BP OIL

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

December 6, 1994

Alameda County Health Care Services Agency
Attention Barney M. Chan - Hazardous Materials Specialist
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502-6577

RE: BP Oil Site No. 11109
4280 Foothill Boulevard
Oakland, CA
StID #102

Dear Mr. Chan:

Enclosed please find a report entitled Groundwater Monitoring and Sampling Report, dated November 23, 1994. You will note that Figure 2, Potentiometric Groundwater Elevation Contour Map, shows that the flow of groundwater in the southern quadrant of the site is towards extraction wells MW-5 and MW-3.

You should be aware that groundwater elevations reported for the extraction wells are based on the top of pump elevations. The small-diameter PVC "drop tubes" that were installed in the recovery wells to facilitate groundwater elevation measurements terminate near the top of the pump. The actual pumping water elevations coincide with the pump intake, located more than a foot below the top of pump elevation.

Please give me a call if you have any questions or concern. My direct dial extension is (206) 251-0689.

Sincerely,

Scott T. Hooton
Environmental Resources Management

attachment

cc: site file
California Regional Water Quality Control Board, Attention Mr. Eddy So, 2101 Webster Street, Ste. 500, Oakland, CA 94612 (w/attachment)

Chevron U.S.A., Inc., Attention Mr. Mark Miller, 2410 El Camino Ramon, San Ramon, CA 94583 (w/attachment)

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11109
4280 Foothill Boulevard
Oakland, California

Project No. 10-014-03-002

Prepared for:

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

Prepared by:

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

November 23, 1994

Brady Nagle
Project Manager

Al Sevilla, P.E.
Principal

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11109
4280 Foothill Boulevard
Oakland, California

Project No. 10-014-03-001

November 23, 1994

INTRODUCTION

This report presents the results and findings of the October 7, 1994 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11109, 4280 Foothill Boulevard, 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 relative 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.

FREE PRODUCT MONITORING AND RECOVERY

Product recovery canisters and manual product bailing were used to remove liquid-phase product from MW-5. Product thicknesses for this and previous monitoring events are presented in Table 1. The volume of product removed from the well 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 a 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. 11109
4280 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-014

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	TPH-D (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TOG (ppb)	HVOC (ppb)	DO (ppm)	LAB
MW-1	01/31/90	38.19	15.41	0.00	22.78	---	---	---	---	---	---	---	---	---	---
MW-1 (c)	02/05/90	38.19	---	0.00	---	---	---	---	---	---	---	---	---	---	---
MW-2	02/05/90	41.22	21.91	0.00	19.31	1300	---	14	ND<1.0	9	13	---	---	---	SUP
MW-2	02/14/91	41.22	21.16	0.00	20.06	ND<50	ND<10000	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<5000	51 (d)	---	SUP
MW-2	05/13/91	41.22	21.32	0.00	19.90	ND<50	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	6000	0.5 (e)	---	SUP
MW-2	07/24/91	41.22	22.92	0.00	18.30	---	---	---	---	---	---	---	---	---	---
MW-2	10/03/91	41.22	24.90	0.00	16.32	ND<50	ND<50	ND<0.3	0.8	ND<0.3	ND<0.3	ND<5000	0.7 (e)	---	SUP
MW-2	10/15/91	41.22	24.10	0.00	17.12	---	---	---	---	---	---	---	---	---	---
MW-2	12/04/91	41.22	INACCESSIBLE	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	12/16/91	41.22	23.95	0.00	17.27	---	---	---	---	---	---	---	---	---	---
MW-2	01/06/92	41.22	23.30	0.00	17.92	ND<50	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<5000	ND	---	ANA
MW-2	01/22/92	41.22	23.14	0.00	18.08	---	---	---	---	---	---	---	---	---	---
MW-2	01/28/92	41.22	22.99	0.00	18.23	---	---	---	---	---	---	---	---	---	---
MW-2	02/05/92	41.22	22.63	0.00	18.59	---	---	---	---	---	---	---	---	---	---
MW-2	02/12/92	41.22	22.04	0.00	19.18	---	---	---	---	---	---	---	---	---	---
MW-2	02/17/92	41.22	20.84	0.00	20.38	---	---	---	---	---	---	---	---	---	---
MW-2	04/03/92	41.22	18.29	0.00	22.93	---	---	---	---	---	---	---	---	---	---
MW-2	04/08/92	41.22	18.86	0.00	22.36	ND<50	63	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5000	ND	---	ANA
MW-2	04/14/92	41.22	19.45	0.00	21.77	---	---	---	---	---	---	---	---	---	---
MW-2	04/29/92	41.22	20.35	0.00	20.87	---	---	---	---	---	---	---	---	---	---
MW-2	05/07/92	41.22	20.84	0.00	20.38	---	---	---	---	---	---	---	---	---	---
MW-2	07/03/92	41.22	22.34	0.00	18.88	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	ANA
MW-2	10/08/92	41.22	23.73	0.00	17.49	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	ANA
MW-2	12/31/92	41.22	21.12	0.00	20.10	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	ANA
MW-2	04/21/93	41.22	17.68	0.00	23.54	ND<50	ND<50 (f)	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5000	ND	---	PACE
MW-2	07/07/93	41.22	20.30	0.00	20.92	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	1.0 (e)	---	PACE
MW-2	09/21/93	41.22	21.93	0.00	19.29	ND<50	---	0.9	0.7	0.7	2.6	---	---	---	PACE
MW-2	12/17/93	41.22	21.48	---	19.74	---	---	---	---	---	---	---	---	---	---
MW-2	12/23/93	41.22	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	0.7	---	---	---	PACE
MW-2	04/07/94	41.22	20.25	---	20.97	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	5.9	PACE
MW-2	07/06/94	41.22	20.59	---	20.63	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	3.1	PACE
MW-2	10/07/94	41.22	22.04	---	19.18	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	2.8	PACE

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4280 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-014

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	TPH-D (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TOG (ppb)	HVOC (ppb)	DO (ppm)	LAB
MW-3	02/05/90	40.74	17.45	0.00	23.29	1400	---	15	ND<2.5	11	8	---	---	---	SUP
MW-3	02/14/91	40.74	18.52	0.00	22.22	320	---	8	ND<0.3	8	1	---	---	---	SUP
MW-3	05/13/91	40.74	19.32	0.00	21.42	640	---	13	ND<0.3	18	1	---	---	---	SUP
MW-3	07/24/91	40.74	20.69	0.00	20.05	---	---	---	---	---	---	---	---	---	---
MW-3	10/03/91	40.74	19.47	0.00	21.27	940	---	21	ND<0.3	23	2.1	---	---	---	SUP
MW-3	10/15/91	40.74	20.46	0.00	20.28	---	---	---	---	---	---	---	---	---	---
MW-3	12/04/91	40.74	18.29	0.00	22.45	---	---	---	---	---	---	---	---	---	---
MW-3	12/16/91	40.74	18.34	0.00	22.40	---	---	---	---	---	---	---	---	---	---
MW-3	01/06/92	40.74	18.50	0.00	22.24	580	---	6.1	1	6.1	7.1	---	---	---	ANA
MW-3	01/22/92	40.74	17.86	0.00	22.88	---	---	---	---	---	---	---	---	---	---
MW-3	01/28/92	40.74	15.84	0.00	24.90	---	---	---	---	---	---	---	---	---	---
MW-3	02/05/92	40.74	17.53	0.00	23.21	---	---	---	---	---	---	---	---	---	---
MW-3	02/12/92	40.74	17.15	0.00	23.59	---	---	---	---	---	---	---	---	---	---
MW-3	02/17/92	40.74	16.18	0.00	24.56	---	---	---	---	---	---	---	---	---	---
MW-3	04/03/92	40.74	14.80	0.00	25.94	---	---	---	---	---	---	---	---	---	---
MW-3	04/08/92	40.74	17.06	0.00	23.68	1100	---	30	4.6	32	11	---	---	---	ANA
MW-3	04/14/92	40.74	15.22	0.00	25.52	---	---	---	---	---	---	---	---	---	---
MW-3	04/29/92	40.74	15.90	0.00	24.84	---	---	---	---	---	---	---	---	---	---
MW-3	05/07/92	40.74	16.35	0.00	24.39	---	---	---	---	---	---	---	---	---	---
MW-3	07/03/92	40.74	17.74	0.00	23.00	1200	---	38	ND<2.5	24	ND<2.5	---	---	---	ANA
MW-3	10/08/92	40.74	19.06	0.00	21.68	1400	---	31	ND<0.5	25	13	---	---	---	ANA
MW-3	12/31/92	40.74	16.61	0.00	24.13	820	---	12	4.1	13	5.9	---	---	---	ANA
QC-1 (g)	12/31/92	40.74	---	---	---	960	---	11	3.6	10	3.8	---	---	---	ANA
MW-3	04/21/93	40.74	14.24	0.00	26.50	420	---	5.6	ND<0.5	3.9	1.4	---	---	---	PACE
QC-1 (g)	04/21/93	40.74	---	---	---	390	---	5.0	ND<0.5	3.7	1.5	---	---	---	PACE
MW-3	07/07/93	40.13 (h)	15.19	0.00	24.94	54	---	0.6	0.6	ND<0.5	ND<0.5	---	---	---	PACE
MW-3	09/21/93	40.13	16.58	0.00	23.55	540	---	7.9	0.9	4.7	2.4	---	---	---	PACE
MW-3	12/17/93	40.13	15.82	---	24.31	---	---	---	---	---	---	---	---	---	---
MW-3	12/23/93	40.13	---	---	---	500	---	9.8	1.5	3.3	2.1	---	---	---	PACE
QC-1 (g)	12/23/93	40.13	---	---	---	480	---	9.2	ND<0.5	5.4	5.3	---	---	---	PACE
MW-3	04/07/94	40.13	28.50	---	11.63	460	---	20	7.4	8.9	11	---	---	---	PACE
QC-1 (g)	04/07/94	40.13	---	---	---	460	---	20	7.7	9.0	11	---	---	---	PACE
MW-3	07/06/94	40.13	---	---	---	300	---	10	0.6	1.7	6.4	---	---	4.8	PACE
MW-3	10/07/94	40.13	27.65 (i)	---	12.48	620	---	28	ND<0.5	2.2	12	---	---	4.4	PACE

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4280 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-014

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	TPH-D (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TOG (ppb)	HVOC (ppb)	DO (ppm)	LAB
MW-4	02/05/90	40.11	20.75	0.00	19.36	620	---	ND<0.5	9	ND<0.5	10	---	---	---	SUP
MW-4	02/14/91	40.11	21.73	0.00	18.38	180	---	ND<0.3	ND<0.3	0.4	2	---	---	---	SUP
MW-4	05/13/91	40.11	18.55	0.00	21.56	72	---	0.7	ND<0.3	ND<0.3	ND<0.3	---	---	---	SUP
MW-4	07/24/91	40.11	21.31	0.00	18.80	---	---	---	---	---	---	---	---	---	---
MW-4	10/03/91	40.11	22.57	0.00	17.54	57	---	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	SUP
MW-4	10/15/91	40.11	22.88	0.00	17.23	---	---	---	---	---	---	---	---	---	---
MW-4	12/04/91	40.11	22.54	0.00	17.57	---	---	---	---	---	---	---	---	---	---
MW-4	12/16/91	40.11	22.59	0.00	17.52	---	---	---	---	---	---	---	---	---	---
MW-4	01/06/92	40.11	22.00	0.00	18.11	480	---	0.6	3.2	1.9	7.7	---	---	---	ANA
MW-4	01/22/92	40.11	21.58	0.00	18.53	---	---	---	---	---	---	---	---	---	---
MW-4	01/28/92	40.11	21.42	0.00	18.69	---	---	---	---	---	---	---	---	---	---
MW-4	02/05/92	40.11	21.10	0.00	19.01	---	---	---	---	---	---	---	---	---	---
MW-4	02/12/92	40.11	20.74	0.00	19.37	---	---	---	---	---	---	---	---	---	---
MW-4	02/17/92	40.11	19.78	0.00	20.33	---	---	---	---	---	---	---	---	---	---
MW-4	04/03/92	40.11	16.80	0.00	23.31	---	---	---	---	---	---	---	---	---	---
MW-4	04/08/92	40.11	17.13	0.00	22.98	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	ANA
MW-4	04/14/92	40.11	17.74	0.00	22.37	---	---	---	---	---	---	---	---	---	---
MW-4	04/29/92	40.11	18.56	0.00	21.55	---	---	---	---	---	---	---	---	---	---
MW-4	05/07/92	40.11	19.10	0.00	21.01	---	---	---	---	---	---	---	---	---	---
MW-4	07/03/92	40.11	20.71	0.00	19.40	ND<50	---	0.6	ND<0.5	ND<0.5	ND<0.5	---	---	---	ANA
MW-4	10/08/92	40.11	22.43	0.00	17.68	270	---	ND<0.5	2.1	2.5	3.2	---	---	---	ANA
MW-4	12/31/92	40.11	19.58	0.00	20.53	150	---	ND<0.5	ND<0.5	ND<0.5	1.3	---	---	---	ANA
MW-4	04/21/93	40.11	17.79	0.00	22.32	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-4	07/07/93	40.11	18.44	0.00	21.67	160	---	1.2	5.4	3.8	19	---	---	---	PACE
MW-4	09/21/93	40.11	20.14	0.00	19.97	71	---	ND<0.5	1.9	ND<0.5	2.1	---	---	---	PACE
MW-4	12/17/93	40.11	19.80	---	20.31	---	---	---	---	---	---	---	---	---	---
MW-4	12/23/93	40.11	---	---	---	ND<50	---	3.1	1.6	0.8	3.8	---	---	---	PACE
MW-4	04/07/94	40.11	19.12	---	20.99	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	6.6	PACE
MW-4	07/06/94	40.11	19.90	---	20.21	62	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	4.1	PACE
MW-4	10/07/94	40.11	20.07	---	20.04	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	3.6	PACE
MW-5	10/03/91	39.55	18.08	0.00	21.47	79000	---	13000	7400	1400	6200	---	---	---	SUP
MW-5	10/15/91	39.55	18.55	0.00	21.00	---	---	---	---	---	---	---	---	---	---
MW-5	12/04/91	39.55	18.44	0.13	21.21	---	---	---	---	---	---	---	---	---	---
MW-5	12/16/91	39.55	18.66	0.01	20.90	---	---	---	---	---	---	---	---	---	---
MW-5	01/06/92	39.55	19.12	0.11	20.51	---	---	---	---	---	---	---	---	---	---
MW-5	01/22/92	39.55	14.59	0.00	24.96	---	---	---	---	---	---	---	---	---	---
MW-5	01/28/92	39.55	15.25	0.00	24.30	---	---	---	---	---	---	---	---	---	---
MW-5	02/05/92	39.55	15.58	SHEEN	23.97	---	---	---	---	---	---	---	---	---	---
MW-5	02/12/92	39.55	15.54	0.01	24.02	---	---	---	---	---	---	---	---	---	---
MW-5	02/17/92	39.55	13.98	SHEEN	25.57	---	---	---	---	---	---	---	---	---	---
MW-5	04/03/92	39.55	13.63	0.04	25.95	---	---	---	---	---	---	---	---	---	---
MW-5	04/08/92	39.55	13.17	0.01	26.39	---	---	---	---	---	---	---	---	---	---
MW-5	04/14/92	39.55	13.45	0.01	26.11	---	---	---	---	---	---	---	---	---	---
MW-5	04/29/92	39.55	13.75	0.07	25.85	---	---	---	---	---	---	---	---	---	---
MW-5	05/07/92	39.55	16.15	0.04	23.43	---	---	---	---	---	---	---	---	---	---
MW-5	07/03/92	39.55	17.67	0.08	21.94	---	---	---	---	---	---	---	---	---	---
MW-5	09/01/92	39.55	17.83	0.50	22.10	---	---	---	---	---	---	---	---	---	---
MW-5	10/08/92	39.55	17.86	0.92	22.38	---	---	---	---	---	---	---	---	---	---
MW-5	12/31/92	39.55	15.20	SHEEN	24.35	---	---	---	---	---	---	---	---	---	---
MW-5	04/21/93	39.55	12.64	0.02	26.93	---	---	---	---	---	---	---	---	---	---
MW-5	07/07/93	39.14 (h)	12.68	0.82	27.08	---	---	---	---	---	---	---	---	---	---
MW-5	09/21/93	39.14	14.35	SHEEN	24.79	---	---	---	---	---	---	---	---	---	---
MW-5	12/17/93	39.14	12.61	0.41	26.84	---	---	---	---	---	---	---	---	---	---
MW-5	04/07/94	39.14	30.00	---	9.14	66000	---	3000	1700	250	6800	---	---	---	PACE
MW-5	07/06/94	39.14	---	---	---	29000	---	1900	330	63	2700	---	---	---	PACE
MW-5	10/07/94	39.14	---	---	---	250000	---	2600	660	830	5200	---	---	4.2	PACE
QC-1 (g)	10/07/94	39.14	28.70 (i)	---	10.44	45000	---	2900	540	260	2600	---	---	---	PACE

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4280 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-014

WELL ID		DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)		DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	TPH-D (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TOG (ppb)	HVOC (ppb)	DO (ppm)	LAB
MW-6		10/03/91	41.59		20.73	0.00	20.86	ND<50	---	0.7	0.8	ND<0.3	1.3	---	---	---	SUP
MW-6		10/15/91	41.59		21.20	0.00	20.39	---	---	---	---	---	---	---	---	---	---
MW-6		12/04/91	41.59		21.26	0.00	20.33	---	---	---	---	---	---	---	---	---	---
MW-6		12/16/91	41.59		21.12	0.00	20.47	---	---	---	---	---	---	---	---	---	---
MW-6		01/06/92	41.59		20.29	0.00	21.30	ND<50	---	ND<0.5	ND<0.5	ND<0.5	1.6	---	---	---	ANA
MW-6		01/22/92	41.59		20.12	0.00	21.47	---	---	---	---	---	---	---	---	---	---
MW-6		01/28/92	41.59		20.20	0.00	21.39	---	---	---	---	---	---	---	---	---	---
MW-6		02/05/92	41.59		20.09	0.00	21.50	---	---	---	---	---	---	---	---	---	---
MW-6		02/12/92	41.59		19.15	0.00	22.44	---	---	---	---	---	---	---	---	---	---
MW-6		02/17/92	41.59		18.02	0.00	23.57	---	---	---	---	---	---	---	---	---	---
MW-6		04/03/92	41.59		16.62	0.00	24.97	---	---	---	---	---	---	---	---	---	---
MW-6		04/08/92	41.59		17.06	0.00	24.53	ND<50	---	0.6	ND<0.5	0.8	ND<0.5	---	---	---	ANA
MW-6		04/14/92	41.59		17.23	0.00	24.36	---	---	---	---	---	---	---	---	---	---
MW-6		04/29/92	41.59		18.12	0.00	23.47	---	---	---	---	---	---	---	---	---	---
MW-6		05/07/92	41.59		18.52	0.00	23.07	---	---	---	---	---	---	---	---	---	---
MW-6		07/03/92	41.59		19.71	0.00	21.88	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	ANA
MW-6		10/08/92	41.59		21.22	0.00	20.37	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	ANA
QC-1	(g)	10/08/92	41.59		21.22	0.00	20.37	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	ANA
MW-6		12/31/92	41.59		21.33	0.00	20.26	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	ANA
MW-6		04/21/93	41.59		16.45	0.00	25.14	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-6		07/07/93	41.59		18.68	0.00	22.91	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-6		09/21/93	41.59		19.64	0.00	21.95	ND<50	---	ND<0.5	ND<0.5	ND<0.5	1.6	---	---	---	PACE
MW-6		12/17/93	41.59		21.08	---	20.51	---	---	---	---	---	---	---	---	---	---
MW-6		12/23/93	41.59		---	---	---	ND<50	---	ND<0.5	0.5	ND<0.5	0.6	---	---	---	PACE
MW-6		04/07/94	41.59		21.27	---	20.32	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	6.1	PACE
MW-6		07/06/94	41.59		19.81	---	21.78	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	4.0	PACE
QC-1	(g)	07/06/94	41.59		---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-6		10/07/94	41.59		21.25	---	20.34	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	3.5	PACE
MW-7		10/03/91	40.64		14.93	0.00	25.71	360	---	62	13	3.4	20	---	---	---	SUP
MW-7		10/15/91	40.64		15.16	0.00	25.48	---	---	---	---	---	---	---	---	---	---
MW-7		12/04/91	40.64		15.41	0.00	25.23	---	---	---	---	---	---	---	---	---	---
MW-7		12/16/91	40.64		15.21	0.00	25.43	---	---	---	---	---	---	---	---	---	---
MW-7		01/06/92	40.64		14.56	0.00	26.08	1100	---	170	ND<0.5	24	23	---	---	---	ANA
MW-7		01/22/92	40.64		14.63	0.00	26.01	---	---	---	---	---	---	---	---	---	---
MW-7		01/28/92	40.64		14.73	0.00	25.91	---	---	---	---	---	---	---	---	---	---
MW-7		02/05/92	40.64		14.58	0.00	26.06	---	---	---	---	---	---	---	---	---	---
MW-7		02/12/92	40.64		13.94	0.00	26.70	---	---	---	---	---	---	---	---	---	---
MW-7		02/17/92	40.64		13.10	0.00	27.54	---	---	---	---	---	---	---	---	---	---
MW-7		04/03/92	40.64		12.66	0.00	27.98	---	---	---	---	---	---	---	---	---	---
MW-7		04/08/92	40.64		12.77	0.00	27.87	750	---	150	ND<0.5	23	9.9	---	---	---	ANA
MW-7		04/14/92	40.64		13.02	0.00	27.62	---	---	---	---	---	---	---	---	---	---
MW-7		04/29/92	40.64		13.59	0.00	27.05	---	---	---	---	---	---	---	---	---	---
MW-7		05/07/92	40.64		13.95	0.00	26.69	---	---	---	---	---	---	---	---	---	---
MW-7		07/03/92	40.64		14.73	0.00	25.91	660	---	210	ND<2.5	33	8	---	---	---	ANA
MW-7		10/08/92	40.64		15.75	0.00	24.89	320	---	49	1.4	13	6.2	---	---	---	ANA
MW-7		12/31/92	40.64		13.57	0.00	27.07	900	---	100	ND<2.5	28	4.3	---	---	---	ANA
MW-7		04/21/93	40.64		14.56	0.00	26.08	510	---	83	1.2	10	5.8	---	---	---	PACE
MW-7		07/07/93	40.32	(h)	13.40	0.00	26.92	1100	---	160	2.0	27	4.0	---	---	---	PACE
QC-1	(g)	07/07/93	40.32		---	---	---	1100	---	170	1.9	29	2.8	---	---	---	PACE
MW-7		09/21/93	40.32		14.40	0.00	25.92	690	---	150	3.1	26	5.7	---	---	---	PACE
QC-1	(g)	09/21/93	40.32		---	---	---	640	---	140	1.7	23	2.4	---	---	---	PACE
MW-7		12/17/93	40.32		13.65	---	26.67	---	---	---	---	---	---	---	---	---	---
MW-7		12/23/93	40.32		---	---	---	250	---	64	1.2	9.0	1.8	---	---	---	PACE
MW-7		04/07/94	40.32		30.62	---	9.70	140	---	32	1.4	ND<0.5	ND<0.5	---	---	---	PACE
MW-7		07/06/94	40.32		16.88	---	23.44	410	---	94	1.3	10	3.5	---	---	4.4	PACE
MW-7		10/07/94	40.32		25.59	---	14.73	ND<50	---	9.2	ND<0.5	ND<0.5	ND<0.5	---	---	4.9	PACE

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11109
4260 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-014

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	TPH-D (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TOG (ppb)	HVOC (ppb)	DO (ppm)	LAB
MW-8	10/03/91	38.18	22.37	0.00	15.81	ND<50	—	ND<0.3	0.6	ND<0.3	0.9	—	—	—	SUP
MW-8	10/15/91	38.18	22.70	0.00	15.48	—	—	—	—	—	—	—	—	—	—
MW-8	12/04/91	38.18	22.44	0.00	15.74	—	—	—	—	—	—	—	—	—	—
MW-8	12/16/91	38.18	22.47	0.00	15.71	—	—	—	—	—	—	—	—	—	—
MW-8	01/06/92	38.18	21.94	0.00	16.24	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	—	ANA
MW-8	01/22/92	38.18	21.44	0.00	16.74	—	—	—	—	—	—	—	—	—	—
MW-8	01/28/92	38.18	21.20	0.00	16.98	—	—	—	—	—	—	—	—	—	—
MW-8	02/05/92	38.18	20.88	0.00	17.30	—	—	—	—	—	—	—	—	—	—
MW-8	02/12/92	38.18	20.54	0.00	17.64	—	—	—	—	—	—	—	—	—	—
MW-8	02/17/92	38.18	19.99	0.00	18.19	—	—	—	—	—	—	—	—	—	—
MW-8	04/03/92	38.18	16.75	0.00	21.43	—	—	—	—	—	—	—	—	—	—
MW-8	04/08/92	38.18	16.57	0.00	21.61	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	—	ANA
MW-8	04/14/92	38.18	INACCESSIBLE	—	—	—	—	—	—	—	—	—	—	—	—
MW-8	04/29/92	38.18	18.61	0.00	19.57	—	—	—	—	—	—	—	—	—	—
MW-8	05/07/92	38.18	18.41	0.00	19.77	—	—	—	—	—	—	—	—	—	—
MW-8	07/03/92	38.18	20.35	0.00	17.83	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	—	ANA
MW-8 (j)	10/08/92	38.18	21.74	0.00	16.44	—	—	—	—	—	—	—	—	—	—
MW-8	12/31/92	38.18	19.09	0.00	19.09	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	—	ANA
MW-8	04/21/93	38.18	18.92	0.00	19.26	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	—	PACE
MW-8	07/07/93	38.18	17.76	0.00	20.42	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	—	PACE
MW-8	09/21/93	38.18	19.71	0.00	18.47	ND<50	—	2.9	2.2	2.2	7.1	—	—	—	PACE
MW-8	12/17/93	38.18	21.33	—	16.85	—	—	—	—	—	—	—	—	—	—
MW-8	12/23/93	38.18	—	—	—	ND<50	—	ND<0.5	ND<0.5	ND<0.5	0.6	—	—	—	PACE
MW-8	04/07/94	38.18	21.51	—	16.67	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	6.6	PACE
MW-8	07/06/94	38.18	17.41	—	20.77	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	4.4	PACE
MW-8	10/07/94	38.18	19.20	—	18.98	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	3.7	PACE
MW-9	10/03/91	41.25	14.12	0.00	27.13	ND<50	—	ND<0.3	0.4	ND<0.3	ND<0.3	—	—	—	SUP
MW-9	10/15/91	41.25	14.27	0.00	26.98	—	—	—	—	—	—	—	—	—	—
MW-9	12/04/91	41.25	13.84	0.00	27.41	—	—	—	—	—	—	—	—	—	—
MW-9	12/16/91	41.25	14.18	0.00	27.07	—	—	—	—	—	—	—	—	—	—
MW-9	01/06/92	41.25	13.42	0.00	27.83	ND<50	—	ND<0.5	ND<0.5	ND<0.5	0.9	—	—	—	ANA
MW-9	01/22/92	41.25	13.75	0.00	27.50	—	—	—	—	—	—	—	—	—	—
MW-9	01/28/92	41.25	14.76	0.00	26.49	—	—	—	—	—	—	—	—	—	—
MW-9	02/05/92	41.25	13.38	0.00	27.87	—	—	—	—	—	—	—	—	—	—
MW-9	02/12/92	41.25	11.86	0.00	29.39	—	—	—	—	—	—	—	—	—	—
MW-9	02/17/92	41.25	10.78	0.00	30.47	—	—	—	—	—	—	—	—	—	—
MW-9	04/03/92	41.25	11.63	0.00	29.62	—	—	—	—	—	—	—	—	—	—
MW-9	04/08/92	41.25	12.25	0.00	29.00	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	—	ANA
MW-9	04/14/92	41.25	12.32	0.00	28.93	—	—	—	—	—	—	—	—	—	—
MW-9	04/29/92	41.25	13.07	0.00	28.18	—	—	—	—	—	—	—	—	—	—
MW-9	05/07/92	41.25	14.43	0.00	26.82	—	—	—	—	—	—	—	—	—	—
MW-9	07/03/92	41.25	13.85	0.00	27.40	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	—	ANA
MW-9	10/08/92	41.25	14.89	0.00	26.36	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	—	ANA
MW-9	12/31/92	41.25	11.90	0.00	29.35	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	—	ANA
MW-9	04/21/93	41.25	13.68	0.00	27.57	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	—	PACE
MW-9	07/07/93	41.25	13.12	0.00	28.13	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	—	PACE
MW-9	09/21/93	41.25	14.00	0.00	27.25	ND<50	—	ND<0.5	ND<0.5	ND<0.5	0.9	—	—	—	PACE
MW-9	12/17/93	41.25	12.98	—	28.27	—	—	—	—	—	—	—	—	—	—
MW-9	12/23/93	41.25	—	—	—	ND<50	—	ND<0.5	ND<0.5	ND<0.5	0.9	—	—	—	PACE
MW-9	04/07/94	41.25	13.24	—	28.01	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	4.7	PACE
MW-9	07/06/94	41.25	13.77	—	27.48	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	3.9	PACE
MW-9	10/07/94	41.25	14.60	—	26.65	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	3.0	PACE

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11109
4280 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-014

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ppb)	TPH-D (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	TOG (ppb)	HVOC (ppb)	DO (ppm)	LAB
QC-2 (k)	10/08/92	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	ANA
QC-2 (k)	12/31/92	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	ANA
QC-2 (k)	04/21/93	---	---	---	---	---	---	---	---	---	---	---	ND	---	PACE
QC-2 (k)	07/07/93	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	0.6	---	---	---	PACE
QC-2 (k)	09/21/93	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (k)	12/23/93	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (k)	04/07/94	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (k)	07/06/94	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (k)	10/07/94	---	---	---	---	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
TOG	Total oil and grease
HVOC	Halogenated volatile organic compounds
DO	Dissolved oxygen
ppb	Parts per billion
ppm	Parts per million
---	Not analyzed/measured/applicable
ND	Not detected above reported detection limit
SUP	Superior Analytical Laboratory
ANA	Anametrix, Inc.
PACE	Pace, Inc.

NOTES:

(a) Top of casing elevations surveyed relative to the NGVD (1929) in feet above mean sea level.

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

(c) Well destroyed during tank removal in November 1990.

(d) Methylene chloride.

(e) 1,2-Dichloroethane.

(f) Sample collected from MW-2 for TPH-D analysis received in laboratory 7 days after collected; sample exceeded EPA recommended holding time for TPH-D on a water matrix.

(g) Blind duplicate.

(h) Top of casing lowered.

(i) Depth to top of pump.

(j) Not sampled due to abandoned vehicle parked over well.

(k) Travel blank.

E:\00\10-014\014-3-2.WQ2

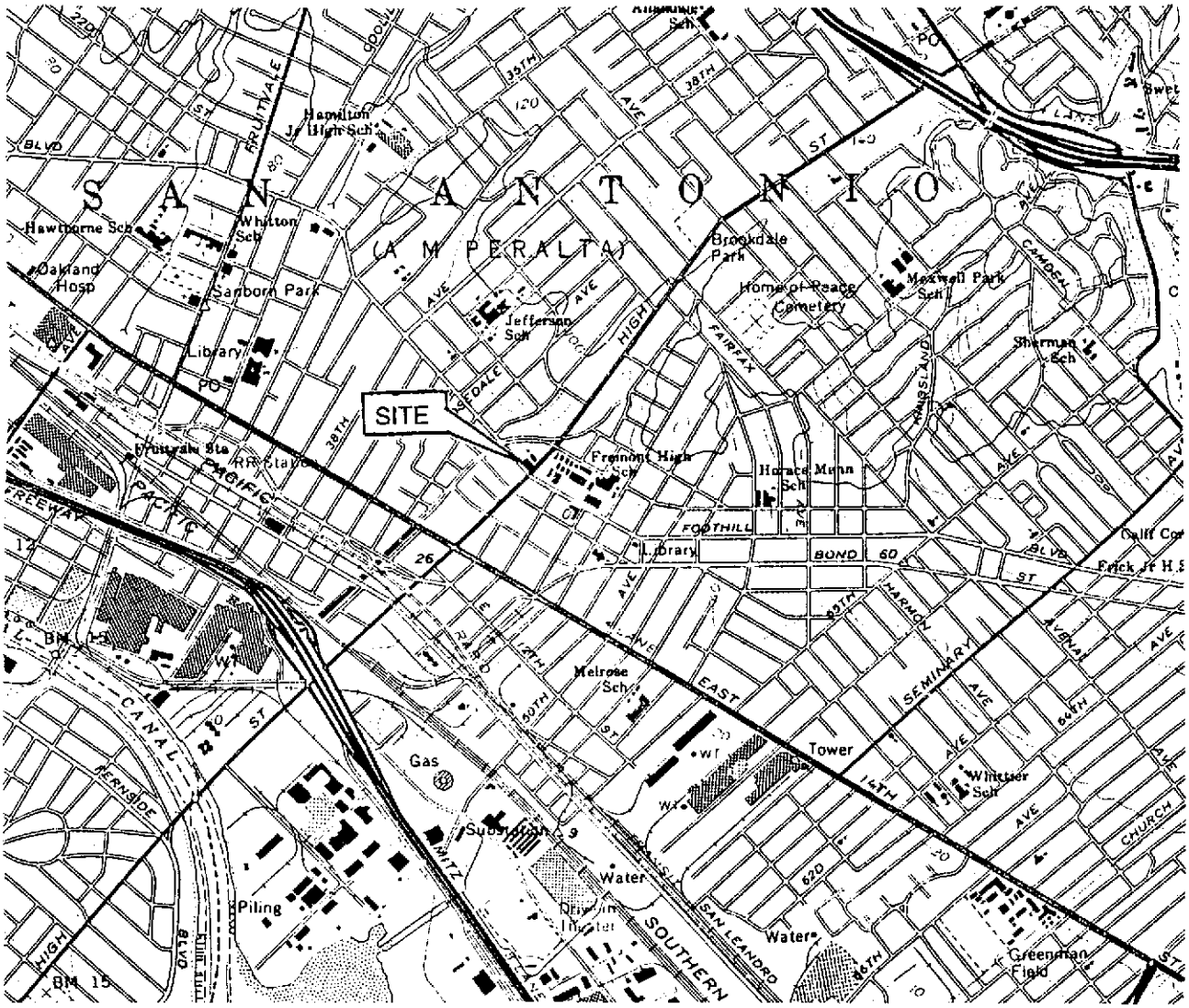
TABLE 2
PRODUCT REMOVAL STATUS

BP OIL COMPANY SERVICE STATION NO. 11109
4270 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-014

WELL ID	DATE	PRODUCT REMOVED (Gallons)	PRODUCT REMOVED CUMULATIVE (Gallons)
MW-5	11/05/92	0.5	0.5
	11/10/92	0.5	1.0
	11/24/92	0.1	1.1
	02/25/93	<0.1	1.1
	03/18/93	0.1	1.2
	04/13/93	<0.1	1.2
	04/23/93	13.0	14.2
	05/24/93	0.1	14.3
	10/14/93	0.3	14.6
	11/10/93	0.4	15.0
	12/23/93 *	0.4	15.4

* No measureable product thickness observed since Decemeber 23, 1993.



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

N

0 1000' 2000'

FIGURE 1

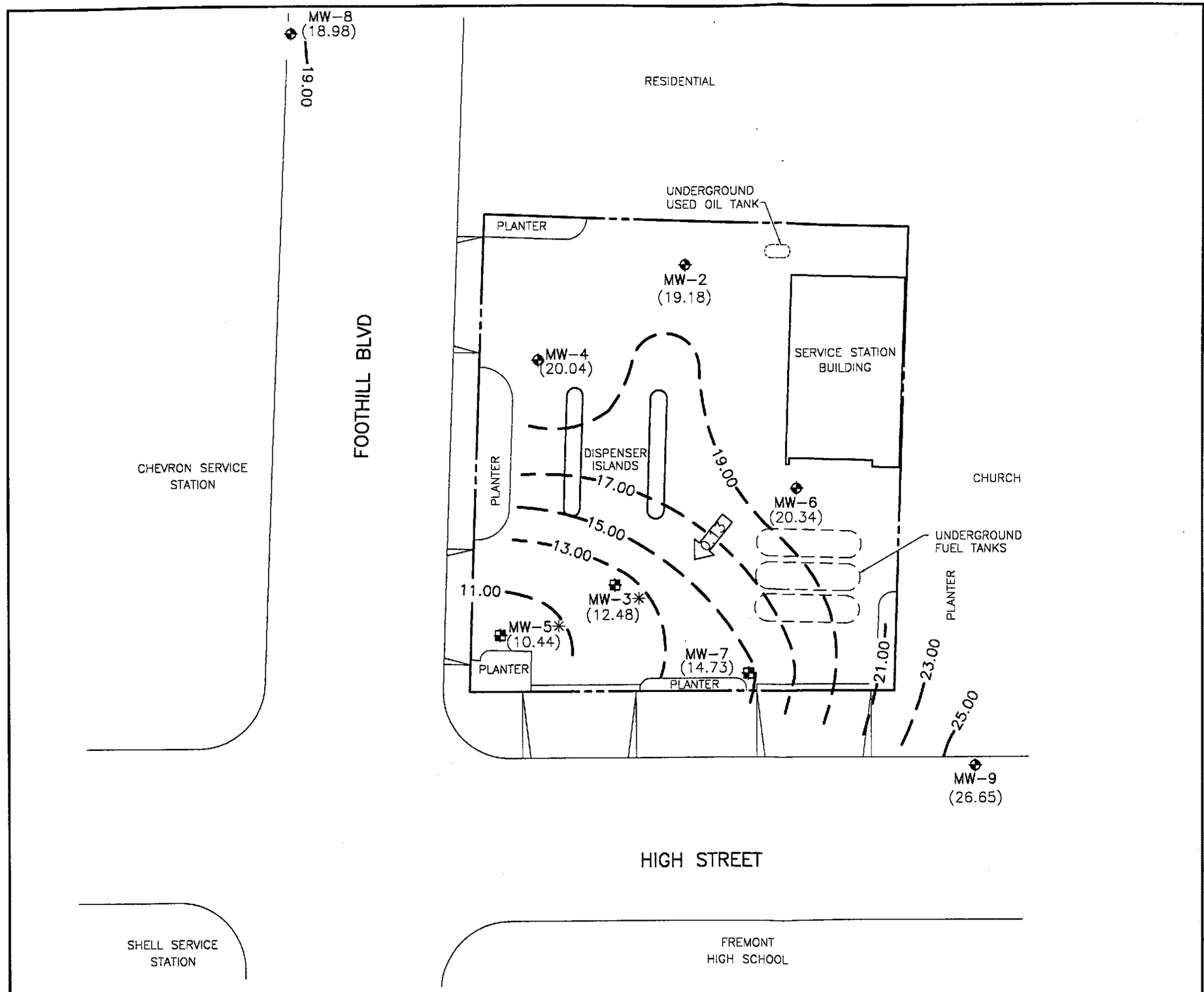
SITE VICINITY MAP

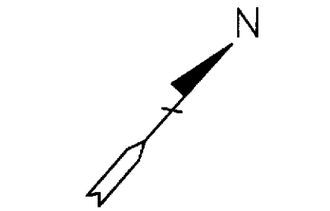
BP OIL SERVICE STATION NO. 11109
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

PROJECT NO. 10-014

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

100148---.DWG 5-26-93 RKW 1=1





LEGEND

- GROUNDWATER MONITORING WELL
- GROUNDWATER RECOVERY WELL
- (18.98) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 19.00 GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL–2.00 FEET)
- 0.13 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT
- * GROUNDWATER ELEVATION CALCULATED USING DEPTH TO TOP OF PUMP

FIGURE 2

POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP

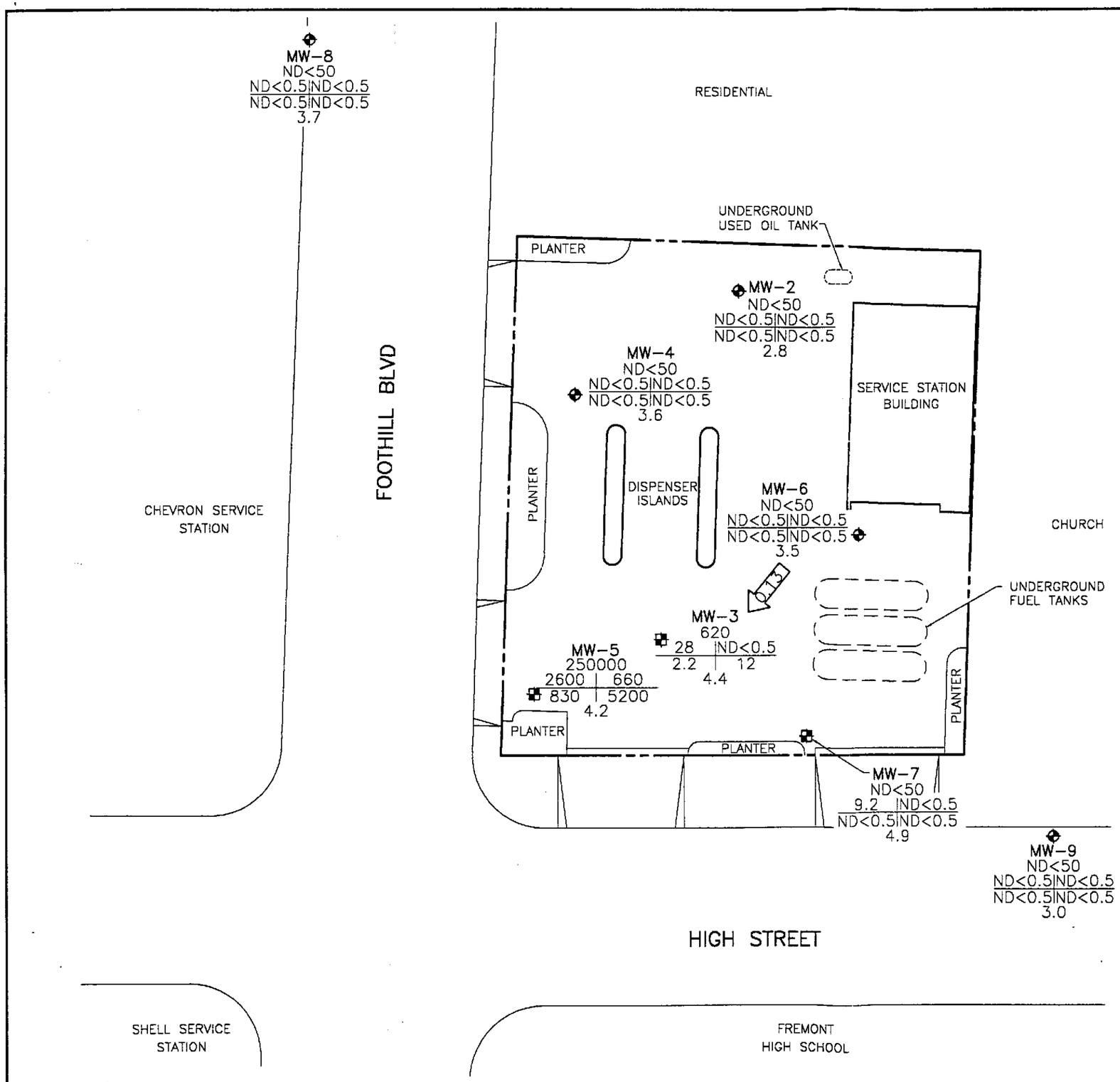
OCTOBER 7, 1994

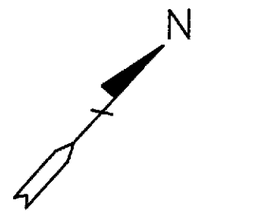
BP OIL SERVICE STATION NO. 11109
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

PROJECT NO. 10–014

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10010-1.DWG 11-23-94 RKW 1-30





LEGEND

◆	GROUNDWATER MONITORING WELL
■	GROUNDWATER RECOVERY WELL
TPH-G / B | T / E | X / DO	CONCENTRATION OF CONSTITUENTS IN PARTS PER BILLION, 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
◁ 0.12	CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 3

CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER

OCTOBER 7, 1994

BP OIL SERVICE STATION NO. 11109
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

PROJECT NO. 10-014

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10014E-L.DWG 11-23-94 RNW 1"=30

APPENDIX A

WATER SAMPLING FIELD SURVEY FORMS

ALISTO ENGINEERING GROUP
GROUNDWATER MONITORING

Client: BP 03-002
Alisto Project No: 10-014 - ~~01-0011~~
Service Station No: 1105

Date: 10/7/94
Field Personnel: DC
Site Address: Foothill blvd, Oakland CA

FIELD ACTIVITY:

✓ Groundwater Monitoring
✓ Groundwater Sampling
___ Well Development

QUALITY CONTROL SAMPLES:

MW5 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 time monitored
MW8	2"	1	21.74	19.20			1131 /S-1
MW9	2"	2	29.31	14.60			1135 /S-2
MW6	4"	3	34.28	21.25			1139 /S-3
MW2	2"	4	30.10	22.04			1143 /S-4
MW4	4"	5	34.28	20.07			1146 /S-5
** MW3 ~~MW7~~	4"	6	31.80	—			1150 /S-6
MW7 ~~MW3~~	6"	7	33.48	25.59			1155 /S-7
** MW5	4"	8	Wm	—			1200 /S-8

Notes:

* System operating, purge water into system
** could not register DTW reading out of MW3, and MW5

FORM: FS2/121592

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: 10/7/94 Project No. 10-014-04-001
Day: Fri Station No. 11109
Weather: Sunny Address Foothill Blvd, Oakland CA
SAMPLER: DC

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp °F	pH	E.C.	D.O.	
MW8	19.20	2"	OK	Φ	Φ	.5	1313	70.2	7.35	0.61	4.0	O EPA 601 ☒ TPH-G/BTEX HCL O TPH Diesel O TOG 5520
Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge = PurgeVol.						1	1314	68.7	7.29	0.58		
21.74 - 19.20 = 2.54 x .16 = 0.41 x 3 = 1.22						1.25	1315	68.2	7.22	0.58	3.7	
Purge Method: OSurface Pump ODisp.Tube OWinch ☒Disp. Bailer(s) OSys Port												Time Sampled
Comments: S-1												S-1 / 1319

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp °F	pH	E.C.	D.O.	
MW9	14.60	2"	OK	Φ	Φ	2.5	1340	74.6	6.97	0.64	3.2	O EPA 601 ☒ TPH-G/BTEX HCL O TPH Diesel O TOG 5520
Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge = PurgeVol.						5	1345	73.4	6.89	0.63		
29.31 - 14.60 = 14.71 x .16 = 2.35 x 3 = 7.06						7.25	1351	72.8	6.83	0.63	3.0	
Purge Method: OSurface Pump ODisp.Tube OWinch ☒Disp. Bailer(s) OSys Port												Time Sampled
Comments: S-2												S-2 / 1355

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp °F	pH	E.C.	D.O.	
MW6	21.25	4"	OK	Φ	Φ	8	1420	73.9	6.96	0.80	3.2	O EPA 601 ☒ TPH-G/BTEX HCL O TPH Diesel O TOG 5520
Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge = PurgeVol.						16	1427	71.0	6.81	0.76		
34.28 - 21.25 = 13.03 x .65 = 8.47 x 3 = 25.41						25.5	1436	70.5	6.76	0.76	3.5	
Purge Method: OSurface Pump ODisp.Tube OWinch ☒Disp. Bailer(s) OSys Port												Time Sampled
Comments: S-3												S-3 / 1440

Well ID	Depth to Water	Diam	(Cap/Lock)	Product Depth	Thickness	Gal.	Time	Temp °F	pH	E.C.	D.O.	
MW2	22.04	2"	replace	Φ	Φ	1.5	1455	73.2	6.87	0.78	2.8	O EPA 601 ☒ TPH-G/BTEX HCL O TPH Diesel O TOG 5520
Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge = PurgeVol.						3	1458	70.5	6.84	0.76		
30.10 - 22.04 = 8.06 x ~~.08~~ .16 = ~~.64~~ 1.29 x 3 = 3.87						4	1502	69.9	6.81	0.75	2.7	
Purge Method: OSurface Pump ODisp.Tube OWinch ☒Disp. Bailer(s) OSys Port												Time Sampled
Comments: S-4												1505 / S-4

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp °F	pH	E.C.	D.O.	
MW4	20.07	4"	OK	Φ	Φ	9	1515	73.3	7.08	0.69	3.6	O EPA 601 O TPH-G/BTEX O TPH Diesel O TOG 5520
Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge = PurgeVol.						18	dry	–	–	–		
34.28 - 20.07 = 14.21 x .65 = 9.24 x 3 = 27.71						28						
Purge Method: OSurface Pump ODisp.Tube OWinch ☒Disp. Bailer(s) OSys Port												Time Sampled
Comments: S-5 dry @ 11 galls; Sampled when recovered												1530 / S-5

PAGE 1 OF 2

[Ice Donated]

O2 meter reading 1.2
time 1210
press 754

[Hydac pH meter]
time 1205
temp 86°

4
-7

ALISTO

Field Report / Sampling Data Sheet

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

⊗ Groundwater Sampling

Date: 10/7/94 Project No. 10-0141-04-001
Day: Fri Station No. 11109
Weather: Sunny Address Foothill Blvd, Oakland CA
SAMPLER: DC

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp °F	pH	E.C.	D.O.	
MW3	—	4"	OK	∅	∅	initial	1235	79.4	6.45	1.19	4.4	O EPA 601 ___
Total Depth - Water Level =	x Well Vol. Factor =	x#vol. to Purge =	PurgeVol.									⊗ TPH-G/BTEX HCl
31.80												O TPH Diesel ___
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s) ⊗Sys Port												O TOG 5520 ___
Comments: Could not register DTW reading (5.6)												Time Sampled 1240
Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp °F	pH	E.C.	D.O.	
MW7	25.59	6"	OK	∅	∅	initial	1245	74.4	6.99	0.67	4.9	O EPA 601 ___
Total Depth - Water Level =	x Well Vol. Factor =	x#vol. to Purge =	PurgeVol.									⊗ TPH-G/BTEX HCl
33.48												O TPH Diesel ___
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s) ⊗Sys Port												O TOG 5520 ___
Comments: 5.7												Time Sampled 1247
Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp °F	pH	E.C.	D.O.	
MW5	—	4"	OK	∅	∅	initial	1305	74.9	6.92	0.77	4.2	O EPA 601 ___
Total Depth - Water Level =	x Well Vol. Factor =	x#vol. to Purge =	PurgeVol.									⊗ TPH-G/BTEX HCl
NM												O TPH Diesel ___
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s) ⊗Sys Port												O TOG 5520 ___
Comments: Couldn't register DTW reading 5.8												Time Sampled 1310

QC-1 from MW-5 (5.9 sample I.D.)

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD

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THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

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

October 21, 1994
PACE Project Number: 441010509

Attn: Mr. Bill Howell

Client Reference: BP Site #11109/10-014-04-001

PACE Sample Number:			70 0420946	
Date Collected:			10/07/94	
Time Collected:			13:19	
Date Received:			10/10/94	
Client Sample ID:			S-1	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	10/13/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	10/13/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	10/13/94
Benzene	ug/L	0.5	ND	10/13/94
Toluene	ug/L	0.5	ND	10/13/94
Ethylbenzene	ug/L	0.5	ND	10/13/94
Xylenes, Total	ug/L	0.5	ND	10/13/94

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REPORT OF LABORATORY ANALYSIS

Mr. Bill Howell
Page 2

October 21, 1994
PACE Project Number: 441010509

Client Reference: BP Site #11109/10-014-04-001

PACE Sample Number:			70 0420954	
Date Collected:			10/07/94	
Time Collected:			13:55	
Date Received:			10/10/94	
Client Sample ID:			S-2	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	10/13/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	10/13/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	10/13/94
Benzene	ug/L	0.5	ND	10/13/94
Toluene	ug/L	0.5	ND	10/13/94
Ethylbenzene	ug/L	0.5	ND	10/13/94
Xylenes, Total	ug/L	0.5	ND	10/13/94

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Mr. Bill Howell
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October 21, 1994
PACE Project Number: 441010509

Client Reference: BP Site #11109/10-014-04-001

PACE Sample Number:			70 0420962	
Date Collected:			10/07/94	
Time Collected:			14:40	
Date Received:			10/10/94	
Client Sample ID:			S-3	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	10/13/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	10/13/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	10/13/94
Benzene	ug/L	0.5	ND	10/13/94
Toluene	ug/L	0.5	ND	10/13/94
Ethylbenzene	ug/L	0.5	ND	10/13/94
Xylenes, Total	ug/L	0.5	ND	10/13/94

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October 21, 1994
PACE Project Number: 441010509

Client Reference: BP Site #11109/10-014-04-001

PACE Sample Number:			70 0420970	
Date Collected:			10/07/94	
Time Collected:			15:05	
Date Received:			10/10/94	
Client Sample ID:			S-4	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	10/13/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	10/13/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	10/13/94
Benzene	ug/L	0.5	ND	10/13/94
Toluene	ug/L	0.5	ND	10/13/94
Ethylbenzene	ug/L	0.5	ND	10/13/94
Xylenes, Total	ug/L	0.5	ND	10/13/94

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October 21, 1994
PACE Project Number: 441010509

Client Reference: BP Site #11109/10-014-04-001

PACE Sample Number:			70 0420989	
Date Collected:			10/07/94	
Time Collected:			15:30	
Date Received:			10/10/94	
Client Sample ID:			S-5	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	10/13/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	10/13/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	10/13/94
Benzene	ug/L	0.5	ND	10/13/94
Toluene	ug/L	0.5	ND	10/13/94
Ethylbenzene	ug/L	0.5	ND	10/13/94
Xylenes, Total	ug/L	0.5	ND	10/13/94

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REPORT OF LABORATORY ANALYSIS

October 21, 1994
PACE Project Number: 441010509

Client Reference: BP Site #11109/10-014-04-001

PACE Sample Number:			70 0420997	
Date Collected:			10/07/94	
Time Collected:			12:40	
Date Received:			10/10/94	
Client Sample ID:			S-6	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	10/13/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	620	10/13/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	10/13/94
Benzene	ug/L	0.5	28	10/13/94
Toluene	ug/L	0.5	ND	10/13/94
Ethylbenzene	ug/L	0.5	2.2	10/13/94
Xylenes, Total	ug/L	0.5	12	10/13/94

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REPORT OF LABORATORY ANALYSIS

Mr. Bill Howell
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October 21, 1994
PACE Project Number: 441010509

Client Reference: BP Site #11109/10-014-04-001

PACE Sample Number:			70 0421004	
Date Collected:			10/07/94	
Time Collected:			12:47	
Date Received:			10/10/94	
Client Sample ID:			S-7	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	10/13/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	10/13/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	10/13/94
Benzene	ug/L	0.5	9.2	10/13/94
Toluene	ug/L	0.5	ND	10/13/94
Ethylbenzene	ug/L	0.5	ND	10/13/94
Xylenes, Total	ug/L	0.5	ND	10/13/94

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REPORT OF LABORATORY ANALYSIS

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October 21, 1994
PACE Project Number: 441010509

Client Reference: BP Site #11109/10-014-04-001

PACE Sample Number:			70 0421012	
Date Collected:			10/07/94	
Time Collected:			13:10	
Date Received:			10/10/94	
Client Sample ID:			S-8	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	10/17/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	5000	250000	10/17/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	10/17/94
Benzene	ug/L	50	2600	10/17/94
Toluene	ug/L	50	660	10/17/94
Ethylbenzene	ug/L	50	830	10/17/94
Xylenes, Total	ug/L	50	5200	10/17/94

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October 21, 1994
PACE Project Number: 441010509

Client Reference: BP Site #11109/10-014-04-001

PACE Sample Number:			70 0421020	
Date Collected:			10/07/94	
Date Received:			10/10/94	
Client Sample ID:			S-9	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	10/13/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	2500	45000	10/13/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	10/13/94
Benzene	ug/L	25	2900	10/13/94
Toluene	ug/L	25	540	10/13/94
Ethylbenzene	ug/L	25	260	10/13/94
Xylenes, Total	ug/L	25	2600	10/13/94

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REPORT OF LABORATORY ANALYSIS

Mr. Bill Howell
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October 21, 1994
PACE Project Number: 441010509

Client Reference: BP Site #11109/10-014-04-001

PACE Sample Number:			70 0421039	
Date Collected:			10/07/94	
Date Received:			10/10/94	
Client Sample ID:			S-10	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
PURGEABLE FUELS AND AROMATICS				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	10/14/94
Purgeable Fuels, as Gasoline (EPA 8015M)	ug/L	50	ND	10/14/94
PURGEABLE AROMATICS (BTXE BY EPA 8020M):			-	10/14/94
Benzene	ug/L	0.5	ND	10/14/94
Toluene	ug/L	0.5	ND	10/14/94
Ethylbenzene	ug/L	0.5	ND	10/14/94
Xylenes, Total	ug/L	0.5	ND	10/14/94

These data have been reviewed and are approved for release.

Darrell C. Cain
Regional Director

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Novato, CA 94949
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Mr. Bill Howell
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FOOTNOTES
for pages 1 through 10

October 21, 1994
PACE Project Number: 441010509

Client Reference: BP Site #11109/10-014-04-001

MDL Method Detection Limit
ND Not detected at or above the MDL.

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QUALITY CONTROL DATA

October 21, 1994
PACE Project Number: 441010509

Client Reference: BP Site #11109/10-014-04-001

PURGEABLE FUELS AND AROMATICS
Batch: 70 35230
Samples: 70 0420954, 70 0420962, 70 0420970, 70 0420989, 70 0420997
70 0421004, 70 0421020, 70 0421039

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

SPIKE AND SPIKE DUPLICATE:

Parameter	Units	MDL	700408849	Spike	Spike Recv	Spike Dupl Recv	RPD
Benzene	ug/L	0.5	ND	100	99%	100%	1%
Toluene	ug/L	0.5	1.1	100	91%	96%	5%
Ethylbenzene	ug/L	0.5	ND	100	89%	92%	3%
Xylenes, Total	ug/L	0.5	1.2	300	89%	95%	7%

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Benzene	ug/L	0.5	100	110%	103%	7%
Toluene	ug/L	0.5	100	108%	102%	6%
Ethylbenzene	ug/L	0.5	100	105%	100%	5%
Xylenes, Total	ug/L	0.5	300	110%	104%	6%

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QUALITY CONTROL DATA

October 21, 1994
PACE Project Number: 441010509

Client Reference: BP Site #11109/10-014-04-001

PURGEABLE FUELS AND AROMATICS
Batch: 70 35231
Samples: 70 0420946

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

SPIKE AND SPIKE DUPLICATE:

Parameter	Units	MDL	700420946 S-1	Spike	Spike Recv	Spike Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	ND	1000	86%	88%	2%

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	99%	99%	0%

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QUALITY CONTROL DATA

October 21, 1994
PACE Project Number: 441010509

Client Reference: BP Site #11109/10-014-04-001

PURGEABLE FUELS AND AROMATICS
Batch: 70 35247
Samples: 70 0421012

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

SPIKE AND SPIKE DUPLICATE:

Parameter	Units	MDL	700420946 S-1	Spike	Spike Recv	Spike Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015M	ug/L	50	ND	1000	86%	88%	2%

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	99%	99%	0%

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Client Reference: BP Site #11109/10-014-04-001

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

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441010.509

CHAIN OF CUSTODY

No. Page 1 of 1

CONSULTANT'S NAME: Alisto Engineering	ADDRESS: 1777 Oakland Blvd, Ste 200	CITY: Walnut Ck	STATE: CA	ZIP CODE: 94596
BP SITE NUMBER: 11109	BP CORNER ADDRESS/CITY: Foothill Blvd, Oakland CA		CONSULTANT PROJECT NUMBER: 10-014-04 ~~001~~ 03-00	
CONSULTANT PROJECT MANAGER: Bill Howell	PHONE NUMBER: (510) 295 1650	FAX NUMBER: 510 295 1823	CONSULTANT CONTRACT NUMBER:	
BP CONTACT: Scott Hooton	BP ADDRESS: Renton WA	PHONE NUMBER:	FAX NO.:	
LAB CONTACT: Pace Inc	LABORATORY ADDRESS: Novato CA	PHONE NUMBER: (415) 883 6100	FAX NO.: (415) 883 2673	
SAMPLED BY (Please Print Name): David Cusack	SAMPLED BY (Signature): David Cusack	SHIPMENT DATE:	SHIPMENT METHOD: Courier	AIRBILL NUMBER:

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

ANALYSIS REQUIRED

SAMPLE DESCRIPTION	COLLECTION DATE / COLLECTION TIME	MATRIX SOIL/WATER	CONTAINERS NO.	CONTAINERS TYPE (VOL.)	PRESERVATIVE / LAB SAMPLE #	HCL TPH G BTX									COMMENTS
S-1 1319	10/7/94	H_2O	3	VOA	420946	X									
S-2 1355	↓	↓	↓	↓	42095.4	↓									
S-3 1440	↓	↓	↓	↓	42096.2	↓									
S-4 1505	↓	↓	↓	↓	42097.0	↓									
S-5 1530	↓	↓	↓	↓	42098.9	↓									
S-6 1240	↓	↓	↓	↓	42099.7	↓									
S-7 1247	↓	↓	↓	↓	42100.4	↓									
S-8 1310	↓	↓	↓	↓	42101.2	↓									
S-9 —	↓	↓	↓	↓	42102.0	↓									
S-10 —	↓	↓	2	↓	42103.4	↓									

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	ADDITIONAL COMMENTS
David Cusack Alisto	10/10/94	10:15	Brenda [signature]	10/10/94	10:15	
Brenda [signature]	10/10/94	5:00	[signature] Pace	10/10/94	500	