



**BP OIL**

BP Oil Company  
16400 Southcenter Parkway, Suite 301  
Tukwila, Washington 98188  
(206) 575-4077

June 9, 1993

Mr. Ron Owcarz  
Alameda County Health Care Services Agency  
80 Swan Way, Suite 200  
Oakland, CA 94621

RE: BP OIL FACILITY #11117  
7210 Bancroft Avenue  
Oakland, CA ~~94601~~

605

94605

Dear Mr. Owcarz:

Attached please find our GROUNDWATER MONITORING AND SAMPLING REPORT for the above referenced facility.

Please call me at (206) 394-5243 with questions regarding this submission.

Respectfully,

Scott T. Hooton  
Environmental Resources Management

STH:jc ERM11117

cc: Mr. Eddy So, California Regional Water Quality Control Board, San Francisco Bay Region, 2101 Webster Street, Suite 500, Oakland, CA 94612

Mr. Markus B. Niebanck, Hydro Environmental Tech., Inc., 2363 Mariner Square Drive, Suite 243, Alameda, Ca 94501

Mr. Al Sevilla, Alisto, 1777 Oakalnd Blvd., Suite 200, Walnut Creek, CA 94596

Mr. Robert Merriken, Mobil Oil Corp, 3225 Gallows Road, Fairfax, VA 22037

Site file

MAY 20 1993

OIL CO.  
ENVIRONMENTAL DEPT.  
REGISTRATION OFFICE

## GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11117  
7210 Bancroft Avenue  
Oakland, California

Project No. 10-018

Prepared for:

BP Oil Company  
Environmental Resource Management  
16400 Southcenter Parkway, Suite 301  
Tukwila, Washington

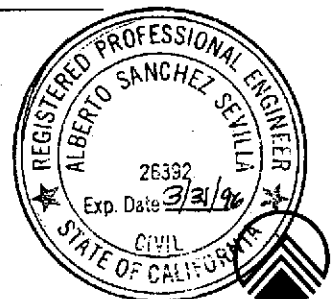
Prepared by:

Alisto Engineering Group  
1777 Oakland Boulevard, Suite 200  
Walnut Creek, California

May 14, 1993

  
\_\_\_\_\_  
Brady Nagle  
Project Manager

  
\_\_\_\_\_  
Al Sevilla, P.E.  
Principal



# GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11117  
7210 Bancroft Avenue  
Oakland, California

Project No. 10-018

May 14, 1993

## INTRODUCTION

This report presents the results and findings of the March 15, 1993 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11117, 7210 Bancroft Avenue, Oakland, California. A site vicinity map is shown in Figure 1.

## FIELD PROCEDURES

Field activities were performed in accordance with the procedures and guidelines of the Alameda County Health Care Services Agency and the California Regional Water Quality Control Board, San Francisco Bay Region.

Before purging and sampling, the groundwater level in each well was measured from a permanent mark on the top of the casing to the nearest 0.01 foot using an electronic sounder. The depth to groundwater and top of casing elevation data were used to calculate the groundwater elevation in each well. The survey data and groundwater elevation measurements collected to date are presented in Table 1.

Before sample collection, each well was purged of 3 casing volumes, while recording field readings of pH, temperature, and electrical conductivity. Groundwater samples were collected for laboratory analysis by lowering a bottom-fill, disposable bailer to just below the water level in the well. The samples were transferred from the bailer into laboratory-supplied containers. The water sampling field survey forms are presented in Appendix A.

## SAMPLING AND ANALYTICAL RESULTS

The results of monitoring and laboratory analysis of the groundwater samples for this and previous quarters are summarized in Table 1. The potentiometric groundwater elevations as interpreted from the results of this monitoring event are shown in Figure 2. The results of groundwater analysis are shown in Figure 3. The laboratory report and chain of custody record are presented in Appendix B.



**GROUNDWATER MONITORING AND SAMPLING REPORT**

**BP Oil Company Service Station No. 11117  
7210 Bancroft Avenue  
Oakland, California**

**Project No. 10-018**

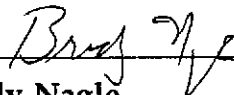
**Prepared for:**

**BP Oil Company  
Environmental Resource Management  
16400 Southcenter Parkway, Suite 301  
Tukwila, Washington**

**Prepared by:**

**Alisto Engineering Group  
1777 Oakland Boulevard, Suite 200  
Walnut Creek, California**

**May 14, 1993**



**Brady Nagle  
Project Manager**



**Al Sevilla, P.E.  
Principal**

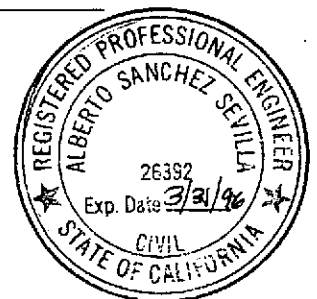


TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING AND SAMPLING  
 BP OIL COMPANY SERVICE STATION NO. 11117  
 7210 BANCROFT AVENUE, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-018

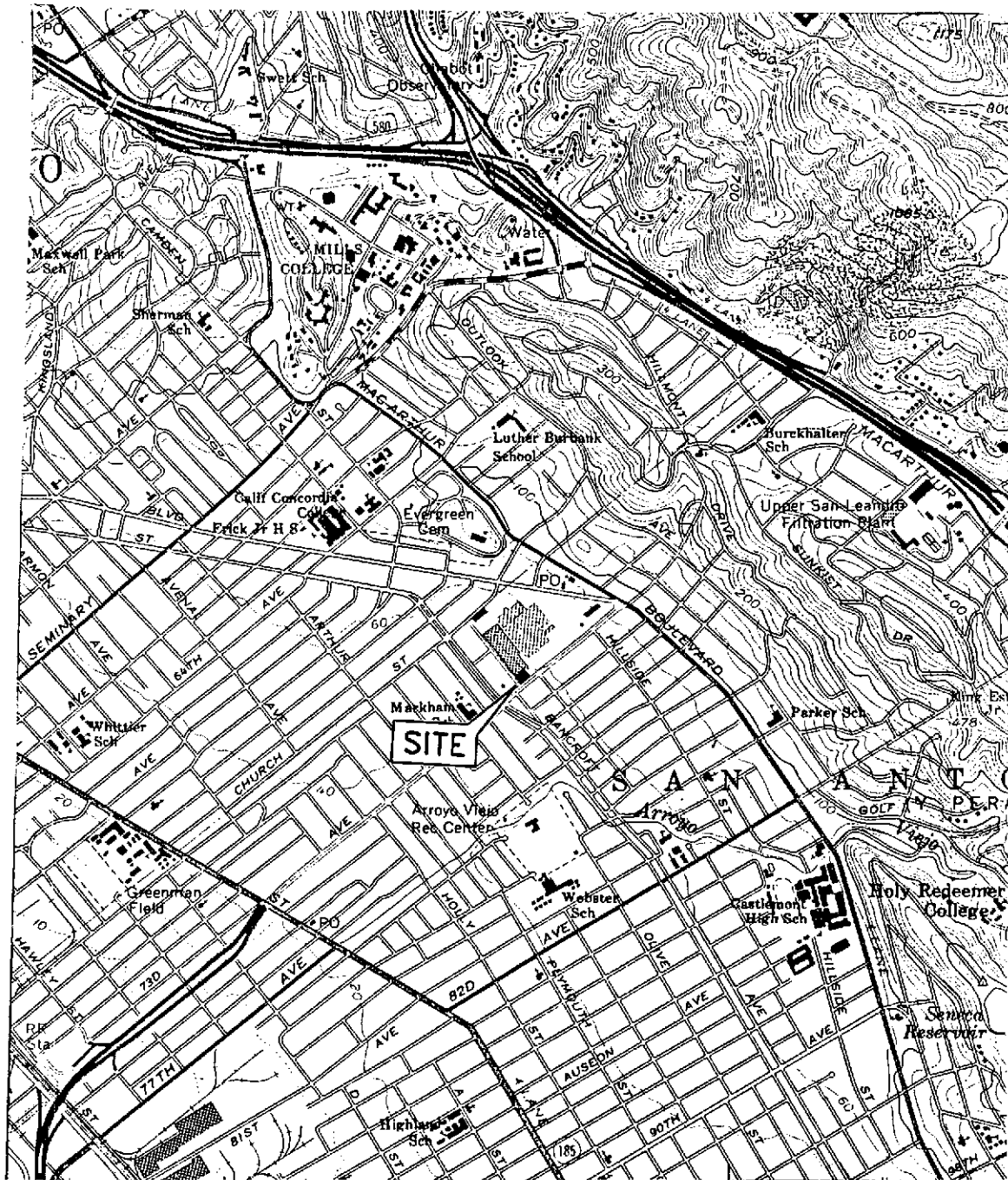
WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	TPH-D (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	Organic Lead (ppb)	LAB
MW-6	07/24/92	50.32	30.63	19.69	ND	---	1.6	ND	ND	ND	---	---
MW-6	07/27/92	50.32	30.63	19.69	---	---	---	---	---	---	---	---
MW-6	09/15/92	50.32	31.52	18.80	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ANA
MW-6	12/15/92	50.32	32.42	17.90	58	ND<50	1.3	ND<0.5	ND<0.5	ND<0.5	---	ANA
MW-6	03/15/93	50.32	26.29	24.03	ND<50	ND<50	ND<0.5	0.6	ND<0.5	0.7	---	PACE
QC-2 (e)	09/15/92	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ANA
QC-2 (e)	12/15/92	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ANA
QC-2 (e)	03/15/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE

ABBREVIATIONS:

TPH-G Total petroleum hydrocarbons as gasoline  
 TPH-D Total petroleum hydrocarbons as diesel  
 B Benzene  
 T Toluene  
 E Ethylbenzene  
 X Total xylenes  
 ppb Parts per billion  
 --- Not measured/analyzed/available  
 ND Not detected above reported detection limits  
 ANA Anametrix, Inc.  
 PACE Pace, Inc.

NOTES:

- (a) Casing elevations surveyed to the nearest 0.01 foot relative to mean sea level.
- (b) Groundwater elevations in feet relative to mean sea level.
- (c) Concentrations reported as diesel from MW-1, MW-2, and MW-4 are primarily due to the presence of a lighter petroleum product, possibly gasoline or kerosene.
- (d) Blind duplicate of sample collected from MW-1.
- (e) Travel blank.

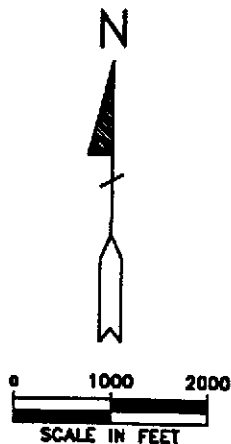


SOURCE:  
USGS MAP, OAKLAND EAST QUADRANGLE, CALIFORNIA.  
7.5 MINUTE SERIES, 1959, PHOTOREVISED 1980.

FIGURE 1

SITE VICINITY MAP

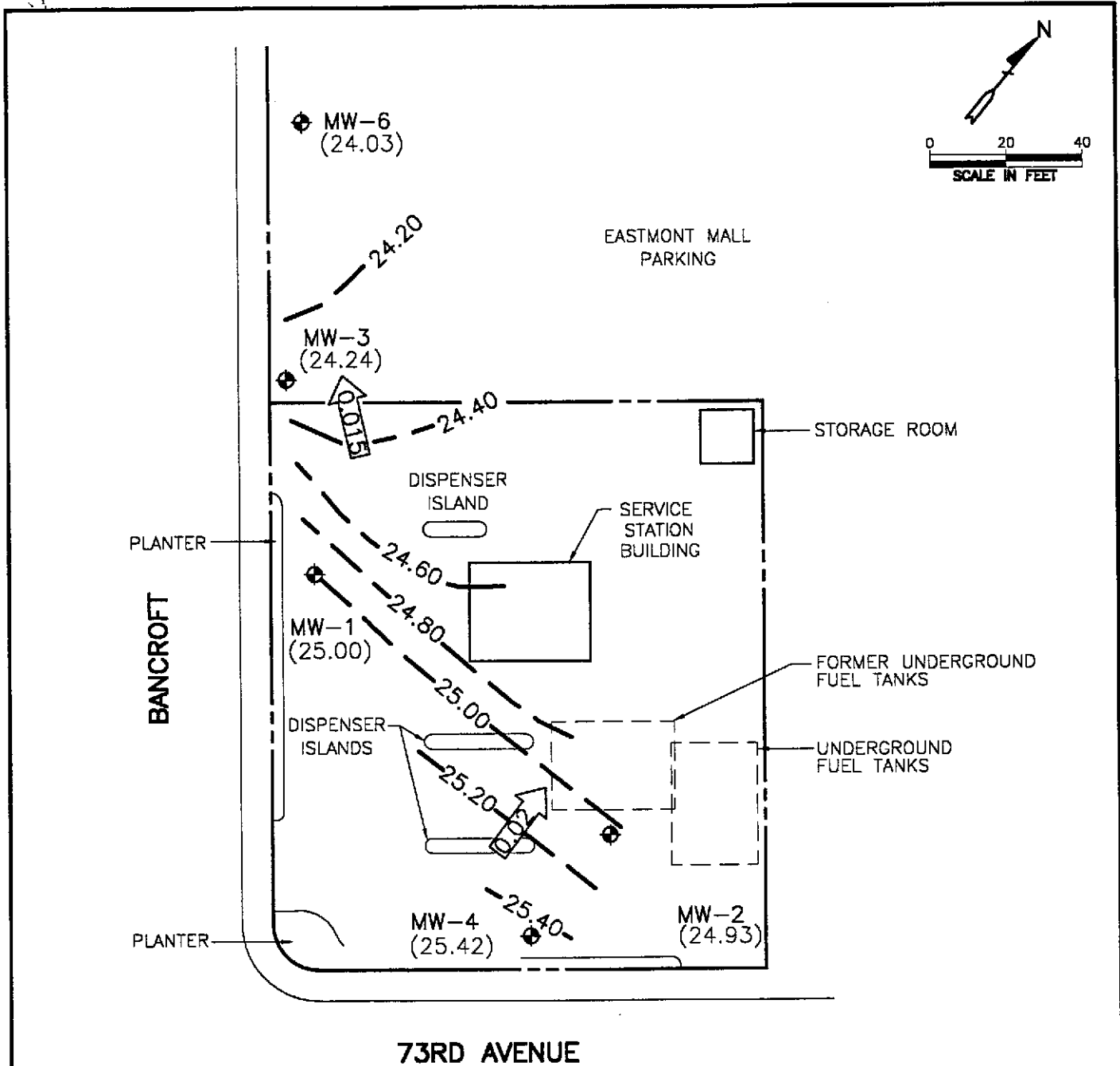
BP OIL SERVICE STATION NO. 11117  
7210 BANCROFT AVENUE  
OAKLAND, CALIFORNIA



ALISTO PROJECT NO. 10-018



ALISTO ENGINEERING GROUP  
WALNUT CREEK, CALIFORNIA



**LEGEND**

- ◆ GROUNDWATER MONITORING WELL  
(24.03) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 25.00- GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL-0.20 FOOT)
- ←0.015 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

**FIGURE 2**

**POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP**

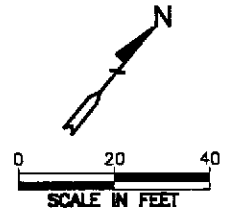
**MARCH 15, 1993**

BP OIL SERVICE STATION NO. 11117  
7210 BANCROFT AVENUE  
OAKLAND, CALIFORNIA

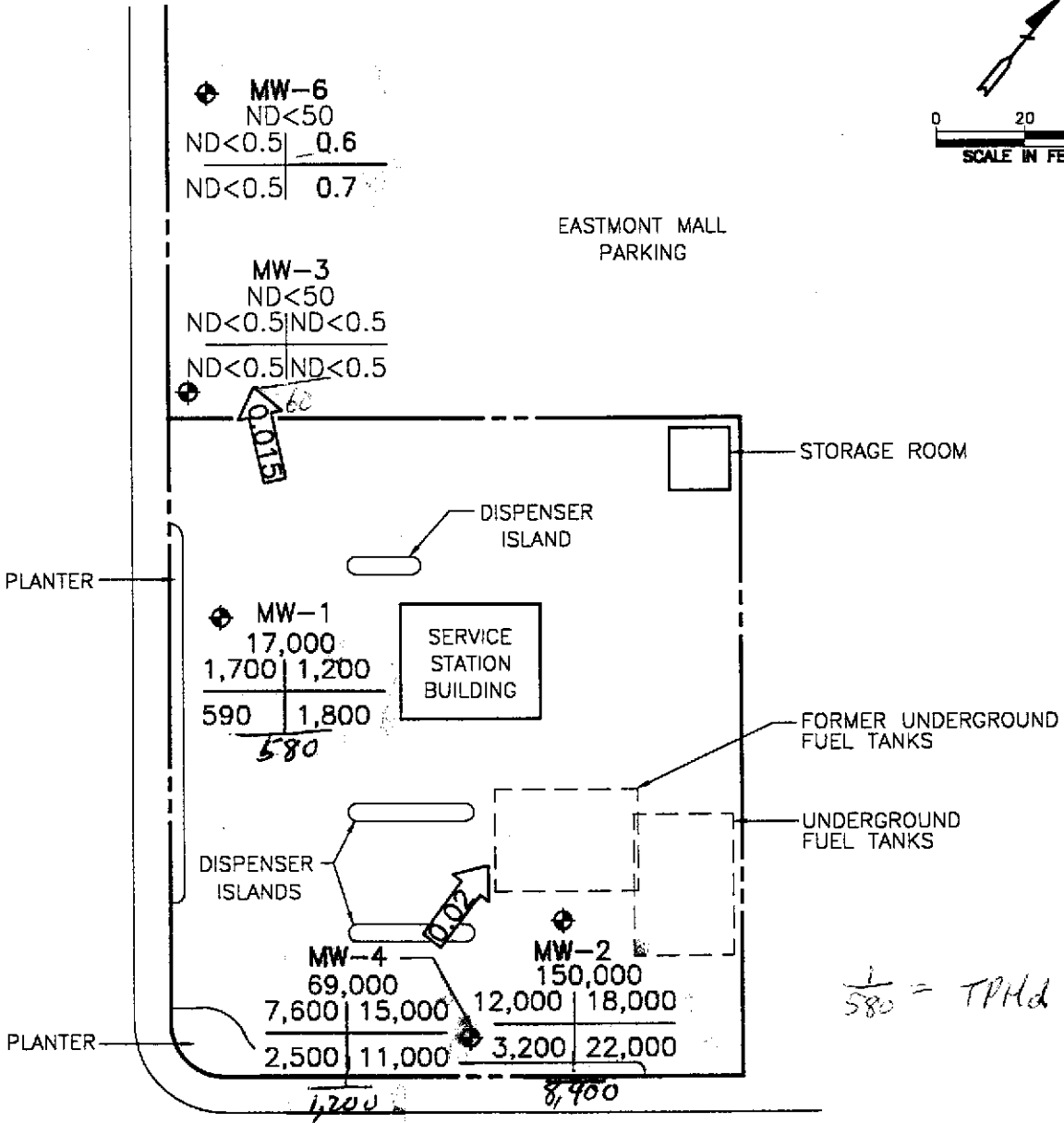
PROJECT NO. 10-018



**ALISTO ENGINEERING GROUP**  
WALNUT CREEK, CALIFORNIA



BANCROFT



73RD AVENUE

**LEGEND**

- ⊕ GROUNDWATER MONITORING WELL
- TPH-G CONCENTRATION OF CONSTITUENTS IN PARTS PER BILLION (PPB)
- |   |   |
|---|---|
| B | T |
| E | X |
- TPH-G TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
- B BENZENE
- T TOLUENE
- E ETHYLBENZENE
- X TOTAL XYLENES
- ND NOT DETECTED ABOVE REPORTED DETECTION LIMIT
- CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

**FIGURE 3**  
**CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER**  
**MARCH 15, 1993**  
 BP OIL SERVICE STATION NO. 11117  
 7210 BANCROFT AVENUE  
 OAKLAND, CALIFORNIA  
 PROJECT NO. 10-018





**APPENDIX A**

**WATER SAMPLING FIELD SURVEY FORMS**



















**APPENDIX B**

**LABORATORY REPORT AND CHAIN OF CUSTODY RECORD**

March 29, 1993

Mr. Brady Nagle  
Alisto Engineering Group  
1777 Oakland Blvd, Ste. 200  
Walnut Creek, CA 94596

RE: PACE Project No. 430316.506  
Client Reference: BP Station # 11117

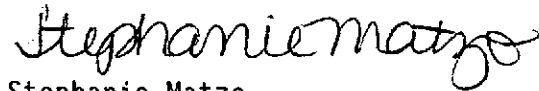
Dear Mr. Nagle:

Enclosed is the report of laboratory analyses for samples received March 16, 1993.

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,



Stephanie Matzo  
Project Manager

Enclosures



# REPORT OF LABORATORY ANALYSIS

Alisto Engineering Group  
 1777 Oakland Blvd, Ste. 200  
 Walnut Creek, CA 94596

March 29, 1993  
 PACE Project Number: 430316506

Attn: Mr. Brady Nagle

Client Reference: BP Station # 11117

PACE Sample Number: 70 0027870  
 Date Collected: 03/15/93  
 Date Received: 03/16/93  
 Client Sample ID: MM-1

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):			-	03/25/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	1000	17000	03/25/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	03/25/93
Benzene	ug/L	10	1700	03/25/93
Toluene	ug/L	10	1200	03/25/93
Ethylbenzene	ug/L	10	590	03/25/93
Xylenes, Total	ug/L	10	1800	03/25/93

EXTRACTABLE FUELS EPA 3510/8015

Extractable Fuels, as Diesel	mg/L	0.05	0.58	03/19/93
Date Extracted			03/18/93	

Mr. Brady Nagle  
 Page 2

March 29, 1993  
 PACE Project Number: 430316506

Client Reference: BP Station # 11117

PACE Sample Number: 70 0027888  
 Date Collected: 03/15/93  
 Date Received: 03/16/93  
 Client Sample ID: MW-2

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS			
TOTAL FUEL HYDROCARBONS, (LIGHT):			03/25/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	5000	150000 03/25/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			- 03/25/93
Benzene	ug/L	50	12000 (MT) 03/25/93
Toluene	ug/L	50	18000 03/25/93
Ethylbenzene	ug/L	50	3200 03/25/93
Xylenes, Total	ug/L	50	22000 03/25/93
EXTRACTABLE FUELS EPA 3510/8015			
Extractable Fuels, as Diesel	mg/L	0.05	8.4 03/19/93
Date Extracted			03/18/93

Mr. Brady Nagle  
 Page 3

March 29, 1993  
 PACE Project Number: 430316506

Client Reference: BP Station # 11117

PACE Sample Number: 70 0027896  
 Date Collected: 03/15/93  
 Date Received: 03/16/93  
 Client Sample ID: MW-3

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):			-	03/25/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	03/25/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	03/25/93
Benzene	ug/L	0.5	ND	03/25/93
Toluene	ug/L	0.5	ND	03/25/93
Ethylbenzene	ug/L	0.5	ND	03/25/93
Xylenes, Total	ug/L	0.5	ND	03/25/93

EXTRACTABLE FUELS EPA 3510/8015

Extractable Fuels, as Diesel	mg/L	0.05	0.06	03/19/93
Date Extracted			03/18/93	

Mr. Brady Nagle  
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March 29, 1993  
 PACE Project Number: 430316506

Client Reference: BP Station # 11117

PACE Sample Number: 70 0027900  
 Date Collected: 03/15/93  
 Date Received: 03/16/93  
 Client Sample ID: MW-4

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):			-	03/25/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	5000	69000	03/25/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	03/25/93
Benzene	ug/L	50	7600	03/25/93
Toluene	ug/L	50	15000	03/25/93
Ethylbenzene	ug/L	50	2500	03/25/93
Xylenes, Total	ug/L	50	11000	03/25/93
EXTRACTABLE FUELS EPA 3510/8015				
Extractable Fuels, as Diesel	mg/L	0.25	1.2	03/22/93
Date Extracted			03/18/93	



# REPORT OF LABORATORY ANALYSIS

Mr. Brady Nagle  
Page 5

March 29, 1993  
PACE Project Number: 430316506

Client Reference: BP Station # 11117

PACE Sample Number: 70 0027918  
Date Collected: 03/15/93  
Date Received: 03/16/93  
Client Sample ID: MW-6

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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### ORGANIC ANALYSIS

<b>PURGEABLE FUELS AND AROMATICS</b>			
TOTAL FUEL HYDROCARBONS, (LIGHT):		-	03/25/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND 03/25/93
<b>PURGEABLE AROMATICS (BTXE BY EPA 8020M):</b>			
Benzene	ug/L	0.5	ND 03/25/93
Toluene	ug/L	0.5	0.6 03/25/93
Ethylbenzene	ug/L	0.5	ND 03/25/93
Xylenes, Total	ug/L	0.5	0.7 03/25/93
<b>EXTRACTABLE FUELS EPA 3510/8015</b>			
Extractable Fuels, as Diesel	mg/L	0.05	ND 03/22/93
Date Extracted			03/18/93



Mr. Brady Nagle  
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March 29, 1993  
 PACE Project Number: 430316506

Client Reference: BP Station # 11117

PACE Sample Number: 70 0027926  
 Date Collected: 03/15/93  
 Date Received: 03/16/93  
 Client Sample ID: QC-1

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS			
TOTAL FUEL HYDROCARBONS, (LIGHT):			03/25/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	1000	15000
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			03/25/93
Benzene	ug/L	10	1100
Toluene	ug/L	10	860
Ethylbenzene	ug/L	10	440
Xylenes, Total	ug/L	10	1400

Mr. Brady Nagle  
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March 29, 1993  
 PACE Project Number: 430316506

Client Reference: BP Station # 11117

PACE Sample Number: 70 0027934  
 Date Collected: 03/15/93  
 Date Received: 03/16/93  
 Client Sample ID: QC-2

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

<u>PURGEABLE FUELS AND AROMATICS</u>			
TOTAL FUEL HYDROCARBONS, (LIGHT):			
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

These data have been reviewed and are approved for release.



Darrell C. Cain  
 Regional Director

Mr. Brady Nagle  
Page 8

FOOTNOTES  
for pages 1 through 7

March 29, 1993  
PACE Project Number: 430316506

Client Reference: BP Station # 11117

MDL Method Detection Limit  
ND Not detected at or above the MDL.  
(MT) A peak eluting earlier than Benzene and suspected to be methyl tert butyl ether  
was present at approximately 82000 ppb.

Mr. Brady Nagle  
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QUALITY CONTROL DATA

March 29, 1993  
 PACE Project Number: 430316506

Client Reference: BP Station # 11117

EXTRACTABLE FUELS EPA 3510/8015

Batch: 70 19578

Samples: 70 0027870, 70 0027888, 70 0027896, 70 0027900, 70 0027918

METHOD BLANK:

Parameter	Units	MDL	Method Blank
Extractable Fuels, as Diesel	mg/L	0.05	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Extractable Fuels, as Diesel	mg/L	0.05	1.00	83%	86%	3%

Mr. Brady Nagle  
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QUALITY CONTROL DATA

March 29, 1993  
 PACE Project Number: 430316506

Client Reference: BP Station # 11117

PURGEABLE FUELS AND AROMATICS

Batch: 70 19673  
 Samples: 70 0027870

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020M)			-
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference	Dupl		
			Value	Recv	Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	1000	106%	98%	7%
Benzene	ug/L	0.5	40.0	95%	99%	4%
Toluene	ug/L	0.5	40.0	98%	103%	4%
Ethylbenzene	ug/L	0.5	40.0	100%	106%	5%
Xylenes, Total	ug/L	0.5	120	100%	106%	5%

Mr. Brady Nagle  
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QUALITY CONTROL DATA

March 29, 1993  
 PACE Project Number: 430316506

Client Reference: BP Station # 11117

PURGEABLE FUELS AND AROMATICS

Batch: 70 19721

Samples: 70 0027888, 70 0027896, 70 0027900, 70 0027918, 70 0027926  
 70 0027934

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020M)			-
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	1000	96%	96%	0%
Benzene	ug/L	0.5	40.0	110%	111%	0%
Toluene	ug/L	0.5	40.0	107%	108%	0%
Ethylbenzene	ug/L	0.5	40.0	105%	105%	0%
Xylenes, Total	ug/L	0.5	120	105%	104%	0%

Mr. Brady Nagle  
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FOOTNOTES  
for pages 9 through 11

March 29, 1993  
PACE Project Number: 430316506

Client Reference: BP Station # 11117

MDL Method Detection Limit  
ND Not detected at or above the MDL.  
RPD Relative Percent Difference

