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GROUND-WATER AND SOIL QUALITY
INVESTIGATION AT THE
MOBIL OIL CORPORATION
TAPPAN TERMINAL
HASTINGS-ON-HUDSON
GREENBURGH, NEW YORK

Prepared For
Mobil Oil Corporation
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# TABLE OF CONTENTS

																								Pag	<u>e</u>
INTRO	DDUCTI	CON	۱		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	1	
SITE	LOCAT	CIO	N.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	1	
PRELI	IMINAF	RY	EVA	LU	AT.	101	1 (	OF	TI	ΗE	s:	ITI	Ξ.	•	•	•	•			•	•	•	•	2	
FIELD	O INVE	EST	'IG <i>P</i>	TIC	ИС	•	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•	•	3	
	Test Insta			_	Dı	cil	11;	no	J a	ano	1 h	or.	ni:	to:	r 1	ve]		•	•	•	•	•	•	3	
	Groun	ıd-	Wat	er	ar	nd	Тj	da	1-	-Ir	nf]	lue	eno	ce	Мо	on i	ito	ori	ing	J -	•	•	•	5	
	Eleva	ti	on	Sui	cve	) Y	•	•	•	•	•	•	•	•	•	•	•		•	•	•	•	•	5	
	Soil	Sa	mpl	ing	3.		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	5	
	Water	· S	amp	lir	ng	•	•	•	•	•	•	•	•					•	•	•	•	•	•	6	
RESUL	TS OF	' I	NVE	STI	[GA	TI	ON		•	•	•	•	•	•		•		•	•	•	•	•	•	7	
	Geolo	gy		•		•	•	•	•	•		•					•		•	•	•	•	•	7	
	Hydro	ge	olo	дУ	•	•	•	•	•	•	•	•	•	•			•		•		•	•	•	7	
	Soil	An	aly	sis	· .			•	•		•	•			•	•							•	9	
	Water	Qı	ual	ity	· .	•	•	•		•	•	•	•	•	•			•	•			•	•	10	
_	Sewer	I	nve	sti	.ga	ti	on	a	nd	S	ew	er	W	lat	er	. Č	ua	li	ty	•	•	•	•	12	
CONCL	USION	S		٠.	•		•	•	•	•	•	•	•		•	•	•	•	•	•	•	•	•	13	
REFER	ENCES	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	15	
APPENDICES																									

# LIST OF FIGURES (at end of report)

Figure	
1	Site Location Map
2	Well Location Map
. 3	Geologic Cross-Sections A-A' and B-B'
4	Geologic Cross-Sections C-C' and D-D'
5	Location of Geologic Cross-Sections
6	Tidal Fluctuation in Hudson River, MW-7 and MW-8
7	Tidal Fluctuation in Hudson River, MW-4 and MW-5
8	Water-Level Elevation Contours Based on Simulta- neous Measurements in Wells December 2, 1986
9	Amplitude of Tidal Influence in Ground Water December 9, 1986
10	Water-Level Elevation Contours Based on Lowest Water Level Observed During A Tidal Cycle Decem- ber 9, 1986
11	Water-Level Elevation Contours Based on Highest Water Level Observed During Tidal Cycle Decem- ber 9, 1986
12	Water-Level Elevation Contours Based on Average Water Level Calculated for a Tidal Cycle Decem-
	ber 9, 1986
13	Total Petroleum Hydrocarbons Detected in the Soil from 0-4 Feet Deep, Compiled From Data Listed on Table 3
14	Total Petroleum Hydrocarbons Detected in the Soil Below 4 Feet, Compiled From Data Listed in Table 3
15	Areal Extent of Dye in the Soil, November 1986
16	Concentration of Chlorobenzene in Ground Water, November 1986
17	Concentration of Ether Compounds (Diethyl Ether and Isopropyl Ether) in Ground Water

# LIST OF TABLES (at end of report)

<u>Table</u>	•
1	Summary of Test Borings and Monitor Well Construction
2	Summary of Ground-Water Data
3	Total Petroleum Hydrocarbons in Soil Samples (EPA Method 418.1)
4	Semivolatile Analysis of Soil Samples (EPA Method 8270)
5	Dye Analysis of Soil Extracts
6	Summary of Ground-Water Parameters Measured During the Water Sampling Program
7	Priority Pollutant Volatiles in Ground Water (EPA Method 624)
8	Ground-Water Analysis for Ether Compounds
9	Priority Pollutant Metals in Ground Water
10	Priority Pollutant Semivolatiles in Ground Water (EPA Method 625)

# GROUND-WATER AND SOIL QUALITY INVESTIGATION AT THE MOBIL OIL CORPORATION TAPPAN TERMINAL HASTINGS-ON-HUDSON GREENBURGH, NEW YORK

#### INTRODUCTION

In October 1986, Leggette, Brashears & Graham, Inc. (LBG) was retained by Mobil Oil Corporation (MOC) to conduct a field investigation, including hydrogeologic aspects, to detect any soil or ground-water contamination at the Tappan Terminal, Hastings-on-Hudson, New York. An investigation plan was developed by LBG in cooperation with Mobil Research and Development Corporation (MRDC), Paulsboro, New Jersey and submitted to Mobil Oil Corporation on October 27, 1986. The scope of work consisted of seven tasks and involved the drilling of test borings, installation monitor wells, ground-water and tidal-influence monitoring, collection of water and soil samples, investigation regarding site sewer and drainage, data evaluation and preparation of a report. The onsite investigation began on November 4 and ended on December 16, 1986.

LBG work was conducted under Contract No. W606003. The drilling and installation of wells was subcontracted to Technical Environmental Specialists Corporation (TES). The soil and water samples for chemical analysis were collected by LBG and analyzed by Mobil Oil Corporation Technical Services Laboratories (TSL), Princeton, New Jersey, and Environmental Testing and Certification (ETC), Edison, New Jersey.

#### SITE LOCATION

Tappan Terminal is located on the eastern bank of the Hudson River in the village of Hastings-on-Hudson, Town of Greenburgh, Westchester County, New York. To the east of

the Tappan Terminal is the property of Paul Uhlich & Company, Inc., an active dye factory and to the north a former Anaconda wire mill, which presently is used as a storage facility. The location of the Tappan Terminal is shown on figure 1. The terminal consists of a building, loading rack and a tank farm with 4 storage tanks. Presently, no storage or distribution of petroleum products are taking place at the terminal.

#### PRELIMINARY EVALUATION OF THE SITE

In May 1986, a preliminary evaluation regarding possible contamination of soil and ground water by petroleum products was conducted by LBG. Nine borings were completed as shallow monitor wells. The drilling method was hollow-stem auger, with continuous soil sampling from land surface to several feet below the water table. Each sample was logged by describing the soil characteristics and noting the presence of hydrocarbon product by odor and/or visual evidence. The geologic logs of the borings are attached in Appendix I and the locations of these wells (MW-1 through MW-9) are shown on figure 2.

The soil samples collected during the drilling of MW-5 showed visual evidence of petroleum hydrocarbon between 4 and 6 feet bg (below grade). Also, hydrocarbon odor was detected in soil samples collected during the drilling of MW-5 at depths between 2 and 6 feet and in samples collected from MW-8 at depths between 5 and 9 feet bg. No odor or visual evidence of hydrocarbons were detected during the drilling of the remaining 7 soil borings. A composite soil sample from each test boring was analyzed by Envirotest Laboratories, Inc. for total petroleum hydrocarbons. Total petroleum hydrocarbons were detected in soil samples collected from MW-5 (370 ppm) and MW-4 (30 ppm) which are located in the tank farm area. The data indicate 44 ppm (parts per million) of total hydrocarbons in soil samples

collected from MW-8. Soil samples collected from the remaining borings showed moderate levels of total hydrocarbons (between 0.29 to 1.9 ppm).

Water samples obtained from all 9 monitor wells showed the presence of total petroleum hydrocarbons ranging from less than 20 ppb (parts per billion) to 140 ppb. The data indicated the presence of petroleum hydrocarbons in soil and ground water in two isolated areas in the tank farm (MW-4 and MW-5) and loading rack (MW-8). No free hydrocarbon product was found during the drilling and after completion of the monitor wells. Additional investigations were recommended to define the magnitude and extent of contamination by hydrocarbon or other chemical compounds at the site.

#### FIELD INVESTIGATION

Between November 4 and December 16, 1986, LBG conducted an expanded subsurface investigation, for the purpose of further defining contamination of soil and ground water at the site. The onsite investigation consisted of drilling test borings, installation of monitor wells, ground-water level measurements, tidal-influence monitoring, collection of soil and water samples, and a well elevation survey.

# Test Borings Drilling and Monitor Well Installation

Between November 4 and 17, 1986, 27 test borings were drilled at the site. As specified in the scope of work, 12 of the test borings were backfilled after sampling and 15 were completed as ground-water monitoring wells. The locations of test borings and monitor wells are shown on figure 2. The borings which were backfilled are marked on figure 2 as TB (test borings) and those completed as monitor wells are marked as OW (monitor wells). Monitor wells completed during the previous preliminary investigation are designated as MW.

Of the 27 test borings, 16 were drilled by the hollowstem auger method using a 6-inch diameter auger, with continuous split-spoon samples taken from ground surface to the water-table surface. An additional spoon sample was obtained at 5 feet below the average ground-water level.

The remaining 11 test borings were drilled by the drive-and-wash method, using a portable gas-powered engine and a tripod, because surface obstructions prevented access by a larger drilling rig. The drive-and-wash procedure consisted of driving 5-foot sections of 3-inch diameter casing into the ground to support the hole. After an individual section was driven, a drilling bit was lowered and operated inside the casing, while water was pumped to flush the cuttings. The split-spoon soil sampling procedure was similar to that of the auger-drilled holes.

Fourteen test borings were completed with 2-inch diameter PVC screen and riser pipe and one well was constructed with 4-inch diameter screen and pipe. borings were selected to be completed as monitor wells based on visual evidence of contamination in soil samples collected during the drilling. Each well was screened from the bottom of the hole to approximately 1 to 2 feet below ground surface. After each well was in place, the annular space between the screen and drilled hole was filled gradually with coarse sand (No. 2), from the bottom to approximately 0.5 to 1 foot above the top of the screen. A bentonite plug was placed on top of the sand pack and the rest of the annular space was sealed with cement. Each well was completed with a riser pipe above ground surface and a locking PVC cap, with the exception of OW-16, which was equipped with a gate box below ground level. The geologist's logs and well construction details are in Appendix I. lists the depth of the test borings and monitor well construction details. Following installation, each well was developed for approximately 45 minutes by pumping until the water was relatively free of sediment.

# Ground-Water and Tidal-Influence Monitoring

On November 13, 1986, water-level recorders were installed in Wells MW-4, MW-5, MW-7, MW-8 and a stilling well in the Hudson River. Because of wave effects in the Hudson River induced by boat traffic, the recorder could not be used to determine the river tide. On November 18, 1986 a data logger (transducer) was installed in the stilling well.

Water levels were taken in all existing wells during the low and high tide in the Hudson River on December 2, 1986. Because these data were insufficient for defining the relationship between the ground water and the river, additional measurements were conducted on December 9, 1986. These measurements are presented in table 2.

## Elevation Survey

All 24 wells installed at the site were located on an existing map and the elevations of the tops of their PVC riser pipes were determined by Peter Hustis, a licensed New York State Surveyor. The elevations are tied to an arbitrary datum and are listed on table 1. It should be noted that a mean sea level elevation was not obtained because no bench mark is available in the vicinity of the site. (The closest bench mark is at approximately 1.25 miles to the north and is located on the railroad.)

## Soil Sampling

During the drilling, continuous split-spoon samples were obtained from ground surface to the water table and one sample was collected approximately 5 feet below average ground-water level. The split spoon was cleaned between each sampling with soap and water. Each sample was logged by the onsite hydrogeologist and a complete description of the material was made. Before the sample was disturbed, a Polaroid camera was used to take a picture of the soil and split spoon. The picture was then labelled with the well number, sampling interval, date of collection, and project

location. The sample was then removed from the spoon and placed in a glass jar which was sealed with plastic tape. The jar was also labelled with the same information as the corresponding picture. In general, 3 to 4 samples were collected per boring. Soil samples which indicated noticeable odors or staining were delivered to TSL in Princeton, New Jersey, for analysis. The soil samples which were delivered to the laboratory are listed in the attached chain-of-custody forms (Appendix II).

#### Water Sampling

Between November 18 and 19, 1986, 16 monitor wells and the Hudson River were sampled for water-quality analysis. Prior to sampling at each well, the depth to water and the depth of the well bottom were measured using a sonic probe, and the standing volume of water in the well was calculated. Following this, three standing volumes of water were removed The well was then from the well using a clean PVC bailer. The water samples allowed to recover prior to sampling. were taken with a dedicated bottom-loading PVC bailer. Water samples for metal analyses were filtered in the field using a 50-millimeter pump and 0.45-micron filters, and were placed in 1-liter plastic containers. Water samples from OW-18 and OW-5 were not filtered because of visual presence of hydrocarbons. However, the samples collected from OW-5 and OW-18 were filtered in the laboratory. Samples for volatile organics were placed in septum vials, and those for semivolatiles were stored in glass bottles.

Seven samples were taken from each well: 3 in 1-liter glass jars, 3 in 25-milliliter vials and one in a 1-liter plastic container. The samples were labelled with the well number, date of collection, and project name, and placed in ice-packed coolers. Field blanks were prepared using distilled water from a 1-gallon glass container provided by the laboratory. The samples were placed in separate coolers depending on container type.

Samples designated for TSL in Princeton (3 vials, 1-liter plastic jars and 1-liter glass jar) were delivered on November 20, 1986, by LBG personnel. Several field blanks were included with the samples. Two bottles of 1-liter capacity each were delivered on the same day to ETC laboratory in Edison, New Jersey. A chain-of-custody form was completed for all samples delivered (Appendix II).

#### .. RESULTS OF INVESTIGATION

#### Geology

The flat area along the eastern bank of the Hudson River in Hastings is underlain by unconsolidated deposits which overlie the Inwood Marble and Fordham Gneiss bedrock. The bedrock is approximately at 70 feet bg. At the Mobil Terminal, the borings generally encountered 2 to 4 feet of fill material consisting of a mixture of sand, silt, clay, wood and brick. Below this, the fill consists of fine sand with silt and trace of gravel. The deepest onsite boring was drilled to 17 feet and no significant changes in subsurface material were observed. Figures 3 and 4 are cross sections showing the subsurface material at the Mobil facility. The location of the sections are shown on figure 5.

#### Hydrogeology

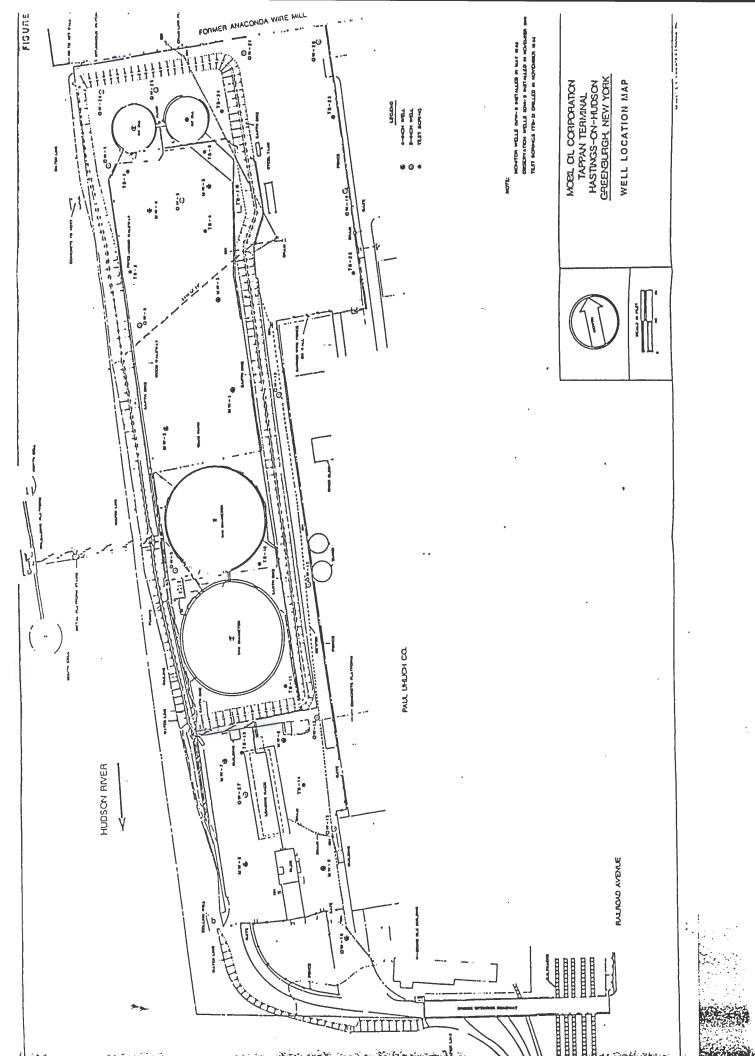
The wells indicate the presence of a water-table aquifer which is influenced by the tide in the adjacent Hudson River. The water table was found at depths ranging between 1 and 5 feet below grade. The tide in the Hudson River and tidal influence in the water table were determined using a data logger and 4 water-level recorders. Figure 6 is a plot of data logger measurements and indicates that the Hudson River is tidal in the vicinity of the terminal, having a fluctuation of approximately 3.5 feet. Figures 6 and 7 show the elevation of water level in the Hudson River

and corresponding tidal effects in wells located in the loading rack and tank farm areas. As shown on figure 6, the tidal influence beneath the loading rack ranges from 0.3 foot in MW-8 to 1 foot in MW-7. The tidal-influence lag time was 2 hours in MW-7 and 5 hours in MW-8. Figure 7 shows that the tidal influence in the water table beneath the tank farm area ranges from 0.1 to 0.2 foot, having a lag time of approximately 5 hours for the entire area.

The elevations of the water table on December 2, 1986, are shown on figure 8. The December 2nd contours were based on approximately simultaneous measurements during a high tide in the Hudson River. As shown on figure 8, the direction of ground-water flow is in general from inland towards the Hudson River with the exception of some local areas (between MW-2 and MW-1; between MW-4, OW-5 and MW-5; between MW-6 and MW-5) where the flow appears to be reversed as a result of tidal influence (see water-level elevation in monitor wells, table 2 and figure 8).

Figure 9 shows the amplitude of the tidal influence in ground water on December 9, 1986. The contour lines indicate a strong tidal influence in the loading rack area which decreases proportionally with distance from the river. The amplitude values also indicate a good hydraulic connection between the Hudson River and the sediments in the loading rack area. The tidal influence in the tank farm is smaller and appears to be controlled by the flood dike installed along the Hudson River. However, a stronger tidal influence was observed at the north end of the tank farm area inside of the flood dike.

The elevations of the water table on December 9, 1986, are shown on figures 10 and 11. The contour lines on figure 10 were constructed using the lowest water levels recorded immediately after the low tide in the Hudson River. Figure 11 contours reflect the highest ground-water levels following the river high tide. Both maps indicate that ground-water flows onto the property from the southeast and



generally all the ground-water flowing beneath the property appears to discharge to the Hudson River. Figure 12 illustrates water-level elevation contours based on average levels calculated for a tidal cycle and indicate a ground-water movement towards the Hudson River.

All maps showed that some low water levels were measured in OW-18 and OW-21. The low water-level elevation in OW-18 may be related to the location of this well in the vicinity of the sewer. Insufficient data are available to explain the unusually low elevation measured in OW-21.

## Soil Analysis

The results of soil samples analysis as reported by TSL are presented on tables 3, 4, and 5 and figures 13 through 15.

# Total Petroleum Hydrocarbons

In general, soil samples collected from the fill material above the water table at depths between 0 and 4 feet showed low levels of total petroleum hydrocarbons for the loading rack and most of the tank farm area. As shown on figure 13, elevated levels of total petroleum hydrocarbons were detected to the south of Tank 5 and 6 and in the vicinity of OW-19, TB-22 and OW-18.

Figure 14 illustrates total petroleum hydrocarbons detected in soil samples collected from depths below the average water-table level. In general, the data show elevated levels of total petroleum hydrocarbons in a smaller area below the water table than between 0 and 4 feet, but the contamination appears to be related to the same source or sources.

# Semivolatile Organics

Five soil samples were analyzed for 47 semivolatile organic compounds and all samples with the

exception of OW-18, indicated non-detectable limits corresponding to the minimum detection limit used for these analyses. The results are summarized in table 4.

# Dye Analysis of Soil Extracts

Dye stain was visually observed in soil samples collected from 7 test borings (geologist's logs). Four soil samples were analyzed to determine the type and amount of dye present; the results are listed in table 5.

Based on visual observation of the soil samples and laboratory results the approximate areal extent of dye in the soil was determined and is illustrated on figure 15. The dye appears to be distributed along the sewer line which parallels the eastern boundary of the terminal. Dye was also found in OW-27 at approximately 140 feet from the main sewer line. The presence of dye in this area may be related to the migration of dye along the drainage line which is connected to the main sewer. The presence of dye in the soil beneath the Mobil Terminal is apparently related to the dye factory located to the east of the site.

# Water Quality

Water samples were collected from 16 wells and the Hudson River. Each sample was tested for pH, temperature and electric conductivity, and analyzed for volatile organics, semivolatile (base neutral and acid extractable) compounds and Priority Pollutant metals.

#### Ground-Water Parameters

All water samples were measured for pH, temperature and electric conductivity. The results are listed in table 6. These measurements showed higher temperature in OW-12, OW-15, OW-16 and OW-17 which may be related to the location of these wells in the vicinity

of the sewer. The pH measurements appear to be normal for the ground-water system.

# Volatile Organic Compounds

Eighteen water samples (16 from monitor wells, one from Hudson River and one field blank) were analyzed for 31 volatile organic compounds using EPA Method 624. The data showed nondetectable levels of all 31 compounds with the exception of chlorobenzene, which was detected in 8 samples (table 7). Chlorobenzene, a halogenated aromatic hydrocarbon, is generally related to solvent recovery plants, or is used as an intermediate in manufacturing dye, aniline, insecticide, phenol chloronitrobenzene (Verschueren, highest concentration of chlorobenzene was found in OW-12 (12,380 ppb). The concentrations diminish with distance from OW-12, and reach a value of 8.5 ppb in water collected from OW-9. The approximate distribution of chlorobenzene contamination in ground water beneath the terminal is shown on figure 16.

As shown in figure 16, a source of chlorobenzene appears to be located in the vicinity of OW-12. The chlorobenzene apparently moved in the direction of -- ground-water flow and was found in smaller concentrations in monitor wells located in the vicinity of the Hudson River.

As reported by TSL, 8 water samples showed concentrations of diethyl ether and isopropyl ether. These compounds, which are used as solvents for waxes, fats, oils, perfumes, alkaloids and gums (Merck Index, Tenth Edition, 1983), were found in water samples collected from monitor wells located to the northern boundary of the terminal (OW-1, OW-5, OW-19, OW-20, OW-21, OW-25 and OW-26) (table 8). The highest concentrations of these ether compounds were found in OW-21 (1,900 ppb).

The concentration of ether compounds in ground water is shown on figure 17.

# Priority Pollutants - Metals

Table 9 lists the analytical results for 13 Priority Pollutant metals. The data show low levels of zinc in eleven samples and low levels of arsenic in samples collected from OW-19.

## Priority Pollutants - Semivolatile Compounds

Analyses of base neutral and acid extractable semivolatile compounds was performed by ETC using EPA Method 625. The results are summarized in table 10; laboratory reports are in Appendix II. In most of the water samples, semivolatiles were either not detectable or were found below the minimum detection level. Seven of the samples did contain small amounts of at least one semi-volatile compound.

#### Sewer Investigation and Sewer Water Quality

The sewer system located on the Tappan Terminal property is used for discharge of nontreated industrial water and is connected to the City of Yonkers treatment plant. Presently, the sewer receives water discharge from Paul Uhlich & Company, Inc., a dye factory located to the east of the site.

Appendix II (tables II-1 through II-5) summarizes analytical results of samples collected from the sewer system, as reported by Westchester County Industrial Pretreatment Program. These samples were collected from a manhole located on the Tappan Terminal property, and are listed as water discharge from Paul Uhlich & Company, Inc. As shown in these tables, water samples were analyzed for volatile organics, base neutrals, acid extractables, metals and other conventional and non-conventional pollutants. Correlation could not be made between compounds found in the

sewer and in nearby monitoring wells since analyses were performed for generally different sets of parameters. The only compound which was found in both the sewer and ground water is dye extract, which dye was also detected in soil samples collected during the drilling of test borings.

#### CONCLUSIONS

- 1. The ground water at the Tappan Terminal site occurs under water-table conditions at depths ranging between 1 and 5 feet below land surface. The ground-water level is strongly influenced by the tide in the adjacent Hudson River. The general direction of ground-water flow beneath the Mobil terminal is towards the Hudson River.
- 2. No significant petroleum hydrocarbons were found in the soil samples collected from the loading rack and most of the tank farm. The drilling of test borings indicated visual evidence of hydrocarbon in several areas in the tank farm. There are well-defined zones in the tank farm area and along portions of the eastern boundary where elevated levels of total petroleum hydrocarbons were found in the soils. No free hydrocarbon was found during the drilling and after completion of the monitor wells, with the exception of OW-18, which indicated a film of oil.
- 3. Dye extracts were found in soil samples collected from test borings drilled parallel to the sewer system located on the eastern boundary of the Tappan Terminal.
- 4. Significant chlorobenzene contamination was found in water samples collected from monitor wells located in the loading rack and south of the tank farm area. The highest level of chlorobenzene was found in the water sample from Well OW-12.

- 5. The source of the dye and chlorobenzene contamination found under the terminal facility appears to be the Paul Uhlich & Company property immediately to the east of the terminal.
- 6. Diethyl ether and isopropyl ether were detected in ground-water samples from wells near the northern end of the terminal property. The source for the ethers found at the north end of the terminal has not been determined. These compounds are not known to have been used at the Mobil terminal.

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Project Hydrogeologist

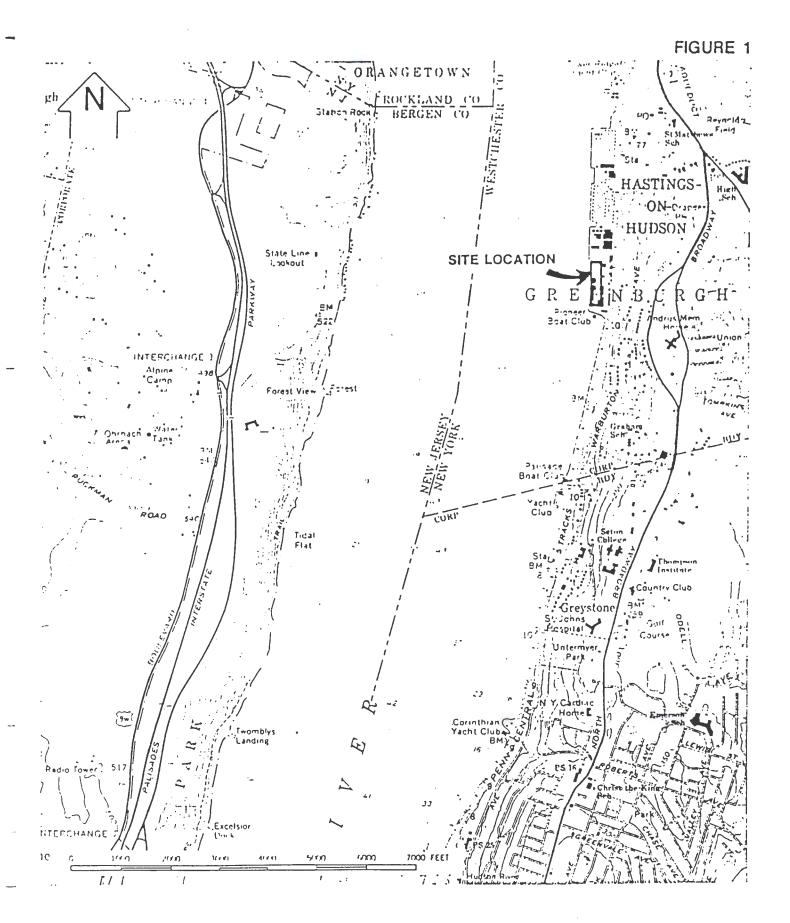
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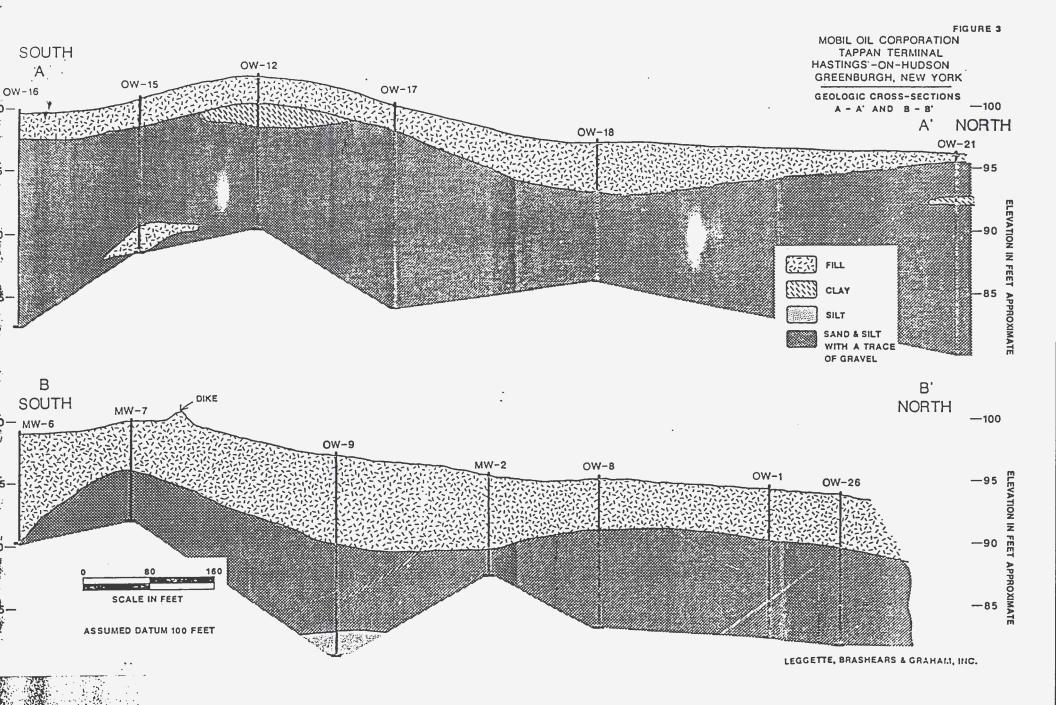
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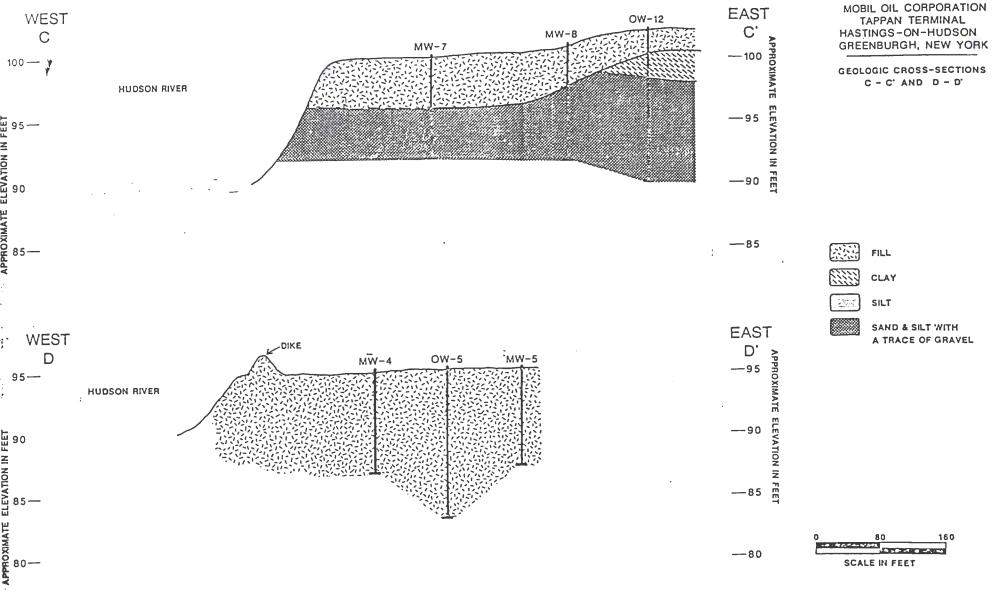
FIGURES



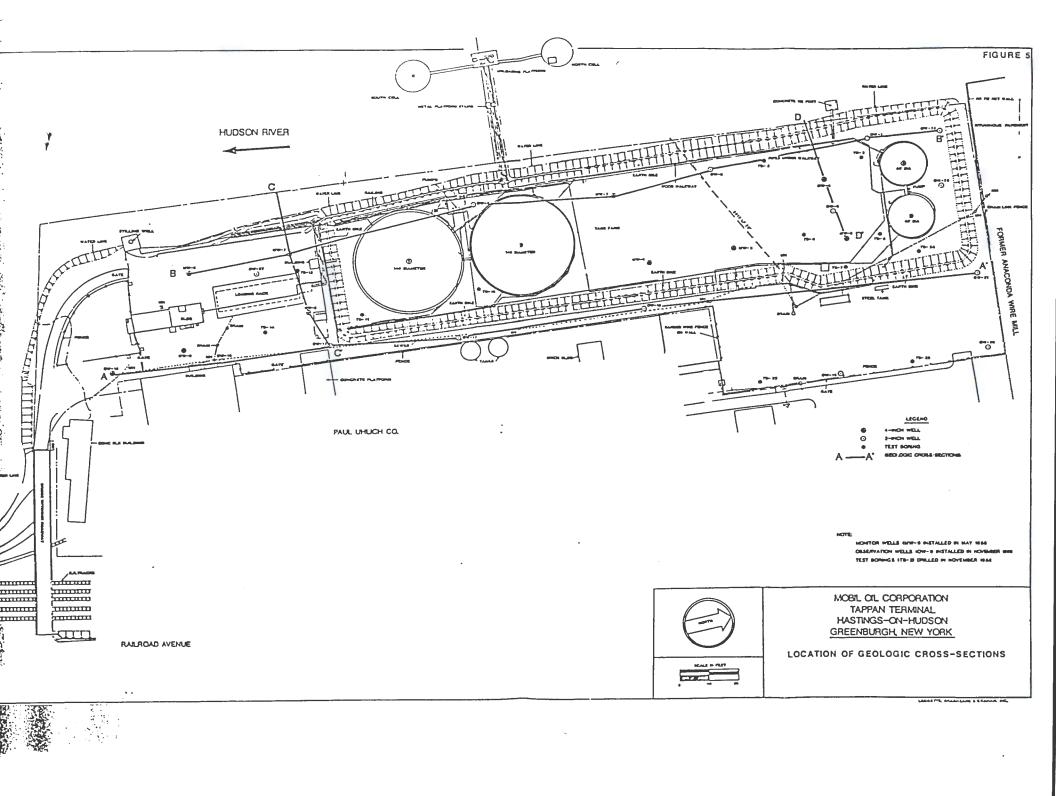
MOBIL OIL CORPORATION TAPPAN TERMINAL HASTINGS-ON-HUDSON GREENBURGH, NEW YORK

SITE LOCATION MAP





LEGGETTE, BRASHEARS & GRAHAM, INC.

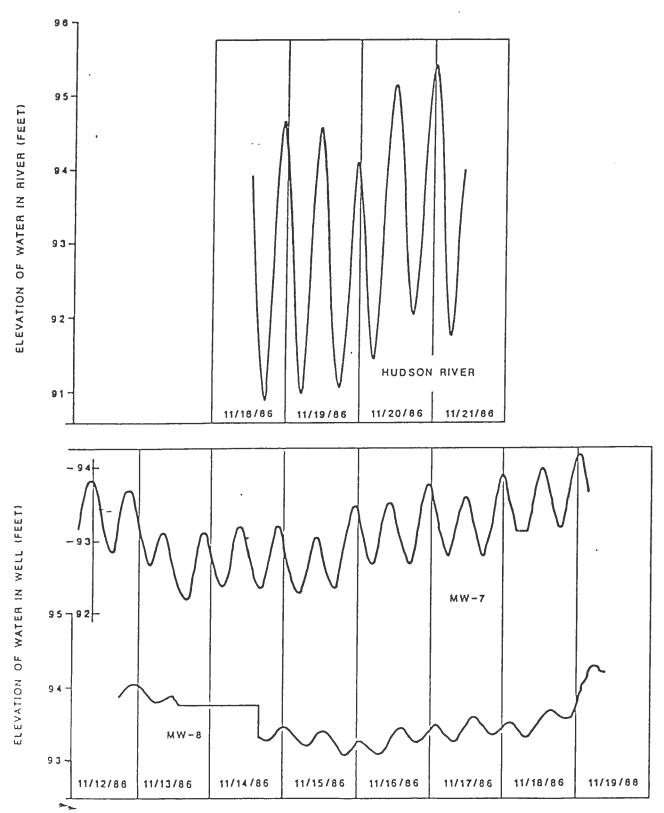


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MOBIL OIL CORPORATION
TAPPAN TERMINAL
HASTINGS-ON-HUDSON
GREENBURGH, NEW YORK

TIDAL FLUCTUATION IN HUDSON RIVER,

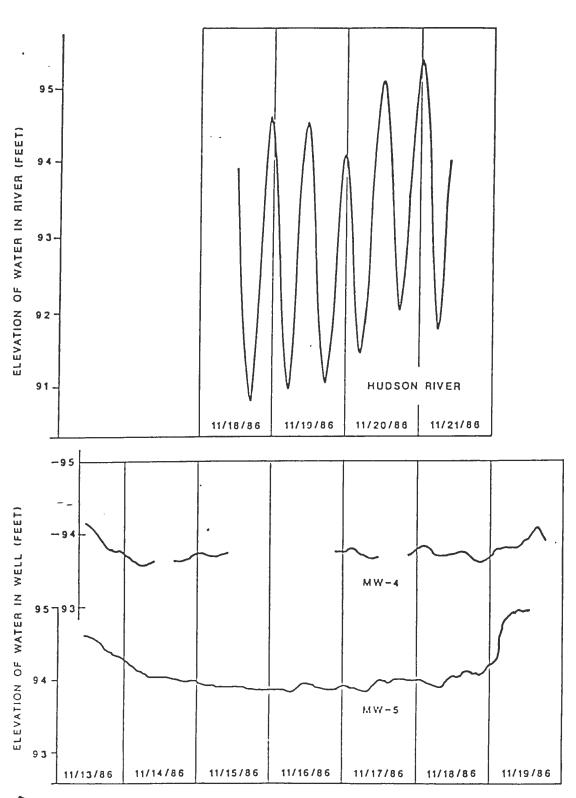
MW-7 AND MW-8



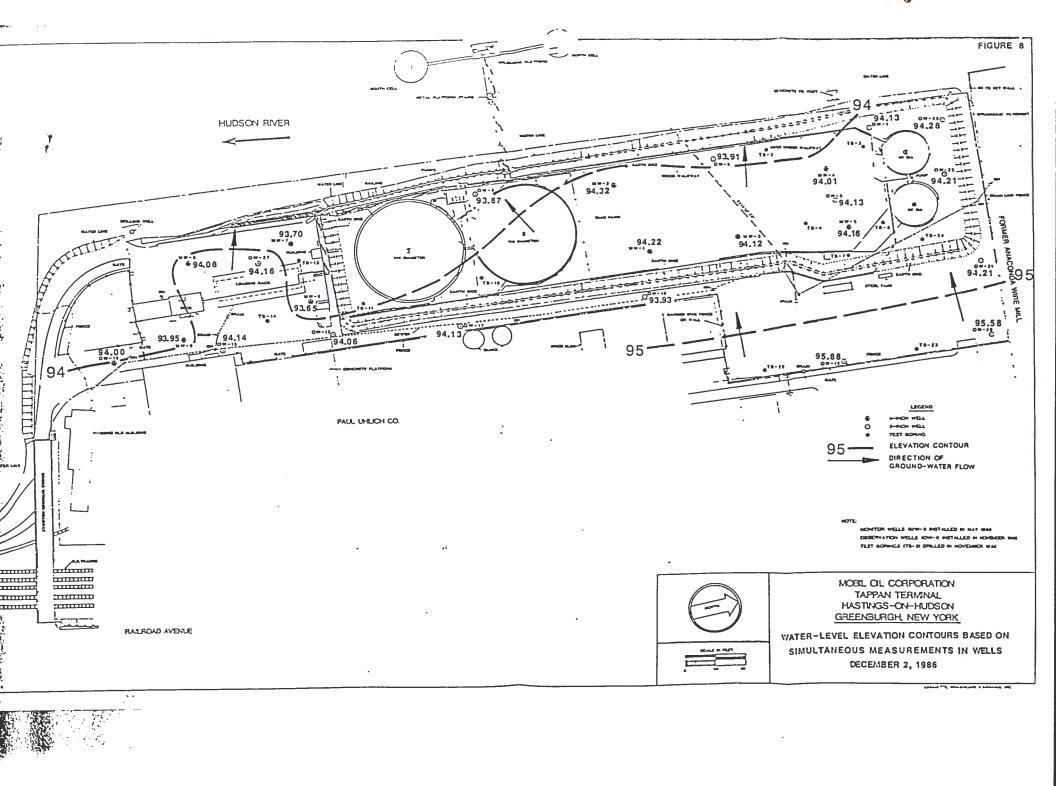
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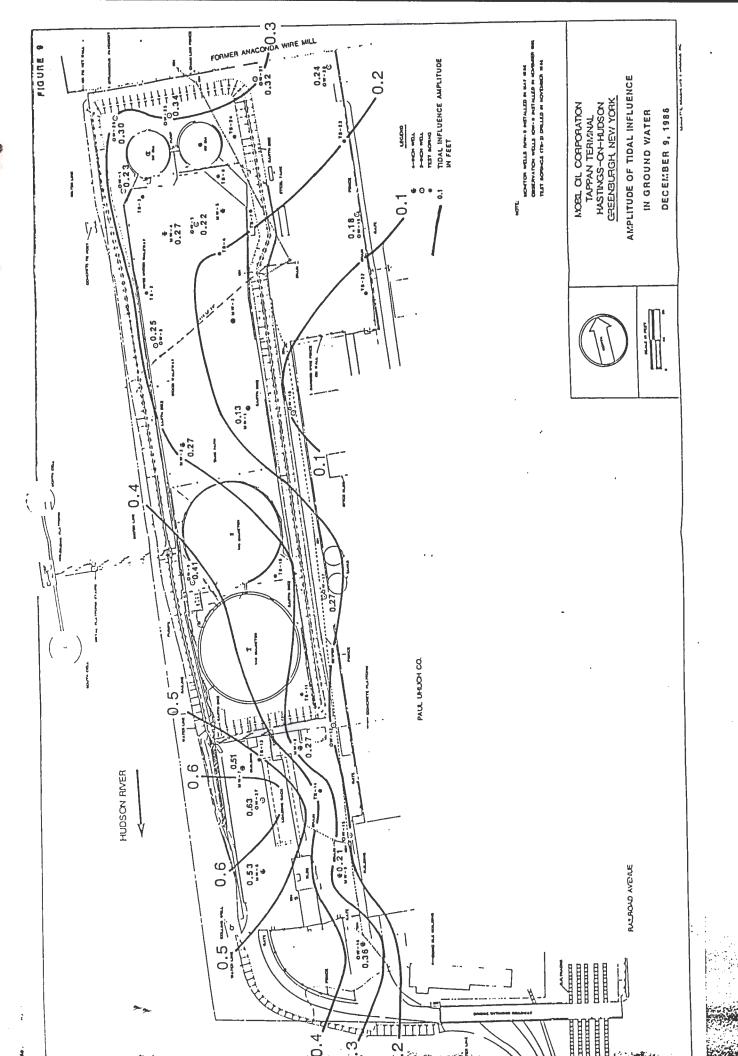
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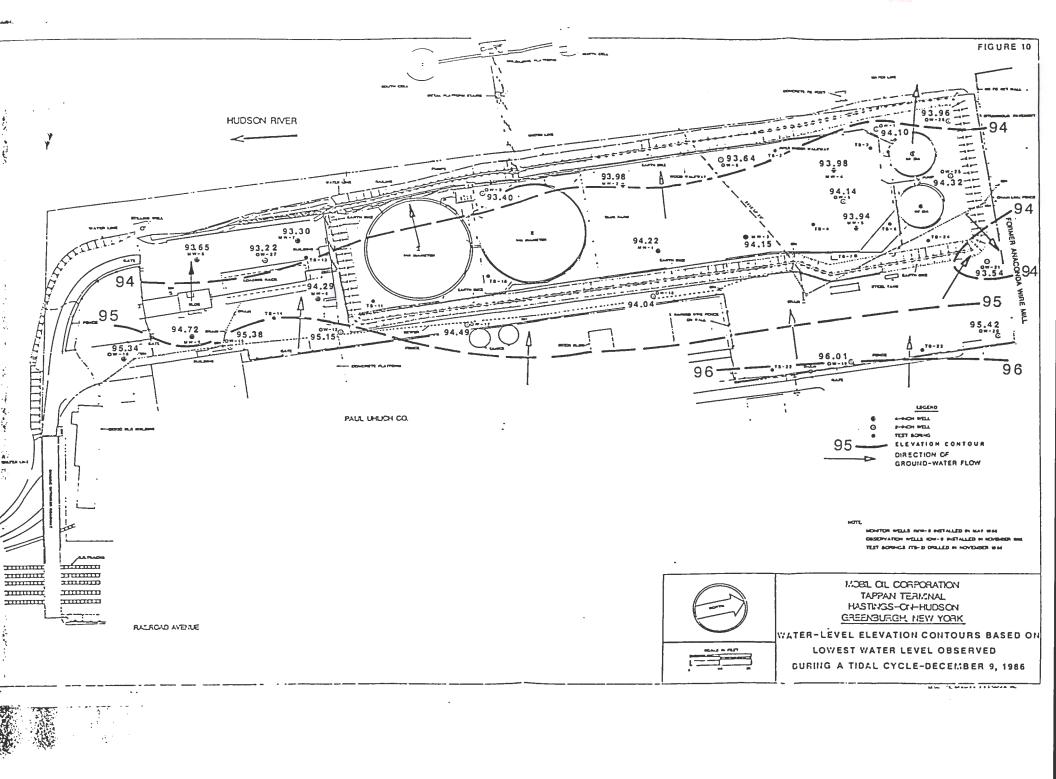
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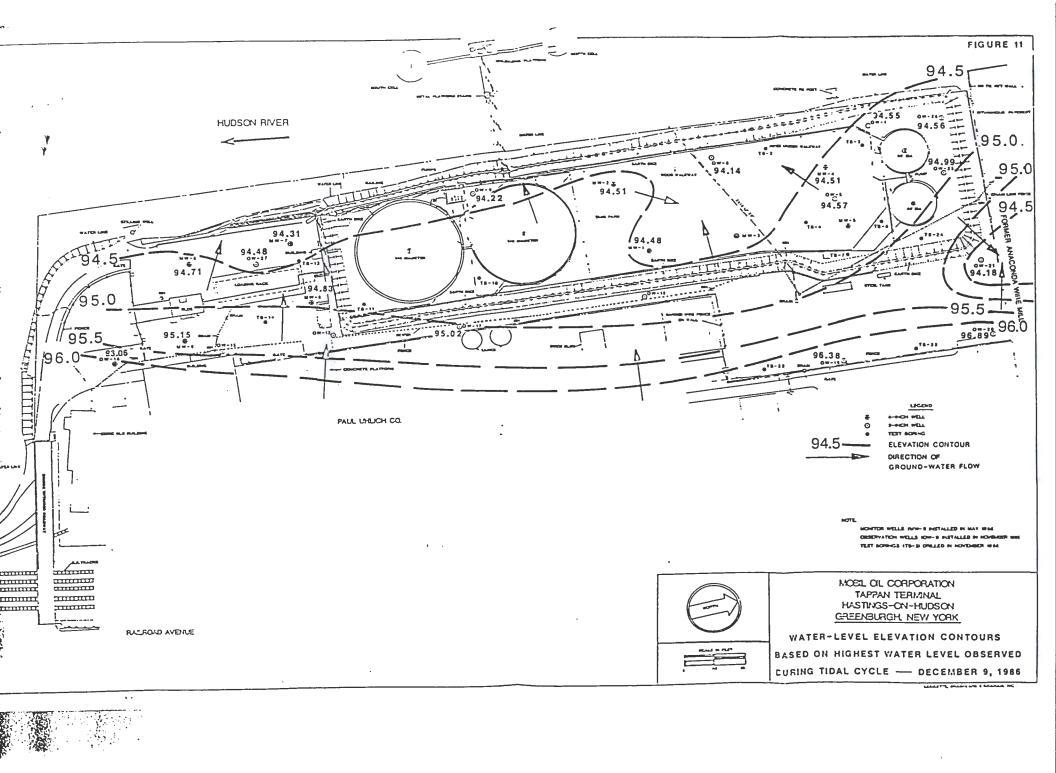


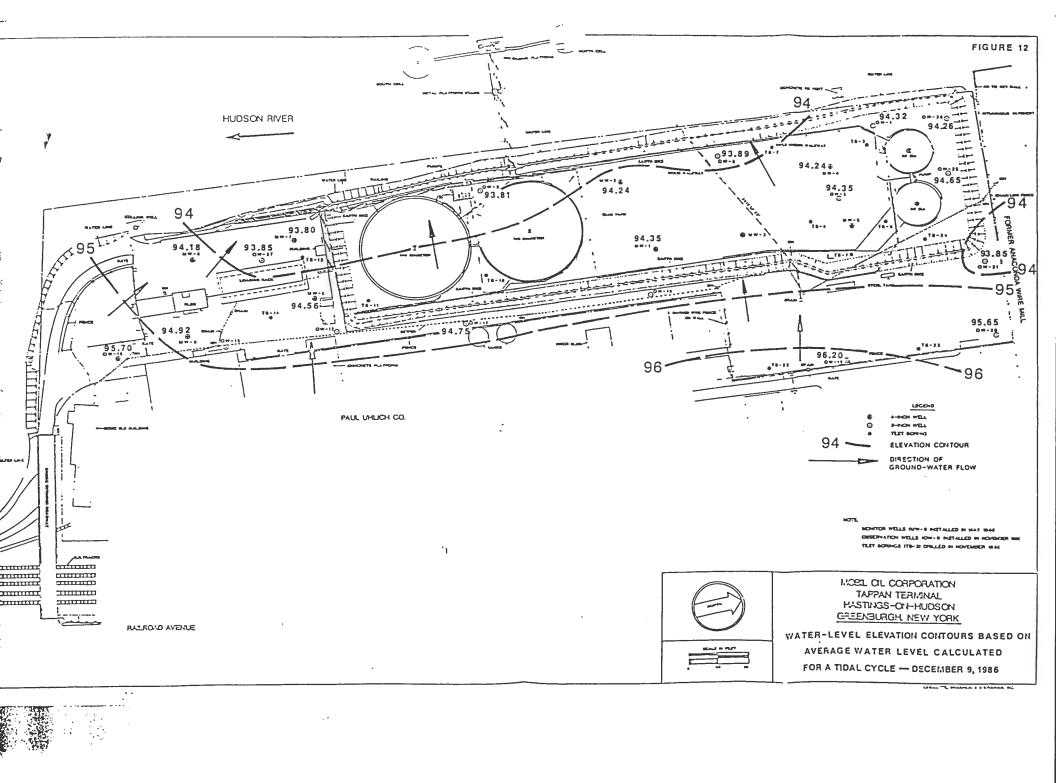
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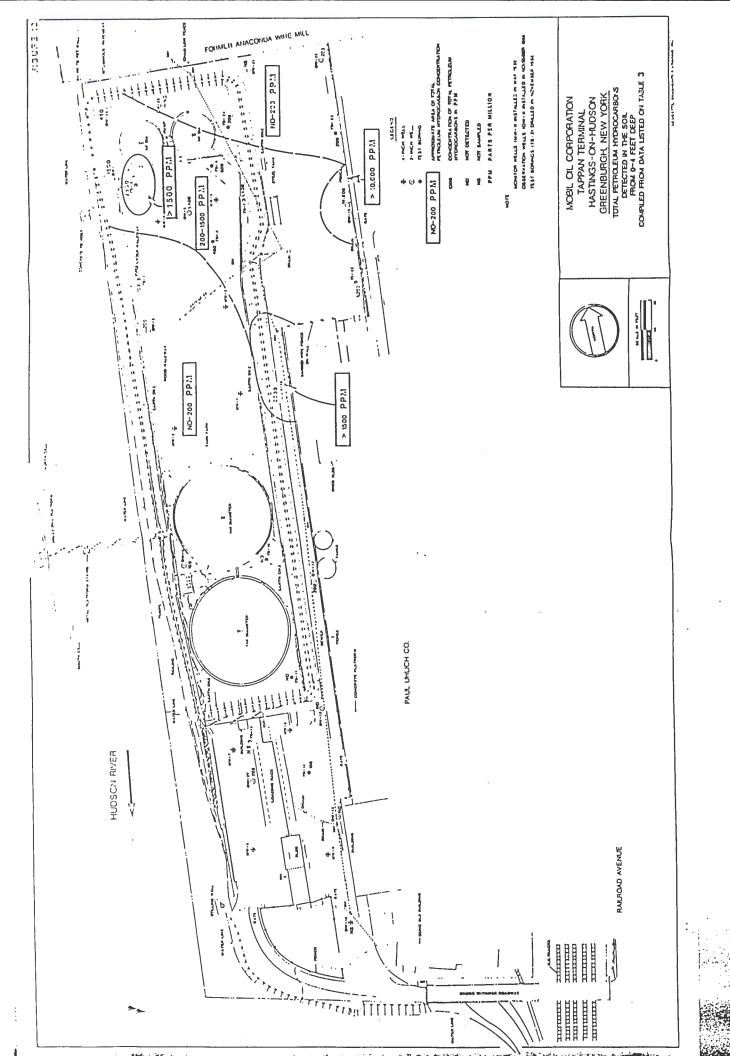


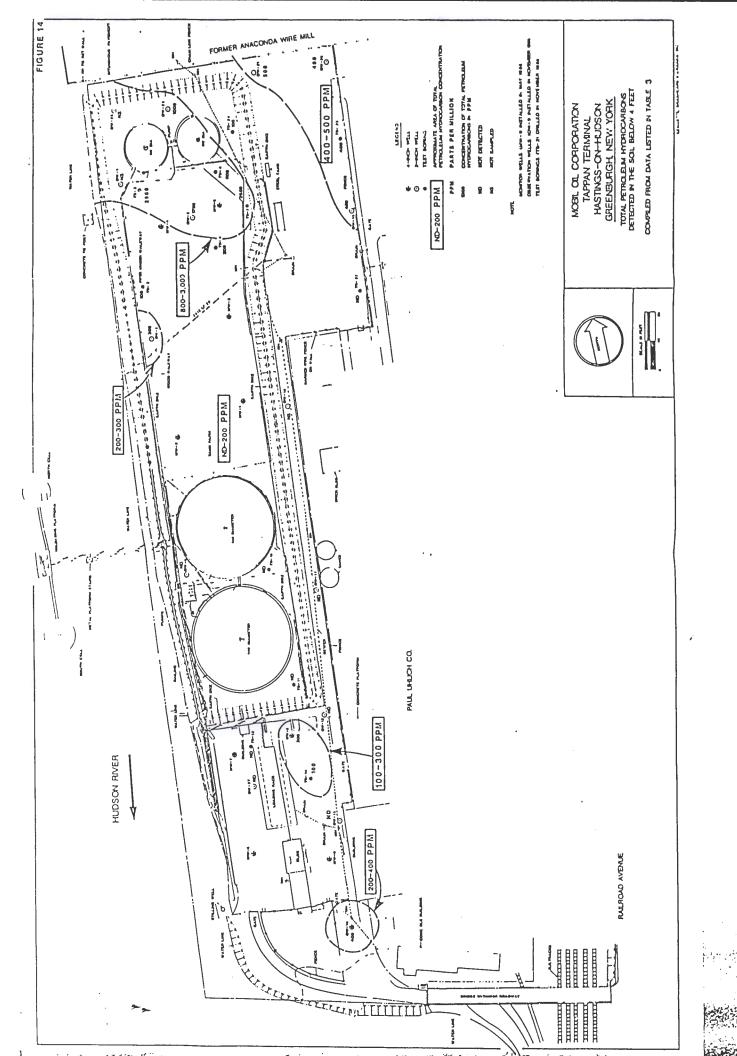


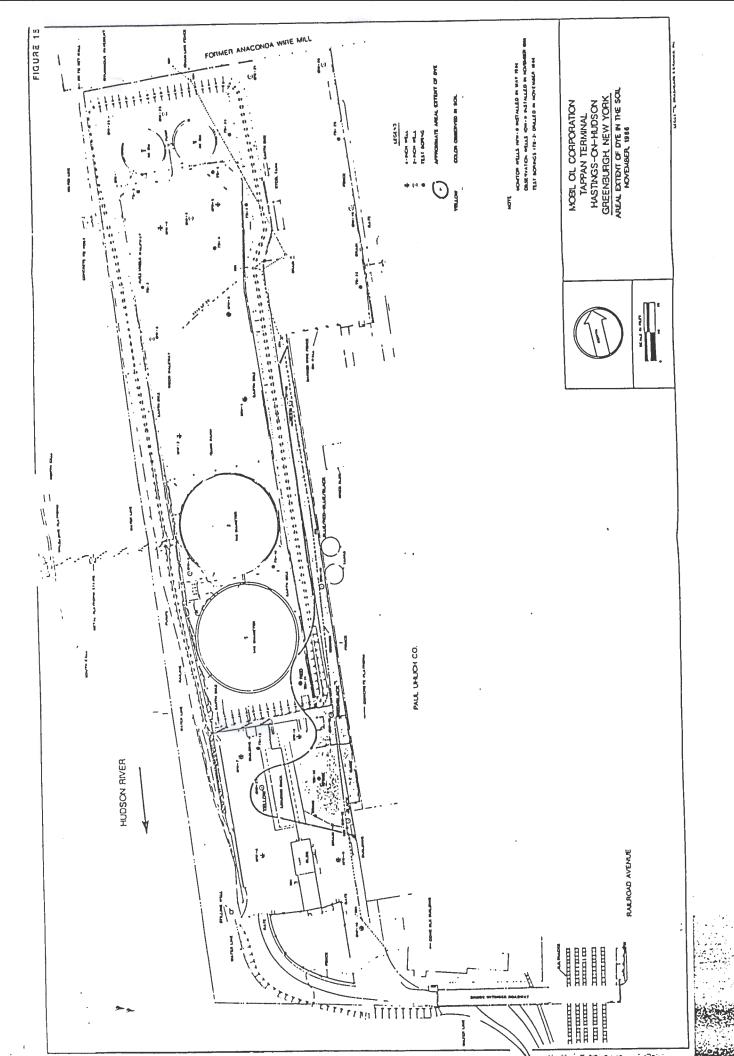


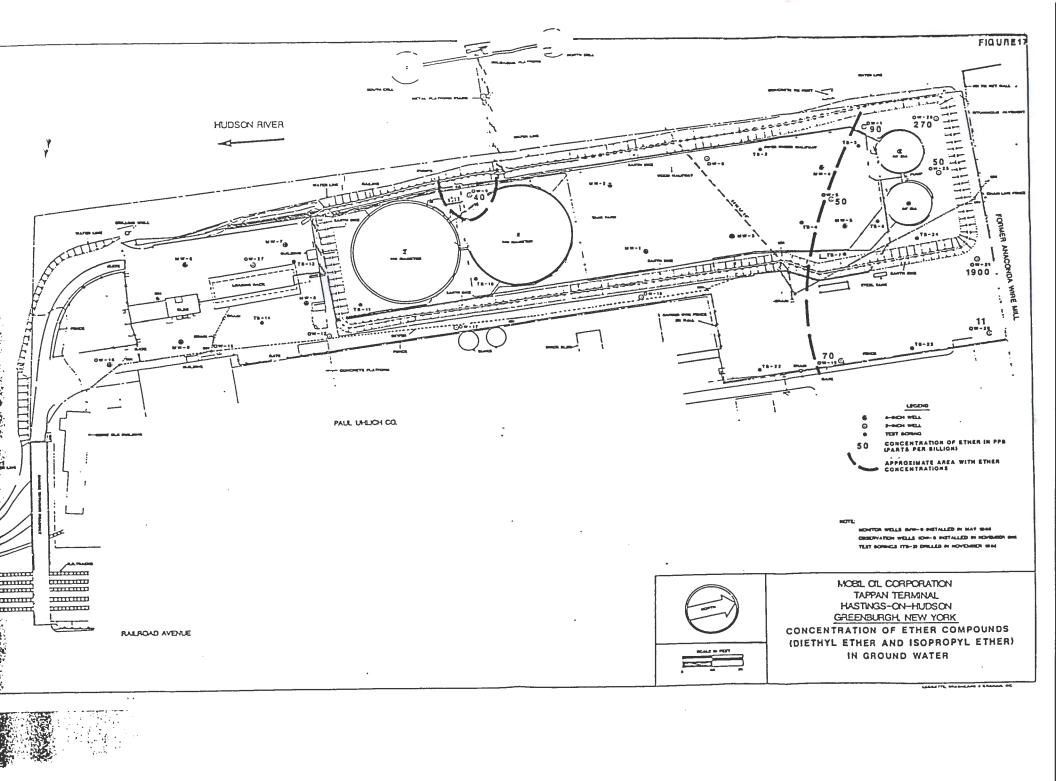


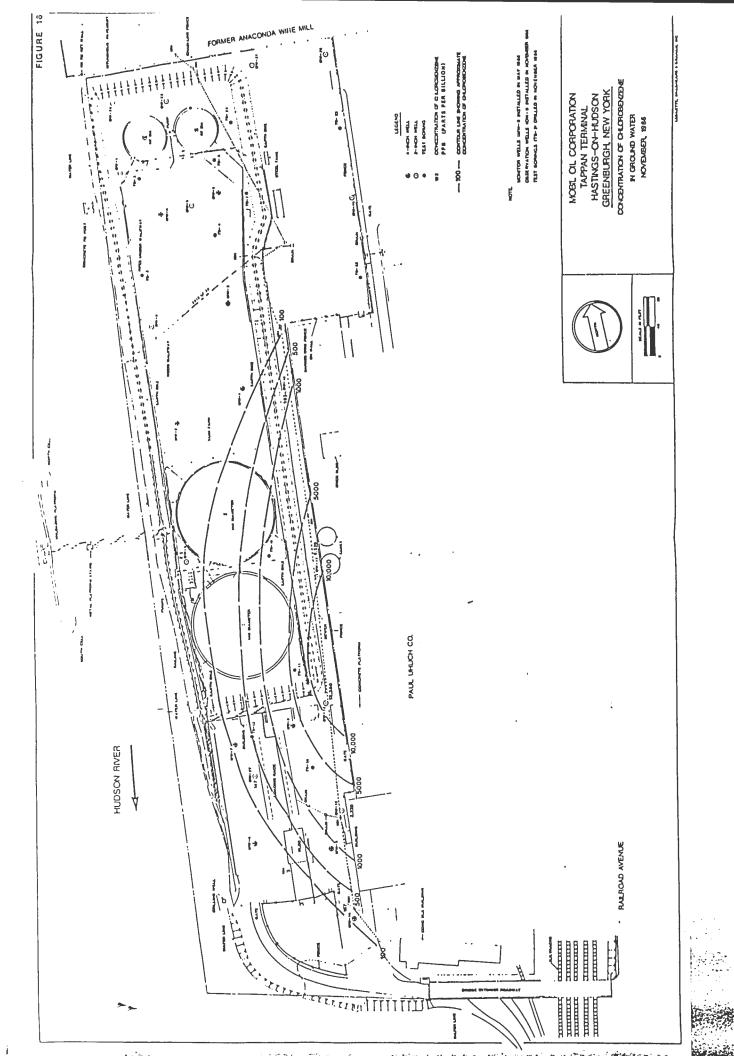












TABLES

TABLE 1

MOBIL OIL CORPORATION
 TAPPAN TERMINAL
 HASTINGS-ON-HUDSON
 GREENBURGH, NEW YORK

Summary of Test Borings and Monitor Well Construction

Test boring/ well no.	Elevation of well	Total depth drilled	Screen setting	Screen diameter
	$(TOC^{\frac{1}{2}})$	(ft)	(ft bg)	(inches)
MW-1	98.17	10	0.5 - 10	4
MW-2	98.38	10	0 - 10	4
MW-3	97.99	11	1 - 11	4
MW-4	97.95	11	1 - 11	4
MW-5	97.29	10	0 - 10	4
MW-6	99.26	11	0.55 - 10.55	4
MW-7	100.50	11	1 - 11	4
MW-8	99.59	11	1 - 11	4
MW-9	100.27	10	0 - 10	4
OW-1	97.57	12	1 - 12	2
TB-2	on on	12		
TB-3	<b></b> .	8		
TB-4		10	019 Ella	
OW-5	98.47	11	0.71 - 10.71	2
TB-6		12		
rB-7	GAS GAS	12		
8 – WC	98.19	12	1.46 - 12.46	2
OW−9	99.19	16	0.5 - 15	2
TB-10	es es	7		
TB-11		8		
017-12	101.55	12	1 - 15	2
TB-13		9	<del></del>	
TB-14		11		
DW-15	100.37	12	1.84 - 15.84	
DW-16 · ►	97.64	17	2 - 17	4

.

TABLE 1 (continued)

Summary of Test Borings and Monitor Well Construction

Test boring/ well no.	Elevation of well	Total depth	Screen setting	Screen diameter	
	$(TOC^{\frac{1}{2}})$	drilled (ft)	(ft bg)	(inches)	
OW-17	101.10	16	1.9 - 15.9	2	
OW-18	98.01	11	1 - 11	2	
OW-19	100.35	16	1 - 16	2	
OW-20	101.12	13	1.73 - 11.73	2	
OW-21	98.63	16	1 - 16	2	
TB-22	are on	12			
TB-23		6			
TB-24		13			
OW-25	97.60	12	1 - 11	2	
OW-26	97.09	12	1 - 11	2	
OW-27	100.04	16	1.95 - 15.95	2	

<sup>1/</sup> TOC = Top of PVC casing.

TABLE 2 MOBIL OIL CORPORATION TAPPAN TERMINAL HASTINGS-ON-HUDSON GREENBURGH, NEW YORK

Summary of Ground-Water Data 1/

		Decemb	per 2, 1986		Decemb	6			
Well	Elevation (TOC <sup>2/</sup> )	Depth to water	Water-level elevation	Depth to water (low)	Water-level elevation	Depth to water (high)	Water-level elevation	Amplitude	Average water-level elevation
NW-1	98.17	3.95	94.22	3.95	94.22	3.69	94.48	0.13	94.35
NW-2	98.38	4.06	94.32	4.40	93.98	3.87	94.51	0.27	94.24
NSW-3	97.99	3.87	94.12	3.84	94.15	3.87 NO-37			
MW-4	97.95	3.94	94.01	3.97	93.98	3.44	94.51	0.27	94.24
MX-5	97.29	3.13	94.16	3.35	93.94	Ю			
MH-6	99.26	5.18	94.08	5.61	93.65	4.55	94.71	0.53	94.18
MW-7	100.50	6.80	93.70	7.20	93.30	6.19	94.31	0.51	93.80
MW-8	99.59	5.94	93.65	5.30	94.29	4.76	94.83	0.27	94.56
MW-9	100.27	6.32	93.95	5.55	94.72	5.14	95.13	0.21	94.92
OW-1	97.57	3.44	94.13	3.47	94.10	3.02	94.55	0.23	94.32
OW-5	98.47	4.34	94.13	4.33	94.14	3.90	94.57	0.22	94.35
8-W0	98.19	4.28	93.91	4.55	93.64	4.05	94.14	0.25	93.89
OW-9	99.19	5.32	93.87	5.79	93.40	4.97	94.22	0.41	93.81
CW-12	101.55	7.49	94.06	6.40	95.15	NO			
0W-15	100.37	6.23	94.14	4.99	95.38	NO			
OW-16	97.64	3.64	94.00	2.30	95.34	1.58	96.06	0.36	95.70
OW-17	101.10 -	-6.97	94.13	6.61	94.49	6.08	95.02	0.27	94.75
OW-18	98.01	4.00	94.01	NO		NO			•
OW-19	100.35	4.47	95.88	4.34	96.01	3.97	96.38	0.18	96.20
OW-20	101.12	5.54	95.58	5.70	95.42	5.23	95.89	0.24	95.65
OW-21	98.63	4.42	94.21	5.09	93.54	4.45	94.18	0.32	93.86
OW-25	97.60	3.39	94.21	3.28	94.32	2.61	94.99	0.34	94.65
OW-26	97.09	2.81	94.28	3.13	93.96	2.53	94.56	0.30	94.26
OW-27	100.04	5.88	94.16	6.82	93.22	5.56	94.48	0.63	93.85

 $<sup>\</sup>frac{1}{2}$ / All measurements in feet.  $\frac{2}{1}$ / TOC = Top of PVC casing. Assumed local datum 100 feet.  $\frac{3}{1}$ / NO = Not observed.

TABLE 3

MOBIL OIL CORPORATION

TAPPAN TERMINAL

HASTINGS-ON-HUDSON

GREENBURGH, NEW YORK

Total Petroleum Hydrocarbons in Soil Samples (EPA Method 418.1)

Test boring or well no.	Date sampled	Depth in feet below grade (feet)	Total Pe hydrod ppm	etroleum carbons weight	Technical Services Laboratories No.
	11/13/86	0 - 2	1,200	0.12	651489
04-1	11/13/86	2 - 4	1,700	0.17	651490
TB-2	11/07/86	2 - 4	100	0.01	650941
18-2	11/07/86	10 - 12	100	0.01	650942
TB-3	11/10/86	2 - 4	2,500	0.25	651500
19-3	11/10/86	6 - 8	2,900	0.29	651501
TB-4	11/07/86	2 - 4	400	0.04	650943
15-4	11/07/86	10 - 12	200	0.02	650945
OV. E	11/17/86	0 - 2	ND	ND	651506
OW-5	11/17/86	2 - 4	1,400	0.14	651507
	11/17/86	10 - 12	1,700	0.17	651508
	11/10/86	2 - 4	800	0.08	651502
TB-6	11/10/86	10 - 12	800	0.08	651503
	11/12/86	2 - 4	1,400	0.14	651495
TB-7	11/12/86	10 - 12	2,600	0.26	651518
OW-8	11/13/86	2 - 4	200	0.02	651491
04-0	11/13/86	10 - 12	300	0.03	651492
OW-9	11/04/86	2 - 4	100	0.01	650956
04-3	11/04/86	5 - 7	ND	ND	650957
TB-10	11/04/86	2 - 4	ND	ND	650947
12 10	11/04/86	5 – 7	ND	ND	650948
TB-11	11/04/86	2 - 4	ND	17D	650944
12-11	11/04/86	6 - 8	ND	ND	650949
or: 12	11/06/86	2 - 4	ND	ND	650958
OW-12	11/06/86	10 - 12	ND	ND	650959

## TABLE 3 (continued)

#### MOBIL OIL CORPORATION TAPPAN TERMINAL HASTINGS-ON-HUDSON GREENBURGH, NEW YORK

## Total Petroleum Hydrocarbons in Soil Samples (EPA Method 418.1)

Test boring or well no.	Date sampled	Depth in feet below grade (feet)		etroleum carbons weight	Technical Services Laboratories No
nn 13	11/05/86	5 - 7	ND	ND	650950
TB-13	11/05/86	7 – 9	ND	ND	650952
TB-14	11/04/86	2 - 4	100	0.01	650953
	11/05/86	4 - 6	100	0.01	650954
	11/05/86	9 - 11	100	0.01	650955
OW-15	11/16/86	2 - 4	· • 17D	ND	650946
OW-15	11/06/86	10 - 12	MD	ND	650960
OW-16	11/07/86	4 - 6	ND	ND	650961
	11/07/86	10 - 12	400	0.04	650962
OW-17	11/07/86	2 - 4	200	0.02	650963
J. 17	11/07/86	10 - 12	ND	ND	650964
 OW-18	11/14/86	0 - 2	1,100	0.11	651487
311 23	11/14/86	2 - 4	3,000	0.30	651488
0₩-19	11/12/86	0 - 2	14,600	1.46	651504
	11/12/86	10 - 12	400	0.04	651505
0₩-20	11/11/86	2 - 4	200	0.02	651509
	11/11/86	6 - 8	700	0.07	651510
	11/11/86	10 - 12	ND	ИD	651511
OW-21	11/10/86	4 - 6	200	0.02	650498
	11/10/86	11 - 13	700	0.07	650499
T5-22	11/12/86	2 - 4	1,200	0.12	651493
	11/12/86	10 - 12	ND	ND	651494
TB-23	11/12/86	2 - 4	200 .	0.02	651497
•	11/12/86	4 - 6	400	0.04	651496

TABLE 3 (continued)

## Total Petroleum Hydrocarbons in Soil Samples (EPA Method 418.1)

Test boring or well no.	Date sampled	Depth in feet below grade (feet)		etroleum carbons weight %	Technical Services Laboratories No.
TE-24	11/10/86	2 - 4	200	0.02	651512
	11/10/86	11 - 13	100	0.01	651513
OW-25	11/14/86	2 - 4	ND	ND	650483
	11/14/86	10 - 12	1,000	0.10	650484
ON-26	11/13/86	C - 2	400	0.04	650485
	11/13/86	2 - 4	· · 500	0.05	650486
OW-27	11/05/86	2 - 4	200.	0.02	650965
	11/05/86	9 - 11	ND	ND	650966

ppm = parts per million.

ND = not detected; minimum detection limit = 0.01 weight % (100 mg/kg).

Y

# MOBIL OIL CORPORATION TAPPAN TERMINAL HASTINGS-ON-HUDSON GREEHBURGH, NEW YORK

Semivolatile— Analysis of Soil Samples
(EPA Method 8270)

			Sa	mple Designatio	on	
		TB-4	OW-16	OW-17	OW-18	OW-19
rechnical Services Laboratories N	lo.:	650943	650962	650963	651488	651504
Date sampled:		11/07/86	11/07/ช6	11/07/86	11/14/06	44.44
2 /		10, 11, 00	11/1//00	11/0//80	11/14/86	11/12/86
Sample depth <sup>2</sup> /:		2-4 feet	10-12 feet	2-4 feet	2-4 feet	0-2 feet
Compound	MDL (ppm)	Amount (ppm)	Amount (ppm)	Amount (ppm)	Amount (ppm)	Amount (ppm)
Base/Neutrals						
ı-Nitrosodimethylamine	6	ND	ND-3/	ND	ИП	ND
is(2-chloroethyl)ether	12	ND	ND	ND	ND	ND
n-Dichlorobenzene	6	ND	ND	ND	HD	110
-Dichlorobenzene	6	ND	ND	ND	ND	ND
-Dichlorobenzene	6	ИD	ND	ND	ND	80
is(2-chloroisopropyl)ether	12	ND	ND	ND	ND	ND
lexachloroethane	. 6	ND	UN	ND	ND	ND
-Nitrosodi-n-propylamine	6	ИD.	ND	ND	но	ND
litrobenzene	6	ND	ND	ND	ND	ND
sophorone	6	ИD	หก	ND	ND	ND
is(2-chloroethoxy)methane	6	ND	ND	ND	HD	ND

TABLE 4 (continued)

Y	1		Sa	mple Designatio	on	
		7:13 – 4	OW-16	OW-17	OVI-18	OW-1*)
echnical Services Laboratories No.:		650943	650962	650963	651488	651504
ate sampled:		11/07/86	11/07/86	11/07/86	11/14/86	11/12/86
ample depth—':		2-4 feet	10-12 feet .	2-4 feet	2-4 feet	0-2 feet
Compound	(ppm)	Amount (ppm)	Amount (ppm)	Amount (ppm)	Amount (բրա)	Amount (ppm)
ase/Neutrals (continued)						
,2,4-Trichlorobenzene	6	ИД	ND	ND	нр	ND
aphthalene	6	ND	ND	ND	ии	ND
exachlorobutadiene	6	ND	ОИ	ND	ND	ND
imethyl phthalate	30	ND	ИD	ND	ND	ОИ
,6-Dinitrotoluene	30	11D	ND	ND	UII	ND
exachlorocyclopentadiene	12	ND	ИО	ИD	ИД	ND
-Chloronaphthalene	6	ND	ND	ND	ИD	ND
cenaphthylene	12	ND	ND	ND	MD	, ND
cenaphthene	6	ND	ИD	ND	HD	ND
i-n-octyl phthalate	30	ND	ND	ND	111)	ND
enzo(b) fluoranthene	30	ND	ND	ND	(11)	MD
enzo(k) fluoranthene	60	ND	ПU	ND	HD	ИD
ndeno(1,2,3,cd)pyrene	. 60	11D	ND	ND	ND	ИD
ibenz(a,h)anthracene	60	ND	ND	ND	111)	ИО
enzo(ghi)perylene	30	ทอ	ND	ND	ND	ND
-4-Dinitrotoluene luorene	12 6	ND ND	ND ND	ND ND	DI Olf	ИD
	· ·	1112	1463	ND	1417	MD

TABLE 4 (continued)

*	1	Sample Designation						
		TB-4	OW-16	OW-17	OW-18	OW-19		
echnical Services Laboratories	No.:	650943	650962	650963	651488	651504		
ate sampled:		11/07/86	11/07/86	11/07/86	11/14/86	11/12/86		
ample depth <sup>2/</sup> :		2-4 feet	10-12 feet	2-4 feet	2-4 feet	0-2 feet		
Compound	MDL (ppm)	Amount (ppm)	Amount (ppm)	Amount (ppm)	Amount (ppm)	Amount (ppm)		
ase/Neutrals (continued)		÷		•				
,2,4-Trichlorobenzene	6	ND	ND	ND	ND	ND		
aphthalene	6	ND	ND	ND	ND	ND		
exachlorobutadiene	6	ND	ND	ND	ND	ND		
imethyl phthalate	30	ND	ND ·	ND	ND	ND		
,6-Dinitrotoluene	30	ND	ND	ND	ND	ND		
exachlorocyclopentadiene	12	ND	ND	ND	ND	ND		
-Chloronaphthalene	6	ND	ND	ND	ND	ND		
cenaphthylene	12	ND	ND	ND	ND	ND		
cenaphthene	6	ND	ND	ND	ND	ND		
i-n-octyl phthalate	30 30	ND ND	ND ND	ND ND	ND	ND		
enzo(b) fluoranthene	60				ND	ND		
enzo(k) fluoranthene	. 60	ND	ND ND	ИD	ND	ND		
ndeno(1,2,3,cd)pyrene	60	ND ND	ИD	ND ND	ND ND	ND ND		
ibenz(a,h)anthracene enzo(ghi)perylene	30	ИD	ND	ИD	ND	ИD		
l-4-Dinitrotoluene	12	ND	ND	ND	ND	ND ND		
luorene	6	ND	ND	ND	ND	ND		
Idolono	9	110	110	110	110	ND		

TABLE 4 (continued)

Ý	ı	Sample Designation						
		TB-4	OW-16	OW-17	OW-18	0W-19		
cchnical Services Laboratories No	· :	650943	650962	650963	651488	651504		
ate sampled:		11/07/86	11/07/86	11/07/86	11/14/86	11/12/86		
ample depth <sup>2/</sup> :		2-4 feet	10-12 Feet.	2-4 feet	2-4 teet	0-2 feet		
Compound	(ppm)	Amount (ppm)	Amount (ppm)	Amount (ppm)	Amount (ppm)	Amount (ppm)		
cid Extractables		•						
-Chlorophenol	10	ND	ND	ND	14D	ND		
henol	10	ИD	ND	ND	all	ND		
-Nitrophenol	10	ND	ND	ND	HD	ND		
,4-Dimethyl phenol	10	ИD	ND	ND	ND	ND		
,4-Dichlorophenol	10	11D	ND	ND	MD	ND		
-Chloro-3-methyl phenol	10	ND	ND	ND	dи	ND		
,4,6-Trichlorophenol	10	ИD	ND	иD	ИD	ND		
,4-Dinitrophenol	200	ND	ND	ND	ND	, ND		
-Nitrophenol	100 50	ND	ND	ND	ND	ИD		
,6-Dinitro-2-methyl phenol entachlorophenol	50	11D	14D	ND ND	HD HD	ИD ИD		

<sup>/</sup> Includes priority pollutants: base/neutrals and acid extractables.

<sup>/</sup> Depth in feet below grade.

<sup>/</sup> This sample was diluted; MDL is twice listed value.

opm = parts per million.

TABLE 5

Dye Analysis of Soil Extracts

echnical Services aboratories Number:	650959	ļ	650963		650966		651488	
		1						
Acte Received:	11/10/86		11/10/80		11/10/86		11/14/86	
Description from Label:	OW-12, 10	0-12 feet	OW-17, 1	l-4 feet	OW-27, 9-	11 feet	OW-18, 2-4	feet
Sppearance:	Red-stain	ned soil	Blue-sta	ined soil	Yellow-st	ained soil	Soil with no obvious	wood pieces color
Analytical Data	weight %	ppm	weight %	ելու	weight %	ppm ;	weight	ppm
bexane woluble	0.3	3,000	ι, γ	47,000	0.2	2,000	1.4	14,000
cetone soluble	1.1	11,000	1.8	18,000	0.9	9,000	0.8	8,000
ethanol soluble	2.1	21,000	4.()	40,000				
approximate Dye Content (estimated)	3.5	35,000	10.5	150,000	1.1	11,000	2.2	22,000
Insoluble	68.2	682,000	36.4	364,000	61.4	614,000	52.8	528,000
ພss from Evaporation	28.3	283,000	53.1	531,000	37.5	375,000	45.0	450,000
Color of Extracts (Acetone/Nethanol)	Red		Blue Trace Ro	2d	Yellow		Green	
dentification by IR Analysis		to Rhodamine Corporation		Blue milar to nic Acid	Insuffic identifi	ient dye for cation	•	Green OZ. Aniline Products, Inc.
Reference Spectra	Sadtler	Ref X2320K	X 395	Ref. (Red)	N/A		Sadtler N	def. X445K

ppm = parts per million.

TABLE 6

MOBIL OIL CORPORATION
TAPPAN TERMINAL
HASTINGS-ON-HUDSON
GREENBURGH, NEW YORK

Summary of Ground-Water Parameters
Measured During the Water Sampling Program

Well no.	Date of measurment	Temperature C°	Нд	Electric conductivity (umhos/cm)	Water description
OW-1	11/19/86	10	7.0	35	silty - gray
CW-5	11/19/86	Not taken			strong odor - sheen
O₩-9	11/18/86	15.5	6.6	210	silty - gray
OW-12	11/18/86	19	5.8	73	silty - gray - sulphur odor
OW-15	11/18/86	18	6.5	60	silty black $\frac{1}{}$
OW-16	11/18/86	19.5	6.3 <sup>.</sup>	50	silty film - sulphur odor
OW-17	11/18/86	17	6.4	120	<pre>silty black - sulphur   odor</pre>
OW-18	11/19/86	Not taken			<pre>product present - black     thick</pre>
07-19	11/19/86	12	7.1	60	silty - gray
OW-20	11/19/86	13	6.9	65	silty - gray
OW-21	11/19/86	12	7.1	70	silty - gray
<b>DW-2</b> 5	11/19/86	8.5	6.8	70	silty - black
OW-26	11/19/86	9	7.0	40	silty - gray
D₩-27	11/18/86	12	6.7	150	silty - gray - sulphur odor
4W-8	11/19/86	11	6.7	30	silty - slight hydro- carbon odor
M-5	11/19/86	11	6.5	98	sheen - odor hydrocarbo
Hudson River	11/19/86	10	6.7	90	cloudy - green

<sup>1/</sup> On November 17, 1986 a spill from P. Uhlich Company came through fence and surrounded base of OW-15. Substance was black with viscosity of syrup, believed to be by-product of dye process.

#### Priority Pollutant Volatiles in Ground Vater (EPA Method 424)

									Sample	Designat	ion							
Compound	MDL	Liver	0%-1	0~-5	121-5	552-8	CH-9	CW-121/	0W-151/	CW-16	02-17-1/	04-18-1/	0::-19	CW-20	02-21	02-25	ON-26	C¥-27
	(ppb)	water																
Technical Services Laboratorie	s Number:	651721	651722	651723	651719	651724	651725	651726	651727	651728	651729	651730	651733	651734	651735	651736	651737	651738
Date sampled:		11.19/85	11/19/66	11/19/86	11/19/56	11/19/86	11/15/56	11/18/36	11/18/86	11/18/86	11/18/66	11/19/86	11/19/86	11/19/56	11/19/86	11/19/86	11/19/86	11/18/8
Acrolein	*	:5	;.D	::	::	:70	::0	מנו	::	150	150	1:D	3:30	:5	:D	ND.	!D	:70
Acrylonitrile		::	:.0	::0	::0	::0	:70	NO.	1D	ND	120	I.D	CZ4	:5	:0	:0	1:10	:.D
Seazene	4.4	:⊃	t-D	::5	::>	1.70	:70	130	:50	130	120	130	ΙĐ	:70	:5	Q7.	I.D	G:
Eis(chlorcmethyl)ether		:.70	I:D	::3	1.70	Œ:	:.D	TD	::D	:5	KD.	:00	:D	:5	:0	I/D	ND GA	 G:
ãro⊏ofora	4.7	: 3	:TD	:.TD	::D	1-10	\$TD	ND OW	::D	:50	2:70	140	:D	:5	:50	ďλ	1.TD	:70
Carbon tetrachloride	2.6	:0	:70	::⊃	:5	::5	:70	1:D	::D	120	:50	λD	::0	:5	:5	IID.	I-D	:.0
Chlcrobenzene	6.0	:0	:70	::⊃	::0	162	8.5	12,380	2,220	157	9.520	907	:5	:5		Cr.	ເລ	147
Chlorodibromemethane	3.1	::	:TD	::⊃	::0	:.D	:D	130	:50	::D	1/D	17D	:.0	35	15	ND UN	1.70	:50
Chloroethane	u	::0	i.D	(T)	:10	::D	(JD	:30	1.70	ďΑ	170	ND	1.0	:5	12	ND.	ND.	:D
2-Chloroethylvinyl ether	u	::	T-D	G.1	t:D	t:D	110	12D	I.D	1:D	ND CA	(ZA	ND.	::D	1:10	ND.	ND	:D
Chlorofora	1.6	:70	T:D	Œ1	t-TD	::D	<b>G</b> .1	Œ	1:10	ďΛ	Ø	ND	120	:.D	120	ND	ND ND	ND GN
Dichlorobromomethane	2.2	:5	CZ2	1:0	:.D	::D	:.70	in .	1:0	:OD	5D	Œ	::0	:5	3.72	ND	ND DA	::D
Dichlorodifluoromethane	*	:0	MD	CA.	Œ	t-D	:D	ETD.	1:0	מא	1:D	ďΛ	ďλ	:S	1:0	120	ND OT	:D
1,1-Dichloroethane	4.7	:5	ND	ďλ	Œ1	t-TD	Q:1	រជា	:.0	ďΑ	::D	T-D	I:D	:.D	::0	Q/A	ND	:0
1,2-Dichloroethane	2.8	:5	7/D	t-D	t/D	taD CEst	T.D	FD	:.D	מא	KD.	ND	1:0	:5	NE	ND.	ATD.	::D
1,1-Dichloroethylene	2.8	::5	Cr.t	Œ:	t-TD	1:0	:30	ΙΦ	Œ1	i:D	1.D	ND.	I-D	155	:0	t-D	ND	370
1,2-Dichloropropane	6.0	:5	7.D	1:D	t/D	t-D	:.D	. 120	:.0	ND.	1.D	ND	ŒI	Q74	Q's	170	NTD.	170
1,2-Dichloropropylene	*	:3	1.70	::>	:30	:D	::0	. 1D	:5	ιĐ	ND	. KD	KD	:5	::0	ΔD.	1D	ND.
Ethylbenzene	7.2	::>	ដោ	i D	::0	:70	1.0	120	1:D	Ci.	ďΛ	ND	T.D	7.2	1:0	KD.	ND	ND.
Methyl brozide	u	::>	i.D	:5	1:10	:5	Œ	ΙĐ	130	tΦ	1:D	KD	ΙÐ	ΙĐ	::D	140	ND	ia)
Methyl chloride	u	્∷⊃	סהו	50	រភា	1.70	ND	Œ	ΙĐ	ET.	KD	ŒΑ	ďΛ	ďΛ	I:D	ND	Φ.	I/D
Hethylene chloride	5.0	.::0	1.70	::2	L:D	::0	1.30	ដា	:50	t-D	KD	Ø.	I.D	t:D	I-D	ND	110	130
1,1,2,2-Tetrachloroethane	6.9	::0	CT.1	ED.	じ	Ci.	:D	KD CA	1:10	I:D	ND	ND.	i D	100	1.5	ND	ND.	120
Tetrachloroethylene	4.1	:0	ΝD	123	120	ED.	LTD.	120	ΙD	tΦ	KD	130	ND.	ເລ	15	ND	Œ4	ND GN
Toluene	6.0	:0	t-D	i 🗅	1.D	MD.	CT.1	ID	:.0	ND.	Œ	Œ	1:0	E	13	ND	ND.	ND DA
l,2-Dichloroethylene(trans)	1.6	:TD	ND:	ďλ	ND	CA CA	120	ND.	C7.I	ND	Œ	Œ	KD.	1.70	1-D	ND	ND.	1.0
l,1,1-Trichloroethane	3.8	12D	CA CA	KD.	KD	1-10	140	KD.	I/D	ND	ND CA	ND	I:D	(ZA	CTA	ND.	ND	ND
1,1,2-Trichloroethane	5.0	ΝD	MD	KD.	ND	ND	ND CN	100	MD	ďΛ	ND	ND	ND.	KD	Œ4	ND	ND.	CA.
Irichloroethylene	1.9	ďλ	KD.	KD	ND.	ND	ND	ND.	ND	KD	ďΑ	KD	KD	ND	ND	ND.	ND	ND
Trichlorofluoromethane	u	t:D	1:10	Ci)	t 3D	LD.	D.I	MD	120	ďΛ	ND	ND	C4	ND	G/A	CA.	C7A	EQ.
Vinyl chloride	u	:50	DT.	ເລ	130	t/D	1:0	120	ŒΑ	ND	1:0	ND.	ďΑ	ND	13	ND.	NTD.	:D

<sup>1/</sup> Due to high levels of chlorobenzere these samples were diluted for analysis. Consequently the MDL for these sample runs is increased as follows: GM-12 and GM-15, 100 times. GM-17, 50 times. GM-18, 10 times.

MDL - Minimum detection limit.

cpb = parts per billion.
:- = not detected.

This compound not recoverable by Method 614.

TABLE 8

MOBIL OIL CORPORATION
TAPPAN TERMINAL
HASTINGS-ON-HUDSON
GREENBURGH, NEW YORK

Ground-Water Analysis
For Ether Compounds

			Wells	Containing	Ether Com	pounds, pp	ь	
Compound	OW-1	OW-5	OW-9	OW-19	OW-20	OW-21	ow-25	OW-26
Diethyl ether	50	20	40	50	4	1,600	40	160
Isopropyl ether	40	30	ND	20	7	300	10	110

ppb = parts per billion.

#### Priority Pollutant Metals in Ground Water

Well Number:		River Surface	HW-5	OV-1	OH-5	HW-8	OW-9	OV-12	OW-15	Ø¥-16	O~-17	OW-18	OW-19	OW-20	Ø¥-21	OW-25	OW-26	Ø¥-27	
Technical Services Laboratories Number:		651721	651719	651722	651723	651724	651725	651726	651727	651728	651729	651730	651733	651734	651735	651736	651737	651738	
Samples analyzed on December 5, 1986														t. 4					
Analytical Data, ppm	Detection Limit, ppm																		EPA Hethod No.
Antimony	1.0	ND ND1/	Ю	Ю,,	ND	Ю	ИD	MD	ND GA	ND .	ND	ND CM	ND	ЖD	ND	ND	ND.	8T)	204.1
Arsenic	0.005	ND-1	ND	ND 1/	ND	ND	ND	ND	IO	ND 1/	ND	ND.	0.006	ND	ND	ND.	ND ND-1/	ND ND-/	206.2
Beryllium	0.05	MD	MD	MD	MD	ND	ND	ND -	ND	KD	ND	ND	MD	IQ)	ND	ND	ND	KD	210.1
Cednium	0.05	ND	ND	ND	ND	Ю	ND	Ю.	ND	Ю	ND	ND	ND	ND	ND	ND	ND	ND	213.1
Chromium	0.05	ND	ND	ND	ND	Ю	ND	ND	KD	ND	ND	ND	Ю	KD	ND	Ю	IO	KD	218.1
Copper	0.05	ND OM	ND	ND	Ю	Ю	ND.	Ю	ND.	ND	ND	Ю	KD	ND.	Ю	Ю	Ю	KD	220.1
Lead	0.05	ND OM	Ю	MD	ND	100	ND	Ю	ND.	MD	KD	ND	KD	I/D	ND	Ю	Ю	ND.	239.1
tercury	0.002	ND ON	ND	Ю	ND	Ю	ND	ND	Ю	Ю	ND	MD	Ю	IØ.	ND.	ND	ND	ND CA	245.1
(ickel	0.05	MD_1/	MD	ND_1/	ND	ND	ND	ND	KD	ND,	ND	MD	Ю	ND.	ND	Ю	Ю	ND	249.1
Selenium	0.005	MD <sup>2</sup> ′	ND	KD <sub>T</sub>	Ю	100	Ю	ND	ND	ND 1/	MD	MD	100	Ю	MD	ND	Ю	ND	270.2
Silver	0.05	ND	MD	ND	Ю	Ю	ND	ND	100	ND	ND	MD	MD	Ю	RD	I/D	Ю	ND	272.1
Challium	0.05	ND	ND	ND	ND	ND	ND	Ю	KD	KD	ND	MD	ND	ND	ND.	ND	Ю	KD	279.1
inc	0.05	КD	1.58	0.43	ND	0.14	0.22	2.07	0.94	0.06	0.06	ND	0.07	ND	Ю	0.05	ND	0.09	289.1

 $\underline{1}/$  Detection limit for these samples was 0.15 ppm, due to salt water matrix interferences.

ppm = parts per million.

TABLE 10

### Priority Pollutant Semivolatiles in Ground Water (EPA Method 625)

									Sample	Designat	ion							
Compound	HDL	OW-1	HV-5	CW-5	MV-8	OU-9	OW-12	CW-15	OW-16	OV-17	OW-18	0₩-19	C%-20	CW-21	OV-25	C¥-26	OV-27	River
• • •	(ppb)																	
Environmental Testing &																		
Certification Number:		P5825	P5832	P5824	P5823	P5822	P5819	P5818	P5817	P5821	P5816	P5830	P5829	P5828	P5827	P5826	P5820	P5821
Date sampled:		11/19/86	11/19/86	11/19/86	11/19/86	11/18/86	11/18/86	11/18/86	11/18/86	11/18/86	11/19/86	11/19/86	11/19/86	11/19/86	11/19/86	11/19/86	11/18/86	11/19/8
Base/Neutral		-																
Acenaphthene	1.9	MD	BADL	28.8	ND	ND	ND	ND	ND	KD	ND	Ю	MD	ND	ND	.YD	ND	ND
Acenaphthylene	3.5	MD.	KD	ND	ИD	KD	MD	ND	ND	ND	ND	ND	<b>SD</b>	ND	Ю	MD.	ND	Ю
Anthracene	1.9	KD	ND	31.4	ИD	ИD	ND	ND	ND	ND	ND	BHDL	<b>:</b> 00:	КD	MD	28.5	ND	ND
Benzidine	44	100	ND	KD	ND	ND	ND	ND	ND	ND	Ю	ND	MD	ND	ND	MD.	ИD	Ю
Benzo(a)anthracene	7.9	ND	ND	KD	ND	ND	KD	ND	ND	ND	Ю	MD	ND	Ю	ND	3/10	ND	ND
Benzo(a)pyrene	2.5	MD	MD	KD	ИD	MD	100	Ю	ND	ND	ND	ND	MD	ND	ND	ND.	ND	KD.
Benzo(b)fluoranthene	10	MD	ND	KD	ND	ND	KD	Ю	ND	I/D	Ю	100	MD	ND	ND	MD	MD	MD
Benzo(ghi)perylene	4.1	Ю	מא	ND	ИD	ND	ND	ND	ND	Ю	KD	ND	MD	ND	ND	ND.	ND	Ю
Benzo(k)fluoranthene	3.5	Ю	מא	KD	MD	ИD	KD	ND	Ю	MD	ND	Ю	ND.	ND	ND	:O	ND.	ND
bis(2-Chloroethoxy)methane	5.4	IND	MD	MD	Ю	ND.	ND	ND.	ND	ND	ND	ND	ND	ND	MD	XD.	ND	Ю
bis(2-Chloroethyl) ether	5.8	ND	ND	КD	KD DN	ND CN	ND DA	КD	ND.	ND	ND	MD.	ND.	ND	ND	AD.	ND.	ND
is (2-Chloroisopropyl)ether	5.8	Ю	ND	DN CN	מא	KD CM	KD	ND	מא מא	ND	ND.	EDI CDI	MD Leve	ND CM	KD	ND	Ю	ND
is(2-Ethylhexyl)phthalate	10	ND	ND	מא	ND	ND ND	KD DN	BHDL		ND	Ю				BHDL	B.YDL	ND	ND
-Bromophenyl phenyl ether	1.9	ND	MD	מא	D	ND D	ND CN	MD CM	DN CDN	ND	ND.	MD.	ND DN	ND QN	M	30	MD.	KD
Suryl benzyl phthalate	10	ND	MD	ND DN	COA COA	KD UN	· 100	מא		ND	Ю	ND CN		DN סא	ND	:10	ND.	ND
2-Chloronaphthalene	1.9	מא מא	MD CM	ND OX	KD KD	ND DN	· 100	KD KD	KD KD	ND DN	ND	100 100	XD XD		ND DN	7D (D):	ND	100
-Chlorophenyl phenyl ether	4.2	עא סא	עא מא	MD MD	KD KD	ND ND	, ND	ND UN	מא	KD	ND.	100	מא	ND.	KD.	ND ND	ND.	ND
hrysene	2.5	MD UN	D D	KD KD	ND ND	KD M	10D	ND ND	MD 0M		ND CN	מא	KD ND	ND ND	100	KD	Ю	KD
ibenzo(a,h)anthracene	10	NO NO	ND UN	ND ND	ND D	ND UN	100	KD	XD	100 64.3		ND D	XD	ND D	10	ND DN	KD	ND
1,2-Dichlorobenzene	1.9	50	100 UN	100	ИD	BHDL	100	KD	70	ND 84.7	48.4	ND ND	מא	ND D	100	ND ND	KD.	KD
L,3-Dichlorobenzene	1.9	100	100	100 100	MD	ND.	BHOL	ND ND	70		22.7	ND CN	KD	MD CM	100	ND UN	KD	ND
L,-4-Dichlorohenzene	4.4	100 100	100	מא	ND D	100	NO.	ND ND	10	154 ND	74.9	100 014	<b>100</b>	100	מא	מא	КD	Ю
3,3'-Dichlorobenzidine	17	100 100	100	ND D	MD.	ND ND	700	χD 1/Ω	10	מא	MD (D)	100	KD KD	ND NO	מא	מא	ND	ND
iethyl phthalate	10			ND ND	D CN	100	100	מא	מא			KD.	KD AD		100 VID		MD	Ю
imethyl phthalate	10	ND	. 100							Ю	Ю		100	Ю		ND	ND	ЖD
i-n-butyl phthalate	10	Ю	Ю	ND ND	ND ND	DN CN	MD MD	ND CM	ND ND	Ю	Ю	BHDL ND	100	ND ON	BHDL ND	ND	MD	100
1,4-Dinitrotoluene	5.8	ND ND	MD		XD		100 LUI			Ю	100		XD XD			ND	100	100
1,6-Dinitrotoluene	1.9	ND	MD	Ю		Ю		ND	Ю	Ю	Ю	Ю		ND	100	Ю	Ю	ND
i-n-octyl phthalate	10	Ю	ND	100	ND D	Ю	100	ЖD	Ю	Ю	Ю	100	Ю	ND	КD	ND.	ND	Ю
,2-Diphenylhydrazine	10	ND.	Ю	Ю	ND	ND	Ю	Ю	Ю	Ю	Ю	ND	ND	Ю	Ю	Ю	ND	MD
luoranthene	2.2	ND.	Ю	104	RMDL	ИD	Ю	ND	Ю	Ю	KD	3.00	BHDL	279	ND	RYDL	ИD	ND
Pluorene	1.9	Ю	BHDL	34.2	2.81	. ND	Ю	ND	100	ND.	ND	Ю	М	100	ND	Ю	ND	Ю
Hexachlorobenzene	1.9	100	100	Ю	KD	100	KD	100	MD	100	KD	Ю	MD	ND	100	100	ND	ND

TABLE 10 (continued)

#### MOBIL OIL CORPORATION TAPPAN TEXNIBAL MASTINGS-ON-MUDSON GREENBURCH, NEW YORK

### Priority Pollutant Semivolatiles in Ground Water (EPA Method 625)

									Sample	Designat	100							
Compound	HDL ppb	OW-1	HS/-5	OW-5	HW-8	OW-9	OW-12	04-15	OW-16	OW-17	OV-18	OW-19	OV-20	ON-21	C¥-25	OU-26	OH-27	River
Environmental Testing &																		
Certification Amber:		P5825	P5832	P5824	P5823	P5822	P5819	75818	P5817	P5821	P5816	P5830	P5829	P5828	P5827	P5826	P5820	P5821
Date sampled:		11/19/86	11/19/86	11/19/86	11/19/86	11/18/86	11/18/86	11/18/86	11/18/86	11/18/86	11/19/86	11/19/86	11/19/86	11/19/86	11/19/86	11/19/86		
Base/Neutral (continued)																		
Hexachlorobutadiene	0.91	ND	ND	ND	Ю	ND	Ю	100	Ю	ND	100	KD	ND	MD	100	-		
Bexachlorocyclopentadiene	10	ND	MD.	ND	Ю	ND	ND	100	ND	MD	100	ND.	ND.	700	ND ID	KD KD	KD	ND
Rexachloroethane	1.6	Ю	ND	ND	ND	ND	ND	ND.	ND	ND	ND	ND.	ND	ю.	ND ON	100	ND DN	ND.
Indeno(1,2,3-c,d)pyrene	4.7	MD	MD	ND	Ю	ND	ND	MD	ND	ND.	ND	ND.	ND	ND.	ND.	100	מא	CN CN
Isophorone	2.2	ND	מא	Ю	Ю	Ю	KD	IO)	KD	ND	ND.	ND	ND	ND CM	100	100	KD	100
Naphthalene	1.6	. 100	ND	27.4	BHDL	Ю	KD	IO)	ND	26.1	30.8	8.80	ND	5.83	Ж	100	מא	ND ND
Mitrobenzene	1.9	ND	KD	ND	Ю	Ю	14.7	NO.	Ю	ND	ND	ND	ND.	.50	ND.	100	ND ND	ND ND
N-Nitrosodimethylamine	10	ND.	KD	MD	ND	Ю	ND	100	Ю	KD	Ю	ND	ND.	ND	ND	100	מא	KD VD
M-Nitrosodi-n-propylamine	10	מא	ND	ND	ND	ND	ND	ND	140	MD.	ND.	ND	ND	ND	100	KD.	ND D	ND CN
N-Nitrosodiphenylamine	1.9	ИD	ND	ND	Ю	ND	108 -	100	Ю	33.4	ND.	ND	ND	900	KD	KD	ND CM	KD GN
Phenanthrene	5.5	ND	BHOL	125	ND	ND	ю.	)ID	ND	BHDL	ND	ILDL.	KD	B-DL	100	BHDL.	ND	100
Рутере	1.9	ND	MD	75.1	BHDL	KD	Ю	JOD .	Ю	Ю	ND	2.36	BHDL.	2.45	Ю	BHOL	100	ND VD
1,2,4-Trichlorobenzene	1.9	ND	MD	ND	KD	Ю	ND	ND	Ю	ND	Ю	ND	Ю	ND T	120	Ю	מא	100
Acid Extractable																		
2-Chlorophenol	3.3	ND	ND	Ю	ND	KD	44.7	MD.	Ю	79.3	100	NO.	MD	KD	100	MD	NB.	
1,4-Dichlorophenol	2.7	HD	Ю	KD	Ю	ND	4.4	700	ND	ND	100	ND	KD	FD	KD	100	CN CN	Ю
1,4-Dimethylphenol	2.7	ND	ND	ND	Ю	ND	ND	ND.	KD	KD.	KD.	ND DM	ND I	IO)	100	100		Ю
,6-Dimitro-o-cresol	24	Ю	Ю	KD	Ю	ND	ND	100	ND	ND.	ND	100	KD	100	100	700	ND CN	Ю
1,4-Dinitrophenol	42	ND	Ю	ND.	Ю	ND	Ю	100	ND	100	ND	ND.	KD	100	מא	ND	D CN	ND
l-Nitrophenol	3.6	ND	MD	KD	KD	Ю	ND	100	100	100	ND.	100	100	IID	מא	100	מא	ND CN
-Nitrophenol	2.4	Ю	KD	ND	Ю	Ю	ND.	ND.	KD	ND.	MD.	ND	ND	ND	MD	ND 10	ND ND	100
-Chloro-m-cresol	3.0	Ю	ND	Ю	ND	100	ND	ND.	ND	Ю	ND	ND	ND	)(D)	מא	100	ND	100
entachlorophenol	3.6	ND	Ю	Ю	Ю	KD	Ю	ND.	ND	Ю	I/D	ND	ND	MD	ND.	ND.	ND	100
hanol	1.5	Ю	ND	Ю	Ю	KD	Ю	100	ND	100	ND	ND.	ND.	ND.	NO.	100	ND ND	100
4,6-Trichlorophenol	2.7	ND	ND	Ю	XD.	KD	ND	ND.	ND	ND	ND	ND	ND	100	200	ND.	100	KD.

MOL = minimum detection limit. BMOL = Below minimum detection limit. ppb = parts per billion.

#### APPENDIX I

LEGGETTE, BRASHEARS & GRAHAM, INC.
CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD WILTON, CT. 06897

OWNER-	Mobil Oil Corporation
	Hastings, New York

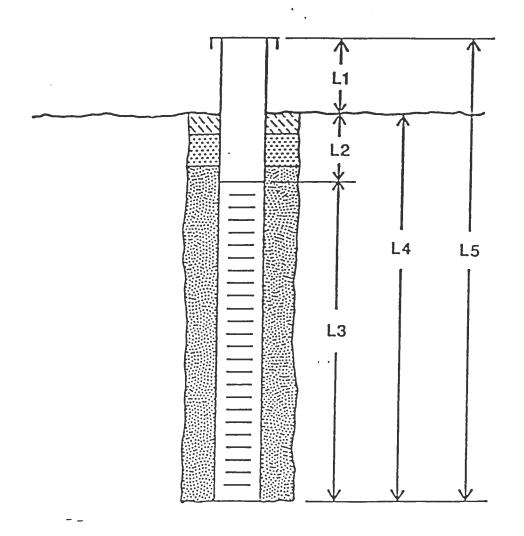
WELL NO. MW-1

DATE 05/12/86 PAGE 10F 1 PAGES

Tank Farm
Blow count: 3-5-3-2  DATE COMPLETED May 12, 1986 2 4 Fill, with gravel; some sand, medium brown.  DATE COMPLETED Blow count: 1-1-2-1  Blow count: 1-1-2-1  Blow count: 1-0-1-1  Fill; with gravel; saturated black.  BETHING BY J. Benvegna 6 8 Fill; with some gravel and sand, medium, black.  BETHING Grade 8 10 Fill, with some gravel and sand, medium, black.  BETHING 96.22 feet 1/  DIAM 4-inch SLOT MO. 20 Cement: 0 - 0.5 foot bg  Bentonite: 0.5 - 1.0 foot bg  Bentonite: 0.5 - 1.0 foot bg  STUTING NONE  OSTICLATION NONE  Stick up: 1.95 feet ag  POWERING TEST  DATE  DATE
Blow count: 3-5-3-2  DATE COMPLETED May 12, 1986 2 4 Fill, with gravel; some sand, medium brown.  DATE COMPLETED Blow count: 1-1-2-1  Blow count: 1-1-2-1  Blow count: 1-0-1-1  Fill; with gravel; saturated black.  BETHING BY J. Benvegna 6 8 Fill; with some gravel and sand, medium, black.  BETHING Grade 8 10 Fill, with some gravel and sand, medium, black.  BETHING 96.22 feet 1/  DIAM 4-inch SLOT MO. 20 Cement: 0 - 0.5 foot bg  Bentonite: 0.5 - 1.0 foot bg  Bentonite: 0.5 - 1.0 foot bg  STUTING NONE  OSTICLATION NONE  Stick up: 1.95 feet ag  POWERING TEST  DATE  DATE
May 12, 1986  2 4 Fill, with gravel; some sand, medium brown.  Blow count: 1-1-2-1  Blow count: 1-1-2-1  Blow count: 1-0-1-1  Blow count: 1-1-2-1  Blow count: 1-1-2-1  Blow count: 1-0-1-1  Blow count: 1-1-2-1  Blow count: 1-1-2-1  Blow count: 1-0-1-1  Blow coun
May 12, 1986  2 4 Fill, with gravel; some sand, medium brown.  Blow count: 1-1-2-1  Blow count: 1-1-2-1  Blow count: 1-0-1-1  Blow count: 1-1-2-1  Blow count: 1-1-2-1  Blow count: 1-0-1-1  Blow count: 1-1-2-1  Blow count: 1-1-2-1  Blow count: 1-0-1-1  Blow coun
Tes Corporation  Blow count: 1-1-2-1  Blow count: 1-1-2-1  Blow count: 1-1-2-1  Blow count: 1-1-2-1  Blow count: 1-0-1-1  Blow count: 1-0-1  Blow count: 1-0-1-1  Blow count: 1-0-1  Blow count: 1-0-1  Blow count: 1-0-1  Blow count: 1-0-1  Bl
Tes Corporation  Blow count: 1-1-2-1  Blow count: 1-1-2-1  Blow count: 1-1-2-1  Blow count: 1-1-2-1  Blow count: 1-0-1-1  Blow count: 1-0-1  Blow count: 1-0-1-1  Blow count: 1-0-1  Blow count: 1-0-1  Blow count: 1-0-1  Blow count: 1-0-1  Bl
DRILLIMA WETHOD  SAMPLING WETHOD  SAMPLING Split spoon  SAMPLES EXAMINED BY  J. Benvegna  6 8 Fill; with gravel; saturated black.  REFERENCE Grade  8 10 Fill, with some gravel and sand, medium, black.  End of hole.  SCASEN TYPE  DIAM. 4-inch SLOT NO. 20  Cement: 0 - 0.5 foot bg  Bentonite: 0.5 - 1.0 foot bg  CASING  NONE  STICK  NONE  STICK  NONE  STICK  NONE  STICK  NONE  STICK  NOTES:  DATE
DRILLIMA WETHOD  SAMPLING WETHOD  SAMPLING Split spoon  SAMPLES EXAMINED BY  J. Benvegna  6 8 Fill; with gravel; saturated black.  REFERENCE Grade  8 10 Fill, with some gravel and sand, medium, black.  End of hole.  SCASEN TYPE  DIAM. 4-inch SLOT NO. 20  Cement: 0 - 0.5 foot bg  Bentonite: 0.5 - 1.0 foot bg  CASING  NONE  STICK  NONE  STICK  NONE  STICK  NONE  STICK  NONE  STICK  NOTES:  DATE
Blow count: 1-0-1-1  SAMPLES J. Benvegna 6 8 Fill; with gravel; saturated black.  REFERENCE Grade 8 10 Fill, with some gravel and sand, medium, black.  ELEVATION 96.22 feet 1/ End of hole.  SAMPLES GRADE PVC - Schedule 40  DIAM 4-inch SLOT NO. 20 Cement: 0 - 0.5 foot bg  Bentonite: 0.5 - 1.0 foot bg  GRAVEL PACK Grade 2 Sand pack: 1.0 - 10.0 feet bg  CASING None Stick up: 1.95 feet ag  PUMPING TEST DATE  DATE DATE  DATE  DATE  DATE  DATE  DATE  DATE  DEPLOYED PUMPING TEST DATE  DATE  DATE  DATE  DATE  DEPLOYED PUMPING TEST  DATE  DATE  DATE  DATE  DEPLOYED PUMPING TEST  DATE  DATE  DEPLOYED PUMPING TEST  DATE  DATE  DEPLOYED PUMPING TEST  DATE  DA
Blow count: 1-0-1-1  SAMPLES J. Benvegna 6 8 Fill; with gravel; saturated black.  REFERENCE Grade 8 10 Fill, with some gravel and sand, medium, black.  ELEVATION 96.22 feet 1/ End of hole.  SAMPLES GRADE PVC - Schedule 40  DIAM 4-inch SLOT NO. 20 Cement: 0 - 0.5 foot bg  Bentonite: 0.5 - 1.0 foot bg  GRAVEL PACK Grade 2 Sand pack: 1.0 - 10.0 feet bg  CASING None Stick up: 1.95 feet ag  PUMPING TEST DATE  DATE DATE  DATE  DATE  DATE  DATE  DATE  DATE  DEPLOYED PUMPING TEST DATE  DATE  DATE  DATE  DATE  DEPLOYED PUMPING TEST  DATE  DATE  DATE  DATE  DEPLOYED PUMPING TEST  DATE  DATE  DEPLOYED PUMPING TEST  DATE  DATE  DEPLOYED PUMPING TEST  DATE  DA
Samples   J. Benvegna   6   8   Fill; with gravel; saturated black.    REFERENCE   Grade   8   10   Fill, with some gravel and sand, medium, black.   RELEVATION   96.22   feet
Samples   J. Benvegna   6   8   Fill; with gravel; saturated black.    REFERENCE   Grade   8   10   Fill, with some gravel and sand, medium, black.   RELEVATION   96.22   feet
REFERENCE Grade 8 10 Fill, with some gravel and sand, medium, black.  ELEVATION 96.22 feet / End of hole.  Cement: 0 - 0.5 foot bg  Bentonite: 0.5 - 1.0 foot bg  Bentonite: 0.5 - 1.0 foot bg  STITIME OND  STITIME NONE Stick up: 1.95 feet ag  POWEL OPMENT Suction pump 45 minutes, 05/14/86  POWELOPMENT SUCTION SUCTION PUMP STICK Up: 1.95 feet ag  POWELOPMENT SUCTION PUMP SUCTIO
REFERENCE Grade 8 10 Fill, with some gravel and sand, medium, black.  ELEVATION 96.22 feet / End of hole.  Cement: 0 - 0.5 foot bg  Bentonite: 0.5 - 1.0 foot bg  Bentonite: 0.5 - 1.0 foot bg  STITIME OND  STITIME NONE Stick up: 1.95 feet ag  POWEL OPMENT Suction pump 45 minutes, 05/14/86  POWELOPMENT SUCTION SUCTION PUMP STICK Up: 1.95 feet ag  POWELOPMENT SUCTION PUMP SUCTIO
REFERENCE Grade 8 10 Fill, with some gravel and sand, medium, black.  ELEVATION 96.22 feet / End of hole.  Cement: 0 - 0.5 foot bg  Bentonite: 0.5 - 1.0 foot bg  Bentonite: 0.5 - 1.0 foot bg  STITIME OND  STITIME NONE Stick up: 1.95 feet ag  POWEL OPMENT Suction pump 45 minutes, 05/14/86  POWELOPMENT SUCTION SUCTION PUMP STICK Up: 1.95 feet ag  POWELOPMENT SUCTION PUMP SUCTIO
ELEVATION 96.22 feet 1/ of R.P. 96.22 feet 1/ of R.P. 96.22 feet 1/ well construction screen PVC - Schedule 40 TYPE PVC - Schedule 40  DIAM 4-inch slot No. 20 Cement: 0 - 0.5 foot bg  Bentonite: 0.5 - 1.0 foot bg  GRAVEL PACE Grade 2 Sand pack: 1.0 - 10.0 feet bg  CASING None Stick up: 1.95 feet ag  DEVELOPMENT Suction pump  45 minutes, 05/14/86 NOTES:  PUMPING TEST bg = below grade
WELL CONSTRUCTION SCREEN PVC - Schedule 40  TYPE
WELL CONSTRUCTION SCREEN PVC - Schedule 40  TYPE
WELL CONSTRUCTION SCREEN PVC - Schedule 40  TYPE
Cement: 0 - 0.5 foot bg
Cement: 0 - 0.5 foot bg
DATE  D.50 - 10 feet bg  Bentonite: 0.5 - 1.0 foot bg  Sand pack: 1.0 - 10.0 feet bg  Sand pack: 1.95 feet ag  Stick up: 1.95 feet ag  None  Stick up: 1.95 feet ag  NOTES:  PUMPING TEST  DATE  Description of the page of th
DATE  D.50 - 10 feet bg  Bentonite: 0.5 - 1.0 foot bg  Sand pack: 1.0 - 10.0 feet bg  Sand pack: 1.95 feet ag  Stick up: 1.95 feet ag  None  Stick up: 1.95 feet ag  NOTES:  PUMPING TEST  DATE  Description of the page of th
Sand pack: 1.0 - 10.0 feet bg  CASING None Stick up: 1.95 feet ag  DEVELOPMENT Suction pump  45 minutes, 05/14/86 NOTES:  PUMPING TEST  DATE bg = below grade
Sand pack: 1.0 - 10.0 feet bg  CASING None Stick up: 1.95 feet ag  DEVELOPMENT Suction pump  45 minutes, 05/14/86 NOTES:  PUMPING TEST  DATE bg = below grade
None  Stick up: 1.95 feet ag  DEVELOPMENT Suction pump  45 minutes, 05/14/86  NOTES:  PUMPING TEST  DATE bg = below grade
None  Stick up: 1.95 feet ag  DEVELOPMENT Suction pump  45 minutes, 05/14/86  NOTES:  PUMPING TEST  DATE bg = below grade
Suction pump  45 minutes, 05/14/86  NOTES:  bg = below grade
Suction pump  45 minutes, 05/14/86  NOTES:  bg = below grade
NOTES:  bg = below grade
NOTES:  bg = below grade
NOTES:  bg = below grade
bg = below grade
bg = below grade
DATE
btoc = below top of casing
btoc = below top of casing
DOMATION
4.18 feet btoc
ag = above grade
PUMPING WATER
rever
YIELD
PVC Elevation:
98.17 feet
1/ Assumed datum
>100 feet.

MOBIL OIL CORPORATION TAPPAN TERMINAL HASTINGS-ON-HUDSON GREENBURGH, NEW YORK

MW-1.



WELL SIZE:	4-INCH DIAMETER	_ L1: _
SCREEN SIZE:	0.020 INCH	_ L2: _
CEMENT DEPTH:	0 - 0.5 FOOT	_ L3: _
BACKFILL DEPTH:		_ L4: _
BENTONITE DEPTH:	0.5 - 1.0 FOOT	_ L5: _
SAND PACK DEPTH:	1.0 - 10.0 FEET	_

FEET

FEET

FEET

FEET

FEET

1.95

0.5

9.50

10.0

11.95

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CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD WILTON, CT. 06897

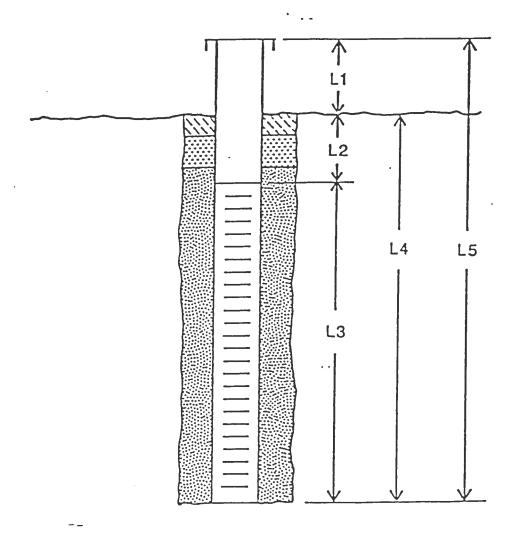
OWNER-	Mobil Uil Corporation
	Hastings, New York

WELL NO. MW-2

DATE 05/12/86 PAGE 10F 1 PAGES

	WILTON, CI.			DATE 05/12/86 PAGE 10F 1 PAGES						
		DEPTH	N FEET	DESCRIPTION						
1		FROM	то							
LOCATION	Tank Farm	0	2	Fill, with gravel; glass, black.						
				Blow count: 3-3-2-3						
DATE	May 12, 1986	2	4	Fill, with gravel; glass, black, moist.						
DRILLING	Tes Corporation			Blow count: 1-2-1-1						
DRILLING METHOD	Hollow-stem auger	4	6	Fill, with gravel; glass, black, saturated.						
SAMPLING METHOD	Split spoon			Blow count: 1-3-1-1						
SAMPLES EXAMINED BY	J. Benvegna	6	8	Fill; with some sand, fine to very fine, gray.						
REFERENCE POINT	Grade			Blow count: 1-1-1-1						
ELEVATION OF R.P.	96.33 feet_			End of hole.						
WELL CONSTR BCREEN TYPE	PVC - Schedule 40									
DIAM	4-inch_stor Mo20			Cement: 0 - 1.0 foot bg						
SETTING_	0 - 10 feet bg			Bentonite: 1.0 - 2.0 feet bg						
GRAVEL P	<sup>Ack</sup> Grade 2			Sand pack: 2.0 - 10.0 feet bg						
CASING_	None			Stick up: 2.05 feet ag						
DEVELOP	Suction pump 45 minutes,									
	05/14/86			NOTES:						
PUMPING TEE	T			bg = below grade						
TARUO	ОМ			btoc = below top of casing						
STATIC LEVEL	4.23 feet btoc WATER 05/13/86			ag = above grade						
PUMPIH LEVEL	RSTAW D									
YIELD_										
REMARKS _	PVC Elevation:									
_	98.38 feet									
. –	1/ Assumed datum									
	≻400 feet.									

### MW-2



WELL SIZE:	4-INCH DIAMETER	<del></del>
SCREEN SIZE:	0.020 INCH	
CEMENT DEPTH:	0 - 1.0 FOOT	
BACKFILL DEPTH:		
BENTONITE DEPTH:	1.0 - 2.0 FEET	-
SAND PACK DEPTH:	2.0 - 10.0 FEET	

L1:	2.05	FEET
L2:	0	FEET
L3:	10.0	FEET
L4:	10.0	FEET
L5:	12.05	FEET

LEGGETTE, BRASHEARS & GRAHAM, INC.

CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD WILTON, CT. 06897

OWNER-	Mobil Oil Corporation
	Hastings, New York

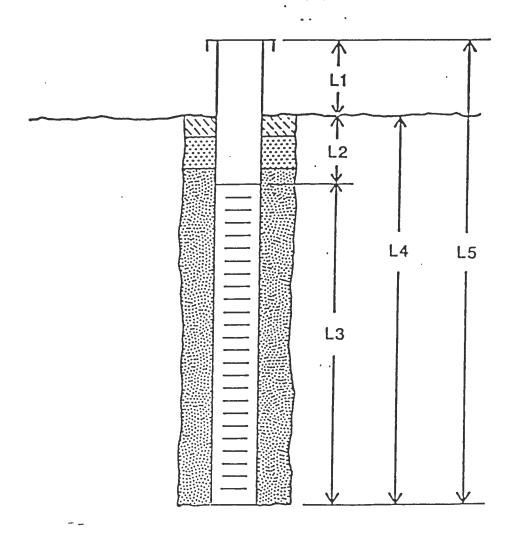
WELL NO. MW-3

DATE 05/12/86PAGE 10F 1 PAGES

	WILTON, CI. 08897			DATE 05/12/86PAGE 10F 1 PAGES
		DEPTH	IN FEET	DESCRIPTION
		FROM	TO	
LOCATION	Tank Farm	0	2	Fill, with sand, fine to very fine; brown, moist
				Blow count: 2-10-9-8
DATE	May 12, 1986	2	4	Fill, with some sand, medium to fine; black.
	Tes Corporation			Blow count: 3-2-2-2
	Hollow-stem auger	4	6	Fill, with some sand, fine; black, saturated.
	Split spoon			Blow count: 1-1-1-1
	J. Benvegna	6	8	Fill; with some sand, fine to very fine, trace
REFERENCE	Grade			silt; black.
	95.96 feet 1/			Blow count: 1-1-1-1
OF R.P. WELL CONSTI SCREEN	PVC - Schedule 40			End of hole.
	4-inchstoT MO 20			Cement: 050 foot bg
	1 - 11 feet bg			Bentonite: .50 - 1.0 foot bg
GRAVEL P	^ckGrade 2			Sand pack: 1.0 - 11.0 feet bg
817.5	None			Stick up: 2.03 feet aq
DEVELOP	Suction pump 30 minutes,			
	30 minutes, 05/14/86			NOTES:
PUMPING TE				
DATE_				bg = below grade
DURAT	10N			btoc = below top of casing
	3.92 feet btoc			
LEVEL	WATER 05/13/86			ag = above grade
PUMPII LEVEL	RATER			
YIELD_				
PEMARKS _	PVC Elevation:			
_	97. <b>9</b> 9 feet			
_	1/ Assumed datum			
	100 feet.			

MOBIL OIL CORPORATION
TAPPAN TERMINAL
HASTINGS-ON-HUDSON
GREENBURGH, NEW YORK

MW-3



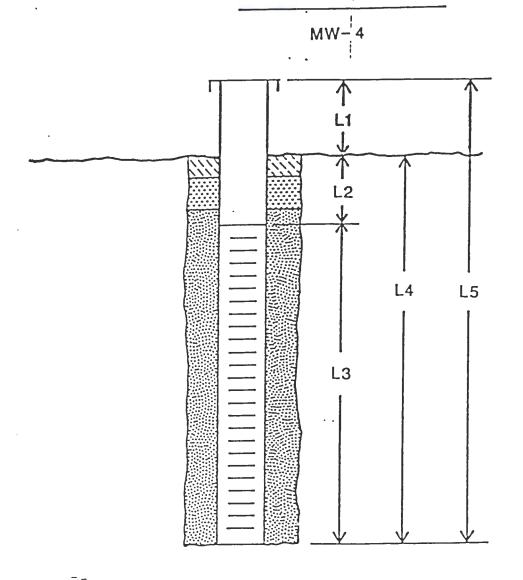
WELL SIZE:	4-INCH DIAMETER	L1:	2.03	FEET
SCREEN SIZE:	0.020 INCH	L2:	1.0	FEET
CEMENT DEPTH:	0 - 0.5 FOOT	L3:	10.0	FEET
BACKFILL DEPTH:		L4:	11.0	FEET
BENTONITE DEPTH:	0.5 - 1.0 FOOT	L5:	13.03	FEET
SAND PACK DEPTH:	1 0 - 11 0 FFFT	-		

LEGGETTE, BRASHEARS & GRAHAM, INC. CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD

OWNER-		
 	MW-4	

WILTON, CT. 06897 DATE 05/12/86 PAGE 1 OF 1 PAGES DEPTH IN FEET DESCRIPTION FROM LOCATION \_ Tank Farm Fill, with some sand, fine to very fine; trace 2 0 silt; brown, gray, moist. COMPLETED May 13, 1986 Blow count: 6-6-5-2 DRILLING Tes Corporation Fill, with glass, wood, paper. 2 4 COMPANY PRILLING Hollow-stem auger Blow count: 1-2-1-1 METHOD --BAMPLING 6 Fill, with glass, wood, paper, saturated. Split spoon METHOD J. Benvegna Blow count: 2-2-2-1 REFERENCE Grade 6 Fill, with glass, wood, paper. POINT of R.P. 95.82 feet 1/ Blow count: 2-3-1-1 OF R.P. \_\_\_\_ WELL CONSTRUCTION SCREEN PVC - Schedule 40 End of hole. Cement: 0 - .50 foot bg DIAM. 4-inch SLOT NO. 20 1 - 11 feet bg Bentonite: .50 - 1.0 foot bg GRAVEL PACKGrade 2 Sand pack: 1.0 - 11.0 feet bg CASING \_\_ None Stick up: 2.13 feet ag Suction pump
30 minutes, 05/14/86 NOTES: PUMPING TEST bg = below grade btoc = below top of casing DURATION \_\_\_\_ 3.44 feet btoc BTATIC WATER 05/14/86 ag = above grade PUMPING WATER LEVEL Y1ELD ..... PVC Elevation: 97.95 feet 1/ Assumed datum 100 feet.



WELL SIZE:	4-INCH DIAMETER	L1:	2.13	FEET
SCREEN SIZE:	0.020 INCH	L2:	1.0	FEET
CEMENT DEPTH:	0 - 0.5 FOOT	L3:	10.0	FEET
BACKFILL DEPTH:		L4:	11.0	FEET
BENTONITE DEPTH:	0.5 - 1.0 FOOT	L5:	13.13	FEET
SAND PACK DEPTH:	1.0 - 11.0 FEET	_		

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CONSULTING GROUND-WATER GEOLOGISTS

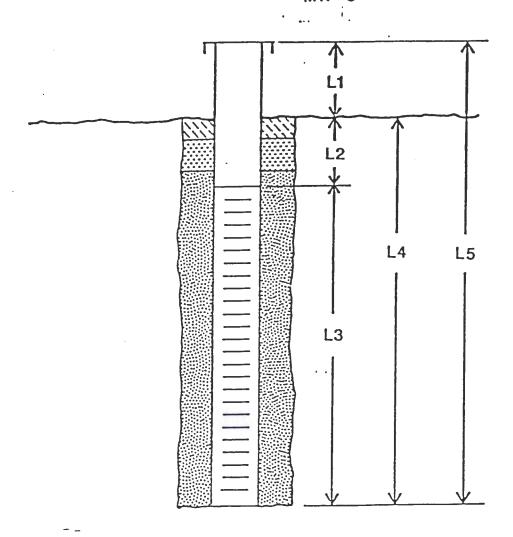
72 DANBURY ROAD WILTON, CT. 06897

OWNER-	Mobil Oil Corporation
	Hastings, New York
WELL NO	MW-5

DATE 05/13/86 PAGE 10F 1 PAGES

WILLION, CI. 08887				DATE US/13/86 PAGE TOF T PAGES
		DEPTH	N FEET	DESCRIPTION
		FROM	то	
	Tank Farm	0	2	Fill, with soil; black.
LOCATION_		-		
		1		Blow count: 1-6-9-1
_				
	12 1006	2	4	Fill, with soil, black; hydrocarbon odor.
COMPLETED	May 13, 1986	2		Fill, With Soil, Black, hydrocarbon odor.
DHILLING	Tes Corporation			Blow count: 1-1-1-1
·				
DRILLING	Hollow-stem auger	4	6	Fill, saturated with hydrocarbon and water;
METHOD -				
SAMPLING	Split spoon			black.
METHOD	Split spoon			
	7 D			Blow count: 2-3-5-2
EXAMINED BY	J. Benvegna			Blow counc. 2 3 3 2
			ا	Hill askumakad with hydrocarbon and water.
REFERENCE POINT	Grade	6	8	Fill, saturated with hydrocarbon and water;
1	1/			
ELEVATION	96.54 feet $\frac{1}{}$			black.
OF R.P.				
SCREEN	PVC - Schedule 40	1		Blow count: 3-2-2-1
TYPE		<del>                                     </del>		
	4-inch 20			End of hole.
DIAM	4-inch			End of more:
SETTING_	0 - 10 feet bg			
1				
BIZE	Grade 2			Cement: 050 foot ba
	None			Bentonite: .50 - 1.0 foot bg
1				
-	Suction pump 30 minutes,			Sand pack: 1.0 - 10.0 feet bg
DEVELOP	30 minutes,			
	·			Stick up: 0.75 foot ag
	05/14/86	<del>                                     </del>		SCICK UD: 0.75 TOOC ad
PUMPING TER	ıt			·
DATE_				
			İ	vomac
TARUD	ON	ļ		NOTES:
1	4.39 feet btoc			
STATIC LEVEL	WATER 05/14/86	ļ		bg = below grade
PUMPIN	Q WATER			btoc = below top of casing
				ag = above grade
YIELD_				
	PVC Elevation:			
REMARKS _	THE BECTALLOIL			
-	07.00 foot	1		
-	97.29 <b>feet</b>			
	1/			
] _	1/ Assumed datum	ļ		
				1
•	100 feet.			
	2 2			

MW-5



WELL SIZE:	4-INCH DIAMETER
SCREEN SIZE:	0.020 INCH
CEMENT DEPTH:	0 - 0.5 FOOT
BACKFILL DEPTH:	
BENTONITE DEPTH:	0.5 - 1.0 FOOT
SAND PACK DEPTH:	1.0 - 10.0 FEET
-	

L1:	0.75	FEET
L2:	0	FEET
L3:	10.0	FEET
L4:	10.0	FEET
L5:	10.75	FEET

### WFLL LOG

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CONSULTING GROUND-WATER GEOLOGISTS

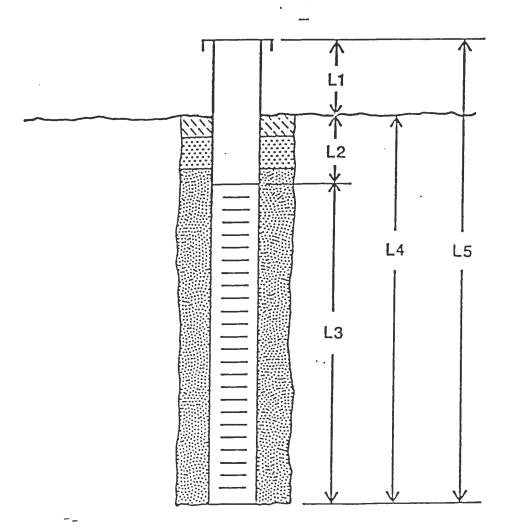
72 DANBURY ROAD WILTON, CT. 06897

OWNER-	Mobil Oil Corporation
	Hastings, New York
WELL NO	MW-6

WILTON, CT. 06897				DATE 05/13/86 PAGE 1 OF 1 PAGES
DEPTH IN FEET			DESCRIPTION	
		FROM	то	]
	Loading rack	0	1	Asphalt and blue chip rock.
LOCATION _		1	3	Fill, with soil; some glass, brown, black;
DATE COMPLETED	May 14, 1986			hydrocarbon odor.
DRILLING COMPANY	Tes Corporation			Blow count: 7-10-13-15
DRILLING METHOD	Hollow-stem auger	3	5	Fill, with soil, some glass; black, brown,
SAMPLING METHOD	Split spoon			moist.
SAMPLES EXAMINED BY	J. Benvegna			Blow count: 3-4-4-4
REFERENCE -	Grade	5	7	No recovery.
ŀ	97.21 feet 1/			Blow count: 3-5-9-2
WELL CONSTR SCREEN TYPE	PVC - Schedule 40	7	9	Fill, little sand, fine; some glass; black,
DIAM	-inch_stor No. 20			.brown, saturated.
\$ E T T I N G	.55 - 10.55 feet bg			Blow count: 3-2-3-3
GRAVEL P	Grade 2			End of hole.
CASING _	None			
DEVELOP	Suction pump			Cement: 030 foot bq
	30 minutes, 05/14786			Bentonite: .3050 foot bg
PUMPING TE	т			Sand pack: .50 - 11.0 feet bg
DURAT	ON			Stick up: 2.05 feet ag
BTATIC LEVEL	5.69 feet btoc WATER 05/14/86			
	Q WATER			NOTES:
YIELD_				bg = below grade
	PVC Elevation:			btoc = below top of casing
	99.26 feet			ag = above grade
=	- Assumed datum			
	1 <del>00</del> - feet			

MOBIL OIL CORPORATION
TAPPAN TERMINAL
HASTINGS-ON-HUDSON
GREENBURGH, NEW YORK

MW-6



WELL SIZE:	4-INCH DIAMETER	_ L	1: _	2.05	FEET
SCREEN SIZE:	0.020 INCH	_ La	2: _	0.55	FEET
CEMENT DEPTH:	0 - 0.30 FOOT	L3	3: _	10.0	FEET
BACKFILL DEPTH:		L4	1: _	10.55	FEET
BENTONITE DEPTH:	0.30 - 0.50 FOOT	L5	5: _	12.60	FEET
SAND PACK DEPTH:	0.50 - 11.0 FEET	_			

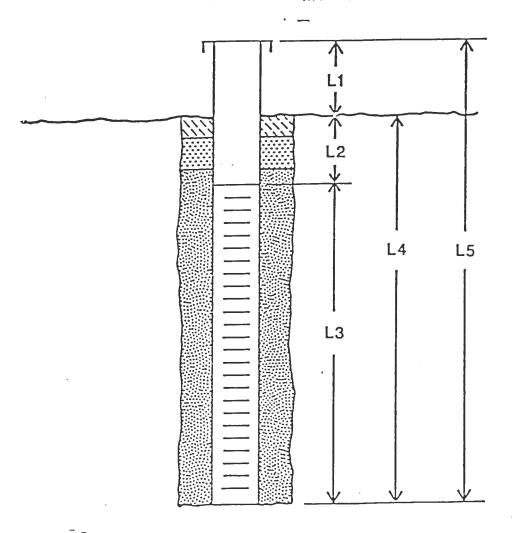
LEGGETTE, BRASHEARS & GRAHAM, INC.

72 DANBURY ROAD WILTON, CT. 06897

OWNER-	Mobil Oil Corporation
	Hastings, New York
VELL NO	MW-7

DATE 05/13/86 PAGE 10F 1 PAGES DESCRIPTION DEPTH IN FEET FROM TO LOCATION \_\_\_Loading rack Fill, with some soil; brown, moist. 2 Blow count: 20-21-13-26 COMPLETED May 14, 1986 Fill, with soil, trace of shell fragments; 4 2 DRILLING brown, moist. Tes Corporation COMPANY Blow count: 7-8-3-4 DRILLING Hollow-stem auger METHOD .. Fill, with some sand, medium to fine; brown, Split spoon 6 METHOD J. Benvegna grav, moist. REFERENCE Grade Blow count: 3-2-2-3 POINT ELEVATION 98.10 feet  $\frac{1}{2}$ Fill, with some sand, medium to fine; brown, 6 8 OF R.P. WELL CONSTRUCTION TYPE PVC - Schedule 40 grav, saturated. 'Blow count: 1-1-1-1 DIAM. 4-inch SLOT NO. 20 serring 1 - 11 feet bg End of hole.\_\_\_\_ GRAVEL PACE Grade 2 CASING None DEVELOPMENT Suction DUMP Cement: 0 - .50 foot bg 30 minutes, Bentonite: .50 - 1.0 foot bg 05/15/86 PUMPING TEST Sand pack: 1.0 - 11.0 feet bg . DATE \_\_\_ Stick up: 2,40 feet aq 5.97 feet btoc STATIC WATER 05/14/86 PUMPING WATER NOTES: LEVEL bg = below grade btoc = below top of casing \_\_\_\_ REWARKS PVC Elevation: 100.50 feet ag = above grade 1/ Assumed datum 100 feet.

MW-7



WELL SIZE:	4-INCH DIAMETER
SCREEN SIZE:	0.020 INCH
CEMENT DEPTH:	0 - 0.5 FOOT
BACKFILL DEPTH:	
BENTONITE DEPTH:	0.5 - 1.0 FOOT
SAND PACK DEPTH:	1.0 -11.0 FEET

L1:	2.40	FEET
L2:	1.0	FEET
L3:	.10.0	FEET
L4:	11.0	FEET
L5:	13.40	FEET

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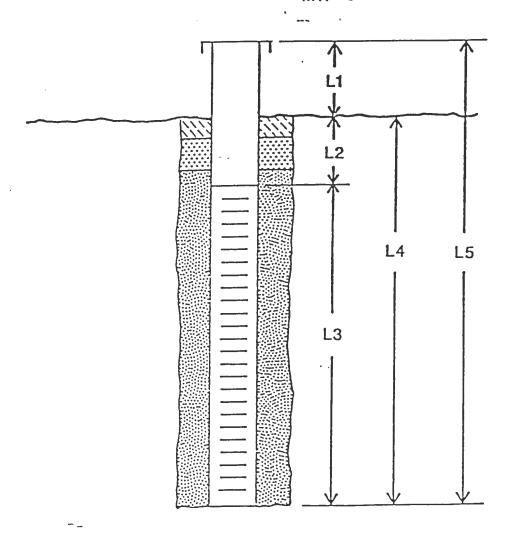
72 DANBURY ROAD WILTON, CT. 06897

OWNER-	Mobil Oil Corporation
_	Hastings, New York
/FII NO	MW-8

DATE 05/14/86 PAGE 10F 1 PAGES

DEPTH IN FEE		N FEET	DESCRIPTION	
		FROM	то	
	Loading rack	0	1	Asphalt
LOCATION _				
		1	3	Soil; brown.
COMPLETED	May 14, 1986	ļ		Blow count: 3-8-8-8
DRILLING			5	No wo course
COMPANY	Tes Corporation	3	) 5	No recovery.
DRILLING	Hollow-stem auger	-	-	Blow count: 2-2-2-2
METHOD -	Hollow-stem auger			
SAMPLING	Split spoon	5	7	Fill, with little sand, medium to fine, strong
METHOD				,
SAMPLES	J. Benvegna			hydrocarbon odor.
REFERENCE -	Grade			Blow count: 6-8-8-8
FLEVATION	1/			Till with and madium to fine black
OF Mir.	98.89 feet 1/	7	9	Fill, with some sand, medium to fine; black,
WELL CONSTR				saturated sludge, strong hydrocarbon odor.
TYPE	PVC - Schedule 40	-		Saturated Siddle, Strong hydrocarbon saszi
	4-inchstoT_NO20			Blow count: 4-3-3-4
DIAM	SLOT NO.	<del>                                     </del>		
	1 - 11 feet bg			End of hole.
GRAVEL PA	Grade 2			
CASING _	None			
	D. 13. 3	i		Company 0 50 foot by
DEVELOP	Bailed 45 minutes,			Cement: 050 foot bg
	05/ <del>1</del> 5/86			Bentonite: .50 - 1.0 foot bg
PUMPING TES				Deficiency 130 2.0 2000 Day
				Sand pack: 1.0 - 11.0 feet bg
DATE				
TARUD	он			Stick up: 0.70 foot bg
	6.92 feet btoc			
LEVEL	WATER 05/15/86			
PUMPIN	Q WATER			NOTES:
LEVEL				NOTES:
				bg = below grade
YIELD_				
BEMYSEU	PVC Elevation:			btoc = below top of casing
_	99.59 feet			aq = above grade
	1/			
	1/ Assumed datum			
	100 feet			

MW-8



WELL SIZE:	4-INCH DIAMETER	
SCREEN SIZE:	0.020 INCH	
CEMENT DEPTH:	0 - 0.5 FOOT	
BACKFILL DEPTH:		
BENTONITE DEPTH:	0.5 - 1.0 FOOT	
SAND PACK DEPTH:	1.0 - 11.0 FEET	

L1:	0.70	FEET
L2:	1.0	FEET
L3:	10.0	FEET
L4:	11.0	FEET
15:	11.70	FEET

#### LEGGETTE, BRASHEARS & GRAHAM, INC. CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD

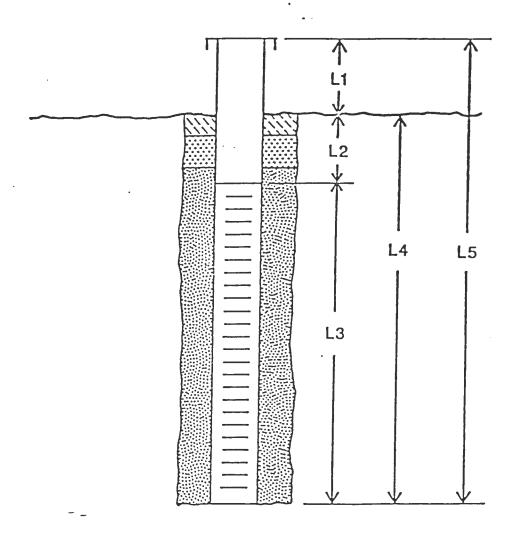
OWNER-	MODII Oil Corporation
	Hastings, New York

WELL NO. MW-9 WILTON, CT. 06897 DATE 05/14/86 PAGE

	DEPTH	IN FEET	DATE 05/14/86 PAGE 1 OF 1 PAGES
	FROM	TO	DESCRIPTION
LOCATION LOAding rack	0	2	Fill, with soil and some sand, medium; brown,
			moist.
DATE May 14, 1986			
			Blow count: 10-9-6-5
COMPANY Tes Corporation	2	4	Fill, with soil; brown.
DRILLING Hollow-stem auger			Blow count: 3-6-5-2
SAMPLING Split spoon	4	6	Fill, with gravel; saturated.
SAMPLES J. Benvegna			Blow count: 5-6-4-5
REFERENCE Grade	6	8	Fill, with gravel, glass, wood.
of R.P. 98.44 feet 1/			Blow count: 10-6-3-3
screen PVC - Schedule 40			End of hole.
DIAM 4-inch SLOT NO. 20			• •
SETTING 0 - 10 feet bg			
BIZE Grade 2			Cement: 050 foot bg
CASING None			Bentonite: .50 - 1.0 foot bg
Suction pump 45 minutes,	.		Backfill: 1.0 - 2.0 feet bg
05/15/86			Bentonite: 2.0 - 3.0 feet bg
PUMPING TEST  DATE			Sand pack: 3.0 - 10.0 feet bg
DURATION			Stick up: 1.83 feet ag
6.38 feet btoc			- 1.05 feet ag
PUMPING WATER			NOMPO
rever			NOTES:
YIELD			bg = below grade
REMARKS PVC Elevation:			btoc = below top of casing
100.27			ag = above grade
1/ Assumed datum			
100 feet.			

# MOBIL OIL CORPORATION TAPPAN TERMINAL HASTINGS-ON-HUDSON GREENBURGH, NEW YORK

MW-9



WELL SIZE:	4-INCH DIAMETER	L1:	1.83	FEET
SCREEN SIZE:	0.020 INCH	L2:	0	FEET
CEMENT DEPTH:	0 - 0.5 FOOT	L3:	10.0	FEET
BACKFILL DEPTH:	1.0 - 2.0 FEET	L4:	10.0	FEET
BENTONITE DEPTH:	0.5 - 1.0 FOOT	L5:	11.83	FEET
SAND PACK DEPTH:	2.0 - 10.0 FEET			

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72 DANBURY ROAD WILTON, CT. 08897

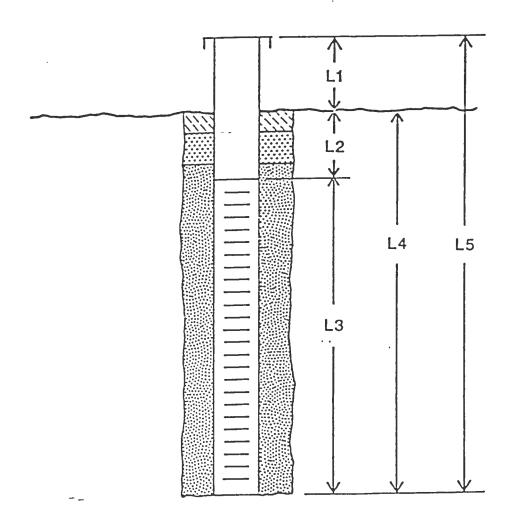
OWNER-	Mobil Oil Corporation
	Hastings, New York
	OW-1

WELL NO. OW-1

DATE 11/13/86 PAGE 1 OF 1 PAGES

		DEPTH	IN FEET	DESCRIPTION
		FROM	то	
	Tank Farm	0	2	Fill with SAND, fine to very fine; some silt;
LOCATION _				
		1		very moist, organic odor, brown-black (0.6-
-				·
DATE	November 13, 1986			foot recovery).
COMPLETED				
DRILLING	Tes Corporation	2	4	0 - 0.35 foot: SILT and CLAY, black with a
COMPANY	Tes corporation		<u> </u>	
ORILLING	Drive and wash			layer of white.
METHOD	Drive and wash			Tayer or white:
SAMPLING	Calit cases		<b>i</b> .	0.35 - 0.8 foot: SAND and gravel, fine;
METHOD	Split spoon			0.53 - 0.6 loot. SAND and graver, rine,
14401 51	7-1 B			continued brown (0.9 foot recovery)
EXAMINED BY	John Benvegna			saturated, brown (0.8-foot recovery).
		1,0	1,,	CDNIET (week) and along any and any
REFERENCE _	Grade	10	12	GRAVEL (wash), some class, saturated (0.3-foot
#1 E V 4 710 H	95.32 feet $\frac{1}{}$	}		
OF M.P.	95.32 feet-			recovery).
WELL CONSTR				
TYPE	PVC - Schedule 40			End of boring 12 feet.
		1		
DIAM.	2-inch20			•.
-		İ .		
	1 - 12 feet bg			Cement: 0 - 0.2 foot bg
				•
GRAVEL PA	No. 2			Bentonite: 0.2 - 0.5 foot bg
6122				
CASINO	PVC			Sand: 0.5 - 12 feet
	Suction pump			Stick up: 2.25 feet ag
DEVELOPE	ENT			
	11/14/86			
PUMPING TES				
				NOTES:
DATE_				
6116.5	OM			bg = below grade
TARUC	3.75 feet btoc			
STATIC	WATER low tide			btoc = below top of casing
LEVEL				
PUMPIN LEVEL	PATER			ag = above grade
LEAST				
				·
YIELD				
	PVC Elevation:			
REMARKS	2.0 22014020111			
	97.57 feet			
_	91.51 1220			
	1/ Assumed datum			
	1/ Assumed datum			
	→ 100 feet.			

MOBIL OIL CORPORATION
TAPPAN TERMINAL
HASTINGS-ON-HUDSON
GREENBURGH, NEW YORK



WELL SIZE:	2-INCH DIAMETER
SCREEN SIZE:	0.020 INCH
CEMENT DEPTH:	0 - 0.20 FOOT
BACKFILL DEPTH:	
BENTONITE DEPTH:	0.20 - 0.50 FOOT
SAND PACK DEPTH:	0.5 - 12.0 FEET
BENTONITE DEPTH:	

L1: _	2.25	FEET
L2: _	1.0	FEET
L3:	11.0	FEET
L4:	12.0	FEET
L5:	14.25	FEET

LEGGETTE, BRASHEARS & GRAHAM, INC.

72 DANBURY ROAD WILTON, CT. 06897

OWNER-	Mobil Oil	Cor	poration	
	Hastings,	New	York	

WELL NO. TB-2

DATE 11/07/86 PAGE 10F 1PAGES DEPTH IN FEET DESCRIPTION FROM Fill with SAND, medium to fine; little silt; 0 2 Tank Farm LOCATION trace of gravel, fine; saturated, brown (1.2-foot recovery). November 7, 1986 COMPLETED\_ Fill with SAND, medium to fine; little gravel, 2 4 Tes Corporation COMPANY fine; trace of silt; saturated, brown, DRILLING Drive and wash METHOD -slight hydrocarbon odor. SAMPLING Split spoon METHOD Could not get casing past 5 feet, had to move SAMPLES John Benvegna EXAMINED BY\_ REFERENCE Grade hole three times (wood), stayed within 5 feet ELEVATION of original location. OF R.P. WELL CONSTRUCTION SCREEN 10 12 0 - 0.6 foot: SAND, fine; and silt; little TYPE .... · · gravel, fine; pieces of shell, saturated, brown black, slight hydrocarbon odor. GRAVEL PACK 0.6 - 1.4 feet: SAND, medium to fine; and gravel, fine; some silt; strong hydrocarbon odor, visible sheen, black, saturated. DEVELOPMENT .... End of boring 12 feet. PUMPING TEST DURATION\_ STATIC WATER LEVEL PUMPING WATER LEVEL Test Boring

LEGGETTE, BRASHEARS & GRAHAM, INC. CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD

o w	IER-	Mobil Oil Corporation	
		Hastings, New York	_
WELL	NO.	TB-3	

WILTON, CT. 06897 DATE 11/10/86 PAGE 10F 1PAGES DEPTH IN FEET FROM TO Fill with SAND, medium to fine, some fine 0 2 Tank Farm LOCATION gravel, pieces of wood; moist, brown to black (0.5-foot recovery). DATE November 10, 1986 COMPLETED Fill with SAND, fine to very fine; saturated, DRILLING Tes Corporation 2 4 COMPARY slight sheen of hydrocarbon; black (0.5-Drive and wash DAILLING METHOD foot recovery). SAMPLING Split spoon METHOD Fill with SAND, fine to very fine; little silt, 8 John Benvegna EXAMINED SY\_ REFERENCE Grade slight hydrocarbon odor, black (0.4-foot POINT ELEVATION recovery). OF R.P. WELL CONSTRUCTION SCREEN End of boring 8 feet. TYPE ..... SETTING \_\_\_\_\_ BIZE CASING DEVELOPMENT\_\_\_\_ PUMPING TEST DATE \_\_\_\_ MOITARUG \_\_\_ STATIC WATER LEVEL LEVEL Test Boring

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72 DANBURY ROAD

WILTON, CT. 06897

OWNER-	Mobil Oil Corporation
	Hastings, New York
VELL NO.	TB-4

DATE 11/07/86 PAGE 10F 1PAGES DEPTH IN FEET DESCRIPTION FROM TO Fill with SAND, fine to very fine, little 0 2 Tank Farm LOCATION gravel, fine; piece of wood; moist; hydrocarbon odor, brown, black (1.20-foot DATE November 7, 1986 COMPLETED DRILLING recovery). Tes Corporation COMPANY Fill with SAND, medium to fine; and GRAVEL, 2 4 DRILLING Hollow-stem auger METHOD -fine; some silt; saturated, strong hydro-SAMPLING Split spoon METHOD John Benvegna carbon odor, sheen on spoon, black (1.50-REFERENCE foot recovery). Grade POINT Auger cuttings: saturated with hydrocarbon, REVATION 8 4 OF R.P. NELL CONSTRUCTION SCREEN black. TYPE .\_ Fill with SAND, medium to fine; some gravel, 10 8 DIAM.\_\_\_\_BLOT NO.\_\_\_\_ fine, little silt; saturated, strong hydro-SETTING \_\_\_\_ carbon odor, sheen on spoon, black (1.35-SIZE foot recovery). End of boring 10 feet. DEVELOPMENT PUMPING TEST DATE \_\_\_\_\_ DURATION \_\_\_ LEVEL REWARKS Test Boring

### WFIL LOG

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CONSULTING GROUND-WATER GEOLOGISTS

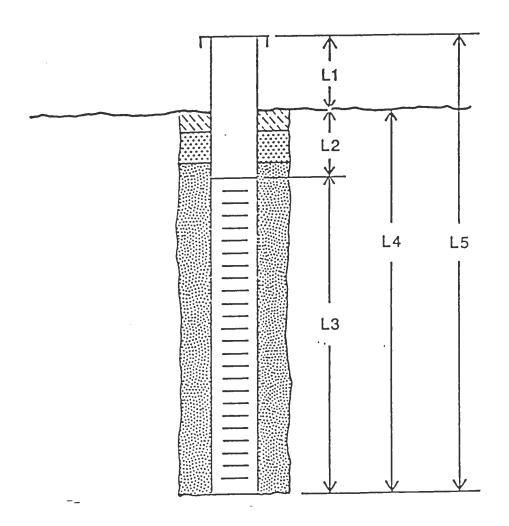
72 DANBURY ROAD WILTON, CT. 06897

OWNER-	Mobil Oil Corporation
	Hastings, New York
/ELL NO	OW-5

DATE 11/17/86 PAGE 1 OF 1 PAGES

		DEPTH	N FEET	DESCRIPTION
		FROM	10	
	North end of	0	2	From bottom of spoon.
LOCATION				
	Tank Farm			0 - 0.35 foot: Fill with sand, medium to fine;
DATE	November 17, 1986			some silt; moist; hydrocarbon odor; black.
COMPLETED_				
DRILLING	Tes Corporation	1	l	0.35 - 0.7 foot: Sand, medium to fine; and
COMPANY _		<del> </del>		
DRILLING	Drive and wash			silt; moist, brown, 0.7-foot recovery.
METHOD				
SAMPLING	Split spoon	2	4	Fill, sand, fine to very fine; and silt; trace
•		<b> </b>		
SAMPLES	John Benvegna			of gravel, fine; saturated with hydro-
EXAMINED BY_				
REFERENCE	Grade			carbon, strong odor (fuel oil), sheen on
POINT -				
ELEVATION	96.47 feet	ļ		spoon, black, 0.35-foot recovery.
WELL CONSTRU SCREEN	PVC	10	12	Fill with sand, medium to fine, and gravel,
TYPE				
າ	-inch 20	[		fine; little silt, saturated, slight hydro-
DIAM. 2-inch_sLot No. 20				
Ω	.71 - 10.71 feet bg			carbon odor, pieces of glass, 0.3-foot
BETTING				
GRAVEL PAG	Grade 2			recovery, brown, black.
BIZE	02440			
	PVC			End of boring.
CASING	PVC		<del> </del>	
	11/17/86			
DEVELOPME	11/17/86 30 minutes,			
	suction pump			Cement: 0 - 0.3 foot bg
_				
PUMPING TEST	•			Bentonite: 0.3 - 0.6 foot bg
DATE				
				Sand pack: 0.6 - 11 feet bq
DURATIO	4.10 feet btoc			
STATIC '	MATER 11/17/86			Stick up: 2.00 feet ag
ſ E V E L				
	WATER			
LEVEL				
	Poor			NOTES:
YIELD			i	
q	C Elevation:			bg = below grade
REWARKS				
a	8.47 feet			btoc = below top of casing
_				
1	/ Assumed datum			ag = above grade
	,			
	100 feet.		l	

MOBIL OIL CORPORATION
TAPPAN TERMINAL
HASTINGS-ON-HUDSON
GREENBURGH, NEW YORK



WELL SIZE:	2-INCH DIAMETER	L1:	2.0	FEET
WELL SIZE	2 11011 51711121	•		
SCREEN SIZE:	0.020 INCH	L2:	0.71	FEET
CEMENT DEPTH:	0 -0.30 FOOT	L3:	10	FEET
BACKFILL DEPTH:		L4:	10.71	FEET
•	0.30 - 0.60 FOOT	L5:	12.71	FEET
SAND PACK DEPTH:	0.60 - 11.0 FEET			

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72 DANBURY ROAD WILTON, CT. 08897

OWNER-	Mobil Oil Corporation
	Hastings, New York
ELL NO	TB-6

WILTON, CT. 08897			•	DATE 11/10/86 PAGE 10F 1PAGES		
		DEPTH	IN FEET	DESCRIPTION		
		FROM	TO			
LOCATION	Tank Farm	0	2	Fill with SAND, fine to very fine; little		
				gravel, fine; trace of silt; brown, black		
DATE COMPLETED_	November 10, 1986			(0.5-foot recovery).		
DRILLING COMPANY	Tes Corporation	2	4	Fill with SAND, fine to very fine; trace of		
DRILLING METHOD	Hollow-stem auger	-		gravel, fine; moist; hydrocarbon odor,		
SAMPLING METHOD	Split spoon			black (0.4-foot recovery).		
SAMPLES EXAMINED BY_	John Benvegna	10	12	Fill with SAND, fine to very fine; little silt;		
REFERENCE POINT	Grade			saturated, slight hydrocarbon odor, black		
ELEVATION OF R.P				(1.0-foot recovery).		
WELL CONSTRU	CTION			End of boring 12 feet.		
GRAVEL PA SIZE						
CASING						
DEVELOPM	E M T					
PUMPING TER						
DATE						
	) N					
STATIC	MATER					
PUMPING LEVEL	WATER					
Y1660						
REMARKS	Test Boring					
				·		

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72 DANBURY ROAD WILTON, CT. 06897

OWNER-	Mobil Oil Corporation
_	Hastings, New York
·= · · · · · ·	TB-7

DATE 11/12/86 PAGE 10F 1PAGES

	DEPTH IN FEET		N FEET	DESCRIPTION	
		FROM	TO		
	Tank Farm	0	2	Fill with SAND, fine to very fine; bottom of	
LOCATION	Tally Talli				
				spoon moist, brown, black (1.0-foot	
l _		<b> </b>		Shoot mother brown, brack (and root	
COMPLETED	November 12, 1986			recovery).	
DRILLING	Tes Corporation	2	4	Fill with SAND, fine to very fine; little silt:	
DRILLING	Drive and wash			pieces of wood, saturated, strong hydro-	
METHOD					
SAMPLING	Split spoon			carbon odor, black (0.4-foot recovery).	
METHOD	Split spoon	-			
SAMPLER	John Danisana	10	12	Fill with SAND, medium to fine; and GRAVEL,	
EXAMINED BY.	John Benvegna	10	14	TILL WICH STATE, ACCIDED TO TIME, and State State	
İ				sing likely wilk, antomakad atmong	
REFERENCE	Grade			fine; little silt; saturated, strong	
ELEVATION				hydrocarbon odor, sheen on spoon, black	
OF R.P WELL CONSTRU	JCTION				
SCREEN				(0.5-foot recovery).	
TYPE					
				End of boring 12 feet.	
DIAM				Did of bolling 12 feet.	
3 E T T I N Q					
GRAVEL PA	CK				
\$1ZE					
CASING					
DEVELOPM	EHT	<del>                                     </del>			
		12.551	ESCONO VARIETA		
-		- 53			
PUMPING TES	Ŧ			•	
DATE					
				į	
DUBATU	ON				
STATIC	WATER				
LEVEL					
	WATER	]			
LEVEL					
41ECD_					
REWARKS	Test Boring	ļ			
	<b>*</b> •				
		1	1		

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CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD

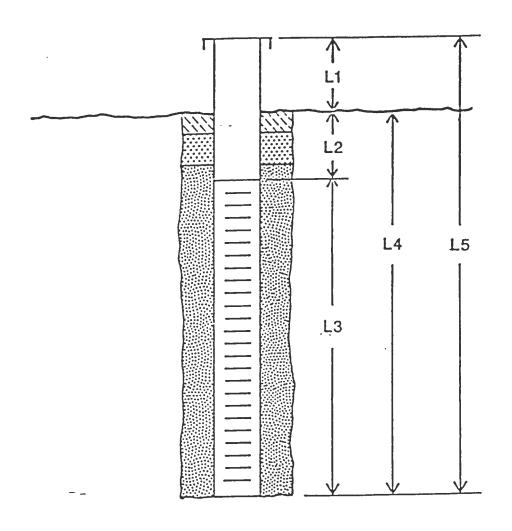
100 feet.

OWNER-	Mobil Oil Corporation
	Hastings, New York
WELL NO	OW-8

WILTON, CT. 06897 DATE 11/13/86 PAGE 10F 1PAGES DEPTH IN FEET FROM TO Fill with SAND, medium to fine; little silt, 2 0 Tank Farm LOCATION \_ trace of gravel, fine; moist, brown (1.5-foot recovery). DATE November 13, 1986 COMPLETED Fill with SAND, fine to very fine; trace of 4 DRILLING 2 Tes Corporation COMPANY silt; pieces of shell and wood, saturated, DRILLING Hollow-stem auger METHOD -organic odor, brown (0.6-foot recovery). SAMPLING Split spoon METHOD Fill with SAND, medium; and GRAVEL, fine; pieces 10 12 SAMPLES John Benvegna EXAMINED BY. of paper, saturated, black, brown (0.5-foot REFERENCE Grade POINT 96.19  $feet \frac{1}{}$ ELEVATION recovery). OF B.P. WELL CONSTRUCTION End of boring 12 feet. PVC - Schedule 40 DIAM. 2-inchiot No. 20 Cement: 0.0 - 0.2 foot bg 1.46 - 12.46 feet bd Bentonite: 0.2 - 0.5 foot bg No. 2 Sand: 0.5 - 12 foot bg PVC CASING \_\_\_\_ Stick up: 2.0 ft ag Suction pump 11/14/86 PUMPING TEST NOTES: bg = below grade 5.01 feet btoc STATIC WATER low tide btoc = below top of casing PUMPING WATER ag = above grade YIELD Poor PVC Elevation: 98.19 feet 1/ Assumed datum

MOBIL OIL CORPORATION
TAPPAN TERMINAL
HASTINGS-ON-HUDSON
GREENBURGH, NEW YORK

8 -WO



WELL SIZE	2-INCH DIAMETER	L1:	2.0	FEET
-		L2:	1.46	FEET
SCREEN SIZE:	0.020 INCH			
CEMENT DEPTH:	0 - 0.20 FOOT	L3:	11.0	FEET
BACKFILL DEPTH:		L4:	12.46	FEET
BENTONITE DEPTH:	0.20 - 0.50 FOOT	L5:	14.46	FEET
SAND PACK DEPTH:	0.5 - 12.0 FEET			

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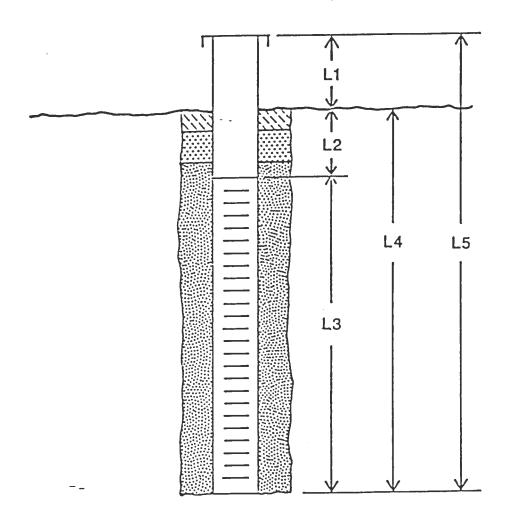
CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD WILTON, CT. 06897

OWNER-	Mobil Oil Corporation
	Hastings, New York
ELL NO	CW-9

	WILTON, CT.	06897	7	DATE 11/04/86 PAGE 1 OF 1 PAGES DESCRIPTION
		DEPTH	IN FEET	DESCRIPTION
		FROM	ТО	
LOCATION _	Southwest side	0	2	Fill with SAND, very fine; and SILT; piece of
	of Tank Farm			paper; moist, brown (2.0-foot recovery).
DATE COMPLETED_	November 5, 1986	2	4	Fill with GRAVEL, medium to fine; trace of silt;
DRILLING	Tes Corporation			pieces of glass, moist, brown (1.2-foot
DRILLING	Drive and wash			recovery).
SAMPLING METHOD	Split spoon	5	7	Fill with GRAVEL, medium to fine; trace of silt;
SAMPLES EXAMINED BY.	John Benvegna			pieces of glass, saturated, brown (1.2-foot
REFERENCE POINT				recovery).
ELEVATION OF R.P	96.69 feet 1/	12	14	No recovery.
WELL CONSTRU SCREEN TYPE	PVC - Schedule 40	14	16	SILT; saturated, black, gray, sulfur odor.
DIAM	2-inch LOT NO. 20			End of boring 16 feet.
SETTING	0.5 - 15 feet bg			
GRAVEL PA BIZE	No. 2			Cement: 0.0 - 0.2 foot bg
CASING	PVC			Bentonite: 0.2 - 0.4 foot bg
DEVELOPM	ENT_Suction pump			Sand: 0.4 - 15 feet bg
_	11/14/86			Stick up: 2.5 ft ag
PUMPING TEST				· · · · · · · · · · · · · · · · · · ·
	) N			NOTES:
	4.66 feet btoc			bg = below grade
PUMPING	WATER			btoc = below top of casing
	Good			ag = above grade
	PVC Elevation:			
- 83 HAM 5 H	99.19 feet			
_	1/ Assumed datum			·
	77.00 6 4			y

MOBIL OIL CORPORATION
TAPPAN TERMINAL
HASTINGS-ON-HUDSON
GREENBURGH, NEW YORK



WELL SIZE:	2-INCH DIAMETER
SCREEN SIZE:	0.020 INCH
CEMENT DEPTH:	0 - 0.20 FOOT
BACKFILL DEPTH:	
BENTONITE DEPTH:	0.20 - 0.40 FOOT
SAND PACK DEPTH:	0.40 - 15.0 FEET

L1:	2.5	FEET
L2:	0.5	FEET
L3:	14.5	FEET
L4:	15.0	FEET
L5:	17.50	FEET

LEGGETTE, BRASHEARS & GRAHAM, INC. CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD

OWNER-	Mobil Oil Corporation
	Hastings, New York
WELL NO	тв-10

WILTON, CT. 06897 DATE 11/04/86 PAGE 10F 1PAGES DEPTH IN FEET FROM TO 0 - 1.0 foot: Fill with SAND, fine; brown. 0 2 Southeast side LOCATION \_ 1 - 1.3 feet: Fill with glass, pieces of shell, of Tank Farm DATE moist, black (1.3-foot recovery). November 14, 1986 COMPLETED \_ \_ Fill with GRAVEL, fine; some SAND, medium to 2 4 Tes Corporation COMPANY fine; pieces of glass; saturated, slight DRILLING Drive and wash METHOD ... hydrocarbon odor, sheen on spoon, black SAMPLING Split spoon METHOD John Benvegna (1.0-foot recovery). Fill with SAND and GRAVEL, medium to fine, REFERENCE 6 Grade POINT ELEVATION pieces of glass, saturated, strong hydro-OF R.P. WELL CONSTRUCTION carbon odor, sheen on spoon, visible hydro-SCREEK TYPE .... carbon, black (1.5-foot recovery). DIAM.\_\_\_\_SLOT NO.\_\_\_ Fill with SAND and GRAVEL, medium to fine, 7 5 pieces of glass, saturated, strong hydro-GRAVEL PACK BIZE carbon odor, sheen on spoon, visible hydrocarbon, black (1.5-foot recovery). DEVELOPMENT\_\_\_\_ End of boring 7 feet. PUMPING TEST \_\_ MOITARUD STATIC WATER LEVEL PUMPING WATER LEVEL YIELD \_\_\_ Test Boring

LEGGETTE, BRASHEARS & GRAHAM, INC.

CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD WILTON, CT. 06897

OWNER-	Mobil Oil Corporation
_	Hastings, New York
WELL NO	TB-11

DATE 11/04/86 PAGE 10F 1PAGES DESCRIPTION DEPTH IN FEET FROM Fill with sand, fine; pieces of shell and glass, 0 Southeast corner LOCATION \_ brown, black, white (1.3-foot recovery). of Tank Farm SILT and CLAY; saturated, hydrogen sulfide odor, DATE 4 November 4, 1986 2 COMPLETED ... black, traces of red dve (1.0-foot DRILLING Tes Corporation COMPANY recovery).\_\_\_ DRILLING Drive and wash METHOD --Silt; pieces of shell, hydrogen sulfide odor, 6 SAMPLING 4 Split spoon METHOD John Benvegna saturated, black, traces of red dve (0.8-foot recovery). REFERENCE Grade POINT Silt; pieces of shell, hydrogen sulfide odor, ELEVATION 6 8 OF B.P. VELL CONSTRUCTION saturated, black, traces of red dye **ECREEN** TYPE .... (0.5-foot recovery). DIAM.\_\_\_\_\_SLOT NO.\_\_\_ End of boring 8 feet. SETTING \_\_\_\_\_ GRAVEL PACK SIZE CASING \_\_\_ DEVELOPMENT\_\_\_\_ PUMPING TEST DURATION \_\_\_\_ STATIC WATER PUMPING WATER YIELD \_\_\_\_ REMARKS Test Boring >>

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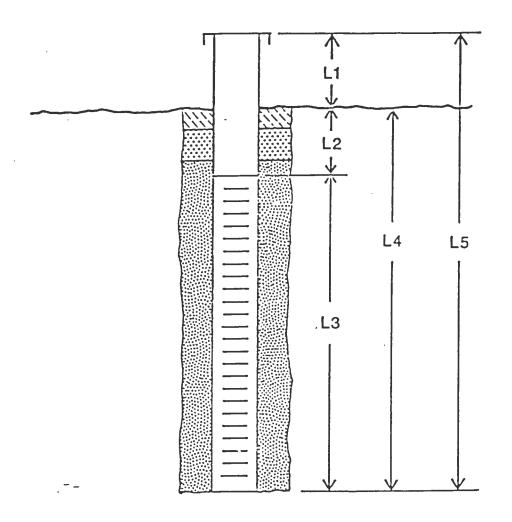
72 DANBURY ROAD

~100 feet.

OWNER-	Mobil Oil Corporation
	Hastings, New York
WELL NO	OW-12

DATE 11/06/86 PAGE 1 OF 1 PAGES WILTON, CT. 06897 DEPTH IN FEET FROM TO Fill with SILT; some gravel, fine, pieces of 2 Northeast corner LOCATION \_. wood and brick, moist; traces of red dye; of loading rack brown; black (1.6-foot recovery). November 6, 1986 DATE COMPLETED \_\_\_ Fill-silt and clay; very moist, black (1.5-foot Tes Corporation 2 4 COMPANY .. recovery). DRILLING Drive and wash HETHOD ---Fill with SILT; little sand, medium; trace of 6 SAMPLING Split spoon 4 John Benvegna gravel, pieces of glass and wood, saturated, trace of red dye, black, brown REFERENCE Grade ELEVATION 100.38 feet  $\frac{1}{2}$ (1.0-foot recovery). OF R.P. WELL CONSTRUCTION Fill with SILT and SAND, medium to fine; trace SCREEN PVC - Schedule 40 12 10 of gravel, fine; some black dye, saturated, 2-inch 20 black (0.4-foot recovery). 1 - 15 feet bg GRAVEL PACK NO. 2 End of boring 12 feet. PVC CASING \_\_\_\_ Cement: 0 - 0.2 foot bg Airlift DEVELOPMENT\_ Bentonite: 0.2 - 0.5 foot bg November 13, 1986 PUMPING TEST Sand: 0.5 - 15 feet bg ... DATE \_\_\_ Stick up: 1.17 feet aq\_ 7.70 feet btoc STATIC WATER high tide LEVEL PUMPING WATER NOTES: LEVEL bg = below grade YIELD \_\_\_\_ PVC Elevation: btoc = below top of casing 101.55 feet. ag = above grade 1/ Assumed datum

MOBIL OIL CORPORATION
TAPPAN TERMINAL
HASTINGS-ON-HUDSON
GREENBURGH, NEW YORK



WELL SIZE:	2-INCH DIAMETER	L1:	1.17	FEET
SCREEN SIZE:	0.020 INCH	L2:	1.0	FEET
-		L3:	14.0	FEET
CEMENT DEPTH:	0 - 0.20 FOOT	•		
BACKFILL DEPTH:		L4: .	15.0	FEET
BENTONITE DEPTH:	0.20 - 0.50 FOOT	L5:	16.17	FEET
SAND PACK DEPTH:	0.5 - 15.0 FEET			

### WFIL LOG

LEGGETTE, BRASHEARS & GRAHAM, INC.
CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD WILTON, CT. 06897

OWNER-	Mobil Oil Corporation
_	Hastings, New York

WELL NO. TB-13

DATE 11/05/86 PAGE 1 OF 1 PAGES

	WILLION, CI.			DATE 11/05/66 PAGE 1 OF 1 PAGES
		DEPTH	IN FEET	DESCRIPTION
		FROM	то	]
LOCATION	Northwest corner	0	2	Fill with SAND, fine; and silt; pieces of
	of loading rack			shell, brown, white (0.7-foot recovery).
DATE	November 5, 1986	2	4	Fill with sand, fine to very fine; some silt;
DRILLING COMPANY	Tes Corporation			spots of light brown and dark brown, moist
1	Drive and wash			(0.8-foot recovery).
SAMPLING METHOD	Split spoon	5	7	Fill with SILT; some gravel, fine, saturated,
SAMPLES EXAMINED BY	John Benvegna			black, brown, spots of white (1.0-foot
REFERENCE	Grade			recovery).
ELEVATION OF R.P.		7	9	Fill with SILT and SAND, fine to very fine;
WELL CONST! SCREEN TYPE				trace of gravel; saturated, brown (1.2-foot
DIAM				recovery).
\$ 2 T T I M Q _				End of boring 9 feet.
GRAVEL P	ACK			
CASING_				
DEVELOP	MEN7			
PUMPING TE	■T			
DATE_				
	ION			
LEVEL	WATER			
LEVEL	IG WATER			
REWARKS _	Test Boring			
_				
_				
	<b></b>			

LEGGETTE, BRASHEARS & GRAHAM, INC. CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD

0 W N E B	Mobil Oil	Corporation
OWNEN-	Hastings,	
_		

WELL NO. TB-14

WILTON, CT. 06897		•	DATE 11/05/86 PAGE 1 OF 1 PAGES	
		DEPTH	N FEET	DESCRIPTION
		FROM	ТО	
LOCATION	East side of	0	0.5	Blacktop.
-	loading rack	2	4	Fill with SILT and GRAVEL, fine; moist, trace of
DATE	November 5, 1986			pink dye; black, very moist (0.7-foot
DRILLING	Tes Corporation			recovery).
DRILLING METHOD -	Hollow-stem auger	4	6	Fill with SILT and GRAVEL, fine; saturated,
SAMPLING METHOD	Split spoon			strong hydrocarbon odor, sheen on spoon,
SAMPLES EXAMINED BY	John Benvegna			black (0.5-foot recovery).
REFERENCE POINT _	Grade	9	11	Fill with SILT: little sand and gravel, medium
ELEVATION				to fine; saturated, strong hydrocarbon
WELL CONSTR	UCTION			odor, visual sheen (0.6-foot recovery).
	SLOT NO			End of boring 11 feet.
BETTING				
GRAVEL P	ACK			
CASING _				
DEVELOPA	4ENT			
PUMPING TER	T			
OATE_				
	OM			
STATIC LEVEL	WATER			
PUMPIN LEVEL	Q WATER			
YIELD_				
REMARKS _	Test Boring			
_				
	<b>&gt;&gt;</b>			

### WFLL LOG

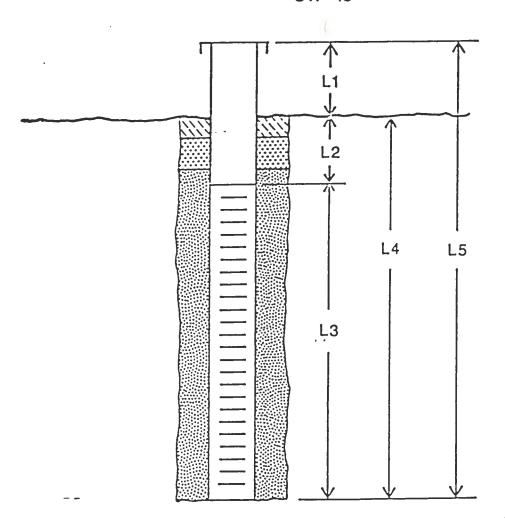
LEGGETTE, BRASHEARS & GRAHAM, INC.
CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD WILTON, CT. 06897

OWNER-	Mobil Oil Corporation
_	Hastings, New York
ELL NO	OW-15

	WILTON, CT.	06897	•	DATE 11/06/86 PAGE 1 OF 1 PAGES
		DEPTH	N FEET	DESCRIPTION
		FROM	TO	
LOCATION	Far east side of	0	2	Fill with SAND, medium to fine; and silt, less
-	loading rack area			of sand, fine; light brown at 0.5 foot;
DATE COMPLETED	November 6, 1986			moist, black stain, dve? (1.6-foot recovery)
DRILLING COMPANY _	Tes Corporation	2	4	Fill with SAND, medium to fine; little silt;
DRILLING METHOD	Drive and wash			trace of gravel, fine; less of sand, 0.2
SAMPLING METHOD _	Split spoon			foot from bottom of stoon, fine, light
SAMPLES EXAMINED BY_	John Benvegna			brown, moist, black, brown (1.1-fcot
REFERENCE	Grade			recovery).
	98.67 feet 1/	4	6	Fill with SAND, medium to fine; some silt; trace
WELL CONSTRU SCREEN TYPE	PVC - Schedule 40			of gravel, fine; lens of SAND, fine; light
DIAM. 2	-inchslot NO. 20			brown, 1.0 foot from bottom of spoon,
SETTING 1	.84 - 15.84 feet bg			saturated, black, brown (1.4-foot recovery)
GRAVEL PAI	No. 2	10	12	Fill with SAND, medium to fine; trace of silt:
CASING	PVC			saturated, pieces of wood, black (0.4-fcot
DEVELOPM	ENTAirlift			recovery).
_	11/13/86			End of boring 16 feet.
PUMPING TEST				
0.416				Cement: 0 - 0.2 foot bg
DURATIO	6.48 feet btoc			cemente.
STATIC '	water high tide			Bentonite: 0.2 - 0.5 foot bg
PUMPINO LEVEL	WATER			Sand: 0.5 - 16.0 feet bg
Y1ELD				Stick up: 1.70 feet ad
REMARKS P	VC Elevation:			
	100.37 feet			NOTES:
<del></del>	1/ Assumed datum			bg = below grade
	100 feet.			btog = below top of casing

MOBIL OIL CORPORATION
TAPPAN TERMINAL
HASTINGS-ON-HUDSON
GREENBURGH, NEW YORK



WELL SIZE:	2-INCH DIAMETER
SCREEN SIZE:	0.020 INCH
CEMENT DEPTH:	0 - 0.20 FOOT
BACKFILL DEPTH:	
BENTONITE DEPTH:	0.20 - 0.50 FOOT
SAND PACK DEPTH:	0.50 - 16.0 FEET

L1:	1.70	FEET
L2:	1.84	FEET
L3:	14.0	FEET
L4:	15.84	FEET
L5:	17.54	FEET

LEGGETTE, BRASHEARS & GRAHAM, INC.

72 DANBURY ROAD WILTON, CT. 06897

OWNER-	Mobil Oil Corporation
<del></del>	Hastings, New York
WELL NO	OW-16

WILTON, CT. 06897			,	11/07/96 2405 105 224055
WILTON, CI. 08897				DATE 11/07/86 PAGE 1 OF 2 PAGES
		FROM	TO	
	Outside front	0	0.3	Blacktop.
LOCATION	Outside front	<del> </del>	1	
	gate	0.3	2	Fill with SAND, fine to very fine; and SILT;
DATE	November 7, 1986			pieces of brick (1.7-foot recovery).
DRILLING COMPANY	Tes Corporation	2	4	Fill with SAND, medium to fine; little SILT;
DRILLING METHOD -				trace of gravel, fine; pieces of glass,
	Split spoon			moist, brown, black, spots of white (1.3-
SAMPLES EXAMINED BY	John Benvegna			foot recovery).
REFERENCE		4	6	Fill with SAND, medium to fine; some silt;
1	97.94 feet			little gravel, fine; saturated, black
WELL CONST	PVC - Schedule 40			(1.7-foot recovery).
	4-inchstoT NO. 20	10	12	Fill with SAND, medium to fine; some silt;
SETTING	2 - 17 feet bg			little gravel, fine; saturated, strong
1	ACK No. 2			hydrocarbon odor, sheen on spoon, black
1	PVC			(1.45-foot recovery).
	Suction pump	12	17	Auger cuttings - approximately.
	11/14/86			Fill with SAND, medium to fine; some silt;
PUMPING TE	8 T			little gravel, fine; saturated, strong
DURAT	10N			hydrocarbon odor, sheen on spoon, black
STATIC LEVEL	4.13 feet btoc			(1.45-foot recovery).
1	NG WATER			End of boring 17 feet.
YIELD	Good			
	Step down cap and			Cement: 0.5 - 1.0 foot bg
	çate box. PVC Elevation:			Bentonite: 1.0 - 1.5 foot bg
	97.64 feet 1/ Assumed datum:			Sand: 1.5 - 17 feet hg
	100 feet.			Stick up: none

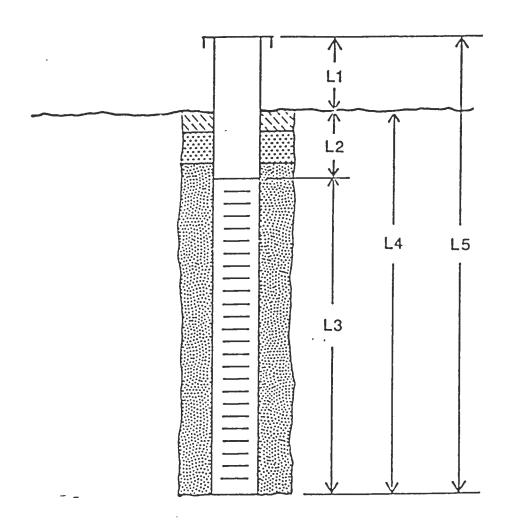
WELL NO. OW-16

PAGE OF PAGES

		DESCRIPTION
	N FEET	
FROM	10	
		NOTES:
		bg = below grade
		btoc = below top of casing
		ag = above grade
		•

MOBIL OIL CORPORATION TAPPAN TERMINAL HASTINGS-ON-HUDSON GREENBURGH, NEW YORK

· OW-16



WELL SIZE:	4-INCH DIAMETER	L1:	0.0	FEET
SCREEN SIZE:	0.020 INCH	L2:	2.0	FEET
CEMENT DEPTH:	0.5 - 1.0 FOOT	L3:	15.0	FEET
BACKFILL DEPTH:		L4:	17.0	FEET
BENTONITE DEPTH:	1.0 -1.5 FOOT	L5:	17.0	FEET
SAND PACK DEPTH:				

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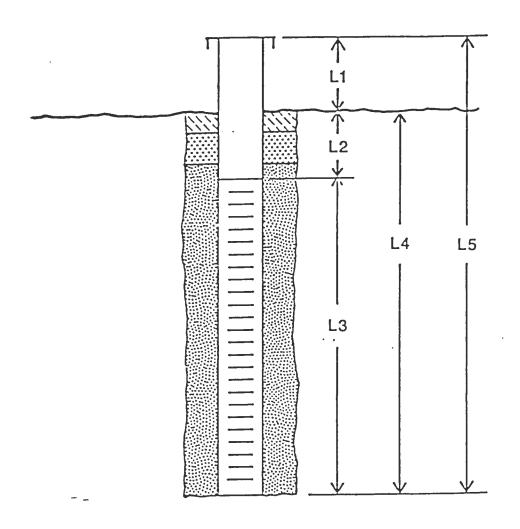
72 DANBURY ROAD WILTON, CT. 06897

Has	tings,	New	York

WELL NO. ON-17

WILTON, CT			DATE 11/07/86 PAGE 10F 1PAGES
	DEPTH	IN FEET	DESCRIPTION
	FROM	ТО	
Southeast side of	0	2	Fill with SAND, medium to fine; and SILT;
Tank Farm			pieces of wood and glass, moist, black
DATE November 7, 1986			stain (carbon?) (1.5-foot recovery).
COMPANY Tes Corporation	2	4	Fill with SAND, medium to fine; and SILT; trace
Drive and wash			of gravel, fine; saturated, strong odor
SAMPLING Split spoon			(hydrogen sulfide), blue and black stain
SAMPLES John Benvegna			(0.5-foot recovery).
REFERENCE Grade	4	6	Fill with SAND, fine to very fine; and SILT;
elevation 99.35 feet 1/			saturated, strong odor (hvdrogen sulfide),
SCREEN PVC - Schedule 40			blue and black stain (1.0-foot recovery).
DIAM. 2-inch SLOT NO. 20	10	12	Fill with SAND, fine to very fine; and SILT;
setting 1.9 - 15.9 feet bg			saturated, strong odor (hydrogen sulfide).
GRAVEL PACK NO. 2			blue and black stain (0.4-foot recovery).
CASING PVC			Drive casing to 16 feet - install well.
DEVELOPMENT Suction pump			End of boring 16 feet.
11/14/86			
PUMPING TEST			Cement: 0 - 0.1 foot
OURATION			Bentonite: 0.1 - 0.5 foot
7.0 feet btoc			
LEVEL low tide			Sand: 0.5 - 16 feet bq
PUMPING WATER LEVEL			Stick up: 1.75 feet aq
Moderate			
PVC Elevation:			NOTES:
101.10 feet	-		bg = below grade
1/ Assumed datum			btoc = below top of casing
~>100 feet.			ag = above grade

MOBIL OIL CORPORATION
TAPPAN TERMINAL
HASTINGS-ON-HUDSON
GREENBURGH, NEW YORK



WELL SIZE:	2-INCH DIAMETER	L1:	1.75	FEET
SCREEN SIZE:	0.020 INCH	L2:	1.9	FEET
CEMENT DEPTH:	0 - 0.10 FOOT	L3:	14.0	FEET
BACKFILL DEPTH:		L4:	15.90_	FEET
BENTONITE DEPTH:	0.10 - 0.5 FOOT	L5:	17.65	FEET
-		•		
SAND PACK DEPTH:	0.5 -16 FEET			

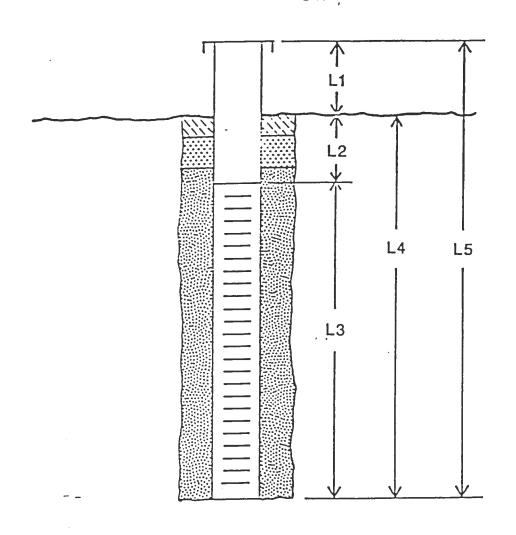
LEGGETTE, BRASHEARS & GRAHAM, INC.
CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD

οW	NER-	Mobil Oil Corporation	
		Hastings, New York	
WELL	NO	OW-18	

	WILTON, CT.	06897	•	DATE 11/14/86 PAGE 1 OF 1 PAGES
		DEPTH	IN FEET	DESCRIPTION
		FROM	то	
	Middle of Tank Farm	0	2	Fill with SAND, very fine; and SILT, trace of
COCATION _	east side			gravel, fine; moist, slight hydrocarbon
DATE COMPLETED	November 14, 1986			color; black (1-foot recovery).
DRILLING COMPANY	Tes Corporation	2	4	Fill with SAND, very fine; and SILT; pieces of
DRILLING METHOD	Drive and wash			wood, saturated with hydrocarbon, strong
	Split spoon			odor (0.6-foot recovery).
	John Benvegna	10	12	Bent spoon - no sample, could not get past 11
REFERENCE				feet, installed well at 11 feet.
	96.46 feet 1/			End of boring 11 feet.
WELL CONSTRE	UCTION			
SCREEN TYPE	PVC - Schedule 40		<u> </u>	
DIAM.	2-inchstoT_NO20			Cement: 0 - 0.2 foot bq
1 5 T T ( N Q	1 - 11 feet bg			Bentonite: 0.2 - 0.5 foot bg
	ck No. 2			Sand: 0.5 - 11 feet bg
	PVC			Stick up: 1.55 feet aq
	Suction pump			
	11/17/86			NOTES:
PUMPING TES	T			1 Nolon made
DATE_				bq = below grade
TARUG	ON			btoc = below top of casing
	WATER			ag = above grade
	G WATER			
	ove Floration.			
	PVC Elevation:			
-	8.01 feet			
_1	./ Assumed datum			
	M 00 6			

MOBIL OIL CORPORATION
TAPPAN TERMINAL
HASTINGS-ON-HUDSON
GREENBURGH, NEW YORK



WELL SIZE:	2-INCH DIAMETER	L1:	1.55	FEET
SCREEN SIZE:	0.020 INCH	L2:	1.0	FEET
CEMENT DEPTH:	0 - 0.20 FOOT	L3:	10.0	FEET
BACKFILL DEPTH:		L4:	11.0	FEET
BENTONITE DEPTH:	0.20 - 0.50 FOOT	L5:	12.55	FEET
SAND PACK DEPTH:	0.50 - 11.0 FEET			

### WFIL LOG

LEGGETTE, BRASHEARS & GRAHAM, INC.
CONSULTING GROUND-WATER GEOLOGISTS

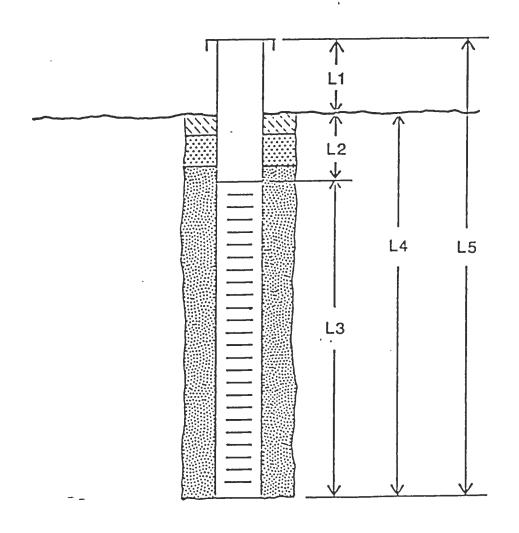
72 DANBURY ROAD

OWNER-	Mobil Oil Corporation	
	Hastings, New York	_
WELL NO	OW-19	_

1	WILTON, CT.	0689	7	DATE 11/12/86 PAGE 1 OF 1 PAGES
		<b></b>	IN FEET	DESCRIPTION
	Incido cato at	FROM	2	Fill with CAND modium to fine, and STITE SOME
LOCATION	Inside gate at	<del>                                     </del>		Fill with SAND, medium to fine; and SILT; some
_	Tank Farm entrance			gravel, fine; moist, slight hydrocarbon
DATE	November 12, 1986		-	odor, brown, black (1.6-foot recovery).
DRILLING COMPANY	Tes Corporation	2	4	Fill with SAND, fine; some silt; saturated,
DRILLING METHOD .	Hollow-stem auger			light brown, gray (1.55-foot recovery).
SAMPLING METHOD	Split spoon	4	6	SAND, fine to very fine; little silt; trace of
SAMPLES EXAMINED BY	John Benvegna			gravel, fine; saturated (1.80-foot
REFERENCE POINT .				recovery).
ELEVATION OF R.P.	98.70 feet 1/	10	12	Sand, medium to fine; little silt; saturated.
WELL CONSTR SCREEN TYPE .	PVC - Schedule 40			black, brown, specks of red and white
DIAM	2-inchstoT_NO20			·· (0.9-foot recovery).
SETTING_	1 - 16 feet bg			Auger to 16 feet.
	No. 2			
CASING _	PVC			Cement: 0 - 0.2 foot bg
DEVELOPI	Airlift Airlift			Backfill: 0.2 - 0.8 foot bg
	11/14/86			Bentonite: 0.8 - 1.2 feet bg
PUMPING TEE				Sand: 1.20 - 16 feet bg .
				Stick up: 1.65 feet ag
STATIC LEVEL	5.10 feet btoc  WATER low tide			
PUMPIN LEVEL	PSTAW D			NOTES:
Y1ELD_				bc = below grade
	PVC Elevation:			btoc = below top of casing
_	100.35 feet			ag = above grade
	1/ Assumed datum			
	<b>~1</b> 00 feet.			

MOBIL OIL CORPORATION
TAPPAN TERMINAL
HASTINGS-ON-HUDSON
GREENBURGH, NEW YORK

· OW-19



WELL SIZE:	2-INCH DIAMETER
SCREEN SIZE:	0.020 INCH
CEMENT DEPTH:	0 - 0.20 FOOT
BACKFILL DEPTH:	0.20 - 0.80 FOOT
BENTONITE DEPTH:	0.80 - 1.20 FEET
SAND PACK DEPTH:	1.20 - 16.0 FEET

L1:	1.65	FEET
L2:	1.0	FEET
L3:	15.0	FEET
L4:	16.0	FEET
L5:	17.65	FEET

LEGGETTE, BRASHEARS & GRAHAM, INC. CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD

WILTON, CT. 06897

OWNER-	Mobil Oil	Corporation
	Hastings,	
_	mastinus,	New 101K

WELL NO. OW-20

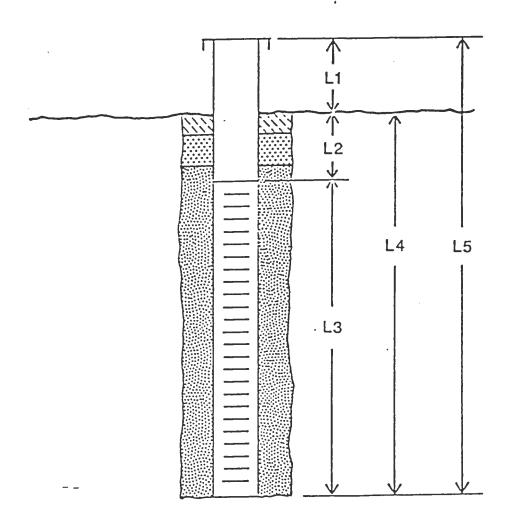
WILTON, CT.	08897	r 	DATE 11/11/86 PAGE 1 OF 2 PAGES
	DEPTH	IN FEET	DESCRIPTION
	FROM	TO	
LOCATION Far northeastern	0	2	Fill with SAND, medium to fine; little silt;
corner of Tank Farm			trace of gravel, fine; pieces of brick,
November 12, 1986			black, brown (1.5-foot recovery).
COMPANY Tes Corporation	2	4	Fill with SAND, medium to fine; trace of gravel,
DRILLING Hollow-stem auger	٠.		fine; layer of silt of approximately 0.1-
SAMPLING Split spoon			foot thick at bottom of spoon, moist
SAMPLES John Benvegna		İ	(0.5-foot recovery).
PEFERENCE Grade	6	8	Fill with SAND, fine to very fine; and SILT;
elevation 98.97 feet / of R.P. 98.97 feet / well construction			trace of gravel, fine; saturated, slight
SCREEN PVC - Schedule 40			hydrocarbon odor, black, grav (0.6-foot
DIAM. 2-inch SLOT NO. 20			··recovery).
1.73 - 11.73 feet bg			Could not pass 6 feet - moved hole 3 feet.
BIZE NO. 2	10	12	Fill with SAND, fine to very fine; and SILT;
CASING PVC			saturated, slight hydrocarbon odor, gray
DEVELOPMENT Airlift			(1.0-foot recovery).
11/14/86			Auger to 13 feet - install well.
DATE			End of boring 13 feet.
DURATION			
6.14 feet btoc			Cement: 0.0 - 0.5 foot bg
PUMPING WATER LEVEL			Backfill: 0.5 - 1.5 feet bo
Y1ELD			Bentonite: 1.5 - 2.0 feet bg
PVC Elevation:		1	Sand: 2 - 13 feet bg
101.12 feet			Stick up: 2.15 feet ag
1/ Assumed datum			
>100 feet.			<u> </u>

WELL NO. OW-20

PAGE 2 OF 2 PAGES

DEPTH IN	FEET	DESCRIPTION
		NOTES:
		bg = below grade
		btoc = below top of casing
		ag = above grade
		-
	1	•
I		

MOBIL OIL CORPORATION
TAPPAN TERMINAL
HASTINGS-ON-HUDSON
GREENBURGH, NEW YORK



WELL SIZE:	2-INCH DIAMETER
SCREEN SIZE:	0.020 INCH
CEMENT DEPTH:	0 - 0.5 FOOT
BACKFILL DEPTH:	0.50 - 1.5 FEET
BENTONITE DEPTH:	1.50 - 2.0 FEET
SAND PACK DEPTH:	2.0 - 13.0 FEET

L1: 2.15 FEET

L2: 1.73 FEET

L3: 10.0 FEET

L4: 11.73 FEET

L5: 13.88 FEET

LEGGETTE, BRASHEARS & GRAHAM, INC.

CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD WILTON, CT. 08897

0 W '1 E R	Mobil Oil Corporation
	Hastings, New York
WELL NO	OW-21

WILTON, CT. 08897			DATE 11/10/86 PAGE 1 OF 2 PAGES
	DEPTH	N FEET	DESCRIPTION
	FROM	TO	
North end of	0	0.3	Blacktop.
Tank Farm	0.3	2	Fill with SAND, fine to very fine; and SILT,
November 10, 198	6		some gravel, fine; moist, black (0.6-foot
COMPANY Tes Corporation			recovery).
ORILLING Hollow-stem auge	r 2	4	From bottom of spoon.
Split spoon			0 - 0.5 foot: SILT AND CLAY, moist, black and
SAMPLES John Benvegna			çray.
REFERENCE Grade			0.5 - 1.2 feet: GRAVEL, medium; gray (1.2-foot
ELEVATION 97.18 feet 1/			recovery).
OF R.P.			
TYPE PVC - Schedule 40	) 4	6	0 - 0.6 foot: SAND, fine to very fine and
DIAM. 2-inch_stot No. 20			GRAVEL, fine; brown grav.
setting 1 - 16 feet bg			0.6 - 1.2 feet: SAND, fine to very fine; and
GRAVEL PACK NO. 2			silt; saturated, crav (1.2-foot recovery).
CASING PVC	11	13	SAND, medium to fine; and SILT; some gravel.
DEVELOPMENT Airlift			fine; saturated, hydrogen sulfide odor.
11/14/86			gray (1.0-foot recovery).
PUMPING TEST DATE			Auger to 16 feet - install well to 16 feet.
DUBATION.			
5.17 feet btoo			Cement: 0.0 - 0.5 foot bg
PUMPING WATER LEVEL			Bentonite: 0.5 - 1 foot bg
Y1ELD			Sand: 1 - 16 feet bg
PVC Elevation:			Stick up: 1.45 feet ag
98.63 feet			
1/ Assumed datum			
►100 feet.			

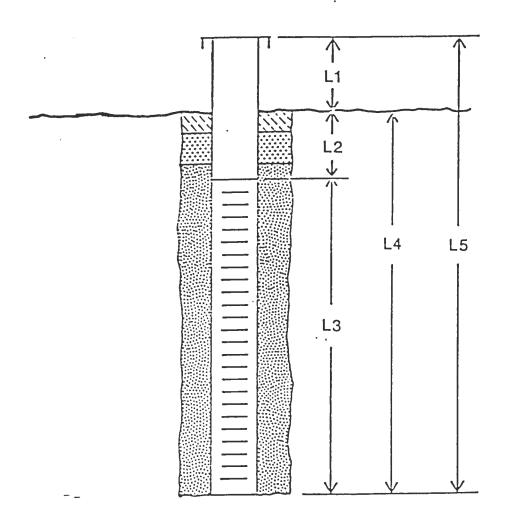
OW-21 WELL NO.

PAGE 2 OF 2 PAGES

DEPTH II	N FEET	DESCRIPTION
FROM	TO	
		NOTES:
		bg = below grade
	-	btoc = below top of casing
		ag = above grade
		·
		•
		•

MOBIL OIL CORPORATION
TAPPAN TERMINAL
HASTINGS-ON-HUDSON
GREENBURGH, NEW YORK

OW-21



WELL SIZE:	2-INCH DIAMETER
SCREEN SIZE:	0.020 INCH
CEMENT DEPTH:	0 - 0.5 FOOT
BACKFILL DEPTH:	0.5 - 1.0 FOOT
BENTONITE DEPTH:	0.5 - 1.0 FOOT
SAND PACK DEPTH:	1.0 - 16 FEET

LEGCETTE, BRASHEARS & GRAHAM, INC.

L1: 1.45

L2: <u>1.0</u>

L3: 15.0

L4: 16.0

L5: 17.45

FEET

FEET

FEET

FEET

FEET

# WELL LOG

LEGGETTE, BRASHEARS & GRAHAM, INC. CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD

WILTON CT. 05897

OWNER-	Mcbil Oil	Corporation	
_	Hastings,		

WELL NO. TB-22

WILTON, CT. 00007				DATE 11/12/86 PAGE 1 OF 1 PAGES
		DEPTH	IN FEET	DESCRIPTION
		FROM	то	
LOCATION _	Far east side	0	2	Fill with SAND, medium to fine; some gravel,
_	of Tank Farm			fine; moist, brown (0.6-foot recovery).
DATE COMPLETED	November 12, 1986			Underground obstruction (foundation?) - moved
DRILLING COMPANY	Tes Corporation			hole 2 feet.
DRILLING METHOD	Hollow-stem auger	2	4	Fill with SAND, medium to fine; little gravel,
	Split spoon			fine; trace of silt; very moist, pieces of
SAMPLES EXAMINED BY.	John Benvegna			brick, black brown (0.8-foot recovery).
REFERENCE POINT				Obstruction and moved hole again 2 feet.
ELEVATION		10	12	From bottom of spoon.
WELL CONSTRU				0 - 0.5 foot: SAND, fine to very fine; and
				·· SILT; black.
				0.5 - 1.3 feet: SILT and CLAY; gray, black;
GRAVEL PA				saturated, hydrocarbon odor.
				End of boring 12 feet.
DEVELOPM				
PUMPING TEST				
DATE				
DURATIC STATIC	NATES			
LEVEL				
PUMPINO LEVEL	1			
*1ELD				
REMARKS	Test Boring			

# WELL LOG

LEGGETTE, BRASHEARS & GRAHAM, INC.
CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD

o w	NER-	Mobil Oil Corporation	_
		Hastings, New York	
/CII	N O	TB-23	

	WILTON, CT.	06897		DATE 11/12/86PAGE 10F 1PAGES
		DEPTH	N FEET	DESCRIPTION
	Northeast corner	FROM	70 2	Fill with SAND, medium to fine; little SILT,
LOCATION	of Tank Farm			and gravel, fine; moist, brown (1.2-foot
DATE COMPLETED	November 12, 1986			recovery).
	Tes Corporation	2	4	Fill with SAND, fine to very fine; little silt;
DRILLING METHOD	Hollow-stem auger			trace of gravel, fine; very moist, brown
	Split spoon			(1.0-foot recovery).
SAMPLES EXAMINED BY_	John Benvegna	4	5	Fill with SAND, coarse to medium, some fine
REFERENCE POINT	Grade			sand, and gravel, fine; little silt;
ELEVATION OF R.P				saturated, grav (0.6-foot recovery).
WELL CONSTRU SCREEN TYPE				Could not drill past 6 feet - last sample 4 to
DIAM				6 feet.
GRAVEL PAG	CK			
CASING				
DEVELOPM				
PUMPING TEST				
DATE				
STATIC 1	WATER			
	WATER			
	Test Boring			
	× 5-			

#### WFLL LOG

LEGGETTE, BRASHEARS & GRAHAM, INC.

CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD WILTON, CT. 06897

OWNER-	Mobil Oil Corporation
OWNEN	
	Hastings, New York
_	

WELL NO. TB-24

DATE 11/10/86 PAGE 1 OF 1 PAGES

ļ	WILLOW, CI.			DATE 11/10/00 PAGE 1 OF 1 PAGES
		DEPTH	IN FEET	DESCRIPTION
		FROM	то	
LOCATION_	North end of	0	2	Fill with SAND, fine to very fine; little silt,
	Tank Farm			pieces of brick, moist, brown (1.0-foot
DATE COMPLETED	November 10, 1986			recovery).
DRILLING	Tes Corporation	3	4	Fill with SAND, very fine and silt, piece of
DRILLING METHOD	Drive and wash			brick, moist, hydrocarbon odor, black
SAMPLING METHOD	Split spoon			(0.7-foot recovery).
SAMPLES EXAMINED BY	John Benvegna	11	13	Fill with SAND, very fine; and SILT; trace of
REFERENCE POINT .	Grade			gravel, fine; saturated, black (0.6-foot
ELEVATION OF R.P.				recovery).
WELL CONST				End of boring 13 feet.
	3LOT NO			• •
SETTING_		<u> </u>		
GRAVEL P	ACK			
CASING_				
DEVELOP	MENT			
PUMPING TE				·
BTATIC	ON			
	WATER			
	Test Boring			
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## WELL LOG

LEGGETTE, BRASHEARS & GRAHAM, INC.

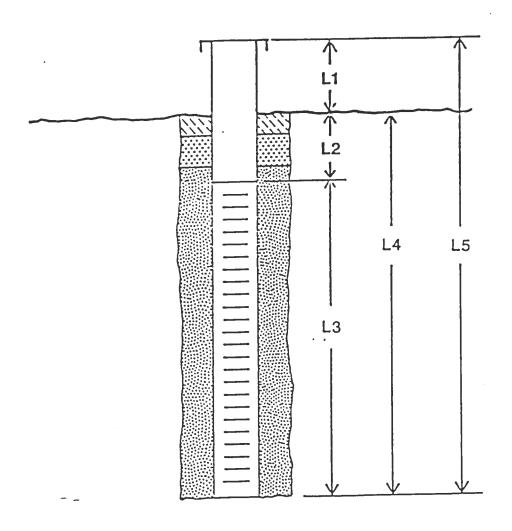
72 DANBURY ROAD WILTON, CT. 06897

OWNER-	Mobil Oil Corporation						
	Hastings, New York						
WELL NO	OW-25						

DATE 11/14/86 PAGE 10F 1PAGES DEPTH IN FEET FROM TO Fill with SAND, medium to fine; little silt; 0 North end of LOCATION \_\_\_ pieces of brick; very moist, black\_ Tank Farm (1.2-foot recovery). DATE November 14, 1986 COMPLETED DRILLING 2 From bottom of spoon. Tes Corporation COMPANY 0 - 0.3 foot: Fill with SAND, fine to very DRILLING Drive and wash METHOD . fine and silt. SAMPLING Split spoon METHOD SAMPLES John Benvegna 0.3 - 0.6: SAND, medium; and cravel, fine; saturated, hydrogen sulfide odor, black REFERENCE Grade POINT elevation 95.75. feet  $\frac{1}{2}$ (0.6-foot recovery). OF R.P. VELL CONSTRUCTION TYPE \_\_ PVC - Schedule 40 SILT AND CLAY; trace of gravel, fine; piece of 10 12 wood, saturated, black (1.3-foot recovery) PIAM. 2-inch\_sLOT NO. 20 settine 1 - 11 feet bg End of boring 12 feet. No. 2 SIZE Cement: 0 - 0.2 foot bg CASING \_\_\_\_ PVC DEVELOPMENT Suction pump Bentonite: 0.2 - 0.5 foot ba Sand: 0.5 - 11 feet bg 11/14/86 PUMPING TERT Stick up: 1.85 feet bg 3.65 feet btoc STATIC WATER low tide NOTES: PUMPING WATER bq = below grade btoc = below top of casing YIELD\_\_\_\_ POOT ac = above grade \_\_\_ PVC Elevation: 97.60 feet 1/ Assumed datum 100 feet.

MOBIL OIL CORPORATION
TAPPAN TERMINAL
HASTINGS-ON-HUDSON
GREENBURGH, NEW YORK

· OW-25



WELL SIZE:	2-INCH DIAMETER	L1:	1.85	FEET
-		L2:	1.0	FEET
SCREEN SIZE:	0.020 INCH	-		
CEMENT DEPTH:	0 - 0.20 FOOT	L3:	10.0	FEET
BACKFILL DEPTH:		L4:	11.0	FEET
BENTONITE DEPTH:	0.20 - 0.50 FOOT	L5:	12.85	FEET
SAND PACK DEPTH:	0.50 - 11.0 FEET	_		

### WFIL LOG

LEGGETTE, BRASHEARS & GRAHAM, INC. CONSULTING GROUND-WATER GEOLOGISTS

72 DANBURY ROAD WILTON, CT. 08897

OWNER-	Mobil Oil	Corporation	
OWNER-			
	Hastings,	New York	

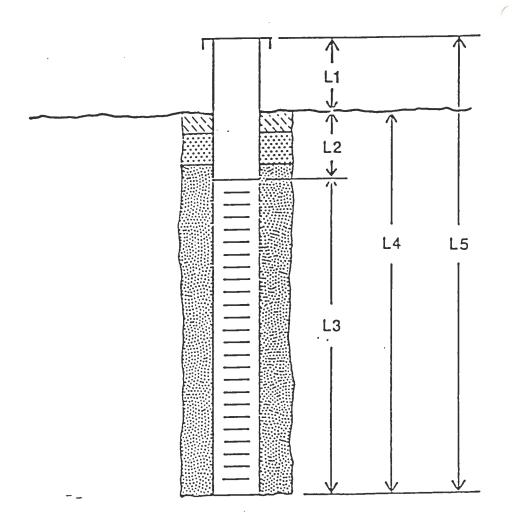
WELL NO. OW-26

DATE 11/13/86 PAGE 1 OF 1 PAGES

		DEPTH	IN FEET	DESCRIPTION
		FROM	TO	·
	Far northwest	0	1	From bottom of spoon.
LOCATION _	Far northwest	<del>                                     </del>	<del>  -</del>	
	corner of Tank Farm			0 - 0.5 foot: SAND, medium to fine; trace of
_	Corner or rank raim		<del>;                                      </del>	
DATE	November 13 1986	1		silt; brown.
COMPLETED	November 13, 1986			
				0.5 - 1.3 feet: SAND, very fine; and silt,
COMPANY	TES Corporation			2.0 2.0
المناسبين المناسبين	Daine andh			very moist, black (1.3-foot recovery).
DRILLING METHOD	Drive and wash			
		2	4	0 - 0.8 foot: SILT AND CLAY; pieces of wood,
METHOD	Split spoon		1 7	0 0,0 2000. 0202 1000 02011 52000 02 10001
				black.
SAMPLES EXAMINED BY	John Benvegna		1	DIACK.
		1		0.8 - 1.2 feet: SAND, medium and gravel, fine:
REFERENCE POINT _	Grade		-	U.U - 1.2 acct. Drawby medical and gravery same
-	24.82 5 1/	1		saturated, black, hydrogen sulfide odor
			!	Saturated, Diack, Hydrogen Sairide Odor
WELL CONSTR	UCTION			(1 2 500 0000000)
SCREEN TYPE	PVC - Schedule 40		1	(1.2-foot recovery).
01414	2-inchslot No. 20	10	12	Wash gravel - no return (2 times).
	1 - 11 feet bg			End of boring 12 feet.
GRAVEL P	No. 2			
SIZE				
a	PVC			Cement: 0 - 0.2 foot bg
		]		
	Suction pump			Bentonite: 0.2 - 0.5 foot bg
DEVELOP	M E M T			
	11/14/86		100000	Sand: 0.5 - 11 feet bg
PUMPING TES				
		L		Stick up: 2.2 feet ag
DATE_				
	10 M			
DURAT	3.54 feet btoc			
STATIC	""low tide			NOTES:
LEVEL				
	WATER	<u>L</u>		bg = below grade
LEVEL				
	Moderate		<u> </u>	btoc = below top of casing
	PVC Elevation:		<u>L</u> _	ac = above crade
REMARKS _				
	97.09 feet			
-				
	1/ Assumed datum	1	1	·
-	27 210 3 William G G G G G G G G G G G G G G G G G G G			
	100 feet.	<u>_</u> -		
	<u></u>			

MOBIL OIL CORPORATION
TAPPAN TERMINAL
HASTINGS-ON-HUDSON
GREENBURGH, NEW YORK

OW-26



WELL SIZE:	2-INCH DIAMETER	L1:	2.2	FEET
SCREEN SIZE:		L2:	1.0	FEET
CEMENT DEPTH:	0 - 0.20 FOOT	L3:	10.0	FEET
BACKFILL DEPTH:		L4:	11.0	FEET
BENTONITE DEPTH:	0.20 - 0.50 FOOT	L5:	13.20	FEET
SAND PACK DEPTH:	0.50 - 11.0 FEET			

LEGGETTE, BRASHEARS & GRAHAM, INC. CONSULTING GROUND-WATER GEOLOGISTS

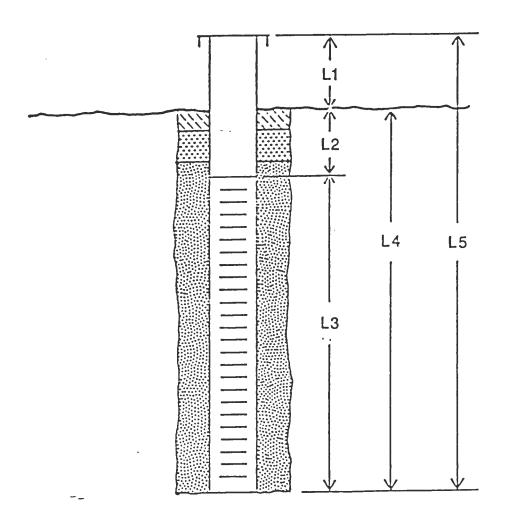
72 DANBURY ROAD WILTON, CT. 06897

OWNER-	Mobil Oil Corporation
	Hastings, New York
WELL NO.	OW-27

	WILTON, CT.	06897		DATE 11/05/86 PAGE 10F 1PAGES
		DEPTH II	N FEET	DESCRIPTION
		FROM	то	
LOCATION	West side of	0	0.35	Blacktop.
	loading rack	0.35	2	From bottom of spoon.
DATE COMPLETED	November 5, 1986			0 - 1.35 feet: SAND, medium to fine; brown
DRILLING COMPANY	Tes Corporation			black.
DRILLING	Hollow-stem auger			1.35 - 1.65 feet: Blue stone and cement
SAMPLING METHOD	Split spoon			(1.65-foot recovery).
SAMPLES EXAMINED BY.	John Benvegna			Trouble drilling past 2 feet - moved hole
REFERENCE POINT	Grade			3 feet south.
	98.34 feet 1/	2	4	Fill with SILT; some gravel, fine; saturated,
				black (1.0-foot recovery).
	2-inch_stor Mo20	4	6	Fill with SILT; some cravel, fine; saturated.
	1.95 - 15.95 feet bg			black (1.0-foot recovery).
	ck No. 2	9	12	Fill with SILT; and gravel, fine; saturated.
	PVC			black (0.5-foot recovery), hydrogen sulfide
	Airlift Airlift			odor.
	11/13/86			Auger to 15 feet - install well to 16 feet.
PUMPING TES	T			the second of th
DATE				
DURATI	ON			Cement: 0.0 - 0.2 foot bg
STATIC	5.34 feet btoc			Bentonite: 0.2 - 0.5 foot bo
PUMPIN	G WATER			Sand: 0.5 - 16 feet bg
				Stick up: 1.70 feet bo
	PVC Elevation:			
	100.04 feet			NOTES:
-	1/ Assumed datum			bg = below grade
. <del>-</del>	100 feet.			btoc = below top of casing
				<del></del>

MOBIL OIL CORPORATION
TAPPAN TERMINAL
HASTINGS-ON-HUDSON
GREENBURGH, NEW YORK

OW-27



WELL SIZE:	2-INCH DIAMETER	L1:	1.70
SCREEN SIZE:		L2:	1.95
CEMENT DEPTH: _	0 - 0.20 FOOT	L3:	14.0
BACKFILL DEPTH:		L4:	15.95
EENTONITE DEPTH:	0.20 - 0.50 FOOT	L5:	17.65
SAND PACK DEPTH:		•	

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APPENDIX II

inquish	ed by: /s	Signe ture)			Date	/Time	Received for (Signature)	Laborator	y by:	Date	/Time	Remark	11/17	ELIVE	/11.12	R - 211001 011 677 7770
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		Signature)			NOI /	/Time	Received by	: (Signature)			ed by: (S)	12	7.1	( <sub>0</sub> 0	1.10	the same of the sa
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v-16	11/18	14/30		X			m = 50/12		8	GW		19.50	6,3.	50	11.08	OM18+0M2
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		CLIENT							[		1, / 1	<b>/</b>				

LEUGETTE, DHASHEARS & GRAHAW, INC.

					CONSU			EOLOGIST				BURY RD	•		897 (203) 762-1207
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Ēβ	S: Islan								O#	4/3			/ .      /	/ /	
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CHAIN OF CUSTODY

1 -- . . . LEGUELLE, BLASTIEAHO & GRAHAM, INC. CONSULTING HYDROGEOLOGISTS 72 DANBURY RD, WILTON 'CT. 06897 (203) 762-1207 CLIENT/LOCATION NO. A POOL OF THE POOL MOBIL HAST, 165 N.Y NO. RS: (Signeture)// Hohn Bennegun **PARAMETERS** CON-TAINERS TO BE ANALYSED FOR DATE TIME REMARKS COLOR, ODOR, ETC. 11/18 14/30 B 6W 6.3 -19,00 07. KOV3 1.6 1345 6.5 60 1.5 14100 0 5.8 77 /530 D 1 d 10000 · 1-1:0 6.4 130 1.8 15 . 15.5 F.h . 3/10 11/1/1/11/11 3 () X 3 111130 X J 10 1800 Ö, 10 31 7.375 9 110 11/3/13 7.:.7 6,8 10 1/1/ 1350 > WEATHER CONDITIONS 7,1 10 11/16 William WERCHALL 1.9 1.100 y 12. 6.9 11/19 com winsing 10 7.1 ed by: (Signature) Received by: (Signeture) Date / Time Relinquished by: (Signeture) 1/20 Date / Time Received by: (Signature) 1450 emajora David Jehand ed by: /Signature) Date / Time Received by: (Signeture) Relinquished by: (Signature) Date / Time Received by: (Signature) ed by: (Signature) Date / Time Received for Laboratory by: Date /Time Remarka (Signature) Sample split with E, T. C CHAIN OF CUSTODY

MI IL, MI III NO I C. ME. WI, ... U. CONSULTING HYDROGEOLOGISTS 72 DANBURY RD, WILTON"CT, 06897 (203) 762-1207 CLIENT/LOCATION THE STATE OF THE S PROJ. NO. Mabil/ Comoncying NO. AMPLERS: (Steneture) . John Bonvesne THY. PARAMETERS . CON-Ya TAINERS. TO BE ANALYSED FOR TA. NO. DATE TIME REMARKS COLOR, ODOR, ETC. -13-14 2-4 ft 1330 SOIL 4-6 Ft. 13-14 B-14 9-11 Ft. B.2 Ft W:7 2-4 1.27 9-11 13 13 5-4 13 13 7-9 2-4. 1 5 - 7 15.10 2-4 13.10 5-7 Po-11 WEATHER CONDITIONS 3-11 6-8 シャマ 2-4 rlinguished by: (Signeture) Received by: (Signature) Date / Time Relinquished by: (Signeture) Date / Time Received by: (Signature) 11/10/1 1350 illinguished by: (Signeave) Data / Time Relinquished by: (Signature) Received by: (Signature) Date / Time Received by: (Signature) (signature): (Signature) Data / Time Received for Laboratory by: Date / Time Remarks (Signature)

CHAIN OF CUSTODY

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CHAIN OF CUSTODY

MOBIL OIL CORPORATION
TAPPAN TERMINAL
HASTINGS-ON-HUDSON
GREENBURCH, NEW YORK

Paul Unlich & Company, Inc. 1/
Location 01
Summary of Analytical Results
for Volatile Organics-

1

						Date s	ampled					
Parameter	04/19/85	04/25/85	06/04/85	06/05/85	07/30/85	07/31/85	10/21/85	10/22/85	11/25/85	11/26/85	08/13/86	08/14/86
	*10	*20	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10
Sethyl chloride	*10 *10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10
lethyl bromide	*10 *10	*10	*10	*10	*10	*10	*10	*10	*10	*10 ·	*10	*10
/inyl chloride	*10 *10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10
Chloroethane	*10	*10	*10	*10	.*10	*10	*10	*10	*10	*10	*10	*10
Methylene chloride	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10
1,1-Dichloroethylene	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10
1,1-Dichloroethane	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10
1,2-Trans-dischloroethylene	*10	*10	*10	*10	*10	*10	· 11	11	*10	11	17	20
Chloroform	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10
Dichlorodifluoromethane		*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10
1,2-Dichloroethane	*10		*10	*10	*10	*10	*10	*10	*10	*10	*10	*10
1,1,1-Trichloroethane	*10	*10		*10	*10	*10	*10	*10	*10	*10	*10	*10
Carbon tetrachloride	*10	*10	*10		*10	*10	*10	*10	*10	*10	*10	*10
Dichlorobromomethane	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	. *10
1,2-Dichloropropane	*10	*10	*10	*10		*10 *10	*10	*10	*10	*10	*10	*10
1,3-Dichloropropoene	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10
Trichloroethylene	*10	*10	*10	*10	*10	*10 *10	*10	*10	*10	*10	*10	*10
Benzene	*10	*10	*10	*10	*10		*10	*10	*10	*10	*10	*10
Chlorodibromomethane	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10
1,1-2-Trichloroethane	*10	*10	*10	*10	*10	*10 *10	*10 *10	*10	*10	*10	*10	*10
Cis-1,3-dichloropropene	*10	*10	*10	*10	*10	*10 *100	*100	*100	*100	*100	*100	*100
2-Chloroethyl vinyl ether	*100	*100	*100	*100	*100	*100 *100	*100	*100	*100	*100	*100	*100
Bromoform	*100	*100	*100	*100	*100	*100	~100	100	100	•	_	

TABLE II-1 (continued)

MOBIL OIL CORPORATION
TAPPAN TERMINAL
HASTINGS-ON-HUDSON
GREENBURCH, NEW YORK

Paul Uhlich & Company, Inc. 1/
Location 01
Summary of Analytical Results
for Volatile Organics-

	Date sampled													
Parameter	04/19/85	04/25/85	06/04/85	06/05/85	07/30/85	07/31/85	10/21/85	10/22/85	11/25/85	11/26/85	08/13/86	08/14/86		
1,1,2,2-Tetrachloroethane	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10 .	*10	*10		
Toluene	*10	*10	*10	*10	24	16	*10	*10	*10	*10	42	21		
Chlorobenzene	*10	*10	*10	*10	.*10	*10	*10	*10	*10	*10	*10	20		
Ethylbenzene	*10	10	*10	*10	**10	*10	*10	*10	*10	*10	*10	<b>*</b> 10		
Xylene	20	34	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10		
Hetaxylene.	*10	12	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10		
Bromomethane	*10	*10	*10	*10	*10	*10								
t-1,3-Dichloropropane	*10	*10	*10	*10	*10	*10						••		
Tetrachloroethene	*10	*10	*10	*10	*10	*10						••		

<sup>1/</sup> Data provided by Blasland & Bouck Engineers, P.C. as authorized by Westchester County Industrial Pretreatment Program.

<sup>2/</sup> Sampling station: sewer line on the Tappan Terminal Property.

<sup>3/</sup> Results reported in parts per billion.

<sup>\*</sup> Denotes less than.

<sup>--</sup> Not analyzed.

TABLE II-2

MOBIL OIL CORPORATION TAPPAN TERMINAL HASTINGS-ON-HUDSON GREENBURGH, NEW YORK

Paul Uhlich & Company, Inc. 1/ Location 01-Summary of Analytical Results 3/for Base/Neutral Extractables

					Date sa	moled				
Parameter	04/19/85	04/25/85	06/04/85	06/05/85	07/30/85	07/31/85	10/21/85	10/22/85	12/17/85	12/18/85
Base/neutral extractable organics	*25	*25	*10		*25	*0.01	63	93	63	100
Acenaphthene	*0.01	*0.01	*0.01		*0.01	*0.01				100
Anthracene	*0.01	*0.01	*0.01		*0.01	*0.01				
Bis(2-ethylhexyl) phthalate	83	157	*0.01	158	*0.01	*0.01				••
Eutyl benzyl phthalate	*0.01	*0.01	*0.01		*0.01	*0.01				
Di-n-butyl phthalate	*0.01	*0.01	*0.01		*0.01	*0.01				
1,2-Dichlorobenzene	*0.01	*0.01	*0.01	-,-	*0.01	*0.01				
1,4-Dichlorobenzene	*0.01	*0.01	*0.01	~~	*0.01	*0.01				
Diethyl phtalate	*0.01	*0.01	*0.01		*0.01	*0.01				
Di-n-Octyl phthalate	*0.01	*0.01	*0.01		*0.01	*0.01				••
Flouranthene	*0.01	*0.01	*0.01		*0.01	*0.01				
Fluorene	*0.01	*0.01	*0.01		*0.01	*0.01				
Naphthalene	*0.01	*0.01	*0.01		*0.01	*0.01				
N-nitrosodimethylamine	*0.01	*0.01	*0.01		*0.01	*0.01			43	72
N-nitrosodiphenylamine	*0.01	*0.01	*0.01		*0.01	*0.01				
phenanthrene	*0.01	*0.01	*0.01		*0.01	*0.01		11	~ •	
Pyrene	*0.01	*0.01	*0.01		*0.01	*0.01				
2,4,6-Trichlorophenol	*0.01	*0.01	*0.01	*0.01	*0.01	*0.01				
2-Chlorophenol	*0.01	*0.01	*0.01	*0.01	*0.01	*0.01			do do	••
2,4-Dichlorophenol	*0.01	*0.01	<b>*0.01</b>	*0.01	*0.01	*0.01				
Pentachlorophenol	*0.01	*0.01	*0.01	*0.01	*0.01	*0.01				
4-Nitrophenol	*0.01	*0.01	*0.01	*0.01	*0.01	*0.01				
2,4-Dinitrophenol	*0.01	*0.01	*0.01	*0.01	*0.01	*0.01				

<sup>1/</sup> Data provided by Blasland & Bouck Engineers, P.C. as authorized by Westchester County Industrial Pretreatment Program.

<sup>2/</sup> Sampling station: sewer line on the Tappan Terminal Property. 3/ Results reported in parts per billion.

<sup>\*</sup> Denotes less than.

<sup>--</sup> Not analyzed.

TABLE II-3

MOBIL OIL CORPORATION TAPPAN TERMINAL HASTINGS-ON-HUDSON GREENBURGH, NEW YORK

Paul Uhlich & Company, Inc. 1/
Location 012/
Swmmary of Analytical Results
for Acid Extractables 1/

				Date sam	pled			•
Parameter	04/19/85	04/25/85	06/04/85	06/05/85	07/30/85	07/31/85	12/17/85	12/18/8
2,4-Dimethylphenol	*0.01	*0.01	*0.01	*0.01	*0.01	*0.01		
2-Nitrophenol	*0.01	*0.01	*0.01	*0.01	*0.01	*0.01		
llexachlorobutadiene	*0.01	*0.01	*0.01		*0.01	*0.01		
1,3-Dichlorobenzene	*0.01	*0.01	*0.01		*0.01	*0.01		
1,2,4-Trichlorobenzene	*0.01	*0.01	*0.01	• ••	*0.01	*0.01	••	
llexachlorobenzene	*0.01	*0.01	*0.01		*0.01	*0.01		
2-Chloronaphthalene	*0.01	*0.01	*0.01	••	*0.01	*0.01		
llexachloroethane	*0.01	*0.01	*0.01		*0.01	*0.01		
Acid Extractable Organics	*250	*250	*25	<b>*25</b>	*25		*250	*250
Bis(2-chloroethyl) ether	*0.01	*0.01	*0.01		*0.01	*0.01		
Bis(2-chloroisopropyl) ether	*0.01	*0.01	*0.01		*0.01	*0.01		
4-Bromophenyl phenyl ether	*0.01	*0.01	*0.01.		*0.01	*0.01		• •
Benzo(A)pyréne	*0.01	*0.01	*0.01		*0.01	*0.01		
Benzo(A)anthracene	*0.01	*0.01	*0.01		*0.01	*0.01	• •	
Benzo(B)fluoranthene	*0.01	*0.01	*0.01		*0.01	*0.01		
Benzo(K)flouranthene	*0.01	*0.01	*0.01	••	*0.01	*0.01		
Chrysene	<b>*0.01</b>	*0.01	*0.01		*0.01	*0.01		
Acenaphtylene	. *0.01	*0.01	*0.01		*0.01	*0.01		
Benzo(g,h,i)perylene	*0.01	*0.01	*0.01		*0.01	*0.01		
Dibenzo(a,h)anthracene	*0.01	*0.01	*0.01	••	*0.01	*0.01		
Indeno(1,2,-3-c,d) pyrene	*0.01	*0.01	*0.01		*0.01	*0.01		
1,2-diphenyldrazine	*0.01	*0.01	*0.01		*0.01	*0.01		
Nitrobenzene	*0.01	*0.01	*0.01		*0.01	*0.01		
2,4-Dinitrotoluene	*0.01	*0.01	*0.01		*0.01	*0.01		
2,6-Dinitrotoluene	*0.01	*0.01	*0.01	• •	*0.01	*0.01		
Dimethyl phthalate	*0.01	*0.01	*0.01		*0.01	*0.01		
Enzidine	*0.01	*0.01	*0.01		*0.01	*0.01		
1,3-Dichlorobenzidine	*0.01	*0.01	*0.01		*0.01	*0.01		
Isophorone	*0.01	*0.01	*0.01		*0.01	*0.01		
N-nitrosodi-n-propylamine	*0.01	*0.01	*0.01		*0.01	*0.01	••	

 <sup>1/</sup> Data provided by Blasland & Bouck Engineers, P.C. as authorized by Weatchester County Industrial Pretreatment Program.
 2/ Sampling station: sewer line on the Tappan Terminal Property.
 3/ Results reported in parts per billion.

<sup>\*</sup> Denotes less than. -- Not analyzed.

TABLE I1-5 (continued)

HOBIL OIL CORPORATION
TAPPAN TEXHINAL
HASTINGS-OX:-BUDSON
CREENBURGH, NEW YORK

Paul Uhlich & Company, Inc. 1/
Location 01Summary of Analytical Results
for Conventional and Non-Conventional Pollutants 3/

Date	Flow	я	Bio-chemical oxygen demand	Total suspended solids	Chenical oxygen demand	Total organic carbon	Total kjeldahl nitrogen	Nitrogen ammonia	Oll and grease	Cyanide (total)	Phenol (total)	Total toxic organics	Phosphorous (total)	Pesticides/PCES (toxaphene)
													••	••
04/21/86	172,190	8.1 -12.1	240	380	••		••	1.6	••					••
04/22/86	137,183	4.0 -12.4	4 90	390	••			320			••			
								22		**				••
05/19/86	224,325	3,54-12,13	480	140				1.6						
05/20/86	201,212	7.01-12.91	300	110	••		••	1.1	••				••	••
06/16/86	190,740	2.12- 7.21	300	26			••	1.6						••
06/17/86	173,760	1.49- 8.73	1,000	73			••	1.9				••	••	
	211,834	5.64-12.56	480	240		••							••	••
07/16/86		5.66-12.48	210	170	**		·							••
07/17/86	266,587		59	190	350	200		0.53	38	*0.05	0.35	0.06		
08/13/86	184,756	4.21-12.40				••	••	••	8.2	*0.05	2.0		••	
		••		340	830	240	**	0.75	19	*0.05	0.35	0.04		
08/14/86	165,084	3.93-12.13	550							*0.05	0.19			
, ••••			••	••					<del>-</del> 5.0	*0.05	0.19			

<sup>1/</sup> Data provided by Blasland & Bouck Engineers, P.C. as authorized by Westchester County Industrial Pretreatment Program.

<sup>2/</sup> Sampling station: sever line on the Tappan Terminal Property.

<sup>3/</sup> Results reported in parts per million unless otherwise noted.

<sup>\*</sup> Denotes less than.

<sup>--</sup> Not analyzed.

TABLE 11-5 (continued)

HOBIL OIL CORPORATION
TAPPAN TERMINAL
HASTINGS-ON-HUDSON
CREENBURCH, NEW YORK

Paul Uhlich & Company, Inc. 1/ Location 01-Summary of Analytical Results for Conventional and Non-Conventional Pollutants 3/

Date	Flow (gpd)	рĦ	Bio-chemical oxygen demand	Total suspended solids	Chenical oxygen demand	Total organic carbon	Total kjeldahl nitrogen	Mitrogen ammonia	Oil and grease	Cyanide (total)	Phenol (total)	Total toxic organics	Phosphorous (total)	Pesticides/PCBS (toxaphene)
07/30/85	152,338	7.0 -13.9	660	180	1,202	490	2.02		16	*0.5	*0.001	0.02	0.69	
	••				••				13	*0.5	0.041		••	
07/31/85	210,554	6.3 -13.1	700	450	1,454	530	10.6					0.02	0.81	
09/04/85	142,793	5.1 -12.8	70	250										••
09/05/85	210,263	5.1 -13.2	280	260			••	••	••					••
10/21/85	130,002	5.1 -13.4	480	84	800	310	0.59		26	*0.05	0.054	0.07		••
,,		••					••		*5.0	+0.05	0.01			**
10/22/85	148,702	3.3 -13.1	300	120			260	1.3	8.0	*0.05	0.036	0.63		0,52
10,11,05			**					••	6.0	*0.05	0.12			
11/25/85	245,344	3.8 -13.3	45	140	580	300		14	8.8	÷0.05	0.16	+0.01		••
			••						14	+0.05	0.022			
11/26/85	225,896	3.9 -12.7	120	27	380	180	••	1.2	6.7	<b>*0.05</b>	0.038	0.01		
11,10,00	12,070				••				+5.0	*0.05	0.210			
12/17/85	162,914	6.3 -13.6	540	210	680	280	••	6.0	23		0.13	0.11		••
2/1//05	101,714		**						14		0.11			
							**		14		0.11			••
12/18/85	197,846	7.1 -12.8	460	320	1,200	290		4.9	46	••	0.15	0.17		••
21,10,00	277,040			••			**	••	62		0.015	••		
01/21/86	188,496	4.8 -12.5	258	170			**	20	••					••
01/22/86	303,688	9.4 -13.3	170	290		••		*0.05	••				••	••
02/19/86	274,965	6.3 -11.8	480	67			••	2.8		••				
02/20/86	274,965	5.6 -11.8	420	120		••		21		••	••			••

TABLE II-5

HOBIL OIL CORPORATION TAPPAN TENHINAL HASTINGS-ON-BUDSON GREENBURGH, MEN YORK

Paul Uhlich & Company, Inc. 1/
Location 01
Summary of Analytical Results
for Conventional and Non-Conventional Pollutants 1/

Date	Flow (gpd)	рН	Bio-chemical oxygen demand	Total suspended solids	Chemical oxygen demand	Total organic carbon	Total kjeldahl nitrogen	Nitrogen ammonia	Oil and grease	Cyanide (total)	Phenol (total)	Total toxic organics	Phosphorous (total)	Pesticides/PCB: (toxaphene)
12/03/84	••	••	**				••	••	61	••	••	••		
12/04/84	155,805	3.6 -13.1	440	80	839			2.32	17	••	••		0.51	••
12/05/84	190,715	7.2 -12.7	640	120	1,252	470	••	99.8				••	1.25	
01/28/85			**		-,				18		0,005		1.25	
			••	**			••	••	47		0.617	•-		
01/29/85	217,405	5.4 -12.9	480	220	1,046				3	••	0.028		••	••
	•••				-,	••	•		í		0.024	••	••	
01/30/85	182,445	5.1 -13.3	1,300	57	2,500		•							
04/17/85	211,392	3.9 -12.8	640	500					2	=0.05	0.007		••	••
								••	7	+0.05	0.036	••		
04/18/85	158,561	4.0 -11.8	31.0	170			4-	••	*1	*0.05	*0.001		••	••
	**			••			••	••	18	+0.05	0.008			
04/19/85		••	••		560	250	••			•••	•••	0.10	••	••
04/25/85						570		1.93		••		0.21	••	••
06/03/85	**	••		••			••		30	=0.05	0.010		••	••
								••	24	•0.05			••	
06/04/85	191,877	7.3 -13.3	280	93	470		300	38.7	55	3.2	0.021	*0.01	0.15	••
		••					••		20	•0.5	0.001	••	•	••
06/05/85	213,015	4.4 -13.4	360	70	970		20,9	••		•-		0.16	5.8	••
07/29/85			••				••		10	+0.05	0.075	**		••
					••	••	••		83	*0.5	*0.001		••	••

HOBIL OIL CORPORATION
TAPPAN TERMINAL
HASTINGS-ON-HUDSON
GREENBURGH, NEW YORK

Paul Uhlich & Company, lac. 1/ Location 01 Summary of Analytical Results for Hetal Pollutants

Parameter	12/04/84	12/05/84	01/29/85	01/30/85	04/17/85	04/18/85		O6/05/85		07/31/85	10/21/85	10/22/85	11/25/85	11/26/85	12/17/85	12/18/85	08/13/86	08/14/8
	*0.02	*0.02	0.05	+0,02	0.03	0.029	+0.02	*0.02	*0.02	•0.02	*0.02	*0.02 *0.002	0.02	*0.02 0.003	*0.02	0.04	*0.02	+0.002
rsenic Lednium	-0.02	**			0.007	0.003	••	••			0.003	0.11	0.11	0.12	0.13	0.17	0.04	0.06
opper					1.4	0.25		**		••			0.02	0.03	••			
hronium	-			••							0.05	0.03			0.03	0.05	0.02	0.02 +0.05
hronium total	••				*0.05	+0.05		••		••	0.15	*0.05	0.09	0.12	0.09	. 0.17 +0.001	0.08	-0.03
ead					**	••		••			+0.001	+0.001	*0.001 *0.05	*0.001 *0.05	*0.001	+0.05	*0.05	+0.05
ercury Lckel	••	••		••			••		••	••	*0.05	+0.05 +0.02	+0.02	*0.02	*0.02	+0.02	+0.02	+0.02
liver		••	••				••				0.14	0.22	0.15	0.09	0.11	0.20	0.07	0.08
tes		••		-	0.17	0.17		**			0, 24							

<sup>1/</sup> Data provided by Blasland & Bouck Engineers, P.C. as authorized by Westchester County Industrial Pretreatment Program.

一日本の中の大人は一切のは大きのできた。 かいとうけい

<sup>2/</sup> Sampling station: sever line on the Tappan Terminal Property.

<sup>3/</sup> Results reported in parts per million.

<sup>.</sup> Denotes less than.

<sup>--</sup> Not analyzed.