



BP OIL

BP Oil Company
Environmental Remediation Management
295 SW 41st Street
Renton, Washington 98065-4931
(425) 251-0687
Fax No: (425) 251-0736

*Following info
relayed to S. Hooton
11/18/97*

07 NOV 12 PM 4:14

November 4, 1997

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

RE: Former BP Oil Site No. 11104
1716 Webster Street (at Buena Vista)
Alameda, CA

- ① Check fuel lines, dispensers, etc for obvious leaks. Make necessary repairs immediately. Report status w/in 10 working days.
- ② May need to pump & treat at site if release is not mitigated

Dear Ms. Chu:

Enclosed find a Groundwater Monitoring and Sampling Report, dated 2 October 1997.

The report shows that aromatic petroleum hydrocarbons were detected in samples obtained in two of the six wells sampled this quarter. The highest benzene concentration (2700 ug/l) was detected in a sample obtained from well MW-1, located immediately adjacent to the underground storage tank area. You will also note that MTBE concentrations reported for well RW-1 increased by almost three orders-of-magnitude when compared to concentrations reported during the previous quarter. MTBE concentration increases are also noted for well MW-1, which is also located nearby the underground storage tanks.

It is noted that the underground storage tank system will require upgrading to comply with 1998 federal requirements for leak detection and prevention. I understand that this will include the installation of an overflow protection device, dispenser pans and spill buckets around the fill tubes for the underground storage tanks. The lack of these prophylactic appurtenances most likely explains the variable and increasing MTBE concentrations detected in groundwater samples collected from the monitoring wells installed at this site.

Please contact me at (425) 251-0689 if you have any questions or concerns regarding this submittal.

Sincerely,

Scott Hooton

attachment

cc: site file
K. Graves - RWQCB, SFBR
T. Berry - Tosco (w/attachment)

ENVIRONMENTAL
PROTECTION
07 NOV 12 PM 11:14

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11104
1716 Webster Street
Alameda, California

Project No. 10-155-07-001

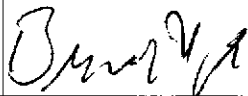
Prepared for:

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

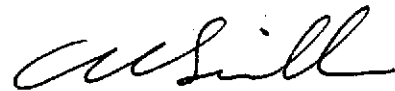
Prepared by:

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

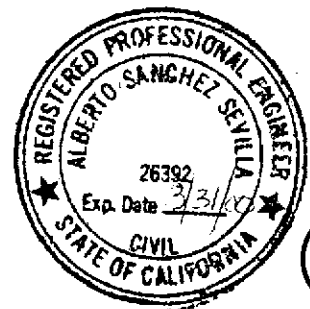
October 2, 1997



Brady Nagle
Project Manager



Al Sevilla, P.E.
Principal



GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11104
1716 Webster Street
Alameda, California

Project No. 10-155-07-001

October 2, 1997

INTRODUCTION

This report presents the results and findings of the August 4, 1997 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11104, 1716 Webster 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.

Groundwater monitoring was performed on August 5, 1997 at the neighboring Chevron service station, 1802 Webster Street. The results are presented in Table 2.

SAMPLING AND ANALYTICAL RESULTS

The results of monitoring and laboratory analysis of the groundwater samples for this and previous quarters are summarized in Table 1. The potentiometric groundwater elevations as interpreted from the results of this monitoring event are shown 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. Historical methyl tert butyl ether (MTBE) laboratory analysis data not previously tabulated are now included in Table 1. Copies of the MTBE documentation are included in Appendix C of this report only.



TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
 BP OIL COMPANY SERVICE STATION NO. 11104
 1716 WEBSTER STREET, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-155

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (Feet) (a)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (Feet) (b)	TPH-G (ug/l)	B (ug/l)	T (ug/l)	F (ug/l)	X (ug/l)	MTBE (ug/l)	TDS (mg/l)	DO (ppm)	LAB
MW-1	07/21/92	11.98	5.91	6.07	34000	7000	1700	2500	6900	---	---	---	---
MW-1	10/20/92	11.98	6.66	5.32	---	---	---	---	---	---	---	---	---
MW-1	03/05/93	11.98	4.56	7.42	---	---	---	---	---	---	---	---	---
MW-1	04/01/93	11.98	4.57	7.41	---	---	---	---	---	---	---	---	---
MW-1	07/09/93	11.98	5.25	6.73	77000	15000	1400	2100	7400	13,000 (c)	---	---	PACE
QC-1 (d)	07/09/93	---	---	---	79000	16000	1500	2200	7700	14,000 (c)	---	---	PACE
MW-1	10/08/93	11.98	6.01	5.97	42000	7100	270	2700	4700	---	---	---	PACE
MW-1	01/06/94	11.98	6.24	5.74	45000	12000	4300	3000	6700	---	---	---	PACE
MW-1	04/26/94	11.98	5.26	6.72	39000	8500	500	1800	1200	17000 (c)	---	6.3	PACE
MW-1	07/25/94	11.98	5.60	6.38	38000	6300	240	1500	1100	26000 (c)	---	1.7	PACE
MW-1	10/13/94	11.98	6.15	5.83	25000	6300	130	1300	830	---	---	2.3	PACE
QC-1 (d)	10/13/94	---	---	---	25000	7300	120	1200	740	---	---	---	PACE
MW-1	01/17/95	11.98	4.19	7.79	7800	3100	1100	460	850	---	---	7.9	ATI
QC-1 (d)	01/17/95	---	---	---	8400	3100	1200	470	1000	---	---	---	ATI
MW-1	03/31/95	11.98	4.48	7.50	37000	6700	6900	1200	4500	---	---	6.4	ATI
QC-1 (d)	03/31/95	---	---	---	40000	6900	7300	1300	5000	---	---	---	ATI
MW-1	05/01/95	11.98	4.39	7.59	---	---	---	---	---	---	---	---	---
MW-1	07/12/95	11.98	5.02	6.96	29000	7000	300	1500	3900	---	---	7.2	ATI
QC-1 (d)	07/12/95	---	---	---	29000	6600	380	1500	3900	---	---	---	ATI
MW-1	10/12/95	11.98	5.68	6.30	20000	3400	310	1100	3000	15000	---	6.3	ATI
QC-1 (d)	10/12/95	---	---	---	20000	3500	310	1100	3000	14000	---	---	ATI
MW-1	02/27/96	11.98	4.18	7.80	18000	4400	2900	860	2380	5500	472	7.9	SPL
MW-1	05/08/96	11.98	4.89	7.09	---	---	---	---	---	---	---	---	---
MW-1	05/09/96	11.98	---	---	14000	2300	1900	540	3340	2700	---	6.1	SPL
MW-1	08/09/96	11.98	5.13	6.85	---	---	---	---	---	---	---	---	---
MW-1	08/12/96	11.98	---	---	13000	2800	190	1300	3040	1800	---	7.1	SPL
MW-1	11/07/96	11.98	5.65	6.33	12000	2100	35	ND<25	ND<25	2100	---	7.2	SPL
MW-1	02/10/97	11.98	4.80	7.18	180000	1900	ND<500	ND<500	ND<500	160000	---	6.8	SPL
QC-1 (d)	02/10/97	---	---	---	180000	2100	ND<500	ND<500	ND<500	160000	---	---	SPL
MW-1	08/04/97	11.98	5.69	6.29	14000	2700	ND<50	1200	1220	260000	---	7.2	SPL
QC-1 (d)	08/04/97	---	---	---	ND<25000	2600	ND<50	1200	1100	260000	---	---	SPL
MW-2	07/21/92	12.98	6.44	6.54	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---
MW-2	10/20/92	12.98	7.39	5.59	---	---	---	---	---	---	---	---	---
MW-2	03/05/93	12.98	4.91	8.07	---	---	---	---	---	---	---	---	---
MW-2	04/01/93	12.98	4.92	8.06	---	---	---	---	---	---	---	---	---
MW-2	07/09/93	12.98	5.60	7.38	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-2	10/08/93	12.98	6.50	6.48	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-1 (d)	10/08/93	12.98	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-2	01/06/94	12.98	6.25	6.73	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-2	04/26/94	12.98	5.73	7.25	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	7.5	PACE
MW-2	07/25/94	12.98	6.07	6.91	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	2.4	PACE
MW-2	10/13/94	12.98	6.80	6.18	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	2.4	PACE
MW-2	01/17/95	12.98	5.10	7.88	---	---	---	---	---	---	---	---	---
MW-2	03/31/95	12.98	4.69	8.29	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	7.3	ATI
MW-2	05/01/95	12.98	5.23	7.75	---	---	---	---	---	---	---	---	---
MW-2	07/12/95	12.98	5.40	7.58	---	---	---	---	---	---	---	---	---
MW-2	10/12/95	12.98	6.06	6.92	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	6.9	ATI
MW-2	02/27/96	12.98	4.66	8.32	ND<50	ND<0.5	ND<1	ND<1	ND<1	ND<10	412	8.7	SPL
MW-2	05/08/96	12.98	5.28	7.70	---	---	---	---	---	---	---	---	---
MW-2	08/09/96	12.98	5.59	7.39	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	7.8	SPL
MW-2	11/07/96	12.98	6.11	6.87	---	---	---	---	---	---	---	---	---
MW-2	02/10/97	12.98	5.26	7.72	---	---	---	---	---	---	---	---	---
MW-2	08/04/97	12.98	6.14	6.84	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	6.5	SPL

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 BP OIL COMPANY SERVICE STATION NO. 11104
 1716 WEBSTER STREET, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-155

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (Feet)	TPH-G (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TDS (mg/l)	DO (ppm)	LAB
MW-3 (e)	07/21/92	13.38	7.07	6.31	ND<50	0.95	ND<0.5	ND<0.5	ND<0.5	---	---	---	---
MW-3	10/20/92	13.38	8.06	5.32	---	---	---	---	---	---	---	---	---
MW-3	03/05/93	13.38	5.16	8.22	---	---	---	---	---	---	---	---	---
MW-3	04/01/93	13.38	5.25	8.13	---	---	---	---	---	---	---	---	---
MW-3	07/09/93	13.38	5.80	7.58	ND<50	0.6	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-3	10/08/93	13.38	7.17	6.21	ND<50	0.6	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-3	01/06/94	13.38	6.94	6.44	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-3	04/26/94	13.38	6.18	7.20	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	3.1	PACE
MW-3	07/25/94	13.38	6.67	6.71	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	2.2	PACE
MW-3	10/13/94	13.38	7.43	5.95	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	2.1	PACE
MW-3	01/17/95	13.38	5.07	8.31	---	---	---	---	---	---	---	---	---
MW-3	03/31/95	13.38	4.03	9.35	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	6.6	ATI
MW-3	05/01/95	13.38	4.94	8.44	---	---	---	---	---	---	---	---	---
MW-3	07/12/95	13.38	5.80	7.58	---	---	---	---	---	---	---	---	---
MW-3	10/12/95	13.38	6.84	6.74	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	6.4	ATI
MW-3	02/27/96	13.38	4.75	8.63	ND<50	ND<0.5	ND<1	ND<1	ND<1	ND<10	316	8.5	SPL
MW-3	05/08/96	13.38	5.86	7.52	---	---	---	---	---	---	---	---	---
MW-3	08/09/96	13.38	5.70	7.68	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	7.9	SPL
MW-3	11/07/96	13.38	6.21	7.17	---	---	---	---	---	---	---	---	---
MW-3	02/10/97	13.38	5.14	8.24	---	---	---	---	---	---	---	---	---
MW-3	08/04/97	13.38	6.01	7.37	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	6.6	SPL
MW-4	03/05/93	11.80	4.81	6.99	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---
MW-4	04/01/93	11.80	4.80	7.00	---	---	---	---	---	---	---	---	---
MW-4	07/09/93	11.80	5.54	6.26	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-4	10/08/93	11.80	6.28	5.52	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-4	01/06/94	11.80	5.82	5.98	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-4	04/26/94	11.80	5.50	6.30	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	7.4	PACE
MW-4	07/25/94	11.80	5.83	5.97	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	7.2	PACE
MW-4	10/13/94	11.80	6.26	5.54	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	6.7	PACE
MW-4	01/17/95	11.80	4.19	7.61	---	---	---	---	---	---	---	---	---
MW-4	03/31/95	11.80	3.96	7.84	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	7.1	ATI
MW-4	05/01/95	11.80	4.49	7.31	---	---	---	---	---	---	---	---	---
MW-4	07/12/95	11.80	5.16	6.64	---	---	---	---	---	---	---	---	---
MW-4	10/12/95	11.80	5.80	6.00	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	6.9	ATI
MW-4	02/27/96	11.80	4.22	7.58	ND<50	ND<0.5	ND<1	ND<1	ND<1	ND<10	256	8.9	SPL
MW-4	05/08/96	11.80	5.00	6.80	---	---	---	---	---	---	---	---	---
MW-4	08/09/96	11.80	5.13	6.67	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	8.5	SPL
MW-4	11/07/96	11.80	5.65	6.15	---	---	---	---	---	---	---	---	---
MW-4	02/10/97	11.80	4.81	6.99	---	---	---	---	---	---	---	---	---
MW-4	08/04/97	11.80	5.72	6.08	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	6.4	SPL

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ALISTO PROJECT NO. 10-155

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)	TDS (mg/l)	DO (ppm)	LAB
MW-5	04/01/93	11.62	4.77	6.85	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---
MW-5	07/09/93	11.62	5.40	6.22	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-5	10/08/93	11.62	5.87	5.75	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-5	01/06/94	11.62	5.75	5.87	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-5	04/26/94	11.62	5.49	6.13	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	7.1	PACE
MW-5	07/25/94	11.62	5.89	5.93	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	6.6	PACE
MW-5	10/13/94	11.62	6.03	5.59	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	3.0	PACE
MW-5	01/17/95	11.62	4.74	6.88	---	---	---	---	---	---	---	---	---
MW-5	03/31/95	11.62	4.58	7.04	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	7.1	ATI
MW-5	05/01/95	11.62	4.79	6.63	---	---	---	---	---	---	---	---	---
MW-5	07/12/95	11.62	5.32	6.30	---	---	---	---	---	---	---	---	---
MW-5	10/12/95	11.62	5.70	5.92	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	6.7	ATI
MW-5 (f)	02/27/96	11.62	---	---	---	---	---	---	---	---	---	---	---
MW-5	05/08/96	11.62	4.91	6.71	---	---	---	---	---	---	---	---	---
MW-5	08/09/96	11.62	5.01	6.61	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	7.7	SPL
MW-5	11/07/96	11.62	5.54	6.08	---	---	---	---	---	---	---	---	---
MW-5	02/10/97	11.62	4.66	6.96	---	---	---	---	---	---	---	---	---
MW-5	08/04/97	11.62	5.51	6.11	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	6.9	SPL
RW-1	01/06/94	11.84	5.59	6.25	23000	3800	210	840	2100	4600 (c)	---	---	PACE
QC-1 (d)	01/06/94	---	---	---	24000	3700	210	830	2000	4700 (c)	---	---	PACE
RW-1	04/26/94	11.84	5.21	6.63	24000	3500	120	800	1700	8100 (c)	---	6.4	PACE
QC-1 (d)	04/26/94	---	---	---	22000	3300	110	700	1700	6900 (c)	---	---	PACE
RW-1	07/25/94	11.84	5.52	6.32	31000	4800	290	1100	1700	21000 (c)	---	5.5	PACE
QC-1 (d)	07/25/94	---	---	---	28000	4400	240	960	1400	19000 (c)	---	---	PACE
RW-1	10/13/94	11.84	6.05	5.79	20000	4200	46	990	440	---	---	6.8	PACE
RW-1	01/17/95	11.84	4.02	7.82	9600	1500	65	300	2700	---	---	7.7	ATI
RW-1	03/31/95	11.84	3.81	8.03	16000	1500	780	370	2000	---	---	7.8	ATI
RW-1	05/01/95	11.84	4.21	7.63	---	---	---	---	---	---	---	---	---
RW-1	07/12/95	11.84	4.93	6.91	22000	3700	150	950	2800	---	---	7.2	ATI
RW-1	10/12/95	11.84	5.46	6.38	30000	1600	1500	1700	8500	4300	---	7.0	ATI
RW-1	02/27/96	11.84	4.00	7.84	1800	30	24	41	440	52	194	7.7	SPL
QC-1 (d)	02/27/96	---	---	---	1600	30	23	38	420	50	---	---	SPL
RW-1	05/08/96	11.84	4.65	7.19	---	---	---	---	---	---	---	---	---
RW-1	05/09/96	11.84	---	---	3200	19	19	97	800	ND<50	---	7.1	SPL
QC-1 (d)	05/09/96	---	---	---	2900	15	15	78	700	ND<50	---	---	SPL
RW-1	08/09/96	11.84	4.96	6.88	---	---	---	---	---	---	---	---	---
RW-1	08/12/96	11.84	---	---	6900	210	270	390	1920	ND<100	---	7.9	SPL
QC-1 (d)	08/12/96	---	---	---	8200	270	330	450	2330	ND<100	---	---	SPL
RW-1	11/07/96	11.84	5.50	6.34	6100	320	45	ND<10	ND<10	430	---	6.9	SPL
QC-1 (d)	11/07/96	---	---	---	6800	360	45	ND<10	ND<10	500	---	---	SPL
RW-1	02/10/97	11.84	3.85	7.99	170000	ND<120	ND<250	ND<250	ND<250	150000	---	6.7	SPL
RW-1	08/04/97	11.84	4.72	7.12	ND<25000	580	450	630	3700	230000	---	6.9	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
 BP OIL COMPANY SERVICE STATION NO. 11104
 1716 WEBSTER STREET, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-155

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (Feet) (a)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (Feet) (b)	TPH-G (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TDS (mg/l)	DO (ppm)	LAB
QC-2 (g)	07/09/93	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (g)	10/08/93	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (g)	01/06/94	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (g)	04/28/94	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (g)	07/25/94	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (g)	10/13/94	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (g)	01/17/95	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	---	ATI
QC-2 (g)	03/31/95	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	ATI
QC-2 (g)	07/12/95	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	ATI
QC-2 (g)	10/12/95	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	ATI
QC-2 (g)	02/27/96	---	---	---	ND<50	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	SPL
QC-2 (g)	06/09/96	---	---	---	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
 TDS Total dissolved solids
 DO Dissolved oxygen
 ug/l Micrograms per liter
 mg/l Milligrams per liter
 ppm Parts per million
 --- Not applicable/analyzed/measured
 ND Not detected above reported detection limit
 PACE Pace, Inc.
 ATI Analytical Technologies, Inc.
 SPL Southern Petroleum Laboratories

NOTES:

- (a) Top of casing elevations surveyed in reference to USGS benchmark (14.108 feet above mean sea level) at northwest corner of Webster Street and Pacific Avenue.
- (b) Groundwater elevations in feet above mean sea level.
- (c) A copy of the documentation for this data is included in Appendix C of Alisto report 10-155-07-001.
- (d) Blind duplicate.
- (e) Sample also analyzed for cadmium, nickel, chromium, lead, and zinc. None were detected above the reported detection limit.
- (f) Well inaccessible.
- (g) Travel blank.

F01\10-155\155-7-1.WQ2

TABLE 2 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING
 CHEVRON STATION 9-0290
 1802 WEBSTER STREET, ALAMEDA, CALIFORNIA

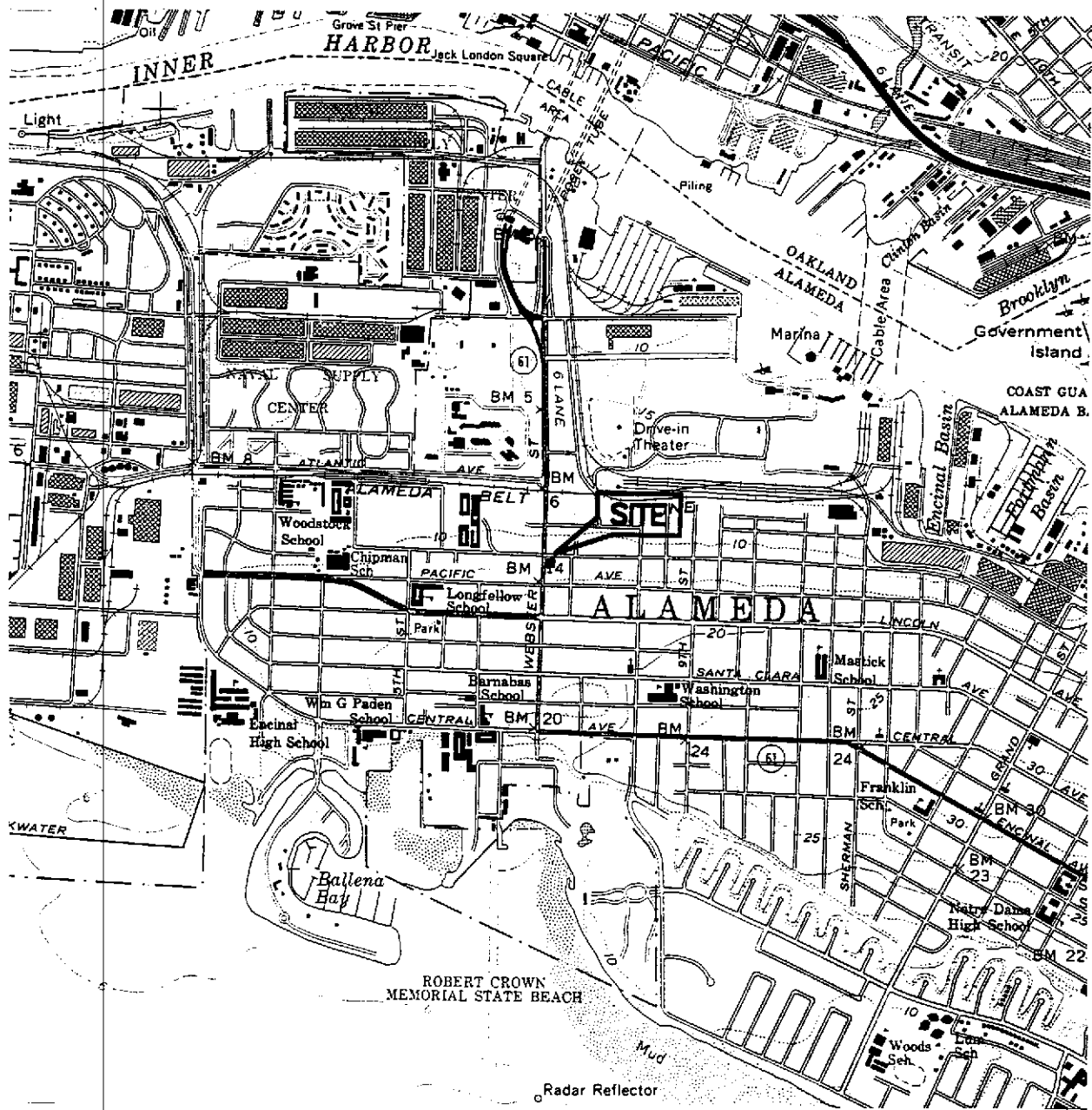
AJLSTO PROJECT NO. 10-155

WELL ID	DATE OF MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)
A-1	05/01/95	11.56	5.80	0.60	6.21
A-1	05/08/96	11.56	5.49	0.28	6.28
A-1	08/23/96	11.56	6.43	0.22	5.30
A-1	02/10/97	11.56	4.45	0.17	7.24
A-1	08/05/97	11.56	5.96	0.10	5.68
B-1	02/15/95	12.12	5.37	0.00	6.75
B-1	05/01/95	12.12	5.12	0.00	7.00
B-1	05/08/96	12.12	4.80	0.00	7.32
B-1	08/23/96	12.12	5.54	0.00	6.58
B-1	02/10/97	12.12	4.59	---	7.53
B-1	08/05/97	12.12	6.44	---	5.68
B-5	02/15/95	10.18	4.15	0.00	6.03
B-5	05/01/95	10.18	4.43	0.00	5.75
B-5	05/08/96	10.18	4.40	0.00	5.78
B-5	08/23/96	10.18	4.99	0.00	5.19
B-5	02/10/97	10.18	3.63	---	6.55
B-5	08/05/97	10.18	4.89	---	5.29
B-6	02/15/95	11.97	4.70	0.00	7.27
B-6	05/01/95	11.97	5.03	0.00	6.94
B-6	05/08/96	11.97	5.23	0.00	6.74
B-6	08/23/96	11.97	6.05	0.00	5.92
B-6	02/10/97	11.97	4.37	0.00	7.60
B-6	08/05/97	11.97	5.75	0.00	6.22
B-7	02/15/95	10.54	4.22	0.00	6.32
B-7	05/01/95	10.54	4.50	0.00	6.04
B-7	08/23/96	---	---	---	---
B-7	02/10/97	---	---	---	---
B-7	08/05/97	---	---	---	---
B-8	02/15/95	11.99	4.72	0.00	7.27
B-8	05/01/95	11.99	5.00	0.00	6.99
B-8	08/23/96	---	---	---	---
B-8	02/10/97	---	---	---	---
B-8	08/05/97	---	---	---	---
B-9	02/15/95	10.70	3.61	0.00	7.09
B-9	05/01/95	10.70	4.29	0.00	6.41
B-9	08/23/96	---	---	---	---
B-9	02/10/97	---	---	---	---
B-9	08/05/97	---	---	---	---
B-10	05/08/96	11.42	5.55	0.00	5.87
B-10	08/23/96	11.42	6.19	0.00	5.23
B-10	02/10/97	11.42	4.58	---	6.84
B-10	08/05/97	11.42	6.30	---	5.12
B-11	05/08/96	11.98	5.00	0.00	6.98
B-11	08/23/96	11.98	5.61	0.00	6.37
B-11	02/10/97	11.98	4.07	---	7.91
B-11	08/05/97	11.98	5.60	---	6.38
B-12	05/08/96	11.16	5.08	0.00	6.08
B-12	08/23/96	11.16	5.65	0.00	5.51
B-12	02/10/97	11.16	4.11	0.00	7.05
B-12	08/05/97	11.16	5.61	0.00	5.55
B-13	05/08/96	11.17	4.97	0.00	6.20
B-13	08/23/96	11.17	5.63	0.00	5.54
B-13	02/10/97	11.17	4.12	0.00	7.05
B-13	08/05/97	11.17	5.65	0.00	5.52

NOTES:

- (a) Top of casing elevations surveyed relative to 1929 NGVD. Measured in feet above mean sea level.
- (b) Groundwater elevations assuming a specific gravity of 0.75 for separate-phase product.
-
- Not measured.

Source: Groundwater data collected by Blaine Tech Services, Inc.



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

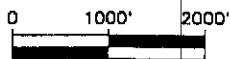
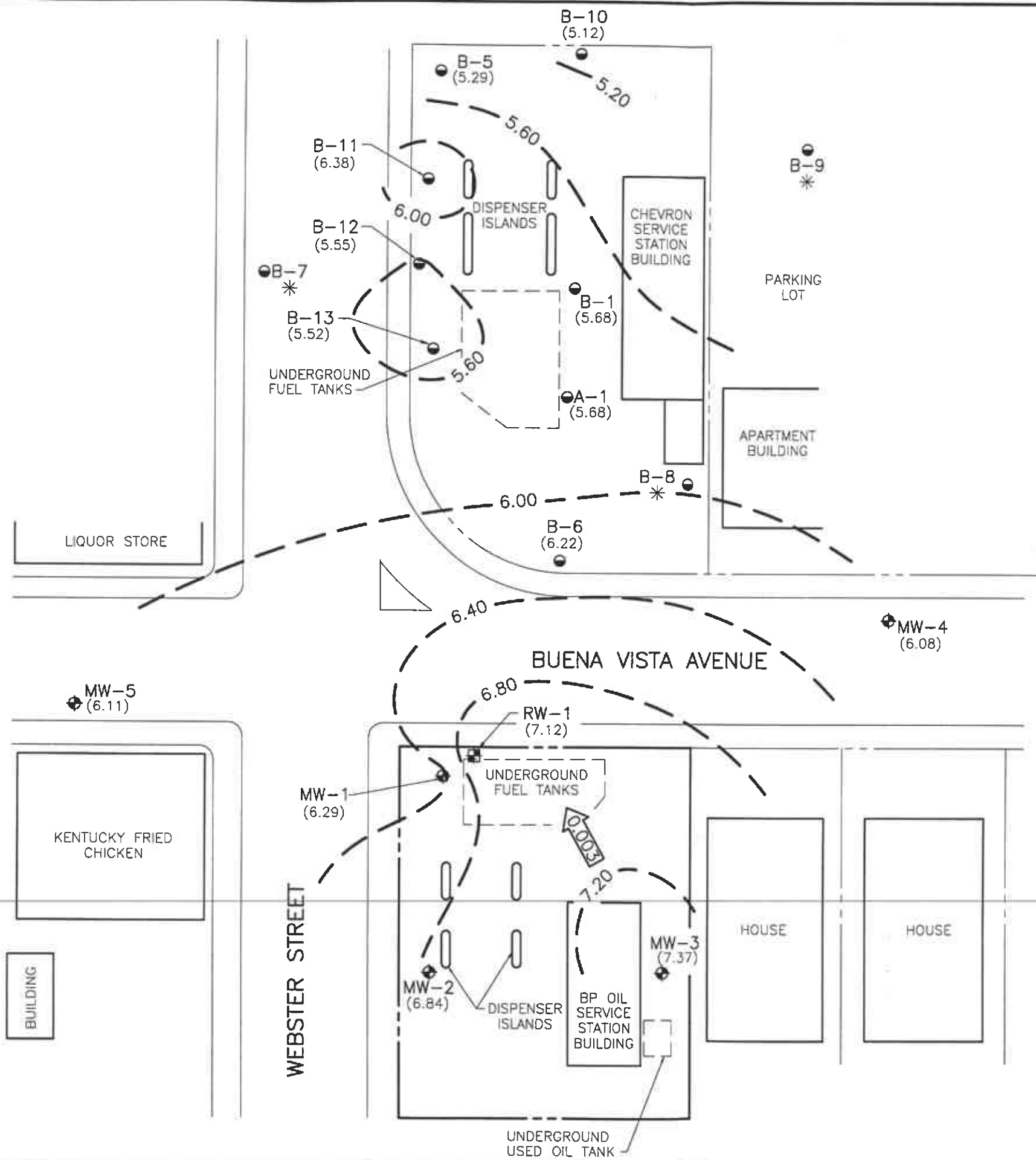


FIGURE 1
SITE VICINITY MAP

BP OIL SERVICE STATION NO. 11104
1716 WEBSTER STREET
ALAMEDA, CALIFORNIA
PROJECT NO. 10-155



ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA



LEGEND

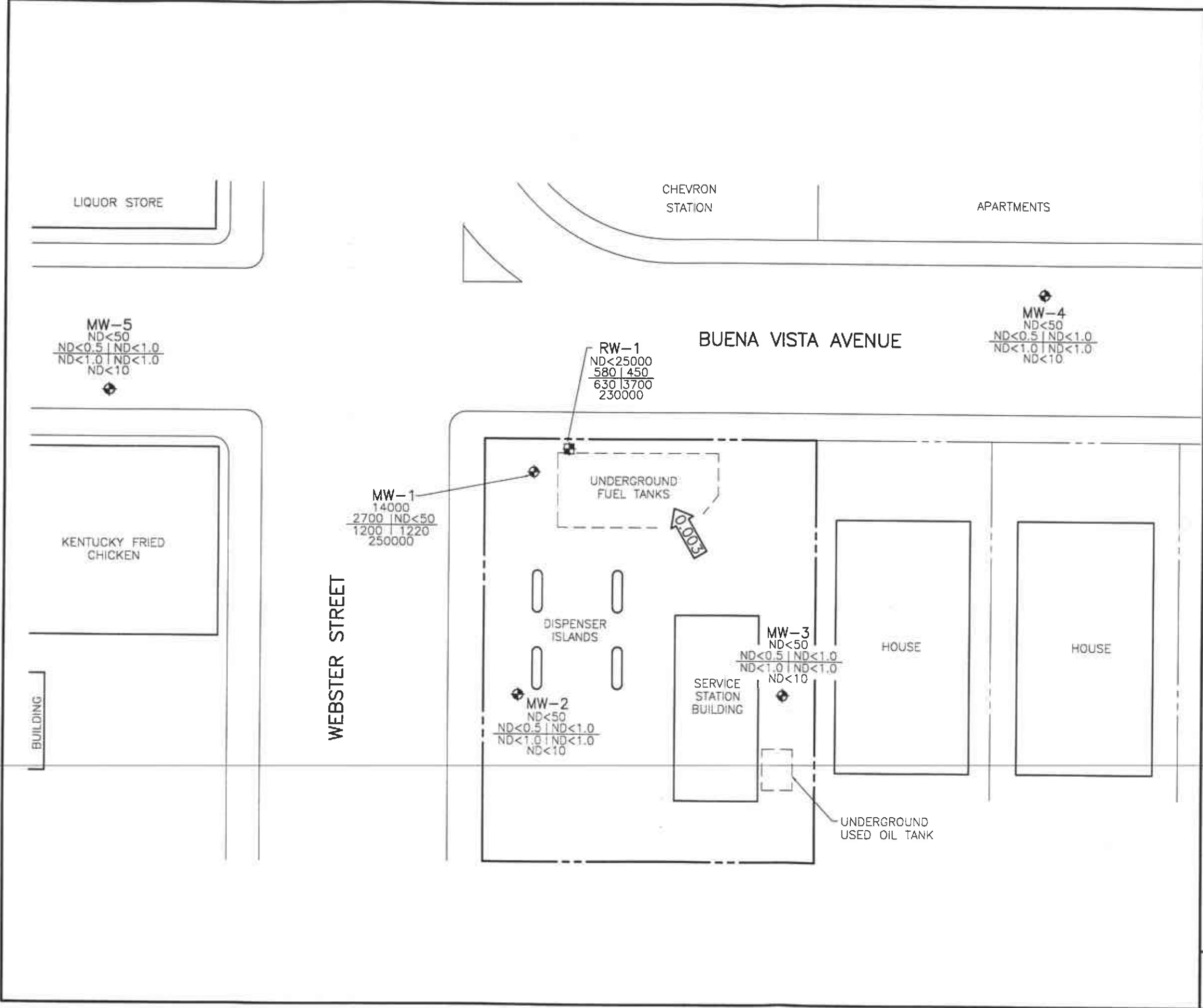
- ◆ BP OIL GROUNDWATER MONITORING WELL
- ◻ GROUNDWATER RECOVERY WELL
- CHEVRON GROUNDWATER MONITORING WELL
- (6.29) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 6.40 - GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL - 0.40 FOOT)
- ← 0.003 → CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT
- * DATA NOT AVAILABLE

NOTE:

CHEVRON SITE WAS MONITORED ON AUGUST 5, 1997

FIGURE 2
POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP
AUGUST 4, 1997
 BP OIL SERVICE STATION NO. 11104
 1716 WEBSTER STREET
 ALAMEDA, CALIFORNIA
 PROJECT NO. 10-155





LEGEND

- ◆ GROUNDWATER MONITORING WELL
- ⊕ GROUNDWATER RECOVERY WELL
- TPH-G
B
T
E
X
MTBE
CONCENTRATION OF CONSTITUENTS IN MICROGRAMS PER LITER
- TPH-G
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
- B
BENZENE
- T
TOLUENE
- E
ETHYLBENZENE
- X
TOTAL XYLENES
- MTBE
METHYL TERT BUTYL ETHER
- ND
NOT DETECTED ABOVE REPORTED DETECTION LIMIT
- ←0.003
CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 3
CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER
AUGUST 4, 1997
 BP OIL SERVICE STATION NO. 11104
 1716 WEBSTER STREET
 ALAMEDA, CALIFORNIA
 PROJECT NO. 10-155

APPENDIX A
WATER SAMPLING FIELD SURVEY FORMS

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. 10-155-07-001

Address 1716 Webster St.

Contract No. H176917

Station No. BP 11104

Date: 8/4/97

Day: M T W T H F

City: Alameda

Sampler: W

DEPTH TO GROUNDWATER SUMMARY

WELL ID	SAMPLE ID	WELL DIAM	TOTAL DEPTH	DEPTH TO WATER	PRODUCT THICKNESS	TIME MONITORED	COMMENTS:
MW-1	S-6	2"	16.88	5.69	∅	1233	S-Feb/Aug ac-1(S-7) From this well
MW-2	S-1	2"	15.84	6.14	↓	1210	A-August
MW-3	S-2	2"	16.60	6.01	↓	1216	A-August
MW-4	S-3	2"	14.80	5.70	↓	1219	A-August
MW-5	S-4	2"	20.00	5.51	↓	1224	A-August
RW-1	S-5	6"	21.61	4.72	↓	1230	S-Feb/Aug

FIELD INSTRUMENT CALIBRATION DATA

pH METER Ihm 4.00 4 7.00 7 10.00 10 TEMPERATURE COMPENSATED N TIME 1245 WEATHER Clear
 D.O. METER Ihm ZERO d.O. SOLUTION _____ BAROMETRIC PRESSURE 760 TEMP 69
 CONDUCTIVITY METER Ihm 10,000 _____ TURBIDITY METER _____ 5.0 NTU _____ OTHER _____
 LEAK DETECTOR: _____ ALARM MODE _____ NON ALARM MODE _____

Well ID	Depth to Water	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.	
MW-2	6.14	2"	OK	∅	Y (N)	2	1301	71.4	7.21	610µs	6.4	<input type="checkbox"/> EPA 601 _____ <input checked="" type="checkbox"/> TPH-G/BTEX _____
Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge PurgeVol.						3.5		70.3	7.10	624µs		<input type="checkbox"/> TPH Diesel _____ <input type="checkbox"/> TOG 5520 _____
15.84 - 6.14 = 9.70 x .16 = 1.55 x 3 = 4.65						5	1309	70.0	7.03	631µs	6.5	TIME/SAMPLE ID
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input type="checkbox"/> ODisp. Tube <input type="checkbox"/> OWinch <input type="checkbox"/> ODisp. Bailer(s) <input type="checkbox"/> OSys Port												1313
Comments:												

Well ID	Depth to Water	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.	
MW-3	6.01	2"	OK	∅	Y (N)	2	1321	71.7	7.47	466µs	6.6	<input type="checkbox"/> EPA 601 _____ <input checked="" type="checkbox"/> TPH-G/BTEX _____
Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge PurgeVol.						3.5		70.6	7.30	479µs		<input type="checkbox"/> TPH Diesel _____ <input type="checkbox"/> TOG 5520 _____
16.60 - 6.01 = 10.59 x .16 = 1.69 x 3 = 5.07						6	1328	70.3	7.21	487µs	6.6	TIME/SAMPLE ID
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input type="checkbox"/> ODisp. Tube <input type="checkbox"/> OWinch <input type="checkbox"/> ODisp. Bailer(s) <input type="checkbox"/> OSys Port												1331
Comments:												

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. 10-155-07-001

Address 1716 Webster St.

Contract No. H176917

Station No. BP 11104

Date: 8/4/97

Day: M T W T H F

City: Alameda

Sampler: *W*

Well ID	Depth to Water	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.	
MW-4	5.72	2"	OIL	Ø	Y N	2	1339	70.6	7.57	397µs	6.1	<input type="checkbox"/> EPA 601
Total Depth - Water Level=						3		70.0	7.30	421µs		<input checked="" type="checkbox"/> TPH-G/BTEX
14.80 - 5.72 = 9.08 x .16 = 1.45 x 3 = 4.35						5	1344	69.5	7.24	421µs	6.4	<input type="checkbox"/> TPH Diesel
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailer(s) <input type="checkbox"/> Sys Port												<input type="checkbox"/> TOG 5520
Comments:												TIME/SAMPLE ID
												1350
MW-5	5.51	2"	OIL	Ø	Y N	3	1401	71.1	7.36	477µs	6.7	<input type="checkbox"/> EPA 601
Total Depth - Water Level=						5		70.4	7.21	492µs		<input checked="" type="checkbox"/> TPH-G/BTEX
20.00 - 5.51 = 14.49 x .16 = 2.32 x 3 = 6.96						7	1409	69.8	7.14	501µs	6.9	<input type="checkbox"/> TPH Diesel
Purge Method: <input type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailer(s) <input type="checkbox"/> Sys Port												<input type="checkbox"/> TOG 5520
Comments:												TIME/SAMPLE ID
												1412
RW-1	4.72	6"	OIL	Ø	Y N	25	1427	70.6	7.61	422µs	6.7	<input type="checkbox"/> EPA 601
Total Depth - Water Level=						50		70.0	7.43	395µs		<input checked="" type="checkbox"/> TPH-G/BTEX
21.61 - 4.72 = 16.89 x .16 = 24.83 x 3 = 74.49						75	1451	69.3	7.36	391µs	6.9	<input type="checkbox"/> TPH Diesel
Purge Method: <input type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailer(s) <input type="checkbox"/> Sys Port												<input type="checkbox"/> TOG 5520
Comments:												TIME/SAMPLE ID
												1455
MW-1	5.69	2"	OIL	Ø	Y N	2	1503	71.3	7.34	647µs	7.2	<input type="checkbox"/> EPA 601
Total Depth - Water Level=						4		70.4	7.17	622µs		<input checked="" type="checkbox"/> TPH-G/BTEX
16.88 - 5.69 = 11.19 x .16 = 1.79 x 3 = 5.37						6	1511	69.7	7.13	610µs	7.2	<input type="checkbox"/> TPH Diesel
Purge Method: <input type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailer(s) <input type="checkbox"/> Sys Port												<input type="checkbox"/> TOG 5520
Comments:												TIME/SAMPLE ID
												1515

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD



HOUSTON LABORATORY

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

August 19, 1997

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


The following report contains analytical results for samples received at Southern Petroleum Laboratories (SPL) on August 13, 1997. The samples were assigned to Certificate of Analysis No.(s)9708521 and analyzed for all parameters as listed on the chain of custody.

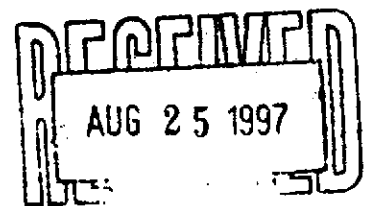
There were no analytical problems encountered with this group of samples and all quality control data was within acceptance limits.

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 No. 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


Brett VanDelinder
Project Manager





HOUSTON LABORATORY

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

Southern Petroleum Laboratories, Inc.

Certificate of Analysis Number 97-08-521

Approved for Release by:

A handwritten signature in cursive script, appearing to read "Brett VanDelinder", is written over a horizontal line.

Brett VanDelinder, Project Manager

A handwritten date "8.20.97" is written in cursive script over a horizontal line.

Date:

Greg Grandits
Laboratory Director

Idelis Williams
Quality Assurance Officer

The attached analytical data package may not be reproduced except in full without the express written approval of this laboratory.



HOUSTON LABORATORY

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

Certificate of Analysis No. H9-9708521-01

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

P.O.#
H176917, COC#084725
DATE: 08/19/97

PROJECT: BP Oil #11104
SITE: Alameda, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-1

PROJECT NO: 10-155-7-1
MATRIX: WATER
DATE SAMPLED: 08/04/97
DATE RECEIVED: 08/13/97

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

93

4-Bromofluorobenzene

103

Method 8020A***

Analyzed by: AA

Date: 08/15/97

Total Petroleum Hydrocarbons-Gasoline

ND

0.05 P

mg/L

Surrogate

% Recovery

1,4-Difluorobenzene

100

4-Bromofluorobenzene

100

California LUFT Manual

Analyzed by: AA

Date: 08/15/97 06:50:00

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. H9-9708521-02

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

P.O.#
 H176917, COC#084725
 DATE: 08/19/97

PROJECT: BP Oil #11104
 SITE: Alameda, CA
 SAMPLED BY: Alisto Engineering
 SAMPLE ID: S-2

PROJECT NO: 10-155-7-1
 MATRIX: WATER
 DATE SAMPLED: 08/04/97
 DATE RECEIVED: 08/13/97

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
 4-Bromofluorobenzene

93
 100

Method 8020A***

Analyzed by: AA

Date: 08/15/97

Total Petroleum Hydrocarbons-Gasoline

ND 0.05 P

mg/L

Surrogate

% Recovery

1,4-Difluorobenzene
 4-Bromofluorobenzene

100
 100

California LUFT Manual

Analyzed by: AA

Date: 08/15/97 04:40:00

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. H9-9708521-03

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

P.O.#
 H176917, COC#084725
 DATE: 08/19/97

PROJECT: BP Oil #11104
 SITE: Alameda, CA
 SAMPLED BY: Alisto Engineering
 SAMPLE ID: S-3

PROJECT NO: 10-155-7-1
 MATRIX: WATER
 DATE SAMPLED: 08/04/97
 DATE RECEIVED: 08/13/97

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

97

4-Bromofluorobenzene

100

Method 8020A***

Analyzed by: AA

Date: 08/15/97

Total Petroleum Hydrocarbons-Gasoline

ND

0.05 P

mg/L

Surrogate

% Recovery

1,4-Difluorobenzene

100

4-Bromofluorobenzene

100

California LUFT Manual

Analyzed by: AA

Date: 08/15/97 08:27:00

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. H9-9708521-04

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

P.O.#
 H176917, COC#084725
 DATE: 08/19/97

PROJECT: BP Oil #11104
 SITE: Alameda, CA
 SAMPLED BY: Alisto Engineering
 SAMPLE ID: S-4

PROJECT NO: 10-155-7-1
 MATRIX: WATER
 DATE SAMPLED: 08/04/97
 DATE RECEIVED: 08/13/97

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	93
4-Bromofluorobenzene	100

Method 8020A***
 Analyzed by: AA
 Date: 08/15/97

Total Petroleum Hydrocarbons-Gasoline	ND	0.05 P	mg/L
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Surrogate	% Recovery
1,4-Difluorobenzene	100
4-Bromofluorobenzene	100

California LUFT Manual
 Analyzed by: AA
 Date: 08/15/97 07:22:00

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. H9-9708521-05

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

P.O.#
H176917, COC#084725
DATE: 08/19/97

PROJECT: BP Oil #11104
SITE: Alameda, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-5

PROJECT NO: 10-155-7-1
MATRIX: WATER
DATE SAMPLED: 08/04/97
DATE RECEIVED: 08/13/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	230000	5000 P	µg/L
Benzene	580	50 P	µg/L
Toluene	450	100 P	µg/L
Ethylbenzene	630	100 P	µg/L
Total Xylene	3700	100 P	µg/L

Surrogate

% Recovery

1,4-Difluorobenzene
4-Bromofluorobenzene

93
100

Method 8020A***

Analyzed by: fab

Date: 08/16/97

Total Petroleum Hydrocarbons-Gasoline

ND

25 P

mg/L

Surrogate

% Recovery

1,4-Difluorobenzene
4-Bromofluorobenzene

100
100

California LUFT Manual

Analyzed by: fab

Date: 08/16/97 11:41:00

(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



Certificate of Analysis No. H9-9708521-06

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

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

P.O.#
H176917, COC#084725
DATE: 08/19/97

PROJECT: BP Oil #11104
SITE: Alameda, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-6

PROJECT NO: 10-155-7-1
MATRIX: WATER
DATE SAMPLED: 08/04/97
DATE RECEIVED: 08/13/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	250000	10000 P	µg/L
Benzene	2700	25 P	µg/L
Toluene	ND	50 P	µg/L
Ethylbenzene	1200	50 P	µg/L
Total Xylene	1220	50 P	µg/L

Surrogate

% Recovery

1,4-Difluorobenzene
4-Bromofluorobenzene

120
100

Method 8020A***

Analyzed by: AA

Date: 08/15/97

Total Petroleum Hydrocarbons-Gasoline

14 2.5 P

mg/L

Surrogate

% Recovery

1,4-Difluorobenzene
4-Bromofluorobenzene

120
100

California LUFT Manual

Analyzed by: AA

Date: 08/15/97 09:00:00

(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. H9-9708521-07

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

P.O.#
H176917, COC#084725
DATE: 08/19/97

PROJECT: BP Oil #11104
SITE: Alameda, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-7

PROJECT NO: 10-155-7-1
MATRIX: WATER
DATE SAMPLED: 08/04/97
DATE RECEIVED: 08/13/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	260000	5000 P	µg/L
Benzene	2600	25 P	µg/L
Toluene	ND	50 P	µg/L
Ethylbenzene	1200	50 P	µg/L
Total Xylene	1100	50 P	µg/L

Surrogate

% Recovery

1,4-Difluorobenzene

93

4-Bromofluorobenzene

100

Method 8020A***

Analyzed by: fab

Date: 08/16/97

Total Petroleum Hydrocarbons-Gasoline

ND

25 P

mg/L

Surrogate

% Recovery

1,4-Difluorobenzene

100

4-Bromofluorobenzene

100

California LUFT Manual

Analyzed by: fab

Date: 08/16/97 12:45:00

(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

QUALITY CONTROL
DOCUMENTATION



AMOUNT CONC. RECOVERY
ADDED MEASURED

LIMITS

California LUFT Manual
WORK ORDER: 9708521-01A

BATCH#:HP_N970814224400
CLIENT SAMPLE ID:S-1

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

California LUFT Manual
WORK ORDER: 9708521-02A

BATCH#:HP_N970814224400
CLIENT SAMPLE ID:S-2

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

California LUFT Manual
WORK ORDER: 9708521-03A

BATCH#:HP_N970814224400
CLIENT SAMPLE ID:S-3

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

California LUFT Manual
WORK ORDER: 9708521-04A

BATCH#:HP_N970814224400
CLIENT SAMPLE ID:S-4

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

California LUFT Manual
WORK ORDER: 9708521-06A

BATCH#:HP_N970814224400
CLIENT SAMPLE ID:S-6

1,4-Difluorobenzene	30	36.0000	120	50- 150
4-Bromofluorobenzene	30	30.0000	100	50- 150

California LUFT Manual
WORK ORDER: Method Blank

BATCH#:HP_N970814224400
CLIENT SAMPLE ID:

1,4-Difluorobenzene	30	30	29.5	50- 150
4-Bromofluorobenzene	30	29	29.5	50- 150

California LUFT Manual
WORK ORDER: LCS

BATCH#:HP_N970814224400
CLIENT SAMPLE ID:

1,4-Difluorobenzene	30	33	110	50- 150
4-Bromofluorobenzene	30	30	100	50- 150

California LUFT Manual
WORK ORDER: Matrix Spike

BATCH#:HP_N970814224400
CLIENT SAMPLE ID:9708521-01A

1,4-Difluorobenzene	30	30	100	50- 150
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AMOUNT CONC. RECOVERY
ADDED MEASURED

LIMITS

4-Bromofluorobenzene	30	30	100	50- 150
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California LUFT Manual

BATCH#:HP_N970814224400

WORK ORDER: Matrix Spike Dup.

CLIENT SAMPLE ID:9708521-01A

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

Method 8020A***

BATCH#:HP_N970815040700

WORK ORDER: 9708521-01A

CLIENT SAMPLE ID:S-1

1,4-Difluorobenzene	30	28	93	70- 131
4-Bromofluorobenzene	30	31	103	43- 135

Method 8020A***

BATCH#:HP_N970815040700

WORK ORDER: 9708521-02A

CLIENT SAMPLE ID:S-2

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

Method 8020A***

BATCH#:HP_N970815040700

WORK ORDER: 9708521-03A

CLIENT SAMPLE ID:S-3

1,4-Difluorobenzene	30	29	97	70- 131
4-Bromofluorobenzene	30	30	100	43- 135

Method 8020A***

BATCH#:HP_N970815040700

WORK ORDER: 9708521-04A

CLIENT SAMPLE ID:S-4

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

Method 8020A***

BATCH#:HP_N970815040700

WORK ORDER: 9708521-05A

CLIENT SAMPLE ID:S-5

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

Method 8020A***

BATCH#:HP_N970815040700

WORK ORDER: 9708521-06A

CLIENT SAMPLE ID:S-6

1,4-Difluorobenzene	30	36.0000	120	70- 131
4-Bromofluorobenzene	30	30.0000	100	43- 135



08/19/97 12:36:52

HOUSTON LABORATORY

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

AMOUNT	CONC.	RECOVERY	LIMITS
ADDED	MEASURED		

Method 8020A***

BATCH#:HP_N970815040700

WORK ORDER: 9708521-07A

CLIENT SAMPLE ID:S-7

1,4-Difluorobenzene	30	36.0000	120	70- 131
4-Bromofluorobenzene	30	30.0000	100	43- 135

Method 8020A***

BATCH#:HP_N970815040700

WORK ORDER: Method Blank

CLIENT SAMPLE ID:

1,4-Difluorobenzene	30	29		70- 131
4-Bromofluorobenzene	30	31		43- 135

Method 8020A***

BATCH#:HP_N970815040700

WORK ORDER: LCS

CLIENT SAMPLE ID:

1,4-Difluorobenzene	30	29	96.7	70- 131
4-Bromofluorobenzene	30	30	100	43- 135

Method 8020A***

BATCH#:HP_N970815040700

WORK ORDER: Matrix Spike

CLIENT SAMPLE ID:9708521-02A

1,4-DIFLUOROBENZENE	30	29	97	70- 131
4-BROMOFLUOROBENZENE	30	31	103	43- 135

Method 8020A***

BATCH#:HP_N970815040700

WORK ORDER: Matrix Spike Dup.

CLIENT SAMPLE ID:9708521-02A

1,4-Difluorobenzene	30	29	97	70- 131
4-Bromofluorobenzene	30	31	103	43- 135

Method 8020A***

BATCH#:HP_N970816021800

WORK ORDER: 9708521-05A

CLIENT SAMPLE ID:S-5

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

Method 8020A***

BATCH#:HP_N970816021800

WORK ORDER: 9708521-06A

CLIENT SAMPLE ID:S-6

1,4-Difluorobenzene	30	29.0000	97	70- 131
4-Bromofluorobenzene	30	31.0000	103	43- 135

Method 8020A***

BATCH#:HP_N970816021800

WORK ORDER: 9708521-07A

CLIENT SAMPLE ID:S-7

1,4-Difluorobenzene	30	28.0000	93	70- 131
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AMOUNT CONC. RECOVERY
ADDED MEASURED

LIMITS

4-Bromofluorobenzene	30	30.0000	100	43- 135
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Method 8020A***

BATCH#:HP_N970816021800

WORK ORDER: Method Blank

CLIENT SAMPLE ID:

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

Method 8020A***

BATCH#:HP_N970816021800

WORK ORDER: LCS

CLIENT SAMPLE ID:

1,4-Difluorobenzene	30	29	96.7	70- 131
4-Bromofluorobenzene	30	30	100	43- 135

Method 8020A***

BATCH#:HP_N970816021800

WORK ORDER: Matrix Spike

CLIENT SAMPLE ID:9708536-01A

1,4-DIFLUOROBENZENE	30	29	97	70- 131
4-BROMOFLUOROBENZENE	30	31	103	43- 135

Method 8020A***

BATCH#:HP_N970816021800

WORK ORDER: Matrix Spike Dup.

CLIENT SAMPLE ID:9708536-01A

1,4-Difluorobenzene	30	29	97	70- 131
4-Bromofluorobenzene	30	30	100	43- 135

California LUFT Manual

BATCH#:HP_N970816042800

WORK ORDER: 9708521-05A

CLIENT SAMPLE ID:S-5

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

California LUFT Manual

BATCH#:HP_N970816042800

WORK ORDER: 9708521-07A

CLIENT SAMPLE ID:S-7

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

California LUFT Manual

BATCH#:HP_N970816042800

WORK ORDER: Method Blank

CLIENT SAMPLE ID:

1,4-Difluorobenzene	30	30	100	50- 150
4-Bromofluorobenzene	30	29	97	50- 150



08/19/97 12:36:52

HOUSTON LABORATORY

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
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California LUFT Manual
WORK ORDER: Matrix Spike

BATCH#:HP_N970816042800

CLIENT SAMPLE ID:9708536-03A

1,4-Difluorobenzene	30	30	100	50- 150
4-Bromofluorobenzene	30	29	97	50- 150

California LUFT Manual
WORK ORDER: Matrix Spike Dup.

BATCH#:HP_N970816042800

CLIENT SAMPLE ID:9708536-03A

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

< = 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



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

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

Matrix: Aqueous
Units: µg/L

Batch Id: HP_N970815040700

LABORATORY CONTROL SAMPLE

S P I K E C O M P O U N D S	Method Blank Result <2>	Spike Added <3>	Blank Spike		QC Limits(**) (Mandatory) ‡ Recovery Range
			Result <1>	Recovery ‡	
MTBE	ND	50	42	84.0	20 - 110
Benzene	ND	50	44	88.0	62 - 121
Toluene	ND	50	46	92.0	66 - 136
Ethyl_Benzene	ND	50	47	94.0	70 - 136
O-Xylene	ND	50	48	96.0	74 - 134
M and P Xylene	ND	100	94	94.0	77 - 140

M A T R I X S P I K E S

S P I K E C O M P O U N D S	Sample Results <2>	Spike Added <3>	Matrix Spike		Matrix Spike Duplicate		MS/MSD Relative % Difference	QC Limits(***) (Advisory)	
			Result <1>	Recovery <4>	Result <1>	Recovery <5>		RPD Max.	Recovery Range
			MTBE	ND	20	18		90.0	18
BENZENE	ND	20.0	17	85.0	16	80.0	6.06	25	39 - 150
TOLUENE	ND	20.0	17	85.0	16	80.0	6.06	26	56 - 134
ETHYL_BENZENE	ND	20.0	17	85.0	16	80.0	6.06	38	61 - 128
O-XYLENE	ND	20.0	17	85.0	16	80.0	6.06	29	40 - 130
M AND P XYLENE	ND	40.0	34	85.0	32	80.0	6.06	20	43 - 152

Analyst: AA

Sequence Date: 08/15/97

SPL ID of sample spiked: 9708521-02A

Sample File ID: N_H7431.TX0

Method Blank File ID:

Blank Spike File ID: N_H7429.TX0

Matrix Spike File ID: N_H7443.TX0

Matrix Spike Duplicate File ID: N_H7444.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 = $[(<1> - <2>) / <3>] \times 100$

LCS % Recovery = $(<1> / <3>) \times 100$

Relative Percent Difference = $| (<4> - <5>) | / [(<4> + <5>) \times 0.5] \times 100$

(**) = Source: SPL-Houston Historical Data (4th Q '95)

(***) = Source: SPL-Houston Historical Data (3rd Q '96)

SAMPLES IN BATCH(SPL ID):

9708519-05A 9708521-03A 9708521-06A 9708403-03A
 9708521-07A 9708521-05A 9708528-01A 9708521-02A
 9708528-08A 9708528-06A 9708528-07A 9708521-01A
 9708521-04A



** 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_N970814224400

LABORATORY CONTROL SAMPLE

S P I K E C O M P O U N D S	Method Blank Result <2>	Spike Added <3>	Blank Spike		QC Limits(**) (Mandatory) % Recovery Range
			Result <1>	Recovery %	
Petroleum Hydrocarbons-Gas	ND	1.0	0.70	70.0	50 - 150

MATRIX SPIKES

S P I K E C O M P O U N D S	Sample Results <2>	Spike Added <3>	Matrix Spike		Matrix Spike Duplicate		MS/MSD Relative % Difference	QC Limits(***) (Advisory)	
			Result <1>	Recovery <4>	Result <1>	Recovery <5>		RPD Max.	Recovery Range
PETROLEUM HYDROCARBONS-GAS	ND	0.9	0.87	96.7	0.87	96.7	0	50	50 - 150

Analyst: AA

Sequence Date: 08/15/97

SPL ID of sample spiked: 9708521-01A

Sample File ID: NNH7435.TX0

Method Blank File ID:

Blank Spike File ID: NNH7426.TX0

Matrix Spike File ID: NNH7445.TX0

Matrix Spike Duplicate File ID: NNH7446.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: Temporary Limits

(***) = Source: Temporary Limits

SAMPLES IN BATCH (SPL ID):

9708521-03A 9708521-06A 9708238-07A 9708521-02A
9708528-08A 9708528-06A 9708528-07A 9708521-01A
9708521-04A 9708519-05A



** 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_N970816042800

LABORATORY CONTROL SAMPLE

S P I K E C O M P O U N D S	Method Blank Result <2>	Spike Added <3>	Blank Spike		QC Limits(**) (Mandatory) ‡ Recovery Range
			Result <1>	Recovery ‡	
Petroleum Hydrocarbons-Gas	ND	1.0	0.69	69.0	50 - 150

MATRIX SPIKES

S P I K E C O M P O U N D S	Sample Results <2>	Spike Added <3>	Matrix Spike		Matrix Spike Duplicate		MS/MSD Relative % Difference	QC Limits(***) (Advisory)	
			Result <1>	Recovery <4>	Result <1>	Recovery <5>		RPD Max.	Recovery Range
PETROLEUM HYDROCARBONS-GAS	ND	0.9	0.62	68.9	0.61	67.8	1.61	50	50 - 150

Analyst: AA

Sequence Date: 08/16/97

SPL ID of sample spiked: 9708536-03A

Sample File ID: NNH7469.TX0

Method Blank File ID:

Blank Spike File ID: NNH7463.TX0

Matrix Spike File ID: NNH7465.TX0

Matrix Spike Duplicate File ID: NNH7466.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: Temporary Limits

(***) = Source: Temporary Limits

SAMPLES IN BATCH(SPL ID):

9708314-08A 9708314-11A 9708314-13A 9708521-07A
 9708536-02A 9708528-01A 9708528-04A 9708528-05A
 9708519-01A 9708519-02A 9708519-03A 9708519-04A
 9708406-01A 9708521-05A 9708536-01A 9708536-03A
 9708528-02A 9708528-03A

CHAIN OF CUSTODY
AND
SAMPLE RECEIPT CHECKLIST



9708521

CHAIN OF CUSTODY

No. 084725

Page 1 of 1

CONSULTANT'S NAME: Alisto Engineering CONSULTANT'S ADDRESS: 1575 Trent Blvd #201, W.C., Ca 94598

BP SITE NUMBER: 11104 BP SITE / FACILITY ADDRESS: Alameda, Ca CONSULTANT PROJECT NUMBER: 10-155-7-1

CONSULTANT PROJECT MANGER: Brady Nagle PHONE NUMBER: (510) 295-1650 FAX NUMBER: 295-1823 CONSULTANT CONTRACT NUMBER: H176917

BP CONTACT: Sgt Scott Boston BP ADDRESS: Texas Renton, VA PHONE NUMBER: FAX NO.

LAB CONTACT: SPL LABORATORY ADDRESS: Texas PHONE NUMBER: FAX NO.

BP CONTACT REQUESTING RUSH TAT (Print BP Contact Name): RUSH REQUESTED OF (Print Consultant Contact Name): DATE/TIME: 8/12/97 SHIPMENT DATE: 8/12/97 SHIPMENT METHOD: Fed Ex

TAT: 24 Hours 48 Hours 72 Hours Standard 7 or 14 Days

ANALYSIS REQUIRED: AIRBILL NUMBER: 3848470286

SAMPLE DESCRIPTION	COLLECTION DATE	COLLECTION TIME	MATRIX SOIL/WATER	CONTAINERS		PRESERVATIVE		COMMENTS
				NO.	TYPE (VOL.)	LAB SAMPLE #		
S-1	8/4/97		W	3				
S-2	↓		↓	↓				
S-3	↓		↓	↓				
S-4	↓		↓	↓				
S-5	↓		↓	↓				
S-6	↓		↓	↓				
S-7	↓		↓	↓				

SAMPLED BY (Please Print Name): _____ SAMPLED BY (Signature): _____ ADDITIONAL COMMENTS: _____

RELINQUISHED BY / AFFILIATION (Print Name / Signature)	DATE	TIME	ACCEPTED BY / AFFILIATION (Print Name / Signature)	DATE	TIME
<u>Patricia Gylton</u>	<u>8/11/97</u>		<u>Patricia Gylton</u>	<u>8/12/97</u>	<u>0900</u>
<u>Patricia Gylton</u>	<u>8/12/97</u>	<u>1500</u>	<u>Patricia Gylton</u>	<u>8/13/97</u>	<u>1015</u>

60001

SPL Houston Environmental Laboratory

Sample Login Checklist

Date: 8/13/97	Time: 1230
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SPL Sample ID: 9708521

		<u>Yes</u>	<u>No</u>								
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:		6C								
10	Method of sample delivery to SPL:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%; padding: 5px;">SPL Delivery</td> <td style="width: 30%;"></td> </tr> <tr> <td style="padding: 5px;">Client Delivery</td> <td></td> </tr> <tr> <td style="padding: 5px;">FedEx Delivery (airbill #)</td> <td style="text-align: center;">3848470286</td> </tr> <tr> <td style="padding: 5px;">Other:</td> <td></td> </tr> </table>		SPL Delivery		Client Delivery		FedEx Delivery (airbill #)	3848470286	Other:	
SPL Delivery											
Client Delivery											
FedEx Delivery (airbill #)	3848470286										
Other:											
11	Method of sample disposal:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%; padding: 5px;">SPL Disposal</td> <td style="width: 30%; text-align: center;">✓</td> </tr> <tr> <td style="padding: 5px;">HOLD</td> <td></td> </tr> <tr> <td style="padding: 5px;">Return to Client</td> <td></td> </tr> </table>		SPL Disposal	✓	HOLD		Return to Client			
SPL Disposal	✓										
HOLD											
Return to Client											

Name: <i>Muben STL</i>	Date: 8/13/97
------------------------	---------------

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

BP Site Number: 11104
ERM Contact: G797392
Sampling Date: 08/04/97
Matrix Description: Water
Date Final Report Received: 08/25/97
Laboratory & Location: SPL, Houston, Texas

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

Notes: _____

Data Validation Completed by: Brady Nagle
 (signature): *Brady Nagle*
 Date: 9/30/97

Calculation of RPD
for BP Oil QA/QC Program
BP Oil Station No. 11104 08/04/97 Event

Analytical Data	TPH-G	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
Primary Sample	14000	2700	ND<50	1200	1220	250000
QC-1 Duplicate	ND<25000	2600	ND<50	1200	1100	260000
Sample Mean	7000 14500	2650	0	1200	1160	255000
RPD	200.00%	3.77%	N/A	0.00%	10.34%	-3.92%
Significant Result?	YES	NO	N/A	NO	NO	NO

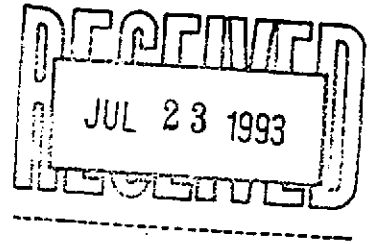
Notes:

- (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.

APPENDIX C

HISTORICAL MTBE LABORATORY ANALYSIS DOCUMENTATION

REPORT OF LABORATORY ANALYSIS



July 22, 1993

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

RE: PACE Project No. 430709.526
Client Reference: BP Station # 11104

Dear Mr. Howell:

Enclosed is the report of laboratory analyses for samples received July 09, 1993.

Please note that a peak eluting earlier than Benzene and suspected to be Methyl tert-butyl ether was detected in the following samples at the approximated level:

70 0110653/MW-1	13,000ug/L
70 0110700/QC-1	14,000ug/L

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

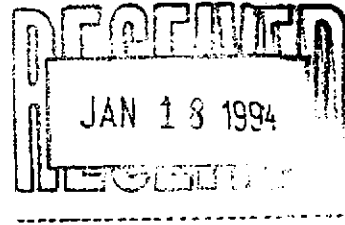
A handwritten signature in cursive script that reads "Jim J. Oys".

Jim J. Oys
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

January 17, 1994



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

RE: PACE Project No. 440110.501
Client Reference: BP Station # 11104/10-155-01-003

Dear Mr. Howell:

Enclosed is the report of laboratory analyses for samples received January 10, 1994.

Please note that methyl tertiary butyl ether (MTBE) was detected in the following samples at the approximate level:

70 0225965/QC-1	4600ug/L
70 0225981/RW-1	4700ug/L

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

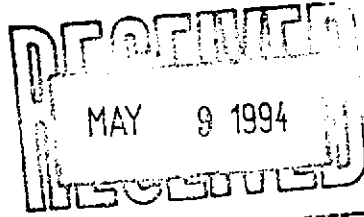
Sincerely,

A handwritten signature in dark ink, appearing to read "Jim J. Oys". The signature is fluid and cursive.

Jim J. Oys
Project Manager

Enclosures

May 06, 1994



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

RE: PACE Project No. 440428.507
Client Reference: BP Site #11104/CP#10-155-01-004 ✓

Dear Mr. Howell:

Enclosed is the report of laboratory analyses for samples received April 28, 1994.

Please note that a peak eluting earlier than Benzene and suspected to be Methyl Tert Butyl Ether was detected in the following samples at the approximated levels:

700312361/MW-1	17000 ug/L	✓
700312418/RW-1	8100 ug/L	
700312426/QC-1	6900 ug/L	

Footnotes are given at the end of the report.

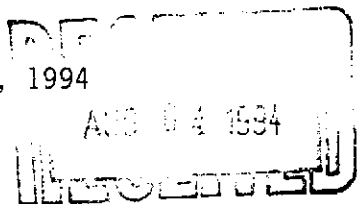
If you have any questions concerning this report, please feel free to contact us.

Sincerely,

Ronald M. Chew
Project Manager

Enclosures

August 03, 1994



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

RE: PACE Project No. 440727.514 CS
Client Reference: BP Site #11104/10-155-02-001 ✓

Dear Mr. Howell:

Enclosed is the report of laboratory analyses for samples received July 27, 1994.

Please note that a peak eluting earlier than Benzene and suspected to be Methyl Tert Butyl Ether was detected in the following samples at the approximated levels:

700362016/S-5	26000 ug/L
700362024/S-6	21000 ug/L ✓
700362032/S-7	19000 ug/L

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

Ronald M. Chew
Project Manager

Enclosures