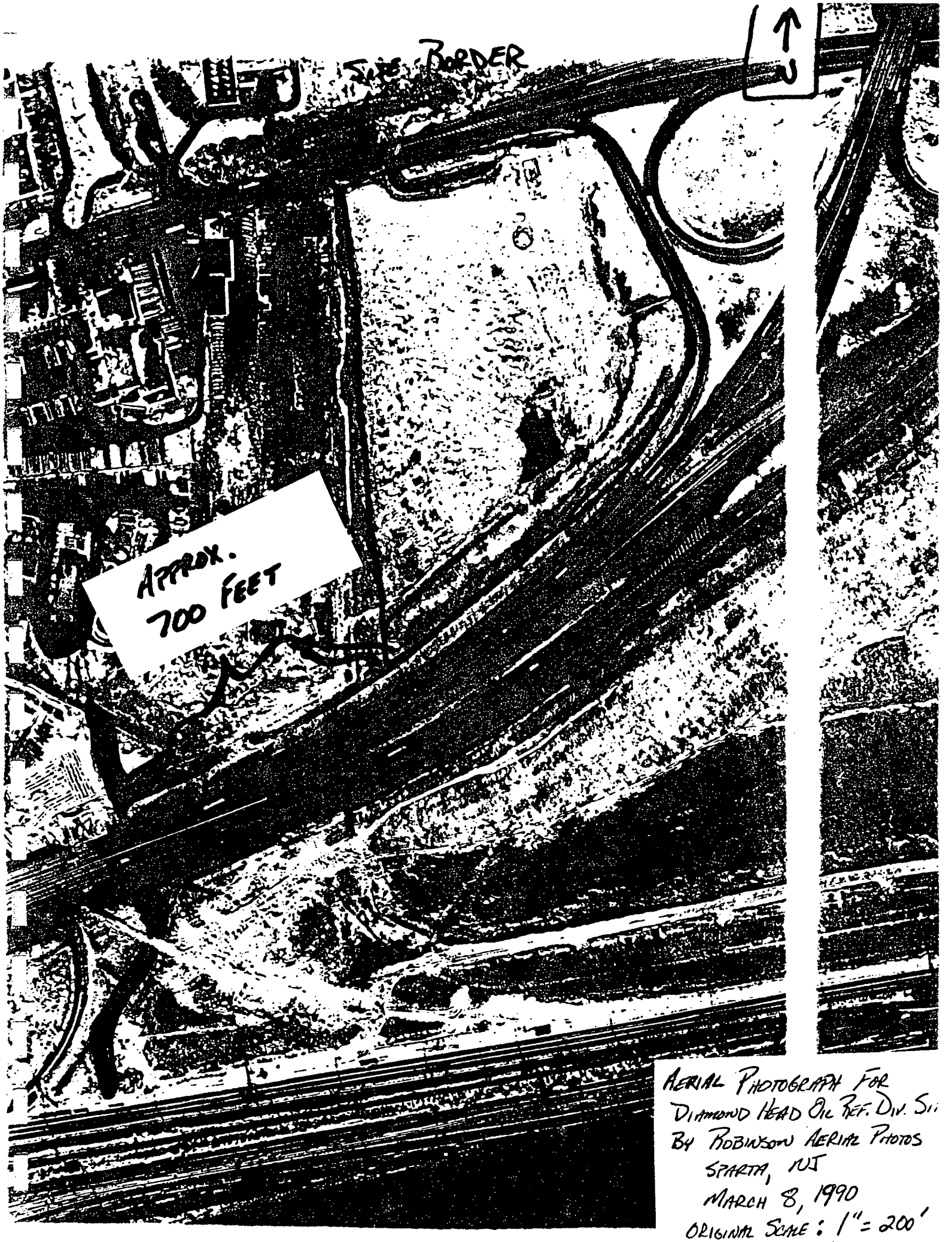
Photo Log Continued

#	Time	Date	Description
1P-11	1326	7/2/91	B. YEAGER ~~Samples~~ collect Liquid waste samples
1S-11	1326	7/2/91	LIQWST 1 + 2(DUP) from groundwater monitoring well No. 3.
1P-12	1337	7/2/91	Photo of Liquid waste sample jars.
1S-12	1337	7/2/91	
1P-13	1548	7/2/91	C. Jimenez and B. YEAGER collect Liquid
1S-13	1548	7/2/91	Waste Sample LIQWST 3 from groundwater monitor well No. 3.

All Photographs Shot by Richard L. Feinberg

[signature] 7/9/91 J Brown 10/4/91

REFERENCE NO. 13



AERIAL PHOTOGRAPH FOR
DIAMOND HEAD OIL REF. DIV. SI
BY ROBINSON AERIAL PHOTOS
SPARTA, NJ
MARCH 8, 1990
ORIGINAL SCALE: 1" = 200'
PHOTO REDUCED 64%

REFERENCE NO. 14

TABLE 2
PERMEABILITY OF GEOLOGIC MATERIALS*

Type of Material	Approximate Range of Hydraulic Conductivity
Clay, compact till, shale; unfractured metamorphic and igneous rocks	$< 10^{-7}$ cm/sec
Silt, loess, silty clays, silty loams, clay loams; less permeable limestone, dolomites, and sandstone; moderately permeable till	10^{-5}-10^{-7} cm/sec
Fine sand and silty sand; sandy loams; loamy sand; moderately permeable limestone, dolomites, and sandstone (no karst); moderately fractured igneous and metamorphic rocks, some course till	10^{-3} - 10^{-5} cm/sec
Gravel, sand; highly fractured igneous and metamorphic rocks; permeable basalt and lavas; karst limestone and dolomite	$> 10^{-3}$ cm/sec

*** Derived from:**

Davis, S.N., Porosity and Permeability of Natural Materials in Flow-Through Porous Media, R.J.M. DeWest ed., Academic Press, New York, 1969

Freeze, R.A. and J.A. Cherry, Groundwater, Prentice-Hall, Inc., New York, 1979

REFERENCE NO. 15

Preliminary Assessment

Diamond Head Oil Refinery Division
Harrison Turnpike (Rt.508)
Kearny, Hudson Co.

EPA

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

I. IDENTIFICATION
01 STATE | 02 SITE NUMBER

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site): Diamond Head Oil Refinery Div.

02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER: 1401 Harrison Turnpike (Rt. 508)

03 CITY: Kearny

04 STATE: NJ | 05 ZIP CODE: | 06 COUNTY: Hudson | 07 COUNTY CODE: | 08 CONG. DIST.:

09 COORDINATES LATITUDE: 40 44 58._ LONGITUDE: 74 _ 07 54._

Block 285, Lot 3

10 DIRECTIONS TO SITE (Starting from nearest public road): N.J. Turnpike to 15 W. Follow signs for Kearny (Rt. 508). Site is located on the left hand side as soon as you get onto Harrison Turnpike.

III. RESPONSIBLE PARTIES

01 OWNER (if known): Mimi Urban Dev. Corp.

02 STREET (Business, mailing, residential): 525 Riverside Ave.

03 CITY: Lyndhurst

04 STATE: NJ | 05 ZIP CODE: 07071 | 06 TELEPHONE NUMBER: ( )

07 OPERATOR (if known and different from owner): Diamond Head Oil

08 STREET (Business, mailing, residential): 140 Harrison Tpk.

09 CITY: Kearny

10 STATE: NJ | 11 ZIP CODE: | 12 TELEPHONE NUMBER: ( )

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

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

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
☒ YES DATE 5 / 3 / 85 (MONTH DAY YEAR)
☐ NO

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

CONTRACTOR NAME(S): ____

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

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

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
Substances possibly present include typical volatile compounds and heavy metals found in oils and refinery by-products. (Attachment B)

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
Site is easily accessible to the public. Also site is located next to a wetland so the potential for surface water contamination is high. (Attachment C)

V. PRIORITY ASSESSMENT

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

VI. INFORMATION AVAILABLE FROM

01 CONTACT: John Potapa

02 OF (Agency/Organization): N.J. Dept of Transportation

03 TELEPHONE NUMBER: (609) 292-3151

04 PERSON RESPONSIBLE FOR ASSESSMENT: Helen Kornitas

05 AGENCY: NJDEP

06 ORGANIZATION: HSMA

07 TELEPHONE NUMBER: (609) 633-2218

08 DATE: 09 23 85 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

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

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

TONS _____
CUBIC YARDS _____
NO. OF DRUMS unknown

03 WASTE CHARACTERISTICS (Check all that apply)

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

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

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

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
	Benzene	71-43-2		16,960.7	ug/kg
	Toluene	108-88-3		40,520.4	ug/kg
	Naphthalene	91-20-3		1446000	ug/kg
	Phenanthrene	999		1487000	ug/kg
	Pyrene	999		1130000	ug/kg
	Note: Several other				
	substances were found				
	See attachment.				

V. FEEDSTOCKS (See Appendix for CAS numbers)

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

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

Memo from H. Kornitas to file (Attachment A)
Results from 5/1/85 sampling (Attachment B)
Site inspection report from SEU (Attachment C)

EPA

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

I. IDENTIFICATION

01 STATE | 02 SITE NUMBER

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. GROUNDWATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: _____
02 [ ] OBSERVED (DATE: _____)
04 NARRATIVE DESCRIPTION
[X] POTENTIAL [ ] ALLEGED

Various oil spills and on-site lagoons may cause groundwater contamination.

(Attachment C)

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

Sampling of on-site lagoons shows hazardous contaminants. This may run off into nearby Franks Creek. (Attachment B)

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

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

[X] [illegible]
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION
[X] POTENTIAL [ ] ALLEGED

Although the site is fenced, the gate is not locked. Anyone has access to the site (Attachment C)

01 [X] F. CONTAMINATION OF SOIL
03 AREA POTENTIALLY AFFECTED: _____ (ACRES)
02 [ ] OBSERVED (DATE: 5/3/85)
04 NARRATIVE DESCRIPTION
[ ] POTENTIAL [ ] ALLEGED

Sampling results show high levels of contamination. (Attachment B)

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

Drinking water in this ares is by public supply.

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

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

The site is easily accessible, therefore potential population exposure is high. (Attachment C)

EPA

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

I. IDENTIFICATION
01 STATE | 02 SITE NUMBER

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

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

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

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

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills/runoff/standing liquids/leaking drums) — 02 ☒ OBSERVED (DATE _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____
04 NARRATIVE DESCRIPTION
Two lagoons on-site with no sound diking system (Attachment C)

01 ☒ N. DAMAGE TO OFFSITE PROPERTY — 02 ☒ OBSERVED (DATE 12/12/77) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Large quantities of ponded oil off-site delayed the construction of I280 (Attachment D)

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

01 ☒ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☒ OBSERVED (DATE: 5/3/85) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Site inspection by SEU revealed evidence of recent on-site dumping. (Attachment C)

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS
This site may be a potential problem if anyone tries to develop the land.

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS
As of this writing, NJDEP is not involved with the case.

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sampling results)
Memo from W. Shader 12/15/77 (Attachment D)

REFERENCE NO. 16

REFERENCE NO. 17

REFERENCE NO. 18

22.67
(C.2)

22.

ENVIRONMENTAL IMPACT ASSESSMENT

for

INTERSTATE ROUTE 280:

PROPOSED FRANK'S CREEK CULVERT UNDER MAIN-LINE

PROPOSED PENN-CENTRAL SPUR OVER RELOCATED FRANK'S CREEK

TOWN OF KEARNY

HUDSON COUNTY, NEW JERSEY

NEW JERSEY DEPARTMENT OF TRANSPORTATION

Division of Economic and Environmental Analysis
Bureau of Environmental Analysis
1035 Parkway Avenue
Trenton, New Jersey

January, 1976

bodies, and other types of solid waste generated from the nearby urban areas.*

C. IDENTIFICATION OF EXISTING POLLUTION PROBLEMS

As noted above, Frank's Creek flows through former swamp land which has been filled with less than suitable material. As such, contact with the banks and stream bed causes the water in the creek to pick up a certain amount of contamination through leaching. [redacted] The creek is subject to urban runoff from Kearny and runoff from adjacent industrial facilities and meadowlands. At the southern terminus of the creek, there is an iron grating which serves as a coarse filter to prevent floating materials from blocking the operation of the [redacted] During field inspection, a variety of floating refuse (automobile tires, wooden timbers, crates, etc.) and scum were observed floating on the water's surface at this grating.

There are two alleged industrial outfalls*** into the creek between the Harrison Avenue culvert and the tide gates. The term "alleged" is used because these outfalls are probably underground and as such have not been discovered - but visible evidence of their discharge, i.e. animal fats, oils, and remains, can be found in the creek.

Associated with the nearby meat processing industry, there was an accidental spill of 20,000 pounds of tallow into the creek during the summer of 1975. Evidence of the spill was observed during a field inspection conducted December 16, 1975.

*, **, *** (see next page)

*from The Hackensack Meadowlands: A Summary of the Hackensack Meadowlands Development Commission Master Plan, April, 1975.

**A pool of oil visible in the aerial mosaic to the extreme right of the photograph along the proposed I-280 alignment (Appendix E, Drawing 1). On January 22, 1976, bids will be received for Rt. 280 Section 8D contract for the removal of the Oil Lake. (unable to locate)

unable to find copy.

***Source: Mr. John Bolan, HMDC

REFERENCE NO. 19

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

HACKENSACK MEADOWLANDS DISTRICT, NEW JERSEY

BERGEN AND HUDSON COUNTIES

PANEL 9 OF 10

(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
340570 0009 A

EFFECTIVE DATE:
DECEMBER 15, 1982

Federal Emergency Management Agency

KEY TO MAP

500-Year Flood Boundary	
100-Year Flood Boundary	
Zone Designations*	ZONE B
100-Year Flood Boundary	
500-Year Flood Boundary	
Base Flood Elevation Line With Elevation In Feet**	513
Base Flood Elevation in Feet Where Uniform Within Zone**	(EL 987)
Elevation Reference Mark	RM7x
Zone D Boundary	
River Mile	•M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
AO	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)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

For adjoining map panels, see separately printed Index To Map Panels.

INITIAL IDENTIFICATION:
MAY 17, 1974

FLOOD HAZARD BOUNDARY MAP REVISIONS:
SEPTEMBER 17, 1976

FLOOD INSURANCE RATE MAP EFFECTIVE:
AUGUST 15, 1983

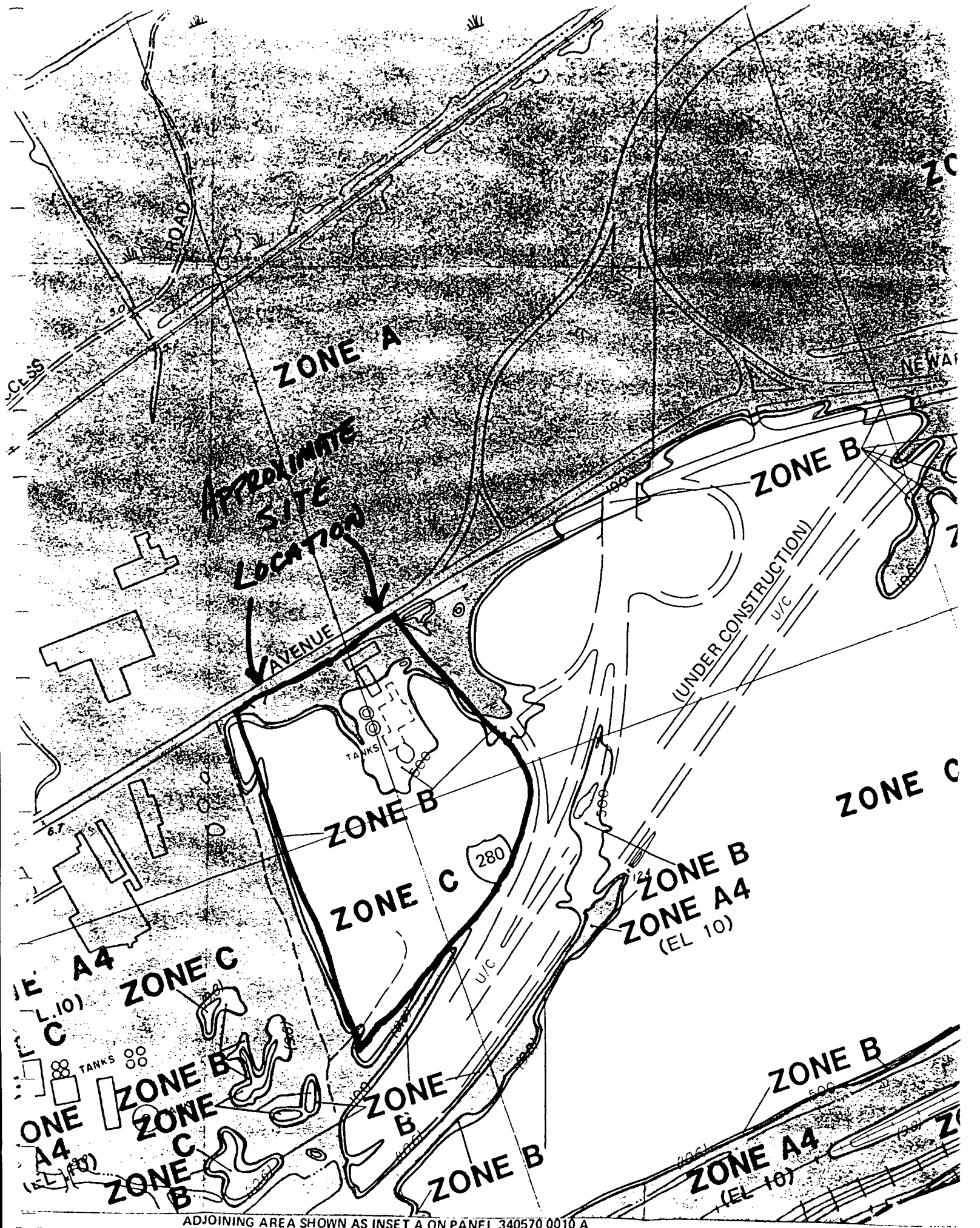
FLOOD INSURANCE RATE MAP REVISIONS:

Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE date shown on this map to determine when actuarial rates apply to structures in the zones where elevations or depths have been established.

To determine if flood insurance is available in this community contact your insurance agent, or call the National Flood Insurance Program, at (800) 638-6620.

APPROXIMATE SCALE

400 0 400 FEET


ZONE A
ROAD
APPROXIMATE SITE LOCATION
AVENUE
ZONE B
(UNDER CONSTRUCTION)
U/C
TANKS
ZONE B
ZONE C
280
ZONE B
ZONE A4
(EL 10)
ZONE C
ZONE A4
(EL 10)
ZONE C
TANKS
ZONE B
ZONE C
ZONE B
ZONE B
ZONE B
ZONE A4
(EL 10)
ADJOINING AREA SHOWN AS INSET A ON PANEL 340570 0010 A

REFERENCE NO. 20

NUS CORPORATION
SUPERFUND DIVISION

PROJECT NOTES

TO: Diamond Head Oil Refinery Div. Site File DATE: 11/22/91

FROM: R. SETTINO COPIES: —

SUBJECT: Sensitive Environments within 15 miles downstream of site

REFERENCE: Attached

The following letter, telecons, and report excerpt document the location of sensitive environments along a 15 mile surface water pathway from the site.

Only known Federal endangered species are Bald Eagle, Peregrine Falcon, and short-nose sturgeon. Only use areas surrounding site temporarily (transient species) -- not as significant breeding or feeding habitat. Great-Blue Herons are also reported to use Prall's Island and Shooters Island (both within 15 mi.) as a "significant habitat" for nesting. The Great-Blue Heron is a state threatened species. No other sensitive environments are located within 15 miles of the site, excluding various wetlands.

11/22/91

NUS 443A 58 1182

REFERENCE NO. 21

GSC-TR8645

GRAPHICAL EXPOSURE MODELING SYSTEM

(GEMS)

USER'S GUIDE

VOLUME 2. MODELING

Prepared for:

U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PESTICIDES AND TOXIC SUBSTANCES
EXPOSURE EVALUATION DIVISION
Task No. 3-2
Contract No. 68023970
Project Officer: Russell Kinerson
Task Manager: Loren Hall

Prepared by:

GENERAL SCIENCES CORPORATION
8401 Corporate Drive
Landover, Maryland 20785

Submitted: December 1, 1986

GEMS> I

DIAMOND HEAD OIL REFINERY DIV.
LATITUDE 40:44:56 LONGITUDE 74: 7:57 1980 POPULATION

KM	0.00-.400	.400-.810	.810-1.60	1.60-3.20	3.20-4.80	4.80-6.40	SECTOR TOTALS
S 1	0	0	6039	60500	132481	250114	449134
RING TOTALS	0	0	6039	60500	132481	250114	449134

GEMS> I

DIAMOND HEAD OIL REFINERY DIV.
LATITUDE 40:44:56 LONGITUDE 74: 7:57 1980 HOUSING

KM	0.00-.400	.400-.810	.810-1.60	1.60-3.20	3.20-4.80	4.80-6.40	SECTOR TOTALS
S 1	0	0	2168	21210	46719	88538	158635
RING TOTALS	0	0	2168	21210	46719	88538	158635

REFERENCE NO. 22

10-07

HAZARDOUS WASTE INVESTIGATION

INSPECTOR: McGuinness Date 3/19/80

LOCATION: Diamond Head Oil Co.

STREET: Harrison Ave

TOWN: Kearny

COUNTY: Hudson

LOT: BLOCK:

ORIGIN OF COMPLAINT:

COMPLAINT: Check if they are operating as a facility

FINDINGS: I visited Diamond Head Oil on 3/19/80 and found no personnel on site. I did, however, meet Mr. John Burger of Environmental Assessment Council who was investigating the site on behalf of the U.S.E.P.A. Together we inspected the site and found some evidence that there may indeed be activity occurring at the Diamond Head Oil Site.

The site does not appear to be operating as a facility. All of the doors and windows are locked and most of the equipment appears unused for a long period of time. However, there is some evidence that the site may be used for illegal dumping of waste oils. This included some equipment that is clean with respect to most of the equipment on site. This equipment includes valves which appear as if they have been used recently, and several pipes which are located in the off loading area and which are connected to the tank farm area. In addition, there are several tire tracks, which appear to be truck tire tracks and which might be somewhat recent. These tracks are concentrated in the off-loading area. Also, some of the storage tanks contain significant amounts of oil which may or may not have been left over from the time of Diamond Head's ownership.

Mr. Burger stated that Modern Transportation has been contracted to clean up the Diamond Head site and that personnel from Modern have visited the site. However, he does not know when Modern plans to begin clean up of the site.

If possible, non-working hour surveillance of this site might prove beneficial. There are no security measures and this invites illegal dumping of waste oils at the site. Evidence suggests that the Diamond Head site is not operating as a facility but may be used as an illegal dump site.

NOTE: Mr. John Burger, Environmental Assessment Council
789 Jersey Ave., P.O. Box 151
New Brunswick, N.J. 08902 201-846-7049 or 201-494-5871

Tim McGuinness

REFERENCE NO. 23

New Jersey Department of Transportation

MEMORANDUM

TO

FROM William T. Shader

Resident Engineer

Rt. 280, Sec. 8A & 8D

SUBJECT Flooding of Harrison Avenue

DATE December 15, 1977

MEMORANDUM OF RECORDS

On Monday, December 12, 1977 it was noticed that large quantities of oil had been deposited on an area adjacent to Diamond Head Oil Company following existing drainage patterns, the oil moved to an area on the South side of the Access Road to the Diamond Head Oil Company. Standing water in this area was displaced by the oil and the water moved across the Access Road to the area between the Access Road and Harrison Avenue.

The situation was reported to the Hackensack Meadowlands Development Commission and the Attorney Generals office. This office stressed the fact that additional rains would cause the oil to move out unto Harrison Avenue causing a very hazardous condition.

On Wednesday December 14, 1977 heavy rains displaced the oil and an area of Harrison Avenue approximately 100 feet long was covered with water and oil. Attempts were made to contact Hudson County Officials, but without success.

On Thursday, December 15th. the water and oil level had receded, however, oil remains on the roadway and oil has been tracked up and down the roadway by traffic. The Hackensack Meadowlands Development Commission and the Hudson County Road Development were notified of the above condition. Efforts by Crescent Construction Co., Hudson County Road Development and the Kearny Fire Department corrected the above situation.

cc.: Kearny City Engineer &
Director of Public Works
Attorney General
Hackensack Meadowlands Dev. Comm.
Mr. William T. Kirchner
Mr. R. Jones - Design
File

SURFACE DESIGN AREA 2
DEC 22 1977
ALL TF CT BD RH ES RD JP EE AW RR JS
INF
ACT
File

REFERENCE NO. 24

NUS CORPORATION
SUPERFUND DIVISION

PROJECT NOTES

TO: Diamond Head Oil Refinery Div. File DATE: 12/16/91

FROM: R. SETTINO COPIES: ——

SUBJECT: NJDEP Sample Analysis Data from Diamond Head Site

REFERENCE: ——

Attached are copies of the sample analysis data from samples collected at the Diamond Head Oil Refinery Div. Site in Kearny, NJ on May 1, 1985. Also attached is the sample location map -- indicating where each sample was collected.

12/16/91

NUS 443A 58 1182

Technical Report

for

NJDEP-DIVISION OF WASTE MGMT.

CONTRACT X-029

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5679	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	TRIPBLANK	850501	0940	

Denis C. K. Lin, Ph.D.

Vice President
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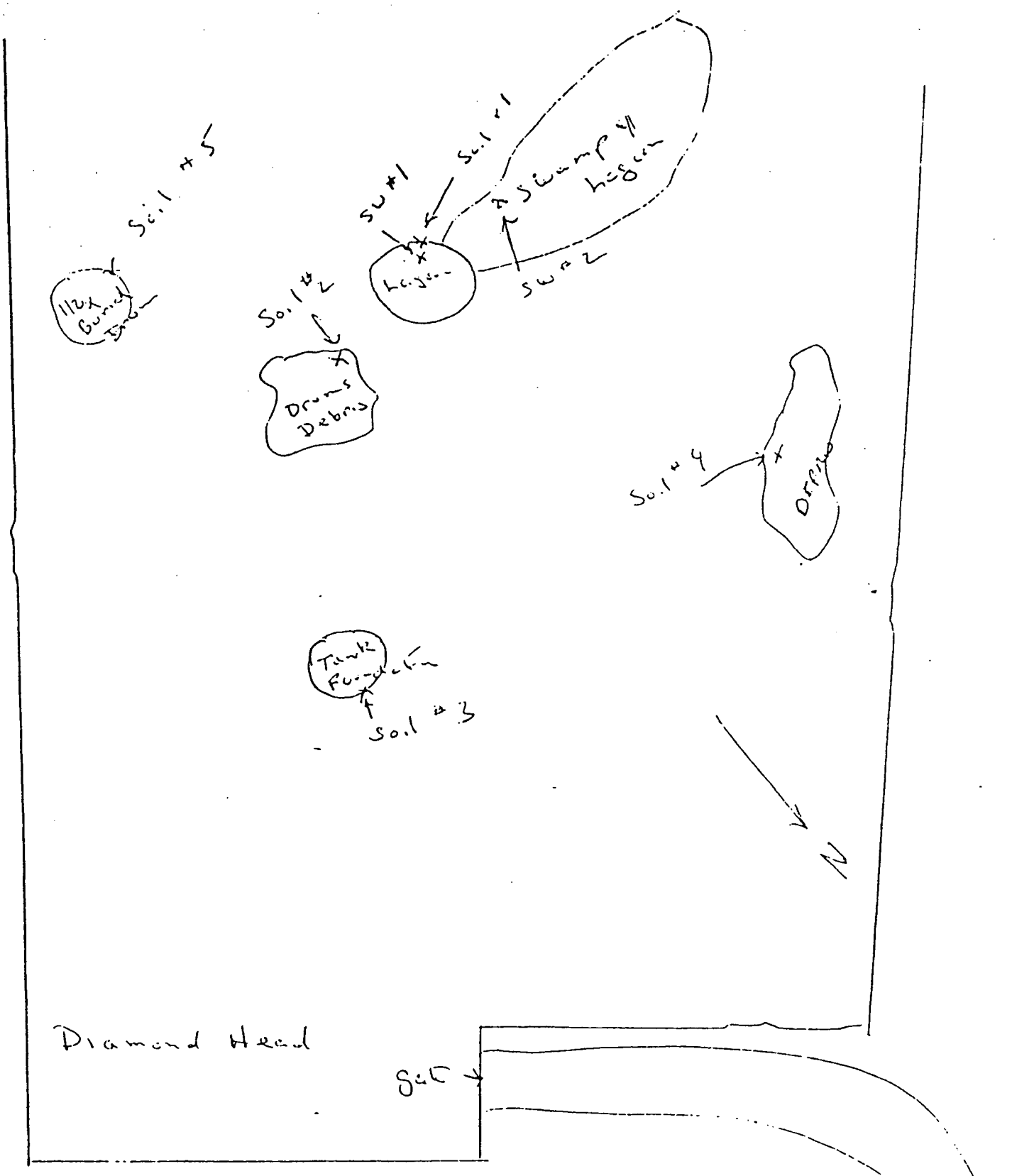

not to scale

Diamond Head Sample Location ~~map~~

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ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 10, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Volatile Compounds - GC/MS Analysis Data (QR01)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5679	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	TRIPBLANK	850501	0940	

NPDES Number	Compound (Acrolein and Acrylonitrile values are screen only.)	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL ug/l A	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
1V	Acrolein	ND	100.0	ND	ND	ND	800	98	ND	800	99
2V	Acrylonitrile	ND	100.0	ND	ND	ND	80	99	ND	80	109
3V	Benzene	ND	4.4	ND	ND	ND	18	104	ND	18	101
4V	bis(Chloromethyl)ether	ND	10.0	ND	ND	ND	0	-	ND	0	-
5V	Bromoform	ND	4.7	ND	ND	ND	18	85	ND	18	93
6V	Carbon tetrachloride	ND	2.8	ND	ND	ND	18	99	ND	18	107
7V	Chlorobenzene	ND	6.0	1	ND	ND	18	105	ND	18	104
8V	Chlorodibromomethane	ND	3.1	ND	ND	ND	18	99	ND	18	103
9V	Chloroethane	ND	10.0	ND	ND	ND	18	106	ND	18	83
10V	2-Chloroethylvinyl ether	ND	10.0	ND	ND	ND	18	70	ND	18	70
11V	Chloroform	ND	1.6	ND	ND	ND	18	103	ND	18	104
12V	Dichlorobromomethane	ND	2.2	ND	ND	ND	18	99	ND	18	100
13V	Dichlorodifluoromethane	ND	10.0	ND	ND	ND	0	-	ND	0	-
14V	1,1-Dichloroethane	ND	4.7	ND	ND	ND	18	100	ND	18	101
15V	1,2-Dichloroethane	ND	2.8	ND	ND	ND	18	102	ND	18	102
16V	1,1-Dichloroethylene	ND	2.8	ND	ND	ND	18	100	ND	18	101
17V	1,2-Dichloropropane	ND	6.0	ND	ND	ND	18	100	ND	18	99
18V	cis-1,3-Dichloropropylene	ND	5.0	ND	ND	ND	18	101	ND	18	102
19V	Ethylbenzene	ND	7.2	1	2	ND	18	107	1	18	98
20V	Methyl bromide	ND	10.0	ND	ND	ND	18	138	ND	18	117
21V	Methyl chloride	ND	10.0	ND	ND	ND	18	98	ND	18	95
22V	Methylene chloride	ND	2.8	ND	ND	8	18	71	ND	18	61
23V	1,1,2,2-Tetrachloroethane	ND	6.9	ND	ND	ND	18	96	ND	18	108
24V	Tetrachloroethylene	ND	4.1	ND	ND	ND	18	104	ND	18	107
25V	Toluene	ND	6.0	ND	ND	BMDL	18	101	ND	18	100
26V	1,2-Trans-dichloroethylene	ND	1.6	ND	ND	ND	18	100	ND	18	102
27V	1,1,1-Trichloroethane	ND	3.8	ND	ND	4	18	88	ND	18	90
28V	1,1,2-Trichloroethane	ND	5.0	ND	ND	ND	18	101	ND	18	84
29V	Trichloroethylene	ND	1.9	ND	ND	ND	18	103	ND	18	100
30V	Trichlorofluoromethane	ND	10.0	ND	3	ND	18	103	ND	18	103
31V	Vinyl chloride	ND	10.0	ND	ND	ND	18	109	ND	18	96
18V	trans-1,3-Dichloropropylene	ND	10.0	ND	ND	ND	18	101	ND	18	92

A EPA published Method Detection Limit.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 22, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Acid Compounds - GC/MS Analysis Data (QR02)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5679	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	TRIPBLANK	850501	0940	

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL ug/l A	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
1A	2-Chlorophenol	ND	3.3	ND	ND	ND	100	85	ND	111	86
2A	2,4-Dichlorophenol	ND	2.7	ND	ND	ND	100	83	ND	111	91
3A	2,4-Dimethylphenol	ND	2.7	ND	ND	ND	100	6B	ND	111	2B
4A	4,6-Dinitro-o-cresol	ND	24.0	ND	ND	ND	100	74	ND	111	73
5A	2,4-Dinitrophenol	ND	42.0	ND	ND	ND	100	68	ND	111	68
6A	2-Nitrophenol	ND	3.6	ND	ND	ND	100	85	ND	111	86
7A	4-Nitrophenol	ND	2.4	ND	ND	ND	100	70	ND	111	69
8A	p-Chloro-m-cresol	ND	3.0	ND	ND	ND	100	43	ND	111	41
9A	Pentachlorophenol	ND	3.6	ND	ND	ND	100	87	ND	111	80
10A	Phenol	ND	1.5	ND	ND	ND	100	90	ND	111	87
11A	2,4,6-Trichlorophenol	ND	2.7	ND	ND	ND	100	90	ND	111	85

A EPA published Method Detection Limit.

B Recovery normally low using EPA Protocol Method 625.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 21, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Pesticide/PCB Compounds - GC/MS Analysis Data (QR04)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5679	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	TRIPBLANK	850501	0940	

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL ug/l A	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
1P	Aldrin	ND	1.9	ND	ND	ND	100	79	ND	100	84
2P	Alpha-BHC	ND	10.0	ND	ND	ND	100	31	ND	100	37
3P	Beta-BHC	ND	4.2	ND	ND	ND	100	74	ND	100	79
4P	Gamma-BHC	ND	10.0	ND	ND	ND	100	32	ND	100	38
5P	Delta-BHC	ND	3.1	ND	ND	ND	100	29	ND	100	29
6P	Chlordane	ND	10.0	ND	ND	ND	200	21B	ND	200	24B
7P	4,4'-DDT	ND	4.7	ND	ND	ND	100	56	ND	100	62
8P	4,4'-DDE	ND	5.6	ND	ND	ND	100	63	ND	100	66
9P	4,4'-DDD	ND	2.8	ND	ND	ND	100	56	ND	100	62
10P	Dieldrin	ND	2.5	ND	ND	ND	100	52	ND	100	60
11P	Endosulfan I	ND	10.0	ND	ND	ND	100	24	ND	100	23
12P	Endosulfan II	ND	10.0	ND	ND	ND	100	21B	ND	100	22B
13P	Endosulfan sulfate	ND	5.6	ND	ND	ND	100	35	ND	100	43
14P	Endrin	ND	10.0	ND	ND	ND	100	52	ND	100	60
15P	Endrin aldehyde	ND	10.0	ND	ND	ND	100	25	ND	100	30
16P	Heptachlor	ND	1.9	ND	ND	ND	100	76	ND	100	80
17P	Heptachlor epoxide	ND	2.2	ND	ND	ND	100	58	ND	100	61
18P	PCB-1242	ND	36.0	ND	ND	ND	0	-	ND	0	-
19P	PCB-1254	ND	36.0	ND	ND	ND	0	-	ND	0	-
20P	PCB-1221	ND	30.0	ND	ND	ND	0	-	ND	0	-
21P	PCB-1232	ND	36.0	ND	ND	ND	0	-	ND	0	-
22P	PCB-1248	ND	36.0	ND	ND	ND	0	-	ND	0	-
23P	PCB-1260	ND	36.0	ND	ND	ND	100	21	ND	100	16
24P	PCB-1016	ND	36.0	ND	ND	ND	0	-	ND	0	-
25P	Toxaphene	ND	10.0	ND	ND	ND	0	-	ND	0	-

A EPA published Method Detection Limit.

B Recovery normally low using EPA Protocol Method 625.

JUN 11, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Metals, Cyanide and Phenols – Analysis Data (QR05)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5679	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	TRIPBLANK	850501	0940	

NPDES Number	Compound		Results: Sample Concen.	Results: MDL							
1M	Antimony	ug/l	ND	80							
2M	Arsenic	ug/l	ND	10							
3M	Beryllium	ug/l	ND	1							
4M	Cadmium	ug/l	ND	3							
5M	Chromium	ug/l	ND	20							
6M	Copper	ug/l	ND	10							
7M	Lead	ug/l	BMDL	5							
8M	Mercury	ug/l	ND	.3							
9M	Nickel	ug/l	ND	20							
10M	Selenium	ug/l	ND	5							
11M	Silver	ug/l	ND	10							
12M	Thallium	ug/l	ND	5							
13M	Zinc	ug/l	ND	4							
14M	Cyanide, Total	mg/l	<.025	.025							
15M	Phenolics, Total	mg/l	<.01	.01							

ETC ENVIRONMENTAL TESTING and CERTIFICATION

May 12, 1985

TABLE 1: QUALITATIVE RESULTS

Tentatively Identified Organic Compounds - GC/MS Analysis Data - Volatile Fraction (QR06)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5679	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	TRIPBLANK	850501	0940	

Compound Name	Data			Identifiers				
	Scan Number	Retention Time (Min)	M.W.	CAS Number	Empirical Formula			
1 None Found								

ETC ENVIRONMENTAL TESTING and CERTIFICATION

June 11, 1985

TABLE 1: QUALITATIVE RESULTS

Tentatively Identified Organic Compounds - GC/MS Analysis Data - Acid Fraction (QR07)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5679	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	TRIPBLANK	850501	0940	

Compound Name	Data			Identifiers				
	Scan Number	Retention Time (Min)	M.W.	CAS Number	Empirical Formula	Estim. Concen. ug/l		
1 unknown	49	3.81				33		

ETC ENVIRONMENTAL TESTING and CERTIFICATION

May 21, 1985

TABLE 1: QUALITATIVE RESULTS

Tentatively Identified Organic Compounds - GC/MS Analysis Data - Base Neutral (QR08)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5679	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	TRIPBLANK	850501	0940	

Compound Name	Data			Identifiers				
	Scan Number	Retention Time (Min)	M.W.	CAS Number	Empirical Formula	Estimated Concen. ug/l		
1 Unknown	829	15.06	156	-	$C_{12}H_{12}$	6.5		
2 2,7,10-trimethyl dodecane	868	15.62	212	74645980	$C_{15}H_{32}$	4.9		

ETC ENVIRONMENTAL TESTING and CERTIFICATION

Technical Report

for

NJDEP-DIVISION OF WASTE MGMT.

CONTRACT X-029

Chain of Custody Data Required for ETC Data Management Summary Reports						
H5680	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	FIELDBLANK	850501	0930	0001
ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours

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Appendix C - Mass Spectral Data for Tentatively Identified Compounds

Appendix D - Subcontractor's Data

Appendix E - Chain of Custody Forms

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 10, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Volatile Compounds - GC/MS Analysis Data (QR01)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5680	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	FIELDBLANK	850501	0930	1

NPDES Number	Compound (Acrolein and Acrylonitrile values are screen only.)	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL ug/l a	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
1V	Acrolein	ND	100.0	ND	ND	ND	800	98	ND	800	99
2V	Acrylonitrile	ND	100.0	ND	ND	ND	80	99	ND	80	109
3V	Benzene	ND	4.4	ND	ND	ND	18	104	ND	18	101
4V	bis(Chloromethyl)ether	ND	10.0	ND	ND	ND	0	-	ND	0	-
5V	Bromoform	ND	4.7	ND	ND	ND	18	85	ND	18	93
6V	Carbon tetrachloride	ND	2.8	ND	ND	ND	18	99	ND	18	107
7V	Chlorobenzene	ND	6.0	1	ND	ND	18	105	ND	18	104
8V	Chlorodibromomethane	ND	3.1	ND	ND	ND	18	99	ND	18	103
9V	Chloroethane	ND	10.0	ND	ND	ND	18	106	ND	18	83
10V	2-Chloroethylvinyl ether	ND	10.0	ND	ND	ND	18	70	ND	18	70
11V	Chloroform	ND	1.6	ND	ND	ND	18	103	ND	18	104
12V	Dichlorobromomethane	ND	2.2	ND	ND	ND	18	99	ND	18	100
13V	Dichlorodifluoromethane	ND	10.0	ND	ND	ND	0	-	ND	0	-
14V	1,1-Dichloroethane	ND	4.7	ND	ND	ND	18	100	ND	18	101
15V	1,2-Dichloroethane	ND	2.8	ND	ND	ND	18	102	ND	18	102
16V	1,1-Dichloroethylene	ND	2.8	ND	ND	ND	18	100	ND	18	101
17V	1,2-Dichloropropane	ND	6.0	ND	ND	ND	18	100	ND	18	99
18V	cis-1,3-Dichloropropylene	ND	5.0	ND	ND	ND	18	101	ND	18	102
19V	Ethylbenzene	ND	7.2	1	2	ND	18	107	1	18	98
20V	Methyl bromide	ND	10.0	ND	ND	ND	18	138	ND	18	117
21V	Methyl chloride	ND	10.0	ND	ND	ND	18	98	ND	18	95
22V	Methylene chloride	ND	2.8	ND	ND	8	18	71	ND	18	61
23V	1,1,2,2-Tetrachloroethane	ND	6.9	ND	ND	ND	18	96	ND	18	108
24V	Tetrachloroethylene	ND	4.1	ND	ND	ND	18	104	ND	18	107
25V	Toluene	ND	6.0	ND	ND	BMDL	18	101	ND	18	100
26V	1,2-Trans-dichloroethylene	ND	1.6	ND	ND	ND	18	100	ND	18	102
27V	1,1,1-Trichloroethane	ND	3.8	ND	ND	4	18	88	ND	18	90
28V	1,1,2-Trichloroethane	ND	5.0	ND	ND	ND	18	101	ND	18	84
29V	Trichloroethylene	ND	1.9	ND	ND	ND	18	103	ND	18	100
30V	Trichlorofluoromethane	ND	10.0	ND	3	ND	18	103	ND	18	103
31V	Vinyl chloride	ND	10.0	ND	ND	ND	18	109	ND	18	96
18V	trans-1,3-Dichloropropylene	ND	10.0	ND	ND	ND	18	101	ND	18	92

a EPA published Method Detection Limit.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 22, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Acid Compounds - GC/MS Analysis Data (QR02)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5680	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	FIELDBLANK	850501	0930	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL ug/l [a]	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
1A	2-Chlorophenol	ND	3.3	ND	ND	ND	100	85	ND	111	86
2A	2,4-Dichlorophenol	ND	2.7	ND	ND	ND	100	83	ND	111	91
3A	2,4-Dimethylphenol	ND	2.7	ND	ND	ND	100	6[b]	ND	111	2[b]
4A	4,6-Dinitro-o-cresol	ND	24.0	ND	ND	ND	100	74	ND	111	73
5A	2,4-Dinitrophenol	ND	42.0	ND	ND	ND	100	68	ND	111	68
6A	2-Nitrophenol	ND	3.6	ND	ND	ND	100	85	ND	111	86
7A	4-Nitrophenol	ND	2.4	ND	ND	ND	100	70	ND	111	69
8A	p-Chloro-m-cresol	ND	3.0	ND	ND	ND	100	43	ND	111	41
9A	Pentachlorophenol	ND	3.6	ND	ND	ND	100	87	ND	111	80
10A	Phenol	ND	1.5	ND	ND	ND	100	90	ND	111	87
11A	2,4,6-Trichlorophenol	ND	2.7	ND	ND	ND	100	90	ND	111	85

[a] EPA published Method Detection Limit.

[b] Recovery normally low using EPA Protocol Method 625.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 22, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

BASE/NEUTRAL COMPOUNDS - GC/MS ANALYSIS DATA (QR03)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5680	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	FIELDBLANK	850501	0930	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
1B	Acenaphthene	ND	1.9	ND	ND	ND	100	82	ND	100	82
2B	Acenaphthylene	ND	3.5	ND	ND	ND	100	89	ND	100	86
3B	Anthracene	ND	1.9	ND	ND	ND	100	82	ND	100	83
4B	Benzidine	ND	44.0	ND	ND	ND	100	37c	ND	100	38c
5B	Benzo(a)anthracene	ND	7.8	ND	ND	ND	100	85	ND	100	88
6B	Benzo(a)pyrene	ND	2.5	ND	ND	ND	100	79	ND	100	85
7B	Benzo(b)fluoroanthene	ND	4.8	ND	ND	ND	100	45	ND	100	59
8B	Benzo(ghi)perylene	ND	4.1	ND	ND	ND	0	-	ND	0	-
9B	Benzo(k)fluoranthene	ND	2.5	ND	ND	ND	100	87	ND	100	67
10B	bis(2-Chloroethoxy)methane	ND	5.3	ND	ND	ND	100	98	ND	100	93
11B	bis(2-Chloroethyl) ether	ND	5.7	ND	ND	ND	100	89	ND	100	86
12B	bis(2-Chloroisopropyl)ether	ND	5.7	ND	ND	ND	100	66	ND	100	71
13B	bis(2-Ethylhexyl)phthalate	ND	10.0	ND	ND	ND	100	81	ND	100	84
14B	4-Bromophenyl phenyl ether	ND	1.9	ND	ND	ND	100	82	ND	100	83
15B	Butyl benzyl phthalate	ND	10.0	ND	ND	ND	100	77	ND	100	81
16B	2-Chloronaphthalene	ND	1.9	ND	ND	ND	100	91	ND	100	91
17B	4-Chlorophenyl phenyl ether	ND	4.2	ND	ND	ND	100	87	ND	100	87
18B	Chrysene	ND	2.5	ND	ND	ND	100	85	ND	100	92
19B	Dibenzo(a,h)anthracene	ND	2.5	ND	ND	ND	0	-	ND	0	-
20B	1,2-Dichlorobenzene	ND	1.9	ND	ND	ND	100	50	ND	100	46
21B	1,3-Dichlorobenzene	ND	1.9	ND	ND	ND	100	42	ND	100	44
22B	1,4-Dichlorobenzene	ND	4.4	ND	ND	ND	100	45	ND	100	42
23B	3,3'-Dichlorobenzidine	ND	16.5	ND	ND	ND	100	80	ND	100	79
24B	Diethyl phthalate	ND	10.0	ND	ND	ND	100	31	ND	100	34
25B	Dimethyl phthalate	ND	10.0	ND	ND	ND	100	3c	ND	100	0c
26B	Di-n-butyl phthalate	BMDL	10.0	ND	ND	BMDL	100	79	2	100	87
27B	2,4-Dinitrotoluene	ND	5.7	ND	ND	ND	100	95	ND	100	94
28B	2,6-Dinitrotoluene	ND	1.9	ND	ND	ND	100	91	ND	100	88
29B	Di-n-octyl phthalate	ND	10.0	ND	ND	ND	100	82	ND	100	89
30B	1,2-Diphenylhydrazine	ND	10.0	ND	ND	ND	100	86	ND	100	85
31B	Fluoranthene	ND	2.2	ND	ND	ND	100	91	ND	100	94
32B	Fluorene	ND	1.9	ND	ND	ND	100	88	ND	100	87

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 22, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

BASE/NEUTRAL COMPOUNDS - GC/MS ANALYSIS DATA (QR03)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5680	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	FIELDBLANK	850501	0930	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL ug/l A	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
33B	Hexachlorobenzene	ND	1.9	ND	ND	ND	100	63	ND	100	64
34B	Hexachlorobutadiene	ND	.9	ND	ND	ND	100	62	ND	100	62
35B	Hexachlorocyclopentadiene	ND	10.0	ND	ND	ND	0	-	ND	0	-
36B	Hexachloroethane	ND	1.6	ND	ND	ND	100	36	ND	100	38
37B	Indeno(1,2,3-c,d)pyrene	ND	3.7	ND	ND	ND	0	-	ND	0	-
38B	Isophorone	ND	2.2	ND	ND	ND	100	86	ND	100	84
39B	Naphthalene	ND	1.6	ND	ND	ND	100	71	ND	100	70
40B	Nitrobenzene	ND	1.9	ND	ND	ND	100	86	ND	100	87
41B	N-Nitrosodimethylamine	ND	10.0	ND	ND	ND	0	-	ND	0	-
42B	N-Nitrosodi-n-propylamine	ND	10.0	ND	ND	ND	100	73	ND	100	78
43B	N-Nitrosodiphenylamine	ND	1.9	ND	ND	ND	100	93	ND	100	95
44B	Phenanthrene	ND	5.4	ND	ND	ND	100	84	ND	100	86
45B	Pyrene	ND	1.9	ND	ND	ND	100	84	ND	100	92
46B	1,2,4-Trichlorobenzene	ND	1.9	ND	ND	ND	100	144	ND	100	134

A EPA published Method Detection Limit.

B ETC established Method Detection Limit for this particular sample.

C Recovery normally low using EPA Protocol Method 625.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUN 12, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Pesticide/PCB Compounds - GC/MS Analysis Data (QR04)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5680	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	FIELDBLANK	850501	0930	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL ug/l *	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
1P	Aldrin	ND	1.9	ND	ND	ND	100	79	ND	100	84
2P	Alpha-BHC	ND	10.0	ND	ND	ND	100	31	ND	100	37
3P	Beta-BHC	ND	4.2	ND	ND	ND	100	74	ND	100	79
4P	Gamma-BHC	ND	10.0	ND	ND	ND	100	32	ND	100	38
5P	Delta-BHC	ND	3.1	ND	ND	ND	100	29	ND	100	29
6P	Chlordane	ND	10.0	ND	ND	ND	200	21	ND	200	24
7P	4,4'-DDT	ND	4.7	ND	ND	ND	100	56	ND	100	62
8P	4,4'-DDE	ND	5.6	ND	ND	ND	100	63	ND	100	66
9P	4,4'-DDD	ND	2.8	ND	ND	ND	100	56	ND	100	62
10P	Dieldrin	ND	2.5	ND	ND	ND	100	52	ND	100	60
11P	Endosulfan I	ND	10.0	ND	ND	ND	100	24	ND	100	23
12P	Endosulfan II	ND	10.0	ND	ND	ND	100	21	ND	100	22
13P	Endosulfan sulfate	ND	5.6	ND	ND	ND	100	35	ND	100	43
14P	Endrin	ND	10.0	ND	ND	ND	100	52	ND	100	60
15P	Endrin aldehyde	ND	10.0	ND	ND	ND	100	25	ND	100	30
16P	Heptachlor	ND	1.9	ND	ND	ND	100	76	ND	100	80
17P	Heptachlor epoxide	ND	2.2	ND	ND	ND	100	58	ND	100	61
18P	PCB-1242	ND	36.0	ND	ND	ND	0	-	ND	0	-
19P	PCB-1254	ND	36.0	ND	ND	ND	0	-	ND	0	-
20P	PCB-1221	ND	30.0	ND	ND	ND	0	-	ND	0	-
21P	PCB-1232	ND	36.0	ND	ND	ND	0	-	ND	0	-
22P	PCB-1248	ND	36.0	ND	ND	ND	0	-	ND	0	-
23P	PCB-1260	ND	36.0	ND	ND	ND	100	21	ND	100	16
24P	PCB-1016	ND	36.0	ND	ND	ND	0	-	ND	0	-
25P	Toxaphene	ND	10.0	ND	ND	ND	0	-	ND	0	-

* EPA published Method Detection Limit.

ETC TESTING and CERTIFICATION

JUN 11, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Metals, Cyanide and Phenols – Analysis Data (QR05)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5680	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	FIELDBLANK	850501	0930	1

NPDES Number	Compound		Results: Sample Concen.	Results: MDL
1M	Antimony	ug/l	BMDL	80
2M	Arsenic	ug/l	ND	10
3M	Beryllium	ug/l	ND	1
4M	Cadmium	ug/l	ND	3
5M	Chromium	ug/l	ND	20
6M	Copper	ug/l	ND	10
7M	Lead	ug/l	BMDL	50
8M	Mercury	ug/l	ND	.3
9M	Nickel	ug/l	ND	20
10M	Selenium	ug/l	ND	5
11M	Silver	ug/l	ND	10
12M	Thallium	ug/l	ND	5
13M	Zinc	ug/l	ND	4
14M	Cyanide, Total	mg/l	<.025	.025
15M	Phenolics, Total	mg/l	<.01	.01

ETC ENVIRONMENTAL TESTING and CERTIFICATION

May 12, 1985

TABLE 1: QUALITATIVE RESULTS

Tentatively Identified Organic Compounds – GC/MS Analysis Data – Volatile Fraction (QR06)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5680	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	FIELDBLANK	850501	0930	1

Compound Name	Data			Identifiers				
	Scan Number	Retention Time (Min)	M.W.	CAS Number	Empirical Formula			
1 None Found								

ETC ENVIRONMENTAL TESTING and CERTIFICATION

June 11, 1985

TABLE 1: QUALITATIVE RESULTS

Tentatively Identified Organic Compounds - GC/MS Analysis Data - Acid Fraction (QR07)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5680	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	FIELDBLANK	850501	930	1

Compound Name	Data			Identifiers				
	Scan Number	Retention Time (Min)	M.W.	CAS Number	Empirical Formula	Estim. Concen. ug/l		
1 unknown	43	3.69	-	-	-	34		

ETC ENVIRONMENTAL TESTING and CERTIFICATION

May 21, 1985

TABLE 1: QUALITATIVE RESULTS

Tentatively Identified Organic Compounds - GC/MS Analysis Data - Base Neutral (QR08)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5680	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	FIELDBLANK	850501	0930	1

Compound Name	Data			Identifiers				
	Scan Number	Retention Time (Min)	M.W.	CAS Number	Empirical Formula	Estimated Concen. ug/l		
1 Unknown	825	15.04	-	-	-	6.9		
2 Unknown	853	15.44	-	-	-	6.1		

Technical Report

for

NJDEP-DIVISION OF WASTE MGMT.

CONTRACT X-029

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5676	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SBACKROUND	850501	1119	0001

Denis C. K. Lin, Ph.D.
Vice President
Research and Operations

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ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 16, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Volatile Compounds - GC/MS Analysis Data (QR01)

004

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5676	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED SBACKROUND		850501	1119	1

NPDES Number	Compound (Acrolein and Acrylonitrile values are screen only.)	Results: Sample Concen. ug/kg	Results: MDL ug/kg[A]	QC Replicate: First ug/kg	QC Replicate: Second ug/kg	QC Blank and Spiked Blank: Blank Data ug/kg	QC Blank and Spiked Blank: Concen. Added ug/kg	QC Blank and Spiked Blank: % Recov	QC Matrix Spike: Unspiked Sample ug/kg	QC Matrix Spike: Concen. Added ug/kg	QC Matrix Spike: % Recov
1V	Acrolein	ND	100.0	ND	ND	ND	800	82	ND	800	163[B]
2V	Acrylonitrile	ND	100.0	ND	ND	ND	80	98	ND	80	184[B]
3V	Benzene	ND	4.4	ND	ND	ND	18	99	46	18	21[C]
4V	bis(Chloromethyl)ether	ND	10.0	ND	ND	ND	0	-	ND	0	-
5V	Bromoform	ND	4.7	ND	ND	ND	18	94	ND	18	69
6V	Carbon tetrachloride	ND	2.8	ND	ND	ND	18	100	ND	18	94
7V	Chlorobenzene	ND	6.0	ND	ND	ND	18	101	ND	18	109
8V	Chlorodibromomethane	ND	3.1	ND	ND	ND	18	95	ND	18	87
9V	Chloroethane	ND	10.0	ND	ND	ND	18	100	ND	18	154[B]
10V	2-Chloroethylvinyl ether	ND	10.0	ND	ND	ND	18	119	ND	18	102
11V	Chloroform	ND	1.6	ND	ND	ND	18	104	ND	18	132
12V	Dichlorobromomethane	ND	2.2	ND	ND	ND	18	101	ND	18	101
13V	Dichlorodifluoromethane	ND	10.0	ND	ND	ND	18	106	ND	18	145
14V	1,1-Dichloroethane	ND	4.7	ND	ND	ND	18	101	21	18	92
15V	1,2-Dichloroethane	ND	2.8	ND	ND	ND	18	103	ND	18	137
16V	1,1-Dichloroethylene	ND	2.8	ND	ND	ND	18	100	ND	18	129
17V	1,2-Dichloropropane	ND	6.0	ND	ND	ND	18	95	ND	18	125
18V	cis-1,3-Dichloropropylene	ND	5.0	ND	ND	ND	18	94	ND	18	95
19V	Ethylbenzene	ND	7.2	ND	ND	BMDL	18	99	14	18	37[B]
20V	Methyl bromide	ND	10.0	ND	ND	ND	18	101	ND	18	118
21V	Methyl chloride	ND	10.0	ND	ND	ND	18	102	ND	18	156[B]
22V	Methylene chloride	19.4	2.8	24	1	9	18	76	18	18	98
23V	1,1,2,2-Tetrachloroethane	ND	6.9	ND	ND	ND	18	99	ND	18	125
24V	Tetrachloroethylene	ND	4.1	ND	ND	ND	18	100	19	18	43
25V	Toluene	ND	6.0	ND	ND	ND	18	102	95	18	0[C]
26V	1,2-Trans-dichloroethylene	ND	1.6	ND	ND	ND	18	100	87	18	0[C]
27V	1,1,1-Trichloroethane	ND	3.8	ND	ND	ND	18	111	13	18	83
28V	1,1,2-Trichloroethane	ND	5.0	ND	ND	ND	18	98	ND	18	109
29V	Trichloroethylene	ND	1.9	ND	ND	3	18	85	13	18	51
30V	Trichlorofluoromethane	ND	10.0	5	3	ND	18	102	ND	18	124
31V	Vinyl chloride	ND	10.0	ND	ND	ND	18	103	3	18	149[B]
18V	trans-1,3-Dichloropropylene	ND	10.0	ND	ND	ND	18	94	ND	18	97

A ETC established Method Detection Limit for this particular sample.

B Recovery variable due to sample matrix interference.

C Spiked samples that contain compounds present at high levels do not provide valid spike recovery data.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUN 2, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Acid Compounds - GC/MS Analysis Data (QR02)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5676	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SBACKROUND	850501	1119	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg A	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov B	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov
1A	2-Chlorophenol	ND	1089.0	ND	ND	ND	0	-	ND	33333	74
2A	2,4-Dichlorophenol	ND	891.0	ND	ND	ND	0	-	ND	33333	96
3A	2,4-Dimethylphenol	ND	891.0	ND	ND	ND	0	-	ND	33333	82
4A	4,6-Dinitro-o-cresol	ND	7920.0	ND	ND	ND	0	-	ND	33333	34
5A	2,4-Dinitrophenol	ND	13860.0	ND	ND	ND	0	-	ND	33333	21
6A	2-Nitrophenol	ND	1188.0	ND	ND	ND	0	-	ND	33333	99
7A	4-Nitrophenol	ND	792.0	ND	ND	ND	0	-	ND	33333	99
8A	p-Chloro-m-cresol	ND	990.0	ND	ND	ND	0	-	ND	33333	90
9A	Pentachlorophenol	ND	1188.0	ND	ND	ND	0	-	ND	33333	91
10A	Phenol	ND	495.0	ND	ND	ND	0	-	ND	33333	83
11A	2,4,6-Trichlorophenol	ND	891.0	ND	ND	ND	0	-	ND	33333	108

A ETC established Method Detection Limit for this particular sample.

B Reagent Blank. Spiked Blank cannot be performed for this sample matrix.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUN 2, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

BASE/NEUTRAL COMPOUNDS - GC/MS ANALYSIS DATA (QR03)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5676	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SBACKROUND	850501	1119	1

DES mber	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov
1B	Acenaphthene	ND	627.0	ND	ND	ND	0	-	ND	33333	110
2B	Acenaphthylene	ND	1155.0	ND	ND	ND	0	-	ND	33333	114
3B	Anthracene	5986	627.0	ND	ND	ND	0	-	ND	33333	112
4B	Benzidine	ND	14520.0	ND	ND	ND	0	-	ND	33333	0
5B	Benzo(a)anthracene	7649	2574.0	ND	ND	ND	0	-	ND	33333	118
6B	Benzo(a)pyrene	5089	825.0	ND	ND	ND	0	-	ND	33333	99
7B	Benzo(b)fluoroanthene	9065	1584.0	ND	ND	ND	0	-	ND	33333	107
8B	Benzo(ghi)perylene	ND	1353.0	ND	ND	ND	0	-	ND	0	-
9B	Benzo(k)fluoranthene	2858	825.0	ND	ND	ND	0	-	ND	33333	77
0B	bis(2-Chloroethoxy)methane	ND	1749.0	ND	ND	ND	0	-	ND	33333	101
1B	bis(2-Chloroethyl) ether	ND	1881.0	ND	ND	ND	0	-	ND	33333	97
2B	bis(2-Chloroisopropyl)ether	ND	1881.0	ND	ND	ND	0	-	ND	33333	96
3B	bis(2-Ethylhexyl)phthalate	666	3300.0	ND	ND	ND	0	-	ND	33333	98
4B	4-Bromophenyl phenyl ether	ND	627.0	ND	ND	ND	0	-	ND	33333	108
5B	Butyl benzyl phthalate	ND	3300.0	ND	ND	ND	0	-	ND	33333	107
6B	2-Chloronaphthalene	ND	627.0	ND	ND	ND	0	-	ND	33333	114
7B	4-Chlorophenyl phenyl ether	ND	1386.0	ND	ND	ND	0	-	ND	33333	109
8B	Chrysene	5584	825.0	ND	ND	ND	0	-	ND	33333	92
9B	Dibenzo(a,h)anthracene	ND	825.0	ND	ND	ND	0	-	ND	0	-
0B	1,2-Dichlorobenzene	ND	627.0	ND	ND	ND	0	-	ND	33333	91
1B	1,3-Dichlorobenzene	ND	627.0	ND	ND	ND	0	-	ND	33333	89
2B	1,4-Dichlorobenzene	ND	1452.0	ND	ND	ND	0	-	ND	33333	87
3B	3,3'-Dichlorobenzidine	ND	5445.0	ND	ND	ND	0	-	ND	33333	0
4B	Diethyl phthalate	ND	3300.0	ND	ND	ND	0	-	ND	33333	113
5B	Dimethyl phthalate	ND	3300.0	ND	ND	ND	0	-	ND	33333	110
6B	Di-n-butyl phthalate	ND	3300.0	ND	ND	ND	0	-	ND	33333	114
7B	2,4-Dinitrotoluene	ND	1881.0	ND	ND	ND	0	-	ND	33333	111
8B	2,6-Dinitrotoluene	ND	627.0	ND	ND	ND	0	-	ND	33333	109
9B	Di-n-octyl phthalate	ND	3300.0	ND	ND	ND	0	-	ND	33333	105
0B	1,2-Diphenylhydrazine	ND	3300.0	ND	ND	ND	0	-	ND	33333	114
1B	Fluoranthene	12025	726.0	ND	ND	ND	0	-	ND	33333	128
2B	Fluorene	ND	627.0	ND	ND	ND	0	-	ND	33333	113

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUN 2, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

BASE/NEUTRAL COMPOUNDS - GC/MS ANALYSIS DATA (QR03)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5676	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SBACKROUND	850501	1119	1

007

PDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg[A]	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov [B]	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov
33B	Hexachlorobenzene	ND	627.0	ND	ND	ND	0	-	ND	33333	80
34B	Hexachlorobutadiene	ND	297.0	ND	ND	ND	0	-	ND	33333	96
35B	Hexachlorocyclopentadiene	ND	330.0	ND	ND	ND	0	-	ND	0	-
36B	Hexachloroethane	ND	528.0	ND	ND	ND	0	-	ND	33333	93
37B	Indeno(1,2,3-c,d)pyrene	ND	1221.0	ND	ND	ND	0	-	ND	0	-
38B	Isophorone	ND	726.0	ND	ND	ND	0	-	ND	33333	102
39B	Naphthalene	ND	528.0	ND	ND	ND	0	-	ND	33333	105
40B	Nitrobenzene	ND	627.0	ND	ND	ND	0	-	ND	33333	92
41B	N-Nitrosodimethylamine	ND	3300.0	ND	ND	ND	0	-	ND	0	-
42B	N-Nitrosodi-n-propylamine	ND	3300.0	ND	ND	ND	0	-	ND	33333	100
43B	N-Nitrosodiphenylamine	ND	627.0	ND	ND	ND	0	-	ND	33333	116
44B	Phenanthrene	7130	1782.0	ND	ND	ND	0	-	ND	33333	115
45B	Pyrene	9346	627.0	ND	ND	ND	0	-	ND	33333	131
46B	1,2,4-Trichlorobenzene	ND	627.0	ND	ND	ND	0	-	ND	33333	99

A ETC established Method Detection Limit for this particular sample.

B Reagent Blank. Spiked Blank cannot be performed for this sample matrix.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 21, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Pesticide Compounds - GC Analysis Data (QR32)

008

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5676	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SBACKROUND	850501	1119	1

PDES umber	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg*	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov
1P	Aldrin	ND	490	ND	ND	ND	0	-	ND	460	93
2P	Alpha-BHC	ND	490	150	ND	ND	0	-	ND	460	84
3P	Beta-BHC	ND	490	ND	ND	ND	0	-	ND	460	84
4P	Gamma-BHC	ND	490	ND	ND	ND	0	-	ND	460	84
5P	Delta-BHC	ND	490	ND	ND	ND	0	-	ND	460	100
6P	Chlordane	ND	4900	ND	ND	ND	0	-	ND	5000	81
7P	4,4'-DDT	ND	490	ND	ND	ND	0	-	ND	460	190c
8P	4,4'-DDE	ND	490	ND	ND	ND	0	-	ND	460	110
9P	4,4'-DDD	ND	490	2400	ND	ND	0	-	ND	460	130
10P	Dieldrin	ND	490	ND	ND	ND	0	-	ND	460	110
11P	Endosulfan I	ND	490	ND	ND	ND	0	-	ND	460	100
12P	Endosulfan II	ND	490	ND	ND	ND	0	-	ND	460	110
13P	Endosulfan sulfate	ND	490	ND	180	ND	0	-	ND	460	110
14P	Endrin	ND	490	ND	ND	ND	0	-	ND	460	140
15P	Endrin aldehyde	ND	490	600	ND	ND	0	-	ND	460	73
16P	Heptachlor	ND	490	ND	ND	ND	0	-	ND	460	83
17P	Heptachlor epoxide	ND	490	ND	ND	ND	0	-	ND	460	100
25P	Toxaphene	ND	4900	ND	ND	ND	0	-	ND	5000	-d

* ETC established Method Detection Limit for this particular sample.

B Reagent Blank. Spiked Blank cannot be performed for this sample matrix.

C Recovery variable due to sample matrix interference.

D Due to dilution of matrix spike toxaphene recovery could not be calculated.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUN 6, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Metals, Cyanide and Phenols – Analysis Data (QR05)

600

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5676	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SBACKROUND	850501	1119	1

NPDES Number	Compound		Results: Sample Concen.	Results: MDL
1M	Antimony	ug/kg	BMDL	9000
2M	Arsenic	mg/kg	7.5	5
3M	Beryllium	ug/kg	490	50
4M	Cadmium	ug/kg	700	300
5M	Chromium	ug/kg	79000	2000
6M	Copper	ug/kg	127000	900
7M	Lead	ug/kg	250000	5000
8M	Mercury	mg/kg	1.3	.1
9M	Nickel	ug/kg	29000	1000
10M	Selenium	mg/kg	.6	.5
11M	Silver	ug/kg	BMDL	500
12M	Thallium	mg/kg	BMDL	.5
13M	Zinc	ug/kg	282000	600
14M	Cyanide, Total	ug/kg	<500	500
15M	Phenolics, Total	ug/kg	<100	100

BMDL
Below the
Detection Level

ETC ENVIRONMENTAL TESTING and CERTIFICATION

May 14, 1985

TABLE 1: QUALITATIVE RESULTS

Tentatively Identified Organic Compounds – GC/MS Analysis Data – Volatile Fraction (QR06)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5676	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SBACKROUND	850501	1119	1

Compound Name	Data			Identifiers				
	Scan Number	Retention Time (Min)	M.W.	CAS Number	Empirical Formula			
None Found								

ETC ENVIRONMENTAL TESTING and CERTIFICATION

June 10, 1985

TABLE 1: QUALITATIVE RESULTS

Tentatively Identified Organic Compounds – GC/MS Analysis Data – B/N/A Fraction (QR08)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5676	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SBACKGROUND	850501	1119	1

Compound Name	Data			Identifiers				
	Scan Number	Retention Time (Min)	M.W.	CAS Number	Empirical Formula	Estimated Conc. ug/kg		
1 Unknown	29	3.03	-	-	-	144540		

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 19, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Aroclors - GC Analysis Data (QR14)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5676	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SBACKROUND	850501	1119	1

Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. mg/kg	MDL mg/kg[a]	First mg/kg	Second mg/kg	Blank Data mg/kg	Concen. Added mg/kg	% Recov [b]	Unspiked Sample mg/kg	Concen. Added mg/kg	% Recov
Aroclor 1242	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1254	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1260	ND	5.0	4.5	3.6	ND	0	-	ND	9.0	93
Aroclor 1248	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1232	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1221	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1016	ND	5.0	ND	ND	ND	0	-	ND	0	-

[a] MDL calculated for each sample matrix.

[b] Reagent Blank. Spiked Blank cannot be performed for this sample matrix.

012

Technical Report

for

NJDEP-DIVISION OF WASTE MGMT.

CONTRACT X-029

Chain of Custody Data Required for ETC Data Management Summary Reports						
H5671	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SS0IL1	850501	1015	0001
ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours

Denis C. K. Lin, Ph.D.

Vice President
Research and Operations

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ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUN 29, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Volatile Compounds - GC/MS Analysis Data (QR01)

004

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5671	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL1	850501	1015	1

NPDES Number	Compound (Acrolein and Acrylonitrile values are screen only.)	Results: Sample Concen. ug/kg	Results: MDL ug/kg[A]	QC Replicate: First ug/kg	QC Replicate: Second ug/kg	QC Blank and Spiked Blank: Blank Data ug/kg	QC Blank and Spiked Blank: Concen. Added ug/kg	QC Blank and Spiked Blank: % Recov	QC Matrix Spike: Unspiked Sample ug/kg	QC Matrix Spike: Concen. Added ug/kg	QC Matrix Spike: % Recov
1V	Acrolein	ND	100.0	ND	ND	ND	800	82	ND	800	163.[B]
2V	Acrylonitrile	ND	100.0	ND	ND	ND	80	98	ND	80	184.[B]
3V	Benzene	BMDL	4.4	ND	ND	ND	18	99	46	18	21[C]
4V	bis(Chloromethyl)ether	ND	10.0	ND	ND	ND	0	-	ND	0	-
5V	Bromoform	ND	4.7	ND	ND	ND	18	94	ND	18	69
6V	Carbon tetrachloride	ND	2.8	ND	ND	ND	18	100	ND	18	94
7V	Chlorobenzene	ND	6.0	ND	ND	ND	18	101	ND	18	109
8V	Chlorodibromomethane	ND	3.1	ND	ND	ND	18	95	ND	18	87
9V	Chloroethane	ND	10.0	ND	ND	ND	18	100	ND	18	154.[B]
10V	2-Chloroethylvinyl ether	ND	10.0	ND	ND	ND	18	119	ND	18	102
11V	Chloroform	ND	1.6	ND	ND	ND	18	104	ND	18	132
12V	Dichlorobromomethane	ND	2.2	ND	ND	ND	18	101	ND	18	101
13V	Dichlorodifluoromethane	ND	10.0	ND	ND	ND	18	106	ND	18	145
14V	1,1-Dichloroethane	10.1	4.7	ND	ND	ND	18	101	21	18	92
15V	1,2-Dichloroethane	ND	2.8	ND	ND	ND	18	103	ND	18	137
16V	1,1-Dichloroethylene	ND	2.8	ND	ND	ND	18	100	ND	18	129
17V	1,2-Dichloropropane	ND	6.0	ND	ND	ND	18	95	ND	18	125
18V	cis-1,3-Dichloropropylene	ND	5.0	ND	ND	ND	18	94	ND	18	95
19V	Ethylbenzene	18.5	7.2	ND	ND	BMDL	18	99	14	18	37.[B]
20V	Methyl bromide	ND	10.0	ND	ND	ND	18	101	ND	18	118
21V	Methyl chloride	ND	10.0	ND	ND	ND	18	102	ND	18	156.[B]
22V	Methylene chloride	10.8	2.8	24	1	9	18	76	18	18	98
23V	1,1,2,2-Tetrachloroethane	ND	6.9	ND	ND	ND	18	99	ND	18	125
24V	Tetrachloroethylene	BMDL	4.1	ND	ND	ND	18	100	19	18	43
25V	Toluene	36.3	6.0	ND	ND	ND	18	102	95	18	0[C]
26V	1,2-Trans-dichloroethylene	5.2	1.6	ND	ND	ND	18	100	87	18	0[C]
27V	1,1,1-Trichloroethane	ND	3.8	ND	ND	ND	18	111	13	18	83
28V	1,1,2-Trichloroethane	ND	5.0	ND	ND	ND	18	98	ND	18	109
29V	Trichloroethylene	3.2	1.9	ND	ND	3	18	85	13	18	51
30V	Trichlorofluoromethane	ND	10.0	5	3	ND	18	102	ND	18	124
31V	Vinyl chloride	BMDL	10.0	ND	ND	ND	18	103	3	18	149.[B]
18V	trans-1,3-Dichloropropylene	ND	10.0	ND	ND	ND	18	94	ND	18	97

A ETC established Method Detection Limit for this particular sample.

B Recovery variable due to sample matrix interference.

C Spiked samples that contain compounds present at high levels do not provide valid spike recovery data.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUN 27, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Acid Compounds - GC/MS Analysis Data (QR02)

005

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5671	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL1	850501	1015	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg[A]	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov [B]	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov [C]
1A	2-Chlorophenol	ND	109	ND	ND	ND	0	-	ND	333	36
2A	2,4-Dichlorophenol	ND	89	ND	ND	ND	0	-	ND	333	28
3A	2,4-Dimethylphenol	ND	89	ND	ND	ND	0	-	ND	333	24
4A	4,6-Dinitro-o-cresol	ND	792	ND	ND	ND	0	-	ND	333	26
5A	2,4-Dinitrophenol	ND	1386	ND	ND	ND	0	-	ND	333	10
6A	2-Nitrophenol	ND	119	ND	ND	ND	0	-	ND	333	27
7A	4-Nitrophenol	ND	79	ND	ND	ND	0	-	ND	333	22
8A	p-Chloro-m-cresol	ND	99	ND	ND	ND	0	-	ND	333	34
9A	Pentachlorophenol	ND	119	ND	ND	ND	0	-	ND	333	33
10A	Phenol	ND	50	ND	ND	ND	0	-	ND	333	45
11A	2,4,6-Trichlorophenol	ND	89	ND	ND	ND	0	-	ND	333	29

A ETC established Method Detection Limit for this particular sample.

B Reagent Blank. Spiked Blank cannot be performed for this sample matrix.

C Recovery low due to sample matrix interference.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUN 27, 1995

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

BASE/NEUTRAL COMPOUNDS - GC/MS ANALYSIS DATA (QR03)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5671	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL1	850501	1015	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov
1B	Acenaphthene	192	66	ND	ND	ND	0	-	ND	333	31
2B	Acenaphthylene	ND	116	ND	ND	ND	0	-	ND	333	29
3B	Anthracene	BMDL	63	ND	ND	ND	0	-	ND	333	31
4B	Benzidine	ND	1450	ND	ND	ND	0	-	ND	333	0
5B	Benzo(a)anthracene	ND	257	ND	ND	ND	0	-	ND	333	33
6B	Benzo(a)pyrene	738	83	ND	ND	ND	0	-	40	333	37
7B	Benzo(b)fluoroanthene	ND	158	ND	ND	ND	0	-	ND	333	38
8B	Benzo(ghi)perylene	ND	135	ND	ND	ND	0	-	ND	0	-
9B	Benzo(k)fluoranthene	1270	83	ND	ND	ND	0	-	119	333	36
10B	bis(2-Chloroethoxy)methane	ND	175	ND	ND	ND	0	-	ND	333	29
11B	bis(2-Chloroethyl) ether	ND	189	ND	ND	ND	0	-	ND	333	27
12B	bis(2-Chloroisopropyl)ether	ND	198	ND	ND	ND	0	-	ND	333	24
>13B	bis(2-Ethylhexyl)phthalate	2117	330	ND	ND	ND	0	-	136	333	35
14B	4-Bromophenyl phenyl ether	ND	63	ND	ND	ND	0	-	ND	333	32
15B	Butyl benzyl phthalate	ND	330	ND	ND	ND	0	-	ND	333	30
16B	2-Chloronaphthalene	ND	63	ND	ND	ND	0	-	ND	333	33
17B	4-Chlorophenyl phenyl ether	ND	139	ND	ND	ND	0	-	ND	333	25
18B	Chrysene	ND	83	ND	ND	ND	0	-	ND	333	32
19B	Dibenzo(a,h)anthracene	ND	83	ND	ND	ND	0	-	ND	0	-
20B	1,2-Dichlorobenzene	ND	63	ND	ND	ND	0	-	ND	333	23
21B	1,3-Dichlorobenzene	ND	66	ND	ND	ND	0	-	ND	333	23
22B	1,4-Dichlorobenzene	ND	145	ND	ND	ND	0	-	ND	333	22
23B	3,3'-Dichlorobenzidine	ND	545	ND	ND	ND	0	-	ND	333	14
24B	Diethyl phthalate	ND	330	ND	ND	ND	0	-	ND	333	27
25B	Dimethyl phthalate	ND	330	ND	ND	ND	0	-	ND	333	29
26B	Di-n-butyl phthalate	ND	330	ND	ND	172	0	-	ND	333	38
27B	2,4-Dinitrotoluene	BMDL	189	ND	ND	ND	0	-	ND	333	28
28B	2,6-Dinitrotoluene	ND	63	ND	ND	ND	0	-	ND	333	29
29B	Di-n-octyl phthalate	ND	330	ND	ND	ND	0	-	ND	333	33
30B	1,2-Diphenylhydrazine	ND	330	ND	ND	ND	0	-	ND	333	26
31B	Fluoranthene	236	73	ND	ND	ND	0	-	ND	333	32
32B	Fluorene	ND	63	ND	ND	ND	0	-	ND	333	28

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUN 27, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

BASE/NEUTRAL COMPOUNDS - GC/MS ANALYSIS DATA (QR03)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5671	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL1	850501	1015	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg[A]	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov [B]	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov [C]
33B	Hexachlorobenzene	ND	63	ND	ND	ND	0	-	ND	333	23
34B	Hexachlorobutadiene	ND	30	ND	ND	ND	0	-	ND	333	30
35B	Hexachlorocyclopentadiene	ND	330	ND	ND	ND	0	-	ND	0	-
36B	Hexachloroethane	ND	53	ND	ND	ND	0	-	ND	333	22
37B	Indeno(1,2,3-c,d)pyrene	ND	122	ND	ND	ND	0	-	ND	0	-
38B	Isophorone	ND	73	ND	ND	ND	0	-	ND	333	29
39B	Naphthalene	ND	53	ND	ND	ND	0	-	ND	333	28
40B	Nitrobenzene	ND	63	ND	ND	ND	0	-	ND	333	25
41B	N-Nitrosodimethylamine	ND	330	ND	ND	ND	0	-	ND	0	-
42B	N-Nitrosodi-n-propylamine	ND	330	ND	ND	ND	0	-	ND	333	27
43B	N-Nitrosodiphenylamine	ND	66	ND	ND	ND	0	-	ND	333	26
44B	Phenanthrene	410	178	ND	ND	ND	0	-	ND	333	32
45B	Pyrene	349	63	ND	ND	ND	0	-	ND	333	31
46B	1,2,4-Trichlorobenzene	ND	63	ND	ND	ND	0	-	ND	333	27

A ETC established Method Detection Limit for this particular sample.

B Reagent Blank. Spiked Blank cannot be performed for this sample matrix.

C Recovery low due to sample matrix interference.

007

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 21, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Pesticide Compounds - GC Analysis Data (QR32)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5671	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL1	850501	1015	1

NPDES Number	Compound	Results: Sample Concen. ug/kg	Results: MDL ug/kg A	QC Replicate: First ug/kg	QC Replicate: Second ug/kg	QC Blank and Spiked Blank: Blank Data ug/kg	QC Blank and Spiked Blank: Concen. Added ug/kg	QC Blank and Spiked Blank: % Recov	QC Matrix Spike: Unspiked Sample ug/kg	QC Matrix Spike: Concen. Added ug/kg	QC Matrix Spike: % Recov
1P	Aldrin	ND	23000	ND	ND	ND	0	-	ND	460	93
2P	Alpha-BHC	ND	23000	150	ND	ND	0	-	ND	460	84
3P	Beta-BHC	ND	23000	ND	ND	ND	0	-	ND	460	84
4P	Gamma-BHC	ND	23000	ND	ND	ND	0	-	ND	460	84
5P	Delta-BHC	ND	23000	ND	ND	ND	0	-	ND	460	100
6P	Chlordane	ND	230000	ND	ND	ND	0	-	ND	5000	81
7P	4,4'-DDT	ND	23000	ND	ND	ND	0	-	ND	460	190
8P	4,4'-DDE	ND	23000	ND	ND	ND	0	-	ND	460	110
9P	4,4'-DDD	ND	23000	2400	ND	ND	0	-	ND	460	130
10P	Dieldrin	ND	23000	ND	ND	ND	0	-	ND	460	110
11P	Endosulfan I	ND	23000	ND	ND	ND	0	-	ND	460	100
12P	Endosulfan II	BMDL	23000	ND	ND	ND	0	-	ND	460	110
13P	Endosulfan sulfate	ND	23000	ND	180	ND	0	-	ND	460	110
14P	Endrin	ND	23000	ND	ND	ND	0	-	ND	460	140
15P	Endrin aldehyde	ND	23000	600	ND	ND	0	-	ND	460	73
16P	Heptachlor	ND	23000	ND	ND	ND	0	-	ND	460	83
17P	Heptachlor epoxide	ND	23000	ND	ND	ND	0	-	ND	460	100
25P	Toxaphene	ND	230000	ND	ND	ND	0	-	ND	5000	-D

A ETC established Method Detection Limit for this particular sample.

B Reagent Blank. Spiked Blank cannot be performed for this sample matrix.

C Recovery variable due to sample matrix interference.

D Due to dilution of matrix spike toxaphene recovery could not be calculated.

003

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUN 6, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Metals, Cyanide and Phenols - Analysis Data (QR05)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5671	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL1	850501	1015	1

NPDES Number	Compound		Results: Sample Concen.	Results: MDL
1M	Antimony	ug/kg	BMDL	9000
2M	Arsenic	mg/kg	4.2	1
3M	Beryllium	ug/kg	200	50
4M	Cadmium	ug/kg	BMDL	300
5M	Chromium	ug/kg	31000	2000
6M	Copper	ug/kg	47000	900
7M	Lead	mg/kg	620	5
8M	Mercury	mg/kg	.2	.1
9M	Nickel	ug/kg	9000	1000
10M	Selenium	mg/kg	ND	.5
11M	Silver	ug/kg	ND	500
12M	Thallium	mg/kg	ND	.5
13M	Zinc	ug/kg	123000	600
14M	Cyanide, Total	ug/kg	<500	500
15M	Phenolics, Total	ug/kg	1400	100

009

ETC ENVIRONMENTAL TESTING and CERTIFICATION

TABLE 1: QUALITATIVE RESULTS

Tentatively Identified Organic Compounds – GC/MS Analysis Data – Volatile

010

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Ela H
H5671	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL1	850501	1015	I

Compound Name	Data			Identifiers		
	Scan Number	Retention Time (Min)	M.W.	CAS Number	Empirical Formula	Esti Conc ug/
1 unknown	139	6.2	-	-	-	9
2 unknown	330	13.6	-	-	-	7
3 Cyclohexane, methyl	478	19.4	98	108872	C_7H_{14}	12
4 unknown	501	20.2	-	-	-	7
5 unknown	532	21.5	-	-	-	16
6 unknown	555	22.3	-	-	-	36
7 unknown	562	22.6	-	-	-	42
8 Benzene, dimethyl	732	29.2	106	-	-	112
9 Benzene, dimethyl	749	29.9	106	-	C_8H_{10}	145
10 unknown	600	24	-	-	C_8H_{10}	19
11 unknown	628	25.2	-	-	-	9

ETC ENVIRONMENTAL TESTING and CERTIFICATION

TABLE 1: QUALITATIVE RESULTS

'Tentatively Identified Organic Compounds – GC/MS Analysis Data – Base/Ne

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time
H5671	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED S	SOIL1	850501	1015

011

	Compound Name	Data			Identifiers		
		Scan Number	Retention Time (Min)	M.W.	CAS Number	Empirical Formula	Est Con us
1	2-methyl 3-heptene	73	2.95	112	692966	C_8H_{16}	121
2	unknown	99	3.40	-	-	-	202
3	unknown	194	5.10	-	-	-	48
4	unknown	250	6.10	-	-	-	155
5	unknown	258	6.30	-	-	-	52
6	alkane	266	6.40	-	-	-	44
7	unknown	280	6.70	-	-	-	203
8	unknown	284	6.70	-	-	-	66
9	1-methyl-4-propyl benzene	291	6.90	134	1074551	$C_{10}H_{14}$	56
10	2-ethyl-1,4-dimethyl benzene	310	7.20	134	1758889	$C_{10}H_{14}$	112
11	1-ethyl 2-propyl cyclohexane	315	7.30	154	62238339	$C_{11}H_{22}$	53
12	alkane	327	7.50	-	-	-	442
13	decahydro-2-methyl naphthalene	335	7.60	152	2958761	$C_{11}H_{20}$	44
14	unknown	340	7.70	-	-	-	135
15	unknown	351	7.90	-	-	-	235

ETC ENVIRONMENTAL TESTING and CERTIFICATION

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE D

Aroclors - GC Analysis Data (QR14)

012

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	E H
H5671	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL1	850501	1015	

Compound	Results		QC Replicate		QC Blank and Spiked Blank		
	Sample Concen. mg/kg	MDL mg/kg[A]	First mg/kg	Second mg/kg	Blank Data mg/kg	Concen. Added mg/kg	% Recov
Aroclor 1242	ND	5.0	ND	ND	ND	0	-
Aroclor 1254	ND	5.0	ND	ND	ND	0	-
Aroclor 1260	BMDL	5.0	4.5	3.6	ND	0	-
Aroclor 1248	ND	5.0	ND	ND	ND	0	-
Aroclor 1232	ND	5.0	ND	ND	ND	0	-
Aroclor 1221	ND	5.0	ND	ND	ND	0	-
Aroclor 1016	ND	5.0	ND	ND	ND	0	-

A MDL calculated for each sample matrix.

B Reagent Blank. Spiked Blank cannot be performed for this sample matrix.

Technical Report

for

NJDEP-DIVISION OF WASTE MGMT.

CONTRACT X-029

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5672	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL2	850501	1037	0001

Denis C. K. Lin, Ph.D.

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ETC ENVIRONMENTAL TESTING and CERTIFICATION

June 29, 1985

TABLE 1: QUALITATIVE RESULTS

Tentatively Identified Organic Compounds – GC/MS Analysis Data – Volatile Fraction (QR06)

010

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5671	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL1	850501	1015	1

	Compound Name	Data: Scan Number	Data: Retention Time (Min)	Data: M.W.	Identifiers: CAS Number	Identifiers: Empirical Formula	Estim. Concen. ug/kg		
1	unknown	139	6.2	-	-	-	9		
2	unknown	330	13.6	-	-	-	7		
3	Cyclohexane, methyl	478	19.4	98	108872	C_7H_{14}	12		
4	unknown	501	20.2	-	-	-	7		
5	unknown	532	21.5	-	-	-	16		
6	unknown	555	22.3	-	-	-	36		
7	unknown	562	22.6	-	-	-	42		
8	Benzene, dimethyl	732	29.2	106	-	-	112		
9	Benzene, dimethyl	749	29.9	106	-	C_8H_{10}	145		
10	unknown	600	24	-	-	C_8H_{10}	19		
11	unknown	628	25.2	-	-	-	9		

ETC ENVIRONMENTAL TESTING and CERTIFICATION

June 27, 1988

TABLE 1: QUALITATIVE RESULTS

'Tentatively Identified Organic Compounds – GC/MS Analysis Data – Base/Neutral/Acid Fraction

011

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5671	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED S	SOIL1	850501	1015	1

Compound Name	Data: Scan Number	Data: Retention Time (Min)	Data: M.W.	Identifiers: CAS Number	Identifiers: Empirical Formula	Estim. Concen. ug/kg
1 2-methyl 3-heptene	73	2.95	112	692966	C_8H_{16}	1210
2 unknown	99	3.40	-	-	-	2020
3 unknown	194	5.10	-	-	-	485
4 unknown	250	6.10	-	-	-	1550
5 unknown	258	6.30	-	-	-	528
6 alkane	266	6.40	-	-	-	449
7 unknown	280	6.70	-	-	-	2030
8 unknown	284	6.70	-	-	-	669
9 1-methyl-4-propyl benzene	291	6.90	134	1074551	$C_{10}H_{14}$	569
10 2-ethyl-1,4-dimethyl benzene	310	7.20	134	1758889	$C_{10}H_{14}$	1120
11 1-ethyl 2-propyl cyclohexane	315	7.30	154	62238339	$C_{11}H_{22}$	532
12 alkane	327	7.50	-	-	-	4420
13 decahydro-2-methyl naphthalene	335	7.60	152	2958761	$C_{11}H_{20}$	443
14 unknown	340	7.70	-	-	-	1350
15 unknown	351	7.90	-	-	-	2350

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 19, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Aroclors - GC Analysis Data (QR14)

012

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5671	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL1	850501	1015	1

Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. mg/kg	MDL mg/kg[A]	First mg/kg	Second mg/kg	Blank Data mg/kg	Concen. Added mg/kg	% Recov	Unspiked Sample mg/kg	Concen. Added mg/kg	% Recov
Aroclor 1242	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1254	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1260	BMDL	5.0	4.5	3.6	ND	0	-	ND	9.0	93
Aroclor 1248	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1232	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1221	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1016	ND	5.0	ND	ND	ND	0	-	ND	0	-

A MDL calculated for each sample matrix.

B Reagent Blank. Spiked Blank cannot be performed for this sample matrix.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

Technical Report

for

NJDEP-DIVISION OF WASTE MGMT.

CONTRACT X-029

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5672	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL2	850501	1037	0001

Denis C. K. Lin, Ph.D.

Vice President
Research and Operations

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ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 16, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Volatile Compounds - GC/MS Analysis Data (QR01)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5672	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL2	850501	1037	1

NPDES Number	Compound (Acrolein and Acrylonitrile values are screen only.)	Results: Sample Concen. ug/kg	Results: MDL ug/kg[a]	QC Replicate: First ug/kg	QC Replicate: Second ug/kg	QC Blank and Spiked Blank: Blank Data ug/kg	QC Blank and Spiked Blank: Concen. Added ug/kg	QC Blank and Spiked Blank: % Recov	QC Matrix Spike: Unspiked Sample ug/kg	QC Matrix Spike: Concen. Added ug/kg	QC Matrix Spike: % Recov
1V	Acrolein	ND	100.0	ND	ND	ND	800	82	ND	800	163[a]
2V	Acrylonitrile	ND	100.0	ND	ND	ND	80	98	ND	80	184[a]
3V	Benzene	45.8	4.4	ND	ND	ND	18	99	46	18	21[c]
4V	bis(Chloromethyl)ether	ND	10.0	ND	ND	ND	0	-	ND	0	-
5V	Bromoform	ND	4.7	ND	ND	ND	18	94	ND	18	69
6V	Carbon tetrachloride	ND	2.8	ND	ND	ND	18	100	ND	18	94
7V	Chlorobenzene	ND	6.0	ND	ND	ND	18	101	ND	18	109
8V	Chlorodibromomethane	ND	3.1	ND	ND	ND	18	95	ND	18	87
9V	Chloroethane	ND	10.0	ND	ND	ND	18	100	ND	18	154[a]
10V	2-Chloroethylvinyl ether	ND	10.0	ND	ND	ND	18	119	ND	18	102
11V	Chloroform	ND	1.6	ND	ND	ND	18	104	ND	18	132
12V	Dichlorobromomethane	ND	2.2	ND	ND	ND	18	101	ND	18	101
13V	Dichlorodifluoromethane	ND	10.0	ND	ND	ND	18	106	ND	18	145
14V	1,1-Dichloroethane	20.6	4.7	ND	ND	ND	18	101	21	18	92
15V	1,2-Dichloroethane	ND	2.8	ND	ND	ND	18	103	ND	18	137
16V	1,1-Dichloroethylene	ND	2.8	ND	ND	ND	18	100	ND	18	129
17V	1,2-Dichloropropane	ND	6.0	ND	ND	ND	18	95	ND	18	125
18V	cis-1,3-Dichloropropylene	ND	5.0	ND	ND	ND	18	94	ND	18	95
19V	Ethylbenzene	14.2	7.2	ND	ND	BMDL	18	99	14	18	37[a]
20V	Methyl bromide	ND	10.0	ND	ND	ND	18	101	ND	18	118
21V	Methyl chloride	ND	10.0	ND	ND	ND	18	102	ND	18	156[a]
22V	Methylene chloride	17.8	2.8	24	1	9	18	76	18	18	98
23V	1,1,2,2-Tetrachloroethane	ND	6.9	ND	ND	ND	18	99	ND	18	125
24V	Tetrachloroethylene	18.8	4.1	ND	ND	ND	18	100	19	18	43
25V	Toluene	94.9	6.0	ND	ND	ND	18	102	95	18	0[c]
26V	1,2-Trans-dichloroethylene	87.0	1.6	ND	ND	ND	18	100	87	18	0[c]
27V	1,1,1-Trichloroethane	13.4	3.8	ND	ND	ND	18	111	13	18	83
28V	1,1,2-Trichloroethane	ND	5.0	ND	ND	ND	18	98	ND	18	109
29V	Trichloroethylene	13.3	1.9	ND	ND	3	18	85	13	18	51
30V	Trichlorofluoromethane	ND	10.0	5	3	ND	18	102	ND	18	124
31V	Vinyl chloride	BMDL	10.0	ND	ND	ND	18	103	3	18	149[a]
18V	trans-1,3-Dichloropropylene	ND	10.0	ND	ND	ND	18	94	ND	18	97

A ETC established Method Detection Limit for this particular sample.

B Recovery variable due to sample matrix interference.

C Spiked samples that contain compounds present at high levels do not provide valid spike recovery data.

002

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 30, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Acid Compounds - GC/MS Analysis Data (QR02)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5672	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL2	850501	1037	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg[a]	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov[b]	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov
1A	2-Chlorophenol	ND	21780.0	ND	ND	ND	0	-	ND	33333	74
2A	2,4-Dichlorophenol	ND	17820.0	ND	ND	ND	0	-	ND	33333	96
3A	2,4-Dimethylphenol	ND	17820.0	ND	ND	ND	0	-	ND	33333	82
4A	4,6-Dinitro-o-cresol	ND	158400	ND	ND	ND	0	-	ND	33333	34
5A	2,4-Dinitrophenol	ND	277200	ND	ND	ND	0	-	ND	33333	21
6A	2-Nitrophenol	ND	23760.0	ND	ND	ND	0	-	ND	33333	99
7A	4-Nitrophenol	ND	15840.0	ND	ND	ND	0	-	ND	33333	99
8A	p-Chloro-m-cresol	ND	19800.0	ND	ND	ND	0	-	ND	33333	90
9A	Pentachlorophenol	ND	23760.0	ND	ND	ND	0	-	ND	33333	91
10A	Phenol	ND	9900.0	ND	ND	ND	0	-	ND	33333	83
11A	2,4,6-Trichlorophenol	ND	17820.0	ND	ND	ND	0	-	ND	33333	108

[a] ETC established Method Detection Limit for this particular sample.

[b] Reagent Blank. Spiked Blank cannot be performed for this sample matrix.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 30, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

BASE/NEUTRAL COMPOUNDS - GC/MS ANALYSIS DATA (QR03)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5672	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL2	850501	1037	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov
1B	Acenaphthene	BMDL	12540	ND	ND	ND	0	-	ND	33333	110
2B	Acenaphthylene	62500	23100	ND	ND	ND	0	-	ND	33333	114
3B	Anthracene	22500	12540	ND	ND	ND	0	-	ND	33333	112
4B	Benzidine	ND	290400	ND	ND	ND	0	-	ND	33333	0
5B	Benzo(a)anthracene	BMDL	51480	ND	ND	ND	0	-	ND	33333	118
6B	Benzo(a)pyrene	ND	16500	ND	ND	ND	0	-	ND	33333	99
7B	Benzo(b)fluoroanthene	ND	31680	ND	ND	ND	0	-	ND	33333	107
8B	Benzo(ghi)perylene	ND	27060	ND	ND	ND	0	-	ND	0	-
9B	Benzo(k)fluoranthene	ND	16500	ND	ND	ND	0	-	ND	33333	77
10B	bis(2-Chloroethoxy)methane	ND	34980	ND	ND	ND	0	-	ND	33333	101
11B	bis(2-Chloroethyl) ether	ND	37620	ND	ND	ND	0	-	ND	33333	97
12B	bis(2-Chloroisopropyl)ether	ND	37620	ND	ND	ND	0	-	ND	33333	96
13B	bis(2-Ethylhexyl)phthalate	BMDL	66000	ND	ND	ND	0	-	ND	33333	98
14B	4-Bromophenyl phenyl ether	ND	12540	ND	ND	ND	0	-	ND	33333	108
15B	Butyl benzyl phthalate	ND	66000	ND	ND	ND	0	-	ND	33333	107
16B	2-Chloronaphthalene	ND	12540	ND	ND	ND	0	-	ND	33333	114
17B	4-Chlorophenyl phenyl ether	ND	27720	ND	ND	ND	0	-	ND	33333	109
18B	Chrysene	ND	16500	ND	ND	ND	0	-	ND	33333	92
19B	Dibenzo(a,h)anthracene	ND	16500	ND	ND	ND	0	-	ND	0	-
20B	1,2-Dichlorobenzene	ND	12540	ND	ND	ND	0	-	ND	33333	91
21B	1,3-Dichlorobenzene	ND	12540	ND	ND	ND	0	-	ND	33333	89
22B	1,4-Dichlorobenzene	ND	29040	ND	ND	ND	0	-	ND	33333	87
23B	3,3'-Dichlorobenzidine	ND	108900	ND	ND	ND	0	-	ND	33333	0
24B	Diethyl phthalate	ND	66000	ND	ND	ND	0	-	ND	33333	113
25B	Dimethyl phthalate	ND	66000	ND	ND	ND	0	-	ND	33333	110
26B	Di-n-butyl phthalate	ND	66000	ND	ND	ND	0	-	ND	33333	114
27B	2,4-Dinitrotoluene	ND	37620	ND	ND	ND	0	-	ND	33333	111
28B	2,6-Dinitrotoluene	ND	12540	ND	ND	ND	0	-	ND	33333	109
29B	Di-n-octyl phthalate	ND	66000	ND	ND	ND	0	-	ND	33333	105
30B	1,2-Diphenylhydrazine	ND	66000	ND	ND	ND	0	-	ND	33333	114
31B	Fluoranthene	55100	14520	ND	ND	ND	0	-	ND	33333	128
32B	Fluorene	ND	12540	ND	ND	ND	0	-	ND	33333	113

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 30, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

BASE/NEUTRAL COMPOUNDS - GC/MS ANALYSIS DATA (QR03)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5672	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL2	850501	1037	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg A	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov
33B	Hexachlorobenzene	ND	12540	ND	ND	ND	0	-	ND	33333	80
34B	Hexachlorobutadiene	ND	5940	ND	ND	ND	0	-	ND	33333	96
35B	Hexachlorocyclopentadiene	ND	10.0	ND	ND	ND	0	-	ND	0	-
36B	Hexachloroethane	ND	10560	ND	ND	ND	0	-	ND	33333	93
37B	Indeno(1,2,3-c,d)pyrene	ND	24420	ND	ND	ND	0	-	ND	0	-
38B	Isophorone	ND	14520	ND	ND	ND	0	-	ND	33333	102
39B	Naphthalene	ND	10560	ND	ND	ND	0	-	ND	33333	105
40B	Nitrobenzene	ND	12540	ND	ND	ND	0	-	ND	33333	92
41B	N-Nitrosodimethylamine	ND	66000	ND	ND	ND	0	-	ND	0	-
42B	N-Nitrosodi-n-propylamine	ND	66000	ND	ND	ND	0	-	ND	33333	100
43B	N-Nitrosodiphenylamine	ND	12540	ND	ND	ND	0	-	ND	33333	116
44B	Phenanthrene	BMDL	35640	ND	ND	ND	0	-	ND	33333	115
45B	Pyrene	178000	12540	ND	ND	ND	0	-	ND	33333	131
46B	1,2,4-Trichlorobenzene	122034	12540	ND	ND	ND	0	-	ND	33333	99

A ETC established Method Detection Limit for this particular sample.

B Reagent Blank. Spiked Blank cannot be performed for this sample matrix.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 21, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Pesticide Compounds - GC Analysis Data (QR32)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5672	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL2	850501	1037	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg[A]	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov [B]	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov
1P	Aldrin	ND	23000	ND	ND	ND	0	-	ND	460	93
2P	Alpha-BHC	ND	23000	150	ND	ND	0	-	ND	460	84
3P	Beta-BHC	ND	23000	ND	ND	ND	0	-	ND	460	84
4P	Gamma-BHC	ND	23000	ND	ND	ND	0	-	ND	460	84
5P	Delta-BHC	ND	23000	ND	ND	ND	0	-	ND	460	100
6P	Chlordane	ND	230000	ND	ND	ND	0	-	ND	5000	81
7P	4,4'-DDT	ND	23000	ND	ND	ND	0	-	ND	460	190[C]
8P	4,4'-DDE	ND	23000	ND	ND	ND	0	-	ND	460	110
9P	4,4'-DDD	ND	23000	2400	ND	ND	0	-	ND	460	130
10P	Dieldrin	ND	23000	ND	ND	ND	0	-	ND	460	110
11P	Endosulfan I	ND	23000	ND	ND	ND	0	-	ND	460	100
12P	Endosulfan II	ND	23000	ND	ND	ND	0	-	ND	460	110
13P	Endosulfan sulfate	ND	23000	ND	180	ND	0	-	ND	460	110
14P	Endrin	ND	23000	ND	ND	ND	0	-	ND	460	140
15P	Endrin aldehyde	ND	23000	600	ND	ND	0	-	ND	460	73
16P	Heptachlor	ND	23000	ND	ND	ND	0	-	ND	460	83
17P	Heptachlor epoxide	ND	23000	ND	ND	ND	0	-	ND	460	100
25P	Toxaphene	ND	230000	ND	ND	ND	0	-	ND	5000	-[D]

A ETC established Method Detection Limit for this particular sample.

B Reagent Blank. Spiked Blank cannot be performed for this sample matrix.

C Recovery variable due to sample matrix interference.

D Due to dilution of matrix spike toxaphene recovery could not be calculated.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUN 6, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Metals, Cyanide and Phenols - Analysis Data (QR05)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5672	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL2	850501	1037	1

NPDES Number	Compound		Results: Sample Concen.	Results: MDL
1M	Antimony	ug/kg	30000	9000
2M	Arsenic	mg/kg	7.2	1
3M	Beryllium	ug/kg	830	50
4M	Cadmium	ug/kg	11000	300
5M	Chromium	mg/kg	1900	2
6M	Copper	mg/kg	520	.8
7M	Lead	mg/kg	30000	5
8M	Mercury	mg/kg	7.5	.1
9M	Nickel	ug/kg	254000	1000
10M	Selenium	mg/kg	ND	1
11M	Silver	ug/kg	32000	500
12M	Thallium	mg/kg	ND	.5
13M	Zinc	mg/kg	4000	.6
14M	Cyanide, Total	ug/kg	1200	500
15M	Phenolics, Total	ug/kg	7200	100

ETC ENVIRONMENTAL TESTING and CERTIFICATION

June 7, 1985

TABLE 1: QUALITATIVE RESULTS

Tentatively Identified Organic Compounds - GC/MS Analysis Data - Volatile Fraction (QR06)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5672	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL2	850501	1037	1

Compound Name	Data			Identifiers				
	Scan Number	Retention Time (Min)	M.W.	CAS Number	Empirical Formula	Estimated Concen. ug/kg		
1 Cyclohexane	330	13.6	84	110827	C_6H_{12}	13		
2 Cyclopentane, methyl	350	14.4	84	96377	C_6H_{12}	18		
3 Unknown	472	19.11	-	-	-	16		
4 Cyclohexane, methyl	479	19.4	98	108872	C_7H_{14}	4		
5 Unknown	532	21.5	-	-	-	63		
6 Unknown	562	22.6	-	-	-	85		
7 Unknown	600	24.1	-	-	-	194		
8 Unknown	627	25.2	-	-	-	29		
9 Unknown	641	25.7	-	-	-	91		
10 Unknown	659	26.4	-	-	-	170		
11 Unknown	673	26.9	-	-	-	133		
12 Unknown	690	27.6	-	-	-	96		
13 Unknown	703	28.1	-	-	-	114		
14 Unknown	731	29.2	-	-	-	173		
15 Unknown	771	30.8	-	-	-	247		

ETC ENVIRONMENTAL TESTING and CERTIFICATION

May 31, 1985

TABLE 1: QUALITATIVE RESULTS

Tentatively Identified Organic Compounds - GC/MS Analysis Data - B/N/Acid Fraction (QR08)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5672	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL2	850501	1037	1

Compound Name	Data			Identifiers				
	Scan Number	Retention Time (Min)	M.W.	CAS Number	Empirical Formula	Estimated Concen. ug/kg		
1 Unknown	23	3.06	-	-	-	231000		
2 Alkane	440	10.47	-	-	C_nH_{2n+2}	172000		
3 Alkane	515	11.81	-	-	C_nH_{2n+2}	139000		
4 Alkane	537	12.20	-	-	C_nH_{2n+2}	145000		
5 Alkane	594	13.21	-	-	C_nH_{2n+2}	191000		
6 Alkane	628	13.82	-	-	C_nH_{2n+2}	125000		
7 Alkane	753	16.04	-	-	C_nH_{2n+2}	204000		
8 Alkane	798	16.84	-	-	C_nH_{2n+2}	330000		
9 Alkane	878	18.27	-	-	C_nH_{2n+2}	277000		
10 Alkane	1082	21.91	-	-	C_nH_{2n+2}	125000		

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 19, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Aroclors - GC Analysis Data (QR14)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5672	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL2	850501	1037	1

Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. mg/kg	MDL mg/kg[A]	First mg/kg	Second mg/kg	Blank Data mg/kg	Concen. Added mg/kg	% Recov [B]	Unspiked Sample mg/kg	Concen. Added mg/kg	% Recov
Aroclor 1242	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1254	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1260	770 [C]	5.0	4.5	3.6	ND	0	-	ND	9.0	93
Aroclor 1248	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1232	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1221	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1016	ND	5.0	ND	ND	ND	0	-	ND	0	-

A MDL calculated for each sample matrix.

B Reagent Blank. Spiked Blank cannot be performed for this sample matrix.

C Confirmed on second column.

H5672

COMMENTS

Base/Neutrals: This sample was initially extracted at low level IFB Protocol . No extract could be achieved due to sample matrix. By reprepping at medium level protocol, the final volume of 1 ml. could not be achieved. In addition to achieving only a 10 ml. final volume. This sample was additionally diluted 1:2 . Due to these facts and the high levels of compounds present, surrogates had l ow and variable recoveries, and would most likely not improve upon re-extraction . Ms. Nancy Fox of NJDEP QA department was informed of these recoveries.

Technical Report

for

NJDEP-DIVISION OF WASTE MGMT.

CONTRACT X-029

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5673	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SS0IL3	850501	1025	0001

Denis C. K. Lin, Ph.D.
Vice President
Research and Operations

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ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 16, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Volatile Compounds - GC/MS Analysis Data (QR01)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5673	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL3	850501	1025	1

NPDES Number	Compound (Acrolein and Acrylonitrile values are screen only.)	Results: Sample Concen. ug/kg	Results: MDL ug/kg[a]	QC Replicate: First ug/kg	QC Replicate: Second ug/kg	QC Blank and Spiked Blank: Blank Data ug/kg	QC Blank and Spiked Blank: Concen. Added ug/kg	QC Blank and Spiked Blank: % Recov	QC Matrix Spike: Unspiked Sample ug/kg	QC Matrix Spike: Concen. Added ug/kg	QC Matrix Spike: % Recov
1V	Acrolein	ND	5000.0	ND	ND	ND	800	82	ND	800	163[b]
2V	Acrylonitrile	ND	5000.0	ND	ND	ND	80	98	ND	80	184[b]
3V	Benzene	16960.7	220.0	ND	ND	ND	18	99	46	18	21[c]
4V	bis(Chloromethyl)ether	ND	500.0	ND	ND	ND	0	-	ND	0	-
5V	Bromoform	ND	235.0	ND	ND	ND	18	94	ND	18	69
6V	Carbon tetrachloride	ND	140.0	ND	ND	ND	18	100	ND	18	94
7V	Chlorobenzene	ND	300.0	ND	ND	ND	18	101	ND	18	109
8V	Chlorodibromomethane	ND	155.0	ND	ND	ND	18	95	ND	18	87
9V	Chloroethane	ND	500.0	ND	ND	ND	18	100	ND	18	154[b]
10V	2-Chloroethylvinyl ether	ND	500.0	ND	ND	ND	18	119	ND	18	102
11V	Chloroform	ND	80.0	ND	ND	ND	18	104	ND	18	132
12V	Dichlorobromomethane	ND	110.0	ND	ND	ND	18	101	ND	18	101
13V	Dichlorodifluoromethane	ND	500.0	ND	ND	ND	18	106	ND	18	145
14V	1,1-Dichloroethane	942.1	235.0	ND	ND	ND	18	101	21	18	92
15V	1,2-Dichloroethane	295.5	140.0	ND	ND	ND	18	103	ND	18	137
16V	1,1-Dichloroethylene	ND	140.0	ND	ND	ND	18	100	ND	18	129
17V	1,2-Dichloropropane	ND	300.0	ND	ND	ND	18	95	ND	18	125
18V	cis-1,3-Dichloropropylene	ND	250.0	ND	ND	ND	18	94	ND	18	95
19V	Ethylbenzene	6020.4	360.0	ND	ND	BMDL	18	99	14	18	37[b]
20V	Methyl bromide	ND	500.0	ND	ND	ND	18	101	ND	18	118
21V	Methyl chloride	ND	500.0	ND	ND	ND	18	102	ND	18	156[b]
22V	Methylene chloride	290.0	140.0	24	1	9	18	76	18	18	98
23V	1,1,2,2-Tetrachloroethane	ND	345.0	ND	ND	ND	18	99	ND	18	125
24V	Tetrachloroethylene	4491.4	205.0	ND	ND	ND	18	100	19	18	43
25V	Toluene	40520.4	300.0	ND	ND	ND	18	102	95	18	0[c]
26V	1,2-Trans-dichloroethylene	7644.5	80.0	ND	ND	ND	18	100	87	18	0[c]
27V	1,1,1-Trichloroethane	770.0	190.0	ND	ND	ND	18	111	13	18	83
28V	1,1,2-Trichloroethane	ND	250.0	ND	ND	ND	18	98	ND	18	109
29V	Trichloroethylene	1613.2	95.0	ND	ND	3	18	85	13	18	51
30V	Trichlorofluoromethane	BMDL	500.0	5	3	ND	18	102	ND	18	124
31V	Vinyl chloride	ND	500.0	ND	ND	ND	18	103	3	18	149[b]
18V	trans-1,3-Dichloropropylene	ND	500.0	ND	ND	ND	18	94	ND	18	97

[a] ETC established Method Detection Limit for this particular sample.

[b] Recovery variable due to sample matrix interference.

[c] Spiked samples that contain compounds present at high levels do not provide valid spike recovery data.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 30, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Acid Compounds - GC/MS Analysis Data (QR02)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5673	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL3	850501	1025	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg[A]	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov
1A	2-Chlorophenol	ND	21780.0	ND	ND	ND	0	-	ND	33333	74
2A	2,4-Dichlorophenol	ND	17820.0	ND	ND	ND	0	-	ND	33333	96
3A	2,4-Dimethylphenol	ND	17820.0	ND	ND	ND	0	-	ND	33333	82
4A	4,6-Dinitro-o-cresol	ND	158400	ND	ND	ND	0	-	ND	33333	34
5A	2,4-Dinitrophenol	ND	277200	ND	ND	ND	0	-	ND	33333	21
6A	2-Nitrophenol	ND	23760.0	ND	ND	ND	0	-	ND	33333	99
7A	4-Nitrophenol	ND	15840.0	ND	ND	ND	0	-	ND	33333	99
8A	p-Chloro-m-cresol	ND	19800.0	ND	ND	ND	0	-	ND	33333	90
9A	Pentachlorophenol	ND	23760.0	ND	ND	ND	0	-	ND	33333	91
10A	Phenol	ND	9900.0	ND	ND	ND	0	-	ND	33333	83
11A	2,4,6-Trichlorophenol	ND	17820.0	ND	ND	ND	0	-	ND	33333	108

A ETC established Method Detection Limit for this particular sample.

B Reagent Blank. Spiked Blank cannot be performed for this sample matrix.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 30, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

BASE/NEUTRAL COMPOUNDS - GC/MS ANALYSIS DATA (QR03)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5673	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL3	850501	1025	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov
1B	Acenaphthene	119000	12540	ND	ND	ND	0	-	ND	33333	110
2B	Acenaphthylene	691000	23100	ND	ND	ND	0	-	ND	33333	114
3B	Anthracene	384000	12540	ND	ND	ND	0	-	ND	33333	112
4B	Benzidine	ND	290400	ND	ND	ND	0	-	ND	33333	0
5B	Benzo(a)anthracene	443000	51480	ND	ND	ND	0	-	ND	33333	118
6B	Benzo(a)pyrene	358000	16500	ND	ND	ND	0	-	ND	33333	99
7B	Benzo(b)fluoroanthene	314000	31680	ND	ND	ND	0	-	ND	33333	107
8B	Benzo(ghi)perylene	ND	27060	ND	ND	ND	0	-	ND	0	-
9B	Benzo(k)fluoranthene	91400	16500	ND	ND	ND	0	-	ND	33333	77
10B	bis(2-Chloroethoxy)methane	ND	34980	ND	ND	ND	0	-	ND	33333	101
11B	bis(2-Chloroethyl) ether	ND	37620	ND	ND	ND	0	-	ND	33333	97
12B	bis(2-Chloroisopropyl)ether	ND	37620	ND	ND	ND	0	-	ND	33333	96
13B	bis(2-Ethylhexyl)phthalate	248000	66000	ND	ND	ND	0	-	ND	33333	98
14B	4-Bromophenyl phenyl ether	ND	12540	ND	ND	ND	0	-	ND	33333	108
15B	Butyl benzyl phthalate	ND	66000	ND	ND	ND	0	-	ND	33333	107
16B	2-Chloronaphthalene	ND	12540	ND	ND	ND	0	-	ND	33333	114
17B	4-Chlorophenyl phenyl ether	ND	27720	ND	ND	ND	0	-	ND	33333	109
18B	Chrysene	219000	16500	ND	ND	ND	0	-	ND	33333	92
19B	Dibenzo(a,h)anthracene	ND	16500	ND	ND	ND	0	-	ND	0	-
20B	1,2-Dichlorobenzene	ND	12540	ND	ND	ND	0	-	ND	33333	91
21B	1,3-Dichlorobenzene	22600	12540	ND	ND	ND	0	-	ND	33333	89
22B	1,4-Dichlorobenzene	ND	29040	ND	ND	ND	0	-	ND	33333	87
23B	3,3'-Dichlorobenzidine	ND	108900	ND	ND	ND	0	-	ND	33333	0
24B	Diethyl phthalate	ND	66000	ND	ND	ND	0	-	ND	33333	113
25B	Dimethyl phthalate	ND	66000	ND	ND	ND	0	-	ND	33333	110
26B	Di-n-butyl phthalate	ND	66000	ND	ND	ND	0	-	ND	33333	114
27B	2,4-Dinitrotoluene	ND	37620	ND	ND	ND	0	-	ND	33333	111
28B	2,6-Dinitrotoluene	ND	12540	ND	ND	ND	0	-	ND	33333	109
29B	Di-n-octyl phthalate	ND	66000	ND	ND	ND	0	-	ND	33333	105
30B	1,2-Diphenylhydrazine	ND	66000	ND	ND	ND	0	-	ND	33333	114
31B	Fluoranthene	601000	14520	ND	ND	ND	0	-	ND	33333	128
32B	Fluorene	365000	12540	ND	ND	ND	0	-	ND	33333	113

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 30, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

BASE/NEUTRAL COMPOUNDS - GC/MS ANALYSIS DATA (QR03)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5673	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL3	850501	1025	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg[A]	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov
33B	Hexachlorobenzene	ND	12540	ND	ND	ND	0	-	ND	33333	80
34B	Hexachlorobutadiene	ND	5940	ND	ND	ND	0	-	ND	33333	96
35B	Hexachlorocyclopentadiene	ND	10.0	ND	ND	ND	0	-	ND	0	-
36B	Hexachloroethane	ND	10560	ND	ND	ND	0	-	ND	33333	93
37B	Indeno(1,2,3-c,d)pyrene	124000	24420	ND	ND	ND	0	-	ND	0	-
38B	Isophorone	ND	14520	ND	ND	ND	0	-	ND	33333	102
39B	Naphthalene	1446000	10560	ND	ND	ND	0	-	ND	33333	105
40B	Nitrobenzene	ND	12540	ND	ND	ND	0	-	ND	33333	92
41B	N-Nitrosodimethylamine	ND	66000	ND	ND	ND	0	-	ND	0	-
42B	N-Nitrosodi-n-propylamine	ND	66000	ND	ND	ND	0	-	ND	33333	100
43B	N-Nitrosodiphenylamine	ND	12540	ND	ND	ND	0	-	ND	33333	116
44B	Phenanthrene	1487000	35640	ND	ND	ND	0	-	ND	33333	115
45B	Pyrene	1130000	12540	ND	ND	ND	0	-	ND	33333	131
46B	1,2,4-Trichlorobenzene	69564	12540	ND	ND	ND	0	-	ND	33333	99

A ETC established Method Detection Limit for this particular sample.

B Reagent Blank. Spiked Blank cannot be performed for this sample matrix.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 21, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Pesticide Compounds - GC Analysis Data (QR32)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5673	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL3	850501	1025	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg[A]	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov
1P	Aldrin	ND	45000	ND	ND	ND	0	-	ND	460	93
2P	Alpha-BHC	ND	45000	150	ND	ND	0	-	ND	460	84
3P	Beta-BHC	ND	45000	ND	ND	ND	0	-	ND	460	84
4P	Gamma-BHC	ND	45000	ND	ND	ND	0	-	ND	460	84
5P	Delta-BHC	ND	45000	ND	ND	ND	0	-	ND	460	100
6P	Chlordane	ND	450000	ND	ND	ND	0	-	ND	5000	81
7P	4,4'-DDT	ND	45000	ND	ND	ND	0	-	ND	460	190[C]
8P	4,4'-DDE	ND	45000	ND	ND	ND	0	-	ND	460	110
9P	4,4'-DDD	ND	45000	2400	ND	ND	0	-	ND	460	130
10P	Dieldrin	ND	45000	ND	ND	ND	0	-	ND	460	110
11P	Endosulfan I	ND	45000	ND	ND	ND	0	-	ND	460	100
12P	Endosulfan II	ND	45000	ND	ND	ND	0	-	ND	460	110
13P	Endosulfan sulfate	ND	45000	ND	180	ND	0	-	ND	460	110
14P	Endrin	ND	45000	ND	ND	ND	0	-	ND	460	140
15P	Endrin aldehyde	ND	45000	600	ND	ND	0	-	ND	460	73
16P	Heptachlor	ND	45000	ND	ND	ND	0	-	ND	460	83
17P	Heptachlor epoxide	ND	45000	ND	ND	ND	0	-	ND	460	100
25P	Toxaphene	ND	450000	ND	ND	ND	0	-	ND	5000	-[D]

A ETC established Method Detection Limit for this particular sample.

B Reagent Blank, Spiked Blank cannot be performed for this sample matrix.

C Recovery variable due to sample matrix interference.

D Due to dilution of matrix spike toxaphene recovery could not be calculated.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUN 6, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Metals, Cyanide and Phenols - Analysis Data (QR05)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5673	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL3	850501	1025	1

NPDES Number	Compound		Results: Sample Concen.	Results: MDL
1M	Antimony	ug/kg	20000	9000
2M	Arsenic	mg/kg	19	1
3M	Beryllium	ug/kg	500	50
4M	Cadmium	ug/kg	19000	300
5M	Chromium	mg/kg	430	2
6M	Copper	mg/kg	1600	.8
7M	Lead	mg/kg	17000	5
8M	Mercury	mg/kg	.6	.1
9M	Nickel	ug/kg	187000	1000
10M	Selenium	mg/kg	3.5	1
11M	Silver	ug/kg	92500	500
12M	Thallium	mg/kg	ND	1
13M	Zinc	mg/kg	3600	.6
14M	Cyanide, Total	ug/kg	1500	500
15M	Phenolics, Total	ug/kg	3100	100

007

ETC ENVIRONMENTAL TESTING and CERTIFICATION

June 6, 1985

TABLE 1: QUALITATIVE RESULTS

Tentatively Identified Organic Compounds – GC/MS Analysis Data – Volatile Fraction (QR06)

008

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5673	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL3	850501	1025	1

Compound Name	Data			Identifiers				
	Scan Number	Retention Time (Min)	M.W.	CAS Number	Empirical Formula	Estimated Concen. ug/kg		
1 Ethane, 1,1,2-Trichloro-1,2,2-trifluoro	278	11.6	186	76131	$C_2Cl_3F_3$	340		
2 Cyclohexane	331	13.6	84	110827	C_6H_{12}	840		
3 Unknown	352	14.5	-	-	-	1100		
4 Cyclohexane, methyl	479	19.4	98	108872	C_7H_{14}	5900		
5 Pentane, 2,3-dimethyl	501	20.2	100	565593	C_7H_{16}	800		
6 Unknown	509	20.6	-	-	-	560		
7 Unknown	532	21.5	-	-	-	3600		
8 Unknown	562	22.6	-	-	-	4400		
9 Unknown	600	24.1	-	-	-	1900		
10 Unknown	627	25.2	-	-	-	1200		
11 Unknown	642	25.7	-	-	-	2100		
12 Unknown	694	27.8	-	-	-	2800		
13 Benzene, dimethyl	731	29.2	106	-	C_8H_{10}	22000		
14 Benzene, dimethyl	749	29.9	106	-	C_8H_{10}	13000		
15 Benzene, 1-ethyl-4-methyl	844	33.6	120	-	C_9H_{12}	4000		

ETC ENVIRONMENTAL TESTING and CERTIFICATION

May 31, 1985

TABLE 1: QUALITATIVE RESULTS

Tentatively Identified Organic Compounds - GC/MS Analysis Data - B/N/Acid Fraction (QR08)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5673	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL3	850501	1025	1

Compound Name	Data			Identifiers				
	Scan Number	Retention Time (Min)	M.W.	CAS Number	Empirical Formula	Estimated Concen. ug/kg		
1 1-methyl, Naphthalene	439	10.35	142	90120	$C_{11}H_{10}$	1910000		
2 2-methyl, Naphthalene	456	10.65	142	91576	$C_{11}H_{10}$	964000		
3 Alkane	536	12.08	-	-	C_nH_{2n+2}	1140000		
4 1,4-Dimethyl, Naphthalene	558	12.47	156	571584	$C_{12}H_{12}$	911000		
5 Alkane	626	13.68	-	-	C_nH_{2n+2}	1240000		
6 Alkane	712	15.22	-	-	C_nH_{2n+2}	1030000		
7 Alkane	793	16.67	-	-	C_nH_{2n+2}	1560000		
8 Alkane	798	16.76	-	-	C_nH_{2n+2}	990000		
9 Alkane	1012	20.59	-	-	C_nH_{2n+2}	904000		

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 19, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Aroclors - GC Analysis Data (QR14)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5673	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL3	850501	1025	1

Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. mg/kg	MDL mg/kg[A]	First mg/kg	Second mg/kg	Blank Data mg/kg	Concen. Added mg/kg	% Recov[B]	Unspiked Sample mg/kg	Concen. Added mg/kg	% Recov
Aroclor 1242	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1254	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1260	30 [C]	5.0	4.5	3.6	ND	0	-	ND	9.0	93
Aroclor 1248	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1232	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1221	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1016	ND	5.0	ND	ND	ND	0	-	ND	0	-

A MDL calculated for each sample matrix.

B Reagent Blank. Spiked Blank cannot be performed for this sample matrix.

C Confirmed on second column.

010

H5673

COMMENTS

Base/Neutrals: This sample was initially extracted at low level IFB Protocol . No extract could be achieved due to sample matrix. By reprepping at medium level protocol, the final volume of 1 ml. could not be achieved. In addition to achieving only a 10 ml. final volume. This sample was additionally diluted 1:2 . Due to these facts and the high levels of compounds present, surrogates had low and variable recoveries, and would most likely not improve upon re-extraction . Ms. Nancy Fox of NJDEP QA department was informed of these recoveries.

Technical Report

for

NJDEP-DIVISION OF WASTE MGMT.

CONTRACT X-029

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5674	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL4	850501	1037	0001

Denis C. K. Lin, Ph.D.
Vice President
Research and Operations

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ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 26, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

BASE/NEUTRAL COMPOUNDS - GC/MS ANALYSIS DATA (QR03)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5674	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL4	850501	1037	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov	Unspiked Sample ug/kg	Concen Added ug/kg	% Recov
1B	Acenaphthene	ND	1254	ND	ND	ND	0	-	ND	33333	110
2B	Acenaphthylene	6138	2310	ND	ND	ND	0	-	ND	33333	114
3B	Anthracene	4983	1254	ND	ND	ND	0	-	ND	33333	112
4B	Benzidine	ND	29040	ND	ND	ND	0	-	ND	33333	0
5B	Benzo(a)anthracene	6712	5148	ND	ND	ND	0	-	ND	33333	118
6B	Benzo(a)pyrene	3967	1650	ND	ND	ND	0	-	ND	33333	99
7B	Benzo(b)fluoroanthene	9913	3168	ND	ND	ND	0	-	ND	33333	107
8B	Benzo(ghi)perylene	ND	2706	ND	ND	ND	0	-	ND	0	-
9B	Benzo(k)fluoranthene	ND	1650	ND	ND	ND	0	-	ND	33333	77
10B	bis(2-Chloroethoxy)methane	ND	3498	ND	ND	ND	0	-	ND	33333	101
11B	bis(2-Chloroethyl) ether	ND	3762	ND	ND	ND	0	-	ND	33333	97
12B	bis(2-Chloroisopropyl)ether	ND	3762	ND	ND	ND	0	-	ND	33333	96
13B	bis(2-Ethylhexyl)phthalate	ND	6600	ND	ND	ND	0	-	ND	33333	98
14B	4-Bromophenyl phenyl ether	ND	1254	ND	ND	ND	0	-	ND	33333	108
15B	Butyl benzyl phthalate	ND	6600	ND	ND	ND	0	-	ND	33333	107
16B	2-Chloronaphthalene	ND	1254	ND	ND	ND	0	-	ND	33333	114
17B	4-Chlorophenyl phenyl ether	ND	2772	ND	ND	ND	0	-	ND	33333	109
18B	Chrysene	5894	1650	ND	ND	ND	0	-	ND	33333	92
19B	Dibenzo(a,h)anthracene	ND	1650	ND	ND	ND	0	-	ND	0	-
20B	1,2-Dichlorobenzene	ND	1254	ND	ND	ND	0	-	ND	33333	91
21B	1,3-Dichlorobenzene	ND	1254	ND	ND	ND	0	-	ND	33333	89
22B	1,4-Dichlorobenzene	ND	2904	ND	ND	ND	0	-	ND	33333	87
23B	3,3'-Dichlorobenzidine	ND	10890	ND	ND	ND	0	-	ND	33333	0
24B	Diethyl phthalate	ND	6600	ND	ND	ND	0	-	ND	33333	113
25B	Dimethyl phthalate	ND	6600	ND	ND	ND	0	-	ND	33333	110
26B	Di-n-butyl phthalate	BMDL	6600	ND	ND	ND	0	-	ND	33333	114
27B	2,4-Dinitrotoluene	ND	3762	ND	ND	ND	0	-	ND	33333	111
28B	2,6-Dinitrotoluene	ND	1254	ND	ND	ND	0	-	ND	33333	109
29B	Di-n-octyl phthalate	ND	6600	ND	ND	ND	0	-	ND	33333	105
30B	1,2-Diphenylhydrazine	ND	6600	ND	ND	ND	0	-	ND	33333	114
31B	Fluoranthene	16645	1452	ND	ND	ND	0	-	ND	33333	128
32B	Fluorene	ND	1254	ND	ND	ND	0	-	ND	33333	113

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 16, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Volatile Compounds - GC/MS Analysis Data (QR01)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5674	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL4	850501	1037	1

NPDES Number	Compound (Acrolein and Acrylonitrile values are screen only.)	Results: Sample Concen. ug/kg	Results: MDL ug/kg[A]	QC Replicate: First ug/kg	QC Replicate: Second ug/kg	QC Blank and Spiked Blank: Blank Data ug/kg	QC Blank and Spiked Blank: Concen. Added ug/kg	QC Blank and Spiked Blank: % Recov	QC Matrix Spike: Unspiked Sample ug/kg	QC Matrix Spike: Concen. Added ug/kg	QC Matrix Spike: % Recov
1V	Acrolein	ND	100.0	ND	ND	ND	800	82	ND	800	163[B]
2V	Acrylonitrile	ND	100.0	ND	ND	ND	80	98	ND	80	184[B]
3V	Benzene	ND	4.4	ND	ND	ND	18	99	46	18	21[C]
4V	bis(Chloromethyl)ether	ND	10.0	ND	ND	ND	0	-	ND	0	-
5V	Bromoform	ND	4.7	ND	ND	ND	18	94	ND	18	69
6V	Carbon tetrachloride	ND	2.8	ND	ND	ND	18	100	ND	18	94
7V	Chlorobenzene	ND	6.0	ND	ND	ND	18	101	ND	18	109
8V	Chlorodibromomethane	ND	3.1	ND	ND	ND	18	95	ND	18	87
9V	Chloroethane	ND	10.0	ND	ND	ND	18	100	ND	18	154[B]
10V	2-Chloroethylvinyl ether	ND	10.0	ND	ND	ND	18	119	ND	18	102
11V	Chloroform	ND	1.6	ND	ND	ND	18	104	ND	18	132
12V	Dichlorobromomethane	ND	2.2	ND	ND	ND	18	101	ND	18	101
13V	Dichlorodifluoromethane	ND	10.0	ND	ND	ND	18	106	ND	18	145
14V	1,1-Dichloroethane	ND	4.7	ND	ND	ND	18	101	21	18	92
15V	1,2-Dichloroethane	ND	2.8	ND	ND	ND	18	103	ND	18	137
16V	1,1-Dichloroethylene	ND	2.8	ND	ND	ND	18	100	ND	18	129
17V	1,2-Dichloropropane	ND	6.0	ND	ND	ND	18	95	ND	18	125
18V	cis-1,3-Dichloropropylene	ND	5.0	ND	ND	ND	18	94	ND	18	95
19V	Ethylbenzene	ND	7.2	ND	ND	BMDL	18	99	14	18	37[B]
20V	Methyl bromide	ND	10.0	ND	ND	ND	18	101	ND	18	118
21V	Methyl chloride	ND	10.0	ND	ND	ND	18	102	ND	18	156[B]
22V	Methylene chloride	BMDL	2.8	24	1	9	18	76	18	18	98
23V	1,1,2,2-Tetrachloroethane	ND	6.9	ND	ND	ND	18	99	ND	18	125
24V	Tetrachloroethylene	ND	4.1	ND	ND	ND	18	100	19	18	43
25V	Toluene	ND	6.0	ND	ND	ND	18	102	95	18	0[C]
26V	1,2-Trans-dichloroethylene	ND	1.6	ND	ND	ND	18	100	87	18	0[C]
27V	1,1,1-Trichloroethane	ND	3.8	ND	ND	ND	18	111	13	18	83
28V	1,1,2-Trichloroethane	ND	5.0	ND	ND	ND	18	98	ND	18	109
29V	Trichloroethylene	ND	1.9	ND	ND	3	18	85	13	18	51
30V	Trichlorofluoromethane	BMDL	10.0	5	3	ND	18	102	ND	18	124
31V	Vinyl chloride	ND	10.0	ND	ND	ND	18	103	3	18	149[B]
18V	trans-1,3-Dichloropropylene	ND	10.0	ND	ND	ND	18	94	ND	18	97

A ETC established Method Detection Limit for this particular sample.

B Recovery variable due to sample matrix interference.

C Spiked samples that contain compounds present at high levels do not provide valid spike recovery data.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 30, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Acid Compounds - GC/MS Analysis Data (QR02)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5674	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL4	850501	1037	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg[a]	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov [b]	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov
1A	2-Chlorophenol	ND	2178.0	ND	ND	ND	0	-	ND	33333	74
2A	2,4-Dichlorophenol	ND	1782.0	ND	ND	ND	0	-	ND	33333	96
3A	2,4-Dimethylphenol	ND	1782.0	ND	ND	ND	0	-	ND	33333	82
4A	4,6-Dinitro-o-cresol	ND	15840.0	ND	ND	ND	0	-	ND	33333	34
5A	2,4-Dinitrophenol	ND	27720.0	ND	ND	ND	0	-	ND	33333	21
6A	2-Nitrophenol	ND	2376.0	ND	ND	ND	0	-	ND	33333	99
7A	4-Nitrophenol	ND	1584.0	ND	ND	ND	0	-	ND	33333	99
8A	p-Chloro-m-cresol	ND	1980.0	ND	ND	ND	0	-	ND	33333	90
9A	Pentachlorophenol	ND	2376.0	ND	ND	ND	0	-	ND	33333	91
10A	Phenol	ND	990.0	ND	ND	ND	0	-	ND	33333	83
11A	2,4,6-Trichlorophenol	ND	1782.0	ND	ND	ND	0	-	ND	33333	108

A ETC established Method Detection Limit for this particular sample.

B Reagent Blank, Spiked Blank cannot be performed for this sample matrix.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 26, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

BASE/NEUTRAL COMPOUNDS - GC/MS ANALYSIS DATA (QR03)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5674	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL4	850501	1037	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg[A]	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov [B]	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov
33B	Hexachlorobenzene	ND	1254	ND	ND	ND	0	-	ND	33333	80
34B	Hexachlorobutadiene	ND	594	ND	ND	ND	0	-	ND	33333	96
35B	Hexachlorocyclopentadiene	ND	10	ND	ND	ND	0	-	ND	0	-
36B	Hexachloroethane	ND	1056	ND	ND	ND	0	-	ND	33333	93
37B	Indeno(1,2,3-c,d)pyrene	ND	2442	ND	ND	ND	0	-	ND	0	-
38B	Isophorone	ND	1452	ND	ND	ND	0	-	ND	33333	102
39B	Naphthalene	2072	1056	ND	ND	ND	0	-	ND	33333	105
40B	Nitrobenzene	ND	1254	ND	ND	ND	0	-	ND	33333	92
41B	N-Nitrosodimethylamine	ND	6600	ND	ND	ND	0	-	ND	0	-
42B	N-Nitrosodi-n-propylamine	ND	6600	ND	ND	ND	0	-	ND	33333	100
43B	N-Nitrosodiphenylamine	ND	1254	ND	ND	ND	0	-	ND	33333	116
44B	Phenanthrene	13114	3564	ND	ND	ND	0	-	ND	33333	115
45B	Pyrene	13200	1254	ND	ND	ND	0	-	ND	33333	131
46B	1,2,4-Trichlorobenzene	ND	1254	ND	ND	ND	0	-	ND	33333	99

A ETC established Method Detection Limit for this particular sample.

B Reagent Blank. Spiked Blank cannot be performed for this sample matrix.

C Recovery normally variable using EPA Protocol Method 625.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 21, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Pesticide Compounds - GC Analysis Data (QR32)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5674	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL4	850501	1037	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg[A]	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov
1P	Aldrin	ND	25000	ND	ND	ND	0	-	ND	460	93
2P	Alpha-BHC	BMDL	25000	150	ND	ND	0	-	ND	460	84
3P	Beta-BHC	ND	25000	ND	ND	ND	0	-	ND	460	84
4P	Gamma-BHC	ND	25000	ND	ND	ND	0	-	ND	460	84
5P	Delta-BHC	ND	25000	ND	ND	ND	0	-	ND	460	100
6P	Chlordane	ND	240000	ND	ND	ND	0	-	ND	5000	81
7P	4,4'-DDT	ND	25000	ND	ND	ND	0	-	ND	460	190[C]
8P	4,4'-DDE	ND	25000	ND	ND	ND	0	-	ND	460	110
9P	4,4'-DDD	BMDL	25000	2400	ND	ND	0	-	ND	460	130
10P	Dieldrin	ND	25000	ND	ND	ND	0	-	ND	460	110
11P	Endosulfan I	ND	25000	ND	ND	ND	0	-	ND	460	100
12P	Endosulfan II	ND	25000	ND	ND	ND	0	-	ND	460	110
13P	Endosulfan sulfate	ND	25000	ND	180	ND	0	-	ND	460	110
14P	Endrin	ND	25000	ND	ND	ND	0	-	ND	460	140
15P	Endrin aldehyde	BMDL	25000	600	ND	ND	0	-	ND	460	73
16P	Heptachlor	ND	25000	ND	ND	ND	0	-	ND	460	83
17P	Heptachlor epoxide	ND	25000	ND	ND	ND	0	-	ND	460	100
25P	Toxaphene	ND	240000	ND	ND	ND	0	-	ND	5000	-[D]

A ETC established Method Detection Limit for this particular sample.

B Reagent Blank. Spiked Blank cannot be performed for this sample matrix.

C Recovery variable due to sample matrix interference.

D Due to dilution of matrix spike toxaphene recovery could not be calculated.

ETC TESTING and CERTIFICATION

JUN 6, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Metals, Cyanide and Phenols – Analysis Data (QR05)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5674	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL4	850501	1037	1

NPDES Number	Compound		Results: Sample Concen.	Results: MDL
1M	Antimony	ug/kg	20000	9000
2M	Arsenic	mg/kg	18	1
3M	Beryllium	ug/kg	1200	50
4M	Cadmium	ug/kg	9400	300
5M	Chromium	mg/kg	340	2
6M	Copper	mg/kg	490	.8
7M	Lead	mg/kg	4400	5
8M	Mercury	mg/kg	7	1.4
9M	Nickel	ug/kg	110000	1000
10M	Selenium	mg/kg	ND	1
11M	Silver	ug/kg	4000	500
12M	Thallium	mg/kg	BMDL	1
13M	Zinc	mg/kg	1600	.6
14M	Cyanide, Total	mg/kg	<.5	.5
15M	Phenolics, Total	mg/kg	.6	.1

ETC ENVIRONMENTAL TESTING and CERTIFICATION

May 14, 1985

TABLE 1: QUALITATIVE RESULTS

Tentatively Identified Organic Compounds - GC/MS Analysis Data - Volatile Fraction (QR06)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5674	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL4	850501	1037	1

Compound Name	Data			Identifiers				
	Scan Number	Retention Time (Min)	M.W.	CAS Number	Empirical Formula			
None Found								

June 6, 1986

TABLE 1: QUALITATIVE RESULTS

Tentatively Identified Organic Compounds – GC/MS Analysis Data – Volatile Fraction (QR06)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5674	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL4	850501	1037	1

Compound Name	Data			Identifiers				
	Scan Number	Retention Time (Min)	M.W.	CAS Number	Empirical Formula	Estimated Concen. ug/kg		
1 Unknown	22	3.09	-	-	-	165000		
2 Unknown	900	18.69	-	-	-	8580		

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 19, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Aroclors - GC Analysis Data (QR14)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5674	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL4	850501	1037	1

Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. mg/kg	MDL mg/kg[a]	First mg/kg	Second mg/kg	Blank Data mg/kg	Concen. Added mg/kg	% Recov [b]	Unspiked Sample mg/kg	Concen. Added mg/kg	% Recov
Aroclor 1242	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1254	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1260	BMDL	5.0	4.5	3.6	ND	0	-	ND	9.0	93
Aroclor 1248	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1232	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1221	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1016	ND	5.0	ND	ND	ND	0	-	ND	0	-

[a] MDL calculated for each sample matrix.

[b] Reagent Blank. Spiked Blank cannot be performed for this sample matrix.

010

Technical Report

for

NJDEP-DIVISION OF WASTE MGMT.

CONTRACT X-029

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5675	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL5	850501	1054	0001

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ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 16, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Volatile Compounds - GC/MS Analysis Data (QR01)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5675	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED SSOIL5		850501	1054	1

NPDES Number	Compound (Acrolein and Acrylonitrile values are screen only.)	Results: Sample Concen. ug/kg	Results: MDL ug/kg A	QC Replicate: First ug/kg	QC Replicate: Second ug/kg	QC Blank and Spiked Blank: Blank Data ug/kg	QC Blank and Spiked Blank: Concen. Added ug/kg	QC Blank and Spiked Blank: % Recov	QC Matrix Spike: Unspiked Sample ug/kg	QC Matrix Spike: Concen. Added ug/kg	QC Matrix Spike: % Recov
1V	Acrolein	ND	5000.0	ND	ND	ND	800	82	ND	800	163.
2V	Acrylonitrile	ND	5000.0	ND	ND	ND	80	98	ND	80	184.
3V	Benzene	252.7	220.0	ND	ND	ND	18	99	46	18	21.
4V	bis(Chloromethyl)ether	ND	500.0	ND	ND	ND	0	-	ND	0	-
5V	Bromoform	ND	235.0	ND	ND	ND	18	94	ND	18	69
6V	Carbon tetrachloride	ND	140.0	ND	ND	ND	18	100	ND	18	94
7V	Chlorobenzene	ND	300.0	ND	ND	ND	18	101	ND	18	109
8V	Chlorodibromomethane	ND	155.0	ND	ND	ND	18	95	ND	18	87
9V	Chloroethane	ND	500.0	ND	ND	ND	18	100	ND	18	154.
10V	2-Chloroethylvinyl ether	ND	500.0	ND	ND	ND	18	119	ND	18	102
11V	Chloroform	ND	80.0	ND	ND	ND	18	104	ND	18	132
12V	Dichlorobromomethane	ND	110.0	ND	ND	ND	18	101	ND	18	101
13V	Dichlorodifluoromethane	ND	500.0	ND	ND	ND	18	106	ND	18	145
14V	1,1-Dichloroethane	335.9	235.0	ND	ND	ND	18	101	21	18	92
15V	1,2-Dichloroethane	ND	140.0	ND	ND	ND	18	103	ND	18	137
16V	1,1-Dichloroethylene	BMDL	140.0	ND	ND	ND	18	100	ND	18	129
17V	1,2-Dichloropropane	ND	300.0	ND	ND	ND	18	95	ND	18	125
18V	cis-1,3-Dichloropropylene	ND	250.0	ND	ND	ND	18	94	ND	18	95
19V	Ethylbenzene	BMDL	360.0	ND	ND	BMDL	18	99	14	18	37.
20V	Methyl bromide	ND	500.0	ND	ND	ND	18	101	ND	18	118
21V	Methyl chloride	ND	500.0	ND	ND	ND	18	102	ND	18	156.
22V	Methylene chloride	BMDL	140.0	24	1	9	18	76	18	18	98
23V	1,1,2,2-Tetrachloroethane	ND	345.0	ND	ND	ND	18	99	ND	18	125
24V	Tetrachloroethylene	2715.6	205.0	ND	ND	ND	18	100	19	18	43
25V	Toluene	2355.7	300.0	ND	ND	ND	18	102	95	18	0.
26V	1,2-Trans-dichloroethylene	483.6	80.0	ND	ND	ND	18	100	87	18	0.
27V	1,1,1-Trichloroethane	400.0	190.0	ND	ND	ND	18	111	13	18	83
28V	1,1,2-Trichloroethane	ND	250.0	ND	ND	ND	18	98	ND	18	109
29V	Trichloroethylene	2235.2	95.0	ND	ND	3	18	85	13	18	51
30V	Trichlorofluoromethane	ND	500.0	5	3	ND	18	102	ND	18	124
31V	Vinyl chloride	ND	500.0	ND	ND	ND	18	103	3	18	149.
18V	trans-1,3-Dichloropropylene	ND	500.0	ND	ND	ND	18	94	ND	18	97

A ETC established Method Detection Limit for this particular sample.

B Recovery variable due to sample matrix interference.

C Spiked samples that contain compounds present at high levels do not provide valid spike recovery data.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 30, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Acid Compounds - GC/MS Analysis Data (QR02)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5675	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL5	850501	1054	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg[A]	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov [B]	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov
1A	2-Chlorophenol	ND	10890.0	ND	ND	ND	0	-	ND	33333	74
2A	2,4-Dichlorophenol	ND	8910.0	ND	ND	ND	0	-	ND	33333	96
3A	2,4-Dimethylphenol	ND	8910.0	ND	ND	ND	0	-	ND	33333	82
4A	4,6-Dinitro-o-cresol	ND	79200.0	ND	ND	ND	0	-	ND	33333	34
5A	2,4-Dinitrophenol	ND	138600	ND	ND	ND	0	-	ND	33333	21
6A	2-Nitrophenol	ND	11880.0	ND	ND	ND	0	-	ND	33333	99
7A	4-Nitrophenol	ND	7920.0	ND	ND	ND	0	-	ND	33333	99
8A	p-Chloro-m-cresol	ND	9900.0	ND	ND	ND	0	-	ND	33333	90
9A	Pentachlorophenol	ND	11880.0	ND	ND	ND	0	-	ND	33333	91
10A	Phenol	ND	4950.0	ND	ND	ND	0	-	ND	33333	83
11A	2,4,6-Trichlorophenol	ND	8910.0	ND	ND	ND	0	-	ND	33333	108

A ETC established Method Detection Limit for this particular sample.

B Reagent Blank. Spiked Blank cannot be performed for this sample matrix.

003

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 30, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

BASE/NEUTRAL COMPOUNDS - GC/MS ANALYSIS DATA (QR03)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5675	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL5	850501	1054	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov	Unspiked Sample ug/kg	Concen Added ug/kg	% Recov
1B	Acenaphthene	ND	6270	ND	ND	ND	0	-	ND	33333	110
2B	Acenaphthylene	BMDL	11550	ND	ND	ND	0	-	ND	33333	114
3B	Anthracene	ND	6270	ND	ND	ND	0	-	ND	33333	112
4B	Benzidine	ND	145200	ND	ND	ND	0	-	ND	33333	0
5B	Benzo(a)anthracene	ND	25740	ND	ND	ND	0	-	ND	33333	118
6B	Benzo(a)pyrene	ND	8250	ND	ND	ND	0	-	ND	33333	99
7B	Benzo(b)fluoroanthene	ND	15840	ND	ND	ND	0	-	ND	33333	107
8B	Benzo(ghi)perylene	ND	13530	ND	ND	ND	0	-	ND	0	-
9B	Benzo(k)fluoranthene	ND	8250	ND	ND	ND	0	-	ND	33333	77
10B	bis(2-Chloroethoxy)methane	ND	17490	ND	ND	ND	0	-	ND	33333	101
11B	bis(2-Chloroethyl) ether	ND	18810	ND	ND	ND	0	-	ND	33333	97
12B	bis(2-Chloroisopropyl)ether	ND	18810	ND	ND	ND	0	-	ND	33333	96
13B	bis(2-Ethylhexyl)phthalate	49500	33000	ND	ND	ND	0	-	ND	33333	98
14B	4-Bromophenyl phenyl ether	ND	6270	ND	ND	ND	0	-	ND	33333	108
15B	Butyl benzyl phthalate	ND	33000	ND	ND	ND	0	-	ND	33333	107
16B	2-Chloronaphthalene	ND	6270	ND	ND	ND	0	-	ND	33333	114
17B	4-Chlorophenyl phenyl ether	ND	13860	ND	ND	ND	0	-	ND	33333	109
18B	Chrysene	ND	8250	ND	ND	ND	0	-	ND	33333	92
19B	Dibenzo(a,h)anthracene	ND	8250	ND	ND	ND	0	-	ND	0	-
20B	1,2-Dichlorobenzene	ND	6270	ND	ND	ND	0	-	ND	33333	91
21B	1,3-Dichlorobenzene	8580	6270	ND	ND	ND	0	-	ND	33333	89
22B	1,4-Dichlorobenzene	ND	14520	ND	ND	ND	0	-	ND	33333	87
23B	3,3'-Dichlorobenzidine	ND	54450	ND	ND	ND	0	-	ND	33333	0
24B	Diethyl phthalate	ND	33000	ND	ND	ND	0	-	ND	33333	113
25B	Dimethyl phthalate	ND	33000	ND	ND	ND	0	-	ND	33333	110
26B	Di-n-butyl phthalate	ND	33000	ND	ND	ND	0	-	ND	33333	114
27B	2,4-Dinitrotoluene	ND	18810	ND	ND	ND	0	-	ND	33333	111
28B	2,6-Dinitrotoluene	ND	6270	ND	ND	ND	0	-	ND	33333	109
29B	Di-n-octyl phthalate	ND	33000	ND	ND	ND	0	-	ND	33333	105
30B	1,2-Diphenylhydrazine	ND	33000	ND	ND	ND	0	-	ND	33333	114
31B	Fluoranthene	13800	7260	ND	ND	ND	0	-	ND	33333	128
32B	Fluorene	14200	6270	ND	ND	ND	0	-	ND	33333	113

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 30, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

BASE/NEUTRAL COMPOUNDS - GC/MS ANALYSIS DATA (QR03)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5675	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL5	850501	1054	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg[A]	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov
33B	Hexachlorobenzene	ND	6270	ND	ND	ND	0	-	ND	33333	80
34B	Hexachlorobutadiene	ND	2970	ND	ND	ND	0	-	ND	33333	96
35B	Hexachlorocyclopentadiene	ND	33000	ND	ND	ND	0	-	ND	0	-
36B	Hexachloroethane	ND	5280	ND	ND	ND	0	-	ND	33333	93
37B	Indeno(1,2,3-c,d)pyrene	ND	12210	ND	ND	ND	0	-	ND	0	-
38B	Isophorone	ND	7260	ND	ND	ND	0	-	ND	33333	102
39B	Naphthalene	20500	5280	ND	ND	ND	0	-	ND	33333	105
40B	Nitrobenzene	ND	6270	ND	ND	ND	0	-	ND	33333	92
41B	N-Nitrosodimethylamine	ND	33000	ND	ND	ND	0	-	ND	0	-
42B	N-Nitrosodi-n-propylamine	ND	33000	ND	ND	ND	0	-	ND	33333	100
43B	N-Nitrosodiphenylamine	ND	6270	ND	ND	ND	0	-	ND	33333	116
44B	Phenanthrene	36200	17820	ND	ND	ND	0	-	ND	33333	115
45B	Pyrene	39100	6270	ND	ND	ND	0	-	ND	33333	131
46B	1,2,4-Trichlorobenzene	ND	6270	ND	ND	ND	0	-	ND	33333	99

A ETC established Method Detection Limit for this particular sample.

B Reagent Blank. Spiked Blank cannot be performed for this sample matrix.

005

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 21, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Pesticide Compounds - GC Analysis Data (QR32)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5675	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SS0IL5	850501	1054	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/kg	MDL ug/kg[A]	First ug/kg	Second ug/kg	Blank Data ug/kg	Concen. Added ug/kg	% Recov	Unspiked Sample ug/kg	Concen. Added ug/kg	% Recov
1P	Aldrin	ND	50000	ND	ND	ND	0	-	ND	460	93
2P	Alpha-BHC	ND	50000	150	ND	ND	0	-	ND	460	84
3P	Beta-BHC	ND	50000	ND	ND	ND	0	-	ND	460	84
4P	Gamma-BHC	ND	50000	ND	ND	ND	0	-	ND	460	84
5P	Delta-BHC	ND	50000	ND	ND	ND	0	-	ND	460	100
6P	Chlordane	ND	500000	ND	ND	ND	0	-	ND	5000	81
7P	4,4'-DDT	ND	50000	ND	ND	ND	0	-	ND	460	190[c]
8P	4,4'-DDE	ND	50000	ND	ND	ND	0	-	ND	460	110
9P	4,4'-DDD	ND	50000	2400	ND	ND	0	-	ND	460	130
10P	Dieldrin	ND	50000	ND	ND	ND	0	-	ND	460	110
11P	Endosulfan I	ND	50000	ND	ND	ND	0	-	ND	460	100
12P	Endosulfan II	ND	50000	ND	ND	ND	0	-	ND	460	110
13P	Endosulfan sulfate	ND	50000	ND	180	ND	0	-	ND	460	110
14P	Endrin	ND	50000	ND	ND	ND	0	-	ND	460	140
15P	Endrin aldehyde	ND	50000	600	ND	ND	0	-	ND	460	73
16P	Heptachlor	ND	50000	ND	ND	ND	0	-	ND	460	83
17P	Heptachlor epoxide	ND	50000	ND	ND	ND	0	-	ND	460	100
25P	Toxaphene	ND	500000	ND	ND	ND	0	-	ND	5000	-[D]

A ETC established Method Detection Limit for this particular sample.

B Reagent Blank. Spiked Blank cannot be performed for this sample matrix.

C Recovery variable due to sample matrix interference.

D Due to dilution of matrix spike toxaphene recovery could not be calculated.

006

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUN 6, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Metals, Cyanide and Phenols - Analysis Data (QR05)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5675	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL5	850501	1054	1

NPDES Number	Compound		Results: Sample Concen.	Results: MDL
1M	Antimony	ug/kg	20000	9000
2M	Arsenic	mg/kg	4.8	1
3M	Beryllium	ug/kg	690	50
4M	Cadmium	ug/kg	13000	300
5M	Chromium	mg/kg	370	2
6M	Copper	mg/kg	340	.8
7M	Lead	mg/kg	40000	5
8M	Mercury	mg/kg	.7	.1
9M	Nickel	mg/kg	56	.1
10M	Selenium	mg/kg	ND	3
11M	Silver	ug/kg	2000	500
12M	Thallium	mg/kg	BMDL	.5
13M	Zinc	mg/kg	7600	.6
14M	Cyanide, Total	mg/kg	<.5	.5
15M	Phenolics, Total	mg/kg	2.3	.1

007

ETC ENVIRONMENTAL TESTING and CERTIFICATION

June 6, 1985

TABLE 1: QUALITATIVE RESULTS

Tentatively Identified Organic Compounds - GC/MS Analysis Data - Volatile Fraction (QR06)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5675	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL5	850501	1054	1

	Compound Name	Data: Scan Number	Data: Retention Time (Min)	Data: M.W.	Identifiers: CAS Number	Identifiers: Empirical Formula	Estimated Concen. ug/kg
1	Cyclopentane, methyl	351	14.4	84	96377	C_6H_{12}	763
2	Unknown	472	19.1	-	-	-	786
3	Cyclohexane, methyl	479	19.4	98	108872	C_7H_{14}	1400
4	Unknown	532	21.5	-	-	-	2200
5	Unknown	563	22.7	-	-	-	4020
6	Unknown	601	24.1	-	-	-	908
7	Unknown	649	26	-	-	-	1600
8	Benzene, dimethyl	749	29.9	106	-	C_8H_{10}	10400
9	Unknown	660	26.4	-	-	-	704
10	Unknown	732	29.2	-	-	-	3700
11	Benzene, dimethyl	749	29.9	106	-	C_8H_{10}	12000

ETC ENVIRONMENTAL TESTING and CERTIFICATION

May 31, 1985

TABLE 1: QUALITATIVE RESULTS

Tentatively Identified Organic Compounds - GC/MS Analysis Data - B/N/Acid Fraction (QR08)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5675	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL5	850501	1054	1

Compound Name	Data			Identifiers				
	Scan Number	Retention Time (Min)	M.W.	CAS Number	Empirical Formula	Estimated Concen. ug/kg		
1 Unknown	15	3.06	-	-	-	228000		
2 Alkane	353	9.07	-	-	C_nH_{2n+2}	254000		
3 Alkane	550	12.57	-	-	C_nH_{2n+2}	211000		
4 Naphthalene, 1,8-dimethyl	574	13.00	156	569415	$C_{12}H_{12}$	257000		
5 Alkane	609	13.62	-	-	C_nH_{2n+2}	248000		
6 Alkane	644	14.25	-	-	C_nH_{2n+2}	320000		
7 Naphthalene, 1,6,7-trimethyl	690	15.07	170	2245387	$C_{13}H_{14}$	307000		
8 Alkane	730	15.78	-	-	C_nH_{2n+2}	277000		
9 Alkane	770	16.49	-	-	C_nH_{2n+2}	234000		
10 Alkane	811	17.22	-	-	C_nH_{2n+2}	182000		

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 19, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Aroclors - GC Analysis Data (QR14)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5675	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	SSOIL5	850501	1054	1

Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. mg/kg	MDL mg/kg A	First mg/kg	Second mg/kg	Blank Data mg/kg	Concen. Added mg/kg	% Recov	Unspiked Sample mg/kg	Concen. Added mg/kg	% Recov
Aroclor 1242	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1254	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1260	8.0 C	5.0	4.5	3.6	ND	0	-	ND	9.0	93
Aroclor 1248	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1232	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1221	ND	5.0	ND	ND	ND	0	-	ND	0	-
Aroclor 1016	ND	5.0	ND	ND	ND	0	-	ND	0	-

A MDL calculated for each sample matrix.

B Reagent Blank. Spiked Blank cannot be performed for this sample matrix.

C Confirmed on second column.

010

ETC ENVIRONMENTAL TESTING and CERTIFICATION

September 6, 1984

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Aroclors – GC Analysis Data (QR14)

QC 2994P

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No. H5675 Company Facility Sample Point Date Time Elapsed Hours

Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
	Sample Concen. mg/kg	MDL mg/kg*	First mg/kg	Second mg/kg	Blank Data mg/kg	Amount Added mg/kg	% Recov	Unspiked Sample mg/kg	Amount Added mg/kg	% Recov
Aroclor 1242	ND	5.0								
Aroclor 1254	ND	↓								
Aroclor 1260	**8.0									
Aroclor 1248	ND									
Aroclor 1232	ND									
Aroclor 1221	ND									
Aroclor 1016	ND									

*MDL calculated for each sample matrix

** CONFIRMED ON SECOND COLUMN

011

H5675

COMMENTS

Base/Neutrals: This sample was initially extracted at low level IFB Protocol . No extract could be achieved due to sample matrix. By reprepping at medium level protocol, a final volume of only 10 ml. was achieved. Considering this an d the high levels of compounds present, the recovery of surrogate. Nitrobenzene -D5 would most likely not improve upon re-extraction.

Technical Report

for

NJDEP-DIVISION OF WASTE MGMT.

CONTRACT X-029

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5677	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	RSURFWATER1	850501	0945	0001

Denis C. K. Lin, Ph.D.
Vice President
Research and Operations

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ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 10, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Volatile Compounds - GC/MS Analysis Data (QR01)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5677	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	RSURFWATER1	850501	0945	1

NPDES Number	Compound (Acrolein and Acrylonitrile values are screen only.)	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL ug/l a	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
1V	Acrolein	ND	100.0	ND	ND	ND	800	98	ND	800	99
2V	Acrylonitrile	ND	100.0	ND	ND	ND	80	99	ND	80	109
3V	Benzene	BMDL	4.4	ND	ND	ND	18	104	ND	18	101
4V	bis(Chloromethyl)ether	ND	10.0	ND	ND	ND	0	-	ND	0	-
5V	Bromoform	ND	4.7	ND	ND	ND	18	85	ND	18	93
6V	Carbon tetrachloride	ND	2.8	ND	ND	ND	18	99	ND	18	107
7V	Chlorobenzene	ND	6.0	1	ND	ND	18	105	ND	18	104
8V	Chlorodibromomethane	ND	3.1	ND	ND	ND	18	99	ND	18	103
9V	Chloroethane	ND	10.0	ND	ND	ND	18	106	ND	18	83
10V	2-Chloroethylvinyl ether	ND	10.0	ND	ND	ND	18	70	ND	18	70
11V	Chloroform	ND	1.6	ND	ND	ND	18	103	ND	18	104
12V	Dichlorobromomethane	ND	2.2	ND	ND	ND	18	99	ND	18	100
13V	Dichlorodifluoromethane	ND	10.0	ND	ND	ND	0	-	ND	0	-
14V	1,1-Dichloroethane	5.5	4.7	ND	ND	ND	18	100	ND	18	101
15V	1,2-Dichloroethane	ND	2.8	ND	ND	ND	18	102	ND	18	102
16V	1,1-Dichloroethylene	ND	2.8	ND	ND	ND	18	100	ND	18	101
17V	1,2-Dichloropropane	ND	6.0	ND	ND	ND	18	100	ND	18	99
18V	cis-1,3-Dichloropropylene	ND	5.0	ND	ND	ND	18	101	ND	18	102
19V	Ethylbenzene	BMDL	7.2	1	2	ND	18	107	1	18	98
20V	Methyl bromide	ND	10.0	ND	ND	ND	18	138	ND	18	117
21V	Methyl chloride	ND	10.0	ND	ND	ND	18	98	ND	18	95
22V	Methylene chloride	ND	2.8	ND	ND	8	18	71	ND	18	61
23V	1,1,2,2-Tetrachloroethane	ND	6.9	ND	ND	ND	18	96	ND	18	108
24V	Tetrachloroethylene	9.3	4.1	ND	ND	ND	18	104	ND	18	107
25V	Toluene	16.4	6.0	ND	ND	BMDL	18	101	ND	18	100
26V	1,2-Trans-dichloroethylene	2.8	1.6	ND	ND	ND	18	100	ND	18	102
27V	1,1,1-Trichloroethane	BMDL	3.8	ND	ND	4	18	88	ND	18	90
28V	1,1,2-Trichloroethane	ND	5.0	ND	ND	ND	18	101	ND	18	84
29V	Trichloroethylene	ND	1.9	ND	ND	ND	18	103	ND	18	100
30V	Trichlorofluoromethane	ND	10.0	ND	3	ND	18	103	ND	18	103
31V	Vinyl chloride	ND	10.0	ND	ND	ND	18	109	ND	18	96
18V	trans-1,3-Dichloropropylene	ND	10.0	ND	ND	ND	18	101	ND	18	92

a EPA published Method Detection Limit.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUN 12, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Acid Compounds - GC/MS Analysis Data (QR02)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5677	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	RSURFWATER1	850501	0945	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL ug/l A	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
1A	2-Chlorophenol	ND	6.6	ND	ND	ND	100	85	ND	111	86
2A	2,4-Dichlorophenol	ND	5.4	ND	ND	ND	100	83	ND	111	91
3A	2,4-Dimethylphenol	22.4	5.4	ND	ND	ND	100	6B	ND	111	2B
4A	4,6-Dinitro-o-cresol	ND	48.0	ND	ND	ND	100	74	ND	111	73
5A	2,4-Dinitrophenol	ND	84.0	ND	ND	ND	100	68	ND	111	68
6A	2-Nitrophenol	ND	7.2	ND	ND	ND	100	85	ND	111	86
7A	4-Nitrophenol	ND	4.8	ND	ND	ND	100	70	ND	111	69
8A	p-Chloro-m-cresol	ND	6.0	ND	ND	ND	100	43	ND	111	41
9A	Pentachlorophenol	ND	7.2	ND	ND	ND	100	87	ND	111	80
10A	Phenol	20.3	3.0	ND	ND	ND	100	90	ND	111	87
11A	2,4,6-Trichlorophenol	ND	5.4	ND	ND	ND	100	90	ND	111	85

A ETC established Method Detection Limit for this particular sample.

B Recovery normally low using EPA Protocol Method 625.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 21, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

BASE/NEUTRAL COMPOUNDS - GC/MS ANALYSIS DATA (QR03)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5677	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	RSURFWATER1	850501	0945	1

IPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
1B	Acenaphthene	ND	1.9	ND	ND	ND	100	82	ND	100	82
2B	Acenaphthylene	ND	3.5	ND	ND	ND	100	89	ND	100	86
3B	Anthracene	ND	1.9	ND	ND	ND	100	82	ND	100	83
4B	Benzidine	ND	44.0	ND	ND	ND	100	37c	ND	100	38c
5B	Benzo(a)anthracene	ND	7.8	ND	ND	ND	100	85	ND	100	88
6B	Benzo(a)pyrene	ND	2.5	ND	ND	ND	100	79	ND	100	85
7B	Benzo(b)fluoroanthene	ND	4.8	ND	ND	ND	100	45	ND	100	59
8B	Benzo(ghi)perylene	ND	4.1	ND	ND	ND	0	-	ND	0	-
9B	Benzo(k)fluoranthene	ND	2.5	ND	ND	ND	100	87	ND	100	67
10B	bis(2-Chloroethoxy)methane	ND	5.3	ND	ND	ND	100	98	ND	100	93
11B	bis(2-Chloroethyl) ether	ND	5.7	ND	ND	ND	100	89	ND	100	86
12B	bis(2-Chloroisopropyl)ether	ND	5.7	ND	ND	ND	100	66	ND	100	71
13B	bis(2-Ethylhexyl)phthalate	ND	10.0	ND	ND	ND	100	81	ND	100	84
14B	4-Bromophenyl phenyl ether	ND	1.9	ND	ND	ND	100	82	ND	100	83
15B	Butyl benzyl phthalate	ND	10.0	ND	ND	ND	100	77	ND	100	81
16B	2-Chloronaphthalene	ND	1.9	ND	ND	ND	100	91	ND	100	91
17B	4-Chlorophenyl phenyl ether	ND	4.2	ND	ND	ND	100	87	ND	100	87
18B	Chrysene	ND	2.5	ND	ND	ND	100	85	ND	100	92
19B	Dibenzo(a,h)anthracene	ND	2.5	ND	ND	ND	0	-	ND	0	-
20B	1,2-Dichlorobenzene	ND	1.9	ND	ND	ND	100	50	ND	100	46
21B	1,3-Dichlorobenzene	ND	1.9	ND	ND	ND	100	42	ND	100	44
22B	1,4-Dichlorobenzene	ND	4.4	ND	ND	ND	100	45	ND	100	42
23B	3,3'-Dichlorobenzidine	ND	16.5	ND	ND	ND	100	80	ND	100	79
24B	Diethyl phthalate	ND	10.0	ND	ND	ND	100	31	ND	100	34
25B	Dimethyl phthalate	BMDL	10.0	ND	ND	ND	100	3c	ND	100	0c
26B	Di-n-butyl phthalate	ND	10.0	ND	ND	BMDL	100	79	2	100	87
27B	2,4-Dinitrotoluene	ND	5.7	ND	ND	ND	100	95	ND	100	94
28B	2,6-Dinitrotoluene	ND	1.9	ND	ND	ND	100	91	ND	100	88
29B	Di-n-octyl phthalate	ND	10.0	ND	ND	ND	100	82	ND	100	89
30B	1,2-Diphenylhydrazine	ND	10.0	ND	ND	ND	100	86	ND	100	85
31B	Fluoranthene	ND	2.2	ND	ND	ND	100	91	ND	100	94
32B	Fluorene	ND	1.9	ND	ND	ND	100	88	ND	100	87

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 21, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

BASE/NEUTRAL COMPOUNDS - GC/MS ANALYSIS DATA (QR03)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5677	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	RSURFWATER1	850501	0945	1

IPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL ug/l A	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
33B	Hexachlorobenzene	ND	1.9	ND	ND	ND	100	63	ND	100	64
34B	Hexachlorobutadiene	ND	.90	ND	ND	ND	100	62	ND	100	62
35B	Hexachlorocyclopentadiene	ND	10.0	ND	ND	ND	0	-	ND	0	-
36B	Hexachloroethane	ND	1.6	ND	ND	ND	100	36	ND	100	38
37B	Indeno(1,2,3-c,d)pyrene	ND	3.7	ND	ND	ND	0	-	ND	0	-
38B	Isophorone	BMDL	2.2	ND	ND	ND	100	86	ND	100	84
39B	Naphthalene	ND	1.6	ND	ND	ND	100	71	ND	100	70
40B	Nitrobenzene	ND	1.9	ND	ND	ND	100	86	ND	100	87
41B	N-Nitrosodimethylamine	ND	10.0	ND	ND	ND	0	-	ND	0	-
42B	N-Nitrosodi-n-propylamine	ND	10.0	ND	ND	ND	100	73	ND	100	78
43B	N-Nitrosodiphenylamine	ND	1.9	ND	ND	ND	100	93	ND	100	95
44B	Phenanthrene	ND	5.4	ND	ND	ND	100	84	ND	100	86
45B	Pyrene	ND	1.9	ND	ND	ND	100	84	ND	100	92
46B	1,2,4-Trichlorobenzene	ND	1.9	ND	ND	ND	100	144	ND	100	134

A EPA published Method Detection Limit.

B ETC established Method Detection Limit for this particular sample.

C Recovery normally low using EPA Protocol Method 625.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 21, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Pesticide/PCB Compounds - GC/MS Analysis Data (QR04)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5677	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	RSURFWATER1	850501	0945	1

IPDES lumber	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL ug/l A	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
1P	Aldrin	ND	1.9	ND	ND	ND	100	79	ND	100	84
2P	Alpha-BHC	ND	10.0	ND	ND	ND	100	31	ND	100	37
3P	Beta-BHC	ND	4.2	ND	ND	ND	100	74	ND	100	79
4P	Gamma-BHC	ND	10.0	ND	ND	ND	100	32	ND	100	38
5P	Delta-BHC	ND	3.1	ND	ND	ND	100	29	ND	100	29
6P	Chlordane	ND	10.0	ND	ND	ND	200	21	ND	200	24
7P	4,4'-DDT	ND	4.7	ND	ND	ND	100	56B	ND	100	62B
8P	4,4'-DDE	ND	5.6	ND	ND	ND	100	63	ND	100	66
9P	4,4'-DDD	ND	2.8	ND	ND	ND	100	56	ND	100	62
10P	Dieldrin	ND	2.5	ND	ND	ND	100	52	ND	100	60
11P	Endosulfan I	ND	10.0	ND	ND	ND	100	24	ND	100	23
12P	Endosulfan II	ND	10.0	ND	ND	ND	100	21	ND	100	22
13P	Endosulfan sulfate	ND	5.6	ND	ND	ND	100	35B	ND	100	43B
14P	Endrin	ND	10.0	ND	ND	ND	100	52	ND	100	60
15P	Endrin aldehyde	ND	10.0	ND	ND	ND	100	25	ND	100	30
16P	Heptachlor	ND	1.9	ND	ND	ND	100	76	ND	100	80
17P	Heptachlor epoxide	ND	2.2	ND	ND	ND	100	58	ND	100	61
18P	PCB-1242	ND	36.0	ND	ND	ND	0	-	ND	0	-
19P	PCB-1254	ND	36.0	ND	ND	ND	0	-	ND	0	-
20P	PCB-1221	ND	30.0	ND	ND	ND	0	-	ND	0	-
21P	PCB-1232	ND	36.0	ND	ND	ND	0	-	ND	0	-
22P	PCB-1248	ND	36.0	ND	ND	ND	0	-	ND	0	-
23P	PCB-1260	ND	36.0	ND	ND	ND	100	21	ND	100	16
24P	PCB-1016	ND	36.0	ND	ND	ND	0	-	ND	0	-
25P	Toxaphene	ND	10.0	ND	ND	ND	0	-	ND	0	-

A EPA published Method Detection Limit.

B Recovery normally low using EPA Protocol Method 625.

ETC TESTING and CERTIFICATION

JUN 11, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Metals, Cyanide and Phenols - Analysis Data (QR05)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5677	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	RSURFWATER1	850501	0945	1

PDES umber	Compound		Results: Sample Concen.	Results: MDL
1M	Antimony	ug/l	ND	80
2M	Arsenic	ug/l	11	10
3M	Beryllium	ug/l	ND	1
4M	Cadmium	ug/l	ND	3
5M	Chromium	ug/l	ND	20
6M	Copper	ug/l	20	10
7M	Lead	ug/l	870	50
8M	Mercury	ug/l	ND	.6
9M	Nickel	ug/l	BMDL	20
10M	Selenium	ug/l	ND	5
11M	Silver	ug/l	ND	10
12M	Thallium	ug/l	ND	5
13M	Zinc	ug/l	150	4
14M	Cyanide, Total	mg/l	<.025	.025
15M	Phenolics, Total	mg/l	<.06	.01

ETC ENVIRONMENTAL TESTING and CERTIFICATION

May 12, 1985

TABLE 1: QUALITATIVE RESULTS

Tentatively Identified Organic Compounds - GC/MS Analysis Data - Volatile Fraction (QR06)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5677	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	RSURFWATER1	850501	0945	1

Compound Name	Data			Identifiers				
	Scan Number	Retention Time (Min)	M.W.	CAS Number	Empirical Formula	Estimated Concen. ug/l		
1 Unknown	7	1.30	-	-	-	10		
2 Dimethyl sulfide	148	8.72	62	75183	C_2H_6S	16		
3 Alkane	614	24.88	-	-	C_nH_{2n+2}	25		
4 Xylene	832	33.36	106	-	C_8H_{10}	12		
5 Xylene	859	34.44	106	-	C_8H_{10}	16		

ETC ENVIRONMENTAL TESTING and CERTIFICATION

June 11, 1985

TABLE 1: QUALITATIVE RESULTS

Tentatively Identified Organic Compounds - GC/MS Analysis Data - Acid Fraction (QR07)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5677	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	RSURFWATER1	850501	0945	1

Compound Name	Data			Identifiers				
	Scan Number	Retention Time (Min)	M.W.	CAS Number	Empirical Formula	Estim. Concen. ug/l		
1 1,3 Isobenzofurandione	436	10.71	148	85449	$C_8H_4O_3$	32		
2 Succinimide,N-methoxy-	521	12.23	129	5904507	$C_5H_7NO_3$	62		
3 unknown	617	13.95	-	-	-	248		
4 Alkane	769	16.67	-	-	C_nH_{2n+2}	24		

ETC ENVIRONMENTAL TESTING and CERTIFICATION

May 21, 1985

TABLE 1: QUALITATIVE RESULTS

Tentatively Identified Organic Compounds – GC/MS Analysis Data – Base Neutral (QR08)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5677	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	RSURFWATER1	850501	0945	1

Compound Name	Data			Identifiers				
	Scan Number	Retention Time (Min)	M.W.	CAS Number	Empirical Formula	Estimated Concen. ug/l		
1 Unknown	334	8.03	-	-	-	8.9		
2 Unknown	487	10.23	-	-	-	9.0		
3 Unknown	729	13.71	-	-	-	8.2		
4 5-propyl Tridecane	866	15.69	226	55045119	$C_{16}H_{34}$	8.7		
5 Unknown	946	16.84	-	-	-	8.3		
6 2,6,8-trimethyl Decane	1068	18.61	184	62108263	$C_{13}H_{28}$	8.4		
7 2,4-dimethyl undecane	1127	19.46	184	17312822	$C_{13}H_{28}$	22.2		
8 Unknown	1312	22.14	-	-	-	12.5		

Technical Report

for

NJDEP-DIVISION OF WASTE MGMT.

CONTRACT X-029

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5678	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	RSURFWATER2	850501	0955	0001

Denis C. K. Lin, Ph.D.
Vice President
Research and Operations

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ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 10, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Volatile Compounds - GC/MS Analysis Data (QR01)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5678	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	RSURFWATER2	850501	0955	1

NPDES Number	Compound (Acrolein and Acrylonitrile values are screen only.)	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL ug/l A	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
1V	Acrolein	ND	100.0	ND	ND	ND	800	98	ND	800	99
2V	Acrylonitrile	ND	100.0	ND	ND	ND	80	99	ND	80	109
3V	Benzene	ND	4.4	ND	ND	ND	18	104	ND	18	101
4V	bis(Chloromethyl)ether	ND	10.0	ND	ND	ND	0	-	ND	0	-
5V	Bromoform	ND	4.7	ND	ND	ND	18	85	ND	18	93
6V	Carbon tetrachloride	ND	2.8	ND	ND	ND	18	99	ND	18	107
7V	Chlorobenzene	ND	6.0	1	ND	ND	18	105	ND	18	104
8V	Chlorodibromomethane	ND	3.1	ND	ND	ND	18	99	ND	18	103
9V	Chloroethane	ND	10.0	ND	ND	ND	18	106	ND	18	83
10V	2-Chloroethylvinyl ether	ND	10.0	ND	ND	ND	18	70	ND	18	70
11V	Chloroform	ND	1.6	ND	ND	ND	18	103	ND	18	104
12V	Dichlorobromomethane	ND	2.2	ND	ND	ND	18	99	ND	18	100
13V	Dichlorodifluoromethane	ND	10.0	ND	ND	ND	0	-	ND	0	-
14V	1,1-Dichloroethane	ND	4.7	ND	ND	ND	18	100	ND	18	101
15V	1,2-Dichloroethane	ND	2.8	ND	ND	ND	18	102	ND	18	102
16V	1,1-Dichloroethylene	ND	2.8	ND	ND	ND	18	100	ND	18	101
17V	1,2-Dichloropropane	ND	6.0	ND	ND	ND	18	100	ND	18	99
18V	cis-1,3-Dichloropropylene	ND	5.0	ND	ND	ND	18	101	ND	18	102
19V	Ethylbenzene	ND	7.2	1	2	ND	18	107	1	18	98
20V	Methyl bromide	ND	10.0	ND	ND	ND	18	138	ND	18	117
21V	Methyl chloride	ND	10.0	ND	ND	ND	18	98	ND	18	95
22V	Methylene chloride	ND	2.8	ND	ND	8	18	71	ND	18	61
23V	1,1,2,2-Tetrachloroethane	ND	6.9	ND	ND	ND	18	96	ND	18	108
24V	Tetrachloroethylene	ND	4.1	ND	ND	ND	18	104	ND	18	107
25V	Toluene	BMDL	6.0	ND	ND	BMDL	18	101	ND	18	100
26V	1,2-Trans-dichloroethylene	ND	1.6	ND	ND	ND	18	100	ND	18	102
27V	1,1,1-Trichloroethane	ND	3.8	ND	ND	4	18	88	ND	18	90
28V	1,1,2-Trichloroethane	ND	6.0	ND	ND	ND	18	101	ND	18	84
29V	Trichloroethylene	ND	1.9	ND	ND	ND	18	103	ND	18	100
30V	Trichlorofluoromethane	ND	10.0	ND	3	ND	18	103	ND	18	103
31V	Vinyl chloride	ND	10.0	ND	ND	ND	18	109	ND	18	96
18V	trans-1,3-Dichloropropylene	ND	10.0	ND	ND	ND	18	101	ND	18	92

A EPA published Method Detection Limit.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUN 12, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Acid Compounds - GC/MS Analysis Data (QR02)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5678	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	RSURFWATER2	850501	0955	1

PDES umber	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL ug/l *	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
1A	2-Chlorophenol	ND	4.1	ND	ND	ND	100	85	ND	111	86
2A	2,4-Dichlorophenol	ND	3.4	ND	ND	ND	100	83	ND	111	91
3A	2,4-Dimethylphenol	ND	3.4	ND	ND	ND	100	6@	ND	111	2@
4A	4,6-Dinitro-o-cresol	ND	30.0	ND	ND	ND	100	74	ND	111	73
5A	2,4-Dinitrophenol	ND	52.5	ND	ND	ND	100	68	ND	111	68
6A	2-Nitrophenol	ND	4.5	ND	ND	ND	100	85	ND	111	86
7A	4-Nitrophenol	ND	3.0	ND	ND	ND	100	70	ND	111	69
8A	p-Chloro-m-cresol	ND	3.8	ND	ND	ND	100	43	ND	111	41
9A	Pentachlorophenol	ND	4.5	ND	ND	ND	100	87	ND	111	80
10A	Phenol	ND	1.9	ND	ND	ND	100	90	ND	111	87
11A	2,4,6-Trichlorophenol	ND	3.4	ND	ND	ND	100	90	ND	111	85

* ETC established Method Detection Limit for this particular sample.

@ Recovery normally low using EPA Protocol Method 625.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 22, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

BASE/NEUTRAL COMPOUNDS - GC/MS ANALYSIS DATA (QR03)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5678	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	RSURFWATER2	850501	0955	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL ug/l	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
1B	Acenaphthene	ND	1.9	ND	ND	ND	100	82	ND	100	82
2B	Acenaphthylene	ND	4.0	ND	ND	ND	100	89	ND	100	86
3B	Anthracene	ND	1.9	ND	ND	ND	100	82	ND	100	83
4B	Benzidine	ND	44.0	ND	ND	ND	100	37c	ND	100	38c
5B	Benzo(a)anthracene	ND	7.8	ND	ND	ND	100	85	ND	100	88
6B	Benzo(a)pyrene	ND	2.5	ND	ND	ND	100	79	ND	100	85
7B	Benzo(b)fluoroanthene	ND	4.8	ND	ND	ND	100	45	ND	100	59
8B	Benzo(ghi)perylene	ND	4.1	ND	ND	ND	0	-	ND	0	-
9B	Benzo(k)fluoranthene	ND	2.5	ND	ND	ND	100	87	ND	100	67
10B	bis(2-Chloroethoxy)methane	ND	5.3	ND	ND	ND	100	98	ND	100	93
11B	bis(2-Chloroethyl) ether	ND	5.7	ND	ND	ND	100	89	ND	100	86
12B	bis(2-Chloroisopropyl)ether	ND	5.7	ND	ND	ND	100	66	ND	100	71
13B	bis(2-Ethylhexyl)phthalate	ND	10.0	ND	ND	ND	100	81	ND	100	84
14B	4-Bromophenyl phenyl ether	ND	1.9	ND	ND	ND	100	82	ND	100	83
15B	Butyl benzyl phthalate	ND	10.0	ND	ND	ND	100	77	ND	100	81
16B	2-Chloronaphthalene	ND	1.9	ND	ND	ND	100	91	ND	100	91
17B	4-Chlorophenyl phenyl ether	ND	4.2	ND	ND	ND	100	87	ND	100	87
18B	Chrysene	ND	2.5	ND	ND	ND	100	85	ND	100	92
19B	Dibenzo(a,h)anthracene	ND	2.5	ND	ND	ND	0	-	ND	0	-
20B	1,2-Dichlorobenzene	ND	1.9	ND	ND	ND	100	50	ND	100	46
21B	1,3-Dichlorobenzene	ND	1.9	ND	ND	ND	100	42	ND	100	44
22B	1,4-Dichlorobenzene	ND	4.4	ND	ND	ND	100	45	ND	100	42
23B	3,3'-Dichlorobenzidine	ND	16.5	ND	ND	ND	100	80	ND	100	79
24B	Diethyl phthalate	ND	10.0	ND	ND	ND	100	31	ND	100	34
25B	Dimethyl phthalate	ND	10.0	ND	ND	ND	100	3c	ND	100	0c
26B	Di-n-butyl phthalate	BMDL	10.0	ND	ND	BMDL	100	79	2	100	87
27B	2,4-Dinitrotoluene	ND	5.7	ND	ND	ND	100	95	ND	100	94
28B	2,6-Dinitrotoluene	ND	2.0	ND	ND	ND	100	91	ND	100	88
29B	Di-n-octyl phthalate	ND	10.0	ND	ND	ND	100	82	ND	100	89
30B	1,2-Diphenylhydrazine	ND	10.0	ND	ND	ND	100	86	ND	100	85
31B	Fluoranthene	ND	2.2	ND	ND	ND	100	91	ND	100	94
32B	Fluorene	ND	1.9	ND	ND	ND	100	88	ND	100	87

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 22, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

BASE/NEUTRAL COMPOUNDS - GC/MS ANALYSIS DATA (QR03)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5678	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	RSURFWATER2	850501	0955	1

NPDES Number	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL ug/l A	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
33B	Hexachlorobenzene	ND	1.9	ND	ND	ND	100	63	ND	100	64
34B	Hexachlorobutadiene	ND	.9	ND	ND	ND	100	62	ND	100	62
35B	Hexachlorocyclopentadiene	ND	10.0	ND	ND	ND	0	-	ND	0	-
36B	Hexachloroethane	ND	1.6	ND	ND	ND	100	36	ND	100	38
37B	Indeno(1,2,3-c,d)pyrene	ND	3.7	ND	ND	ND	0	-	ND	0	-
38B	Isophorone	ND	2.2	ND	ND	ND	100	86	ND	100	84
39B	Naphthalene	ND	1.6	ND	ND	ND	100	71	ND	100	70
40B	Nitrobenzene	ND	2.0	ND	ND	ND	100	86	ND	100	87
41B	N-Nitrosodimethylamine	ND	10.0	ND	ND	ND	0	-	ND	0	-
42B	N-Nitrosodi-n-propylamine	ND	10.0	ND	ND	ND	100	73	ND	100	78
43B	N-Nitrosodiphenylamine	ND	2.0	ND	ND	ND	100	93	ND	100	95
44B	Phenanthrene	ND	5.4	ND	ND	ND	100	84	ND	100	86
45B	Pyrene	ND	1.9	ND	ND	ND	100	84	ND	100	92
46B	1,2,4-Trichlorobenzene	ND	1.9	ND	ND	ND	100	144	ND	100	134

A EPA published Method Detection Limit.

B ETC established Method Detection Limit for this particular sample.

C Recovery normally low using EPA Protocol Method 625.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

MAY 21, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Pesticide/PCB Compounds - GC/MS Analysis Data (QR04)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5678	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	RSURFWATER2	850501	0955	1

DES mber	Compound	Results		QC Replicate		QC Blank and Spiked Blank			QC Matrix Spike		
		Sample Concen. ug/l	MDL ug/l A	First ug/l	Second ug/l	Blank Data ug/l	Concen. Added ug/l	% Recov	Unspiked Sample ug/l	Concen. Added ug/l	% Recov
1P	Aldrin	ND	1.9	ND	ND	ND	100	79	ND	100	84
2P	Alpha-BHC	ND	10.0	ND	ND	ND	100	31	ND	100	37
3P	Beta-BHC	ND	4.2	ND	ND	ND	100	74	ND	100	79
4P	Gamma-BHC	ND	10.0	ND	ND	ND	100	32	ND	100	38
5P	Delta-BHC	ND	3.1	ND	ND	ND	100	29	ND	100	29
6P	Chlordane	ND	10.0	ND	ND	ND	200	21B	ND	200	24B
7P	4,4'-DDT	ND	4.7	ND	ND	ND	100	56	ND	100	62
8P	4,4'-DDE	ND	5.6	ND	ND	ND	100	63	ND	100	66
9P	4,4'-DDD	ND	2.8	ND	ND	ND	100	56	ND	100	62
0P	Dieldrin	ND	2.5	ND	ND	ND	100	52	ND	100	60
1P	Endosulfan I	ND	10.0	ND	ND	ND	100	24	ND	100	23
2P	Endosulfan II	ND	10.0	ND	ND	ND	100	21B	ND	100	22B
3P	Endosulfan sulfate	ND	5.6	ND	ND	ND	100	35	ND	100	43
4P	Endrin	ND	10.0	ND	ND	ND	100	52	ND	100	60
5P	Endrin aldehyde	ND	10.0	ND	ND	ND	100	25	ND	100	30
6P	Heptachlor	ND	1.9	ND	ND	ND	100	76	ND	100	80
7P	Heptachlor epoxide	ND	2.2	ND	ND	ND	100	58	ND	100	61
8P	PCB-1242	ND	36.0	ND	ND	ND	0	-	ND	0	-
9P	PCB-1254	ND	36.0	ND	ND	ND	0	-	ND	0	-
0P	PCB-1221	ND	30.0	ND	ND	ND	0	-	ND	0	-
1P	PCB-1232	ND	36.0	ND	ND	ND	0	-	ND	0	-
2P	PCB-1248	ND	36.0	ND	ND	ND	0	-	ND	0	-
3P	PCB-1260	ND	36.0	ND	ND	ND	100	21	ND	100	16
4P	PCB-1016	ND	36.0	ND	ND	ND	0	-	ND	0	-
5P	Toxaphene	ND	10.0	ND	ND	ND	0	-	ND	0	-

A EPA published Method Detection Limit.

B Recovery normally low using EPA Protocol Method 625.

ETC ENVIRONMENTAL TESTING and CERTIFICATION

JUN 12, 1985

TABLE 1: QUANTITATIVE RESULTS and QUALITY ASSURANCE DATA

Metals, Cyanide and Phenols - Analysis Data (QR05)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5678	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	RSURFWATER2	850501	0955	1

NPDES Number	Compound		Results Sample Concen.	Results MDL
1M	Antimony	ug/l	ND	90
2M	Arsenic	ug/l	27	10
3M	Beryllium	ug/l	ND	1
4M	Cadmium	ug/l	BMDL	3
5M	Chromium	ug/l	30	20
6M	Copper	ug/l	250	10
7M	Lead	ug/l	970	50
8M	Mercury	ug/l	BMDL	3.0
9M	Nickel	ug/l	60	20
10M	Selenium	ug/l	ND	5
11M	Silver	ug/l	ND	10
12M	Thallium	ug/l	ND	5
13M	Zinc	ug/l	901	4
14M	Cyanide, Total	mg/l	<.025	.025
15M	Phenolics, Total	mg/l	.03	.01

ETC ENVIRONMENTAL TESTING and CERTIFICATION

May 12, 1985

TABLE 1: QUALITATIVE RESULTS

Tentatively Identified Organic Compounds – GC/MS Analysis Data – Volatile Fraction (QR06)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5678	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	RSURFWATER2	850501	0955	1

Compound Name	Data			Identifiers				
	Scan Number	Retention Time (Min)	M.W.	CAS Number	Empirical Formula	Estimated Concen. ug/l		
1 Unknown	7	1.34	-	-	-	10		

ETC ENVIRONMENTAL TESTING and CERTIFICATION

May 21, 1985

TABLE 1: QUALITATIVE RESULTS

Tentatively Identified Organic Compounds – GC/MS Analysis Data – Acid Fraction (QR07)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5678	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	RSURFWATER2	850501	0955	1

Compound Name	Data			Identifiers				
	Scan Number	Retention Time (Min)	M.W.	CAS Number	Empirical Formula			
None Found								

ETC ENVIRONMENTAL TESTING and CERTIFICATION

May 21, 1985

TABLE 1: QUALITATIVE RESULTS

Tentatively Identified Organic Compounds - GC/MS Analysis Data - Base Neutral (QR08)

Chain of Custody Data Required for ETC Data Management Summary Reports

ETC Sample No.	Company	Facility	Sample Point	Date	Time	Elapsed Hours
H5678	NJDEP-DIVISION OF WASTE MGMT.	NJDDAIMHED	RSURFWATER2	850501	0955	1

Compound Name	Data			Identifiers				
	Scan Number	Retention Time (Min)	M.W.	CAS Number	Empirical Formula			
None Found								