BP OIL

ENVIRONMENTAL
95 AUG 31 AM 11:05

BP Oil Company
Environmental Resources Management
Building 13, Suite N
295 SW 41st Street
Renton, Washington 98055-4931
(206) 251-0667

August 30, 1995

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

RE: BP OIL FACILITY #11117
7210 Bancroft Avenue
Oakland, CA 94621

Attached please find our **GROUNDWATER MONITORING AND SAMPLING REPORT DATED June 5, 1995** for the above referenced facility. Please note that BP is currently soliciting proposals for a vapor extraction pilot test. You should expect to receive a workplan for this activity shortly.

If you should have any questions regarding this site, I may be reached at (206) 251-0689.

Respectfully,

Scott T. Hooton
Environmental Resources Management
Group Leader

STH:mu msword\ERM11117

cc: Ms Juliet Shin, Alameda County Health Care Services Agency
1131 Harbour Bay Parkway, Room 250, Alameda CA 94502-6577

Mr. Brady Nagle, Alisto , 1575 Treat Blvd, Ste 201, Walnut Creek, CA 94598

Mr. Robert K. Barth, Bancroft Oakland Investment Company, 9454 Wilshire Blvd, Suite 901, Beverly Hills, CA 98212

Mr. Larry Silva, TOSCO Northwest, 601 Union Street, Suite 2500, Seattle WA 98101

Site File

GROUNDWATER MONITORING AND SAMPLING REPORT

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

Project No. 10-018-03-003

Prepared for:

BP Oil Company
Environmental Resources Management
295 S.W. 41st Street
Building 13, Suite N
Renton, Washington

Prepared by:

Alisto Engineering Group
1575 Treat Boulevard, Suite 201
Walnut Creek, California

June 5, 1995

Brady Nagle
Project Manager

Al Sevilla, P.E.
Principal

REGISTERED PROFESSIONAL ENGINEER
ALBERTO CARLOS SEVILLA
No. 36092
Exp. Date 3/31/96
STATE OF CALIFORNIA

GROUNDWATER MONITORING AND SAMPLING REPORT

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

Project No. 10-018-03-003

June 5, 1995

INTRODUCTION

This report presents the results and findings of the April 19, 1995 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 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, electrical conductivity, and dissolved oxygen. 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.

FREE PRODUCT MONITORING AND RECOVERY

A passive product recovery canister has been installed in Monitoring Well MW-2 to recover liquid-phase product. Product thicknesses for this and previous monitoring events are presented in Table 1. The volume of free product recovered from the wells is presented in Table 2.

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.

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER 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)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	Organic Lead (ppb)	DO (ppm)	LAB
MW-1	01/05/92	49.81	33.16	—	16.65	57000	50000	2400	1000	1100	3100	ND	—	—
MW-1	01/10/92	49.81	33.16	—	16.65	—	—	—	—	—	—	—	—	—
MW-1	06/05/92	49.81	29.01	—	20.80	31000	—	2800	2100	600	2300	—	—	—
MW-1	07/24/92	49.80	29.45	—	20.35	—	—	—	—	—	—	—	—	—
MW-1	07/27/92	49.80	29.45	—	20.35	—	—	—	—	—	—	—	—	—
MW-1	09/15/92	49.80	30.53	—	19.27	40000	1200 (c)	3400	3000	1300	3400	—	—	ANA
QC-1 (d)	09/15/92	—	—	—	—	36000	—	3800	3400	1400	3800	—	—	ANA
MW-1	12/15/92	49.80	31.26	—	18.54	27000	1100 (c)	1700	580	700	1900	—	—	ANA
QC-1 (d)	12/15/92	—	—	—	—	22000	—	1500	440	510	1300	—	—	ANA
MW-1	03/15/93	49.80	24.80	—	25.00	17000	580	1700	1200	590	1800	—	—	PACE
QC-1 (d)	03/15/93	—	—	—	—	15000	—	1100	860	440	1400	—	—	PACE
MW-1	06/07/93	49.80	25.01	—	24.79	750	100	0.8	0.8	ND<0.5	ND<0.5	—	—	PACE
QC-1 (d)	06/07/93	—	—	—	—	720	—	0.7	0.7	ND<0.5	ND<0.5	—	—	PACE
MW-1	09/23/93	49.80	28.70	—	21.10	—	—	—	—	—	—	—	—	—
MW-1	09/23/93	—	—	—	—	40000	770	4000	500	920	3000	—	—	PACE
MW-1	12/27/93	49.80	28.66	—	21.14	27000	—	2000	400	940	2600	—	—	PACE
QC-1 (d)	12/27/93	—	—	—	—	21000	—	1700	380	830	2400	—	—	PACE
MW-1	04/05/94	49.80	26.37	—	23.43	27000	—	3400	930	950	2900	—	—	PACE
QC-1 (d)	04/05/94	—	—	—	—	29000	—	3700	1000	1000	3100	—	1.3	PACE
MW-1	07/22/94	49.80	26.54	—	23.26	1700	—	220	2.3	2.0	3.4	—	2.0	PACE
MW-1	10/13/94	49.80	27.46	—	22.34	1200	—	250	21	ND<0.5	3.2	—	2.6	PACE
MW-1	01/25/95	49.80	20.96	—	28.84	1000	—	420	8	13	4	—	—	ATI
MW-1	04/19/95	49.80	19.59	—	30.21	5200	—	420	51	230	340	—	6.0	ATI
MW-2	01/05/92	51.07	DRY	—	DRY	—	—	—	—	—	—	—	—	—
MW-2	01/10/92	51.06	DRY	—	DRY	—	—	—	—	—	—	—	—	—
MW-2	06/05/92	51.06	30.05	—	21.01	11000	—	2000	180	490	1900	—	—	—
MW-2	07/24/92	51.07	30.72	—	20.35	—	—	—	—	—	—	—	—	—
MW-2	07/27/92	51.07	30.52	—	20.55	—	—	—	—	—	—	—	—	—
MW-2	09/15/92	51.07	31.56	—	19.51	75000	3200 (c)	2000	6500	2300	13000	—	—	ANA
MW-2	12/15/92	51.07	32.40	—	18.67	34000	1600 (c)	6200	8900	2000	7900	—	—	ANA
MW-2	03/15/93	51.07	26.14	—	24.93	150000	8400	12000	18000	3200	22000	—	—	PACE
MW-2 (e)	06/07/93	51.07	26.38	SHEEN	24.69	—	—	—	—	—	—	—	—	—
MW-2 (e)	09/23/93	51.07	31.43	1.92	21.08	—	—	—	—	—	—	—	—	—
MW-2 (e)	12/27/93	51.07	34.07	1.07	17.80	—	—	—	—	—	—	—	—	—
MW-2 (e)	04/05/94	51.07	30.44	3.30	23.11	—	—	—	—	—	—	—	—	—
MW-2 (e)	07/22/94	51.07	28.51	0.80	23.15	—	—	—	—	—	—	—	—	—
MW-2 (e)	10/13/94	51.07	29.33	0.70	22.27	—	—	—	—	—	—	—	—	—
MW-2 (e)	01/25/95	51.07	25.55	4.25	28.71	—	—	—	—	—	—	—	—	—
MW-2 (e)	04/19/95	51.07	19.78	0.12	31.38	—	—	—	—	—	—	—	—	—

F.P.

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

ALISTO PROJECT NO. 10-016

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	Organic Lead (ppb)	DO (ppm)	LAB
MW-3	01/05/92	49.95	33.69	—	16.26	7400	4000	790	23	210	40	ND	---	---
MW-3	01/10/92	50.00	33.74	—	16.26	—	—	—	—	—	—	—	---	---
MW-3	06/05/92	50.00	29.65	—	20.35	2000	—	130	5.3	93	20	---	---	—
MW-3	07/24/92	49.95	30.14	—	19.81	—	—	—	---	---	---	---	---	—
MW-3	07/27/92	49.95	30.14	—	19.81	—	—	—	—	—	—	—	—	---
MW-3	09/15/92	49.95	31.07	—	18.88	450	ND<50	55	3.1	34	7.1	---	—	ANA
MW-3	12/15/92	49.95	31.93	—	18.02	12000	710 (c)	940	ND<50	310	120	---	---	ANA
MW-3	03/15/93	49.95	25.71	—	24.24	ND<50	60	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	—	PACE
MW-3	06/07/93	49.95	25.80	---	24.15	150	ND<50	3.6	ND<0.5	0.9	1.3	—	—	PACE
MW-3	09/23/93	49.95	29.18	—	20.77	—	---	---	—	---	---	—	---	---
MW-3	09/24/93	—	---	—	---	160	ND<50	5.4	ND<0.5	3.7	1.3	—	—	PACE
MW-3	12/27/93	49.95	29.25	—	20.70	9400	—	1100	48	530	120	---	—	PACE
MW-3	04/05/94	49.95	26.84	—	23.11	7000	---	860	19	330	52	---	2.0	PACE
MW-3	07/22/94	49.95	26.90	—	23.11	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	2.1	PACE
MW-3	10/13/94	49.95	27.83	—	22.12	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	2.6	PACE
MW-3	01/25/95	49.95	21.65	---	28.30	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	—	—	ATI
~~MW-3~~	~~04/19/95~~	~~49.95~~	~~19.33~~	—	30.62	2400	—	170	6.0	130	27	—	5.9	ATI
MW-4	07/24/92	50.76	30.02	—	20.74	42000	---	3200	3600	1400	4100	—	---	---
MW-4	07/27/92	50.76	30.02	—	20.74	---	---	—	---	---	---	---	---	---
MW-4	09/15/92	50.76	31.14	—	19.62	55000	1700 (c)	7600	13000	2800	9500	—	---	ANA
MW-4	12/15/92	50.76	31.98	---	18.78	36000	2200 (c)	3700	4700	1200	4000	---	—	ANA
MW-4	03/15/93	50.76	25.34	—	25.42	69000	1200	7600	15000	2500	11000	---	—	PACE
MW-4	06/07/93	50.76	25.67	—	25.09	73000	2500	10000	19000	3400	14000	---	—	PACE
MW-4	09/23/93	50.76	29.37	---	21.39	---	---	—	---	---	—	—	—	—
MW-4	09/24/93	—	—	—	—	68000	5700	11000	2100	8600	990	---	—	PACE
QC-1 (d)	09/24/93	—	---	—	---	59000	—	5300	10000	2200	8400	---	---	PACE
MW-4	12/27/93	50.76	29.40	—	21.36	32000	---	2500	4400	1300	4400	—	---	PACE
MW-4	04/05/94	50.76	27.09	—	23.67	64000	---	6500	14000	1900	9600	—	1.4	PACE
MW-4	07/22/94	50.76	27.33	—	23.43	85000	—	10000	20000	3200	13000	—	0.8	PACE
QC-1 (d)	07/22/94	—	—	—	—	85000	—	11000	21000	3300	14000	---	—	PACE
MW-4	10/13/94	50.76	28.25	—	22.51	51000	—	7100	13000	2100	8900	—	2.9	PACE
QC-1 (d)	10/13/94	—	—	—	---	51000	—	7400	13000	2100	9100	—	—	PACE
MW-4	01/25/95	50.76	21.85	---	28.91	26000	---	3600	9600	1200	6400	—	---	ATI
QC-1 (d)	01/25/95	—	—	—	—	28000	—	4200	12000	1500	7800	---	—	ATI
~~MW-4~~	~~04/19/95~~	~~50.76~~	~~19.44~~	—	31.32	88000	—	12000	24000	3500	18000	—	5.1	ATI
QC-1 (d)	04/19/95	—	---	—	---	100000	—	12000	26000	3800	21000	---	—	ATI

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER 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)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	Organic Lead (ppb)	DO (ppm)	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
MW-6	06/07/93	50.32	26.33	—	23.99	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	1.5	—	—	PACE
MW-6	09/23/93	50.32	29.64	—	20.68	—	—	—	—	—	—	—	—	—
MW-6	09/24/93	—	—	—	—	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	PACE
MW-6	12/27/93	50.32	29.75	—	20.57	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	PACE
MW-6	04/05/94	50.32	27.26	—	23.06	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	1.7	PACE
MW-6	07/22/94	50.32	27.34	—	22.98	350	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	4.5	PACE
MW-6 (f)	10/13/94	50.32	—	—	—	—	—	—	—	—	—	—	—	—
MW-6	01/25/95	50.32	22.16	—	28.16	240	—	6	ND<0.5	ND<0.5	ND<1	—	—	ATI
MW-6 (e)	04/19/95	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-7	01/25/95	51.4	21.67	—	29.73	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<1	—	7.0	ATI
MW-7	04/19/95	51.4	25.27	—	26.13	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<1	—	6.0	ATI
MW-8	01/25/95	50.88	31.59	—	19.29	54	—	ND<0.5	ND<0.5	ND<0.5	ND<1	—	7.1	ATI
MW-8	04/19/95	50.88	19.18	—	31.70	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<1	—	5.1	ATI
MW-9	01/25/95	51.05	22.32	—	28.73	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<1	—	7.4	ATI
MW-9	04/19/95	51.05	19.86	—	31.19	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<1	—	5.2	ATI
QC-2 (g)	09/15/92	—	—	—	—	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	ANA
QC-2 (g)	12/15/92	—	—	—	—	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	ANA
QC-2 (g)	03/15/93	—	—	—	—	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	PACE
QC-2 (g)	06/07/93	—	—	—	—	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	PACE
QC-2 (g)	09/24/93	—	—	—	—	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	PACE
QC-2 (g)	12/27/93	—	—	—	—	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	PACE
QC-2 (g)	04/05/94	—	—	—	—	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	PACE
QC-2 (g)	07/22/94	—	—	—	—	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	PACE
QC-2 (g)	10/13/94	—	—	—	—	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	PACE
QC-2 (g)	01/25/95	—	—	—	—	ND<50	—	ND<0.5	2	0.6	1	—	—	ATI
QC-2 (g)	04/19/95	—	—	—	—	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	ATI

ABBREVIATIONS:

TPH-G	Total petroleum hydrocarbons as gasoline
TPH-D	Total petroleum hydrocarbons as diesel
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
DO	Dissolved oxygen
ug/l	Micrograms per liter
ppm	Parts per million
ND	Not detected above reported detection limit
—	Not analyzed/applicable/measured
ANA	Anametrix, Inc.
PACE	Pace, Inc.
ATI	Analytical Technologies, Inc.

NOTES:

(a) Casing elevations surveyed to the nearest 0.01 foot relative to mean sea level.

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

(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.

(e) Well not sampled due to presence of free product.

(f) Well inaccessible.

(g) Travel blank.

E:\QPRO4\10-018-3-3

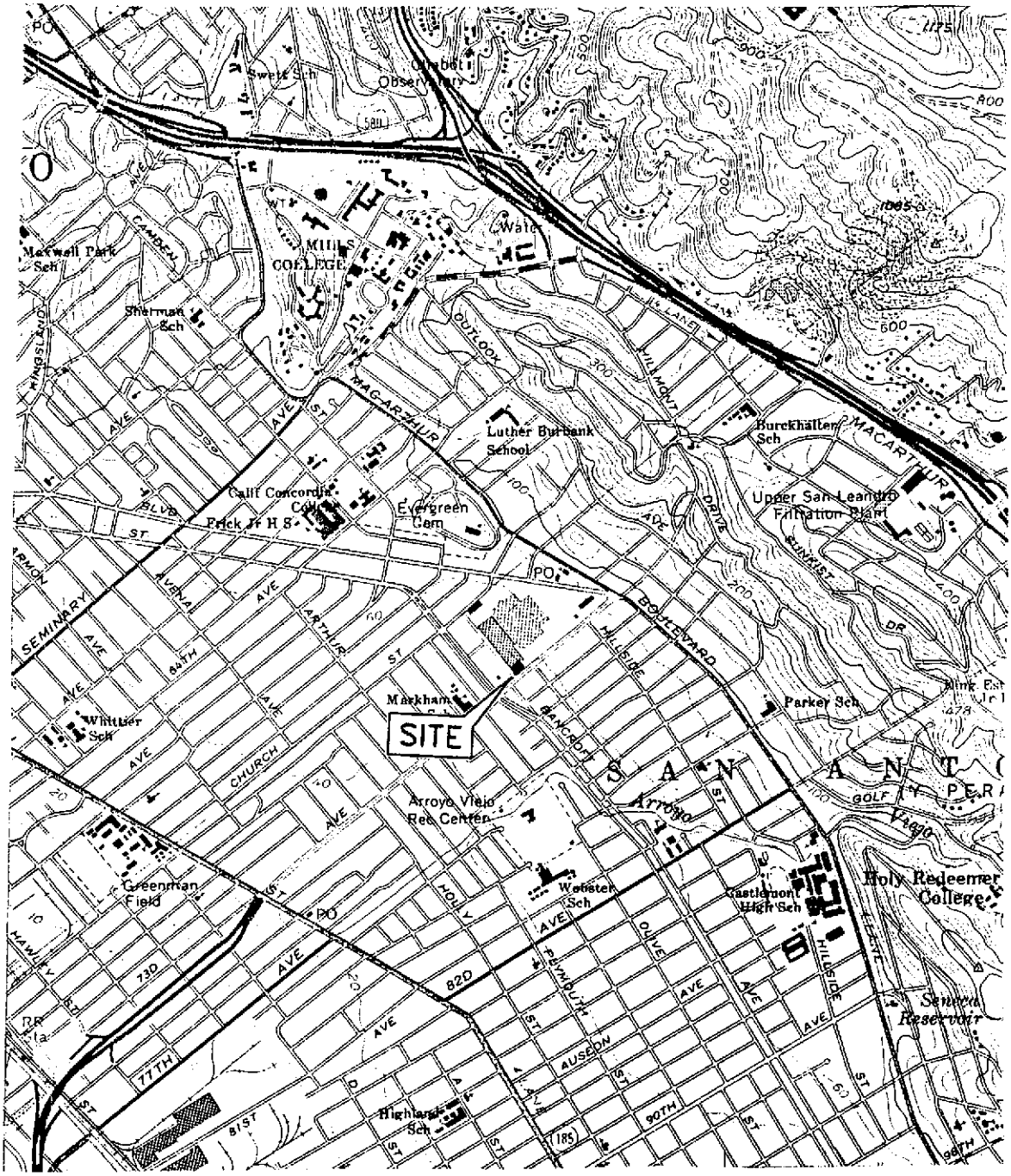
02-Jun-95

TABLE 2
PRODUCT REMOVAL STATUS

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

ALISTO PROJECT NO. 10-018

WELL ID	DATE	PRODUCT REMOVED (Gallons)	PRODUCT REMOVED CUMULATIVE (Gallons)
MW-2	02/11/94	0.1	0.1
	02/18/94	0.9	1.0
	02/25/94	0.1	1.1
	03/04/94	0.1	1.2
	03/30/94	2.6	3.8
	04/05/94	4.0	7.8
	04/13/94	0.1	7.9
	04/21/94	0.1	8.0
	04/29/94	0.3	8.3
	05/06/94	0.6	8.9
	05/13/94	0.1	9.0
	05/20/94	1.1	10.1
	05/26/94	2.0	12.1
	06/02/94	1.0	13.1
	06/09/94	1.0	14.1
	06/16/94	1.1	15.2
	06/23/94	0.9	16.1
	06/29/94	0.6	16.7
	07/07/94	0.5	17.2
	07/12/94	1.0	18.2
	07/20/94	0.7	18.9
	07/29/94	1.1	20.0
	08/05/94	0.7	20.7
	08/12/94	0.7	21.4
	08/18/94	0.4	21.8
	09/16/94	0.8	22.6
	09/23/94	0.7	23.3
	10/26/94	0.4	23.7
	11/03/94	1.1	24.8
	11/12/94	0.6	25.4
	11/16/94	0.4	25.8
	11/23/94	0.6	26.4
	01/25/95	4	30.4
	02/08/95	0.3	30.7
	03/30/95	0.0	30.7
	04/13/95	0.0	30.7
	04/19/95	0.1	30.8



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

N

0 1000' 2000'

FIGURE 1

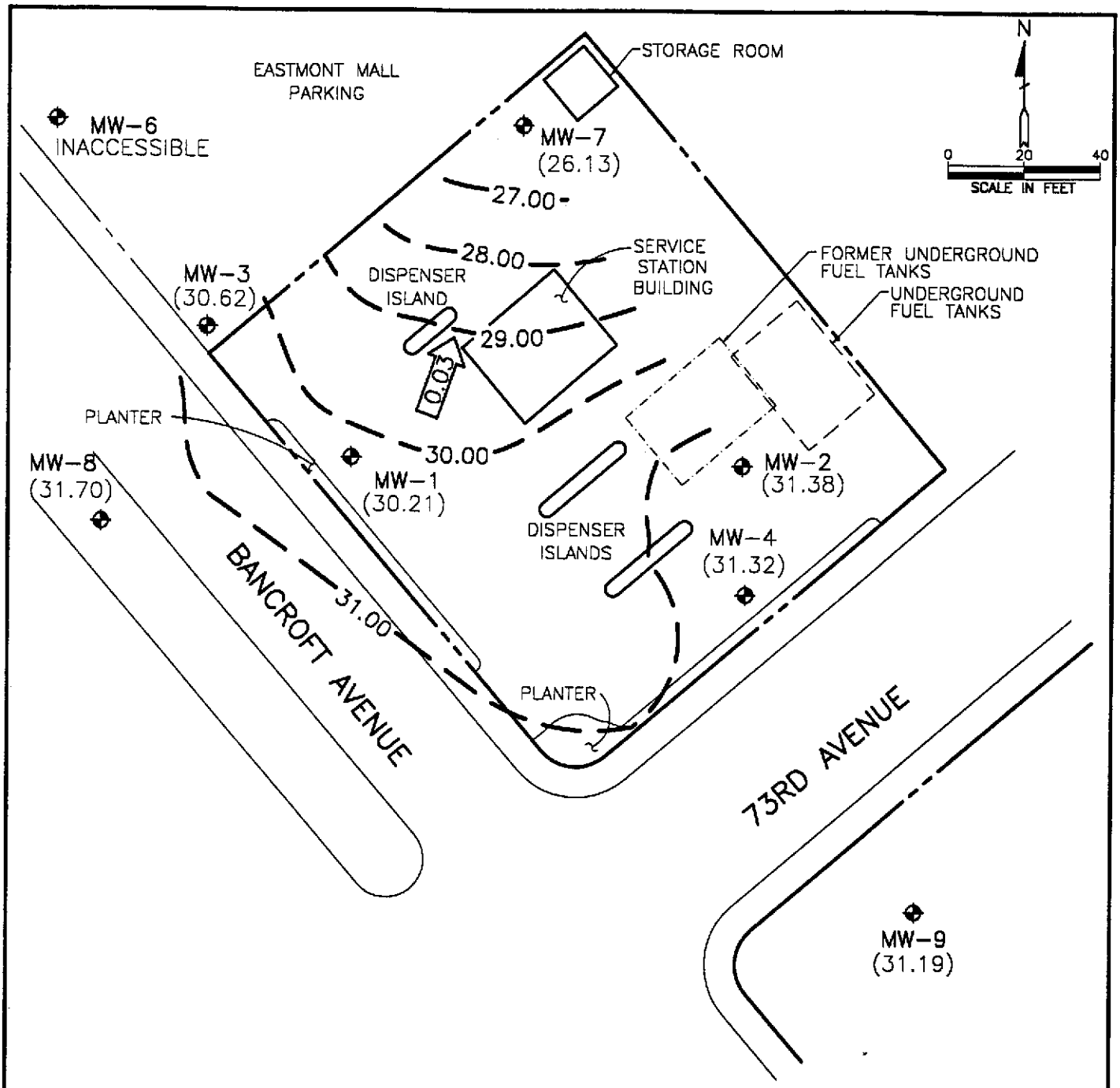
SITE VICINITY MAP

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

PROJECT NO. 10-018

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10018----.DWG 11-12-03 RKW 1=1



LEGEND

⊕	GROUNDWATER MONITORING WELL
(26.13)	GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
28.00	GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL–2.00 FEET)
0.03	CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 2

POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP

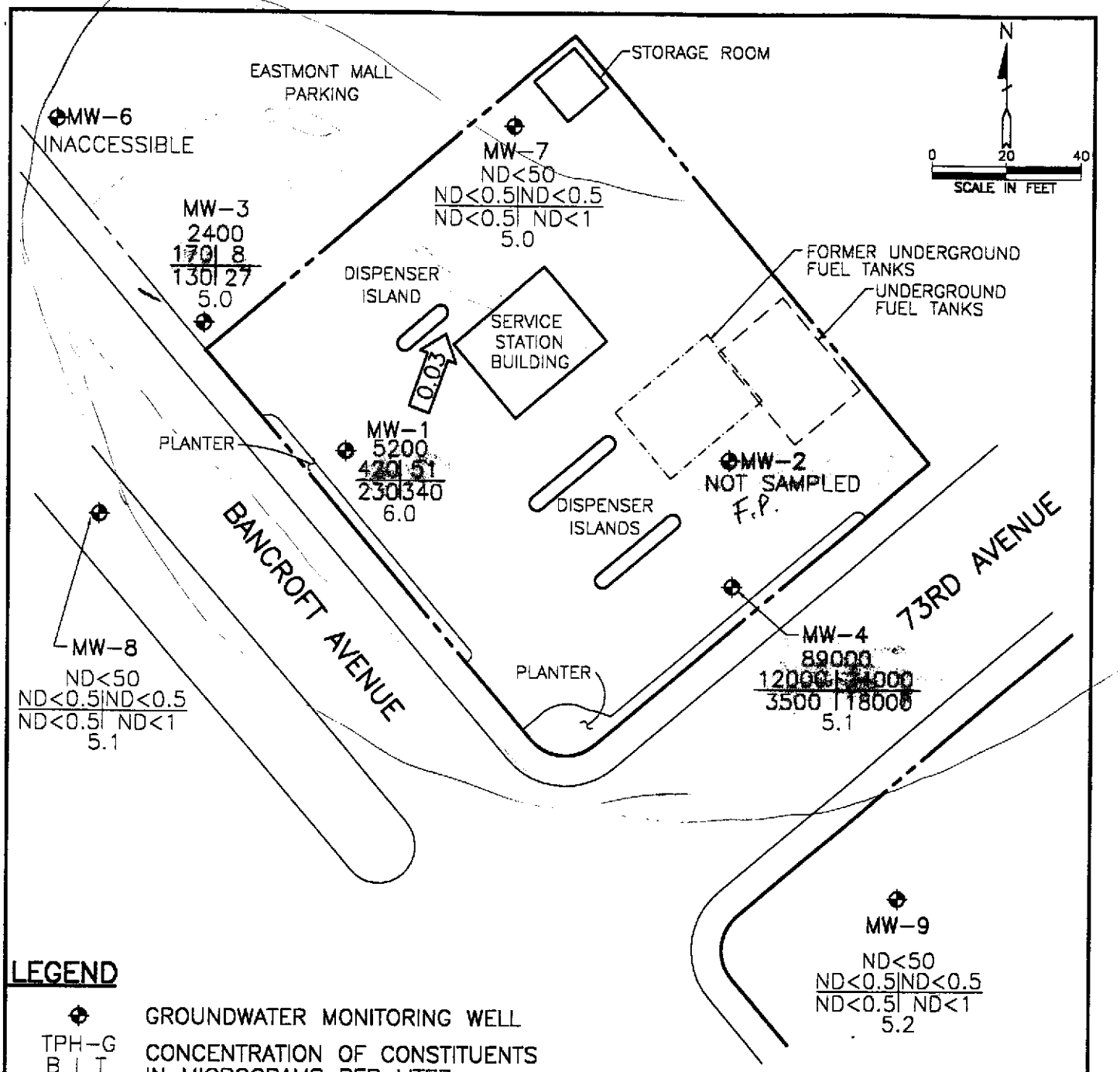
APRIL 19, 1995

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

PROJECT NO. 10–018

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10018D-N.DWG 5-31-95 RKW 1=40



LEGEND

◆	GROUNDWATER MONITORING WELL
TPH-G / B / T / E / X / DO	CONCENTRATION OF CONSTITUENTS IN MICROGRAMS PER LITER, EXCEPT DISSOLVED OXYGEN, WHICH IS IN PARTS PER MILLION
TPH-G	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES
DO	DISSOLVED OXYGEN
ND	NOT DETECTED ABOVE REPORTED DETECTION LIMIT
← 0.03	CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 3

CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER

APRIL 19, 1995

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

PROJECT NO. 10-018

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10018E-N.DWG 5-31-95 RKW 1=40

APPENDIX A

WATER SAMPLING FIELD SURVEY FORMS

ALISTO ENGINEERING GROUP

Field Report / Sampling Data Sheet

1777 OAKLAND BLVD, STE 200
WALNUT CREEK CA 94596 (510) 295-1650 FAX 295-1823

☒ Groundwater Sampling

Date: 4/19/95 Project No. 10-018-03-003

Day: M T (W) Th F Facility No. 11117

Barometric pres. 763 Temp. 72°F Address 7210 Bancroft Ave, OAKland CA

SAMPLER: JC

Well ID	SAMPLE #	WATER / time	Well ID	SAMPLE #	WATER / time	Well ID	SAMPLE	WATER / time
MW-9	S-1	19.86 / 1218	MW-1	S-5	19.59 / 1239			
MW-3	S-2	19.33 / 1224	MW-4	S-6	19.44 / 1242			
MW-7	S-3	25.27 / 1227	MW-2	S-7	19.98 / 1248			
MW-8	S-4	19.18 / 1233						
MW-6	inaccessible	see pg 2						

FIELD INSTRUMENT CALIBRATION DATA

PH METER Hydac 4.00 ✓ 7.00 ✓ 10.00 _____ TIME 1330 TEMPERATURE COMPENSATED (Y) N

TURBIDI METER _____ 5.0 NTU STANDARD _____ OTHER _____

CONDUCTIVITY METER Hydac 10,000 ✓ OTHER _____

1cm Dometer OSoln 2.0 @ 1320

MW-9

Well ID	Depth to Water	Diam	Cap/Lock	Depth to prod.	Iridescence
MW-9	19.86	2"	replace	ϕ	Y (N)

Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge = PurgeVol.

38.86 - 19.86 = 19 x .16 = 3.04 x 3 = 9.12

Purge Method: OSurface Pump ODisp.Tube OWinch ☒Disp. Bailer(s) 1 OSys Port

Comments: well is in VACANT lot across site.

Gal.	Time	Temp °F	pH	E.C.	D.O.
3	1354	69.4	6.67	0.48	4.6
6	1405	66.9	6.87	0.42	
9.25	1414	66.3	7.09	0.40	5.2

O EPA 601 ____ ☒ TPH-G/BTEX Hcl O TPH Diesel ____ O TOG 5520 ____

Time/Sample 1415 /S-1

MW-3

Well ID	Depth to Water	Diam	Cap/Lock	Depth to prod.	Iridescence
MW-3	19.33	2"	replaced	ϕ	Y (N)

Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge = PurgeVol.

42.40 - 19.33 = 23.07 x .16 = 3.69 x 3 = 11.07

Purge Method: OSurface Pump ODisp.Tube OWinch ☒Disp. Bailer(s) 1 OSys Port

Comments:

Gal.	Time	Temp °F	pH	E.C.	D.O.
4	1456	66.4	7.34	0.36	5.9
8	1502	66.3	7.27	0.38	
11.25	1505	65.9	7.22	0.39	5.0

O EPA 601 ____ ☒ TPH-G/BTEX Hcl O TPH Diesel ____ O TOG 5520 ____

Time/ Sample 1510 /S-2

MW-7

Well ID	Depth to Water	Diam	Cap/Lock	Depth to prod.	Iridescence
MW-7	25.27	2"	OK	ϕ	Y (N)

Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge = PurgeVol.

44.72 - 25.27 = 19.45 x .16 = 3.11 x 3 = 9.34

Purge Method: OSurface Pump ODisp.Tube OWinch ☒Disp. Bailer(s) 1 OSys Port

Comments: Sampled this before S-2 because cap VAS intact.

Gal.	Time	Temp °F	pH	E.C.	D.O.
3	1430	70.0	7.29	0.48	4.3
6	1434	69.7	7.22	0.48	
9.5	1438	69.9	7.16	0.48	5.0

O EPA 601 ____ ☒ TPH-G/BTEX Hcl O TPH Diesel ____ O TOG 5520 ____

Time /Sample 1440/S-3

ALISTO

ENGINEERING GROUP
1777 OAKLAND BLVD, STE 200
WALNUT CREEK CA 94596 (510) 295-1650 FAX 295-1823

Field Report / Sampling Data Sheet

☒ Groundwater Sampling

Date: 4/19/95 Project No. 10-018-03-003
Day: Wed Station No. 11117
Weather: Sunny Address 7210 Bancroft Ave, Oakland CA
SAMPLER: JC

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness
MW-8	19.18	2"	OK	Φ	Φ

Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge = PurgeVol.
39.50 - 19.18 = 20.32 x .16 = 3.25 x 3 = 9.75
Purge Method: OSurface Pump ODisp.Tube OWinch ☒Disp. Bailer(s) 1 OSye Port
Comments: water fell back in bailer

Gal.	Time	Temp °F	pH	E.C.	D.O.
3	1524	60.4	7.67	0.30	5.6
6	1531	59.2	7.57	0.28	
9.75	1538	58.7	7.53	0.28	5.1

☒ EPA 601 ☒ TPH-G/BTEX Hcl
O TPH Diesel O TOG 5520
Time Sampled: 1540 / 5-4

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness
MW-1	19.59	2"	replaced	Φ	Φ

Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge = PurgeVol.
36.12 - 19.59 = 16.53 x .16 = 2.65 x 3 = 7.93
Purge Method: OSurface Pump ODisp.Tube OWinch ☒Disp. Bailer(s) 1 OSye Port
Comments:

Gal.	Time	Temp °F	pH	E.C.	D.O.
3	1551	66.4	7.00	0.40	5.0
6	1557	66.2	6.89	0.38	
8	1601	65.2	6.85	0.39	6.0

☒ EPA 601 ☒ TPH-G/BTEX Hcl
O TPH Diesel O TOG 5520
Time Sampled: 1605 / 5-5

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness
MW-4	19.44	2"	replaced	Φ	Φ

Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge = PurgeVol.
40.00 - 19.44 = 20.56 x .16 = 3.28 x 3 = 9.84
Purge Method: OSurface Pump ODisp.Tube OWinch ☒Disp. Bailer(s) 1 OSye Port
Comments: QC-1 from this well (5-7)

Gal.	Time	Temp °F	pH	E.C.	D.O.
4	1630	66.9	6.85	0.46	5.5
8	1628	66.2	6.75	0.46	
10	1633	66.3	6.72	0.46	5.1

☒ EPA 601 ☒ TPH-G/BTEX Hcl
O TPH Diesel O TOG 5520
Time Sampled: 1637 / 5-6

* MW6 → inaccessible due to STACK OF C41, recycling resource cargo trailer parked over well w/ out the truck to move it.

- MW-3 → cap was totally off well casing, could have been tampered w/ rain water runoff may have gotten in.

- MW-1 → cap was on well casing w/out a seal (just set on it) could have been tampered w/

- MW-2 → DTW - 19.78'; P.T. = 0.12'; DTP = 19.66'; PPRS had many droplets in it, bailed 0.5 gall of water & only globules were present.

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD

Analytical Technologies, Inc. Corporate Offices: 5550 Morehouse Drive San Diego, CA 92121 (619) 458-9141

ATI I.D.: 504226

May 01, 1995

ALISTO ENGINEERING
1777 OAKLAND BOULEVARD, SUITE 200
WALNUT CREEK, CA 94596

Project Name: BP SITE#11117/7210 BANCROFT AVE., OAKLAND, CA
Project # : G317860/10-018-03-003

Attention: BILL HOWELL

Analytical Technologies, Inc. has received the following sample(s):

Date Received	Quantity	Matrix
April 21, 1995	8	WATER

The sample(s) were analyzed with EPA methodology or equivalent methods as specified in the enclosed analytical schedule. The symbol for "less than" indicates a value below the reportable detection limit. If any flags appear next to the analytical data in this report, please see the attached list of flag definitions.

The results of these analyses and the quality control data are enclosed. Please note that the Sample Condition Upon Receipt Checklist is included at the end of this report.

GARY STEWART
VOLATILES SUPERVISOR

ALAN J. KLEINSCHMIDT
LABORATORY MANAGER

Analytical Technologies, Inc.

SAMPLE CROSS REFERENCE

Client : ALISTO ENGINEERING
Project # : G317860/10-018-03-003
Project Name: BP SITE#11117/7210 BANCROFT AVE., OAKLAND, CA

Report Date: May 01, 1995
ATI I.D. : 504226

ATI #	Client Description	Matrix	Date Collected
1	S-1	WATER	19-APR-95
2	S-2	WATER	19-APR-95
3	S-3	WATER	19-APR-95
4	S-4	WATER	19-APR-95
5	S-5	WATER	19-APR-95
6	S-6	WATER	19-APR-95
7	S-7	WATER	19-APR-95
8	S-8	WATER	19-APR-95

---TOTALS---

Matrix	# Samples
WATER	8

ATI STANDARD DISPOSAL PRACTICE

The sample(s) from this project will be disposed of in twenty-one (21) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ANALYTICAL SCHEDULE

Client : ALISTO ENGINEERING
Project # : G317860/10-018-03-003
Project Name: BP SITE#11117/7210 BANCROFT AVE., OAKLAND, CA

ATI I.D.: 504226

Analysis	Technique/Description
MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)	GC/FLAME ION./PHOTO IONIZATION DETECTOR

GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)
Client : ALISTO ENGINEERING ATI I.D. : 504226
Project # : G317860/10-018-03-003
Project Name: BP SITE#11117/7210 BANCROFT AVE., OAKLAND, CA

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
1	S-1	WATER	19-APR-95	N/A	27-APR-95	1.00
2	S-2	WATER	19-APR-95	N/A	27-APR-95	5.00
3	S-3	WATER	19-APR-95	N/A	28-APR-95	1.00

Parameter	Units	1	2	3
BENZENE	UG/L	<0.50	170	<0.50
TOLUENE	UG/L	<0.50	8.0	<0.50
ETHYLBENZENE	UG/L	<0.50	130	<0.50
XYLENES (TOTAL)	UG/L	<1.0	27	<1.0
FUEL HYDROCARBONS	UG/L	<50	2400	<50
HYDROCARBON RANGE		C6-C12	C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE	GASOLINE
SURROGATES				
TRIFLUOROTOLUENE	%	87	120	100

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)
Client : ALISTO ENGINEERING ATI I.D. : 504226
Project # : G317860/10-018-03-003
Project Name: BP SITE#11117/7210 BANCROFT AVE., OAKLAND, CA

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
4	S-4	WATER	19-APR-95	N/A	27-APR-95	1.00
5	S-5	WATER	19-APR-95	N/A	27-APR-95	10.00
6	S-6	WATER	19-APR-95	N/A	27-APR-95	500.00

Parameter	Units	4	5	6
BENZENE	UG/L	<0.50	420	12000
TOLUENE	UG/L	<0.50	51	24000
ETHYLBENZENE	UG/L	<0.50	230	3500
XYLENES (TOTAL)	UG/L	<1.0	340	18000
FUEL HYDROCARBONS	UG/L	<50	5200	89000
HYDROCARBON RANGE		C6-C12	C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE	GASOLINE
SURROGATES				
TRIFLUOROTOLUENE	%	88	104	93

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)
Client : ALISTO ENGINEERING ATI I.D. : 504226
Project # : G317860/10-018-03-003
Project Name: BP SITE#11117/7210 BANCROFT AVE., OAKLAND, CA

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
7	S-7	WATER	19-APR-95	N/A	28-APR-95	500.00
8	S-8	WATER	19-APR-95	N/A	28-APR-95	1.00

Parameter	Units	7	8
BENZENE	UG/L	12000	<0.50
TOLUENE	UG/L	26000	<0.50
ETHYLBENZENE	UG/L	3800	<0.50
XYLENES (TOTAL)	UG/L	21000	<1.0
FUEL HYDROCARBONS	UG/L	100000	<50
HYDROCARBON RANGE		C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE
SURROGATES			
TRIFLUOROTOLUENE	%	98	87

GAS CHROMATOGRAPHY - QUALITY CONTROL

REAGENT BLANK

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
Blank I.D. : 35198
Client : ALISTO ENGINEERING
Project # : G317860/10-018-03-003
Project Name: BP SITE#11117/7210 BANCROFT AVE., OAKLAND, CA

ATI I.D. : 504226
Date Extracted: N/A
Date Analyzed : 27-APR-95
Dil. Factor : 1.00

Parameters	Units	Results
BENZENE	UG/L	<0.50
TOLUENE	UG/L	<0.50
ETHYLBENZENE	UG/L	<0.50
XYLENES (TOTAL)	UG/L	<1.0
FUEL HYDROCARBONS	UG/L	<50
HYDROCARBON RANGE		C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE
SURROGATES		
TRIFLUOROTOLUENE	%	99

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
MSMSD # : 75235
Client : ALISTO ENGINEERING

Project # : G317860/10-018-03-003
Project Name: BP SITE#11117/7210 BANCROFT AVE., OAKLAND, CA

ATI I.D. : 504226
Date Extracted: N/A
Date Analyzed : 28-APR-95
Sample Matrix : WATER
REF I.D. : 504226-03

Parameters	Units	Sample Result	Conc Spike	Spiked Sample	% Rec	Dup Spike	Dup % Rec	RPD
BENZENE	UG/L	<0.50	5.0	5.5	110	5.4	108	2
TOLUENE	UG/L	<0.50	5.0	5.4	108	5.4	108	0

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration
RPD (Relative % Difference) = (Spiked Sample Result - Duplicate Spike Result)*100/Average Result

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

BLANK SPIKE

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
Blank Spike #: 56149
Client : ALISTO ENGINEERING
Project # : G317860/10-018-03-003
Project Name : BP SITE#11117/7210 BANCROFT AVE., OAKLAND, CA

ATI I.D. : 504226
Date Extracted: N/A
Date Analyzed : 27-APR-95
Sample Matrix : WATER

Parameters	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
BENZENE	UG/L	<0.50	5.4	5.0	108
TOLUENE	UG/L	<0.50	5.6	5.0	112

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration
RPD (Relative % Difference) = (Spiked Sample - Blank Result)*100/Average Result

CHAIN OF CUSTODY

No. 058662

Page 1 of 1

CONSULTANT'S NAME: Alisto Engineering	ADDRESS: 1777 Oakland Blvd	CITY: Walnut Creek	STATE: CA	ZIP CODE: 94596
BP SITE NUMBER: 11117	BP CORNER ADDRESS/CITY: 710 Bancroft Ave, Oakland CA			CONSULTANT PROJECT NUMBER: 10-117-03-003
CONSULTANT PROJECT MANAGER: Bill Hurwell	PHONE NUMBER: (510) 295 1650	FAX NUMBER: (510) 295 1923		CONSULTANT CONTRACT NUMBER: 6317760
BP CONTACT: Scott Hooton	BP ADDRESS: Renton WA	PHONE NUMBER:		FAX NO.:
LAB CONTACT: ATI Inc	LABORATORY ADDRESS: San Diego CA	PHONE NUMBER:		FAX NO.:
SAMPLED BY (Please Print Name): Dan Cusack	SAMPLED BY (Signature): Dan Cusack	SHIPMENT DATE: 4-20-95		SHIPMENT METHOD: Courier Fedex

TAT: ☐ 24 Hours ☐ 48 Hours ☐ 1 Week ☒ Standard 2 Weeks

ANALYSIS REQUIRED

AIRBILL NUMBER: 181892075 1

SAMPLE DESCRIPTION	COLLECTION DATE / COLLECTION TIME	MATRIX SOIL/WATER	CONTAINERS NO.	CONTAINERS TYPE (VOL.)	PRESERVATIVE LAB SAMPLE #	TPH (GAS) BTEX	COMMENTS
S-1 1115	4/19/95	H2O	7	VOA	01	X	
S-2 1510					02		
S-3 1410					03		
S-4 1510					04		
S-5 1605					05		
S-6 1637					06		
S-7 —					07		
S-8 —					08		

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Dan Cusack Alisto	4/20/95	0900			
			A. Tait	4/21/95	10:15

ADDITIONAL COMMENTS: 504226

2.0°C

CLV-16722

Distribution: White - Original (with Data) Yellow - BP Pink - Lab Blue - Consultant Field Staff