GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11133
2220 98th Avenue
Oakland, California

Project No. 10-025

Prepared for:

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March 10, 1993

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INTRODUCTION

This report presents the results and findings of the January 14, 1993 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11133, 2220 98th 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 California Regional Water Quality Control Board, San Francisco Bay Region, and the Alameda County Health Care Services Agency.

Before purging and sampling, the ground water level in each well was measured from a permanent mark on 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 in reference to mean sea level. 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

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. Isoconcentration maps of total petroleum hydrocarbons as gasoline (TPH-G) and benzene are shown in Figures 3 and 4. The laboratory report and chain of custody record are presented in Appendix B.

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11133
2220 98th AVENUE, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-025

WELL ID	DATE OF SAMPLING/	CASING ELEVATION (a)	DEPTH TO WATER	PRODUCT THICKNESS	GROUNDWATER ELEVATION (b)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	LAB
MW-1	04/05/91	34.46	—	—	—	—	—	—	—	—	—
MW-1	04/01/92	34.46	11.25	0.01	23.22	FP	FP	FP	FP	FP	—
MW-1	07/06/92	34.46	13.61	0.02	20.87	FP	FP	FP	FP	FP	—
MW-1	10/07/92	34.46	15.15	0.09	19.38	FP	FP	FP	FP	FP	—
[illegible]	01/14/93	34.46	10.73	0.01	23.74	[illegible]	FP	FP	FP	FP	—
MW-2	04/05/91	35.50	16.62	0.00	18.88	ND<50	0.6	0.9	ND<0.3	ND<0.3	SUP
MW-2 (c)	04/01/92	35.50	11.25	0.00	24.25	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	APP
MW-2	07/06/92	35.50	12.72	0.00	22.78	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
MW-2	10/07/92	35.50	15.08	0.00	20.42	ND<50	ND<0.5	1.8	ND<0.5	2.3	ANA
MW-2	01/14/93	35.50	9.69	0.00	25.81	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE
MW-3	04/05/91	36.53	17.84	0.00	18.69	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	SUP
MW-3 (c)	04/01/92	36.53	15.64	0.00	20.89	ND<50	1.4	ND<0.5	ND<0.5	ND<0.5	APP
MW-3	07/06/92	36.53	19.03	0.00	17.50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
MW-3	10/07/92	36.53	21.83	0.00	14.70	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
MW-3	01/14/93	36.53	15.96	0.00	20.57	350	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE
AW-1	04/05/91	38.11	25.44	0.00	12.67	4100	1500	69	100	83	SUP
AW-1 (c)	04/01/92	38.11	23.22	0.00	14.89	11000	1600	210	210	490	APP
AW-1	07/06/92	38.11	24.89	0.00	13.22	6500	4000	40	290	530	ANA
AW-1	10/07/92	38.11	26.55	0.00	11.56	4700	1500	41	47	300	ANA
QC-1 (d)	10/07/92	38.11	26.55	0.00	11.56	2900	1200	25	37	210	ANA
[illegible]	01/14/93	38.11	23.73	0.00	14.38	2800	830	31	140	240	PACE
QC-1 (d)	01/14/93	—	—	—	—	4100	1700	28	130	230	PACE
AW-2	04/05/91	36.83	22.36	0.00	14.47	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	SUP
AW-2 (c)	04/01/92	36.83	20.81	0.00	16.02	130	25	2.3	0.7	2.1	APP
AW-2	07/06/92	36.83	23.57	0.00	13.26	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
AW-2	10/07/92	36.83	25.24	0.00	11.59	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
AW-2	01/14/93	36.83	20.82	0.00	16.01	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE
AW-3	04/05/91	39.13	23.90	0.00	15.23	5200	980	450	95	310	SUP
AW-3	04/01/92	39.13	22.50	0.00	16.63	4700	890	47	43	110	APP
AW-3	07/06/92	39.13	23.26	0.00	15.87	3900	3100	30	80	99	ANA
AW-3	10/07/92	39.13	24.75	0.00	14.38	5000	2600	ND<0.5	ND<0.5	59	ANA
[illegible]	01/14/93	39.13	23.59	0.00	15.54	350	250	ND<0.5	ND<0.5	ND<0.5	PACE
AW-4	04/05/91	39.08	25.12	0.00	13.96	110000	40000	13000	2000	5500	SUP
AW-4	04/01/92	39.08	23.56	0.00	15.52	230000	57000	31000	2900	7600	APP
AW-4 (e)	04/01/92	39.08	23.56	0.00	15.52	210000	55000	23000	2900	7000	APP
AW-4	07/06/92	39.08	25.87	0.00	13.21	38000	16000	5400	2000	6100	ANA
AW-4	10/07/92	39.08	27.53	0.00	11.55	120000	41000	26000	4700	13000	ANA
[illegible]	01/14/93	39.08	24.12	0.00	14.96	62000	18000	14000	2700	7700	PACE
AW-5	04/05/91	38.51	25.48	0.00	13.03	420	31	7.5	20	68	SUP
AW-5 (c)	04/01/92	38.51	23.95	0.00	14.56	4000	270	63	190	290	APP
AW-5	07/06/92	38.51	26.48	0.00	12.03	1400	160	ND<2.5	250	58	ANA
AW-5	10/07/92	38.51	26.18	0.00	10.33	360	12	0.6	8.7	5	ANA
[illegible]	01/14/93	38.51	24.15	0.00	14.36	1700	270	7.5	130	62	PACE

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11133
2220 98th AVENUE, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-025

WELL ID	DATE OF SAMPLING/	CASING ELEVATION (a)	DEPTH TO WATER	PRODUCT THICKNESS	GROUNDWATER ELEVATION (b)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	LAB
AW-6	04/05/91	37.08	22.48	0.00	14.60	1100	80	19	1.4	230	SUP
AW-6 (c)	04/01/92	37.08	22.50	0.00	14.58	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	APP
AW-6	07/06/92	37.08	22.74	0.00	14.34	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
AW-6	10/07/92	37.08	24.64	0.00	12.44	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
AW-6	01/14/93	37.08	22.36	0.00	14.72	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE
AW-7	04/05/91	37.60	23.38	0.00	14.22	ND<50	0.4	0.7	ND<0.3	ND<0.3	SUP
AW-7 (c)	04/01/92	37.60	21.92	0.00	15.68	ND<50	ND<0.5	3.2	1.0	5.4	APP
AW-7	07/06/92	37.60	24.50	0.00	13.10	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
AW-7	10/07/92	37.60	26.18	0.00	11.42	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
AW-7	01/14/93	37.60	22.03	0.00	15.57	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE
AW-8	04/05/91	40.86	26.68	0.00	14.18	60	1.9	2.2	0.5	1.3	SUP
AW-8	04/01/92	40.86	25.11	0.00	15.75	73	ND<0.5	0.7	ND<0.5	0.6	APP
AW-8	07/06/92	40.86	26.43	0.00	14.43	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
AW-8	10/07/92	40.86	28.59	0.00	12.27	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
AW-8	01/14/93	40.86	25.55	0.00	15.31	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE
RW-1	04/05/91	37.73	—	0.00	—	—	—	—	—	—	SUP
RW-1	04/01/92	37.73	22.81	0.30	15.14	FP	FP	FP	FP	FP	—
RW-1	07/06/92	37.73	26.92	0.41	11.12	FP	FP	FP	FP	FP	—
RW-1	10/07/92	37.73	28.51	1.26	10.16	FP	FP	FP	FP	FP	—
[redacted]	01/14/93	37.73	23.75	0.25	14.17	[redacted]	FP	FP	FP	FP	PACE
QC-2 (f)	10/07/92	—	—	—	—	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
QC-2 (f)	01/14/93	—	—	—	—	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	PACE

ABBREVIATIONS:

TPH-G	Total petroleum hydrocarbons as gasoline
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
ppb	Parts per billion
FP	Not sampled due to the presence of free product
—	Not analyzed/not available
ND	Not detected above reported detection limits
SUP	Superior Analytical Laboratories, Inc.
APP	Applied Analytical
ANA	Anametrix, Inc.
PACE	Pace, Inc.

NOTES:

(a) Top of casing elevations were surveyed to the nearest 0.01 foot above mean sea level.

(b) Groundwater elevations were adjusted assuming a specific gravity of 0.75 for the free product.

(c) Groundwater was monitored on April 1, 1992 and sampled on April 2, 1992.

(d) Blind duplicate of sample collected from AW-1.

(e) Blind duplicate of sample collected from AW-4.

(f) Travel blank.

SOURCE:
USGS MAP, OAKLAND EAST AND SAN LEANDRO QUADRANGLE, CALIFORNIA. 7.5 MINUTE SERIES. 1959. PHOTOREVERSED 1980.

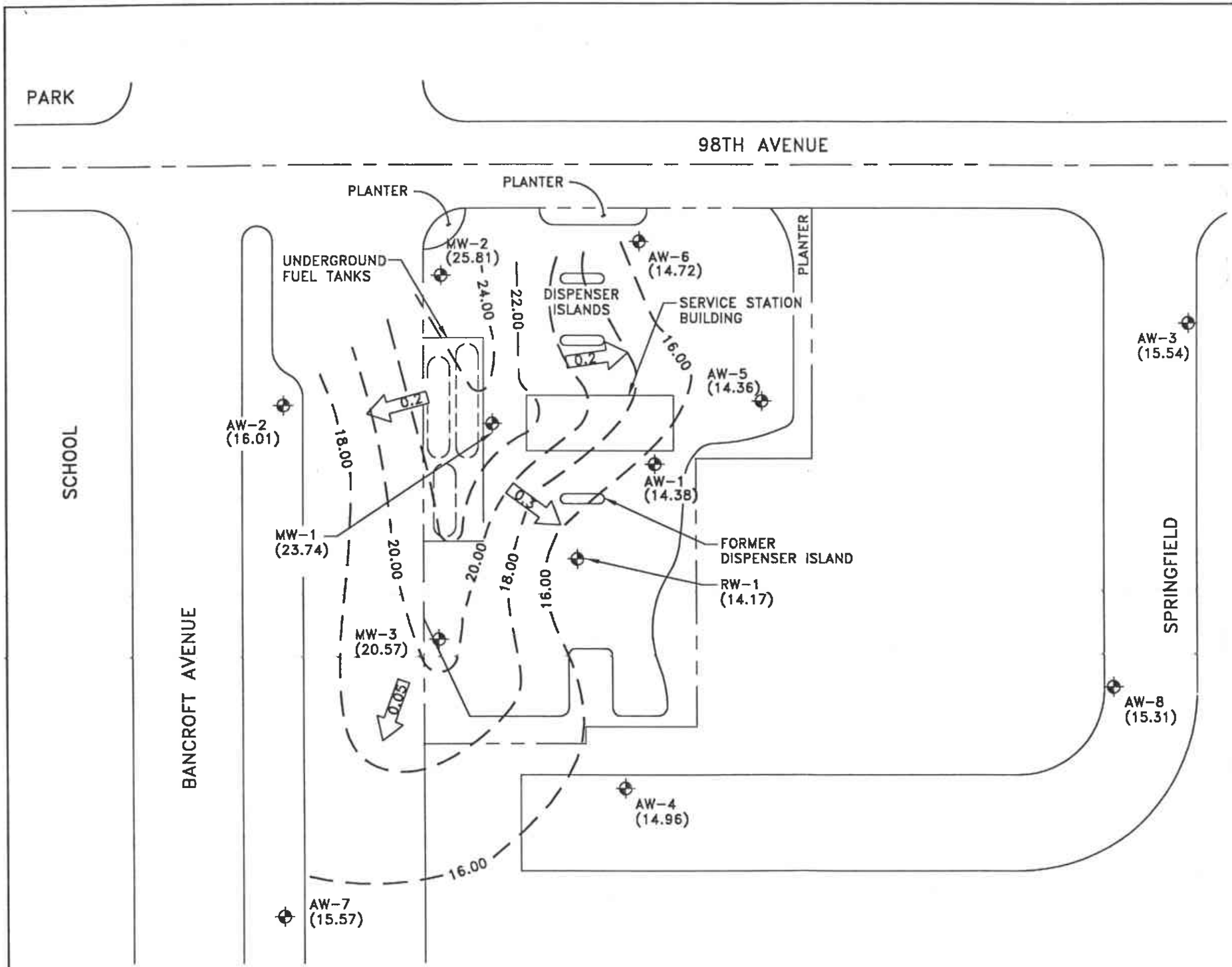
FIGURE 1

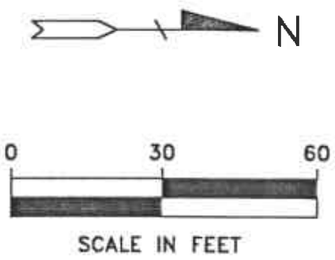
SITE VICINITY MAP

BP OIL SERVICE STATION NO. 11133
2220 98TH AVENUE
OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-025

ALISTO ENGINEERING GROUP
CONCORD, CALIFORNIA





LEGEND:

- GROUNDWATER MONITORING WELLS
- (15.57) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 18.00 GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL – 2.0 FOOT)
- 0.2 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 2

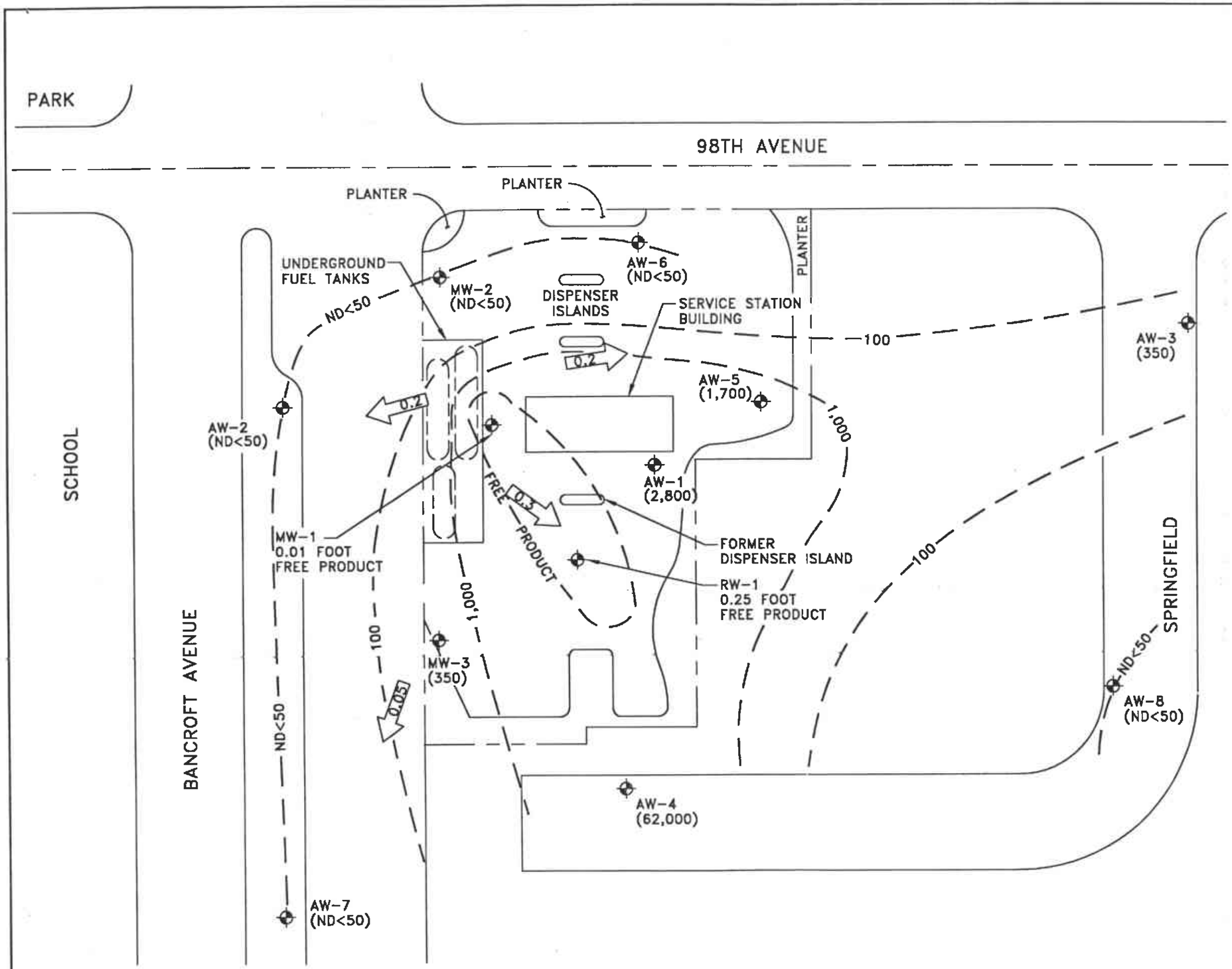
POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP (JANUARY 14, 1993)

BP OIL SERVICE STATION NO. 11133
2220 98TH AVENUE
OAKLAND, CALIFORNIA

PROJECT NO. 10-025

ALISTO ENGINEERING GROUP
CONCORD, CALIFORNIA

10075025.DWG 7-16-93 RKS 1=30



N

0 30 60

SCALE IN FEET

LEGEND:

- GROUNDWATER MONITORING WELLS
- (18,000) TOTAL PETROLEUM HYDROCARBONS AS GASOLINE CONCENTRATION IN PARTS PER BILLION
- 100 TOTAL PETROLEUM HYDROCARBONS AS GASOLINE ISOCONCENTRATION CONTOUR IN PARTS PER BILLION
- 0.05 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 3

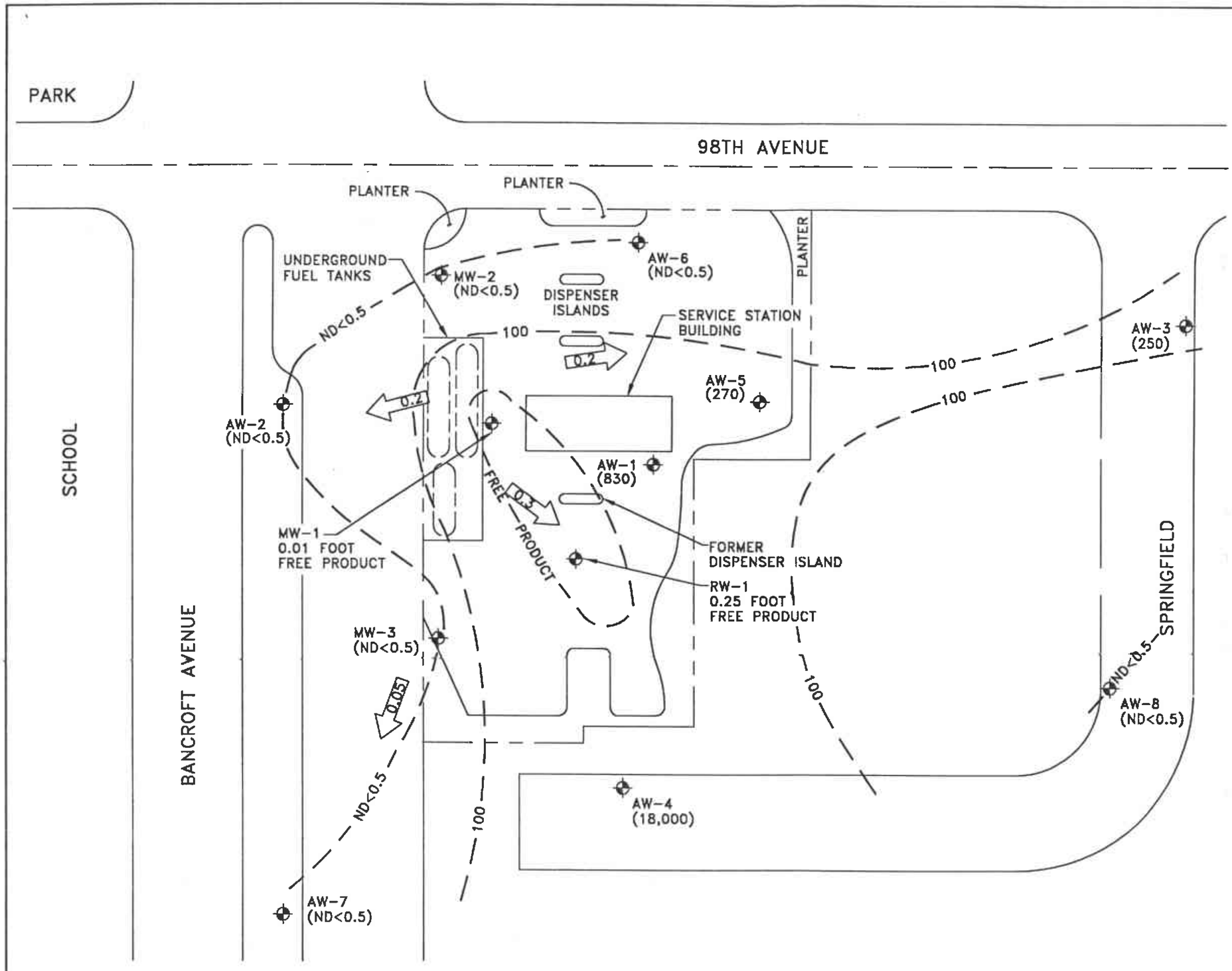
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE ISOCONCENTRATION CONTOUR MAP (JANUARY 14, 1993)

BP OIL SERVICE STATION NO. 11133
2220 98TH AVENUE
OAKLAND, CALIFORNIA

PROJECT NO. 10-025

ALISTO ENGINEERING GROUP
CONCORD, CALIFORNIA

10023026.DWG 2-26-93 RCS 1=30



N

0 30 60

SCALE IN FEET

LEGEND:

- GROUNDWATER MONITORING WELLS
- (18,000) BENZENE CONCENTRATION IN PARTS PER BILLION
- 100 BENZENE ISOCONCENTRATION IN PARTS PER BILLION
- 0.05 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 4

BENZENE ISOCONCENTRATION CONTOUR MAP (JANUARY 14, 1993)

BP OIL SERVICE STATION NO. 11133
2220 98TH AVENUE
OAKLAND, CALIFORNIA

PROJECT NO. 10-025

ALISTO ENGINEERING GROUP
CONCORD, CALIFORNIA

APPENDIX A

WATER SAMPLING FIELD SURVEY FORMS

ALISTO ENGINEERING GROUP
GROUNDWATER MONITORING

Client: BP
Alisto Project No: 10-025-01
Service Station No: 11133

Date: 1/14/93
Field Personnel: LCB
Site Address: Oakland, Ca

FIELD ACTIVITY:

__ Groundwater Monitoring
X Groundwater Sampling
__ Well Development

QUALITY CONTROL SAMPLES:

Aw-1 QC-1 Sample Duplicate (Well ID)
X QC-2 Trip Blank
__ QC-3 Rinsate Blank

Well ID	Well Diam	Order Measured/ Sampled	Total Depth	Depth to Water	Depth to Product	Product Thick-ness	Comments
MW-1	2"	11	NM	10.73	10.72	.01	FP
MW-2		6	31.40	9.69	Ø	Ø	
MW-3		5	34.10	15.96			
Aw-1		8	38.60	23.73			
AW-2		4	35.20	20.82			
Aw-3		9	35.80	23.59			
Aw-4	↓	10	32.90	24.12			
Aw-5	4"	7	42.90	24.15			
Aw-6	4"	1	34.20	22.36			
Aw-7	2"	2	32.30	22.03			
Aw-8	2"	3	39.20	25.55	↓	↓	
RW-1	6"	12	NM	23.75	23.50	.25	FP

Notes:

FORM: FS2/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-025-01
Service Station No: 11133

Date: 1/14/93
Field Personnel: LCB
Address: OAKL, CA

Well ID: AW-1 Field Activity: ___Well Development X Well Sampling ___Product Bailing

Casing Diameter:
X 2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
___4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
___6 Inch (1.47 Gal/foot)

Purge Method:
X Pump (dispos. Poly Tubing)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:
Ø Depth to Product
Ø Product Thickness
23.73 Depth to Water

Sampling Method:
X Disposable Bailer
___Pump

Decontamination Method:
X Triple Rinse (Liquinox)
___ Steam Cleaned

Calculated Purge Volume
38.60 (Total Depth of Well) - 23.73 (Depth to Water) = 14.87 ft (Water Column) X .16 Gal/Ft (Conversion Factor) = 2.38 Gal (Casing Vol) X 3 (Vols to Purge) = 7.14 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments/ Turbidity
1532	64.6	8.08	X1000 .50	1.50	clear
1534	65.6	7.78	.78	3.00	
1535	65.9	7.69	.77	4.50	
1536	66.3	7.65	.75	6.00	
1538	66.5	7.60	.76	7.25	

Analysis Required		Container Type	Preserv.
X	TPH-G/BTEX	VOA	HCL
	TPH-Diesel	Amber Liter	Solvent Rinsed
	EPA 601	VOA	
	TOG 5520BF	Amber Liter	H_2SO_4

Begun 1530 Stop 1538 Sampled 1544

QC-1 Dup. also taken from this well

Replaced lock

FORM: FS3/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-025-01
Service Station No: 11133

Date: 1/14/93
Field Personnel: LCS
Address: Oakland, CA

Well ID: AW-2 Field Activity: ___Well Development X Well Sampling ___Product Bailing

Casing Diameter:

X 2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
___4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
___6 Inch (1.47 Gal/foot)

Purge Method:

X Pump (dispos. Poly Tubing)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

0 Depth to Product
0 Product Thickness
20.82 Depth to Water

Sampling Method:

X Disposable Bailer
___Pump

Decontamination Method:

X Triple Rinse (Liquinox)
___ Steam Cleaned

Calculated Purge Volume

35.20 (Total Depth of Well) - 20.82 (Depth to Water) = 14.38 ft (Water Column) X .16 Gal/Ft (Conversion Factor) = 2.30 Gal (Casing Vol) X 3 (Vols to Purge) = 6.90 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments/ Turbidity
			X1000		
1419	66.8	8.56	.53	1.50	clear
1421	66.5	8.39	.49	3.00	
1423	65.1	8.34	.46	4.25	
1424	65.7	8.31	.44	5.75	
1425	65.5	8.26	.42	7.00	

Analysis Required		Container Type	Preserv.
X	TPH-G/BTEX	VOA	HCL
	TPH-Diesel	Amber Liter	Solvent Rinsed
	EPA 601	VOA	
	TOG 5520BF	Amber Liter	H_2SO_4

Begin 1416 Stop 1425 Sampled 1429

FORM: FS3/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-025-01
Service Station No: 11133

Date: 1/14/93
Field Personnel: LCB
Address: Oakland, Ca

Well ID: AW-3 Field Activity: ___Well Development X Well Sampling ___Product Bailing

Casing Diameter:

X 2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
___4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
___6 Inch (1.47 Gal/foot)

Purge Method:

X Pump (dispos. Poly Tubing)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

0 Depth to Product
0 Product Thickness
23.59 Depth to Water

Sampling Method:

X Disposable Bailer
___Pump

Decontamination Method:

X Triple Rinse (Liquinox)
___Steam Cleaned

Calculated Purge Volume

35.80 (Total Depth of Well) - 23.59 (Depth to Water) = 12.21 ft (Water Column) X .16 Gal/Ft (Conversion Factor) = 1.95 Gal (Casing Vol) X 3 (Vols to Purge) = 5.85 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments/ Turbidity
1549	61.8	8.02	X1000 .96	1.25	clear
1553	62.8	8.05	1.02	2.50	
1555	63.7	7.94	1.07	3.75	
1556	64.2	8.01	1.08	5.00	
1557	64.4	8.04	1.07	6.00	

Analysis Required	Container Type	Preserv.
X TPH-G/BTEX	VOA	HCL
TPH-Diesel	Amber Liter	Solvent Rinsed
EPA 601	VOA	
TOG 5520BF	Amber Liter	H_2SO_4

Begin 1547 Stop 1557 Sampled 1601

FORM: FS3/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-025-01
Service Station No: 11133

Date: 1/14/93
Field Personnel: TCB
Address: Oakland, CA

Well ID: MW-4 Field Activity: ___Well Development X Well Sampling ___Product Bailing

Casing Diameter:

X 2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
___4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
___6 Inch (1.47 Gal/foot)

Purge Method:

X Pump (dispos. Poly Tubing)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

0 Depth to Product
0 Product Thickness
24.12 Depth to Water

Sampling Method:

X Disposable Bailer
___Pump

Decontamination Method:

X Triple Rinse (Liquinox)
___Steam Cleaned

Calculated Purge Volume

32.90 (Total Depth of Well) - 24.12 (Depth to Water) = 8.78 ft (Water Column) X .16 Gal/Ft (Conversion Factor) = 1.40 Gal (Casing Vol) X 3 (Vols to Purge) = 4.20 Total Volume

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments/ Turbidity
1603	62.1	8.03	X1000 1.06	1	clear
1604	63.4	7.91	1.05	1.75	
1605	63.9	7.84	1.07	2.75	
1606	64.4	7.77	1.06	3.75	
1607	65.1	7.75	1.05	4.25	

Analysis Required	Container Type	Preserv.
X TPH-G/BTEX	VOA	HCL
TPH-Diesel	Amber Liter	Solvent Rinsed
EPA 601	VOA	
TOG 5520BF	Amber Liter	H_2SO_4

Begin 1602 Stop 1607 Sampled 1612

FORM: FS3/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-025-01
Service Station No: 11133

Date: 1/14/93
Field Personnel: LGB
Address: Oakland, Ca

Well ID: AW-5 Field Activity: ___Well Development X Well Sampling ___Product Bailing

Casing Diameter:

___2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
X 4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
___6 Inch (1.47 Gal/foot)

Purge Method:

X Pump (dispos. Poly Tubing)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

0 Depth to Product
0 Product Thickness
24.15 Depth to Water

Sampling Method:

X Disposable Bailer
___Pump

Decontamination Method:

X Triple Rinse (Liquinox)
___Steam Cleaned

Calculated Purge Volume

42.90 (Total Depth of Well) - 24.15 (Depth to Water) = 18.75 ft (Water Column) X .65 Gal/Ft (Conversion Factor) = 12.19 Gal (Casing Vol) X 3 (Vols to Purge) = 36.57 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments/ Turbidity
			X1000		
1623	61.2	8.18	.95	7.25	Grey
1627	63.8	8.09	.52	14.50	clear
1631	65.4	7.85	.48	22.00	
1635	65.9	7.75	.46	29.25	
1638	66.3	7.69	.47	36.25	

Analysis Required	Container Type	Preserv.
X TPH-G/BTEX	VOA	HCL
TPH-Diesel	Amber Liter	Solvent Rinsed
EPA 601	VOA	
TOG 5520BF	Amber Liter	H_2SO_4

Begin 1615 Stop 1638 Sampled 1645

Replaced lock

FORM: FS3/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-025-01
Service Station No: 11133

Date: 1/14/93
Field Personnel: LB
Address: Oakland, CA

Well ID: AW-6 Field Activity: ___Well Development X Well Sampling ___Product Bailing

Casing Diameter:

___2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
X 4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
___6 Inch (1.47 Gal/foot)

Purge Method:

X Pump (dispos. Poly Tubing)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

Ø Depth to Product
Ø Product Thickness
22.36 Depth to Water

Sampling Method:

X Disposable Bailer
___Pump

Decontamination Method:

X Triple Rinse (Liquinox)
___ Steam Cleaned

Calculated Purge Volume

34.20 (Total Depth of Well) - 22.36 (Depth to Water) = 11.84 ft (Water Column) X .65 Gal/Ft (Conversion Factor) = 7.70 Gal (Casing Vol) X 3 (Vols to Purge) = 23.10 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments/ Turbidity
1311	67.8	9.35	X1000 .63	4.50	clear
1316	67.0	8.67	.53	9.00	
1323	66.0	8.24	.50	13.75	
1328	65.7	8.06	.49	18.25	
1333	65.1	7.99	.47	23.25	

Analysis Required		Container Type	Preserv.
X	TPH-G/BTEX	VOA	HCL
	TPH-Diesel	Amber Liter	Solvent Rinsed
	EPA 601	VOA	
	TOG 5520BF	Amber Liter	H_2SO_4

Begin 1301 Stop 1333 Sampled 1338

Replaced Lock

FORM: FS3/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-025-01
Service Station No: 11133

Date: 1/14/93
Field Personnel: LCB
Address: Oakland, CA

Well ID: AW-7 Field Activity: ___Well Development X Well Sampling ___Product Bailing

Casing Diameter:

X 2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
___4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
___6 Inch (1.47 Gal/foot)

Purge Method:

X Pump (dispos. Poly Tubing)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

Ø Depth to Product
Ø Product Thickness
22.03 Depth to Water

Sampling Method:

X Disposable Bailer
___Pump

Decontamination Method:

X Triple Rinse (Liquinox)
___ Steam Cleaned

Calculated Purge Volume: 32.30 (Total Depth of Well) - 22.03 (Depth to Water) = 10.27 ft (Water Column) X .16 (Conversion Factor) Gal/Ft = 1.64 (Casing Vol) Gal X 3 (Vols to Purge) = 4.92 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments/ Turbidity
1404	65.9	8.84	X1000 .90	1	Clear
1405	67.9	8.65	.80	2	
1406	67.4	8.71	.67	3	
1407	66.7	8.45	.60	4	
1410	66.4	8.39	.59	5	↓

Analysis Required	Container Type	Preserv.
X TPH-G/BTEX	VOA	HCL
TPH-Diesel	Amber Liter	Solvent Rinsed
EPA 601	VOA	
TOG 5520BF	Amber Liter	H_2SO_4

Begin 1401 Stop 1410 Sampled 1415

FORM: FS3/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-025-01
Service Station No: 11133

Date: 11/4/93
Field Personnel: LB
Address: Oakland, Ca

Well ID: AW-8 Field Activity: ___Well Development X Well Sampling ___Product Bailing

Casing Diameter:

X 2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
___4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
___6 Inch (1.47 Gal/foot)

Purge Method:

X Pump (dispos. Poly Tubing)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

0 Depth to Product
0 Product Thickness
25.55 Depth to Water

Sampling Method:

X Disposable Bailer
___Pump

Decontamination Method:

X Triple Rinse (Liquinox)
___Steam Cleaned

Calculated Purge Volume

39.20 (Total Depth of Well) - 25.55 (Depth to Water) = 13.70 ft (Water Column) X .16 Gal/Ft (Conversion Factor) = 2.19 Gal (Casing Vol) X 3 (Vols to Purge) = 6.57 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments/ Turbidity
			X1000		
1343	65.6	8.24	1.71	1.25	Clear
1345	66.6	8.01	1.21	2.75	
1349	67.0	8.22	1.27	4.00	
1351	66.2	8.27	1.26	5.75	
1354	66.0	8.24	1.24	6.75	

Analysis Required	Container Type	Preserv.
X TPH-G/BTEX	VOA	HCL
TPH-Diesel	Amber Liter	Solvent Rinsed
EPA 601	VOA	
TOG 5520BF	Amber Liter	H_2SO_4

Begin 1339 Stop 1354 Sampled 1359

FORM: FS3/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-025-01
Service Station No: 11133

Date: 1/14/93
Field Personnel: JCB
Address: Oakland, Ca

Well ID: MW-2 Field Activity: ___Well Development X Well Sampling ___Product Bailing

Casing Diameter:

X 2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
___4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
___6 Inch (1.47 Gal/foot)

Purge Method:

X Pump (dispos. Poly Tubing)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

0 Depth to Product
0 Product Thickness
9.69 Depth to Water

Sampling Method:

X Disposable Bailer
___Pump

Decontamination Method:

X Triple Rinse (Liquinox)
___Steam Cleaned

Calculated Purge Volume

31.40 (Total Depth of Well) - 9.69 (Depth to Water) = 21.71 ft (Water Column) X .16 Gal/Ft (Conversion Factor) = 3.47 Gal (Casing Vol) X 3 (Vols to Purge) = 10.41 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments/ Turbidity
1521	64.7	8.26	X1000 .27	2	clear
1522	67.2	8.28	.24	4.25	
1523	67.3	8.30	.25	6.25	
1524	68.8	8.29	.27	8.25	
1527	69.3	8.31	.26	10.50	

Analysis Required	Container Type	Preserv.
X TPH-G/BTEX	VOA	HCL
TPH-Diesel	Amber Liter	Solvent Rinsed
EPA 601	VOA	
TOC 5520BF	Amber Liter	H_2SO_4

Begin 1519 Stop 1527 Sampled 1530

FORM: FS3/121592

ALISTO ENGINEERING GROUP
Groundwater Development and Sampling Form

Client: BP
Alisto Project No: 10-025-01
Service Station No: 11133

Date: 1/14/93
Field Personnel: LCB
Address: Oakland, CA

Well ID: MW-3 Field Activity: ___Well Development X Well Sampling ___Product Bailing

Casing Diameter:

X 2 Inch (0.16 Gal/foot)
___3 Inch (0.37 Gal/foot)
___4 Inch (0.65 Gal/Foot)
___4.5 Inch (0.83 Gal/foot)
___6 Inch (1.47 Gal/foot)

Purge Method:

X Pump (dispos. Poly Tubing)
___Disposable Bailers
___Other
___1.66 PVC Standard Bailer
___3.50 PVC Standard Bailer

Well Data:

0 Depth to Product
0 Product Thickness
15.96 Depth to Water

Sampling Method:

X Disposable Bailer
___Pump

Decontamination Method:

X Triple Rinse (Liquinox)
___ Steam Cleaned

Calculated Purge Volume

34.10 (Total Depth of Well) - 15.96 (Depth to Water) = 18.14 ft (Water Column) X .16 Gal/Ft (Conversion Factor) = 2.90 Gal (Casing Vol) X 3 (Vols to Purge) = 8.70 (Total Volume)

Well Development/Sampling Parameters

Time	Temp °F	pH	Cond. (umhos /cm)	Purge Vol (Gal)	Comments/ Turbidity
			X1000		
1509	63.7	8.45	.33	1.75	Clear
1510	65.7	8.38	.29	3.50	
1511	66.7	8.33	.27	5.25	
1512	66.9	8.29	.25	7.25	
1514	67.4	8.25	.24	9.00	↓

Analysis Required	Container Type	Preserv.
X TPH-G/BTEX	VOA	HCL
TPH-Diesel	Amber Liter	Solvent Rinsed
EPA 601	VOA	
TOG 5520BF	Amber Liter	H_2SO_4

Begin 1504 Stop 1514 Sampled 1518

FORM: FS3/121592

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD

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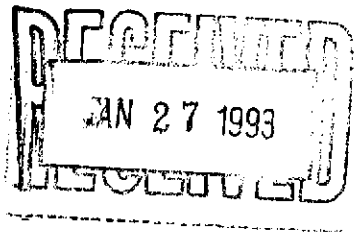
REPORT OF LABORATORY ANALYSIS



January 25, 1993

Mr. Brady Nagle
Alisto Engineering Group
1000 Burnett Ave., Ste. 420
Concord, CA 94520

RE: PACE Project No. 430115.505
Client Reference: BP Station # 11133

Dear Mr. Nagle:

Enclosed is the report of laboratory analyses for samples received January 15, 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

Stephanie Matzo
Project Manager

Enclosures

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Novato, CA 94949
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FAX: 415-883-2673

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REPORT OF LABORATORY ANALYSIS

Alisto Engineering Group
1000 Burnett Ave., Ste. 420
Concord, CA 94520

January 25, 1993
PACE Project Number: 430115505

Attn: Mr. Brady Nagle

Client Reference: BP Station # 11133

PACE Sample Number:			70 0277400	
Date Collected:			01/14/93	
Date Received:			01/15/93	
Client Sample ID:			QC-2	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	01/19/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	01/19/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	01/19/93
Benzene	ug/L	0.5	ND	01/19/93
Toluene	ug/L	0.5	ND	01/19/93
Ethylbenzene	ug/L	0.5	ND	01/19/93
Xylenes, Total	ug/L	0.5	ND	01/19/93

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REPORT OF LABORATORY ANALYSIS

Mr. Brady Nagle
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January 25, 1993
PACE Project Number: 430115505

Client Reference: BP Station # 11133

PACE Sample Number:			70 0277418	
Date Collected:			01/14/93	
Date Received:			01/15/93	
Client Sample ID:			AW-6	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	01/19/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	01/19/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	01/19/93
Benzene	ug/L	0.5	ND	01/19/93
Toluene	ug/L	0.5	ND	01/19/93
Ethylbenzene	ug/L	0.5	ND	01/19/93
Xylenes, Total	ug/L	0.5	ND	01/19/93

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REPORT OF LABORATORY ANALYSIS

January 25, 1993
PACE Project Number: 430115505

Client Reference: BP Station # 11133

PACE Sample Number:			70 0277426	
Date Collected:			01/14/93	
Date Received:			01/15/93	
Client Sample ID:			AW-7	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	01/19/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	01/19/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	01/19/93
Benzene	ug/L	0.5	ND	01/19/93
Toluene	ug/L	0.5	ND	01/19/93
Ethylbenzene	ug/L	0.5	ND	01/19/93
Xylenes, Total	ug/L	0.5	ND	01/19/93

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REPORT OF LABORATORY ANALYSIS

Mr. Brady Nagle
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January 25, 1993
PACE Project Number: 430115505

Client Reference: BP Station # 11133

PACE Sample Number:			70 0277434	
Date Collected:			01/14/93	
Date Received:			01/15/93	
Client Sample ID:			AW-8	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	01/19/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	01/19/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	01/19/93
Benzene	ug/L	0.5	ND	01/19/93
Toluene	ug/L	0.5	ND	01/19/93
Ethylbenzene	ug/L	0.5	ND	01/19/93
Xylenes, Total	ug/L	0.5	ND	01/19/93

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REPORT OF LABORATORY ANALYSIS

Mr. Brady Nagle
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January 25, 1993
PACE Project Number: 430115505

Client Reference: BP Station # 11133

PACE Sample Number:			70 0277442	
Date Collected:			01/14/93	
Date Received:			01/15/93	
Client Sample ID:			AW-2	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	01/19/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	01/19/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	01/19/93
Benzene	ug/L	0.5	ND	01/19/93
Toluene	ug/L	0.5	ND	01/19/93
Ethylbenzene	ug/L	0.5	ND	01/19/93
Xylenes, Total	ug/L	0.5	ND	01/19/93

REPORT OF LABORATORY ANALYSIS

Mr. Brady Nagle
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January 25, 1993
PACE Project Number: 430115505

Client Reference: BP Station # 11133

PACE Sample Number:			70 0277450	
Date Collected:			01/14/93	
Date Received:			01/15/93	
Client Sample ID:			MW-3	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	01/19/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	350	01/19/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	01/19/93
Benzene	ug/L	0.5	ND (MT)	01/19/93
Toluene	ug/L	0.5	ND	01/19/93
Ethylbenzene	ug/L	0.5	ND	01/19/93
Xylenes, Total	ug/L	0.5	ND	01/19/93

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REPORT OF LABORATORY ANALYSIS

Mr. Brady Nagle
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January 25, 1993
PACE Project Number: 430115505

Client Reference: BP Station # 11133

PACE Sample Number:			70 0277469	
Date Collected:			01/14/93	
Date Received:			01/15/93	
Client Sample ID:			MW-2	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	01/19/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	01/19/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	01/19/93
Benzene	ug/L	0.5	ND	01/19/93
Toluene	ug/L	0.5	ND	01/19/93
Ethylbenzene	ug/L	0.5	ND	01/19/93
Xylenes, Total	ug/L	0.5	ND	01/19/93

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REPORT OF LABORATORY ANALYSIS

Mr. Brady Nagle
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January 25, 1993
PACE Project Number: 430115505

Client Reference: BP Station # 11133

PACE Sample Number:			70 0277477	
Date Collected:			01/14/93	
Date Received:			01/15/93	
Client Sample ID:			AW-5	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	01/19/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	1700	01/19/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	01/19/93
Benzene	ug/L	0.5	270	01/19/93
Toluene	ug/L	0.5	7.5	01/19/93
Ethylbenzene	ug/L	0.5	130	01/19/93
Xylenes, Total	ug/L	0.5	62	01/19/93

REPORT OF LABORATORY ANALYSIS

Mr. Brady Nagle
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January 25, 1993
PACE Project Number: 430115505

Client Reference: BP Station # 11133

PACE Sample Number:			70 0277485	
Date Collected:			01/14/93	
Date Received:			01/15/93	
Client Sample ID:			AW-1	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	01/19/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	2800	01/19/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	01/19/93
Benzene	ug/L	0.5	830 (MT)	01/19/93
Toluene	ug/L	0.5	31	01/19/93
Ethylbenzene	ug/L	0.5	140	01/19/93
Xylenes, Total	ug/L	0.5	240	01/19/93

REPORT OF LABORATORY ANALYSIS

Mr. Brady Nagle
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January 25, 1993
PACE Project Number: 430115505

Client Reference: BP Station # 11133

PACE Sample Number:			70 0277493	
Date Collected:			01/14/93	
Date Received:			01/15/93	
Client Sample ID:			AW-3	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	01/19/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	350	01/19/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	01/19/93
Benzene	ug/L	0.5	250	01/19/93
Toluene	ug/L	0.5	ND	01/19/93
Ethylbenzene	ug/L	0.5	ND	01/19/93
Xylenes, Total	ug/L	0.5	ND	01/19/93

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REPORT OF LABORATORY ANALYSIS

Mr. Brady Nagle
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January 25, 1993
PACE Project Number: 430115505

Client Reference: BP Station # 11133

PACE Sample Number:			70 0277507	
Date Collected:			01/14/93	
Date Received:			01/15/93	
Client Sample ID:			AW-4	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	01/19/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	1200	62000	01/19/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	01/19/93
Benzene	ug/L	12	18000 (MT)	01/19/93
Toluene	ug/L	12	14000	01/19/93
Ethylbenzene	ug/L	12	2700	01/19/93
Xylenes, Total	ug/L	12	7700	01/19/93

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TEL: 415-883-6100
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pace INCORPORATED
THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

Mr. Brady Nagle
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January 25, 1993
PACE Project Number: 430115505

Client Reference: BP Station # 11133

PACE Sample Number:			70 0277515	
Date Collected:			01/14/93	
Date Received:			01/15/93	
Client Sample ID:			QC-1	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	01/19/93
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	250	4100	01/19/93
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	01/19/93
Benzene	ug/L	2.5	1700	01/19/93
Toluene	ug/L	2.5	28	01/19/93
Ethylbenzene	ug/L	2.5	130	01/19/93
Xylenes, Total	ug/L	2.5	230	01/19/93

These data have been reviewed and are approved for release.

Darrell C. Cain
Regional Director

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Client Reference: BP Station # 11133

MDL Method Detection Limit
ND Not detected at or above the MDL.
(MT) Please note regarding your samples MW-3 (PACE #70 0277450), AW-1 (PACE #70 0277485), and AW-4 (PACE #70 0277507), a peak eluting earlier than Benzene and suspected to be methyl tert butyl ether was present at approximately 714 ppb, 987 ppb, and 1400 ppb respectively.

Mr. Brady Nagle
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QUALITY CONTROL DATA

January 25, 1993
PACE Project Number: 430115505

Client Reference: BP Station # 11133

PURGEABLE FUELS AND AROMATICS
Batch: 70 18229
Samples: 70 0277400, 70 0277418, 70 0277426

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	102%	102%	0%
Benzene	ug/L	0.5	40.0	94%	95%	1%
Toluene	ug/L	0.5	40.0	93%	94%	1%
Ethylbenzene	ug/L	0.5	40.0	96%	99%	3%
Xylenes, Total	ug/L	0.5	120	98%	99%	1%

Client Reference: BP Station # 11133

PURGEABLE FUELS AND AROMATICS
Batch: 70 18246
Samples: 70 0277434, 70 0277442, 70 0277450, 70 0277469, 70 0277477
70 0277485, 70 0277493, 70 0277507, 70 0277515

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	98%	93%	5%
Benzene	ug/L	0.5	40.0	93%	93%	0%
Toluene	ug/L	0.5	40.0	93%	93%	0%
Ethylbenzene	ug/L	0.5	40.0	98%	98%	0%
Xylenes, Total	ug/L	0.5	120	99%	98%	1%

Client Reference: BP Station # 11133

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

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pace INCORPORATED THE ASSURANCE OF QUALITY

B.P. OIL MARKETING COMPANY

33305 First Way South, Federal Way, WA 98003

CHAIN OF CUSTODY

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30115.505

Consultant's Name: Alisto Engineering Group
Page ___ of ___
Address: 1000 Burnett Ave # 420 Concord, Ca
Project Contact: Brady Nagle
Consultant Project #: 10-025-01
Phone #: (510) 798-4070 Fax #: 798-4099
Sampled by (print): Larry Bucnvieida
Sampler's Signature: Larry Bucnvieida
Shipment Method: Courier
B.P. Site Location #: 11133
B.P. Site Location: Oakland
TAT: ☐ 24 hr ☐ 48 hr ☐ 72 hr ☒ Standard (10 day)

ANALYSIS REQUIRED

Sample Condition as Received
Temperature ° C: ___
Cooler #: ___
Inbound Seal Yes No
Outbound Seal Yes No

Sample Description	Collection Date/Time	Matrix Soil/Water	Prsv	# of Cont	PACE Sample #	TPH/GAS/BTEX EPA 8015/8020	TPH/Diesel EPA 8015	Oil & Grease SM 5520	HVOC 8010								COMMENTS
QC-2	11/14/93 1336	W	HCL	2	27740.0	X											
AW-6	1338			3	41.8												
AW-7	1415				42.6												
AW-8	1359				43.4												
AW-2	1429				44.2												
MW-3	1518				45.0												
MW-2	1530				46.9												
AW-5	1445				47.7												
AW-1	1544				48.5												
AW-3	1601				49.3												
AW-4	1612				50.7												
QC-1	1546	↓	↓	↓	51.5	↓											

Relinquished by/Affiliation	Date	Time	Accepted by/Affiliation	Date	Time
Larry Bucnvieida	11/15/93	1425	Ed Matt - Ace	11/15	1425
Ed Matt - Ace	11/15	1710	Lea Dotson PACE	11/15/93	1710

Additional Comments:

10/1