BP OIL

BP Oil Company
Environmental Remediation Management
295 SW 41st Street
Renton, Washington 98055-4931
(425) 251-0667
Fax No: (425) 251-0736

September 2, 1997

Mr. Scott Seery
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Room 250
Alameda, CA 94542-6577

RE: BP OIL FACILITY #11105
3515 Castro Valley Blvd
Castro Valley, CA

Attached please find our **GROUNDWATER MONITORING AND SAMPLING REPORT DATED AUGUST 14, 1997** for the above referenced facility. Plans for the following quarter include additional groundwater monitoring.

On a final note, please note that BP and Mobil Oil Corporation have an agreement to cooperate in the filing for reimbursement applications to the UST Cleanup Fund. If you become aware of any notices or proposals to withdraw a Letter of Commitment for this site, please give me a call to let me know immediately.

If you should have any questions regarding this site, I may be reached at (425) 251-0689.

Sincerely,

Scott T. Hooton
Environmental Remediation Management

STH:sb msword\ERM11105

cc: Mr. Eddy So, CRWQCB, San Francisco Bay Region, 2101 Webster Street, Suite 200, Oakland, CA 94612 (without attachment)

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

Mr. Azim Shakoori, Castro Valley Chevron, 3519 Castro Valley Blvd, Castro Valley, CA 94546

Site File

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11105
3519 Castro Valley Boulevard
Castro Valley, California

Project No. 10-138-09-003

Prepared for:

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

Prepared by:

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

August 14, 1997

Brady Nagle
Project Manager

Al Sevilla, P.E.
Principal

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11105
3519 Castro Valley Boulevard
Castro Valley, California

Project No. 10-138-09-003

August 14, 1997

INTRODUCTION

This report presents the results and findings of the April 25 and 28, 1997 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11105, 3519 Castro Valley Boulevard, Castro Valley, 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.

Groundwater monitoring was performed concurrently at the neighboring Xtra Oil Company service station, 3495 Castro Valley Boulevard. The results are presented in Table 2.

SAMPLING AND ANALYTICAL RESULTS

The results of monitoring and laboratory analysis of the groundwater samples collected during 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 laboratory 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. 11105
3519 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

ALISTO PROJECT NO. 10-138

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
ESE-1 (c)	10/05/92	177.69	11.22	166.47	2100	370	150	17	110	---	---	---
ESE-1D (d)	10/05/92	---	---	---	2300	370	160	16	110	---	---	---
ESE-1	04/01/93	177.69	8.79	168.90	5900	1500	410	110	390	---	---	PACE
ESE-1	06/29/93	177.69	10.34	167.35	7600	2900	390	130	460	---	---	PACE
ESE-1	09/23/93	177.69	10.91	166.78	2000	490	40	20	56	---	---	PACE
QC-1 (d)	09/23/93	---	---	---	1500	420	39	19	56	---	---	PACE
ESE-1	12/10/93	177.69	9.93	167.76	1800	480	42	19	66	---	3.2	PACE
QC-1 (d)	12/10/93	---	---	---	1500	380	38	17	55	---	---	PACE
ESE-1	02/17/94	177.69	9.64	168.05	1900	380	48	24	80	---	---	PACE
QC-1 (d)	02/17/94	---	---	---	2200	430	42	19	65	---	---	PACE
ESE-1	08/08/94	177.69	11.72	165.97	2100	450	46	16	50	---	5.1	PACE
ESE-1	10/12/94	177.69	10.48	167.21	760	240	16	51	39	---	3.5	PACE
ESE-1	01/19/95	177.69	7.77	169.92	840	600	120	22	58	---	8.0	ATI
ESE-1	05/02/95	177.69	8.69	169.00	2000	640	67	24	98	---	8.5	ATI
ESE-1	07/28/95	177.69	10.12	167.57	190	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	7.9	ATI
ESE-1	11/17/95	177.69	10.57	167.12	200	3.4	ND<1.0	1.0	ND<2.0	600	7.7	ATI
ESE-1	02/07/96	177.69	7.41	170.28	750	370	23	21	64	680	2.5	SPL
ESE-1	04/23/96	177.69	9.12	168.57	310	100	ND<1	ND<1	ND<1	1500	6.3	SPL
ESE-1	07/09/96	177.69	10.12	167.57	730	230	74	13	63	750	2.9	SPL
ESE-1	10/10/96	177.69	10.80	166.89	420	26	1.6	7.3	12.0	430	7.4	SPL
ESE-1	01/20/97	177.69	8.52	169.17	660	290	4.2	13	36	450	5.9	SPL
ESE-1	04/25/97	177.69	9.77	167.92	410	ND<0.5	ND<1.0	ND<1.0	ND<1.0	580	5.3	SPL
ESE-2	10/05/92	178.23	11.68	166.55	300	5.4	16	3.9	45	---	---	---
ESE-2	04/01/93	178.23	9.17	169.06	240	27	ND<0.5	17	2.6	---	---	PACE
ESE-2	06/29/93	178.23	10.88	167.35	1700	260	24	110	23	---	---	PACE
QC-2 (d)	06/29/93	---	---	---	1300	240	17	110	25	---	---	PACE
ESE-2	09/23/93	178.23	11.56	166.67	240	3.1	0.5	0.6	2.5	---	---	PACE
ESE-2	12/10/93	178.23	10.48	167.75	250	2.4	2.4	1.5	11	---	2.6	PACE
ESE-2	02/17/94	178.23	10.06	168.17	900	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
ESE-2	08/08/94	178.23	11.11	167.12	750	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	5.1	PACE
ESE-2	10/12/94	178.23	11.31	166.92	1700	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	3.6	PACE
ESE-2	01/19/95	178.23	8.25	169.98	300	2	0.9	0.7	1	---	8.1	ATI
ESE-2	05/02/95	178.23	9.21	169.02	1200	4.0	ND<2.5	ND<2.5	ND<5.0	---	8.4	ATI
ESE-2	07/28/95	178.23	10.64	167.59	2000	ND<2.5	ND<2.5	ND<2.5	ND<5.0	---	7.7	ATI
ESE-2	11/17/95	178.23	11.13	167.10	3600	ND<25	ND<25	ND<25	ND<50	[illegible]	7.4	ATI
QC-1 (d)	11/17/95	---	---	---	3400	ND<25	ND<25	ND<25	ND<50	[illegible]	---	ATI
ESE-2	02/07/96	178.23	7.94	170.29	450	ND<0.5	ND<1	ND<1	ND<1	[illegible]	1.8	SPL
ESE-2	04/23/96	178.23	9.73	168.50	260	0.9	ND<1	ND<1	ND<1	[illegible]	7.2	SPL
ESE-2	07/09/96	178.23	10.70	167.53	780	ND<2.5	ND<5	ND<5	ND<5	[illegible]	3.0	SPL
ESE-2	10/10/96	178.23	11.39	166.84	2900	ND<0.5	ND<1.0	ND<1.0	ND<1.0	[illegible]	7.0	SPL
ESE-2	01/20/97	178.23	9.04	169.19	ND<250	ND<2.5	ND<5.0	ND<5.0	ND<5.0	[illegible]	6.2	SPL
ESE-2	04/25/97	178.23	10.31	167.92	2700	ND<0.5	ND<1.0	ND<1.0	ND<1.0	[illegible]	5.9	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11105
3519 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

ALISTO PROJECT NO. 10-138

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
ESE-3	10/05/92	178.20		10.58	167.62	430	57	31	3.6	34	---	---	---
ESE-3	04/01/93	178.20		8.14	170.06	2400	460	220	74	210	---	---	PACE
ESE-3	06/29/93	178.20		9.72	168.48	280	56	14	15	13	---	---	PACE
ESE-3	09/23/93	178.20		10.46	167.74	72	13	3.5	1.7	4.1	---	---	PACE
ESE-3	12/10/93	178.20		9.30	168.90	270	71	32	6.1	33	---	2.7	PACE
ESE-3	02/17/94	178.20		8.97	169.23	520	140	10	20	33	---	---	PACE
ESE-3	08/08/94	178.20		10.02	168.18	ND<50	8.8	1.6	1.6	2.3	---	6.2	PACE
ESE-3	10/12/94	178.20		10.32	167.88	470	190	6.4	15	18	---	3.5	PACE
ESE-3	01/19/95	178.20		7.40	170.80	330	260	27	21	20	---	6.7	ATI
ESE-3	05/02/95	178.20		8.26	169.94	530	180	30	23	44	---	8.6	ATI
ESE-3	07/28/95	178.20		9.54	168.66	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	8.8	ATI
ESE-3	11/17/95	178.20		10.04	168.16	ND<50	1.7	ND<0.50	ND<0.50	ND<1.0	ND<5.0	7.3	ATI
ESE-3	02/07/96	178.20		7.08	171.12	ND<50	8.6	ND<1	ND<1	ND<1	ND<10	3.9	SPL
ESE-3	04/23/96	178.20		8.79	169.41	ND<50	7.6	ND<1	ND<1	ND<1	65	6.9	SPL
ESE-3	07/09/96	178.20		10.09	168.11	ND<50	12	2.6	2.0	3.9	26	3.4	SPL
ESE-3	10/10/96	178.20		10.48	167.72	---	---	---	---	---	---	---	---
ESE-3	10/11/96	178.20		---	---	260	140	ND<1.0	ND<1.0	2.6	ND<10	7.2	SPL
ESE-3	01/20/97	178.20		8.65	169.55	ND<50	1.5	1.7	ND<1.0	ND<1.0	14	5.7	SPL
ESE-3	04/25/97	178.20		10.02	168.18	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	14	5.4	SPL
ESE-4	10/05/92	177.73		10.33	167.40	98	7.2	1.3	1.1	6.1	---	---	---
ESE-4	04/01/93	177.73		7.88	169.85	550	93	20	23	33	---	---	PACE
ESE-4	06/29/93	177.66	(e)	8.33	169.33	150	23	0.6	5.4	0.5	---	---	PACE
ESE-4	09/23/93	177.66		10.05	167.61	110	14	1.7	3.2	4.6	---	---	PACE
ESE-4	12/10/93	177.66		8.95	168.71	110	21	7.2	4.2	10	---	2.8	PACE
ESE-4	02/17/94	177.66		8.65	169.01	210	26	1.2	4.7	11	---	---	PACE
ESE-4	08/08/94	177.66		9.76	167.90	76	9.6	ND<0.5	2.0	ND<0.5	---	7.0	PACE
ESE-4	10/12/94	177.66		9.62	168.04	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	3.2	PACE
ESE-4	01/19/95	177.66		6.97	170.69	140	56	14	24	23	---	6.9	ATI
ESE-4	05/02/95	177.66		7.85	169.81	130	21	2.8	8.6	8.2	---	9.1	ATI
ESE-4	07/28/95	177.66		9.20	168.46	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	8.1	ATI
ESE-4	11/17/95	177.66		9.68	167.98	ND<50	ND<0.50	0.60	ND<0.50	ND<1.0	18	5.7	ATI
ESE-4	02/07/96	177.66		6.59	171.07	100	2.6	ND<1	1.6	4.1	42	2.0	SPL
ESE-4	04/23/96	177.66		8.30	169.36	160	37	15	16	31	43	5.4	SPL
ESE-4	07/09/96	177.66		9.21	168.45	60	17	1.5	6.8	11.6	27	3.9	SPL
ESE-4	10/10/96	177.66		9.97	167.69	---	---	---	---	---	---	---	---
ESE-4	10/11/96	177.66		---	---	ND<50	ND<0.50	ND<1.0	ND<1.0	ND<1.0	18	5.5	SPL
ESE-4	01/20/97	177.66		7.68	169.98	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	130	4.9	SPL
ESE-4	04/25/97	177.66		9.15	168.51	ND<250	ND<2.5	ND<5.0	ND<5.0	ND<5.0	ND<50	4.3	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11105
3519 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

ALISTO PROJECT NO. 10-138

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
ESE-5		10/05/92	176.08	9.22	166.86	1300	200	3.8	1.2	18	---	---	---
ESE-5		04/01/93	176.08	7.02	169.06	13000	2200	26	730	1000	---	---	PACE
QC-1	(d)	04/01/93	---	---	---	13000	2500	25	740	1100	---	---	PACE
ESE-5		06/29/93	176.08	10.21	165.87	7600	1500	9.3	170	100	---	---	PACE
ESE-5		09/23/93	176.08	10.64	165.44	560	19	1.2	0.9	1.8	---	---	PACE
ESE-5		12/10/93	176.08	9.42	166.66	1700	300	3.0	76	110	---	2.5	PACE
ESE-5		02/07/94	176.08	9.35	166.73	3500	640	7.8	90	130	---	---	PACE
ESE-5		08/08/94	176.08	8.76	167.32	2600	210	4.6	9.4	4.4	---	5.8	PACE
QC-1	(d)	08/08/94	---	---	---	2500	230	4.6	13	4.8	---	---	PACE
ESE-5		10/12/94	176.08	8.95	167.13	5600	560	9.5	75	21	---	3.6	PACE
QC-1	(d)	10/12/94	---	---	---	6000	550	10	78	22	---	---	PACE
ESE-5		01/19/95	176.08	5.40	170.68	1900	620	ND<5	95	15	---	7.6	ATI
QC-1	(d)	01/19/95	---	---	---	1600	620	ND<5	93	17	---	---	ATI
ESE-5		05/02/95	176.08	6.48	169.60	5700	1100	ND<10	180	58	---	8.2	ATI
QC-1	(d)	05/02/95	---	---	---	5300	1100	ND<10	180	58	---	---	ATI
ESE-5		07/28/95	176.08	7.97	168.11	520	15	ND<0.50	1.7	1.3	---	8.2	ATI
QC-1	(d)	07/28/95	---	---	---	460	7.2	ND<0.50	1.9	1.5	---	---	ATI
ESE-5		11/17/95	176.08	8.39	167.69	850	39	1.8	7.6	2.7	24	6.3	ATI
ESE-5		02/07/96	176.08	4.71	171.37	4100	670	6.0	190	140	ND<50	1.5	SPL
ESE-5		04/23/96	176.08	7.35	168.73	3000	570	ND<5	79	100	84	6.5	SPL
ESE-5		07/09/96	176.08	9.40	166.68	620	150	1.7	9.3	6.4	25	3.7	SPL
ESE-5		10/10/96	176.08	9.04	167.04	1100	29	ND<5.0	ND<5.0	ND<5.0	ND<50	6.3	SPL
QC-1	(d)	10/10/96	---	---	---	1100	31	ND<5.0	ND<5.0	ND<5.0	ND<50	---	SPL
ESE-5		01/20/97	176.08	5.82	170.26	2100	980	ND<25	280	80	ND<250	5.4	SPL
QC-1	(d)	01/20/97	---	---	---	2700	910	8.8	280	84	180	---	SPL
ESE-5		04/25/97	176.08	7.24	168.84	---	---	---	---	---	---	---	---
ESE-5		04/28/97	176.08	---	---	ND<250	7.9	ND<5.0	ND<5.0	ND<5.0	ND<50	4.9	SPL
MW-6		07/28/95	179.24	10.00	169.24	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	8.1	ATI
MW-6		11/17/95	179.24	10.44	168.80	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	6.8	ATI
MW-6		02/07/96	179.24	7.68	171.56	ND<50	ND<0.5	ND<1	ND<1	ND<1	ND<10	2.4	SPL
MW-6		04/23/96	179.24	9.33	169.91	ND<50	ND<0.5	ND<1	ND<1	ND<1	ND<10	6.6	SPL
MW-6		07/09/96	179.24	10.10	169.14	ND<50	ND<0.5	ND<1	ND<1	ND<1	ND<10	2.7	SPL
MW-6		10/10/96	179.24	11.00	168.24	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	6.9	SPL
MW-6		01/20/97	179.24	8.70	170.54	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	5.5	SPL
MW-6		04/25/97	179.24	10.16	169.08	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	5.1	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11105
3519 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

ALISTO PROJECT NO. 10-138

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-7		07/28/95	176.55	9.25	167.30	ND<50	0.54	(f)	0.54	ND<0.50	ND<1.0	---	7.1	ATI
MW-7		11/17/95	176.55	9.73	166.82	1100	ND<10		ND<10	ND<10	ND<20	4000	6.3	ATI
MW-7		02/07/96	176.55	6.48	170.07	610	ND<0.5		ND<1	ND<1	ND<1	2500	4.1	SPL
QC-1	(d)	02/07/96	---	---	---	280	ND<0.5		ND<1	ND<1	ND<1	2600	---	SPL
MW-7		04/23/96	176.55	8.37	168.18	110	ND<0.5		ND<1	ND<1	ND<1	3500	6.4	SPL
QC-1	(d)	04/23/96	---	---	---	230	ND<0.5		ND<1	ND<1	ND<1	3500	---	SPL
MW-7		07/09/96	176.55	9.24	167.31	230	ND<0.5		ND<1	ND<1	ND<1	4286	3.1	SPL
QC-1	(d)	07/09/96	---	---	---	220	ND<0.5		ND<1	ND<1	ND<1	4460	---	SPL
MW-7		10/10/96	176.55	10.05	166.50	---	---		---	---	---	---	---	---
MW-7		10/11/96	176.55	---	---	1600	ND<0.5		ND<1.0	ND<1.0	ND<1.0	3080	6.9	SPL
MW-7		01/20/97	176.55	7.51	169.04	ND<50	0.63		1.0	ND<1.0	ND<1.0	2600	5.7	SPL
MW-7		04/25/97	176.55	8.79	167.76	---	---		---	---	---	---	---	---
MW-7		04/28/97	176.55	---	---	1500	ND<0.5		ND<1.0	ND<1.0	ND<1.0	3600	5.1	SPL
QC-1	(d)	04/28/97	---	---	---	7700	3500		ND<25	74	37	ND<250	---	SPL
MW-8		07/28/95	176.34	7.80	168.54	1100	ND<2.5		ND<2.5	ND<2.5	ND<5.0	---	7.2	ATI
MW-8		11/17/95	176.34	8.29	168.05	8300	75		5.3	670	240	140	7.0	ATI
MW-8		02/07/96	176.34	4.99	171.35	2300	33		ND<10	190	216	ND<100	1.7	SPL
MW-8		04/23/96	176.34	6.09	170.25	2000	390		ND<20	150	26	ND<250	5.1	SPL
MW-8	(g)	07/09/96	---	---	---	---	---		---	---	---	---	---	---
QC-2	(h)	04/01/93	---	---	---	ND<50	ND<0.5		ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2	(h)	06/29/93	---	---	---	ND<50	ND<0.5		ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2	(h)	09/23/93	---	---	---	ND<50	ND<0.5		ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2	(h)	12/10/93	---	---	---	ND<50	ND<0.5		ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2	(h)	02/17/94	---	---	---	ND<50	ND<0.5		ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2	(h)	08/08/94	---	---	---	ND<50	ND<0.5		ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2	(h)	10/12/94	---	---	---	ND<50	ND<0.5		ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2	(h)	01/19/95	---	---	---	ND<50	ND<0.5		ND<0.5	ND<0.5	ND<1	---	---	ATI
QC-2	(h)	05/02/95	---	---	---	ND<50	ND<0.50		ND<0.50	ND<0.50	ND<1.0	---	---	ATI
QC-2	(h)	07/28/95	---	---	---	ND<50	ND<0.50		ND<0.50	ND<0.50	ND<1.0	---	---	ATI
QC-2	(h)	11/17/95	---	---	---	ND<50	ND<0.50		ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	ATI
QC-2	(h)	02/07/96	---	---	---	ND<50	ND<0.5		ND<1	ND<1	ND<1	ND<10	---	SPL
QC-2	(h)	04/23/96	---	---	---	ND<50	ND<0.5		ND<1	ND<1	ND<1	ND<10	---	SPL
QC-2	(h)	07/09/96	---	---	---	ND<50	ND<0.5		ND<1	ND<1	ND<1	ND<10	---	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11105
3519 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

ALISTO PROJECT NO. 10-138

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

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

NOTES:

(a) Top of casing elevations surveyed relative to mean sea level.

(b) Groundwater elevations in feet relative to mean sea level.

(c) Additional analysis of the sample collected from ESE-1 on 10/5/92 detected 96 ug/l total petroleum hydrocarbons as diesel and 1.8 ug/l 1,2-dichloroethane.

(d) Blind duplicate.

(e) Top of casing lowered by 0.07 foot after the monitoring event on 4/01/93.

(f) Sample result may be falsely elevated due to matrix interference.

(g) Well destroyed.

(h) Travel blank.

F:\01\10-138\138-9-3.WQ2

TABLE 2 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
XTRA OIL COMPANY SERVICE STATION
3495 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

ALISTO PROJECT NO. 10-138

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)
MW-1	08/19/91	177.24	9.31	167.93	48	47	13	8.4	0.99	29
MW-1	09/17/91	177.24	9.50	167.74	39	19	4.9	4.1	1.2	5.9
MW-1	10/10/91	177.24	9.70	167.54	28	19	4.1	4.7	1.0	4.8
MW-1	11/25/91	177.24	9.41	167.83	170	36	5.6	5.6	1.6	8.4
MW-1	12/23/91	177.24	9.65	167.59	78	34	9.3	7.3	0.54	13
MW-1	01/14/92	177.24	8.57	168.67	39	19	7.3	8.7	1.3	8.9
MW-1	05/27/92	177.24	8.59	168.65	120	11	8.8	16	2.3	15
MW-1	11/13/92	177.24	9.13	168.11	120	4.4	5.8	10	2.1	13
MW-1	02/23/93	177.24	7.34	169.90	100	14	4.5	11	2.1	12
MW-1	05/18/93	177.24	8.12	169.12	92	30	4.0	11	2.5	15
MW-1	08/30/93	177.24	8.78	168.46	77	9.4	6.4	11	2.2	12
MW-1	11/24/93	177.24	8.74	168.50	66	8.2	8.3	8.9	2.0	11
MW-1	02/28/94	177.24	7.44	169.80	90	110	11	9.6	2.1	9.9
MW-1	05/19/94	177.24	8.05	169.19	---	---	---	---	---	---
MW-1	08/22/94	177.24	8.67	168.57	---	---	---	---	---	---
MW-1	11/18/94	177.24	7.14	170.10	---	---	---	---	---	---
MW-1	02/23/95	177.24	7.72	169.52	---	---	---	---	---	---
MW-1	05/02/95	177.24	6.96	170.28	---	---	---	---	---	---
MW-1	07/28/95	177.24	8.27	168.97	---	---	---	---	---	---
MW-1	10/26/95	177.24	8.45	168.79	---	---	---	---	---	---
MW-1	01/29/96	177.24	6.17	171.07	---	---	---	---	---	---
MW-1	02/07/96	177.24	6.09	171.15	---	---	---	---	---	---
MW-1	04/23/96	177.24	7.47	169.77	---	---	---	---	---	---
MW-1	07/09/96	177.24	8.16	169.08	---	---	---	---	---	---
MW-1	01/20/97	177.24	7.12	170.12	---	---	---	---	---	---
MW-1	04/25/97	177.24	7.98	169.26	---	---	---	---	---	---
MW-2	08/19/91	176.30	9.60	166.70	69	19	26	22	2.1	18
MW-2	09/17/91	176.30	10.23	166.07	74	56	10	11	1.4	8.1
MW-2	10/10/91	176.30	10.39	165.91	85	360	21	25	2.1	14
MW-2	11/25/91	176.30	9.81	166.49	230	130	11	9.7	1.4	9.7
MW-2	12/23/91	176.30	10.39	165.91	2100	700	36	130	79	560
MW-2	01/14/92	176.30	8.97	167.33	59	1600	17	14	1.8	15
MW-2	05/27/95	176.30	9.31	166.99	89	130	18	19	1.7	14
MW-2	11/13/92	176.30	8.70	167.60	79	8.2	10	13	1.4	8.6
MW-2	02/23/93	176.30	6.39	169.91	76	7.0	12	17	1.6	9.6
MW-2	05/18/93	176.30	7.73	168.57	67	44	9.2	12	1.4	9.3
MW-2	08/30/93	176.30	8.64	167.66	110	110	11	14	1.8	11
MW-2	11/24/93	176.30	8.47	167.83	12	79	13	17	2.5	17
MW-2	02/28/94	176.30	6.99	169.31	91	13	13	16	1.5	9.0
MW-2	05/19/94	176.30	7.70	168.60	---	---	---	---	---	---
MW-2	08/22/94	176.30	8.59	167.71	---	---	---	---	---	---
MW-2	11/18/94	176.30	6.92	169.38	---	---	---	---	---	---
MW-2	02/23/95	176.30	7.51	168.79	---	---	---	---	---	---
MW-2	05/02/95	176.30	6.79	169.51	---	---	---	---	---	---
MW-2	07/28/95	176.30	7.99	168.31	---	---	---	---	---	---
MW-2	10/26/95	176.30	8.21	168.09	---	---	---	---	---	---
MW-2	01/29/96	176.30	5.16	171.14	---	---	---	---	---	---
MW-2	02/07/96	176.30	5.70	170.60	---	---	---	---	---	---
MW-2 (c)	04/23/96	176.30	---	---	---	---	---	---	---	---

TABLE 2 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
XTRA OIL COMPANY SERVICE STATION
3495 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

ALISTO PROJECT NO. 10-138

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)
MW-3	08/19/91	178.07	8.95	169.12	170	150	82	31	4.4	22
MW-3	09/17/91	178.07	9.20	168.87	180	140	47	25	2.6	15
MW-3	10/10/91	178.07	9.43	168.64	140	39	57	31	2.2	14
MW-3	11/25/91	178.07	9.19	168.88	150	74	65	31	3.4	18
MW-3	12/23/91	178.07	9.37	168.70	740	540	30	61	31	180
MW-3	01/14/92	178.07	8.24	169.83	130	270	76	30	3.4	21
MW-3	05/27/92	178.07	8.45	169.62	370	27	91	57	3.0	21
MW-3	11/13/92	178.07	7.86	170.21	140	4.7	38	24	2.0	12
MW-3	02/23/93	178.07	8.01	170.06	110	8.1	31	18	1.9	11
MW-3	05/18/93	178.07	7.12	170.95	130	7.2	36	21	2.1	12
MW-3	08/30/93	178.07	7.64	170.43	130	32	36	21	1.9	8.2
MW-3	11/24/93	178.07	7.55	170.52	160	24	48	26	2.2	12
MW-3	02/28/94	178.07	6.68	171.39	110	210	36	21	1.9	11
MW-3	05/19/94	178.07	7.15	170.92	---	---	---	---	---	---
MW-3	08/22/94	178.07	7.65	170.42	---	---	---	---	---	---
MW-3	11/18/94	178.07	6.05	172.02	---	---	---	---	---	---
MW-3	02/23/95	178.07	7.24	170.83	---	---	---	---	---	---
MW-3	05/02/95	178.07	6.50	171.57	---	---	---	---	---	---
MW-3	07/28/95	178.07	7.80	170.27	---	---	---	---	---	---
MW-3	10/26/95	178.07	7.72	170.35	---	---	---	---	---	---
MW-3	01/29/96	178.07	5.77	172.30	---	---	---	---	---	---
MW-3	02/07/96	178.07	5.05	173.02	---	---	---	---	---	---
MW-3	04/23/96	178.07	6.81	171.26	---	---	---	---	---	---
MW-3	07/09/96	178.07	7.61	170.46	---	---	---	---	---	---
MW-3	01/20/97	178.07	6.35	171.72	---	---	---	---	---	---
MW-3	04/25/97	178.07	7.12	170.95	---	---	---	---	---	---

ABBREVIATIONS:

TPH-G	Total petroleum hydrocarbons as gasoline
TPH-D	Total petroleum hydrocarbons as diesel
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
ug/l	Micrograms per liter
---	Not available

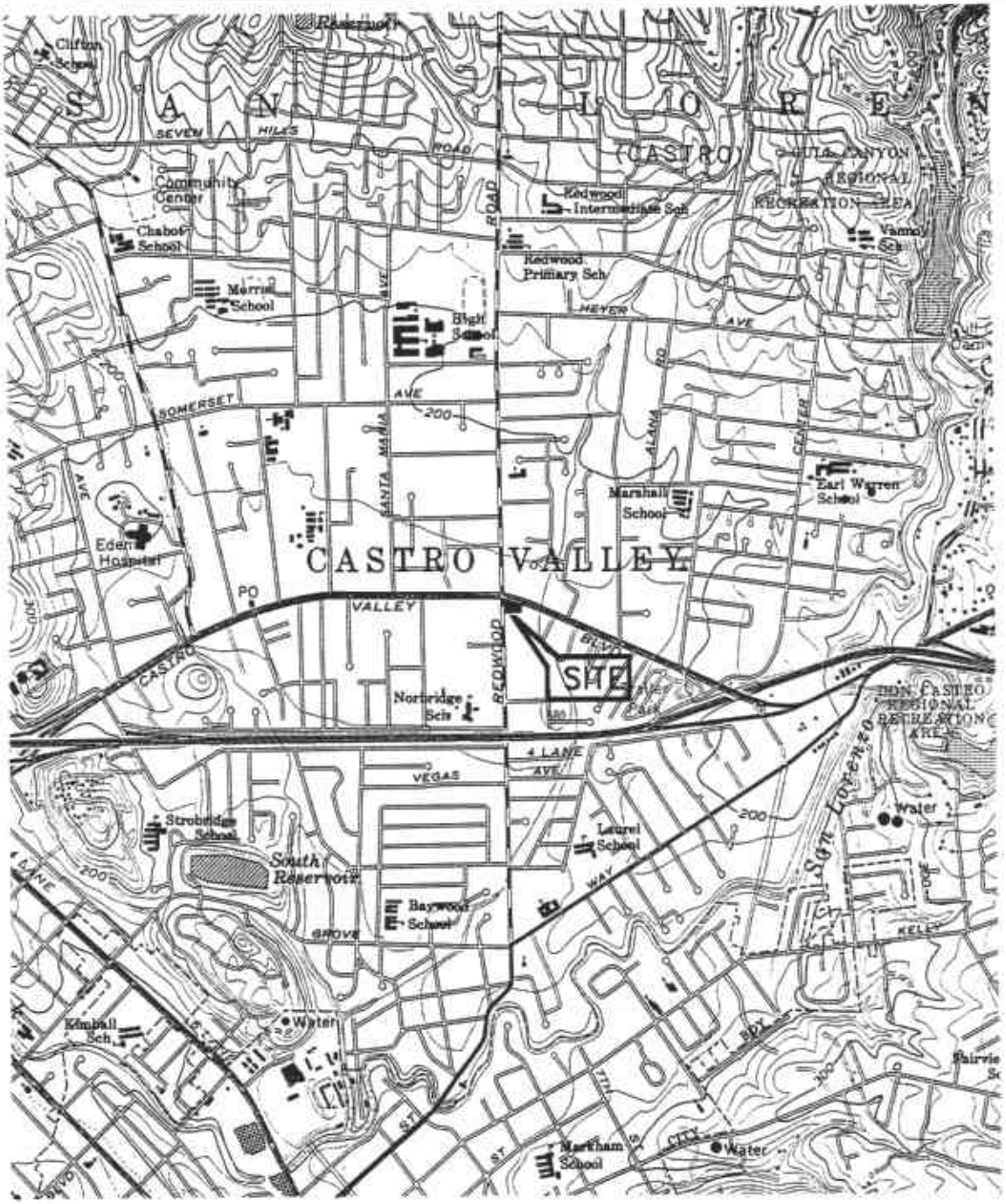
NOTES:

(a) Top of casing elevations relative to mean sea level.

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

(c) Well destroyed February 7, 1996.

E:\0\10-138\138JOINT.WQ2



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

N

0 1000' 2000'

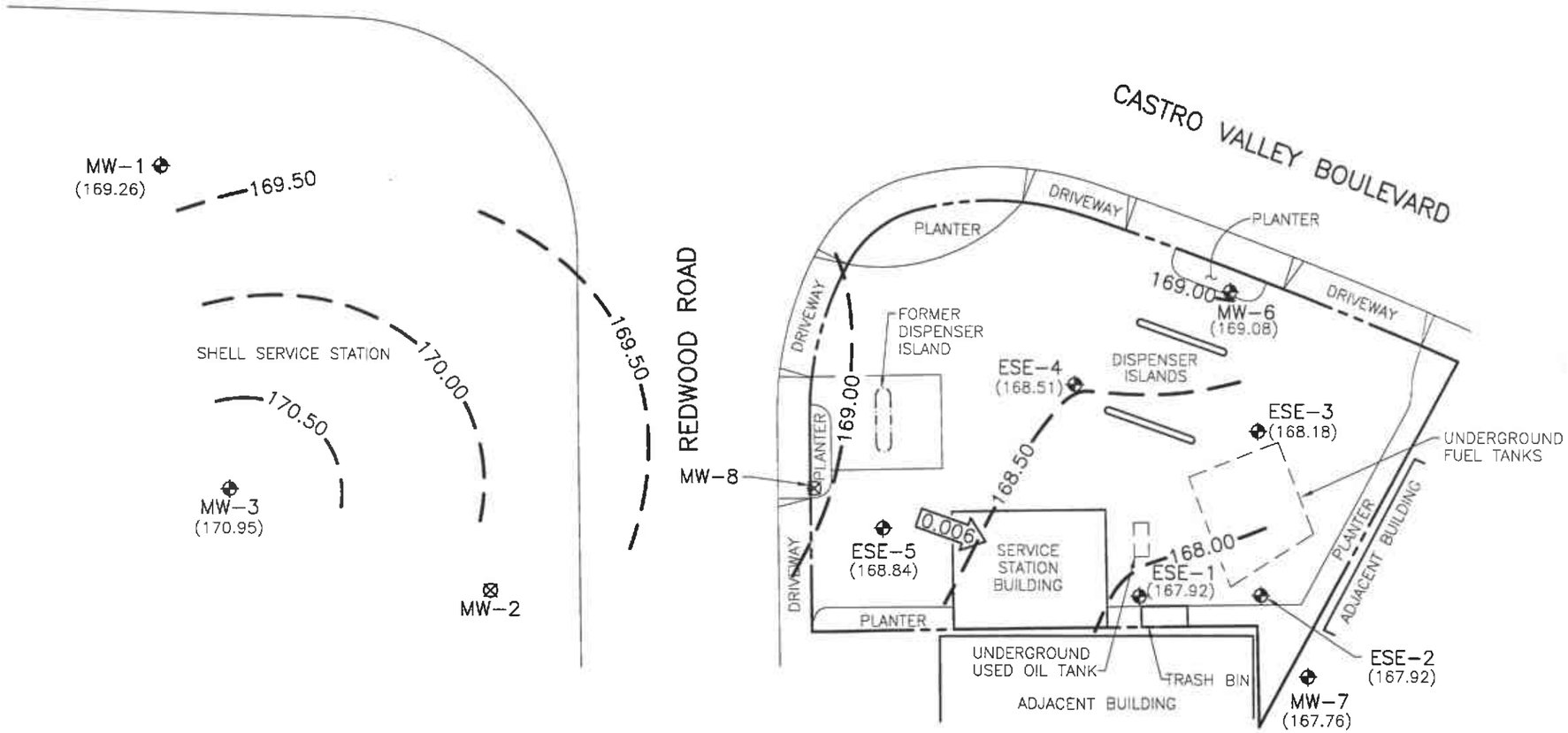
FIGURE 1

SITE VICINITY MAP

BP OIL SERVICE STATION NO. 11105
3519 CASTRO VALLEY BOULEVARD
CASTRO VALLEY, CALIFORNIA

PROJECT NO. 10-138

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA



N

0 40 80

SCALE IN FEET

LEGEND

- ◆ GROUNDWATER MONITORING WELL
- ⊠ DESTROYED WELL
- (167.92) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 168.00 GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL–0.50 FOOT)
- 0.006 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 2

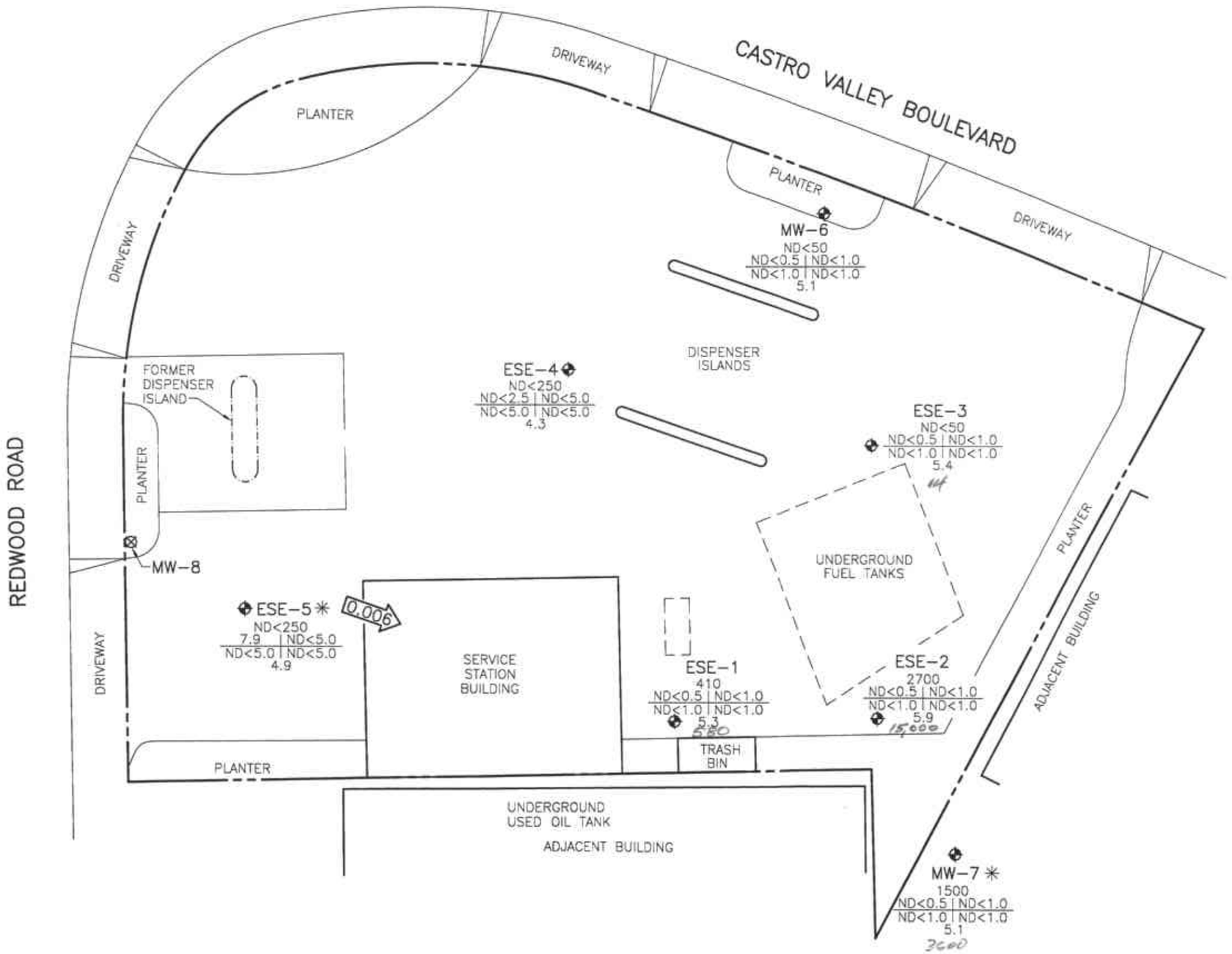
POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP

APRIL 25, 1997

BP OIL SERVICE STATION NO. 11105
3519 CASTRO VALLEY BOULEVARD
CASTRO VALLEY, CALIFORNIA

PROJECT NO. 10–138

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA



N

0 20 40

SCALE IN FEET

LEGEND

◆	GROUNDWATER MONITORING WELL
⊗	DESTROYED WELL
TPH-G / B / T / E / X / DO / MtBE	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
0.006	CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT
*	WELLS WERE SAMPLED ON APRIL 28, 1997

FIGURE 3

CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER

APRIL 25 & 28, 1997

BP OIL SERVICE STATION NO. 11105
3519 CASTRO VALLEY BOULEVARD
CASTRO VALLEY, CALIFORNIA

PROJECT NO. 10-138

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10138C-Y.DWG 8-17-97 MW 1=20

APPENDIX A

WATER SAMPLING FIELD SURVEY FORMS

ALISTO

Field Report / Sampling Data Sheet

ENGINEERING
GROUP
1575 TREAT BOULEVARD, SUITE 201

Project No. 10-138-09-003 Date: 4/25 & 4/27/17
Address 3515 Castro Valley Blvd Day: (M) T W TH (F)
Contract No. G797425 City: Castro Valley
Station No. BP 11105 Sampler: LG

DEPTH TO GROUNDWATER SUMMARY

WELL ID	SAMPLE ID	WELL DIAM	TOTAL DEPTH	DEPTH TO WATER	PRODUCT THICKNESS	TIME MONITORED	COMMENTS: JOINT
ESE-1	S-6	2"	30.00	9.77	Ø	1210	
ESE-2	S-3		30.00	10.31		1153	
ESE-3	S-7		30.00	10.03		1214	
ESE-4	S-2		25.00	9.15		1150	
ESE-5	S-5		24.00	7.24		1200	
MW-6	S-1		29.43	10.16		1145	
MW-7	S-4	↓	19.85	8.79	↓	1158	QC-1 From This well (S-8)
MW-8	N/S	—	—	—	—	—	Destroyed Well

FIELD INSTRUMENT CALIBRATION DATA

pH METER Hm 4.00 4 7.00 7 10.00 10 TEMPERATURE COMPENSATED (Y) N TIME 0930

D.O. METER Hm ZERO d.O. SOLUTION ____ BAROMETRIC PRESSURE ____ TEMP 64 WEATHER clear

CONDUCTIVITY METER Hm 10,000 ____ TURBIDITY METER ____ 5.0 NTU ____ OTHER X

LEAK DETECTOR OPERATION: ____ ALARM MODE Y NON ALARM MODE

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
MW-6	10.16	2"	OK	Ø	Y (N)	3	1225	69.4	7.61	410 µs	4.7
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			6		68.7	7.49	437 µs	
29.43-10.16 = 19.27 X .16 = 3.08 X 3 =	9.24					9.5	1232	68.1	7.41	444 µs	5.1

Purge Method: (Surface Pump) ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port
Comments:

EPA 601 ____
(X) TPH-G/BTEX HCl
TPH Diesel ____
TOG 5520 ___
TIME/SAMPLE ID
1236

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
ESE-4	9.15	2"	OK	Ø	Y (N)	2	1244	70.4	7.61	475 µs	4.1
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			4		69.8	7.40	501 µs	
25.00-9.15 = 15.85 X .16 = 2.54 X 3 =	7.62					8	1254	69.0	7.32	511 µs	4.3

Purge Method: (Surface Pump) ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port
Comments:

EPA 601 ____
(X) TPH-G/BTEX HCl
TPH Diesel ____
TOG 5520 ___
TIME/SAMPLE ID
1257

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. 10-138-09-003 Date: 4/25 & 4/28/97
Address 3515 Castro Valley Blvd Day: (M) T W TH F
Contract No. G797425 City: Castro Valley
Station No. BP 11105 Sampler: LS

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
ESE-2	10.31	2"	OK	Ø	Y (N)	3	1330	71.2	7.24	472µS	5.5
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			6		70.4	7.16	487µS	
30.00-10.31=19.69x.16=3.15x3=			9.45			10	1339	69.9	7.09	490µS	5.9

Purge Method: (S)Surface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port
Comments:

EPA 601___ TPH-G/BTEX HCl TPH Diesel___ TOG 5520 ___
TIME/SAMPLE ID: 1344

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
4/28 MW-7	8.79	2"	OK	Ø	Y (N)	2	0750	68.4	7.51	449µS	5.1
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			4		67.9	7.41	463µS	
19.85-8.79=11.06x.16=1.77x3=			5.31			6	0800	67.4	7.33	472µS	5.1

Purge Method: (S)Surface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port
Comments: QC-1 (S-8) From this well

EPA 601___ TPH-G/BTEX HCl TPH Diesel___ TOG 5520 ___
TIME/SAMPLE ID: 0819 4/28/97

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
4/28 ESE-5	7.24	2"	OK	Ø	Y (N)	3	0827	69.6	7.61	612µS	4.7
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			5		69.0	7.44	624µS	
24.00-7.24=16.76x.16=2.68x3=			8.04			8.5	0835	68.2	7.36	636µS	4.9

Purge Method: (S)Surface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port
Comments:

EPA 601___ TPH-G/BTEX HCl TPH Diesel___ TOG 5520 ___
TIME/SAMPLE ID: 0840 4/28/97

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
ESE-4	9.77	2"	OK	Ø	Y (N)	3	0849	71.9	7.57	511µS	4.9
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			7		70.6	7.41	522µS	
30.00-9.77=20.23x.16=3.24x3=			9.72			10	0859	70.4	7.34	517µS	5.3

Purge Method: (S)Surface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port
Comments:

EPA 601___ TPH-G/BTEX HCl TPH Diesel___ TOG 5520 ___
TIME/SAMPLE ID: 0907

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.
ESE-3	10.02	2"	OK	Ø	Y (N)	3	0912	68.7	7.77	437µS	5.2
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			7		67.7	7.60	451µS	
30.00-10.02=19.98x.16=3.20x3=			9.60			10	0925	67.1	7.52	451µS	5.4

Purge Method: (S)Surface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port
Comments:

EPA 601___ TPH-G/BTEX HCl TPH Diesel___ TOG 5520 ___
TIME/SAMPLE ID: 0930

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD

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

May 9, 1997

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

The following report contains analytical results for samples received at Southern Petroleum Laboratories (SPL) on April 30, 1997. The samples were assigned to Certificate of Analysis No(s).9704F43 and analyzed for the parameters specified on the chain of custody.

There were no analytical problems encountered with this group of samples and all quality control data was within acceptance limits.

If you have any questions or comments pertaining to this data report, please do not hesitate to contact me. Please reference the above Certificate of Analysis Number during any inquiries.

Again, SPL is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Southern Petroleum Laboratories

Ed Fry
Project Manager

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

Southern Petroleum Laboratories, Inc.

Certificate of Analysis Number: 97-04-F43

Approved for Release by:

Ed Fry, Project Manager

Date: 5/9/97

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. H9-9704F43-01

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

P.O.# G797425,COC#083160
DATE: 05/09/97

PROJECT: BP Oil #11105
SITE: Castro Valley, CA.
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-1

PROJECT NO: 10-138-9-3
MATRIX: WATER
DATE SAMPLED: 04/25/97
DATE RECEIVED: 04/30/97

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	90
4-Bromofluorobenzene	97

Method 8020A***
Analyzed by: RL
Date: 05/07/97

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Total Petroleum Hydrocarbons-Gasoline	ND	0.05 P	mg/L

Surrogate	% Recovery
1,4-Difluorobenzene	100
4-Bromofluorobenzene	87

California LUFT Manual
Analyzed by: RL
Date: 05/07/97 04:54:00

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

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

Certificate of Analysis No. H9-9704F43-02

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

P.O.# G797425,COC#083160
DATE: 05/09/97

PROJECT: BP Oil #11105
SITE: Castro Valley, CA.
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-2

PROJECT NO: 10-138-9-3
MATRIX: WATER
DATE SAMPLED: 04/25/97
DATE RECEIVED: 04/30/97

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	100		
Method 8020A***			
Analyzed by: RL			
Date: 05/07/97			
Total Petroleum Hydrocarbons-Gasoline	ND	0.25 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	100		
4-Bromofluorobenzene	87		
California LUFT Manual			
Analyzed by: RL			
Date: 05/07/97 08:05:00			

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

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

Certificate of Analysis No. H9-9704F43-03

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

P.O.# G797425,COC#083160
DATE: 05/09/97

PROJECT: BP Oil #11105
SITE: Castro Valley, CA.
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-3

PROJECT NO: 10-138-9-3
MATRIX: WATER
DATE SAMPLED: 04/25/97
DATE RECEIVED: 04/30/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	15000	500 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	107		
4-Bromofluorobenzene	93		
Method 8020A***			
Analyzed by: RL			
Date: 05/07/97			
Total Petroleum Hydrocarbons-Gasoline	2.7	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	123		
4-Bromofluorobenzene	87		
California LUFT Manual			
Analyzed by: RL			
Date: 05/07/97 06:43:00			

(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

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

Certificate of Analysis No. H9-9704F43-04

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

P.O.# G797425,COC#083160
DATE: 05/09/97

PROJECT: BP Oil #11105
SITE: Castro Valley, CA.
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-4

PROJECT NO: 10-138-9-3
MATRIX: WATER
DATE SAMPLED: 04/28/97
DATE RECEIVED: 04/30/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	3600	100 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	103		
4-Bromofluorobenzene	93		
Method 8020A***			
Analyzed by: RL			
Date: 05/07/97			
Total Petroleum Hydrocarbons-Gasoline	1.5	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	113		
4-Bromofluorobenzene	87		
California LUFT Manual			
Analyzed by: RL			
Date: 05/07/97 06:16:00			

(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

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

Certificate of Analysis No. H9-9704F43-05

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

P.O.# G797425,COC#083160
DATE: 05/09/97

PROJECT: BP Oil #11105
SITE: Castro Valley, CA.
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-5

PROJECT NO: 10-138-9-3
MATRIX: WATER
DATE SAMPLED: 04/28/97
DATE RECEIVED: 04/30/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	ND	50 P	µg/L
Benzene	7.9	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	93		
4-Bromofluorobenzene	93		
Method 8020A***			
Analyzed by: RL			
Date: 05/07/97			
Total Petroleum Hydrocarbons-Gasoline	ND	0.25 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	107		
4-Bromofluorobenzene	87		
California LUFT Manual			
Analyzed by: RL			
Date: 05/07/97 09:59:00			

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

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

Certificate of Analysis No. H9-9704F43-06

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

P.O.# G797425,COC#083160
DATE: 05/09/97

PROJECT: BP Oil #11105
SITE: Castro Valley, CA.
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-6

PROJECT NO: 10-138-9-3
MATRIX: WATER
DATE SAMPLED: 04/25/97
DATE RECEIVED: 04/30/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	580	50 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	93		
4-Bromofluorobenzene	97		
Method 8020A***			
Analyzed by: RL			
Date: 05/07/97			
Total Petroleum Hydrocarbons-Gasoline	0.41	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	107		
4-Bromofluorobenzene	93		
California LUFT Manual			
Analyzed by: RL			
Date: 05/07/97 05:48:00			

(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

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

Certificate of Analysis No. H9-9704F43-07

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

P.O.# G797425,COC#083160
DATE: 05/09/97

PROJECT: BP Oil #11105
SITE: Castro Valley, CA.
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-7

PROJECT NO: 10-138-9-3
MATRIX: WATER
DATE SAMPLED: 04/25/97
DATE RECEIVED: 04/30/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	14	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	90		
4-Bromofluorobenzene	93		
Method 8020A***			
Analyzed by: RL			
Date: 05/07/97			
Total Petroleum Hydrocarbons-Gasoline	ND	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	97		
4-Bromofluorobenzene	87		
California LUFT Manual			
Analyzed by: RL			
Date: 05/07/97 05:21:00			

(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

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

Certificate of Analysis No. H9-9704F43-08

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

P.O.# G797425,COC#083160
DATE: 05/09/97

PROJECT: BP Oil #11105
SITE: Castro Valley, CA.
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-8

PROJECT NO: 10-138-9-3
MATRIX: WATER
DATE SAMPLED: 04/25/97
DATE RECEIVED: 04/30/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	ND	250 P	µg/L
Benzene	3500	12 P	µg/L
Toluene	ND	25 P	µg/L
Ethylbenzene	74	25 P	µg/L
Total Xylene	37	25 P	µg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	113		
4-Bromofluorobenzene	93		
Method 8020A***			
Analyzed by: RL			
Date: 05/07/97			
Total Petroleum Hydrocarbons-Gasoline	7.7	1.2 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	124		
4-Bromofluorobenzene	89		
California LUFT Manual			
Analyzed by: RL			
Date: 05/07/97 10:26:00			

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

QUALITY CONTROL

DOCUMENTATION

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

SURROGATE RECOVERY SUMMARY **PAGE 1**
05/09/97 09:02:07

Method 8020A* BATCH#:HP_W970507033200
WORK ORDER: 9704F43-01A **CLIENT SAMPLE ID:** S-1

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
1,4-Difluorobenzene	30	27	90	70- 131
4-Bromofluorobenzene	30	29	97	43- 135

Method 8020A* BATCH#:HP_W970507033200
WORK ORDER: 9704F43-02A **CLIENT SAMPLE ID:** S-2

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
1,4-Difluorobenzene	30	26.0000	87	70- 131
4-Bromofluorobenzene	30	30.0000	100	43- 135

Method 8020A* BATCH#:HP_W970507033200
WORK ORDER: 9704F43-03A **CLIENT SAMPLE ID:** S-3

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
1,4-Difluorobenzene	30	32	107	70- 131
4-Bromofluorobenzene	30	28	93	43- 135

Method 8020A* BATCH#:HP_W970507033200
WORK ORDER: 9704F43-04A **CLIENT SAMPLE ID:** S-4

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
1,4-Difluorobenzene	30	31	103	70- 131
4-Bromofluorobenzene	30	28	93	43- 135

Method 8020A* BATCH#:HP_W970507033200
WORK ORDER: 9704F43-06A **CLIENT SAMPLE ID:** S-6

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
1,4-Difluorobenzene	30	28	93	70- 131
4-Bromofluorobenzene	30	29	97	43- 135

Method 8020A* BATCH#:HP_W970507033200
WORK ORDER: 9704F43-07A **CLIENT SAMPLE ID:** S-7

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
1,4-Difluorobenzene	30	27	90	70- 131
4-Bromofluorobenzene	30	28	93	43- 135

Method 8020A * BATCH#:HP_W970507033200
WORK ORDER: Method Blank **CLIENT SAMPLE ID:**

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
1,4-Difluorobenzene	30	29	29.0	74- 131
4-Bromofluorobenzene	30	30	29.6	43- 135

Method 8020A* BATCH#:HP_W970507033200
WORK ORDER: Matrix Spike **CLIENT SAMPLE ID:** 9704F43-07A

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
1,4-DIFLUOROBENZENE	30	30	100	70- 131

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

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
4-BROMOFLUOROBENZENE	30	28	93	43- 135

Method 8020A* BATCH#:HP_W970507033200**
WORK ORDER: Matrix Spike Dup. **CLIENT SAMPLE ID:**9704F43-07A

1,4-Difluorobenzene	30	28	93	70- 131
4-Bromofluorobenzene	30	30	100	43- 135

California LUFT Manual BATCH#:HP_W970507035900
WORK ORDER: 9704F43-01A **CLIENT SAMPLE ID:**S-1

1,4-Difluorobenzene	30	30	100	50- 150
4-Bromofluorobenzene	30	26	87	50- 150

California LUFT Manual BATCH#:HP_W970507035900
WORK ORDER: 9704F43-02A **CLIENT SAMPLE ID:**S-2

1,4-Difluorobenzene	30	30.0000	100	50- 150
4-Bromofluorobenzene	30	26.0000	87	50- 150

California LUFT Manual BATCH#:HP_W970507035900
WORK ORDER: 9704F43-03A **CLIENT SAMPLE ID:**S-3

1,4-Difluorobenzene	30	37	123	50- 150
4-Bromofluorobenzene	30	26	87	50- 150

California LUFT Manual BATCH#:HP_W970507035900
WORK ORDER: 9704F43-04A **CLIENT SAMPLE ID:**S-4

1,4-Difluorobenzene	30	34	113	50- 150
4-Bromofluorobenzene	30	26	87	50- 150

California LUFT Manual BATCH#:HP_W970507035900
WORK ORDER: 9704F43-06A **CLIENT SAMPLE ID:**S-6

1,4-Difluorobenzene	30	32	107	50- 150
4-Bromofluorobenzene	30	28	93	50- 150

California LUFT Manual BATCH#:HP_W970507035900
WORK ORDER: 9704F43-07A **CLIENT SAMPLE ID:**S-7

1,4-Difluorobenzene	30	29	97	50- 150
4-Bromofluorobenzene	30	26	87	50- 150

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

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS

Modified 8015A - Gasoline* BATCH#:HP_W970507035900**
WORK ORDER: Method Blank **CLIENT SAMPLE ID:**

4-Bromofluorobenzene	30	24	80	52- 152
1,4-Difluorobenzene	30	30	100	54- 137

California LUFT Manual BATCH#:HP_W970507035900
WORK ORDER: Matrix Spike **CLIENT SAMPLE ID:**9704F44-03A

1,4-Difluorobenzene	30	31	103	50- 150
4-Bromofluorobenzene	30	33	110	50- 150

California LUFT Manual BATCH#:HP_W970507035900
WORK ORDER: Matrix Spike Dup. **CLIENT SAMPLE ID:**9704F44-03A

1,4-Difluorobenzene	30	31	103	50- 150
4-Bromofluorobenzene	30	33	110	50- 150

Method 8020A* BATCH#:HP_W970507071400**
WORK ORDER: 9704F43-02A **CLIENT SAMPLE ID:**S-2

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

Method 8020A* BATCH#:HP_W970507071400**
WORK ORDER: 9704F43-03A **CLIENT SAMPLE ID:**S-3

1,4-Difluorobenzene	30	28.0000	93	70- 131
4-Bromofluorobenzene	30	30.0000	100	43- 135

Method 8020A* BATCH#:HP_W970507071400**
WORK ORDER: 9704F43-04A **CLIENT SAMPLE ID:**S-4

1,4-Difluorobenzene	30	28.0000	93	70- 131
4-Bromofluorobenzene	30	29.0000	97	43- 135

Method 8020A* BATCH#:HP_W970507071400**
WORK ORDER: 9704F43-05A **CLIENT SAMPLE ID:**S-5

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

Method 8020A* BATCH#:HP_W970507071400**
WORK ORDER: 9704F43-06A **CLIENT SAMPLE ID:**S-6

1,4-Difluorobenzene	30	28.0000	93	70- 131

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

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
4-Bromofluorobenzene	30	30.0000	100	43- 135

Method 8020A* BATCH#:HP_W970507071400**
WORK ORDER: 9704F43-08A **CLIENT SAMPLE ID:** S-8

1,4-Difluorobenzene	30	34.0000	113	70- 131
4-Bromofluorobenzene	30	28.0000	93	43- 135

Method 8020A * BATCH#:HP_W970507071400**
WORK ORDER: Method Blank **CLIENT SAMPLE ID:**

1,4-Difluorobenzene	30	28	93	74- 131
4-Bromofluorobenzene	30	30	100	43- 135

Method 8020A * BATCH#:HP_W970507071400**
WORK ORDER: Matrix Spike **CLIENT SAMPLE ID:** 9705118-06A

1,4-DIFLUOROBENZENE	30	31	103	70- 131
4-BROMOFLUOROBENZENE	30	30	100	43- 135

Method 8020A * BATCH#:HP_W970507071400**
WORK ORDER: Matrix Spike Dup. **CLIENT SAMPLE ID:** 9705118-06A

1,4-Difluorobenzene	30	31	103	70- 131
4-Bromofluorobenzene	30	30	100	43- 135

California LUFT Manual BATCH#:HP_W970507074200
WORK ORDER: 9704F43-02A **CLIENT SAMPLE ID:** S-2

1,4-Difluorobenzene	30	30.0000	100	50- 150
4-Bromofluorobenzene	30	26.0000	87	50- 150

California LUFT Manual BATCH#:HP_W970507074200
WORK ORDER: 9704F43-05A **CLIENT SAMPLE ID:** S-5

1,4-Difluorobenzene	30	32.0000	107	50- 150
4-Bromofluorobenzene	30	26.0000	87	50- 150

California LUFT Manual BATCH#:HP_W970507074200
WORK ORDER: 9704F43-08A **CLIENT SAMPLE ID:** S-8

1,4-Difluorobenzene	30	37.2000	124	50- 150
4-Bromofluorobenzene	30	26.8000	89	50- 150

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

Modified 8015A - Gasoline* BATCH#:HP_W970507074200**
WORK ORDER: Method Blank **CLIENT SAMPLE ID:**

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
4-Bromofluorobenzene	30	26	87	52- 152
1,4-Difluorobenzene	30	30	100	54- 137

Method Modified 8015A* for Gasoline BATCH#:HP_W970507074200**
WORK ORDER: Matrix Spike **CLIENT SAMPLE ID:**9705084-02A

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
4-Bromofluorobenzene	30	35	117	52- 152
1,4-Difluorobenzene	30	32	107	54- 137

Method Modified 8015A* for Gasoline BATCH#:HP_W970507074200**
WORK ORDER: Matrix Spike Dup. **CLIENT SAMPLE ID:**9705084-02A

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
4-Bromofluorobenzene	30	33	110	52- 152
1,4-Difluorobenzene	30	32	107	54- 137

« = 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_W970507033200

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	44	88.0	63 - 120
Benzene	ND	50	44	88.0	62 - 121
Toluene	ND	50	48	96.0	66 - 136
EthylBenzene	ND	50	48	96.0	70 - 136
O Xylene	ND	50	48	96.0	74 - 134
M & P Xylene	ND	100	97	97.0	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	14	20	31	85.0	31	85.0	0	20	39 - 150
BENZENE	ND	20	18	90.0	18	90.0	0	25	39 - 150
TOLUENE	ND	20	17	85.0	17	85.0	0	26	56 - 134
ETHYL_BENZENE	ND	20	16	80.0	16	80.0	0	38	61 - 128
O-XYLENE	ND	20	16	80.0	17	85.0	6.06	29	40 - 130
M AND P XYLENE	ND	40	33	82.5	33	82.5	0	20	43 - 152

Analyst: RL
Sequence Date: 05/07/97
SPL ID of sample spiked: 9704F43-07A
Sample File ID: W_E7245.TX0
Method Blank File ID:
Blank Spike File ID: W_E7257.TX0
Matrix Spike File ID: W_E7258.TX0
Matrix Spike Duplicate File ID: W_E7259.TX0

* = Values Outside QC Range. « = Data outside Method Specification limits.
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 (3rd Q '96)

SAMPLES IN BATCH(SPL ID):

9704F44-01A 9704F43-02A 9704F44-03A 9704F44-07A
9704F26-01A 9704F44-04A 9704F44-06A 9705101-01A
9705101-07A 9705101-14A 9705101-10A 9704F43-01A
9704F43-07A 9704F43-06A 9704F43-04A 9704F43-03A
9704F44-02A

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_W970507071400

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	50.0	45	90.0	63 - 120
Benzene	ND	50.0	44	88.0	62 - 121
Toluene	ND	50.0	48	96.0	66 - 136
EthylBenzene	ND	50.0	48	96.0	70 - 136
O Xylene	ND	50.0	49	98.0	74 - 134
M & P Xylene	ND	100.0	97	97.0	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	66	20	84	90.0	84	90.0	0	20	39 - 150
BENZENE	ND	20	20	100	20	100	0	25	39 - 150
TOLUENE	ND	20	18	90.0	19	95.0	5.41	26	56 - 134
ETHYLBENZENE	ND	20	18	90.0	18	90.0	0	38	61 - 128
O XYLENE	ND	20	17	85.0	17	85.0	0	29	40 - 130
M & P XYLENE	ND	40	33	82.5	34	85.0	2.99	20	43 - 152

Analyst: RL
Sequence Date: 05/07/97
SPL ID of sample spiked: 9705118-06A
Sample File ID: W_E7287.TX0
Method Blank File ID:
Blank Spike File ID: W_E7275.TX0
Matrix Spike File ID: W_E7302.TX0
Matrix Spike Duplicate File ID: W_E7303.TX0

* = Values Outside QC Range. « = Data outside Method Specification limits.
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):

9704F43-06A 9704F43-04A 9705084-01A 9705084-07A
9705084-06A 9705084-08A 9705084-03A 9705084-05A
9705084-04A 9704F04-06A 9704F04-05A 9704F43-03A
9704F43-02A 9704F43-05A 9704F43-08A 9704F44-08A
9704F44-09A 9705084-02A

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

** SPL BATCH QUALITY CONTROL REPORT **
Modified 8015 - Gasoline

Matrix: Aqueous
Units: mg/L

Batch Id: HP_W970507074200

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Gasoline Petr. Hydrocarbon	ND	1.0	0.95	95.0	56 - 130

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
GASOLINE RANGE ORGANICS	ND	0.9	1.2	119	1.2	119	0	22	37 - 169

Analyst: RL
Sequence Date: 05/07/97
SPL ID of sample spiked: 9705084-02A
Sample File ID: WWE7283.TX0
Method Blank File ID:
Blank Spike File ID: WWE7276.TX0
Matrix Spike File ID: WWE7304.TX0
Matrix Spike Duplicate File ID: WWE7305.TX0

* = Values Outside QC Range. « = Data outside Method Specification limits.
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 (4th Q '95)

SAMPLES IN BATCH(SPL ID):

9705118-06A 9705084-01A 9705084-07A 9705084-06A
9705084-08A 9705084-03A 9705084-05A 9705084-04A
9704F43-02A 9704F43-05A 9704F43-08A 9704F44-08A
9704F44-09A 9705084-02A

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

** SPL BATCH QUALITY CONTROL REPORT **
Modified 8015 - Gasoline

Matrix: Aqueous
Units: mg/L

Batch Id: HP_W970507035900

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Gasoline Petr. Hydrocarbon	ND	1.0	0.99	99.0	56 - 130

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	0.9	1.15	128	1.1	122	4.80	50	50 - 150

Analyst: RL
Sequence Date: 05/06/97
SPL ID of sample spiked: 9704F44-03A
Sample File ID: WWE7252.TX0
Method Blank File ID:
Blank Spike File ID: WWE7224.TX0
Matrix Spike File ID: WWE7260.TX0
Matrix Spike Duplicate File ID: WWE7261.TX0

* = Values Outside QC Range. « = Data outside Method Specification limits.
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: Temporary Limits

SAMPLES IN BATCH(SPL ID):

9704F44-01A 9704F43-02A 9704F44-03A 9704F44-07A
9704F26-01A 9704F44-04A 9705042-08A 9705042-02A
9705042-07A 9704F44-06A 9705101-01A 9705101-07A
9705101-14A 9705101-10A 9704F43-01A 9704F43-07A
9704F43-06A 9704F43-04A 9704F43-03A 9704F44-02A

CHAIN OF CUSTODY

AND

SAMPLE RECEIPT CHECKLIST

9704F43

BP

CHAIN OF CUSTODY

No. 083160 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
11105	Castro Valley, Ca	10-138-9-3

CONSULTANT PROJECT MANAGER	PHONE NUMBER	FAX NUMBER	CONSULTANT CONTRACT NUMBER
Brady Nagle	(510) 295-1650	295-1823	~~Brady Nagle~~ 6797425

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 Buenaventura	[signature]	4-29-97	Fed Ex

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

ANALYSIS REQUIRED

AIRBILL NUMBER: 3848470113

SAMPLE DESCRIPTION	COLLECTION DATE / COLLECTION TIME	MATRIX SOIL/WATER	CONTAINERS NO.	TYPE (VOL.)	PRESERVATIVE LAB SAMPLE #	GW TPH-G/BTEX 8020	TPH-D 8015								COMMENTS
S-1	4/25/97	W	3	HCl		X	X								
S-2	↓	↓	↓	↓		↓	↓								
S-3	↓	↓	↓	↓		↓	↓								
S-4	4/28/97	↓	↓	↓		↓	↓								
S-5	4/28/97	↓	↓	↓		↓	↓								
S-6	4/25/97	↓	↓	↓		↓	↓								
S-7	↓	↓	↓	↓		↓	↓								
S-8	↓	↓	↓	↓		↓	↓								

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature]	4/29/97		Jeffrey Gamaldi	4-29-97	
Jeffrey Gamaldi	4-29-97		[signature] / SPL	4/30/97	0930

ADDITIONAL COMMENTS: 5°C, ROI, 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:
4-30-97	0930

SPL Sample ID:
9704 F43

			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:		5° C	
10	Method of sample delivery to SPL:	SPL Delivery		
		Client Delivery		
		FedEx Delivery (airbill #)	884847011 3	
		Other:		
11	Method of sample disposal:	SPL Disposal	✓	
		HOLD		
		Return to Client		

Name:	Date:
[signature]	4/30/97

Calculation of RPD
for BP Oil QA/QC Program
BP Oil Station No. 11105 04/25/97 & 04/28/97 Event

Analytical Data	TPH-G	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
Primary Sample	1500	ND<0.5	ND<1.0	ND<1.0	ND<1.0	3600
QC-1 Duplicate	7700	3500	ND<25	74	37	ND<250
Sample Mean	4600	1750	0	37	18.5	1800
RPD	-134.78%	-200.00%	N/A	-200.00%	-200.00%	200.00%
Significant Result?	YES	YES	N/A	YES	YES	YES

Notes:

(1) Significance is defined as an RPD greater than 30% (or less than -30).

(2) "A negative" RPD will result if the value of the Primary Sample Result is smaller than QC-1. The determination of Significant Result is not affected by sign of RPD.

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

BP Site Number:	11105
ERM Contact:	G797425
Sampling Date:	04/25 & 4/28/97
Matrix Description:	Water
Date Final Report Received:	05/12/97
Laboratory & Location:	SPL, Houston, Texas

		Yes	No	N/A
1.	Is BP contract release number consistent with analytical report?	X		
2.	Was report submitted within the specified timeframe?	X		
3.	Does report agree with the COC?	Y		
4.	Are units consistent with the given matrix?	X		
5.	Were any target analytes/compounds detected in blanks (i.e., trip or equipment)?			X
6.	Are duplicate water samples within 30%?	See attached		
7.	Are holding times met?	X		
8.	Are surrogates within limits using laboratory criteria?	X		
9.	Are MS/MSD acceptable using laboratory criteria?	X		
10.	Are LCS results acceptable using laboratory criteria?	X		

Notes: _____

Data Validation Completed by: Brady Nagle

(signature): _____

Date: 8/5/97