



**BP OIL**

BP Oil Company  
Aetna Bldg., Suite 360  
2868 Prospect Park Drive  
Rancho Cordova, California 95670-6020  
(916) 631-8733

92 MAR 23 11:05 AM

March 23, 1992

Mr. Brian Oliva  
Alameda County Department of  
Environmental Health  
80 Swan Way, Room 200  
Oakland, CA 94621

RE: BP FACILITY #11266  
1541 PARK STREET  
ALAMEDA, CA

Dear Mr. Oliva,

Attached 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 SML  
Environmental Resources Management

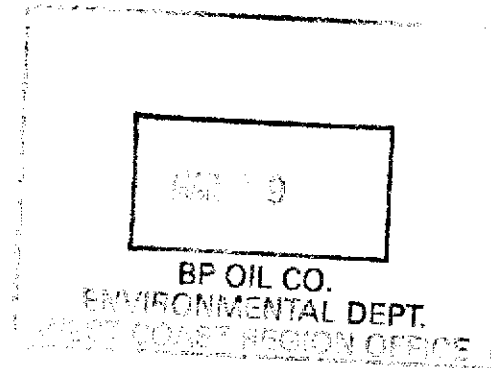
PJD:sml

Attachment

cc: Mr. Eddy So- RWQCB, San Francisco Bay Region  
David Baker-Mobil Oil  
Site file

March 17, 1992

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



Re: BP Oil Facility No. 11266, 1541 Park Street, Alameda, 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 January 8, 1992. A report titled "Remedial Action Plan" was submitted to the Alameda County Department of Environmental Health (ACDEH) on February 28, 1992. This report presented an assessment of site conditions and recommendations for site remediation.

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 1541 Park Street in Alameda, California (Figure 1). An environmental investigation has been in process at this site since hydrocarbons were first detected in the subsurface in October 1987. A preliminary investigation was completed by Kaprealian Engineering, Inc., with subsequent investigative tasks carried out by EMCON Associates and Hydro-Environmental Technologies, Inc. (HETI). Tasks completed to date have included the installation of 6 monitoring wells (5 on-site and 1 off-site) for soil/groundwater sample collection and analysis.

The extent of hydrocarbons in soil beneath the site has been defined. Soil samples collected during tank replacement and monitoring well installation verified that the extent of hydrocarbon impacted soil was not extensive. The lateral extent of hydrocarbons dissolved in groundwater has also been established. The only well where dissolved petroleum hydrocarbons have consistently been detected is MW-1, which is downgradient of the underground storage tanks.

## Field Activities

HETI collected water samples from all six wells on January 8, 1992. Prior to sampling, the depth to water in the wells was gauged to the nearest hundredth of a foot with an interface probe. Separate phase petroleum was not detected in any of the wells with the probe or by means of visual inspection.

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 was dry. As requested by the Regional Water Quality Control Board for the San Francisco Bay Area, well purging was completed when temperature, conductivity, and pH stabilized. 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 receptacle. During sampling a blind duplicate (QC-1) was collected as a quality assurance sample. This sample was prepared using a second water sample from MW-6.

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 CHROMALAB, a DHS certified laboratory, located in San Ramon, California.

## Ground Water Data

Depth to ground water in each of the wells ranged from approximately 9.2 to 10.5 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 HETI 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 towards the northeast.

## 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 CHROMALAB, INC. Analytical results of samples collected indicate that TPHg, benzene, toluene, ethylbenzene and xylene were found in MW- 1 only (Table 1). Benzene and total xylenes were also found in well MW-2 in a small amount as shown in Figure 3 the Groundwater Concentration Map. All other wells were found to be non-detect.

A quality control blind duplicate sample (QC-1) was taken from MW-6 as a laboratory check on analytical precision. QC-1 was found to have the same results as MW-6 indicating laboratory procedures were adequate.

**Status of Investigative Activities**

Following review and approval of the "Remedial Action Plan" by the ACDEH, HETI will proceed with final design of the remediation system, installation of the recovery well, and permitting for installation of treatment equipment.

Sincerely,  
HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.



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

Henry Hurkmans  
Staff Geologist



# TABLES

**Table 1**  
**WATER SAMPLES**  
**SUMMARY OF RECENT ANALYTICAL RESULTS**  
**BP Oil Facility No. 11266**

Sample date: January 8, 1992

MW No.	TPHg	B	T	E	X
MW-1	10,000	260	1,100	570	2,000
MW-2	ND	1.4	ND	ND	1.1
MW-3	ND	ND	ND	ND	ND
MW-4	ND	ND	ND	ND	ND
MW-5	ND	ND	ND	ND	ND
MW-6	ND	ND	ND	ND	ND
QC-1	ND	ND	ND	ND	ND

All hydrocarbon concentrations in  $\mu\text{g/l}$  (ppb).

TPHg = Total petroleum hydrocarbons as gasoline by EPA method 5030/8015  
(DHS modified)

B = Benzene

T = Toluene

E = Ethylbenzene

X = Total Xylenes

ND = Not detected above the laboratory method  
detection limit

QC-1 = Quality control sample taken from MW-6

**TABLE 2**  
**Cumulative Analytical Results of Water Samples**  
**BP Oil Facility No. 11266**  
**Alameda, California**

Well No.	Sample Date	Consultant	TPHg	B	T	E	X
*	10/87	KEI	530	6.3	66	NA	200
MW-1	3/4/88	KEI	95,000	2,000	5,900	1,100	10,000
	3/29/89	KEI	25,000	930	2,600	24	3,100
	11/28/89	EMCON	15,000	280	880	340	1,200
	2/13/91	EMCON	25,000	680	2,700	1,100	3,200
	1/8/92	HETI	10,000	260	1,100	570	2,000
MW-2	3/4/88	KEI	ND	ND	ND	ND	ND
	3/29/89	KEI	ND	1.1	0.78	ND	1.7
	11/28/89	EMCON	170	ND	ND	ND	ND
	2/13/91	EMCON	150	1.4	ND	ND	0.9
	1/8/92	HETI	ND	1.4	ND	ND	1.1
MW-3**	3/28/88	KEI	ND	ND	ND	ND	ND
	3/29/89	KEI	ND	ND	ND	ND	ND
	11/28/89	EMCON	ND	ND	ND	ND	ND
	2/13/91	EMCON	ND	ND	ND	ND	ND
	1/8/92	HETI	ND	ND	ND	ND	ND
MW-4	3/29/89	KEI	ND	ND	ND	ND	ND
	11/28/89	EMCON	ND	ND	ND	ND	ND
	2/13/91	EMCON	430	6.2	0.6	12	3.3
	1/8/92	HETI	ND	ND	ND	ND	ND
MW-5	3/29/89	KEI	ND	ND	ND	ND	ND
	11/28/89	EMCON	ND	ND	ND	ND	ND
	2/13/91	EMCON	ND	ND	ND	ND	ND
	1/8/92	HETI	ND	ND	ND	ND	ND
MW-6	4/19/89	KEI	ND	ND	ND	ND	ND
	11/28/89	EMCON	ND	ND	ND	ND	ND
	2/13/91	EMCON	ND	ND	ND	ND	ND
	1/8/92	HETI	ND	ND	ND	ND	ND

All concentrations in µg/l (ppb)

TPHg = Total petroleum hydrocarbons as gasoline.

B = Benzene

T = Toluene

E = Ethylbenzene

X = Total Xylenes

ND = Not detected in concentrations exceeding the laboratory method detection limit

KEI = Kaprealian Engineering, Inc.

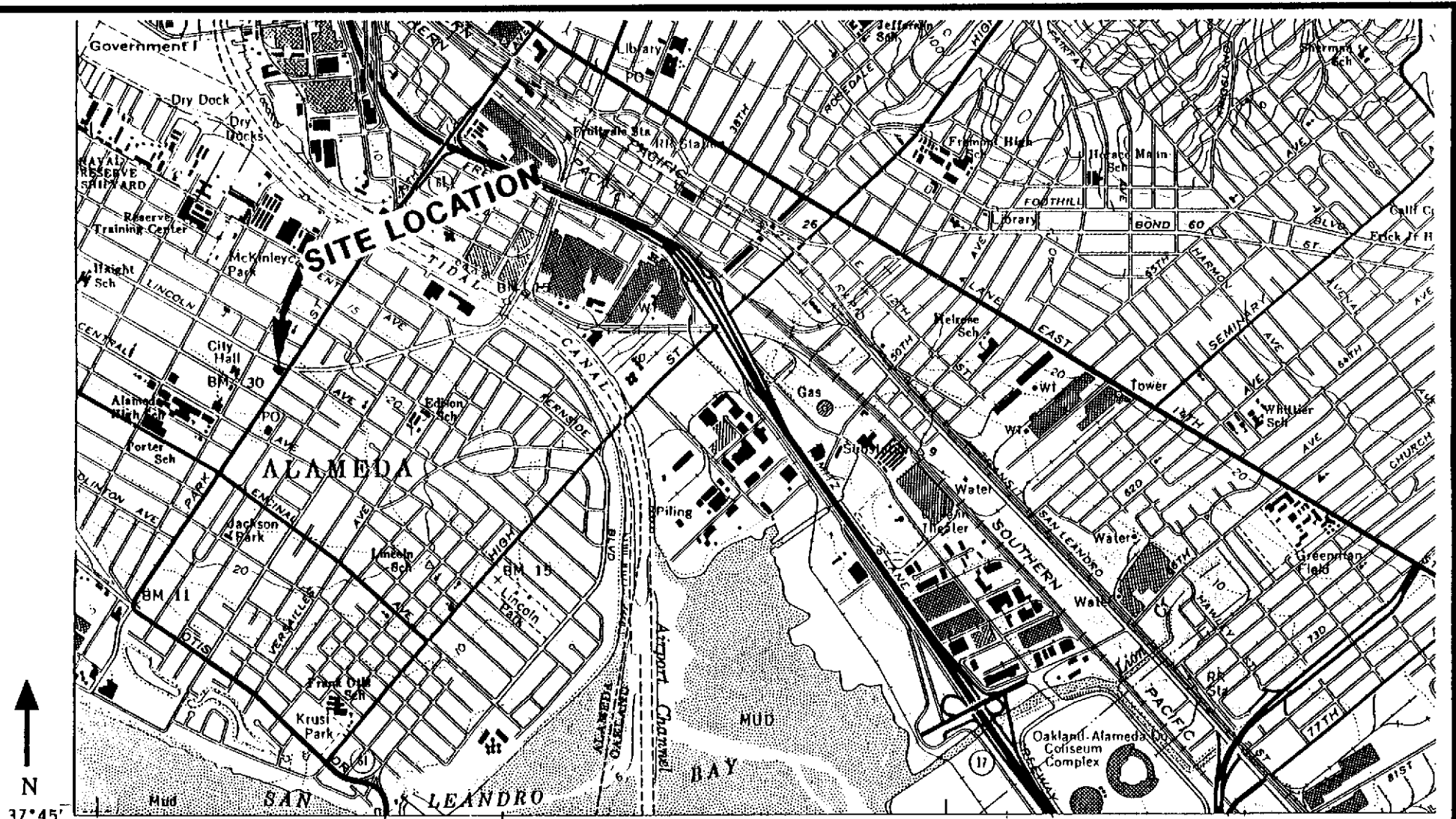
EMCON = EMCON Associates

\*Sample was obtained from the tank excavation in 1987

\*\*In March of 1988, KEI reported less than 50 ppb as diesel in MW-3

# FIGURES





37°45'  
122°15'

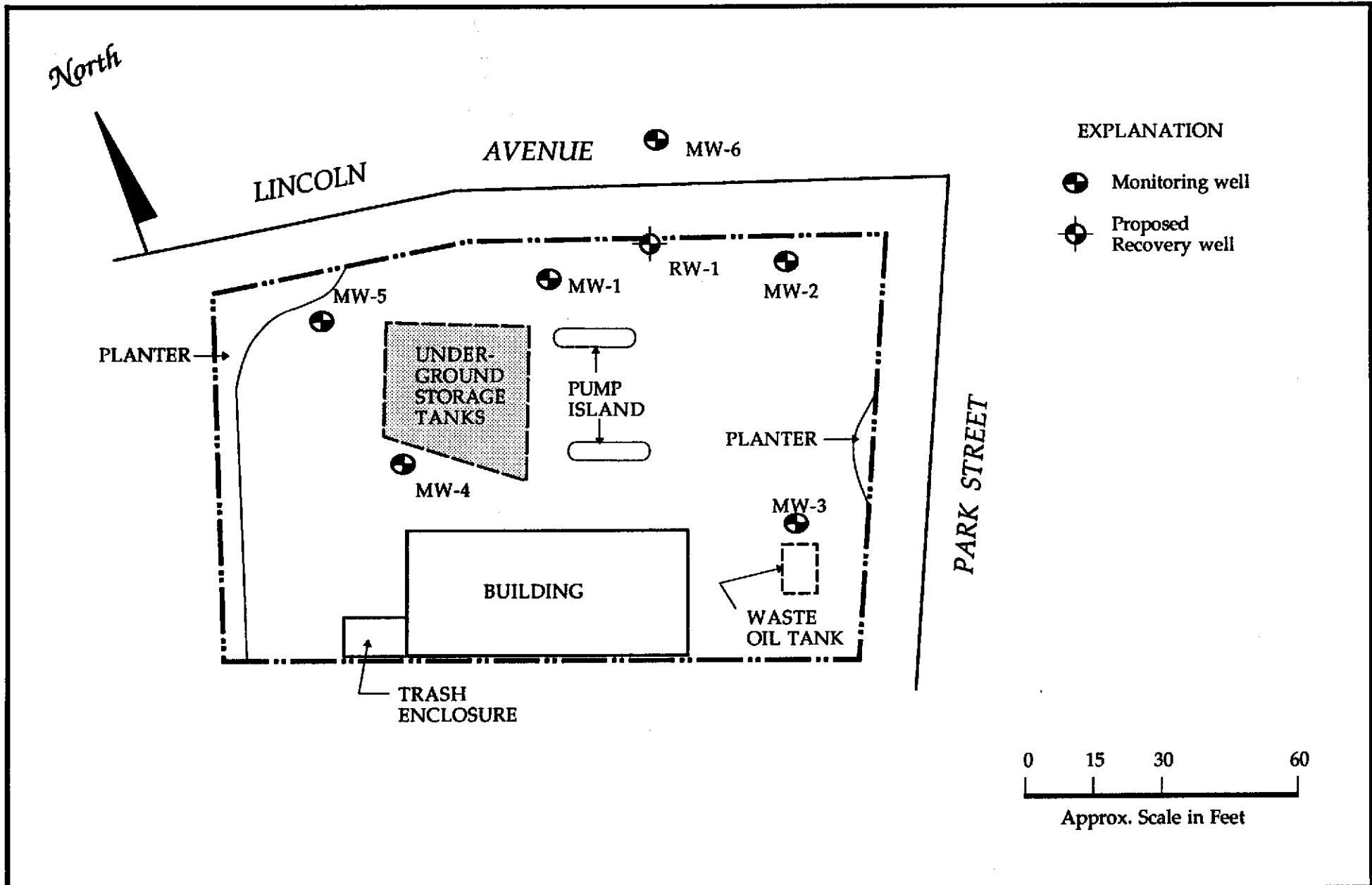
Scale 1: 24000  
0 2000'

Source: U.S.G.S. Oakland East Quadrangle, CA  
7.5 Minute Series (Topographic)

**HYDRO-  
ENVIRONMENTAL  
TECHNOLOGIES, INC.**

**SITE LOCATION MAP**  
BP SERVICE STATION No. 11266  
1541 PARK STREET  
ALAMEDA, CA

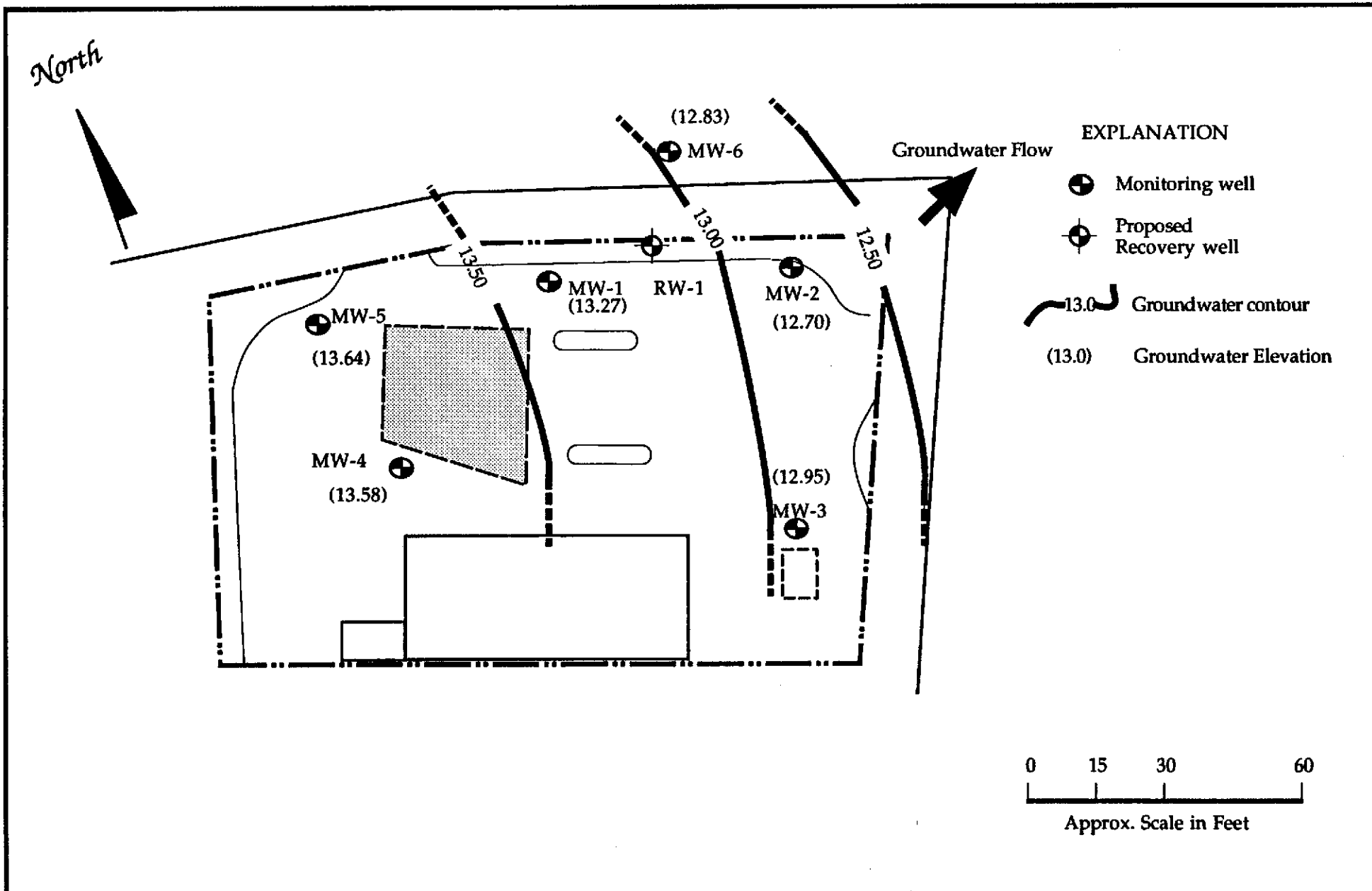
**FIGURE:  
1**  
Job No. 9-031



HYDR-  
 ENVIRONMENTAL  
 TECHNOLOGIES, INC.

**SITE PLAN**  
 BP SERVICE STATION No. 11266  
 1541 Park Street, Alameda, California

Figure  
**2**  
 9-031 3/6/92



HYDRO-  
ENVIRONMENTAL  
TECHNOLOGIES, INC.

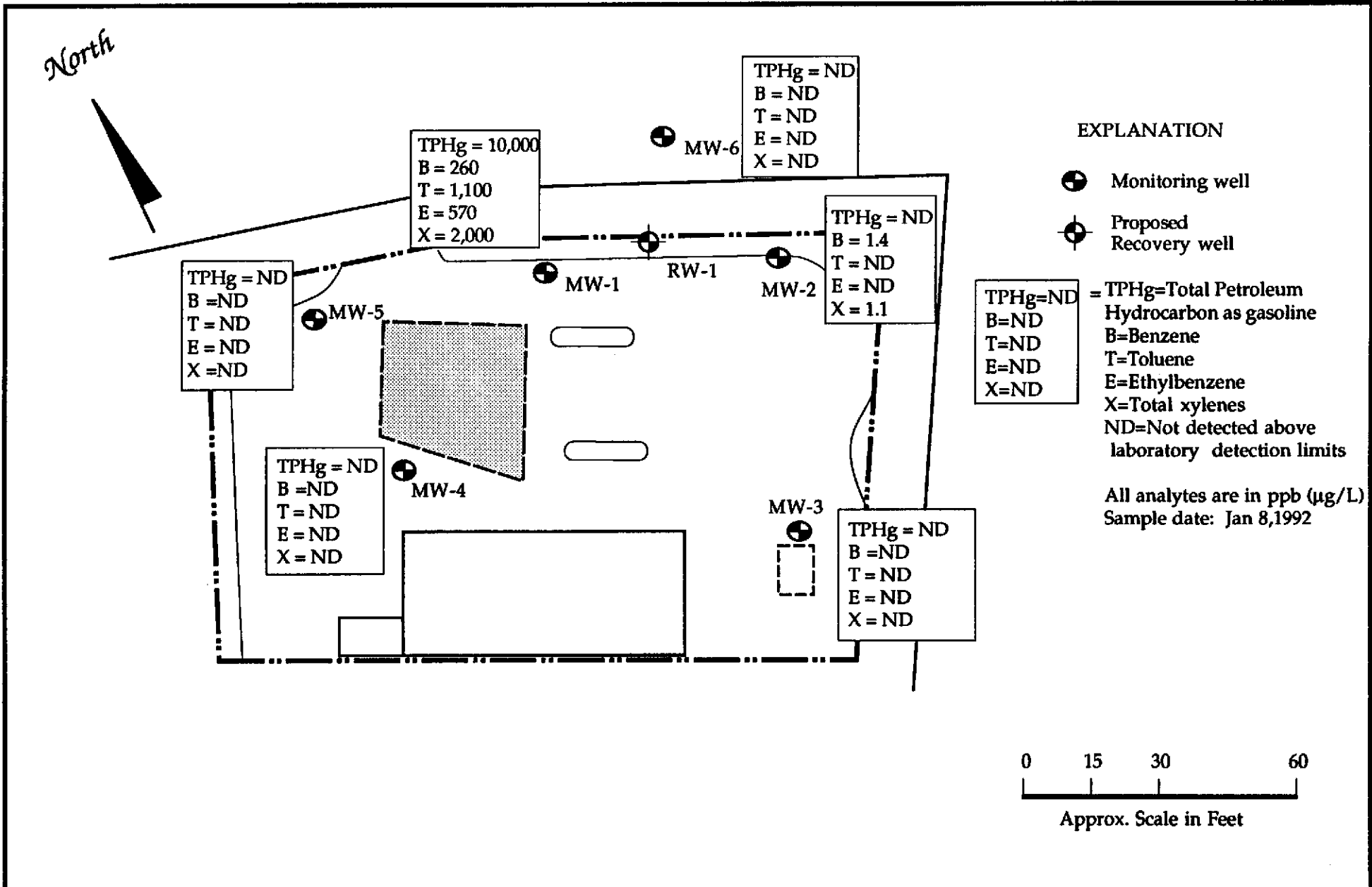
### GROUNDWATER CONTOUR MAP

BP SERVICE STATION No. 11266  
1541 Park Street, Alameda, California

Figure

**3**

9-031 | 3/6/92



**HYDR-  
 ENVIRONMENTAL  
 TECHNOLOGIES, INC.**

**GROUNDWATER CONCENTRATION MAP**

**BP SERVICE STATION No. 11266**  
 1541 Park Street, Alameda, California

Figure  
**4**

9-031 | 2/2/92

# APPENDIX A



PURGED/SAMPLED BY: JM, HH

DATE: 1/8/92

**GAUGING DATA:**

Depth to bottom: 21.95 ft.

Depth to water: 9.36 ft.

Saturated Thickness: 12.59 ft.

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

Well casing volume 2.01 gallons

# volumes to purge x 3 vols.

\*Total volume to purge = 6.53 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
1040	0			
1045	3			
1050	6			
Sample at				
After sampling				

Color: DRK OLIVE GRN

Turbidity: 1-2 NTU

FLUATING

Recharge: GOOD

Petroleum hydrocarbon odor: STRONG or SPPRODUCT

**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
- Nitrate
- 8260
- 8270
- Other: \_\_\_\_\_



MONITORING WELL PURGE/SAMPLE SHEET  
WELL # MW-1  
LOCATION BP ALAMEDA

JOB NO.  
9-031





PURGED/SAMPLED BY: EM, HH DATE: 1/8/92

**GAUGING DATA:**

Depth to bottom: 19.96 ft.  
 Depth to water: 10.50 ft.  
 Saturated Thickness: 9.46 ft.

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

Well casing volume 1.514 gallons  
 # volumes to purge x 3 vols.  
 \*Total volume to purge = 4.54 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
1105	0			
1112	3			
1120	5			
Sample at				
After sampling				

Color: yellow-brown Turbidity: high  
 Recharge: good Petroleum hydrocarbon odor: none or SPP \_\_\_\_\_ ft.

**SAMPLING DATA:**

Sampling method: Dedicated bailer / \_\_\_\_\_

- Sample for: (circle)
- TPHg/STEX
  - METALS
  - TOC
  - 8010
  - TPHd
  - O-Pb
  - TEL
  - 8020
  - TPH mo
  - Total Pb
  - ED8
  - 8240
  - 601
  - 602
  - Nitrate
  - 8260
  - 8270
- Other: \_\_\_\_\_



MONITORING WELL PURGE/SAMPLE SHEET  
 WELL # MW-3  
 LOCATION BP/ALAMEDA

JOB NO.  
9-031



PURGED/SAMPLED BY: DAH HH

DATE: 1/8/92

**GAUGING DATA:**

Depth to bottom: 24.33 ft.

Depth to water: 9.23 ft.

Saturated Thickness: 15.10 ft.

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

Well casing volume 2.41 gallons

# volumes to purge x 3 vols.

\*Total volume to purge = 7.25 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
1015	0			
1025	5			
1030	7.55			
Sample at				
After sampling				

Color: 1000

Turbidity: ND

Recharge: RPD

Petroleum hydrocarbon odor: 0 or SPP 0 ft.

**SAMPLING DATA:**

Sampling method: Dedicated bailer / \_\_\_\_\_

Sample for: (circle)

<u>TPHg/STEX</u>	METALS	TOC	8010
TPHd	C-Pb	TEL	8020
TPH no	Total Pb	ED8	8240
601	602	Nitrate	8260 8270
Other: _____			

**HYDR**  
**ENVIRONMENTAL**  
**TECHNOLOGIES, INC.**

MONITORING WELL PURGE/SAMPLE SHEET

WELL # MW-5

LOCATION BP/ALAMEDA

JOB NO.

9-031



## APPENDIX B

RECEIVED JAN 20 1992

9-031

**CHROMALAB, INC.**

5 DAYS TURNAROUND

Analytical Laboratory (E694)

January 16, 1992

ChromaLab File No.: 0192055

HYDRO ENVIRONMENTAL TECHNOLOGIES, INC.

Attn: Frances MaroniRE: Seven water samples for Gasoline/BTEX analysis

Project Number: 9-031

Date Sampled: Jan. 8, 1992

Date Submitted: Jan. 9, 1992

Date Extracted: Jan. 14, 1992

Date Analyzed: Jan. 15, 1992

RESULTS:

Sample I.D.	Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
MW-1	10000	260	1100	570	2000
MW-2	N.D.	1.4	N.D.	N.D.	1.1
MW-3	N.D.	N.D.	N.D.	N.D.	N.D.
MW-4	N.D.	N.D.	N.D.	N.D.	N.D.
MW-5	N.D.	N.D.	N.D.	N.D.	N.D.
MW-6	N.D.	N.D.	N.D.	N.D.	N.D.
QC-1	N.D.	N.D.	N.D.	N.D.	N.D.

BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	91%	100%	89%	85%	91%
DUP. SPIKE RECOVERY	87%	101%	91%	86%	92%
DETECTION LIMIT	50	0.5	0.5	0.5	0.5
METHOD OF ANALYSIS	5030/8015	602	602	602	602

ChromaLab, Inc.

*Mary Cappelli*Mary Cappelli  
Analytical ChemistEric Tam  
Laboratory Director

SAMPLER  
PRINTED NAME:

# CHAIN OF CUSTODY RECORD

FRANCES MARONI

SEND RESULTS TO:

Signature:

FRANCES MARONI

HYDRO-ENVIRONMENTAL  
TECHNOLOGIES, INC.

DELIVER TO: CHROMA LAB

2363 MARINER SQUARE DR., SUITE 243  
ALAMEDA, CA 94501

ATTENTION:

ATTENTION:

Relinquished by: (Signature) <u>FRANCES MARONI</u>	Received by: (Signature) <u>[Signature]</u>	Date <u>1-9-92</u>	Time <u>11:00</u>
Relinquished by:	Received by:		
Relinquished by:	Received by:		
Relinquished by:	Received by: LABORATORY		

HETICAL JOB No. - 9-031

PAGE 1 OF

Sample Number	DATE & TIME	No. & Type Container	Analysis Requested					Lab Remarks
			TRP-BTEX (DHS mod)	TPH (DHS mod)	Tot. O & G (503)	8010 or 8240	Organic Lead	
<u>MW-1</u>	<u>1/8/92 1pm</u>	<u>6 AX 2 90ml</u>	<input checked="" type="checkbox"/>					<p>* Please Identify Carbon Chain from Sample MW-1</p> <p>• INCLUDE CHROMATOGRAM FOR MW-1</p>
<u>MW-2</u>			<input checked="" type="checkbox"/>					
<u>MW-3</u>			<input checked="" type="checkbox"/>					
<u>MW-4</u>			<input checked="" type="checkbox"/>					
<u>MW-5</u>			<input checked="" type="checkbox"/>					
<u>MW-6</u>			<input checked="" type="checkbox"/>					
<u>OC-1</u>	▽	▽	<input checked="" type="checkbox"/>					

Special Instructions: \_\_\_\_\_

Turnaround:  
 STANDARD  72 HOURS  
 5 DAY  24 HOURS