BP OIL

BP Oil Company
Aetna Bldg., Suite 360
2868 Prospect Park Drive
Rancho Cordova, California 95670-6020
(916) 631-0733

92 MAY -7 AM 11:20

April 29, 1992

Mr. Rafat Shahid
Alameda County Department of
Environmental Health Services
80 Swan Way
Oakland, California 94621

RE: BP FACILITY #11132
3201 35th AVENUE
OAKLAND, CALIFORNIA

Dear Mr. Shahid,

Enclosed please find the results of the Quarterly Monitoring Report for the above referenced facility.

Please call me at (916) 631-6919 with any questions regarding this submission.

Respectfully,

Peter J. DeSantis

Peter J. DeSantis sml
Environmental Resources Management

PJD/sml

Attachment

cc: Fred Moss, HETI
Tom Callaghan, RWQCB San Francisco Bay Region
David Baker, Mobil Oil Co.
Site file

HYDRO
ENVIRONMENTAL
TECHNOLOGIES, INC.

April 24, 1992 9-037

Mr. Peter DeSantis
Environmental Resource Management
BP Oil Company
2868 Prospect Park Drive, Suite 360
Rancho Cordova, CA 95670

Re: BP Oil Facility No. 11132, 3201 35th Avenue, Oakland, California

Dear Mr. DeSantis:

The purpose of this letter is to present the results of Hydro-Environmental Technologies, Inc.'s (HETI's) quarterly water sampling at the above-referenced site. Sampling was performed on April 1, 1992.

Work performed at the site by HETI included (1) well purging, (2) collection of ground water samples from each of the wells, and (3) analysis of water samples for total low to medium boiling point petroleum hydrocarbons (TPHg), and benzene, toluene, ethylbenzene, and xylenes (BTEX), using EPA method 8015/8020 (DHS modified). All documentation related to the field work is appended to this report.

Background

The site is located at 3201 35th Avenue, in Oakland, California (Figure 1). As presented in previously submitted reports, an environmental investigation has been in process at this site since hydrocarbons were first detected in the subsurface after three underground storage tanks were removed in June 1987. A preliminary investigation was completed by an environmental consultant hired by Mobil Corporation in May, 1988. Alton Geoscience Inc. was retained when BP Oil Company took ownership of the site in 1989. Subsequent investigative tasks are being carried out by Hydro-Environmental Technologies, Inc (HETI). Tasks completed by HETI to date have included the installation of a floating hydrocarbon skimmer in the recovery well (RW-1) and quarterly well sampling performed April 1, 1992, during which wells MW-3 through MW-10 were sampled.

Field Activities

HETI collected water samples from all wells on April 1, 1992 which did not contain separate phase petroleum. Prior to sampling, the depth to water in the wells was gauged to the nearest hundredth of a foot with an interface probe. A layer of separate-phase petroleum, 0.11 foot thick, was detected in recovery well RW-1. Additionally, a layer of seperate phase petroleum 0.15 foot thick was detected in monitoring well MW-1, and .10 foot was detected in monitoring well MW-2.

The wells were also checked for integrity and condition of the casing and wellhead. All wells appeared to be in satisfactory condition. Prior to sampling, the monitoring wells were purged of a minimum of three well volumes or until each well had stabilized for temperature, conductivity, and pH. Purging data is attached in Appendix A.

Following recovery of the wells to at least 70 percent of their static water level, samples were collected with dedicated bailers. Each sample was transferred to 40 ml VOA glass vials and sealed with a teflon septum cap. Sample vials were documented, labeled and placed in an insulated, chilled cooler. A chain of custody was prepared and accompanied the samples to the laboratory, and a copy is included in Appendix B. Water sample analysis was performed by PACE Laboratories, a DHS certified laboratory, located in Novato, California.

Ground Water Data

Depth to ground water in each of the wells ranged from approximately 11.7 to 17.4 feet below grade, according to the well gauging conducted for this investigation. Gauging data is attached as Appendix A. The depth to water data was combined with wellhead elevation data previously collected by Alton Geoscience to calculate water surface elevations. These elevations were used to produce the ground water contour map shown in Figure 3. The map shows ground water flow direction beneath the site to be generally south easterly which is inconsistent with the results obtained by Alton Geoscience, Inc. during previous quarterly sampling events. However, in Alton Geoscience Quarterly Report dated August 21, 1991, ground water depths measured on April 5, 1991 indicated a ground water flow direction similar to this quarter.

Laboratory Analytical Results

All wells sampled were analyzed for total petroleum hydrocarbons as gasoline (TPHg) and volatile aromatics as benzene, toluene, ethylbenzene and xylene (BTEX) by Pace Laboratories. Analytical results of samples collected indicate that only MW-5, MW-8 and MW-9 had detectable amounts of the chemicals analyzed for. Results ranged from 800 ppb (TPHg) in the sample from MW-5 to 15,000 ppb (TPHg)in the sample from MW-8.

Benzene results from water samples ranged from 250 ppb in the sample from MW-5 to 3,600 ppb in the sample from MW-8. TPHg and Benzene concentrations are graphically displayed on Figure 4 and Figure 5, the TPHg and Benzene Isoconconcentration maps. TPHg and BTEX were found in maximum concentrations in wells MW-8 and MW-9. These wells are located directly downgradient of RW-1, MW-1 and MW-2 which were found to have varying amounts of floating product.

Status of Investigative Activities

A plan for interim remedial action was submitted to the Alameda County Department of Environmental Health (ACDEH) on March 20, 1992. A response from (ACDEH) is currently pending. HETI will also maintain the passive skimmer installed in RW-1.

HETI is pleased to be of continued service to BP. If you have any questions or comments concerning this report, please do not hesitate to call.

Sincerely,
HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

Frederick Moss

Frederick G. Moss, P.E., No. 35162
Senior Engineer

REGISTERED PROFESSIONAL ENGINEER
FREDERICK G. MOSS
No. 35162
CIVIL
STATE OF CALIFORNIA

Craig Hartman
Project Manager

TABLES

Table 1
WATER SAMPLES
SUMMARY OF ANALYTICAL RESULTS
BP Oil Facility Nº 11132
Oakland, California
Sampling Date: April 1, 1992

MW No.	TPHg	B	T	E	X
RW-1 (1)	NT	NT	NT	NT	NT
MW-1 (1)	NT	NT	NT	NT	NT
MW-2 (1)	NT	NT	NT	NT	NT
MW-3	Lab report → ~~ND~~ 480	~~ND~~ 54	~~ND~~ 11	~~ND~~ 28	~~ND~~ 43
MW-4	ND	ND	ND	ND	ND
MW-5	800	250	54	11	60
MW-6	ND	ND	ND	ND	ND
MW-7	ND	ND	ND	ND	ND
MW-8	15,000	3,600	2,600	410	1,900
MW-9	12,000	2,000	2,600	360	1,600
MW-10	ND	ND	ND	ND	ND

All hydrocarbon concentrations in µg/l (ppb)
TPHg = Total petroleum hydrocarbons as gasoline by EPA method 5030/8015 (DHS modified)
B = Benzene
T = Toluene
E = Ethylbenzene
X = Total Xylenes
BTEX analysis by EPA method 8020
ND = Not detected above the laboratory method detection limit
NT = Not tested

(1) Note A sample was not collected from RW-1, MW-1 and MW-2 due to the separate phase petroleum (SPP) present in the well.

Sampling event 12/29/90 not given

Table 2 (Page 1 of 2)
WATER SAMPLES
CUMULATIVE ANALYTICAL RESULTS
BP Oil Facility No. 11132
Oakland, California

MW No.	Date	SPP (ft)	TPHg	B	T	E	X
RW-1	7/9/90	1.21	NT	NT	NT	NT	NT
	12/21/90	.01	NT	NT	NT	NT	NT
	3/7/91	NM	NT	NT	NT	NT	NT
	6/27/91	.04	NT	NT	NT	NT	NT
	9/27/91	.02	NT	NT	NT	NT	NT
	12/18/91	.02	NT	NT	NT	NT	NT
	4/1/92	.11	NT	NT	NT	NT	NT
MW-1	7/9/90	.22	NT	NT	NT	NT	NT
	12/21/90	.58	NT	NT	NT	NT	NT
	3/7/91	NM	NT	NT	NT	NT	NT
	6/27/91	.18	NT	NT	NT	NT	NT
	9/27/91	.27	NT	NT	NT	NT	NT
	12/18/91	.28	NT	NT	NT	NT	NT
	4/1/92	.15	NT	NT	NT	NT	NT
MW-2	7/9/90	.10	NT	NT	NT	NT	NT
	12/21/90	.48	NT	NT	NT	NT	NT
	3/7/91	NM	NT	NT	NT	NT	NT
	6/27/91	.19	NT	NT	NT	NT	NT
	9/27/91	.15	NT	NT	NT	NT	NT
	12/18/91	.36	NT	NT	NT	NT	NT
	4/1/92	.10	NT	NT	NT	NT	NT
MW-3	7/9/90	0.0	140	5.3	4.6	2.0	3.8
	12/21/90	0.0	0.19 (400)	100	6.0	0.9	27
	3/7/91	0.0	0.4	69	22	6.1	57
	6/27/91	0.0	380	28	26	13	46
	9/27/91	0.0	.07 (70)	7.9	ND	0.4	1.1
	12/18/91	0.0	.26 (260)	34	24	0.8	28
	4/1/92	0.0	ND ✓	ND	ND	ND	ND
MW-4	7/9/90	0.0	ND	ND	ND	ND	ND
	12/21/90	0.0	ND	ND	ND	ND	0.8
	3/7/91	0.0	ND	2.2	3.8	1.5	2.8
	6/27/91	0.0	ND	6.3	1.8	0.4	1.0
	9/27/91	0.0	ND	ND	ND	ND	ND
	12/18/91	0.0	ND	ND	ND	ND	ND
	4/1/92	0.0	ND	ND	ND	ND	ND
MW-5	7/9/90	0.0	280	200	210	46	290
	12/21/90	0.0	.69 ?	300	34	8.4	39
	3/7/91	0.0	ND	17	0.9	0.7	1.6
	6/27/91	0.0	330	120	10	12	8
	9/27/91	0.0	.73 (730)	230	16	20	22
	12/18/91	0.0	ND	ND	ND	ND	ND
	4/1/92	0.0	800	250	54	11	60

Table 2 (Page 2 of 2)
WATER SAMPLES
CUMULATIVE ANALYTICAL RESULTS
BP Oil Facility No. 11132
Oakland, California

MW No.	Date	SPP (ft)	TPHg	B	T	E	X
MW-6	7/9/90	0.0	ND	ND	ND	ND	ND
	12/21/90	0.0	.17	2.6	7.0	4.9	26
	3/7/91 (1)	0.0	NT	NT	NT	NT	NT
	6/27/91 (1)	0.0	NT	NT	NT	NT	NT
	9/27/91 (1)	0.0	NT	NT	NT	NT	NT
	12/18/91	0.0	ND	1.3	22	ND	2.7
	4/1/92	0.0	ND	ND	ND	ND	ND
MW-7	7/9/90	0.0	ND	ND	ND	ND	ND
	12/21/90	0.0	ND	ND	ND	ND	ND
	3/7/91	0.0	ND	ND	0.4	0.3	2.4
	6/27/91	0.0	70 ✓	17	4	0.8	2.2
	9/27/91	0.0	ND	0.4	ND	ND	0.4
	12/18/91	0.0	ND	0.7	2.9	0.8	3.3
	4/1/92	0.0	ND	ND	ND	ND	ND
MW-8	3/7/91	0.0	2.7 (2700)	780	450	64	310
	6/27/91	0.0	12,000 ✓	3,400	1,100	240	750
	9/27/91	0.0	41 (4100)	5,700	5,200	1,100	4,300
	12/18/91	0.0	3.2 (3200)	990	150	120	250
	4/1/92	0.0	15,000 ✓	3,600	2,600	410	1,900
MW-9	3/7/91	0.0	7.1 (7100)	220	4	2.4	2,400
	6/27/91	0.0	3,600	520	400	85	310
	9/27/91	0.0	3.2 (3200)	720	150	50	180
	12/18/91	0.0	ND	2.5	1.1	0.3	5.8
	4/1/92	0.0	12,000 ✓	2,000	2,600	360	1,600
MW-10	3/7/91	0.0	1.6 (1600)	120	190	32	230
	6/27/91	0.0	12,000	7,300	500	150	300
	9/27/91	0.0	57 (57000)	12,000	7,200	1,400	4,600
	12/18/91	0.0	5.3 (5300)	2,500	120	36	79
	4/1/92	0.0	ND ?	ND	ND	ND	ND

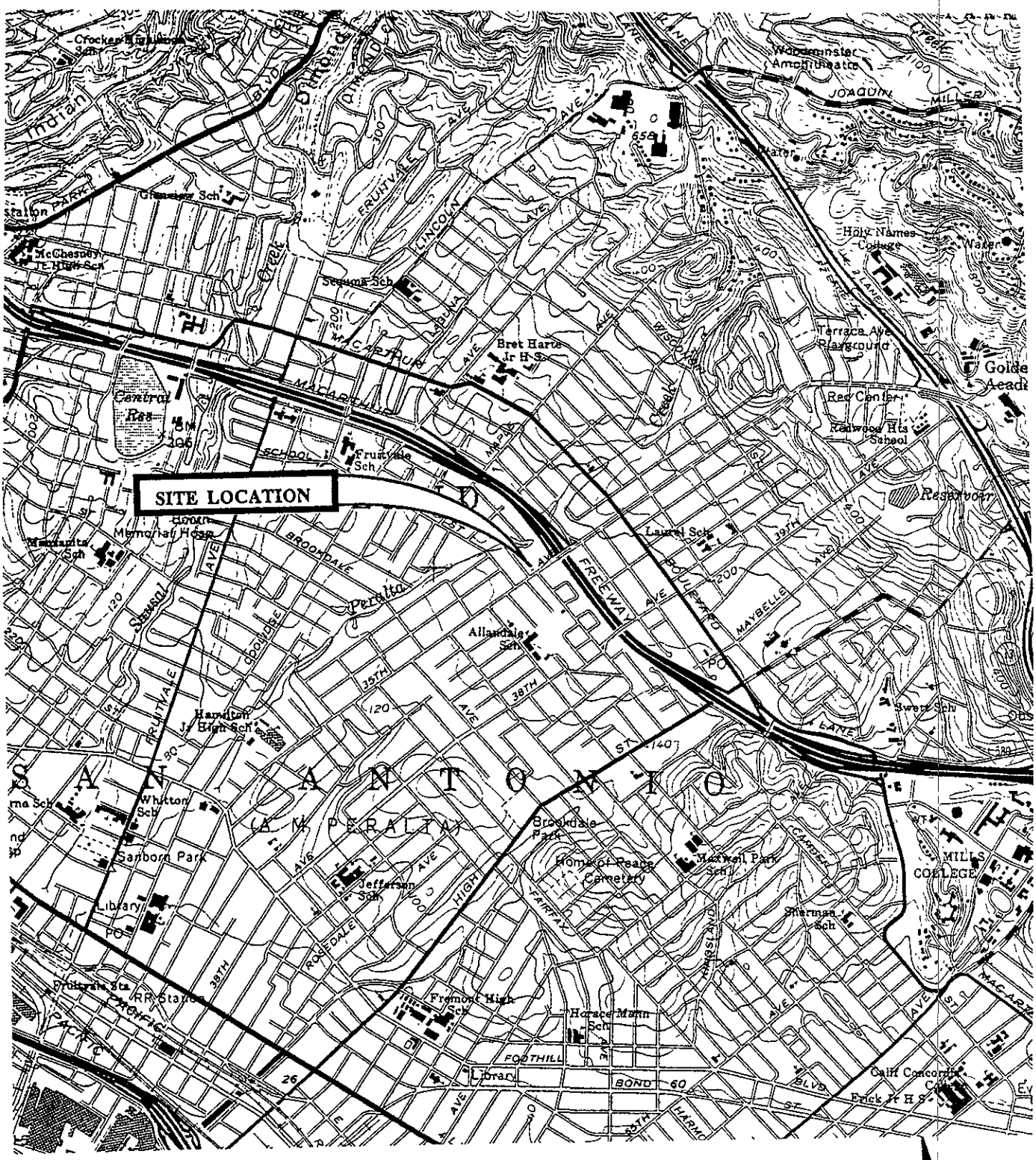
All hydrocarbon concentrations in µg/l (ppb)
TPHg = Total petroleum hydrocarbons as gasoline by EPA method 5030/8015 (DHS modified)

B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylenes

Note: All samples taken by Alton Geoscience, except 4/1/92 data taken by HETI.
(1) = Unknown obstruction in well at ~ 15 ft. Used smaller hose on other dates to obtain samples.

SPP = Separate Phase Petroleum
ND = Not detected above the laboratory method detection limit.
NT = Not tested.
NM = Not measured

FIGURES



Source: U.S.Geological Survey
7.5 Minute Topographic Maps
Entitled: "Oakland East, California",
Photorevised 1980

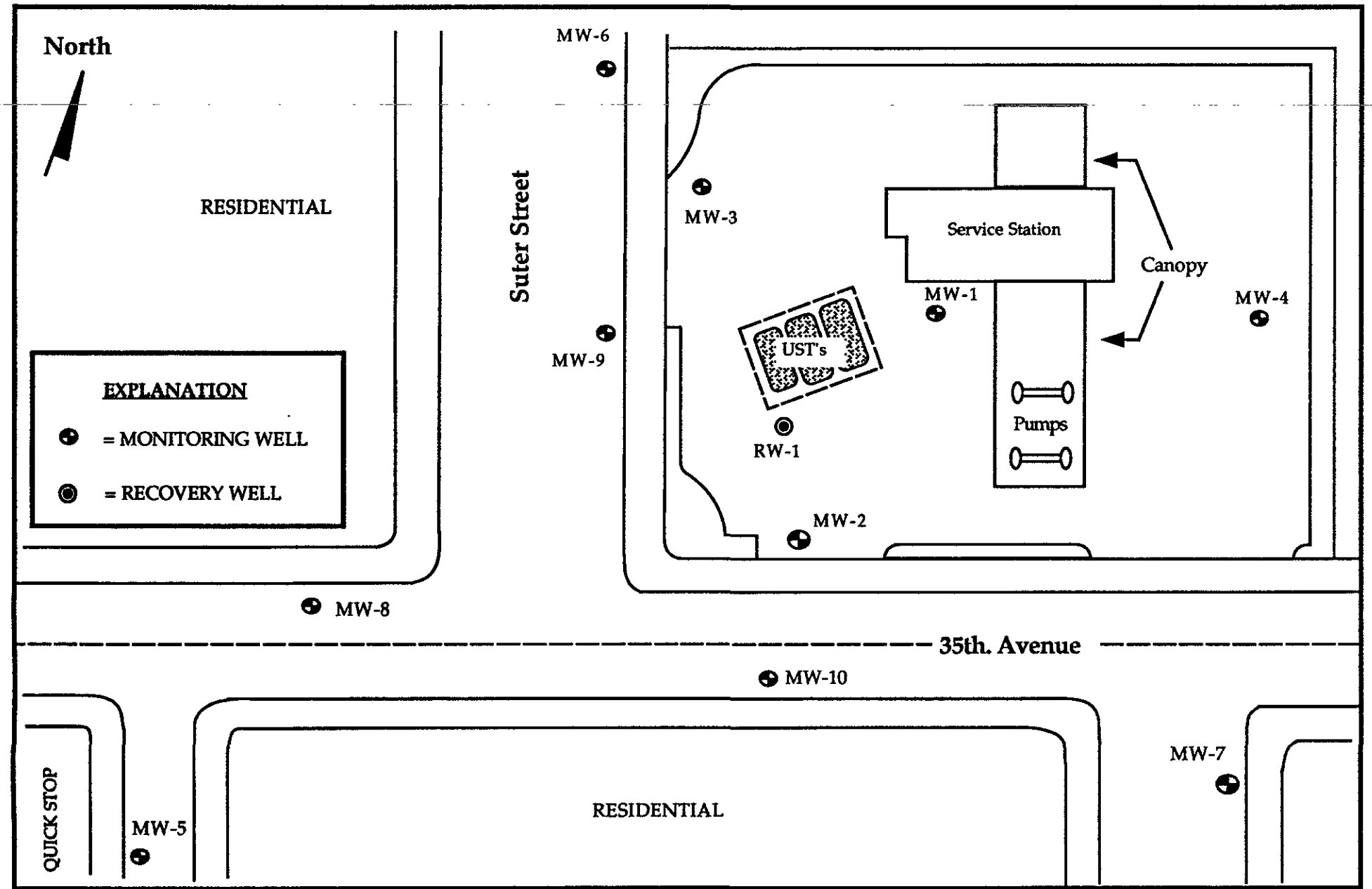
Scale 1:24000

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

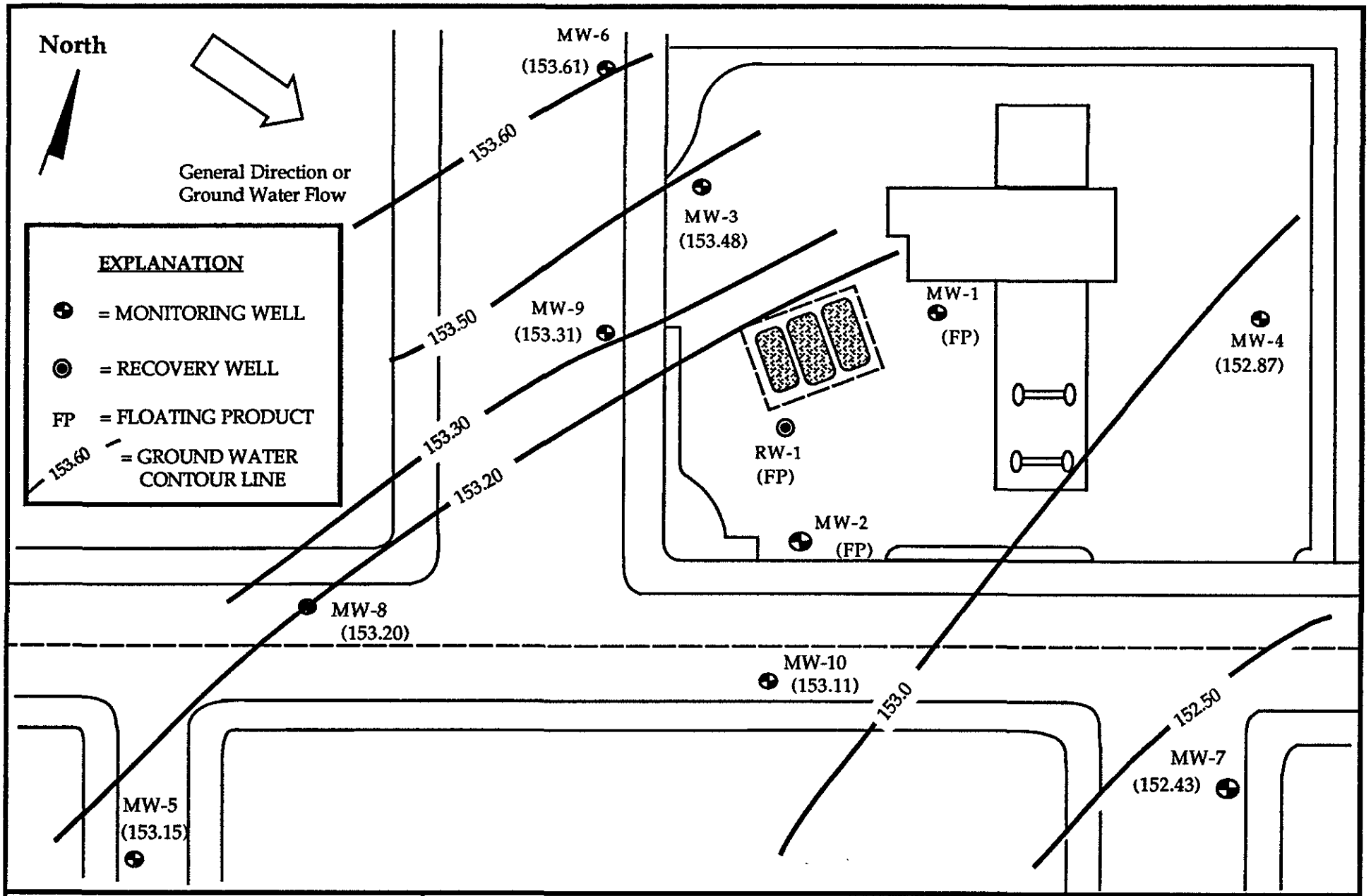
SITE LOCATION MAP

BP OIL COMPANY
SERVICE STATION NO. 11132
3201 35th Avenue
Oakland, California

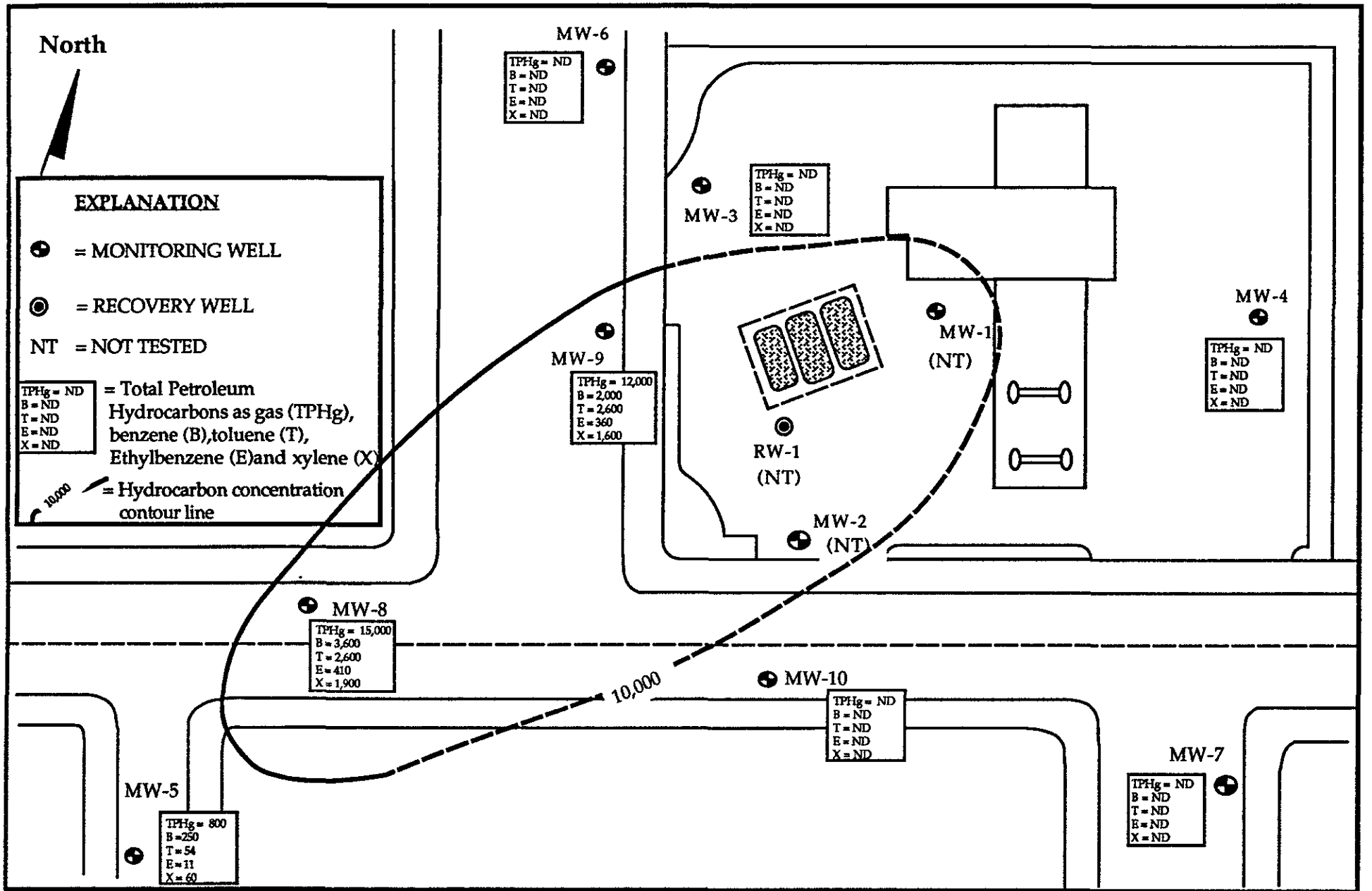
Job No.
9-037
Figure 1



HYDRO ENVIRONMENTAL TECHNOLOGIES, INC.	**SITE PLAN** BP SERVICE STATION NO. 11132 3201 35TH AVENUE OAKLAND, CALIFORNIA	**JOB NO. 9-037** **FIGURE 2**



HYDRO ENVIRONMENTAL TECHNOLOGIES, INC.	**GROUND WATER CONTOUR MAP** BP SERVICE STATION NO. 11132 3201 35TH AVENUE OAKLAND, CALIFORNIA	**JOB NO. 9-037** **FIGURE 3**



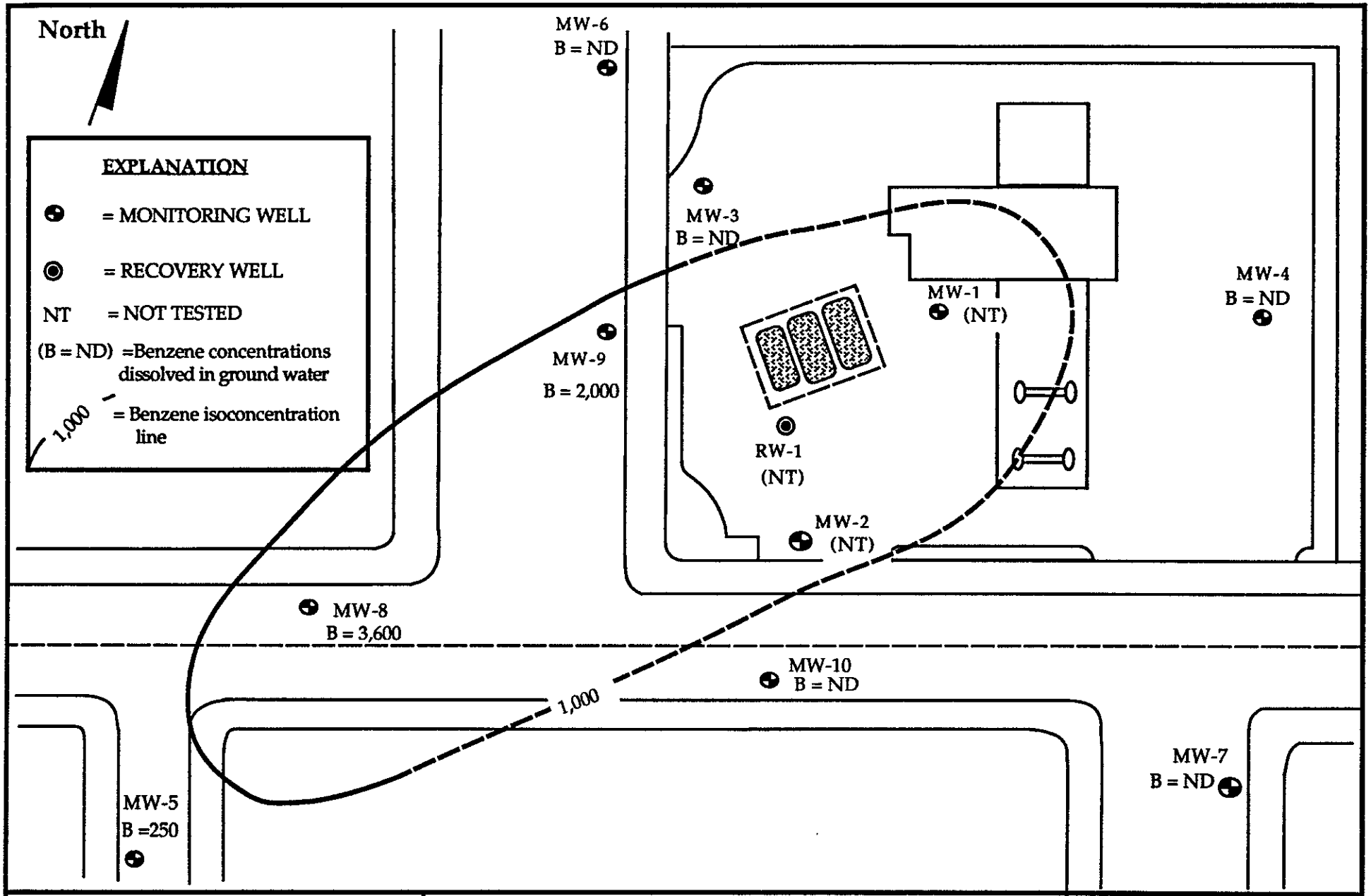
HYDRO ENVIRONMENTAL TECHNOLOGIES, INC.

TPHg ISOCONCENTRATION MAP

BP SERVICE STATION NO. 11132
3201 35TH AVENUE
OAKLAND, CALIFORNIA

JOB NO. 9-037

FIGURE 4



HYDRO ENVIRONMENTAL TECHNOLOGIES, INC.	**BENZENE ISOCONCENTRATION MAP** BP SERVICE STATION NO. 11132 3201 35TH AVENUE OAKLAND, CALIFORNIA	**JOB NO. 9-037** **FIGURE 5**

APPENDIX A

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

WATER TABLE ELEVATION DATA

Location: 3201 35th Avenue, Oakland, California

Client: BP Oil Company **Job No.** 9-037

Well No.	Elev. T.C.*	DTW	Date Measured	Elev. Water	Remarks/Observations
RW-1	168.01	14.40	4/1/92	N/A	6-inch Recovery Well 0.11 ft. free product
MW-1	169.75	16.51	4/1/92	N/A	2-inch Monitoring Well 0.15 ft. free product
MW-2	168.14	15.21	4/1/92	N/A	2-inch Monitoring Well 0.10 ft. free product
MW-3	167.17	13.69	4/1/92	153.48	2-inch Monitoring Well
MW-4	170.36	17.49	4/1/92	152.87	2-inch Monitoring Well
MW-5	165.14	11.99	4/1/92	153.15	2-inch Monitoring Well
MW-6	165.40	11.79	4/1/92	153.61	2-inch Monitoring Well
MW-7	167.61	15.18	4/1/92	152.43	2-inch Monitoring Well
MW-8	165.74	12.54	4/1/92	153.20	2-inch Monitoring Well
MW-9	166.20	12.89	4/1/92	153.31	2-inch Monitoring Well
MW-10	167.01	13.92	4/1/92	153.11	2-inch Monitoring Well

Benchmark = MW-2
T. C. = 168.14

Carried from previous surveys by Alton Geoscience, Inc. July 5, 1990.

T. C.* = Top of PVC Casing -- North Edge -- All measurements in feet & hundredths

PURGED/SAMPLED BY: HH/TR DATE: 4-1-92

GAUGING DATA:

Depth to bottom: 38.41 ft.

Depth to water: 14.40 ft.

Saturated Thickness: 24.01 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 34.6 gallons

volumes to purge x 3 vols.

*Total volume to purge = 104 gallons

* unless chemical parameters stabilize earlier

PURGING DATA:

Purge method: PVC bailer / Submersible pump / Suction lift pump / _____
(circle one)

	Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
Sample at:					
After sampling					

Color: _____ Turbidity: _____

Recharge: _____ Petroleum hydrocarbon odor: _____ or SPP _____ ft.

SAMPLING DATA:

Sampling method: Dedicated bailer / _____

Sample for: (circle)

TPH-g/BTEX	METALS	TOC	8010
TPH-d	O-Pb	TEL	8021
TPH mo	Total Pb	EDB	8240
601	602	Nitrates	8260 8270

Other: _____

HYDRO ENVIRONMENTAL TECHNOLOGIES, INC.

MONITORING WELL PURGE/SAMPLE SHEET

WELL # RW-1

LOCATION 35th Ave, Oakland

JOB NO. 9-037

PURGED/SAMPLED BY: HH/TR DATE: 4-1-92

GAUGING DATA:

Depth to bottom: 44.08 ft.

Depth to water: 16.51 ft.

Saturated Thickness: 27.57 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 4.41 gallons

volumes to purge x 3 vols.

*Total volume to purge = 13.3 gallons

* unless chemical parameters stabilize earlier

PURGING DATA: Did not purge due to presence of SPP

Purge method: (PVC bailer) / Submersible pump / Suction lift pump / _____ (see below)
(circle one)

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
Sample at				
After sampling				

Color: dark brown Turbidity: _____

Recharge: ✓ Petroleum hydrocarbon odor: strong or SPP 0.15 ft.

SAMPLING DATA: SPP is dark in color, with oily consistency and a strong gasoline odor

Sampling method: ~~Dedicated bailer~~ / test bailer
test bailer coated with SPP

Sample for: (circle)

~~TPH/BTEX~~	METALS	TOC	8010	
TPHd	O-Pb	TEL	8020	
TPH mo	Total Pb	EDB	8240	
601	602	Nitrates	8260	8270

Other: _____

HYDRO ENVIRONMENTAL TECHNOLOGIES, INC.

MONITORING WELL PURGE/SAMPLE SHEET

WELL # MW-1

LOCATION 35th Ave. Oakland

JOB NO. 9-037

PURGED/SAMPLED BY: HH/TR DATE: 4-1-92

GAUGING DATA:

Depth to bottom: 34.31 ft.

Depth to water: 15.05 ft.

Saturated Thickness: 19.26 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 3.08 gallons

volumes to purge x 3 vols.

*Total volume to purge = 9.3 gallons

* unless chemical parameters stabilize earlier

PURGING DATA:

Purge method: ~~PVC bailer~~ / Submersible pump/ Suction lift pump/ _____
(circle one)

	Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
Sample at					
After sampling					

Color: dark brown Turbidity: N/A

Recharge: N/A Petroleum hydrocarbon odor: strong or SPP 0.1"

SAMPLING DATA: strong gasoline odor thin dark SPP layer

Sampling method: ~~dedicated bailer~~ / disposable sampling bailer

Sample for: (circle)

~~TPH-g/BTEX~~ METALS TOC 8010

TPHd O-Pb TEL 8020

TPH mo Total Pb EDB 8240

601 602 Nitrates 8260 8270

Other: _____

HYDRO ENVIRONMENTAL TECHNOLOGIES, INC.

MONITORING WELL PURGE/SAMPLE SHEET

WELL # MW-2

LOCATION ~~XX~~ 35th Ave Oakland

JOB NO. 9-037

PURGED/SAMPLED BY: HH/TR DATE: 4-1-92

GAUGING DATA:

Depth to bottom: 34.58 ft.

Depth to water: 13.69 ft.

Saturated Thickness: 20.89 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 3.34 gallons

volumes to purge x 3 vols.

*Total volume to purge = 10 gallons

* unless chemical parameters stabilize earlier

PURGING DATA:

Purge method: (PVC bailer) / Submersible pump / Suction lift pump / _____ (circle one)

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
115	0	—	—	—
	2	70.3	0.97	8.04
	4	70.1	0.99	7.90
	6	70.5	1.01	7.73
	8	70.3	1.02	7.88
130	10	69.9	1.02	7.94
Sample at				
After sampling				

Color: brown Turbidity: moderate

Recharge: good Petroleum hydrocarbon odor: moderate or SPP 9 ft.

SAMPLING DATA:

Sampling method: (Dedicated bailer) / _____

Sample for: (circle)

(TPHg/BTEX)	METALS	TOC	8010
TPHd	Cr-Pb	TEL	8020
TPH oil	Total Pb	EDB	8240
601	602	Nitrates	8260 8270

Other: _____

HYDRO ENVIRONMENTAL TECHNOLOGIES, INC.

MONITORING WELL PURGE/SAMPLE SHEET

WELL # MW-3

LOCATION 35th Ave, Oakland

JOB NO. 9-037

PURGED/SAMPLED BY: HH/TR DATE: 4-1-92

GAUGING DATA:

Depth to bottom: 38.74 ft.

Depth to water: 17.49 ft.

Saturated Thickness: 21.25 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 3.40 gallons

volumes to purge x 3 vols.

*Total volume to purge = 10.2 gallons

* unless chemical parameters stabilize earlier

PURGING DATA:

Purge method: (PVC bailer) / Submersible pump / Suction lift pump / _____ (circle one)

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
11:50	0	~~71.5~~	—	—
11:53	2	~~69.8~~ 69.8	0.74	7.44
11:56	4	69.8	0.72	7.21
11:59	6	69.5	0.72	7.11
12:03	8	69.1	0.71	7.00
12:07	10.5	68.8	0.71	6.97
Sample at:				
After sampling				

Color: Tan Turbidity: Moderate to strong

Recharge: good Petroleum hydrocarbon odor: None or SPP ∅ ft.

SAMPLING DATA:

Sampling method: (Dedicated bailer) / _____

Sample for: (circle)

(TPHg/BTEX) METALS TOC 8010

TPHd O-Pb TEL 8021

TPH oil Total Pb EDB 8240

601 602 Nitrates 8260 8270

Other: _____

HYDRO ENVIRONMENTAL TECHNOLOGIES, INC.

MONITORING WELL PURGE/SAMPLE SHEET

WELL # MW-4

LOCATION 35th Ave., Oakland

JOB NO. 9-037

PURGED/SAMPLED BY: HH/TR DATE: 4-1-92

GAUGING DATA:

Depth to bottom: 30.88 ft.

Depth to water: 11.99 ft.

Saturated Thickness: 18.89 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 3.02 gallons

volumes to purge x 3 vols.

*Total volume to purge = 9.1 gallons

* unless chemical parameters stabilize earlier

PURGING DATA:

Purge method: (PVC bailer) / Submersible pump / Suction lift pump / _____ (circle one)

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
130	0	—	—	—
	2	72.1	1.13	8.26
	4	70.8	1.15	8.00
	6	70.9	1.17	7.82
150	9.1	70.6	1.17	7.77
Sample at				
After sampling				

Color: tan-olive Turbidity: moderate/light

Recharge: good Petroleum hydrocarbon odor: slight or SPP Ø ft.

SAMPLING DATA:

Sampling method: (Dedicated bailer) / _____

Sample for: (circle)

(TPHg/BTEX)	METALS	TOG	8010
TPHd	O-Pb	TEL	8021
TPH mo	Total Pb	EDB	8240
601	602	Nitrates	8260 8270

Other: _____

HYDRO ENVIRONMENTAL TECHNOLOGIES, INC.

MONITORING WELL PURGE/SAMPLE SHEET

WELL # MW-5

LOCATION 35th Ave. Oakland

JOB NO. 9-037

PURGED/SAMPLED BY: HH/TR DATE: 4-1-92

GAUGING DATA:

Depth to bottom: 34.56 ft.

Depth to water: 11.79 ft.

Saturated Thickness: 22.77 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 3.64 gallons

volumes to purge x 3 vols.

*Total volume to purge = 10.93 gallons

* unless chemical parameters stabilize earlier

PURGING DATA:

Purge method: (PVC bailer) / Submersible pump / Suction lift pump / _____ (circle one)

	Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
	11:03	0			
	11:09	11	72.2	0.66	7.81
	11:13	8	72.8	0.72	7.89
	11:17	6	69.7	0.62	7.57
	11:21	4	68.5	0.60	7.51
	11:27	2	68.0	0.60	7.51
		reversed order			
Sample at					
After sampling					

Color: tan Turbidity: slight

Recharge: great Petroleum hydrocarbon odor: None or SPF 0 ft.

SAMPLING DATA:

Sampling method: (Dedicated bailer) / _____

Sample for: (circle)

(TPHg/BTEX)	METALS	TOC	8010
TPHd	O-Pb	TEL	8020
TPH ms	Total Pb	EDB	8240
601	602	Nitrates	8260 8270

Other: _____

HYDRO ENVIRONMENTAL TECHNOLOGIES, INC.

MONITORING WELL PURGE/SAMPLE SHEET

WELL # MW-6

LOCATION 35th Ave, Oakland

JOB NO. 9-037

PURGED/SAMPLED BY: HH/TR DATE: 4-1-92

GAUGING DATA:

Depth to bottom: 34.49 ft.

Depth to water: 15.18 ft.

Saturated Thickness: 19.31 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 3.09 gallons

volumes to purge x 3 vols.

*Total volume to purge = 9.3 gallons

* unless chemical parameters stabilize earlier

PURGING DATA:

Purge method: (PVC bailer) / Submersible pump / Suction lift pump / _____ (circle one)

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
1250	0	—	—	—
1254	2	69.1	1.09	7.48
1256	4	68.6	1.11	7.94
1258	6	68.2	1.14	7.48
1100	8	68.3	1.11	7.47
1105	9.3	68.2	1.11	7.36
Sample at				
After sampling				

Color: brown Turbidity: moderate

Recharge: _____ Petroleum hydrocarbon odor: none or SPP 0 ft.

SAMPLING DATA:

Sampling method: (Dedicated bailer) / _____

Sample for: (circle)

(TPHg/BTEX)	METALS	TOC	8010
TPHd	Cr-Pb	TEL	8020
TPH oil	Total Pb	EDB	8240
601	602	Nitrates	8260 8270

Other: _____

HYDRO ENVIRONMENTAL TECHNOLOGIES, INC.

MONITORING WELL PURGE/SAMPLE SHEET

WELL # MW-7

LOCATION 35th Ave., Oakland

JOB NO. 9-037

PURGED/SAMPLED BY: HH/TR DATE: 4-1-92

GAUGING DATA:

Depth to bottom: 38.72 ft.

Depth to water: 12.54 ft.

Saturated Thickness: 26.18 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 4.19 gallons

volumes to purge x 3 vols.

*Total volume to purge = 12.6 gallons

* unless chemical parameters stabilize earlier

PURGING DATA:

Purge method: (PVC bailer) / Submersible pump / Suction lift pump / _____ (circle one)

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
225	0	—	—	—
↓	2	71.6	2.00	8.07
	4	71.1	1.93	7.67
	6	70.9	1.81	7.57
	8	70.6	1.79	7.44
↓	10	69.9	1.86	7.30
250	12.6	69.9	1.63	7.21
Sample at				
After sampling				

Color: ~~dk~~ light olive tint Turbidity: none

Recharge: good Petroleum hydrocarbon odor: strong or SPP Ø ft.

SAMPLING DATA:

Sampling method: (Dedicated bailer) / _____

Sample for: (circle)

(TPH-g/BTEX)	METALS	TOC	8010
TPH-d	Cr-Pb	TEL	8020
TPH-mo	Total Pb	EDB	8240
601	602	Nitrates	8260 8270

Other: _____

HYDRO ENVIRONMENTAL TECHNOLOGIES, INC.

MONITORING WELL PURGE/SAMPLE SHEET

WELL # MW-8

LOCATION 35th Ave. Oakland

JOB NO. 9-037

PURGED/SAMPLED BY: HH/TR DATE: 4-1-92

GAUGING DATA:

Depth to bottom: 29.49 ft.

Depth to water: 12.89 ft.

Saturated Thickness: 16.6 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 2.66 gallons

volumes to purge x 3 vols.

*Total volume to purge = 8 gallons

* unless chemical parameters stabilize earlier

PURGING DATA:

Purge method: (PVC bailer) / Submersible pump / Suction lift pump / _____ (circle one)

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
200	0	—	—	—
↓	2	71.3	1.71	7.89
	4	70.3	1.87	7.34
↓	6	70.1	1.96	7.19
215	8	70.5	1.42	7.22
Sample at				
After sampling				

Color: brown Turbidity: moderate

Recharge: good Petroleum hydrocarbon odor: strong or SPP 0 ft.

SAMPLING DATA:

Sampling method: (Dedicated bailer) / _____

Sample for: (circle)

(TPHg/BTEX)	METALS	TOC	8010
TPHd	O-Pb	TEL	8020
TPH mo	Total Pb	EDB	8240
601	602	Nitrates	8260 8270

Other: _____

HYDRO ENVIRONMENTAL TECHNOLOGIES, INC.

MONITORING WELL PURGE/SAMPLE SHEET

WELL # MW-9

LOCATION 35th Ave. Oakland

JOB NO. 9-037

PURGED/SAMPLED BY: HH/TR DATE: 4-1-92

GAUGING DATA:

Depth to bottom: 34.00 ft.

Depth to water: 13.92 ft.

Saturated Thickness: 20.08 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 3.21 gallons

volumes to purge x 3 vols.

*Total volume to purge = 9.7 gallons

* unless chemical parameters stabilize earlier

PURGING DATA:

Purge method: (PVC bailer) / Submersible pump / Suction lift pump / _____ (circle one)

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
3:08	0			
3:12	2	71.4	0.98	8.45
3:15	4	71.8	0.92	8.21
3:18	6	71.7	0.90	8.03
3:22	8	70.5	0.92	7.92
3:25	10	70.0	0.94	7.71
Sample at				
After sampling				

Color: olive-tan Turbidity: _____

Recharge: _____ Petroleum hydrocarbon odor: _____ or SPP _____ ft.

SAMPLING DATA:

Sampling method: (Dedicated bailer) / _____

Sample for: (circle)

(TPHg/BTEX)	METALS	TOC	8010	
TPHd	O-Pb	TEL	8020	
TPH mo	Total Pb	EDB	8240	
601	602	Nitrates	8260	8270

Other: _____

HYDRO ENVIRONMENTAL TECHNOLOGIES, INC.

MONITORING WELL PURGE/SAMPLE SHEET

WELL # MW-10

LOCATION 35th Ave., Oakland

JOB NO. 9-037

APPENDIX B

pace INCORPORATED
THE ASSURANCE OF QUALITY

Hydro-Environmental Tech., Inc.	Client Project ID:	9-037	Date Received:	April 2, 1992
2343 Mariner Square Dr., Ste. 243	Matrix Description:	Water		
Alameda, CA 94501	Analysis Method:	Mod EPA 8015/8020	Date Reported:	April 10, 1992
Attention: Mr. Markus Niebanck	PACE Project #:	420402.500		

TOTAL PETROLEUM FUEL HYDROCARBONS-GASOLINE/BTEX

Sample Number	Sample Description	Purgeable Hydrocarbons µg/L (ppb)	Benzene µg/L (ppb)	Toluene µg/L (ppb)	Ethyl Benzene µg/L (ppb)	Xylenes µg/L (ppb)	Date Sampled	Date Analyzed
700053749	MW-3	480	54	11	28	43	4/01/92	4/06/92
700053854	MW-4	ND	ND	ND	ND	ND	4/01/92	4/06/92
700055580	MW-6	ND	ND	ND	ND	ND	4/01/92	4/06/92
700058392	MW-7	ND	ND	ND	ND	ND	4/01/92	4/06/92
700065623	MW-10	ND	ND	ND	ND	ND	4/01/92	4/08/92
Detection Limits:		50	0.5	0.5	0.5	0.5		
700053862	MW-5	800	250	54	11	60	4/01/92	4/07/92
Detection Limits:		120	1.2	1.2	1.2	1.2		
70060303	MW-8	15000	3600	2600	410	1900	4/01/92	4/08/92
70065470	MW-9	12000	2000	2600	360	1600	4/01/92	4/09/92
Detection Limits:		2500	25	25	25	25		

These data have been reviewed and are approved for release.

Darrell Cain for
Mark A. Valentini, Ph.D.
Regional Director

TEL NO. Apr 10,92 12:00 P.04/04

CHAIN OF CUSTODY RECORD

SAMPLER
PRINTED NAME: Henry Huckmans

Signature: Hy Huckmans

DELIVER TO: PACE

ATTENTION: Caren Sontag

SEND RESULTS TO:

HYDRO-ENVIRONMENTAL
TECHNOLOGIES, INC.
2363 MARINER SQUARE DR., SUITE 243
ALAMEDA, CA 94501

ATTENTION: Markus Niebanck

Relinquished by: (Signature)	Received by: (Signature)	Date	Time
[signature]	Ed [signature] - Pace	4/2/92	1140
Relinquished by: Ed [signature] Pace	Received by: [signature] PACE One	4/2	1245
Relinquished by:	Received by:		
Relinquished by:	Received by: LABORATORY		

HETICAL JOB No.-- 9-037

PAGE 1 OF

	Sample Number	DATE & TIME.	No. & Type Container	TPHg-BTEX (DHS mod)	TPHd (DHS mod)	Tot. O & G (SMG)	8010 or 8240	Organic Lead			Lab Remarks
374.9	MW-3	4-1-92	3X HCl VOA	X							
385.4	MW-4	↓		↓							
386.2	MW-5										
558.0	MW-6										
339.2	MW-7										
030.3	MW-8										
547.0	MW-9										
562.3	MW-10	↓		↓							

Special Instructions: MW-2 & MW-1 not sampled

Turnaround:
☒ STANDARD ☐ 72 HOURS
☒ 5 DAY ☐ 24 HOURS