BP OIL

ENVIRONMENTAL PROTECTION
97 FEB -6 PM 2:51

BP Oil Company
Environmental Resources Management
Building 13, Suite N
295 SW 41st Street
Renton, Washington 98055-4931
(206) 251-0667
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February 4, 1997

3878

Ms. Susan Hugo
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway Room 250
Oakland CA 94621

RE: BP OIL FACILITY #11132
3201 - 35th Street
Oakland, CA

Dear Ms Hugo:

Attached please find our **GROUNDWATER MONITORING AND SAMPLING REPORT DATED DECEMBER 26, 1996** for the above referenced facility. Plans for the following quarter include additional groundwater monitoring and product removal.

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

Respectfully,

Scott T. Hooton
Environmental Resources Management
Corrective Action Manager

STH:sb msword\ERM11132

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

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

TOSCO Northwest, 601 Union Street, Suite 2500, Seattle WA 98101

Site File

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11132
3201 35th Street
Oakland, California

Project No. 10-024-09-002

Prepared for:

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

Prepared by:

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

December 26, 1996

Ken Simas
Project Manager

Al Sevilla, P.E.
Principal

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11132
3201 35th Street
Oakland, California

Project No. 10-024-09-002

December 26, 1996

INTRODUCTION

This report presents the results and findings of the November 11, 1996 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11132, 3201 35th Street, Oakland, California. A site vicinity map is shown on 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, 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.

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 on Figure 2. The results of groundwater analysis are shown on Figure 3. The laboratory report and chain of custody record are presented in Appendix B.

FREE PRODUCT MONITORING AND RECOVERY

Product recovery canisters have been installed in Monitoring Wells MW-1, MW-2, MW-8, MW-9, and MW-10 to recover liquid-phase product. Product thicknesses measured during this and previous monitoring events are presented in Table 1. The volume of free product recovered from the wells is presented in Table 2.

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11132
3201 35TH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-024

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)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	DO (ppm)	LAB
MW-1	07/09/90	169 75	---	0.22	---	---	---	---	---	---	---	---	---
MW-1	12/21/90	169.75	---	0.58	---	---	---	---	---	---	---	---	---
MW-1	03/07/91	169.75	20.59	---	---	---	---	---	---	---	---	---	---
MW-1	06/27/91	169.75	---	0 18	---	---	---	---	---	---	---	---	---
MW-1	09/27/91	169.75	---	0.27	---	---	---	---	---	---	---	---	---
MW-1	12/18/91	169.75	---	0.28	---	---	---	---	---	---	---	---	---
MW-1	04/01/91	169.75	16.51	0.15	153.35	---	---	---	---	---	---	---	---
MW-1	07/03/92	169.75	22.30	0.27	147.65	---	---	---	---	---	---	---	---
MW-1	10/05/92	169.75	23.98	0.24	145 95	---	---	---	---	---	---	---	---
MW-1	01/13/93	169.75	17.03	0.24	152.90	---	---	---	---	---	---	---	---
MW-1	04/23/93	169.75	18.10	0.42	151 97	---	---	---	---	---	---	---	---
MW-1	07/12/93	169.75	22 02	0.49	148.10	---	---	---	---	---	---	---	---
MW-1	10/21/93	169.75	25 12	1.09	145.45	---	---	---	---	---	---	---	---
MW-1	01/21/94	169 75	23 02	0.76	147.30	---	---	---	---	---	---	---	---
MW-1	04/20/94	169.75	24 54	1 80	146.56	---	---	---	---	---	---	---	---
MW-1	08/01/94	169.75	24.11	0 35	145.90	---	---	---	---	---	---	---	---
MW-1	12/23/94	169.75	18 19	0 29	151.78	---	---	---	---	---	---	---	---
MW-1	01/26/95	169 75	16 25	1.10	154.33	---	---	---	---	---	---	---	---
MW-1	06/08/95	169.75	22.92	1 20	147.73	---	---	---	---	---	---	---	---
MW-1	08/22/95	169 75	24.45	0.85	145.94	---	---	---	---	---	---	---	---
MW-1	10/27/95	169.75	25.41	0 69	144 86	---	---	---	---	---	---	---	---
MW-1	01/25/96	169.75	18.20	1.40	152.60	---	---	---	---	---	---	---	---
MW-1	04/19/96	169.75	19.06	1.22	151 61	---	---	---	---	---	---	---	---
MW-1	07/23/96	169.75	22.98	0.89	147.44	---	---	---	---	---	---	---	---
MW-1	11/11/96	169.75	23.99	0.98	146 50	---	---	---	---	---	---	---	---
MW-2	07/09/90	168.14	---	0.10	---	---	---	---	---	---	---	---	---
MW-2	12/21/90	168.14	---	0.48	---	---	---	---	---	---	---	---	---
MW-2	03/07/91	168 14	19.18	---	---	---	---	---	---	---	---	---	---
MW-2	06/27/91	168.14	---	0.19	---	---	---	---	---	---	---	---	---
MW-2	09/27/91	168.14	---	0 15	---	---	---	---	---	---	---	---	---
MW-2	12/18/91	168 14	---	0.36	---	---	---	---	---	---	---	---	---
MW-2	04/01/91	168.14	15.21	0.10	153.01	---	---	---	---	---	---	---	---
MW-2	07/03/92	168.14	20.93	0.03	147.23	---	---	---	---	---	---	---	---
MW-2	10/05/92	168.14	22.74	0 21	145.56	---	---	---	---	---	---	---	---
MW-2	01/13/93	168.14	15.55	0.02	152.61	---	---	---	---	---	---	---	---
MW-2	04/23/93	168.14	16.54	0.21	151.76	---	---	---	---	---	---	---	---
MW-2	07/12/93	168.14	20.46	0.06	147.73	---	---	---	---	---	---	---	---
MW-2	10/21/93	168.14	24.91	0.31	143.46	---	---	---	---	---	---	---	---
MW-2	01/21/94	168.14	21.20	---	146.94	---	---	---	---	---	---	---	---
MW-2	04/20/94	168.14	22.44	---	145.70	1800	140	370	54	290	1.7	1.7	PACE
MW-2	08/01/94	168 14	22.24	0.04	145.93	---	---	---	---	---	---	---	---
MW-2	12/23/94	168.14	16.25	0.03	151.91	---	---	---	---	---	---	---	---
MW-2	01/26/95	168.14	14.55	0.39	153.88	---	---	---	---	---	---	---	---
MW-2	06/08/95	168.14	21.18	0.43	147.28	---	---	---	---	---	---	---	---
MW-2	08/22/95	168.14	22 76	0.36	145.65	---	---	---	---	---	---	---	---
MW-2	10/27/95	168.14	23 61	0 30	144.76	---	---	---	---	---	---	---	---
MW-2	01/25/96	168 14	15.95	0.15	152.30	---	---	---	---	---	---	---	---
MW-2	04/19/96	168.14	17.33	0.07	150.86	---	---	---	---	---	---	---	---
MW-2	07/23/96	168 14	21 25	0.05	146.93	---	---	---	---	---	---	---	---
MW-2	11/11/96	168.14	22.27	0.01	145.88	---	---	---	---	---	---	---	---

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11132
3201 35TH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-024

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)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	DO (ppm)	LAB
MW-3	07/09/90	167.17	---	---	---	140	5.3	4.6	2.0	3.8	---	---	---
MW-3	12/21/90	167.17	---	---	---	0.19	100	6 0	0.9	27	---	---	---
MW-3	03/07/91	167.17	17.40	---	149.77	0.4	69	22	6 1	57	---	---	---
MW-3	06/27/91	167.17	---	---	---	380	28	26	13	46	---	---	---
MW-3	09/27/91	167.17	---	---	---	0.07	7.9	ND	0 4	1.1	---	---	---
MW-3	12/18/91	167.17	---	---	---	0.26	34	24	0.8	28	---	---	---
MW-3	04/01/91	167.17	13 69	---	153.48	ND	ND	ND	ND	ND	---	---	---
MW-3	07/03/92	167.17	19.59	---	147.58	71	9.4	0.9	5.0	13	---	---	ANA
MW-3	10/05/92	167.17	21.22	---	145.95	67	5.1	1.1	6.1	8.1	---	---	ANA
QC-1 (c)	10/05/92	---	---	---	---	ND<50	2.2	ND<0.5	1.5	2.8	---	---	ANA
MW-3	01/13/93	167.17	13.63	---	153.54	830	50	34	42	89	---	---	PACE
MW-3	04/23/93	167.17	15 02	---	152.15	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-1 (c)	04/23/93	---	---	---	---	ND<50	ND<0.5	ND<0 5	ND<0.5	ND<0.5	---	---	PACE
MW-3	07/12/93	167.17	19.16	---	148.01	250	12	4.2	12	16	---	---	PACE
MW-3	10/21/93	167.17	21.81	---	145.36	52	4.4	1.4	4.7	3.3	---	---	PACE
QC-1 (c)	10/21/93	---	---	---	---	65	7.4	1.0	6.9	4.2	---	---	PACE
MW-3	01/21/94	167.17	19.94	---	147.23	57	3.0	3.4	3.6	9.0	---	---	PACE
MW-3	04/20/94	167.17	20.24	---	146.93	600	26	23	33	88	---	1.8	PACE
MW-3	08/01/94	167.17	20.74	---	146.43	99	6.2	1.1	4.5	5.2	---	1.4	PACE
QC-1 (c)	08/01/94	---	---	---	---	120	7.7	1.6	5.9	6 7	---	---	PACE
MW-3	12/23/94	167.17	14 70	---	152.47	ND<50	ND<0.5	0.78	ND<0.5	ND<0.5	---	1 7	PACE
QC-1 (c)	12/23/94	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0 5	---	---	PACE
MW-3	01/26/95	167.17	12.89	---	154.28	190	16	0.5	35	24	---	6.6	ATI
MW-3	06/08/95	167.17	19 95	---	147.22	330	21	4.0	34	32	---	7.0	ATI
MW-3	08/22/95	167.17	21.41	---	145.76	150	14	ND<0 50	ND<0 50	1.6	---	6.6	ATI
MW-3	10/27/95	167.17	22.43	---	144.74	---	---	---	---	---	---	---	---
MW-3	10/30/95	---	---	---	---	51	2.4	ND<0.50	ND<0.50	ND<1.0	ND<5.0	6.9	ATI
MW-3	01/25/96	167.17	14.03	---	153.14	ND<50	ND<0.50	ND<0 50	ND<0 50	ND<1.0	5.1	---	CEI
MW-3	04/19/96	167.17	15.26	---	151.91	460	55	4	33	63	ND<10	9.4	SPL
MW-3	07/23/96	167.17	19.19	---	147.98	ND<50	ND<0 5	ND<0.5	ND<0.5	ND<0.5	ND<10	9.2	SPL
MW-3	11/11/96	167 17	20.24	---	146.93	ND<250	ND<2.5	ND<5.0	ND<5.0	ND<5.0	ND<50	8 4	SPL
MW-4	07/09/90	170.36	---	---	---	ND	ND	ND	ND	ND	---	---	---
MW-4	12/21/90	170.36	---	---	---	ND	ND	ND	ND	0.8	---	---	---
MW-4	03/07/91	170.36	20.72	---	149 64	ND	2.2	3.8	1.5	2.8	---	---	---
MW-4	06/27/91	170.36	---	---	---	ND	6.3	1.8	0.4	1.0	---	---	---
MW-4	09/27/91	170.36	---	---	---	ND	ND	ND	ND	ND	---	---	---
MW-4	12/18/91	170.36	---	---	---	ND	ND	ND	ND	ND	---	---	---
MW-4	04/01/91	170.36	17.49	---	152.87	ND	ND	ND	ND	ND	---	---	---
MW-4	07/03/92	170 36	22.16	---	148.20	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-4	10/05/92	170 36	23.38	---	146.98	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-4	01/13/93	170.36	17.58	---	152.78	ND<50	ND<0.5	ND<0 5	ND<0.5	ND<0 5	---	---	PACE
MW-4	04/23/93	170.36	15.72	---	154.64	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-4	07/12/93	170.36	21.74	---	148.62	ND<50	ND<0 5	ND<0.5	ND<0 5	ND<0.5	---	---	PACE
MW-4	10/21/93	170.36	23.84	---	146.52	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-4	01/21/94	170.36	22.42	---	147.94	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-4	04/20/94	170.36	22.66	---	147.70	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	2.2	PACE
MW-4	08/01/94	170.36	23.01	---	147.35	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	1.9	PACE
MW-4	12/23/94	170.36	17.03	---	153.33	---	---	---	---	---	---	---	---
MW-4	01/26/95	170.36	17.42	---	152.94	ND<50	ND<0 5	ND<0.5	ND<0.5	ND<1	---	7.5	ATI
MW-4	06/08/95	170.36	21 55	---	148.81	---	---	---	---	---	---	---	---
MW-4	08/22/95	170.36	23.47	---	146.89	ND<50	ND<0 50	ND<0 50	ND<0.50	ND<1.0	---	6.4	ATI
MW-4	10/27/95	170 36	24.50	---	145.86	---	---	---	---	---	---	---	---
MW-4	01/25/96	170.36	18.74	---	151.62	ND<50	ND<0 50	ND<0.50	ND<0.50	ND<1.0	58	---	CEI
MW-4	04/19/96	170.36	18 63	---	151.73	---	---	---	---	---	---	---	---
MW-4	07/23/96	170.36	22 56	---	147.80	---	---	---	---	---	---	---	---
MW-4	11/11/96	170.36	23.63	---	146.73	ND<50	ND<1.0	ND<1.0	ND<1.0	ND<1.0	34	8.2	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11132
3201 35TH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-024

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)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	DO (ppm)	LAB
MW-5	07/09/90	165.14	—	—	—	280	200	210	46	290	—	—	—
MW-5	12/21/90	165.14	—	—	—	0.69	300	34	8.4	39	—	—	—
MW-5	03/07/91	165.14	16.60	—	148.54	ND	17	0 9	0.7	1.6	—	—	—
MW-5	06/27/91	165.14	—	—	—	330	120	10	12	8	—	—	—
MW-5	09/27/91	165.14	—	—	—	0.73	230	16	20	22	—	—	—
MW-5	12/18/91	165.14	—	—	—	ND	ND	ND	ND	ND	—	—	—
MW-5	04/01/91	165.14	11 99	—	153.15	800	250	54	11	60	—	—	—
MW-5	07/03/92	165.14	18 65	—	146.49	150	36	ND<0.5	ND<0.5	1.1	—	—	ANA
MW-5	10/05/92	165.14	20.32	—	144.82	270	79	4	1.7	2.9	—	—	ANA
MW-5	01/13/93	165.14	13 03	—	152.11	180	59	6.0	1.8	7.6	—	—	PACE
MW-5	04/23/93	165.14	13.51	—	151.63	8700	440	96	35	136	—	—	PACE
MW-5	07/12/93	165.14	18 06	—	147.08	250	57	2.9	2.1	6 0	—	—	PACE
MW-5	10/21/93	165.14	20.41	—	144.73	210	82	1.5	ND<0.5	1.4	—	—	PACE
MW-5	01/21/94	165.14	18.86	—	146.28	110	36	1.2	ND<0.5	0.7	—	—	PACE
MW-5	04/20/94	165.14	17.30	—	147.84	690	230	4.5	1.6	11	—	1.3	PACE
MW-5	08/01/94	165.14	17 53	—	147.61	170	44	1.6	0.9	2 7	—	0.9	PACE
MW-5	12/23/94	165.14	11.63	—	153.51	630	180	1.9	0.66	1.9	—	1.4	PACE
MW-5	01/26/95	165.14	11 25	—	153.89	160	68	ND<0.5	ND<0.5	22	—	5.9	ATI
MW-5	06/08/95	165.14	16.80	—	148.34	2000	630	58	61	180	—	6.5	ATI
QC-1 (c)	06/08/95	—	—	—	—	1700	560	51	55	170	—	—	ATI
MW-5	08/22/95	165.14	19.02	—	146.12	3700	1100	18	27	59	—	7.3	ATI
MW-5	10/27/95	165.14	20 94	—	144.20	—	—	—	—	—	—	—	—
MW-5	10/30/95	—	—	—	—	6500	2200	55	180	270	ND<250	7.5	ATI
MW-5	01/25/96	165.14	13.30	—	151.84	590	37	0.70	ND<0.50	ND<1.0	ND<5.0	—	CEI
QC-1 (c)	01/25/96	—	—	—	—	540	37	0.66	ND<0 50	ND<1.0	ND<5.0	—	CEI
MW-5	04/19/96	165.14	13.63	—	151.51	1500	470	38	49	210	ND<50	8.1	SPL
MW-5	07/23/96	165.14	17.61	—	147.53	140	4.6	ND<0.5	ND<0.5	ND<0.5	ND<10	8.0	SPL
MW-5	11/11/96	165.14	18.70	—	146.44	140	40	ND<1.0	ND<1.0	ND<1.0	ND<10	7.9	SPL
MW-6	07/09/90	165 40	—	—	—	ND	ND	ND	ND	ND	—	—	—
MW-6	12/21/90	165.40	—	—	—	0.17	2.6	7.0	4.9	26	—	—	—
MW-6 (d)	03/07/91	165.40	—	—	—	—	—	—	—	—	—	—	—
MW-6 (d)	06/27/91	165.40	—	—	—	—	—	—	—	—	—	—	—
MW-6 (d)	09/27/91	165.40	—	—	—	—	—	—	—	—	—	—	—
MW-6	12/18/91	165.40	—	—	—	ND	1.3	22	ND	2.7	—	—	—
MW-6	04/01/91	165.40	11.79	—	153 61	ND	ND	ND	ND	ND	—	—	—
MW-6	07/03/92	165.40	17.77	—	147.63	ND<50	ND<0.5	ND<0 5	ND<0.5	ND<0.5	—	—	ANA
MW-6	10/05/92	165.40	19 46	—	145.94	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	ANA
MW-6	01/13/93	165.40	11.34	—	154.06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	PACE
MW-6	04/23/93	165.40	12.92	—	152.48	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	PACE
MW-6	07/12/93	165.40	17.36	—	148.04	ND<50	ND<0.5	ND<0.5	ND<0.5	0.7	—	—	PACE
MW-6	10/21/93	165.40	19.98	—	145.42	ND<50	ND<0 5	ND<0.5	ND<0.5	ND<0 5	—	—	PACE
MW-6	01/21/94	165.40	18 10	—	147 30	ND<50	ND<0 5	ND<0.5	ND<0 5	ND<0.5	—	—	PACE
MW-6	04/20/94	165.40	18 68	—	146.72	ND<50	ND<0.5	ND<0 5	ND<0.5	ND<0.5	—	2.0	PACE
MW-6	08/01/94	165.40	18.90	—	146.50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	1.5	PACE
MW-6	12/23/94	165.40	12.94	—	152.46	—	—	—	—	—	—	—	—
MW-6	01/26/95	165.40	10 46	—	154.94	ND<50	ND<0.5	ND<0 5	ND<0 5	ND<1	—	7.3	ATI
MW-6	06/08/95	165.40	16.84	—	148.56	—	—	—	—	—	—	—	—
MW-6	08/22/95	165 40	19.48	—	145.92	ND<50	ND<0.50	ND<0 50	ND<0 50	ND<1.0	—	6.7	ATI
MW-6	10/27/95	165.40	20.39	—	145.01	—	—	—	—	—	—	—	—
MW-6	01/25/96	165.40	12.24	—	153.16	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	9.9	—	CEI
MW-6	04/19/96	165.40	13.90	—	151.50	—	—	—	—	—	—	—	—
MW-6	07/23/96	165.40	17.83	—	147 57	—	—	—	—	—	—	—	—
MW-6	11/11/96	165.40	18 90	—	146 50	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	7.7	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11132
3201 35TH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-024

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)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	DO (ppm)	LAB
MW-7	07/09/90	167.61	—	—	—	ND	ND	ND	ND	ND	—	—	—
MW-7	12/21/90	167.61	—	—	—	ND	ND	ND	ND	ND	—	—	—
MW-7	03/07/91	167.61	19.04	—	148.57	ND	ND	0.4	0.3	2.4	—	—	—
MW-7	06/27/91	167.61	—	—	—	70	17	4	0.8	2.2	—	—	—
MW-7	09/27/91	167 61	—	—	—	ND	0.4	ND	ND	0 4	—	—	—
MW-7	12/18/91	167.61	—	—	—	ND	0.7	2.9	0.8	3.3	—	—	—
MW-7	04/01/91	167.61	15.18	—	152.43	ND	ND	ND	ND	ND	—	—	—
MW-7	07/03/92	167.61	20.28	—	147.33	ND<50	ND<0.5	ND<0.5	ND<0 5	ND<0.5	—	—	ANA
MW-7	10/05/92	167 61	21.56	—	146.05	ND<50	ND<0.5	ND<0.5	ND<0 5	1.5	—	—	ANA
MW-7	01/13/93	167.61	15.41	—	152.20	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	PACE
MW-7	04/23/93	167.61	15 84	—	151.77	ND<50	ND<0 5	ND<0 5	ND<0.5	ND<0.5	—	—	PACE
MW-7	07/12/93	167.61	19.84	—	147.77	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	PACE
MW-7	10/21/93	167.61	21.61	—	146.00	ND<50	ND<0 5	ND<0 5	ND<0.5	ND<0.5	—	—	PACE
MW-7	01/21/94	167.61	20.49	—	147.12	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0 5	—	—	PACE
QC-1 (c)	01/21/94	—	—	—	—	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	PACE
MW-7	04/20/94	167.61	20.54	—	147.07	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	1.5	PACE
MW-7	08/01/94	167.61	20.99	—	146.62	ND<50	0.7	ND<0.5	ND<0.5	ND<0.5	—	1.9	PACE
MW-7	12/23/94	167.61	15.00	—	152.61	—	—	—	—	—	—	—	—
MW-7	01/26/95	167.61	14.69	—	152.92	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	—	7.0	ATI
MW-7	06/08/95	167.61	19 87	—	147.74	—	—	—	—	—	—	—	—
MW-7	08/22/95	167 61	21.49	—	146.12	ND<50	ND<0.50	ND<0.50	ND<0 50	ND<1.0	—	6.4	ATI
MW-7	10/27/95	167.61	22.53	—	145.08	—	—	—	—	—	—	—	—
MW-7	01/25/96	167 61	17.21	—	150.40	ND<50	ND<0.50	ND<0.50	ND<0 50	ND<1.0	ND<5.0	—	CEI
MW-7	04/19/96	167.61	17.09	—	150.52	—	—	—	—	—	—	—	—
MW-7	07/23/96	167.61	21.02	—	146.59	—	—	—	—	—	—	—	—
MW-7	11/11/96	167.61	22.03	—	145.58	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	7.8	SPL
MW-8	03/07/91	165.74	16.72	—	149.02	2.7	780	450	64	310	—	—	—
MW-8	06/27/91	165.74	—	—	—	12000	3400	1100	240	750	—	—	—
MW-8	09/27/91	165.74	—	—	—	41	5700	5200	1100	4300	—	—	—
MW-8	12/18/91	165.74	—	—	—	3.2	990	150	120	250	—	—	—
MW-8	04/01/91	165.74	12.54	—	153.20	15000	3600	2600	410	1900	—	—	—
MW-8	07/03/92	165.74	18.78	—	146.96	72000	19000	32000	3000	15000	—	—	ANA
MW-8	10/05/92	165 74	20 48	0.01	145.27	—	—	—	—	—	—	—	—
MW-8	01/13/93	165.74	12 87	0.01	152.88	—	—	—	—	—	—	—	—
MW-8	04/23/93	165.74	13.90	SHEEN	151.84	—	—	—	—	—	—	—	—
MW-8	07/12/93	165.74	18.30	SHEEN	147 44	—	—	—	—	—	—	—	—
MW-8	10/21/93	165.74	21.91	0.95	144.54	—	—	—	—	—	—	—	—
MW-8	01/21/94	165.74	19.12	0.03	146 64	—	—	—	—	—	—	—	—
MW-8	04/20/94	165.74	19.28	0 03	146.48	26000	1700	4100	960	4000	—	1.1	PACE
MW-8	08/01/94	165.74	—	—	—	—	—	—	—	—	—	—	—
MW-8	12/23/94	165.74	13 81	0.03	151.95	—	—	—	—	—	—	—	—
MW-8	01/26/95	165.74	—	—	—	—	—	—	—	—	—	—	—
MW-8	06/08/95	165.74	17.82	0.29	148.14	—	—	—	—	—	—	—	—
MW-8	08/22/95	165.74	19.41	0.20	146 48	—	—	—	—	—	—	—	—
MW-8	10/27/95	165.74	20.47	0.14	145.38	—	—	—	—	—	—	—	—
MW-8	01/25/96	165.74	13.35	0 22	152 56	—	—	—	—	—	—	—	—
MW-8	04/19/96	165.74	14.40	0.20	151.49	—	—	—	—	—	—	—	—
MW-8	07/23/96	165.74	18.35	0 14	147.50	—	—	—	—	—	—	—	—
MW-8	11/11/96	165.74	19.41	0.02	146.35	—	—	—	—	—	—	—	—

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO 11132
3201 35TH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-024

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)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	DO (ppm)	LAB
MW-9	03/07/91	166.20	16.79	---	149.41	7.1	220	4	2.4	2400	---	---	---
MW-9	06/27/91	166.20	---	---	---	3600	520	400	85	310	---	---	---
MW-9	09/27/91	166.20	---	---	---	3.2	720	150	50	180	---	---	---
MW-9	12/18/91	166.20	---	---	---	ND	2.5	1.1	0.3	5.8	---	---	---
MW-9	04/01/91	166.20	12.89	---	153.31	12000	2000	2600	360	1600	---	---	---
MW-9	07/03/92	166.20	18.89	---	147.31	5700	17000	840	230	800	---	---	ANA
MW-9	10/05/92	166.20	20.52	---	145.68	1400	440	17	14	100	---	---	ANA
MW-9	01/13/93	166.20	12.92	---	153.28	11000	1200	1700	340	1400	---	---	PACE
QC-1 (c)	01/13/93	---	---	---	0.00	11000	1200	1600	330	1300	---	---	PACE
MW-9	04/23/93	166.20	14.08	---	152.12	24000	2800	4500	730	3400	---	---	PACE
MW-9	07/12/93	166.20	18.44	---	147.76	13000	1400	1100	360	1400	---	---	PACE
QC-1 (c)	07/12/93	---	---	---	---	10000	1200	900	310	1200	---	---	PACE
MW-9	10/21/93	166.20	21.81	0.89	145.06	---	---	---	---	---	---	---	---
MW-9	01/21/94	166.20	19.28	---	146.92	---	---	---	---	---	---	---	---
MW-9	04/20/94	166.20	19.72	---	146.48	43000	2800	6800	1300	7900	---	1.7	PACE
QC-1 (c)	04/20/94	---	---	---	---	45000	2700	6800	1200	8200	---	---	PACE
MW-9	08/01/94	166.20	20.18	0.05	146.06	---	---	---	---	---	---	---	---
MW-9	12/23/94	166.20	14.22	0.02	152.00	---	---	---	---	---	---	---	---
MW-9	01/26/95	166.20	11 85	0.13	154.45	---	---	---	---	---	---	---	---
MW-9	06/08/95	166.20	18.33	0.80	148.47	---	---	---	---	---	---	---	---
MW-9	08/22/95	166.20	19 95	0.01	146 26	---	---	---	---	---	---	---	---
MW-9	10/27/95	166.20	20.88	0.01	145 33	---	---	---	---	---	---	---	---
MW-9	01/25/96	166.20	13.84	0.07	152 41	---	---	---	---	---	---	---	---
MW-9 (d)	04/19/96	166.20	---	---	---	---	---	---	---	---	---	---	---
MW-9	07/23/96	166.20	18.84	0.03	147.38	---	---	---	---	---	---	---	---
MW-9	11/11/96	166.20	19 91	0.01	146.30	---	---	---	---	---	---	---	---
MW-10	03/07/91	167.01	18.09	---	148.92	1.6	120	190	32	230	---	---	---
MW-10	06/27/91	167.01	---	---	---	12000	7300	500	150	300	---	---	---
MW-10	09/27/91	167.01	---	---	---	57	12000	7200	1400	4600	---	---	---
MW-10	12/18/91	167.01	---	---	---	5.3	2500	120	36	79	---	---	---
MW-10	04/01/91	167.01	13.92	---	153 09	ND	ND	ND	ND	ND	---	---	---
MW-10	07/03/92	167.01	19.92	---	147.09	8600	5100	1300	180	690	---	---	ANA
MW-10	10/05/92	167.01	21.92	0.19	145.23	---	---	---	---	---	---	---	---
MW-10	01/13/93	167.01	14.43	0 03	152 60	---	---	---	---	---	---	---	---
MW-10	04/23/93	167.01	15.26	0.06	151.80	---	---	---	---	---	---	---	---
MW-10	07/12/93	167.01	19.78	0.45	147.57	---	---	---	---	---	---	---	---
MW-10	10/21/93	167.01	22.90	0.69	144.63	---	---	---	---	---	---	---	---
MW-10	01/21/94	167.01	20.25	0.06	146.81	---	---	---	---	---	---	---	---
MW-10	04/20/94	167 01	20.74	---	146.27	100000	12000	24000	2400	14000	---	1.0	PACE
MW-10	08/01/94	167.01	22.00	0.28	145.22	---	---	---	---	---	---	---	---
MW-10	12/23/94	167.01	16.08	0 25	151.12	---	---	---	---	---	---	---	---
MW-10	01/26/95	167.01	13 68	0.80	153.93	---	---	---	---	---	---	---	---
MW-10	06/08/95	167.01	19.08	0 75	148.49	---	---	---	---	---	---	---	---
MW-10	08/22/95	167.01	20 73	0.70	146.81	---	---	---	---	---	---	---	---
MW-10	10/27/95	167.01	21.69	0 63	145 79	---	---	---	---	---	---	---	---
MW-10	01/25/96	167.01	15.05	0.81	152.57	---	---	---	---	---	---	---	---
MW-10	04/19/96	167.01	16.26	0.58	151 19	---	---	---	---	---	---	---	---
MW-10	07/23/96	167.01	20.18	0.62	147.30	---	---	---	---	---	---	---	---
MW-10	11/11/96	167.01	21.20	0.20	145.96	---	---	---	---	---	---	---	---

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11132
3201 35TH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-024

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)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	DO (ppm)	LAB
RW-1	07/09/90	168 01	---	1.21	---	---	---	---	---	---	---	---	---
RW-1	12/21/90	168 01	---	0.01	---	---	---	---	---	---	---	---	---
RW-1	03/07/91	168 01	17.62	SHEEN	150.39	---	---	---	---	---	---	---	---
RW-1	06/27/91	168.01	---	0.04	---	---	---	---	---	---	---	---	---
RW-1	09/27/91	168.01	---	0.02	---	---	---	---	---	---	---	---	---
RW-1	12/18/91	168.01	---	0.02	---	---	---	---	---	---	---	---	---
RW-1	04/01/91	168.01	14.40	0.11	153.69	---	---	---	---	---	---	---	---
RW-1	07/03/92	168.01	20.66	SHEEN	147.35	---	---	---	---	---	---	---	---
RW-1	10/05/92	168.01	23.34	0.08	144.73	---	---	---	---	---	---	---	---
RW-1	01/13/93	168 01	16 59	0.05	151.46	---	---	---	---	---	---	---	---
RW-1	04/23/93	168.01	16 17	0 18	151.98	---	---	---	---	---	---	---	---
RW-1	07/12/93	168.01	20 18	0.06	147.88	---	---	---	---	---	---	---	---
RW-1	10/21/93	168.01	25 70	0.56	142.73	---	---	---	---	---	---	---	---
RW-1	01/21/94	168 01	21.24	0.40	147.07	---	---	---	---	---	---	---	---
RW-1	04/20/94	168 01	32.20	---	135 81	---	---	---	---	---	---	---	---
RW-1	08/01/94	168.01	21.70	---	146.31	29000	580	950	300	7800	---	1.1	PACE
RW-1	12/23/94	168.01	16.02	---	151.99	1300	25	8.6	1.4	69	---	1.8	PACE
RW-1	01/26/95	168.01	13.78	---	154 23	ND<50	ND<0.5	ND<0.5	ND<0 5	ND<1	---	---	ATI
QC-1 (c)	01/26/95	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0 5	ND<1	---	---	ATI
RW-1	06/08/95	168.01	20.05	---	147.96	1300	130	ND<1.0	ND<1.0	36	---	---	ATI
RW-1	08/22/95	168.01	21.74	---	146.27	3300	230	13	4.9	280	---	6.6	ATI
QC-1 (c)	08/22/95	---	---	---	---	2800	210	9 3	4.3	250	---	---	ATI
RW-1	10/27/95	168.01	32.00	---	136.01	---	---	---	---	---	---	---	---
RW-1	10/30/95	---	---	---	---	230	1.4	ND<1.0	ND<1.0	ND<2.0	650	6.9	ATI
QC-1 (c)	10/30/95	---	---	---	---	240	1.6	ND<1.0	ND<1.0	ND<2.0	630	---	ATI
RW-1	01/25/96	168.01	15.41	---	152.60	15000	3400	930	330	2500	5300	---	CEI
RW-1	04/19/96	168.01	16.83	---	151.18	35000	5500	3300	1700	9400	14000	7.6	SPL
QC-1 (c)	04/19/96	---	---	---	---	33000	5600	3200	1700	8800	15000	---	SPL
RW-1	07/23/96	168 01	20 76	---	147.25	46000	3600	2300	900	5100	36000	7.4	SPL
QC-1 (c)	07/23/96	---	---	---	---	47000	3700	2500	930	5300	35000	---	SPL
RW-1	11/11/96	168 01	21 73	---	146.28	34000	3000	1200	880	4600	22000	8.3	SPL
QC-1 (c)	11/11/96	---	---	---	---	31000	2900	1000	860	4600	22000	---	SPL
QC-2 (e)	10/05/92	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
QC-2 (e)	01/13/93	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (e)	04/23/93	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (e)	07/12/93	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (e)	10/21/93	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (e)	01/21/94	---	---	---	---	ND<50	ND<0.5	2.1	ND<0.5	2.1	---	---	PACE
QC-2 (e)	04/20/94	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (e)	04/20/94	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (e)	12/23/94	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0 5	---	---	ATI
QC-2 (e)	01/26/95	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	ATI
QC-2 (e)	06/08/95	---	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	ATI
QC-2 (e)	08/22/95	---	---	---	---	ND<50	ND<0 50	ND<0.50	ND<0.50	ND<1.0	---	---	ATI
QC-2 (e)	10/30/95	---	---	---	---	ND<50	ND<0 50	ND<0 50	ND<0 50	ND<1.0	ND<5.0	---	ATI
QC-2 (e)	01/25/96	---	---	---	---	ND<50	ND<0 50	ND<0.50	ND<0 50	ND<1.0	ND<5.0	---	CEI
QC-2 (e)	04/19/96	---	---	---	---	ND<50	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	SPL

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3201 35TH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-024

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)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	DO (ppm)	LAB

ABBREVIATIONS:

TPH-G	Total petroleum hydrocarbons as gasoline
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
MTBE	Methyl tert butyl ether
DO	Dissolved oxygen
ug/l	Micrograms per liter
ppm	Parts per million
---	Not analyzed/available/applicable/measurable
ND	Not detected above reported detection limit
PACE	Pace, Inc.
ANA	Anametrix, Inc.
ATI	Analytical Technologies, Inc.
CEI	Ceimic Corporation
SPL	Southern Petroleum Laboratories

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) Blind duplicate.

(d) Well inaccessible.

(e) Travel blank.

F\0\10-024\024-9-2.WQ2

TABLE 2 - PRODUCT REMOVAL STATUS
BP OIL COMPANY SERVICE STATION NO. 11132
3201 35TH STREET, OAKLAND, CALIFORNIA

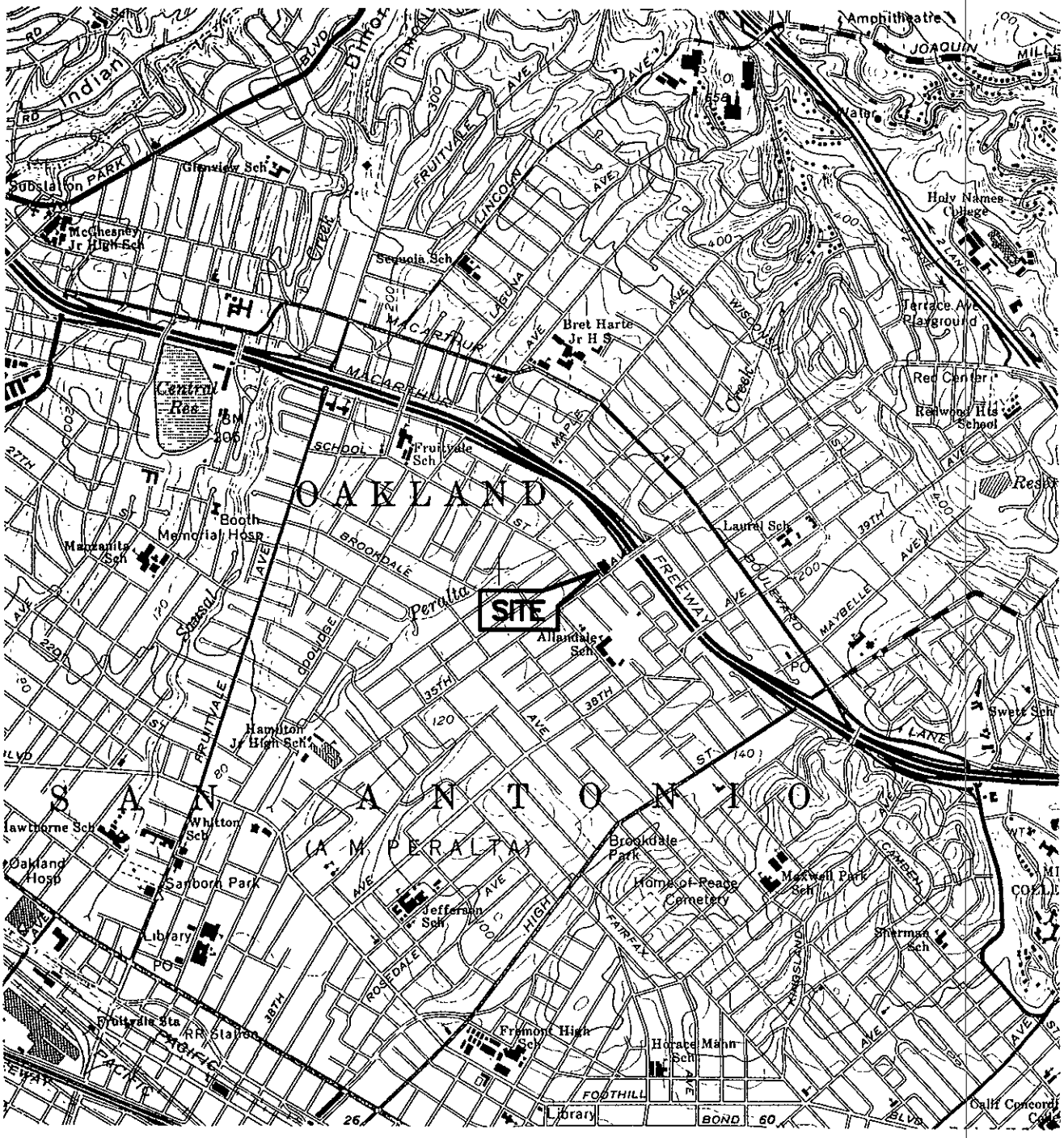
ALISTO PROJECT NO. 10-024

WELL ID	DATE	PRODUCT REMOVED (Gallons)	PRODUCT REMOVED CUMULATIVE (Gallons)
MW-1	01/26/95	3.00	3.00
	06/08/95	0.60	3.60
	06/28/95	0.10	3.70
	08/22/95	0.15	3.85
	10/30/95	0.11	3.96
	01/25/96	1.00	4.96
	02/16/95	0.08	5.04
	04/19/96	0.75	5.79
	07/23/96	0	5.79
	11/11/96	0.98	6.77
MW-2	09/29/93	0.10	0.10
	10/05/93	0.10	0.20
	10/14/93	0.10	0.30
	10/20/93	0.25	0.55
	11/02/93	0.10	0.65
	12/07/93	0.05	0.70
	12/17/93	<0.01	0.70
	12/23/93	0.30	1.00
	01/12/94	0.05	1.05
	02/02/94	0.01	1.06
	02/11/94	0.01	1.07
	03/18/94	<0.01	1.07
	10/26/94	0.76	1.83
	11/12/94	0.08	1.91
	12/12/94	0.03	1.94
	01/26/95	0.19	2.13
	06/08/95	Sheen	2.13
	06/28/95	0.05	2.18
	08/22/95	0.10	2.28
	10/30/95	0.05	2.33
	01/25/96	Sheen	2.33
	02/16/95	0.04	2.37
	04/19/96	0.01	2.38
	07/23/96	0	2.38
	11/11/96	0.01	2.39
MW-8	11/02/93	0.25	0.25
	11/10/93	0.10	0.35
	11/16/93	0.10	0.45
	11/23/93	0.10	0.55
	11/30/93	0.10	0.65
	12/17/93	<0.01	0.65
	12/23/93	<0.01	0.65
	01/12/94	0.01	0.66
	02/02/94	0.05	0.71
	02/11/94	0.08	0.79
	02/18/94	<0.01	0.79
	03/18/94	0.01	0.80
	04/27/94	<0.01	0.80
	05/27/94	<0.01	0.80
	10/26/94	0.10	0.90
	11/12/94	0.02	0.92
	12/12/94	0.01	0.93
	06/08/95	Sheen	0.93
	08/22/95	0.05	0.98
	10/30/95	0.02	1.00
	01/25/96	0.05	1.05
	02/16/95	0.01	1.06
	04/19/96	0.25	1.31
	07/23/96	0	1.31
	11/11/96	0.02	1.33

TABLE 2 - PRODUCT REMOVAL STATUS
BP OIL COMPANY SERVICE STATION NO. 11132
3201 35TH STREET, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-024

WELL ID	DATE	PRODUCT REMOVED (Gallons)	PRODUCT REMOVED CUMULATIVE (Gallons)
MW-9	11/02/93	0.10	0.10
	11/10/93	0.10	0.20
	11/16/93	0.10	0.30
	12/23/93	<0.01	0.30
	01/12/94	0.01	0.31
	01/20/93	0.05	0.36
	02/02/94	0.05	0.41
	02/11/94	0.01	0.42
	02/18/94	<0.01	0.42
	03/18/94	0.10	0.52
	10/26/94	0.15	0.67
	11/12/94	<0.01	0.67
	12/12/94	<0.01	0.67
	01/26/95	0.10	0.77
	06/28/95	<0.01	0.77
	08/22/95	<0.01	0.77
	10/30/95	<0.01	0.77
	01/25/96	<0.01	0.77
	02/16/95	<0.01	0.77
	04/19/96	<0.01	0.77
	07/23/96	0	0.77
	11/11/96	0.01	0.78
MW-10	09/07/93	0.10	0.10
	09/14/93	0.10	0.20
	09/29/93	0.10	0.30
	10/05/93	1.60	1.90
	10/14/93	2.10	4.00
	10/20/93	1.00	5.00
	10/27/93	1.00	6.00
	11/02/93	0.30	6.30
	11/10/93	0.20	6.50
	11/16/93	0.10	6.60
	11/23/93	0.10	6.70
	11/30/93	0.30	7.00
	12/07/93	0.20	7.20
	12/17/93	0.30	7.50
	12/23/93	<0.01	7.50
	01/04/94	0.01	7.51
	01/12/94	0.01	7.52
	01/20/94	0.20	7.72
	02/02/94	0.01	7.73
	02/11/94	0.01	7.74
	02/18/94	0.20	7.94
	05/27/94	<0.01	7.94
	10/26/94	0.60	8.54
	11/12/94	0.43	8.97
	12/12/94	0.26	9.23
	01/26/95	0.13	9.36
	06/28/95	0.10	9.46
	08/22/95	0.15	9.61
	10/30/95	0.10	9.71
	01/25/96	0.25	9.96
	02/16/95	0.10	10.06
	04/19/96	0.50	10.56
	07/23/96	0	10.56
	11/11/96	0.20	10.76



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

N

0 1000' 2000'

FIGURE 1

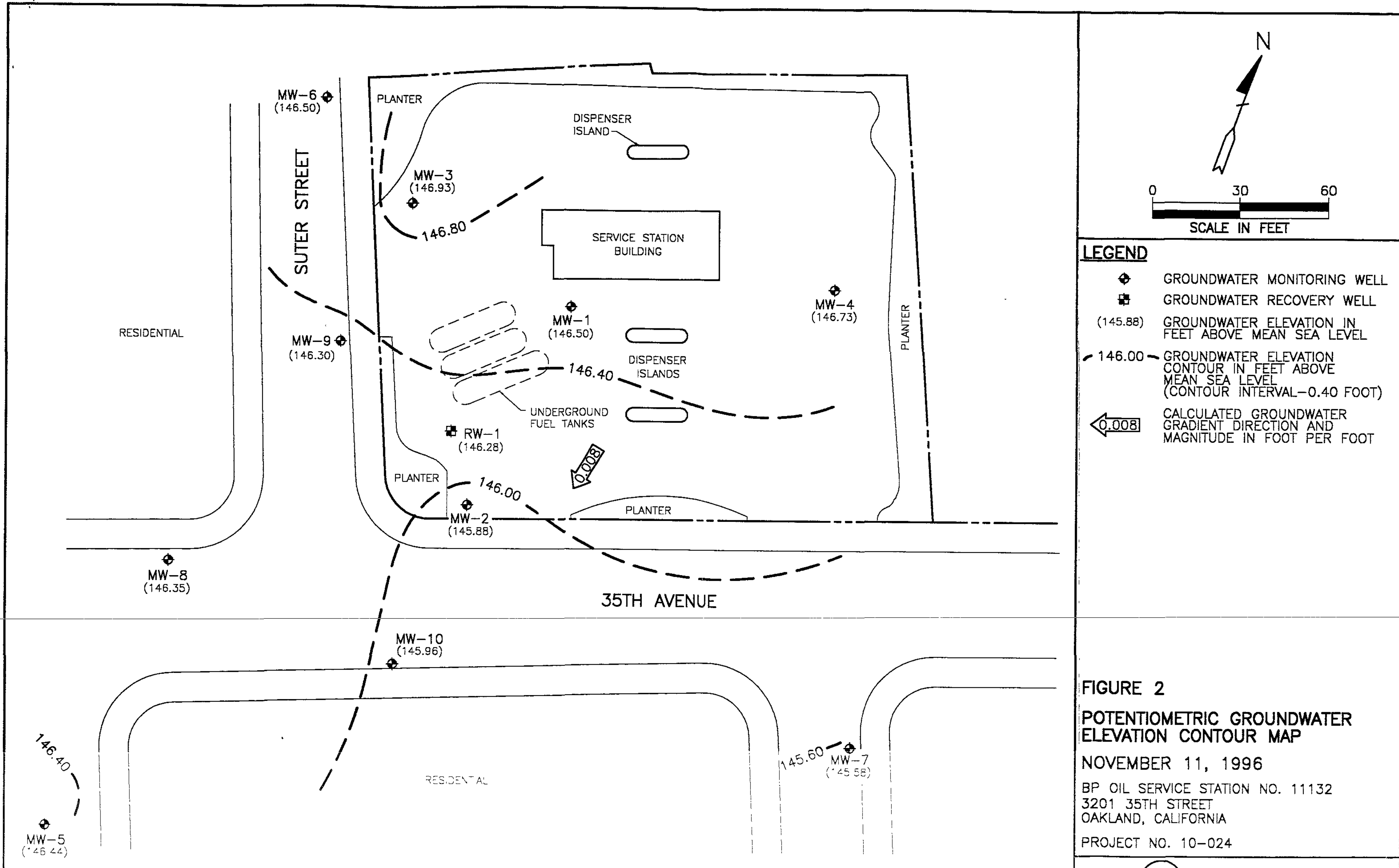
SITE VICINITY MAP

BP OIL SERVICE STATION NO. 11132
3201 35TH STREET
OAKLAND, CALIFORNIA

PROJECT NO. 10-024

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10024B--DWG 2-28-94 RKW 1=1



LEGEND

- GROUNDWATER MONITORING WELL
- GROUNDWATER RECOVERY WELL
- (145.88) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 146.00 GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL-0.40 FOOT)
- 0.008 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 2

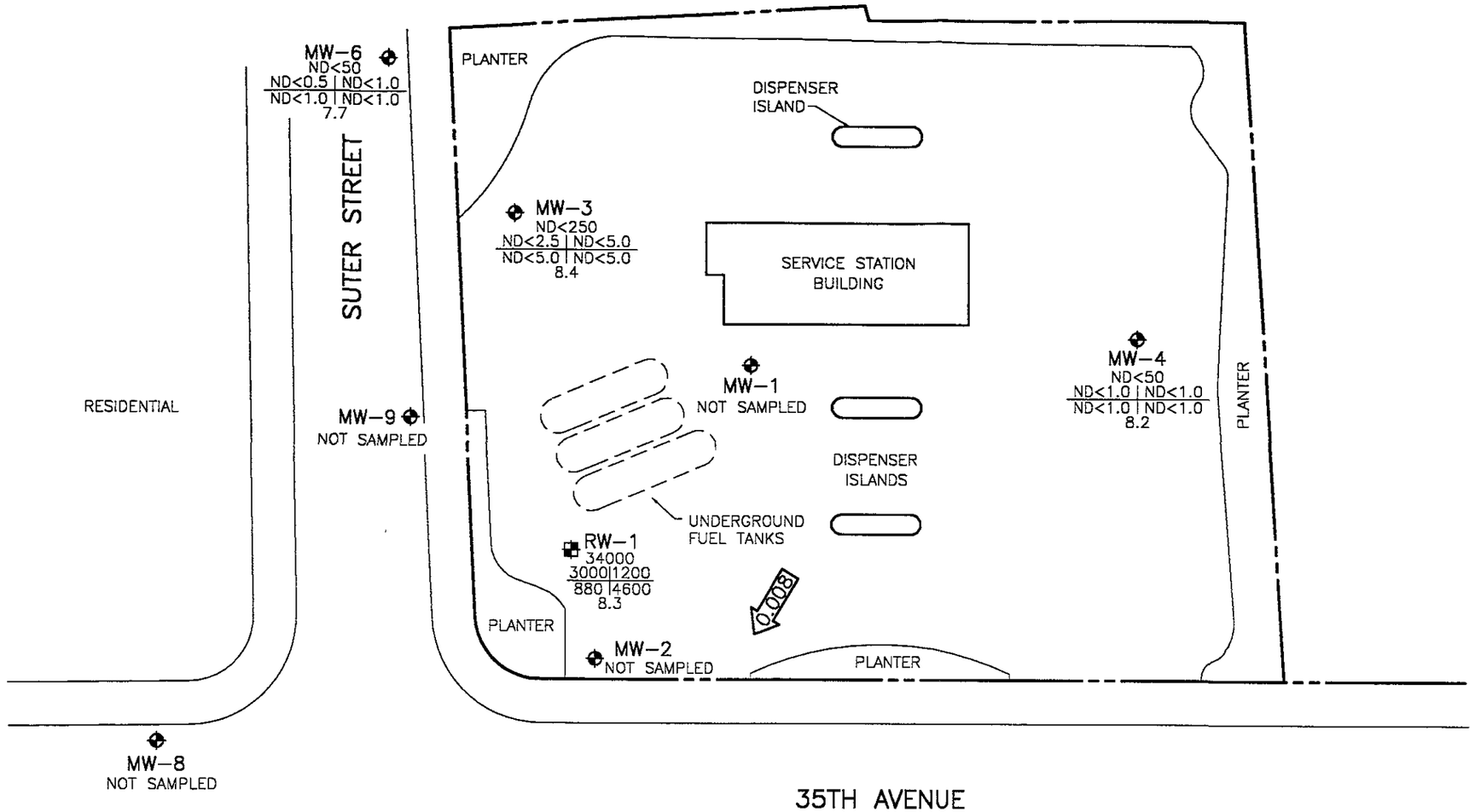
POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP

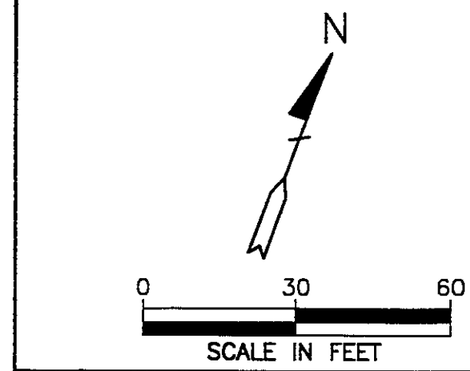
NOVEMBER 11, 1996

BP OIL SERVICE STATION NO. 11132
3201 35TH STREET
OAKLAND, CALIFORNIA

PROJECT NO. 10-024

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA





LEGEND

⊕	GROUNDWATER MONITORING WELL
⊞	GROUNDWATER RECOVERY 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
⇦0.008	CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 3

CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER

NOVEMBER 11, 1996

BP OIL SERVICE STATION NO. 11132
3201 35TH STREET
OAKLAND, CALIFORNIA

PROJECT NO. 10-024

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

APPENDIX A

WATER SAMPLING FIELD SURVEY FORMS

ALISTO

Field Report / Sampling Data Sheet

ENGINEERING
GROUP
1575 TREAT BOULEVARD, SUITE 201

Project No. 10-024-09-002 Date: 11/11/96
Address 3201 35th Street Day: (M) T W TH F
Contract No. G797457 City: Oakland
Station No. BP 11132 Sampler: LB

DEPTH TO GROUNDWATER SUMMARY

WELL ID	SAMPLE ID	WELL DIAM	TOTAL DEPTH	DEPTH TO WATER	PRODUCT THICKNESS	TIME MONITORED	COMMENTS:
MW-1	N/S	2"	N/M	23.99	.98	1056	Serviced PPRS 2 gal TF, .20 gal FP
MW-2	N/S		N/M	22.27	.01 ~~.03~~	1059	Serviced PPRS 1 gal TF, < .002 gal FP
MW-3	S-4		34.58	20.24	Ø	1047	
MW-4	~~N/S~~		38.74	23.63		1029	SEMI/JAN-JULY S-1
MW-5	S-5		30.88	18.70		1045	
MW-6	S-2		34.56	18.90		1033	SEMI/JAN-JULY
MW-7	S-3		34.49	22.03	✓	1039	SEMI/JAN-JULY
MW-8	N/S		N/M	19.41	.02	1104	Serviced PPRS 1 gal TF < .002 gal FP
MW-9	↓		N/M	19.91	.01	1110	Serviced PPRS 1 gal TF < .002 gal FP
MW-10	↓	↓	N/M	21.20	.20	1113	Serviced PPRS 1 gal TF < .04 gal FP
RW-1	S-6	6"	38.41	21.73	½	1050	QC-1 = (S-7) From this well

FIELD INSTRUMENT CALIBRATION DATA

pH METER Jun 4.00 4 7.00 7 10.00 10 TEMPERATURE COMPENSATED (Y) N TIME 1017
D.O. METER Jun ZERO d.O. SOLUTION 0 BAROMETRIC PRESSURE 760 TEMP 63 WEATHER Cloudy
CONDUCTIVITY METER Jun 10,000 _____ TURBIDITY METER _____ 5.0 NTU _____ OTHER X
LEAK DETECTOR : _____ ALARM MODE X NON ALARM MODE

Well ID	Depth to Water	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.
MW-4	23.63	2"	OK	Ø	Y (N)	3	1129	67.9	7.47	1.21ms	8.7
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			5		66.7	7.31	1.12ms	
38.74-23.63 = 15.11 X .16 = 2.42 X 3 =	7.26					7.5	1139	65.9	7.23	1.07ms	8.2
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port											
Comments:											

O EPA 601 ____
X TPH-G/BTEX HCl
O TPH Diesel ____
O TOG 5520 ____
TIME/SAMPLE ID
1147

Well ID	Depth to Water	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.
MW-6	18.90	2"	OK	Ø	Y (N)	3	1155	67.3	7.62	992µs	7.3
~~Total Depth~~ - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			5		66.6	7.54	1.17ms	
34.56 - 18.90 = 15.66 X .16 = 2.51 X 3 =	7.53					8	1205	66.2	7.46	1.14ms	7.7
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port											
Comments:											

O EPA 601 ____
X TPH-G/BTEX HCl
O TPH Diesel ____
O TOG 5520 ____
TIME/SAMPLE ID
1210

ALISTO

Field Report / Sampling Data Sheet

ENGINEERING
GROUP
1575 TREAT BOULEVARD, SUITE 201
WALNUT CREEK CA 94598 (510) 295-1650 FAX 295-1823

Project No. 10-024-09-002 Date: 11/11/96
Address 3201 35th Street Day: M T W TH F
Contract No. G797457 City: Oakland
Station No. BP 11132 Sampler: LWB

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
MW-7	22.03	2"	OK	Ø	Y (N)	2	1317	68.0	7.77	1.62ms	7.4
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			4		67.2	7.60	1.40ms	
34.49 - 22.03 = 12.46 X .16 = 1.99 X 3 =			6.00			6	1329	66.3	7.53	1.33ms	7.8
Purge Method: OSurface Pump ODisp.Tube OWinch XDisp. Bailer(s) 1 OSys Port											
Comments:											

O EPA 601 ____
X TPH-G/BTEX HCl
O TPH Diesel ____
O TOG 5520 ____
TIME/SAMPLE ID
1333

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
MW-3	20.24	2"	OK	Ø	Y (N)	2	1347	67.4	7.50	717µS	7.9
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			4		66.5	7.41	709µS	
34.58 - 20.24 = 14.34 X .16 = 2.29 X 3 =			6.87			7	1359	66.2	7.34	692µS	8.4
Purge Method: OSurface Pump ODisp.Tube OWinch XDisp. Bailer(s) 1 OSys Port											
Comments:											

O EPA 601 ____
X TPH-G/BTEX HCl
O TPH Diesel ____
O TOG 5520 ____
TIME/SAMPLE ID
1401

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
MW-5	18.70	2"	OK	Ø	Y (N)	2	1415	68.0	7.47	1.54ms	7.4
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			4		67.3	7.30	1.33ms	
30.88 - 18.70 = 12.18 X .16 = 1.95 X 3 =			5.85			6	1427	66.7	7.21	1.26ms	7.9
Purge Method: OSurface Pump ODisp.Tube OWinch XDisp. Bailer(s) 1 OSys Port											
Comments:											

O EPA 601 ____
X TPH-G/BTEX HCl
O TPH Diesel ____
O TOG 5520 ____
TIME/SAMPLE ID
1427

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
RW-1	21.73	6"	OK	Ø	Y (N)	25	1440	67.2	7.63	1.49ms	7.7
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			50		66.5	7.52	1.21ms	
38.41 - 21.73 = 16.68 X 1.47 = 24.52 X 3 =			73.56			74	1454	66.0	7.47	1.14ms	8.3
Purge Method: OSurface Pump ODisp.Tube OWinch XDisp. Bailer(s) 4 OSys Port											
Comments:											

X EPA 601 HCl
X TPH-G/BTEX HCl
O TPH Diesel ____
O TOG 5520 ____
TIME/SAMPLE ID
1501

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
					Y N						
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.								
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s) ___ OSys Port											
Comments:											

O EPA 601 ____
O TPH-G/BTEX ___
O TPH Diesel ____
O TOG 5520 ____
TIME/SAMPLE ID

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Southern Petroleum Laboratories, Inc.

Certificate of Analysis Number: 96-11-596

Approved for Release by:

Ed Fry, Project Manager — Date: 11/19/96

Greg Grandits
Laboratory Director

Idelis Williams
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9611596-01

BP Oil Company
295 SW 41st St, Bldg 13,Ste N
Renton, WA 98055
ATTN: Scott Hooton

P.O.# G797457,COC#084391
DATE: 11/19/96

PROJECT: BP Oil #11132
SITE: Oakland, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-1

PROJECT NO: 10-024-9-2
MATRIX: WATER
DATE SAMPLED: 11/11/96
DATE RECEIVED: 11/12/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	34	1.0 P	µg/L
Benzene	ND	1.0 P	µg/L
Toluene	ND	1.0 P	µg/L
Ethylbenzene	ND	1.0 P	µg/L
Total Xylene	ND	1.0 P	µg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	90		
4-Bromofluorobenzene	93		
METHOD 8020***			
Analyzed by: AA			
Date: 11/15/96			
Total Petroleum Hydrocarbons-Gasoline	ND	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	93		
4-Bromofluorobenzene	100		
CA LUFT - Gasoline			
Analyzed by: AA			
Date: 11/15/96 08:39:00			

(P) - Practical Quantitation Limit ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.
SPL California License # 1903

SPL, Inc., - Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9611596-02

BP Oil Company
295 SW 41st St, Bldg 13,Ste N
Renton, WA 98055
ATTN: Scott Hooton

P.O.# G797457,COC#084391
DATE: 11/19/96

PROJECT: BP Oil #11132
SITE: Oakland, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-2

PROJECT NO: 10-024-9-2
MATRIX: WATER
DATE SAMPLED: 11/11/96
DATE RECEIVED: 11/12/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	ND	10 P	µg/L
Benzene	ND	0.5 P	µg/L
Toluene	ND	1.0 P	µg/L
Ethylbenzene	ND	1.0 P	µg/L
Total Xylene	ND	1.0 P	µg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	83		
4-Bromofluorobenzene	93		
METHOD 8020***			
Analyzed by: AA			
Date: 11/15/96			
Total Petroleum Hydrocarbons-Gasoline	ND	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	93		
4-Bromofluorobenzene	103		
CA LUFT - Gasoline			
Analyzed by: AA			
Date: 11/15/96 09:07:00			

ND - Not detected. (P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.
SPL California License # 1903

SPL, Inc., - Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9611596-03

BP Oil Company
295 SW 41st St, Bldg 13,Ste N
Renton, WA 98055
ATTN: Scott Hooton

P.O.# G797457,COC#084391
DATE: 11/19/96

PROJECT: BP Oil #11132
SITE: Oakland, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-3

PROJECT NO: 10-024-9-2
MATRIX: WATER
DATE SAMPLED: 11/11/96
DATE RECEIVED: 11/12/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	ND	10 P	µg/L
Benzene	ND	0.5 P	µg/L
Toluene	ND	1.0 P	µg/L
Ethylbenzene	ND	1.0 P	µg/L
Total Xylene	ND	1.0 P	µg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	83		
4-Bromofluorobenzene	93		
METHOD 8020***			
Analyzed by: AA			
Date: 11/15/96			
Total Petroleum Hydrocarbons-Gasoline	ND	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	93		
4-Bromofluorobenzene	100		
CA LUFT - Gasoline			
Analyzed by: AA			
Date: 11/15/96 09:35:00			

ND - Not detected. (P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.
SPL California License # 1903

SPL, Inc., - Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9611596-04

BP Oil Company
295 SW 41st St, Bldg 13,Ste N
Renton, WA 98055
ATTN: Scott Hooton

P.O.# G797457,COC#084391
DATE: 11/19/96

PROJECT: BP Oil #11132
SITE: Oakland, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-4

PROJECT NO: 10-024-9-2
MATRIX: WATER
DATE SAMPLED: 11/11/96
DATE RECEIVED: 11/12/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	ND	50 P	µg/L
Benzene	ND	2.5 P	µg/L
Toluene	ND	5.0 P	µg/L
Ethylbenzene	ND	5.0 P	µg/L
Total Xylene	ND	5.0 P	µg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	87		
4-Bromofluorobenzene	93		
METHOD 8020***			
Analyzed by: AA			
Date: 11/15/96			
Total Petroleum Hydrocarbons-Gasoline	ND	0.25 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	93		
4-Bromofluorobenzene	100		
CA LUFT - Gasoline			
Analyzed by: AA			
Date: 11/15/96 11:58:00			

ND - Not detected. (P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.
SPL California License # 1903

SPL, Inc., - Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9611596-05

BP Oil Company
295 SW 41st St, Bldg 13,Ste N
Renton, WA 98055
ATTN: Scott Hooton

P.O.# G797457,COC#084391
DATE: 11/19/96

PROJECT: BP Oil #11132
SITE: Oakland, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-5

PROJECT NO: 10-024-9-2
MATRIX: WATER
DATE SAMPLED: 11/11/96
DATE RECEIVED: 11/12/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	ND	10 P	µg/L
Benzene	40	0.5 P	µg/L
Toluene	ND	1.0 P	µg/L
Ethylbenzene	ND	1.0 P	µg/L
Total Xylene	ND	1.0 P	µg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	107		
4-Bromofluorobenzene	93		
METHOD 8020***			
Analyzed by: AA			
Date: 11/15/96			
Total Petroleum Hydrocarbons-Gasoline	0.14	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	90		
4-Bromofluorobenzene	93		
CA LUFT - Gasoline			
Analyzed by: AA			
Date: 11/15/96 10:03:00			

ND - Not detected. (P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.
SPL California License # 1903

SPL, Inc., - Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9611596-06

BP Oil Company
295 SW 41st St, Bldg 13,Ste N
Renton, WA 98055
ATTN: Scott Hooton

P.O.# G797457,COC#084391
DATE: 11/19/96

PROJECT: BP Oil #11132
SITE: Oakland, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-6

PROJECT NO: 10-024-9-2
MATRIX: WATER
DATE SAMPLED: 11/11/96
DATE RECEIVED: 11/12/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	22000	2500 P	µg/L
Benzene	3000	120 P	µg/L
Toluene	1200	250 P	µg/L
Ethylbenzene	880	250 P	µg/L
Total Xylene	4600	250 P	µg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	83		
4-Bromofluorobenzene	96		
METHOD 8020***			
Analyzed by: AA			
Date: 11/16/96			
Total Petroleum Hydrocarbons-Gasoline	34	12 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	89		
4-Bromofluorobenzene	99		
CA LUFT - Gasoline			
Analyzed by: AA			
Date: 11/16/96 12:54:00			

(P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.
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SPL, Inc., - Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9611596-07

BP Oil Company
295 SW 41st St, Bldg 13,Ste N
Renton, WA 98055
ATTN: Scott Hooton

P.O.# G797457,COC#084391
DATE: 11/19/96

PROJECT: BP Oil #11132
SITE: Oakland, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-7

PROJECT NO: 10-024-9-2
MATRIX: WATER
DATE SAMPLED: 11/11/96
DATE RECEIVED: 11/12/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	22000	1000 P	µg/L
Benzene	2900	50 P	µg/L
Toluene	1000	100 P	µg/L
Ethylbenzene	860	100 P	µg/L
Total Xylene	4600	100 P	µg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	90		
4-Bromofluorobenzene	90		
METHOD 8020***			
Analyzed by: AA			
Date: 11/16/96			
Total Petroleum Hydrocarbons-Gasoline	31	5 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	93		
4-Bromofluorobenzene	100		
CA LUFT - Gasoline			
Analyzed by: AA			
Date: 11/16/96 12:26:00			

(P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.
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SPL, Inc., - Project Manager

QUALITY CONTROL

DOCUMENTATION

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

CA LUFT - Gasoline **BATCH#:HP_N961115113500**
WORK ORDER: 9611596-01A **CLIENT SAMPLE ID:** S-1

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
1,4-Difluorobenzene	30	28	93	50- 150
4-Bromofluorobenzene	30	30	100	50- 150

CA LUFT - Gasoline **BATCH#:HP_N961115113500**
WORK ORDER: 9611596-02A **CLIENT SAMPLE ID:** S-2

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
1,4-Difluorobenzene	30	28	93	50- 150
4-Bromofluorobenzene	30	31	103	50- 150

CA LUFT - Gasoline **BATCH#:HP_N961115113500**
WORK ORDER: 9611596-03A **CLIENT SAMPLE ID:** S-3

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
1,4-Difluorobenzene	30	28	93	50- 150
4-Bromofluorobenzene	30	30	100	50- 150

CA LUFT - Gasoline **BATCH#:HP_N961115113500**
WORK ORDER: 9611596-04A **CLIENT SAMPLE ID:** S-4

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
1,4-Difluorobenzene	30	28.0000	93	50- 150
4-Bromofluorobenzene	30	30.0000	100	50- 150

CA LUFT - Gasoline **BATCH#:HP_N961115113500**
WORK ORDER: 9611596-05A **CLIENT SAMPLE ID:** S-5

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
1,4-Difluorobenzene	30	27	90	50- 150
4-Bromofluorobenzene	30	28	93	50- 150

CA LUFT - Gasoline **BATCH#:HP_N961115113500**
WORK ORDER: 9611596-06A **CLIENT SAMPLE ID:** S-6

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
1,4-Difluorobenzene	30	26.8000	89	50- 150
4-Bromofluorobenzene	30	29.6000	99	50- 150

CA LUFT - Gasoline **BATCH#:HP_N961115113500**
WORK ORDER: 9611596-07A **CLIENT SAMPLE ID:** S-7

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
1,4-Difluorobenzene	30	28.0000	93	50- 150
4-Bromofluorobenzene	30	30.0000	100	50- 150

CA LUFT - Gasoline **BATCH#:HP_N961115113500**
WORK ORDER: Method Blank **CLIENT SAMPLE ID:**

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
1,4-Difluorobenzene	30	28		50- 150

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HOUSTON, TEXAS 77054
PHONE (713) 660-0901

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
4-Bromofluorobenzene	30	30		50- 150

CA LUFT - Gasoline **BATCH#:**HP_N961115113500
WORK ORDER: Matrix Spike **CLIENT SAMPLE ID:**9611596-02A

1,4-Difluorobenzene	30	29	97	50- 150
4-Bromofluorobenzene	30	31	103	50- 150

CA LUFT - Gasoline **BATCH#:**HP_N961115113500
WORK ORDER: Matrix Spike Dup. **CLIENT SAMPLE ID:**9611596-02A

1,4-Difluorobenzene	30	30	100	50- 150
4-Bromofluorobenzene	30	31	103	50- 150

METHOD 8020A *** **BATCH#:**HP_N961115123200
WORK ORDER: 9611596-01A **CLIENT SAMPLE ID:**S-1

1,4-Difluorobenzene	30	27	90	70- 131
4-Bromofluorobenzene	30	28	93	43- 135

METHOD 8020*** **BATCH#:**HP_N961115123200
WORK ORDER: 9611596-02A **CLIENT SAMPLE ID:**S-2

1,4-Difluorobenzene	30	25	83	70- 131
4-Bromofluorobenzene	30	28	93	43- 135

METHOD 8020*** **BATCH#:**HP_N961115123200
WORK ORDER: 9611596-03A **CLIENT SAMPLE ID:**S-3

1,4-Difluorobenzene	30	25	83	70- 131
4-Bromofluorobenzene	30	28	93	43- 135

METHOD 8020*** **BATCH#:**HP_N961115123200
WORK ORDER: 9611596-04A **CLIENT SAMPLE ID:**S-4

1,4-Difluorobenzene	30	26.0000	87	70- 131
4-Bromofluorobenzene	30	28.0000	93	43- 135

METHOD 8020*** **BATCH#:**HP_N961115123200
WORK ORDER: 9611596-05A **CLIENT SAMPLE ID:**S-5

1,4-Difluorobenzene	30	32	107	70- 131
4-Bromofluorobenzene	30	28	93	43- 135

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HOUSTON, TEXAS 77054
PHONE (713) 660-0901

METHOD 8020***
WORK ORDER: 9611596-06A
BATCH#:HP_N961115123200
CLIENT SAMPLE ID:S-6

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
1,4-Difluorobenzene	30	24.8000	83	70- 131
4-Bromofluorobenzene	30	28.8000	96	43- 135

METHOD 8020***
WORK ORDER: 9611596-07A
BATCH#:HP_N961115123200
CLIENT SAMPLE ID:S-7

1,4-Difluorobenzene	30	27.0000	90	70- 131
4-Bromofluorobenzene	30	27.0000	90	43- 135

METHOD 8020A ***
WORK ORDER: Method Blank
BATCH#:HP_N961115123200
CLIENT SAMPLE ID:

1,4-Difluorobenzene	30	25	83	74- 131
4-Bromofluorobenzene	30	28	93	43- 135

METHOD 8020A ***
WORK ORDER: Matrix Spike
BATCH#:HP_N961115123200
CLIENT SAMPLE ID:9611596-01A

1,4-DIFLUOROBENZENE	30	23	77	70- 131
4-BROMOFLUOROBENZENE	30	26	87	43- 135

METHOD 8020A ***
WORK ORDER: Matrix Spike Dup.
BATCH#:HP_N961115123200
CLIENT SAMPLE ID:9611596-01A

1,4-Difluorobenzene	30	25	83	70- 131
4-Bromofluorobenzene	30	27	90	43- 135

« = Recovery outside of control limits
* = Methods for Chemical Analysis of Water & Wastes,1983,EPA.
** = Standard Methods for Examination of Water & Wastewater,17th
*** = Test Methods for Evaluating Solid Waste,EPA SW846,3rd

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

** SPL BATCH QUALITY CONTROL REPORT **
METHOD 8020/602

Matrix: Aqueous
Units: µg/L

Batch Id: HP_N961115123200

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
MTBE	ND	50	50	100	63 - 120
Benzene	ND	50	41	82.0	62 - 121
Toluene	ND	50	42	84.0	66 - 136
EthylBenzene	ND	50	42	84.0	70 - 136
O Xylene	ND	50	44	88.0	74 - 134
M & P Xylene	ND	100	84	84.0	77 - 140

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
MTBE	34	20	55	105	55	105	0	20	39 - 150
BENZENE	ND	20	18	90.0	17	85.0	5.71	25	39 - 150
TOLUENE	ND	20	19	95.0	17	85.0	11.1	26	56 - 134
ETHYLBENZENE	ND	20	18	90.0	17	85.0	5.71	38	61 - 128
O XYLENE	ND	20	18	90.0	17	85.0	5.71	29	40 - 130
M & P XYLENE	ND	40	36	90.0	34	85.0	5.71	20	43 - 152

Analyst: AA
Sequence Date: 11/15/96
SPL ID of sample spiked: 9611596-01A
Sample File ID: N_K6826.TX0
Method Blank File ID:
Blank Spike File ID: N_K6819.TX0
Matrix Spike File ID: N_K6821.TX0
Matrix Spike Duplicate File ID: N_K6822.TX0

* = Values Outside QC Range
NC = Not Calculated (Sample exceeds spike by factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = |(<4> - <5> | / [(<4> + <5>) x 0.5] x 100
(**) = Source: SPL-Houston Historical Data (3rd Q '95)
(***) = Source: SPL-Houston Historical Data (2nd Q '95)

SAMPLES IN BATCH(SPL ID):

9611596-03A 9611596-05A 9611602-01A 9611602-02A
9611602-03A 9611596-04A 9611596-07A 9611596-06A
9611602-04A 9611602-05A 9611428-01A 9611498-01A
9611498-03A 9611428-04A 9611602-08A 9611602-07A
9611596-01A 9611596-02A

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

** SPL BATCH QUALITY CONTROL REPORT **
CA LUFT

Matrix: Aqueous
Units: mg/L

Batch Id: HP_N961115113500

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Petroleum Hydrocarbons-Gas	ND	1.0	0.85	85.0	50 - 150

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
PETROLEUM HYDROCARBONS-GAS	ND	0.90	1.0	111	1.0	111	0	50	50 - 150

Analyst: AA
Sequence Date: 11/15/96
SPL ID of sample spiked: 9611596-02A
Sample File ID: NNK6827.TX0
Method Blank File ID:
Blank Spike File ID: NNK6817.TX0
Matrix Spike File ID: NNK6823.TX0
Matrix Spike Duplicate File ID: NNK6824.TX0

* = Values Outside QC Range
NC = Not Calculated (Sample exceeds spike by factor of 4 or more)
ND = Not Detected/Below Detection Limit
% Recovery = [(<1> - <2>) / <3>] x 100
LCS % Recovery = (<1> / <3>) x 100
Relative Percent Difference = |(<4> - <5> | / [(<4> + <5>) x 0.5] x 100
(**) = Source: Temporary Limits
(***) = Source: Temporary Limits

SAMPLES IN BATCH(SPL ID):

9611596-01A 9611596-02A 9611596-03A 9611596-05A
9611602-01A 9611602-02A 9611602-03A 9611596-04A
9611596-07A 9611596-06A 9611602-04A 9611602-05A
9611602-06A 9611428-01A 9611428-04A 9611602-08A
9611602-07A

CHAIN OF CUSTODY

AND

SAMPLE RECEIPT CHECKLIST

96-11-596

BP

CHAIN OF CUSTODY

No. 084391 Page 1 of 1

CONSULTANT'S NAME	ADDRESS	CITY	STATE	ZIP CODE
Alisto Engineering	1575 Treat Blvd #201	W.C.	Ca	94598

BP SITE NUMBER	BP CORNER ADDRESS/CITY	CONSULTANT PROJECT NUMBER
11132	Oakland, Ca	10-024-9-2

CONSULTANT PROJECT MANAGER	PHONE NUMBER	FAX NUMBER	CONSULTANT CONTRACT NUMBER
Brady Nagle	(510) 295-1650	295-1823	6797457
BP CONTACT	**BP ADDRESS**	**PHONE NUMBER**	**FAX NO**
Scott Hooton	Renton, WA		
LAB CONTACT	**LABORATORY ADDRESS**	**PHONE NUMBER**	**FAX NO**
SPL	Texas		

SAMPLED BY (Please Print Name)	SAMPLED BY (Signature)	SHIPMENT DATE	SHIPMENT METHOD
Larry Buenvenida	[signature]	11/11/96	Fed Ex

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

ANALYSIS REQUIRED

AIRBILL NUMBER 9404778891

SAMPLE DESCRIPTION	COLLECTION DATE / COLLECTION TIME	MATRIX SOIL/WATER	CONTAINERS NO.	CONTAINERS TYPE (VOL.)	PRESERVATIVE / LAB SAMPLE #	TPH-G/BTEX	MTBE	11-12 AM MP								COMMENTS
S-1	11/11/96	W	3	HCl		X	X	1								
S-2	↓	↓	↓	↓		↓	↓	1								
S-3	↓	↓	↓	↓		↓	↓	1								
S-4	↓	↓	↓	↓		↓	↓	1								
S-5	↓	↓	↓	↓		↓	↓	1								
S-6	↓	↓	↓	↓		↓	↓	1								
S-7	↓	↓	↓	↓		↓	↓	1								

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature]	11/11/96		[signature] Jeffrey Mandili	11/11/96	3:40
[signature] Jeffrey Mandili	11/11/96	3:48	Fed ex: 9404778891		
			Misty Paul	11-12-96	10:00

ADDITIONAL COMMENTS
4°C intact

CLV-16722
PKG/50

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

SPL Houston Environmental Laboratory

Sample Login Checklist

Date:	Time:
11-12-96	1000

SPL Sample ID:
96-11-596

			Yes	No
1	Chain-of-Custody (COC) form is present.		✓	
2	COC is properly completed.		✓	
3	If no, Non-Conformance Worksheet has been completed.			
4	Custody seals are present on the shipping container.		✓	
5	If yes, custody seals are intact.		✓	
6	All samples are tagged or labeled.		✓	
7	If no, Non-Conformance Worksheet has been completed.			
8	Sample containers arrived intact		✓	
9	Temperature of samples upon arrival:		4° C	
10	Method of sample delivery to SPL:	SPL Delivery		
		Client Delivery		
		FedEx Delivery (airbill #)	940477889	
		Other:		
11	Method of sample disposal:	SPL Disposal	✓	
		HOLD		
		Return to Client		

Name:	Date:
[signature]	11-12-96

BP EXPLORATION & OIL, INC.
ENVIRONMENTAL REMEDIATION MANAGEMENT
DATA REVIEW CHECKLIST

BP Site Number: 11132
ERM Contact: Scott Hooton
Sampling Date: 11/11/96
Matrix Description: WATER
Date Final Report Received: 11/25/96
Laboratory & Location: SPL - TX

		Yes	No	NA
1.	Is BP contract release number consistent with analytical report?	✓		
2.	Was report submitted within the specified timeframe?	✓		
3.	Does report agree with the COC?	✓		
4.	Are units consistent with the given matrix?		✓	
5.	Were any target analytes/compounds detected in blanks (i.e., trip or equipment)?			✓
6.	Are duplicate water samples within ___%?	✓		
7.	Are holding times met?	✓		
8.	Are surrogates within limits using laboratory criteria?	✓		
9.	Are MS/MSD acceptable using laboratory criteria?	✓		
10.	Are LCS results acceptable using laboratory criteria?	✓		

Notes: 1 MDL elevated for S-4.

Data Validation Completed by (print): Ken Simms
(signature): [signature]
Date: 12/19/96