BP OIL

97 FEB 18 PM 4:08
ENVIRONMENTAL PROTECTION

February 14, 1997

High MTBE on wells.
MW-1 and MW-6

Ms Eva Chu
Alameda County Health Care Services Agency
1131 Harbour Bay Parkway, Room 250
Alameda, CA 94502-6577

RE: BP OIL FACILITY #11266
1541 Park Street
Alameda, CA

Dear Ms Chu:

Attached please find our **GROUNDWATER MONITORING AND SAMPLING REPORT DATED DECEMBER 20, 1996** for the above referenced facility. Plans for the following quarter include additional groundwater monitoring.

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\ERM11266

cc: Mr. Eddy So, CRWQCB, San Francisco Bay Region, 2101 Webster St. Suite 500, Oakland CA 94612

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

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

Site File

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11266
1541 Park Street
Alameda, California

Project No. 10-050-07-001

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 20, 1996

William Howell
Project Manager

Al Sevilla, P.E.
Principal

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11266
1541 Park Street
Alameda, California

Project No. 10-050-07-001

December 20, 1996

INTRODUCTION

This report presents the results and findings of the November 5, 1996 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11266, 1541 Park Street, Alameda, 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 in reference to mean sea level. The survey data and groundwater elevation measurements collected to date are presented in Table 1.

Before sample collection, each well was purged of 3 casing volumes, while recording field readings of pH, temperature, 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.

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11266
1541 PARK STREET, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-050

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (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	03/04/88	19.19	---	---	95000	2000	5900	1100	10000	---	---	---
MW-1	03/29/89	19.19	---	---	25000	930	2600	24	3100	---	---	---
MW-1	11/28/89	19.19	---	---	15000	280	880	340	1200	---	---	---
MW-1	02/13/91	19.19	---	---	25000	680	2700	1100	3200	---	---	---
MW-1	01/08/92	19.19	---	---	10000	260	1100	570	2000	---	---	---
MW-1	03/30/92	19.19	8.15	11.04	5800	290	570	500	1100	---	---	PACE
MW-1	07/02/92	19.19	9.38	9.81	2500	170	60	310	300	---	---	ANA
MW-1	07/22/92	19.19	9.62	9.57	---	---	---	---	---	---	---	---
MW-1	10/02/92	19.19	9.98	9.21	4000	86	190	270	350	---	---	ANA
QC-1 (c)	10/02/92	---	---	---	3600	89	180	270	340	---	---	ANA
MW-1	12/14/92	19.19	9.90	9.29	6800	75	540	200	670	---	---	ANA
QC-1 (c)	12/14/92	---	---	---	5900	68	480	190	600	---	---	ANA
MW-1	03/24/93	19.19	8.52	10.67	6400	150	310	370	710	---	---	PACE
MW-1	06/17/93	19.19	9.37	9.82	3800	110	160	310	480	---	---	PACE
MW-1	09/29/93	19.19	10.80	8.39	1100	22	16	54	110	---	---	PACE
MW-1	12/28/93	19.19	9.27	9.92	1800	26	110	77	300	---	---	PACE
MW-1	03/29/94	19.19	8.77	10.42	22000	990	560	970	2000	---	3.1	PACE
MW-1	07/07/94	19.19	9.18	10.01	18000	67	32	250	140	---	---	PACE
MW-1	10/18/94	19.19	9.85	9.34	270	1.9	0.6	ND<0.5	3.2	---	3.6	PACE
MW-1	02/01/95	19.19	7.04	12.15	5400	260	350	1100	980	---	6.5	ATI
MW-1	04/12/95	19.19	7.74	11.45	13000	260	620	960	2600	---	5.0	ATI
MW-1	09/13/95	19.19	9.58	9.61	5800	110	110	510	830	4300	5.2	ATI
QC-1 (c)	09/13/95	---	---	---	5800	110	100	490	800	4500	---	ATI
MW-1	01/11/96	19.19	8.95	10.24	5400	91	130	510	1000	1700	5.2	ATI
QC-1 (c)	01/11/96	---	---	---	5100	89	120	490	950	2000	---	ATI
MW-1	04/18/96	19.19	8.40	10.79	12000	190	420	1100	1560	2100	4.5	SPL
QC-1 (c)	04/18/96	---	---	---	12000	190	390	1100	1440	2000	---	SPL
MW-1	06/28/96	19.19	9.08	10.11	11000	100	130	670	1180	4600	---	SPL
QC-1 (c)	06/28/96	---	---	---	11000	100	140	690	1290	4600	---	SPL
MW-1	11/05/96	19.19	9.81	9.38	8800	55	28	520	430	[illegible]	5.5	SPL
QC-1 (c)	11/05/96	---	---	---	8800	48	ND<25	490	413	[illegible]	---	SPL
MW-2	03/04/88	19.32	---	---	ND	ND	ND	ND	ND	---	---	---
MW-2	03/29/89	19.32	---	---	ND	1.1	0.78	ND	1.7	---	---	---
MW-2	11/28/89	19.32	---	---	170	ND	ND	ND	ND	---	---	---
MW-2	02/13/91	19.32	---	---	150	1.4	ND	ND	0.9	---	---	---
MW-2	01/08/92	19.32	---	---	ND	1.4	ND	ND	1.1	---	---	---
MW-2	03/30/92	19.32	9.03	10.29	91	0.7	ND	ND	ND	---	---	PACE
MW-2	07/02/92	19.32	9.96	9.36	150	3.1	0.6	0.6	1.1	---	---	ANA
MW-2	07/22/92	19.32	10.12	9.20	---	---	---	---	---	---	---	---
MW-2	10/02/92	19.32	10.42	8.90	56	ND<0.5	0.8	0.8	1.2	---	---	ANA
MW-2	12/14/92	19.32	10.77	8.55	210	1.5	ND<0.5	0.9	2.7	---	---	ANA
MW-2	03/24/93	19.32	9.33	9.99	94	0.8	ND<0.5	ND<0.5	0.9	---	---	PACE
QC-1 (c)	03/24/93	---	---	---	150	1.8	0.6	1.3	1.3	---	---	PACE
MW-2	06/17/93	19.32	9.91	9.41	ND<50	ND<0.5	ND<0.5	ND<0.5	0.7	---	---	PACE
MW-2	09/29/93	19.32	11.39	7.93	68	ND<0.5	0.9	0.7	1.9	---	---	PACE
MW-2	12/28/93	19.32	9.75	9.57	260	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-1 (c)	12/28/93	---	---	---	240	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-2	03/29/94	19.32	9.39	9.93	150	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	4.9	PACE
QC-1 (c)	03/29/94	---	---	---	140	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-2	07/07/94	19.32	9.68	9.64	1100	0.6	1.7	0.6	3.2	---	---	PACE
MW-2	10/18/94	19.32	10.22	9.10	290	3.1	0.8	ND<0.5	5.1	---	3.3	PACE
MW-2	02/01/95	19.32	8.03	11.29	100	ND<0.5	ND<0.5	ND<0.5	ND<1	---	6.0	ATI
MW-2	04/12/95	19.32	8.71	10.61	1200	ND<1.0	ND<1.0	ND<1.0	ND<2.0	---	8.3	ATI
MW-2	09/13/95	19.32	10.19	9.13	480	ND<2.5	ND<2.5	ND<2.5	ND<5.0	2300	7.8	ATI
MW-2	01/11/96	19.32	9.59	9.73	3400	ND<25	ND<25	ND<25	ND<50	11000	5.4	ATI
MW-2	04/18/96	19.32	9.04	10.28	130	ND<0.5	ND<1	ND<1	ND<1	170	5.5	SPL
MW-2	06/28/96	19.32	9.72	9.60	300	ND<0.5	ND<1	ND<1	ND<1	430	4.9	SPL
MW-2	11/05/96	19.32	10.43	8.89	710	ND<2.5	ND<5.0	ND<5.0	ND<5.0	960	5.3	SPL

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ALISTO PROJECT NO. 10-050

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (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	03/04/88	19.99	---	---	ND	ND	ND	ND	ND	---	---	---
MW-3	03/29/89	19.99	---	---	ND	ND	ND	ND	ND	---	---	---
MW-3	11/28/89	19.99	---	---	ND	ND	ND	ND	ND	---	---	---
MW-3	02/13/91	19.99	---	---	ND	ND	ND	ND	ND	---	---	---
MW-3	01/08/92	19.99	---	---	ND	ND	ND	ND	ND	---	---	---
MW-3	03/30/92	19.99	9.71	10.28	ND	ND	ND	ND	ND	---	---	PACE
MW-3	07/02/92	19.99	10.52	9.47	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-3	07/22/92	19.99	10.62	9.37	---	---	---	---	---	---	---	---
MW-3	10/02/92	19.99	10.86	9.13	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-3	12/14/92	19.99	10.53	9.46	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-3	03/24/93	19.99	9.06	10.93	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-3	06/17/93	19.99	10.44	9.55	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-3	09/29/93	19.99	11.06	8.93	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-3	12/28/93	19.99	9.43	10.56	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-3	03/29/94	19.99	10.01	9.98	---	---	---	---	ND<0.5	---	---	---
MW-3	07/07/94	19.99	10.14	9.85	ND<50	ND<0.5	0.7	ND<0.5	ND<0.5	---	---	PACE
QC-1 (c)	07/07/94	---	---	---	ND<50	ND<0.5	0.7	ND<0.5	ND<0.5	---	---	PACE
MW-3	10/18/94	19.99	10.56	9.43	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	3.2	PACE
MW-3	02/01/95	19.99	8.98	11.01	ND<50	ND<0.5	1.0	0.5	1.9	---	5.9	ATI
MW-3	04/12/95	19.99	9.70	10.29	---	---	---	---	---	---	---	---
MW-3	09/13/95	19.99	10.70	9.29	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	5.7	ATI
MW-3	01/11/96	19.99	10.18	9.81	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	5.5	ATI
MW-3	04/18/96	19.99	9.53	10.46	---	---	---	---	---	---	---	---
MW-3	06/28/96	19.99	9.21	10.78	ND<50	ND<0.5	ND<1	ND<1	ND<1	ND<10	4.3	SPL
MW-3	11/05/96	19.99	9.94	10.05	---	---	---	---	---	---	---	---
MW-4	03/04/88	20.17	---	---	ND	ND	ND	ND	ND	---	---	---
MW-4	03/29/89	20.17	---	---	ND	ND	ND	ND	ND	---	---	---
MW-4	11/28/89	20.17	---	---	430	6.2	0.6	12	3.3	---	---	---
MW-4	02/13/91	20.17	---	---	ND	ND	ND	ND	ND	---	---	---
MW-4	01/08/92	20.17	---	---	ND	ND	ND	ND	ND	---	---	---
MW-4	03/30/92	20.17	8.73	11.44	ND	ND	ND	ND	ND	---	---	PACE
MW-4	07/02/92	20.17	10.04	10.13	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-4	07/22/92	20.17	10.26	9.91	---	---	---	---	---	---	---	---
MW-4	10/02/92	20.17	10.63	9.54	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-4	12/14/92	20.17	10.02	10.15	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-4	03/24/93	20.17	9.08	11.09	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-4	06/17/93	20.17	10.03	10.14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-4	09/29/93	20.17	10.96	9.21	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-4	12/28/93	20.17	9.33	10.84	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-4	03/29/94	20.17	9.42	10.75	---	---	---	---	---	---	---	---
MW-4	07/07/94	20.17	9.82	10.35	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-4	10/18/94	20.17	10.36	9.81	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	3.1	PACE
MW-4	02/01/95	20.17	7.50	12.67	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	---	9.3	ATI
MW-4	04/12/95	20.17	8.21	11.96	---	---	---	---	---	---	---	---
MW-4	09/13/95	20.17	10.20	9.97	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	4.3	ATI
MW-4	01/11/96	20.17	9.57	10.60	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	5.1	ATI
MW-4	04/18/96	20.17	9.03	11.14	---	---	---	---	---	---	---	---
MW-4	06/28/96	20.17	8.73	11.44	ND<50	ND<0.5	ND<1	ND<1	ND<1	ND<10	4.6	SPL
MW-4	11/05/96	20.17	9.47	10.70	---	---	---	---	---	---	---	---

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BP OIL COMPANY SERVICE STATION NO. 11266
1541 PARK STREET, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-050

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (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	03/04/88	19.41	—	—	ND	ND	ND	ND	ND	—	—	—
MW-5	03/29/89	19.41	---	---	ND	ND	ND	ND	ND	---	---	---
MW-5	11/28/89	19.41	---	---	ND	ND	ND	ND	ND	---	---	---
MW-5	02/13/91	19.41	---	---	ND	ND	ND	ND	ND	---	---	---
MW-5	01/08/92	19.41	---	---	ND	ND	ND	ND	ND	---	---	---
MW-5	03/30/92	19.41	7.85	11.56	ND	ND	ND	ND	ND	---	---	PACE
MW-5	07/02/92	19.41	9.27	10.14	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-5	07/22/92	19.41	9.55	9.86	---	---	---	---	---	—	—	---
MW-5	10/02/92	19.41	9.97	9.44	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	ANA
MW-5	12/14/92	19.41	9.14	10.27	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	ANA
MW-5	03/24/93	19.41	8.17	11.24	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-5	06/17/93	19.41	8.29	11.12	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-1 (c)	06/17/93	---	---	—	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	—	PACE
MW-5	09/29/93	19.41	10.31	9.10	ND<50	ND<0.5	ND<0.5	ND<0.5	0.6	---	---	PACE
MW-5	12/28/93	19.41	8.91	10.50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	---	PACE
MW-5	03/29/94	19.41	8.50	10.91	---	---	---	---	---	---	---	---
MW-5	07/07/94	19.41	8.99	10.42	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	PACE
MW-5	10/18/94	19.41	9.61	9.80	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	3.5	PACE
MW-5	02/01/95	19.41	6.55	12.86	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	—	7.6	ATI
MW-5	04/12/95	19.41	7.27	12.14	---	---	---	---	---	---	---	---
MW-5	09/13/95	19.41	9.49	9.92	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	4.9	ATI
MW-5	01/11/96	19.41	8.82	10.59	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	4.9	ATI
MW-5	04/18/96	19.41	8.30	11.11	---	---	---	---	---	---	---	---
MW-5	06/28/96	19.41	8.96	10.45	ND<50	ND<0.5	ND<1	ND<1	ND<1	ND<10	4.2	SPL
MW-5	11/05/96	19.41	9.69	9.72	---	---	---	---	---	---	---	---
MW-6	03/04/88	19.40	—	—	ND	ND	ND	ND	ND	—	---	---
MW-6	03/29/89	19.40	—	—	ND	ND	ND	ND	ND	—	---	---
MW-6	11/28/89	19.40	---	—	ND	ND	ND	ND	ND	—	—	—
MW-6	02/13/91	19.40	—	---	ND	ND	ND	ND	ND	—	---	---
MW-6	01/08/92	19.40	---	—	ND	ND	ND	ND	ND	—	—	—
MW-6	03/30/92	19.40	8.86	10.54	ND	ND	ND	ND	ND	—	—	PACE
MW-6	07/02/92	19.40	9.94	9.46	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	ANA
MW-6	07/22/92	19.40	10.10	9.30	---	---	---	---	---	---	---	---
MW-6	10/02/92	19.40	10.48	8.92	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-6	12/14/92	19.40	10.76	8.64	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
MW-6	03/24/93	19.40	9.19	10.21	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-6	06/17/93	19.40	9.91	9.49	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-6	09/29/93	19.40	11.49	7.91	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-6	12/28/93	19.40	9.88	9.52	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-6	03/29/94	19.40	9.36	10.04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	5.0	PACE
MW-6	07/07/94	19.40	9.75	9.65	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	PACE
MW-6	10/18/94	19.40	10.30	9.10	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	3.3	PACE
MW-6	02/01/95	19.40	7.92	11.48	ND<50	ND<0.5	0.9	ND<0.5	1.1	—	5.4	ATI
MW-6	04/12/95	19.40	8.41	10.99	220	ND<0.50	ND<0.50	ND<0.50	ND<1.0	—	4.7	ATI
MW-6	09/13/95	19.40	10.05	9.35	180	ND<1.0	ND<1.0	ND<1.0	ND<2.0	770	4.9	ATI
MW-6	01/11/96	19.40	9.52	9.88	670	ND<2.5	ND<2.5	ND<2.5	ND<5.0	2400	4.6	ATI
MW-6	04/18/96	19.40	9.03	10.37	560	ND<0.5	ND<1	ND<1	ND<1	850	5.1	SPL
MW-6	06/28/96	19.40	8.76	10.64	620	ND<0.5	ND<1	ND<1	ND<1	540	4.9	SPL
MW-6	11/05/96	19.40	9.48	9.92	810	ND<5	ND<10	ND<10	ND<10	970	4.8	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11266
1541 PARK STREET, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-050

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (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	07/22/92	---	9.66	---	13000	1000	3400	380	2800	---	---	ANA
RW-1	10/02/92	---	10.28	---	---	---	---	---	---	---	---	---
RW-1	12/14/92	---	23.28	---	---	---	---	---	---	---	---	---
RW-1	03/24/93	---	8.93	---	660	21	25	8.3	100	---	---	PACE
RW-1	06/17/93	---	9.66	---	850	13	1.0	15	100	---	---	PACE
RW-1	09/29/93	19.27	23.40	-4.13	1200	26	27	11	150	---	---	PACE
QC-1 (c)	09/29/93	---	---	---	1200	26	28	11	160	---	---	PACE
RW-1	12/28/93	19.27	9.76	9.51	3500	300	220	180	480	---	---	PACE
RW-1	03/29/94	19.27	8.93	10.34	12000	640	1700	450	2200	---	6.3	PACE
RW-1	07/07/94	19.27	9.45	9.82	7600	530	1100	380	1800	---	---	PACE
RW-1	10/18/94	19.27	10.11	9.16	5300	47	100	150	280	---	3.4	PACE
QC-1 (c)	10/18/94	---	---	---	430	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
RW-1	02/01/95	19.27	8.54	10.73	27000	2400	6100	1800	5300	---	4.5	ATI
QC-1 (c)	02/01/95	---	---	---	15000	1300	3300	970	2900	---	---	ATI
RW-1	04/12/95	19.27	8.21	11.06	6200	330	910	350	1500	---	5.2	ATI
QC-1 (c)	04/12/95	---	---	---	7600	400	1100	440	1900	---	---	ATI
RW-1	09/13/95	19.27	9.84	9.43	920	140	60	34	110	1200	5.1	ATI
RW-1	01/11/96	19.27	9.25	10.02	ND<50	0.95	0.61	ND<0.50	2.1	43	5.4	ATI
RW-1	04/18/96	19.27	8.73	10.54	ND<50	ND<0.5	ND<1	ND<1	ND<1	ND<10	4.7	SPL
RW-1	06/28/96	19.27	9.40	9.87	ND<50	ND<0.5	ND<1	ND<1	ND<1	ND<10	4.5	SPL
RW-1	11/05/96	19.27	10.12	9.15	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	4.9	SPL
QC-2 (d)	10/02/92	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
QC-2 (d)	12/14/92	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	ANA
QC-2 (d)	03/24/93	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (d)	06/17/93	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (d)	09/29/93	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (d)	12/28/93	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (d)	03/29/94	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (d)	07/07/94	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (d)	10/18/94	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (d)	02/01/95	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	ATI
QC-2 (d)	04/12/95	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	ATI
QC-2 (d)	09/13/95	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	ATI
QC-2 (d)	01/11/96	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	ATI
QC-2 (d)	04/18/96	---	---	---	ND<50	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	SPL
QC-2 (d)	06/28/96	---	---	---	ND<50	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	SPL

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 measured/applicable/analyzed
ND	Not detected above reported detection limit
PACE	Pace, Inc.
ANA	Anametrix, Inc.
ATI	Analytical Technologies, Inc.
SPL	Southern Petroleum Laboratories

NOTES:

(a) Casing elevations surveyed to nearest 0.01 foot above mean sea level, with an assigned elevation of 22.82 feet (City datum).

(b) Groundwater elevations in feet above mean sea level.

(c) Blind duplicate.

(d) Travel blank.

F:\0\10-050\050-7-1.WQ2

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

N

0 1000' 2000'

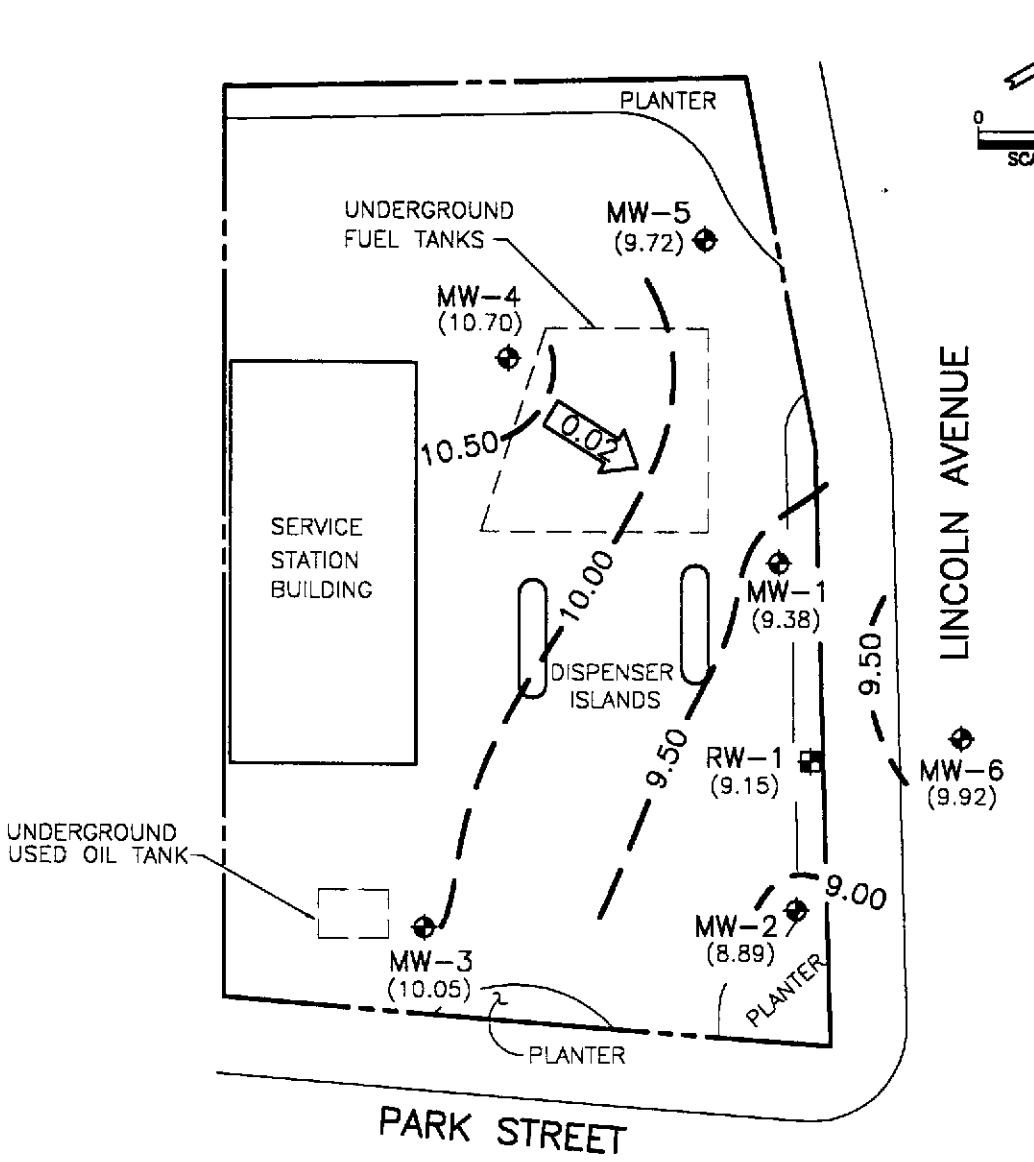
FIGURE 1

SITE VICINITY MAP

BP OIL SERVICE STATION NO. 11266
1541 PARK STREET
ALAMEDA, CALIFORNIA

PROJECT NO. 10-050

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA



LEGEND

- ⊕ GROUNDWATER MONITORING WELL
- ⊕ GROUNDWATER RECOVERY WELL
- (9.15) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 9.50 GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL–0.50 FOOT)
- 0.02 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 2

POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP

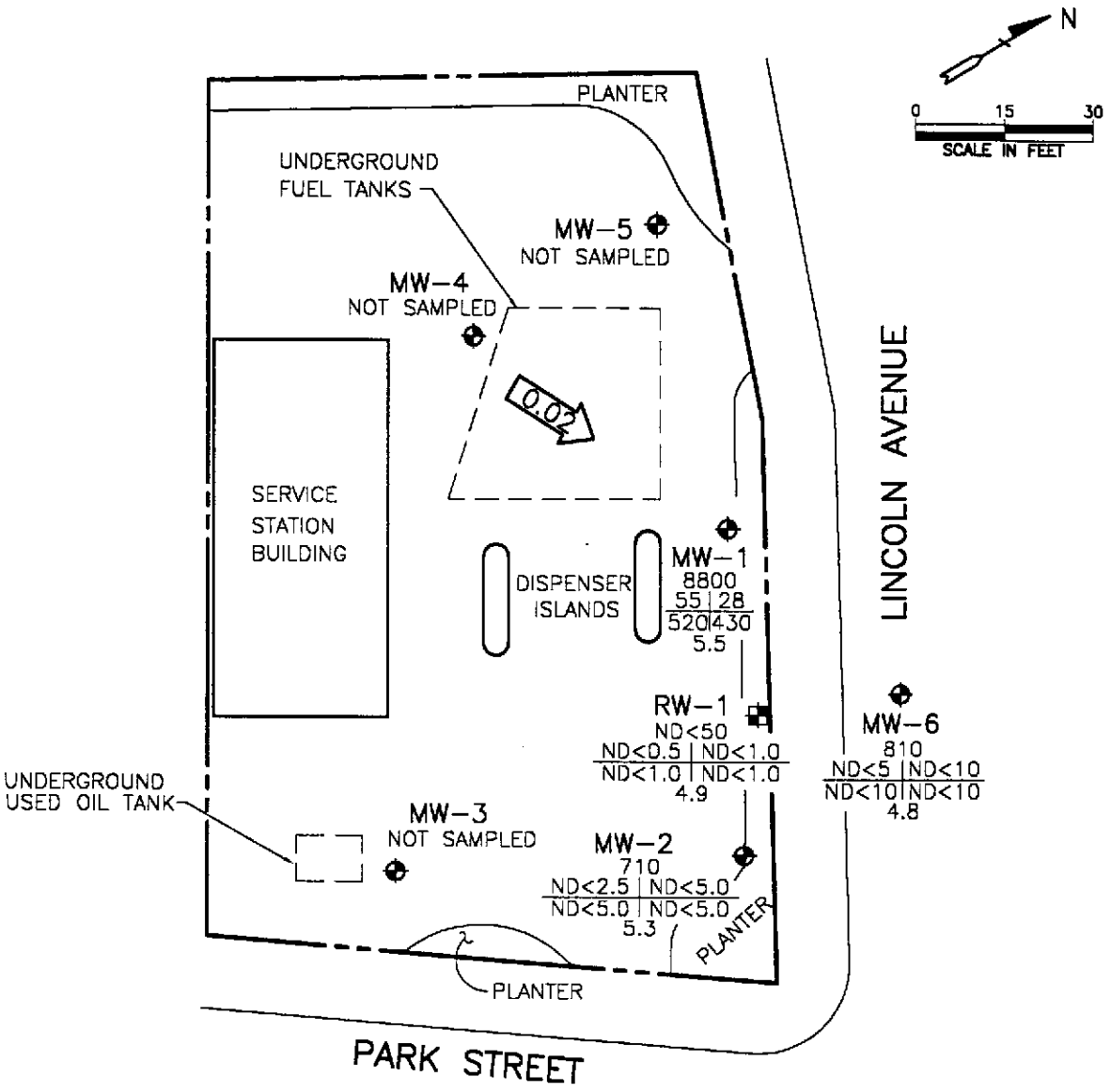
NOVEMBER 5, 1996

BP OIL SERVICE STATION NO. 11266
1541 PARK STREET
ALAMEDA, CALIFORNIA

PROJECT NO. 10–050

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

100500-T.DWG 12-10-96 DDM 1"=30



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
0.02	CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 3

CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER

NOVEMBER 5, 1996

BP OIL SERVICE STATION NO. 11266
1541 PARK STREET
ALAMEDA, CALIFORNIA

PROJECT NO. 10-050

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10050E-T.DWG 12-10-96 DDM 1=30

APPENDIX A

WATER SAMPLING FIELD SURVEY FORMS

ALISTO

Field Report / Sampling Data Sheet

ENGINEERING
GROUP
1575 TREAT BOULEVARD, SUITE 201

Project No. 10-050-07-001 Date: 11/5/96
Address 1541 Park St. Day: M T W TH F
Contract No. G797621 City: Alameda
Station No. BP 11266 Sampler: LCB

DEPTH TO GROUNDWATER SUMMARY

WELL ID	SAMPLE ID	WELL DIAM	TOTAL DEPTH	DEPTH TO WATER	PRODUCT THICKNESS	TIME MONITORED	COMMENTS: Semi=June/Dec
MW-1	S-4	2"	21.88	9.81	Ø	1518	INSTALL ORC QC-1 (S-5) From this well
MW-2	S-2		21.88	10.43		1511	
MW-3	N15		N15	9.94		1522	SEMI/JUNE-DEC
MW-4	↓		↓	9.47		1526	SEMI/JUNE-DEC
MW-5	↓		↓	9.69		1529	SEMI/JUNE-DEC
MW-6	S-3	↓	24.24	9.48		1515	INSTALL ORC
RW-1	S-1	6"	29.54	10.12	↓	1507	

FIELD INSTRUMENT CALIBRATION DATA

pH METER Icm 4.00 4 7.00 7 10.00 10 TEMPERATURE COMPENSATED (Y) N TIME 0800
D.O. METER Icm ZERO d.O. SOLUTION 0 BAROMETRIC PRESSURE 760 TEMP 61 WEATHER Clear
CONDUCTIVITY METER Icm 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 Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
RW-1	10.12	6"	OK	Ø	Y (N)	29	1533	70.4	7.49	881 µS	4.5
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			58		69.3	7.21	841 µS	
29.54-10.12 =	19.42 X 1.47 =	28.55 X 3 =	85.65			86	1538	68.9	7.19	834 µS	4.9

Purge Method: (X)Surface 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: 1600

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
MW-2	10.43	2"	OK	Ø	Y (N)	2	1610	70.7	7.93	677 µS	5.1
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			4		69.4	7.71	653 µS	
21.88-10.43 =	11.45 X .16 =	1.83 X 3 =	5.49			5.5	1618	68.5	7.63	645 µS	5.3

Purge Method: (X)Surface 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: 1620

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. 10-050-07-001 Date: 11/5/96
Address 1541 Park St. Day: M T W TH F
Contract No. G797621 City: Alameda
Station No. BP 11266 Sampler: LCB

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
MW-6	9.48	2"	ok	∅	Y (N)	3	1628	70.2	7.80	8.11 µs	4.3
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			5		69.2	7.42	780 µs	
24.24-9.48 = 14.76 X .16 = 2.36 X 3 =			7.08			7.5	1630	68.1	7.33	764 µs	4.8
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: 1633

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
MW-1	9.81	2"	OK	∅	Y (N)	2	1640	69.7	7.71	683 µs	5.2
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			4		68.3	7.43	662 µs	
21.88-9.81 = 12.07 X .16 = 1.93 X 3 =			5.79			6	1647	67.7	7.34	655 µs	5.5
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port											
Comments: QC-1(5-5) from this well											

O EPA 601 ____
X TPH-G/BTEX HCl
O TPH Diesel ____
O TOG 5520 ___
TIME/SAMPLE ID: 1649

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: 96-11-498

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. H9-9611498-01

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

P.O.# G797621 , COC#078136
DATE: 11/19/96

PROJECT: BP Oil #11266
SITE: Almeda, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-1

PROJECT NO: 10-050-7-1
MATRIX: WATER
DATE SAMPLED: 11/06/96
DATE RECEIVED: 11/09/96

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	87		
4-Bromofluorobenzene	93		
METHOD 8020***			
Analyzed by: AA			
Date: 11/16/96			
Total Petroleum Hydrocarbons-Gasoline	ND	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	93		
4-Bromofluorobenzene	97		
CA LUFT - Gasoline			
Analyzed by: WK			
Date: 11/14/96 11:42:00			

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. H9-9611498-02

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

P.O.# G797621 , COC#078136
DATE: 11/19/96

PROJECT: BP Oil #11266
SITE: Almeda, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-2

PROJECT NO: 10-050-7-1
MATRIX: WATER
DATE SAMPLED: 11/06/96
DATE RECEIVED: 11/09/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	960	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	100		
METHOD 8020***			
Analyzed by: WK			
Date: 11/15/96			
Total Petroleum Hydrocarbons-Gasoline	0.71	0.25 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	100		
4-Bromofluorobenzene	93		
CA LUFT - Gasoline			
Analyzed by: WK			
Date: 11/15/96 12:10:00			

(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. H9-9611498-03

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

P.O.# G797621 , COC#078136
DATE: 11/19/96

PROJECT: BP Oil #11266
SITE: Almeda, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-3

PROJECT NO: 10-050-7-1
MATRIX: WATER
DATE SAMPLED: 11/06/96
DATE RECEIVED: 11/09/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	970	100 P	µg/L
Benzene	ND	5 P	µg/L
Toluene	ND	10 P	µg/L
Ethylbenzene	ND	10 P	µg/L
Total Xylene	ND	10 P	µg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	83		
4-Bromofluorobenzene	90		
METHOD 8020***			
Analyzed by: AA			
Date: 11/16/96			
Total Petroleum Hydrocarbons-Gasoline	0.81	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	93		
4-Bromofluorobenzene	97		
CA LUFT - Gasoline			
Analyzed by: WK			
Date: 11/14/96 11:14:00			

(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. H9-9611498-04

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

P.O.# G797621 , COC#078136
DATE: 11/19/96

PROJECT: BP Oil #11266
SITE: Almeda, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-4

PROJECT NO: 10-050-7-1
MATRIX: WATER
DATE SAMPLED: 11/06/96
DATE RECEIVED: 11/09/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	5700	250 P	µg/L
Benzene	55	12 P	µg/L
Toluene	28	25 P	µg/L
Ethylbenzene	520	25 P	µg/L
Total Xylene	430	25 P	µg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	89		
4-Bromofluorobenzene	95		
METHOD 8020***			
Analyzed by: WK			
Date: 11/15/96			
Total Petroleum Hydrocarbons-Gasoline	8.8	1.2 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	97		
4-Bromofluorobenzene	97		
CA LUFT - Gasoline			
Analyzed by: WK			
Date: 11/15/96 12:38:00			

(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.
SPL California License # 1903

SPL, Inc., - Project Manager

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

Certificate of Analysis No. H9-9611498-05

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

P.O.# G797621 , COC#078136
DATE: 11/19/96

PROJECT: BP Oil #11266
SITE: Almeda, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-5

PROJECT NO: 10-050-7-1
MATRIX: WATER
DATE SAMPLED: 11/06/96
DATE RECEIVED: 11/09/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	5600	250 P	µg/L
Benzene	48	12 P	µg/L
Toluene	ND	25 P	µg/L
Ethylbenzene	490	25 P	µg/L
Total Xylene	413	25 P	µg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	88		
4-Bromofluorobenzene	95		
METHOD 8020***			
Analyzed by: WK			
Date: 11/15/96			
Total Petroleum Hydrocarbons-Gasoline	8.8	1.2 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	103		
4-Bromofluorobenzene	100		
CA LUFT - Gasoline			
Analyzed by: WK			
Date: 11/15/96 01:07:00			

(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

QUALITY CONTROL

DOCUMENTATION

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_N961114052700

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	47	94.0	63 - 120
Benzene	ND	50	41	82.0	62 - 121
Toluene	ND	50	42	84.0	66 - 136
EthylBenzene	ND	50	43	86.0	70 - 136
O Xylene	ND	50	44	88.0	74 - 134
M & P Xylene	ND	100	88	88.0	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	ND	20	19	95.0	18	90.0	5.41	20	39 - 150
BENZENE	ND	20	18	90.0	18	90.0	0	25	39 - 150
TOLUENE	ND	20	19	95.0	19	95.0	0	26	56 - 134
ETHYLBENZENE	ND	20	19	95.0	18	90.0	5.41	38	61 - 128
O XYLENE	ND	20	18	90.0	18	90.0	0	29	40 - 130
M & P XYLENE	ND	40	36	90.0	37	92.5	2.74	20	43 - 152

Analyst: WK
Sequence Date: 11/14/96
SPL ID of sample spiked: 9611719-01A
Sample File ID: N_K6793.TX0
Method Blank File ID:
Blank Spike File ID: N_K6785.TX0
Matrix Spike File ID: N_K6786.TX0
Matrix Spike Duplicate File ID: N_K6787.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):

9611428-05A 9611719-01A 9611498-02A 9611498-04A
9611498-05A 9611719-03A 9611719-02A 9611501-03A
9611501-05A 9611501-01A 9611501-02A 9611501-06A
9611501-07A 9611501-09A 9611428-03A 9611719-04A

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

** SPL BATCH QUALITY CONTROL REPORT **
CA LUFT

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

Matrix: Aqueous
Units: mg/L

Batch Id: HP_N961114022300

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	0.86	86.0	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	0.81	0.9	1.4	65.6	1.4	65.6	0	50	50 - 150

Analyst: WK
Sequence Date: 11/14/96
SPL ID of sample spiked: 9611498-03A
Sample File ID: NNK6794.TX0
Method Blank File ID:
Blank Spike File ID: NNK6781.TX0
Matrix Spike File ID: NNK6788.TX0
Matrix Spike Duplicate File ID: NNK6789.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):

9611719-04A 9611428-05A 9611719-01A 9611498-03A
9611498-01A 9611498-02A 9611498-04A 9611498-05A
9611719-03A 9611719-02A 9611501-01A 9611501-02A
9611501-06A 9611501-07A 9611501-08A 9611501-09A
9611428-03A

CHAIN OF CUSTODY

AND

SAMPLE RECEIPT CHECKLIST

9611498

BP

CHAIN OF CUSTODY

No. 078136 Page 1 of 1

CONSULTANT'S NAME	ADDRESS	CITY	STATE	ZIP CODE
Alisto Engineering	1575 Treat Blvd #201	W.C.	Ca	94596

BP SITE NUMBER: 11266
BP CORNER ADDRESS/CITY: Alameda
CONSULTANT PROJECT NUMBER: 10-050-7-1
CONSULTANT PROJECT MANAGER: Brady Nagle
PHONE NUMBER: (510) 295-1650
FAX NUMBER: 295-1650
CONSULTANT CONTRACT NUMBER: 6797621
BP CONTACT: Scott Hooton
BP ADDRESS: Renton, WA
PHONE NUMBER:
FAX NO.:
LAB CONTACT: SPL
LABORATORY ADDRESS: Texas
PHONE NUMBER:
FAX NO.:
SAMPLED BY (Please Print Name): Larry Buenavida
SAMPLED BY (Signature): [signature]
SHIPMENT DATE: 11/08/96
SHIPMENT METHOD: Fed Ex
AIRBILL NUMBER: 94047 79145

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 #	TPH-G	BTEX	PA	COMMENTS
S-1	11/6/96	W	3	HCL		X	X	1	
S-2	↓	↓	↓	↓		↓	↓	1	
S-3	↓	↓	↓	↓		↓	↓	1	
S-4	↓	↓	↓	↓		↓	↓	1	
S-5	↓	↓	↓	↓		↓	↓	1	

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	ADDITIONAL COMMENTS
[signature]	11/7/96		[signature]	11/08/96	3:45	
[signature]	11/8/96	3:45	R. West	11/9/96	1000	3C FEDEX# 9404779145

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:
11/9/96	1000

SPL Sample ID:
9611498

			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:		3° C	
10	Method of sample delivery to SPL:	SPL Delivery		
		Client Delivery		
		FedEx Delivery (airbill #)	940479145	
		Other:		
11	Method of sample disposal:	SPL Disposal	✓	
		HOLD		
		Return to Client		

Name:	Date:
S. West	11/9/96

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

BP Site Number: 11266
ERM Contact: G 797621
Sampling Date: 11/5/96
Matrix Description: groundwater
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)?			X
6.	Are duplicate water samples within 30%?	✓ (1)		
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) Assuming ND < 25 significant concentration between 25 and 15 mg/L for dup sample 5-5

Data Validation Completed by (print): Bill Howell
(signature): Bill Howell
Date: 12/19/96