BP OIL

ENVIRONMENTAL PROTECTION
99 JAN 21 PM 2:1

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

January 15, 1999

- Check MtBE at Chevron station across street (D.G.) B-6 is increasing (5/97) 2000 ppb to 3000 ppb (7/98)
- See if sewer / storm drain act as conduit for off site migration of MtBE
- See if station is updated - any repairs, repaired leaks, etc
- Consider remediation

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

Dear Ms. Chu:

Enclosed find a Groundwater Monitoring and Sampling Report, dated 31 December 1998. The report summarizes chemical data obtained since 1992, including the results associated with samples obtained on 2 September 1998.

The report shows that aromatic petroleum hydrocarbons were detected in samples obtained in two of the wells sampled this quarter. The highest benzene concentration (3900 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 the aggregate increasing trend of MTBE concentrations reported for wells RW-1 and MW-1 since the August 1996 sampling event.

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

Sincerely,

Scott Hooton

attachment

cc: site file
David Camille - Tosco (w/attachment)
Fran Thie - Blaine

GROUNDWATER MONITORING AND SAMPLING REPORT

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

Project No. 10-155-09-001

Prepared for:

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

Prepared by:

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

December 31, 1998

Brady Nagle
Project Manager

Al Sevilla, P.E.
Principal

REGISTERED PROFESSIONAL ENGINEER
ALBERTO SANCHEZ SEVILLA
26392
Exp. Date 3-31-00
CIVIL
STATE OF CALIFORNIA

GROUNDWATER MONITORING AND SAMPLING REPORT

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

Project No. 10-155-09-001

December 31, 1998

INTRODUCTION

This report presents the results and findings of the September 2, 1998 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.

SAMPLING AND ANALYTICAL RESULTS

The results of monitoring and laboratory analysis of the groundwater samples for this and previous quarters are summarized in Table 1. The potentiometric groundwater elevations as interpreted from the results of this monitoring event are shown on Figure 2. The results of groundwater analysis are shown on Figure 3. The laboratory report and chain of custody record are presented in Appendix B.

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

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-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	6500	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	250000	---	7.2	SPL
QC-1 (d)	08/04/97	---	---	---	ND<25000	2600	ND<50	1200	1100	260000	---	---	SPL
MW-1	01/27/98	11.98	3.96	8.02	390000	4400	4300	1600	2890	490000	---	6.4	SPL
MW-1	09/02/98	11.98	5.03	6.95	230000	3900	ND<50	1900	1000	230000	---	6.3	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
MW-2	01/27/98	12.98	4.42	8.56	---	---	---	---	---	---	---	---	---
MW-2	09/02/98	12.98	5.47	7.51	100	0.56	3.6	ND<1.0	3.0	110	---	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 (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-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	6.64	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-3	01/27/98	13.38	4.30	9.08	---	---	---	---	---	---	---	---	---
MW-3	09/02/98	13.38	5.80	7.58	ND<50	ND<0.5	2.2	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
MW-4	01/27/98	11.80	4.06	7.74	---	---	---	---	---	---	---	---	---
MW-4	09/02/98	11.80	4.89	6.91	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	5.8	SPL

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1716 WEBSTER STREET, ALAMEDA, CALIFORNIA

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	5.69	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	6.83	---	---	---	---	---	---	---	---	---
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
MW-5	01/27/98	11.62	4.01	7.61	---	---	---	---	---	---	---	---	---
MW-5	09/02/98	11.62	5.17	6.45	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	6.4	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	4600	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	560	450	630	3700	230000	---	6.9	SPL
RW-1	01/27/98	11.84	3.80	8.04	52000	380	330	490	2970	38000	---	6.1	SPL
QC-1 (d)	01/27/98	---	---	---	51000	380	300	480	2980	36000	---	---	SPL
RW-1	09/02/98	11.84	4.91	6.93	260000	2500	56	1400	3070	250000	---	6.6	SPL
QC-1 (d)	09/02/98	---	---	---	280000	2400	ND<50	1400	3170	270000	---	---	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 (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
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)	04/26/94	---	---	---	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)	05/09/96	---	---	---	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/available/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.

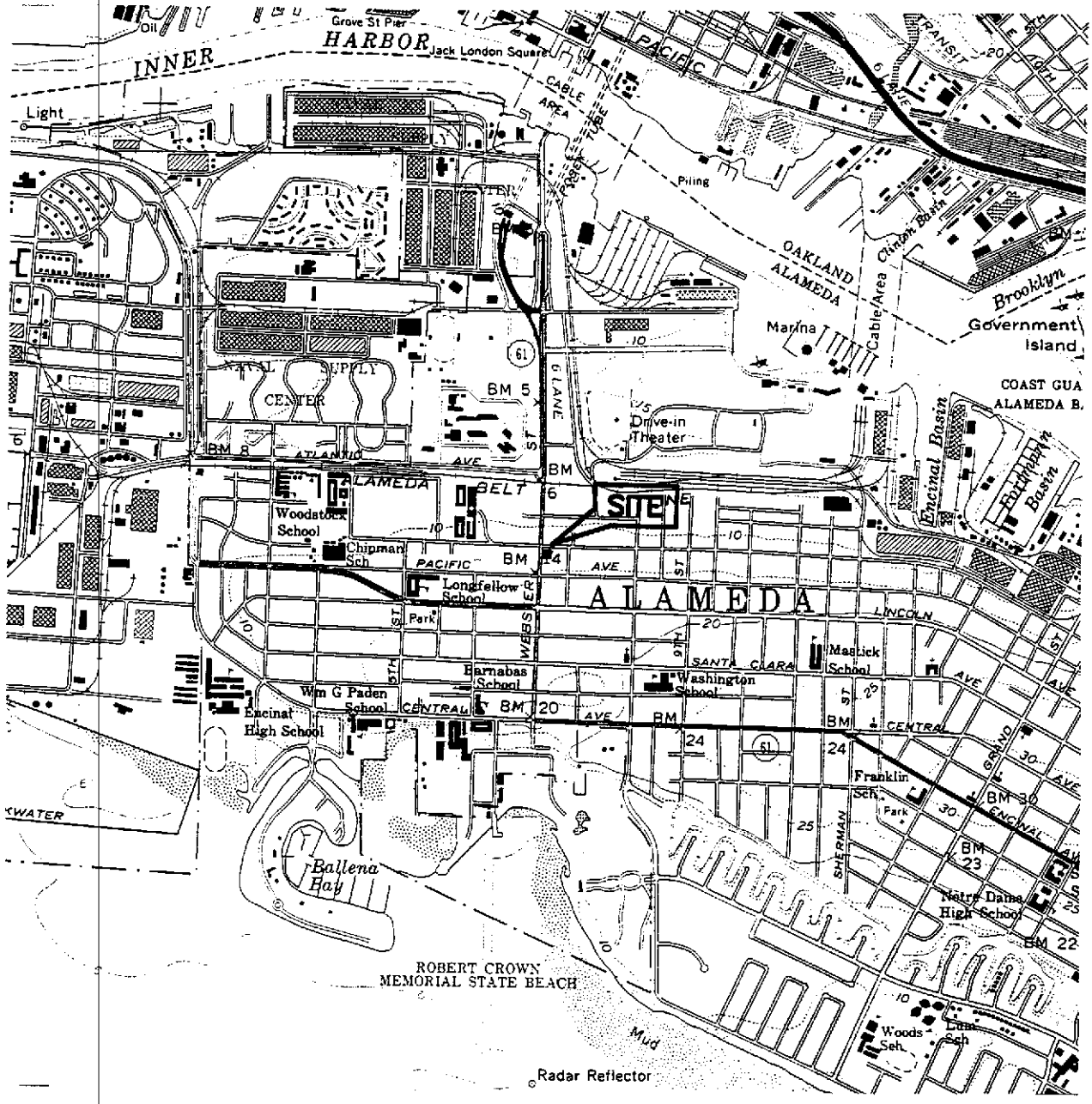
(d) Blind duplicate.

(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.

F:\01\10-155\10-155GW.WQ2



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

N

0 1000' 2000'

CALIF

QUADRANGLE LOCATION

FIGURE 1

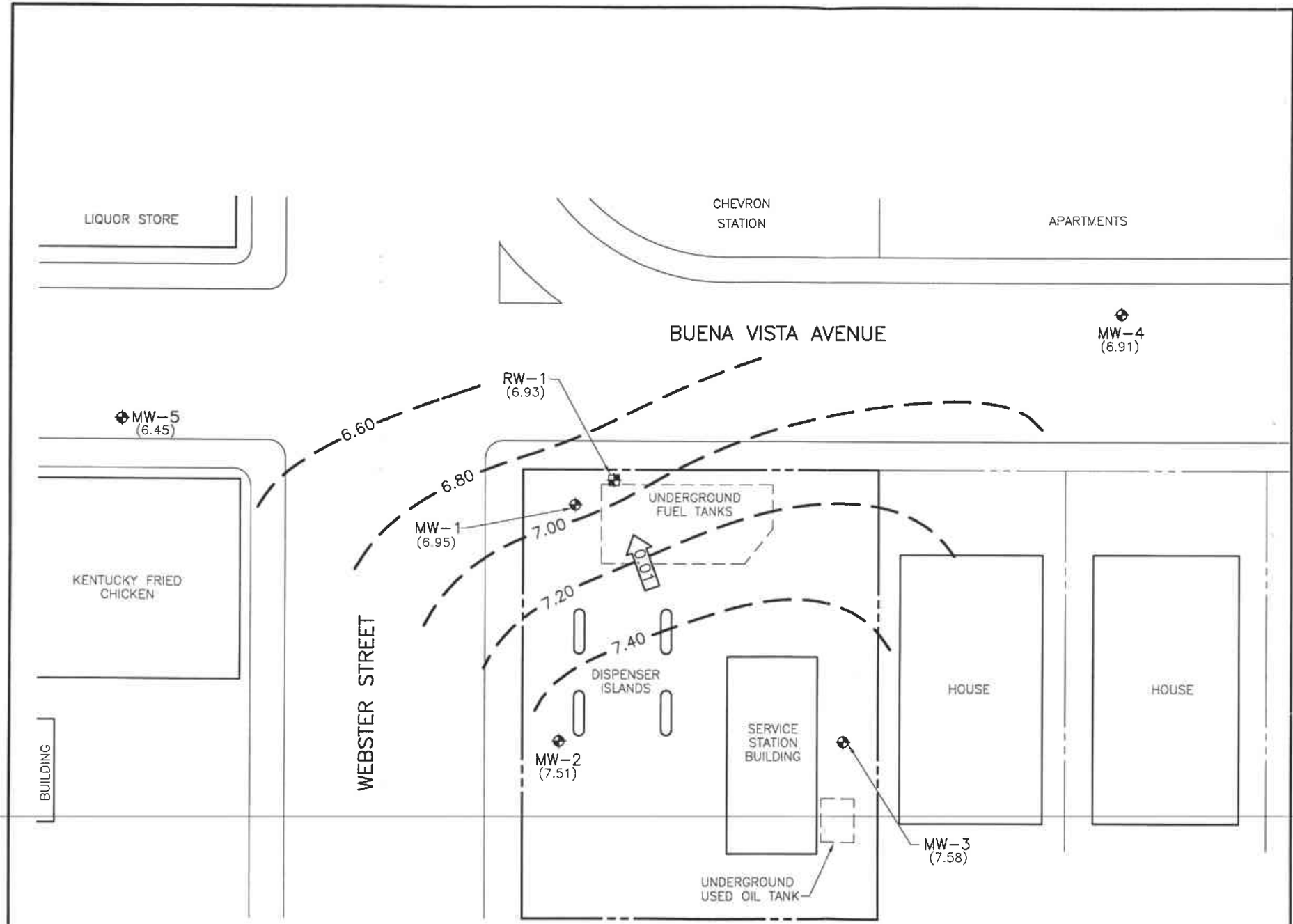
SITE VICINITY MAP

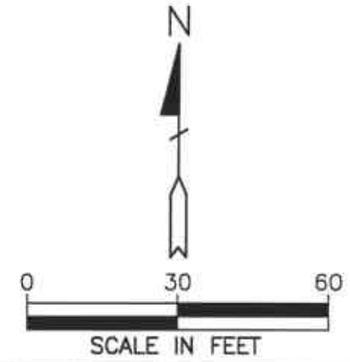
BP OIL SERVICE STATION NO. 11104
1716 WEBSTER STREET
ALAMEDA, CALIFORNIA

PROJECT NO. 10-155

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10155B—DWG 8-10-93 RKW 1-1





LEGEND

- GROUNDWATER MONITORING WELL
- GROUNDWATER RECOVERY WELL
- (6.45) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 6.60 GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL–0.20 FOOT)
- 0.01 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

NOTE:
Potentiometric groundwater elevation contours were generated with Quicksurf using the Kriging method with a spherical variogram on a triangulated grid surface.

FIGURE 2

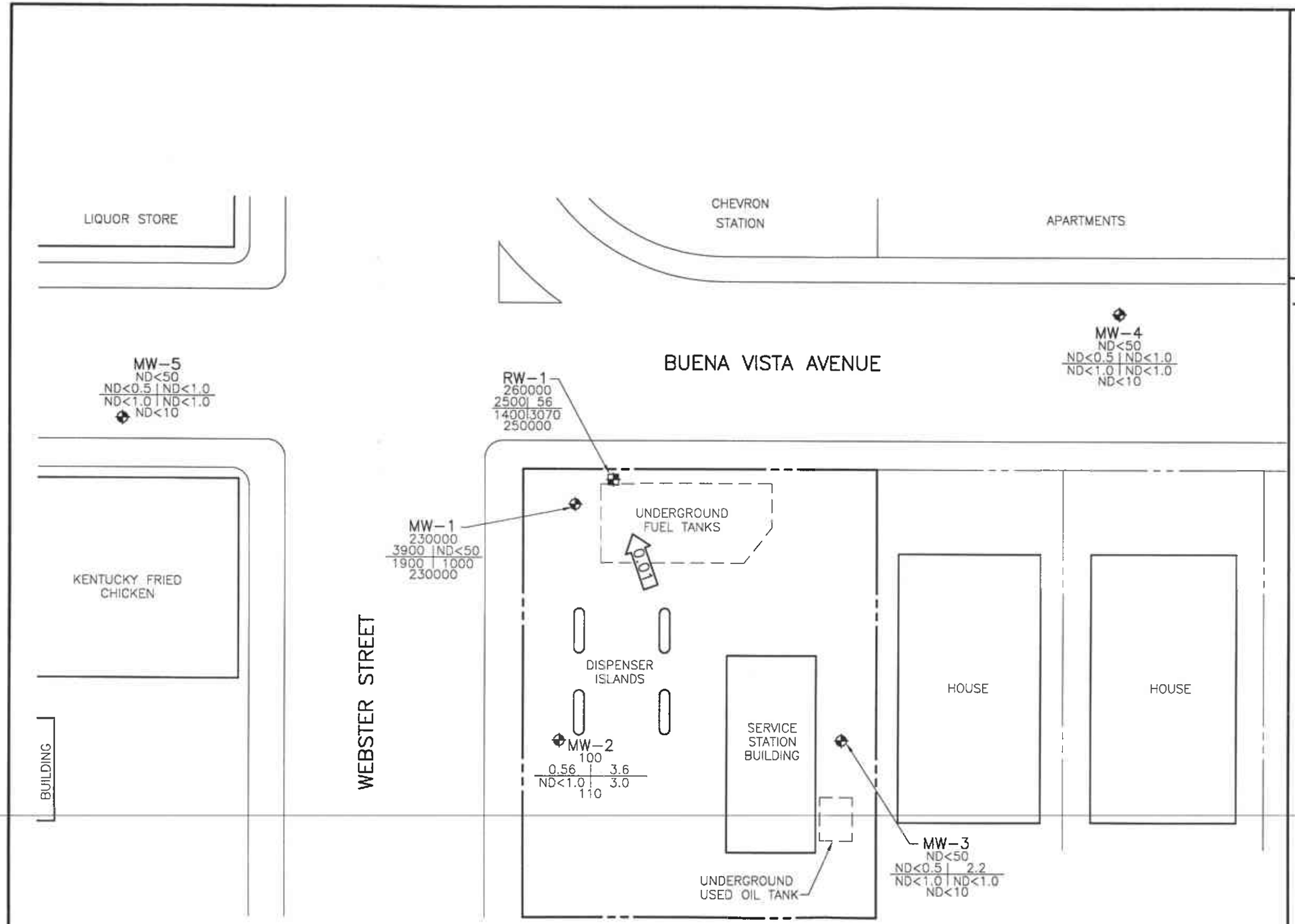
POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP

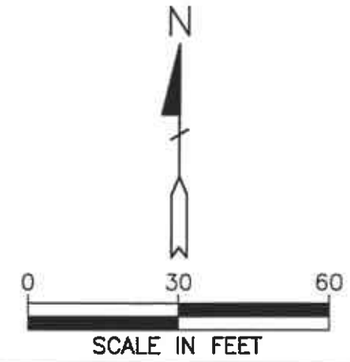
SEPTEMBER 2, 1998

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

PROJECT NO. 10–155

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA





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
0.01	CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 3

CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER

SEPTEMBER 2, 1998

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

PROJECT NO. 10-155

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10155-1.DWG 12-10-98 TWI 1=30

APPENDIX A

WATER SAMPLING FIELD SURVEY FORMS

ALISTO

ENGINEERING
GROUP
1575 TREAT BOULEVARD, SUITE 201
WALNUT CREEK CA 94598 (925) 295-1650 FAX 295-1823

Field Report / Sampling Data Sheet

9-1 RY

Project No. 10-155 ~~8-2~~ Date: 9/2/98
Address 1716 Webster St. Day: M T (W) TH F
Contract No. Pending City: Alameda
Station No. BP 11104 Sampler: LR JCER

DEPTH TO GROUNDWATER SUMMARY

WELL ID	SAMPLE ID	WELL DIAM	TOTAL DEPTH	DEPTH TO WATER	PRODUCT THICKNESS	TIME MONITORED	COMMENTS: DBA: "76" 4 hole
MW-1	S-6	2"	~~16.88~~	5.03	Ø	1115	SEMI SAMPLE THIS EVENT 16.51 (TD)
MW-2	S-1	2"	~~15.84~~	5.47		1050	ANNUAL SAMPLE THIS EVENT 15.70 (TD)
MW-3	S-2	2"	~~16.60~~	5.80		1053	ANNUAL SAMPLE THIS EVENT 16.62 (TD)
MW-4	S-3	2"	~~14.80~~	4.89		1057	ANNUAL SAMPLE THIS EVENT 14.64 TD
MW-5	S-4	2"	20.00			1100	ANNUAL SAMPLE THIS EVENT
RW-1	S-5	6"	~~21.61~~	4.91		1109	SEMI SAMPLE THIS EVENT 22.38 (TD) QC-1 (S-7)

FIELD INSTRUMENT CALIBRATION DATA

pH METER Ion 4.00 4 7.00 7 10.00 10 TEMPERATURE COMPENSATED Y N TIME 1122 WEATHER clear
D.O. METER Ion ZERO d.O. SOLUTION _____ BAROMETRIC PRESSURE 760 TEMP 68
CONDUCTIVITY METER Ion 10,000 _____ TURBIDITY METER _____ 5.0 NTU _____ OTHER X
LEAK DETECTOR : _____ ALARM MODE _____ NON ALARM MODE

Well ID MW-2 | Depth to Water 5.47 | Diam 2" | Cap/Lock OK | Product Dept Ø | Iridescence Y (N)

Total Depth - Water Level= 15.70 - 5.47 = 10.23 | x Well Vol. Factor= x .16 = | x#vol. to Purge = 1.64 X 3 = | PurgeVol. = 4.92

Purge Method: (X) Surface Pump ( ) Disp.Tube ( ) Winch ( ) Disp. Bailer(s) ___ ( ) Sys Port

Comments:

Gal.	Time	Temp *F	pH	E.C.	D.O.
2	1145	76.1	6.74	965 µS	6.4
4		79.6	6.68	899 µS	
5	1150	78.4	6.71	895 µS	6.9

( ) EPA 601 ___
(X) TPH-G/BTEX ___
( ) TPH Diesel ___
( ) TOG 5520 ___
TIME/SAMPLE ID
1205

Well ID MW-3 | Depth to Water 5.80 | Diam 2" | Cap/Lock OK | Product Dept Ø | Iridescence Y (N)

Total Depth - Water Level= 16.62 - 5.80 = 10.82 | x Well Vol. Factor= x .16 = | x#vol. to Purge = 1.73 X 3 = | PurgeVol. = 5.19

Purge Method: (X) Surface Pump ( ) Disp.Tube ( ) Winch ( ) Disp. Bailer(s) ___ ( ) Sys Port

Comments:

Gal.	Time	Temp *F	pH	E.C.	D.O.
2	1214	70.4	7.01	366 µS	6.3
4		68.8	6.82	339 µS	
6	1217	68.1	6.77	331 µS	6.6

( ) EPA 601 ___
(X) TPH-G/BTEX ___
( ) TPH Diesel ___
( ) TOG 5520 ___
TIME/SAMPLE ID
1301

ALISTO

Field Report / Sampling Data Sheet

ENGINEERING
GROUP
1575 TREAT BOULEVARD, SUITE 201
WALNUT CREEK CA 94598 (925) 295-1650 FAX 295-1823

Project No. 10-155 Date: 9/2/98
Address 1716 Webster St. Day: M T W TH F
Contract No. Pending City: Alameda
Station No. BP 11104 Sampler: LCB CFK

Well ID MW-4 | Depth to Water 4.89 | Diam 2" | Cap/Lock OK | Product Dept Ø | Iridescence Y (N)

Total Depth - Water Level= 14.64-4.89=9.75 x Well Vol. Factor=.16 x#vol. to Purge=1.56X3= PurgeVol. 4.68

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

Comments:

Gal.	Time	Temp *F	pH	E.C.	D.O.
1	1448	77.5	6.66	504 µs	5.6
3		73.6	6.55	483 µs	
5	1452	72.8	6.52	474 µs	5.8

O EPA 601___ O TPH-G/BTEX___ O TPH Diesel___ O TOG 5520___
TIME/SAMPLE ID: 1500

Well ID MW-5 | Depth to Water 5.17 | Diam 2" | Cap/Lock OK | Product Dept Ø | Iridescence Y (N)

Total Depth - Water Level= 14.63-5.17=9.46 x Well Vol. Factor=.16 x#vol. to Purge=1.51X3= PurgeVol. 4.53

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

Comments: Need to Replace Monument

Gal.	Time	Temp *F	pH	E.C.	D.O.
2	1513	76.7	6.95	764 µs	6.1
3		75.5	6.70	746 µs	
5	1518	74.9	6.64	740 µs	6.4

O EPA 601___ O TPH-G/BTEX___ O TPH Diesel___ O TOG 5520___
TIME/SAMPLE ID: 1545

Well ID RW-1 | Depth to Water 4.91 | Diam 6" | Cap/Lock OK | Product Dept Ø | Iridescence Y (N)

Total Depth - Water Level= 22.38-4.91=17.47 x Well Vol. Factor=1.47 =25.68X3= PurgeVol. 77.04

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

Comments: RW-1 (5-7) From This well

Gal.	Time	Temp *F	pH	E.C.	D.O.
26		76.2	6.44	.68 ms	6.5
52		74.8	6.54	.72 ms	
77		74.1	6.61	.77 ms	6.6

O EPA 601___ O TPH-G/BTEX___ O TPH Diesel___ O TOG 5520___
TIME/SAMPLE ID:

Well ID MW-1 | Depth to Water 5.03 | Diam 2" | Cap/Lock OK | Product Dept Ø | Iridescence Y (N)

Total Depth - Water Level= 16.51-5.03= x Well Vol. Factor= x#vol. to Purge= PurgeVol.

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

Comments:

Gal.	Time	Temp *F	pH	E.C.	D.O.
15	1554	78.9	6.40	.94 ms	6.1
	1559	76.8	6.55	.91 ms	
	1604	76.0	6.62	.90 ms	6.3
	1555				

O EPA 601___ O TPH-G/BTEX___ O TPH Diesel___ O TOG 5520___
TIME/SAMPLE ID: ~~1600~~ 1600

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD

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

September 16, 1998

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

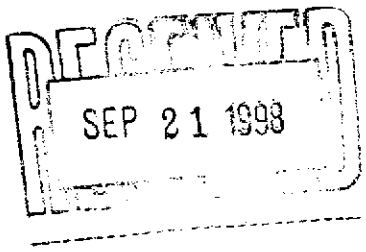
The following report contains analytical results for the sample(s) received at Southern Petroleum Laboratories (SPL) on September 4, 1998. The sample(s) was assigned to Certificate of Analysis No.(s)9809204 and analyzed for all parameters as listed on the chain of custody.

Any data flag or quality control exception associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s).

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



Joel Grice
Senior Organic Project Manager

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

Southern Petroleum Laboratories, Inc.

Certificate of Analysis Number: 98-09-204

Approved for Release by:

Joel Grice, Senior Organic Project Manager — Date: 9/16/98

Greg Grandits
Laboratory Director

Cynthia Schreiner
Quality Assurance Officer

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

Certificate of Analysis No. H9-9809204-01

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

P.O.#
, COC#095805
DATE: 09/16/98

PROJECT: #11104, N/A
SITE: Alameda, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-1

PROJECT NO: 10-155-9-1
MATRIX: WATER
DATE SAMPLED: 09/02/98
DATE RECEIVED: 09/04/98

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	110	10 P	ug/L
Benzene	0.56	0.5 P	ug/L
Toluene	3.6	1.0 P	ug/L
Ethylbenzene	ND	1.0 P	ug/L
Total Xylene	3.0	1.0 P	ug/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	97		
4-Bromofluorobenzene	90		
Method 8020A***			
Analyzed by: YN			
Date: 09/13/98			
Gasoline Range Organics	0.10	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	77		
4-Bromofluorobenzene	83		
California LUFT Manual for Gasoline			
Analyzed by: YN			
Date: 09/13/98 08:34:00			

(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. H9-9809204-02

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

P.O.#
, COC#095805
DATE: 09/16/98

PROJECT: #11104, N/A
SITE: Alameda, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-2

PROJECT NO: 10-155-9-1
MATRIX: WATER
DATE SAMPLED: 09/02/98
DATE RECEIVED: 09/04/98

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	ND	10 P	ug/L
Benzene	ND	0.5 P	ug/L
Toluene	2.2	1.0 P	ug/L
Ethylbenzene	ND	1.0 P	ug/L
Total Xylene	ND	1.0 P	ug/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	93		
4-Bromofluorobenzene	97		
Method 8020A***			
Analyzed by: YN			
Date: 09/13/98			
Gasoline Range Organics	ND	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	77		
4-Bromofluorobenzene	87		
California LUFT Manual for Gasoline			
Analyzed by: YN			
Date: 09/12/98 06:42:00			

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

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

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

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

Certificate of Analysis No. H9-9809204-03

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

P.O.#
, COC#095805
DATE: 09/16/98

PROJECT: #11104, N/A
SITE: Alameda, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-3

PROJECT NO: 10-155-9-1
MATRIX: WATER
DATE SAMPLED: 09/02/98
DATE RECEIVED: 09/04/98

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	ND	10 P	ug/L
Benzene	ND	0.5 P	ug/L
Toluene	ND	1.0 P	ug/L
Ethylbenzene	ND	1.0 P	ug/L
Total Xylene	ND	1.0 P	ug/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	97		
4-Bromofluorobenzene	97		
Method 8020A***			
Analyzed by: YN			
Date: 09/12/98			
Gasoline Range Organics	ND	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	77		
4-Bromofluorobenzene	93		
California LUFT Manual for Gasoline			
Analyzed by: YN			
Date: 09/12/98 07:19:00			

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. H9-9809204-04

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

P.O.#
, COC#095805
DATE: 09/16/98

PROJECT: #11104, N/A
SITE: Alameda, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-4

PROJECT NO: 10-155-9-1
MATRIX: WATER
DATE SAMPLED: 09/02/98
DATE RECEIVED: 09/04/98

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	ND	10 P	ug/L
Benzene	ND	0.5 P	ug/L
Toluene	ND	1.0 P	ug/L
Ethylbenzene	ND	1.0 P	ug/L
Total Xylene	ND	1.0 P	ug/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	97		
4-Bromofluorobenzene	93		
Method 8020A***			
Analyzed by: YN			
Date: 09/12/98			
Gasoline Range Organics	ND	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	80		
4-Bromofluorobenzene	93		
California LUFT Manual for Gasoline			
Analyzed by: YN			
Date: 09/12/98 07:57:00			

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. H9-9809204-05

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

P.O.#
, COC#095805
DATE: 09/16/98

PROJECT: #11104, N/A
SITE: Alameda, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-5

PROJECT NO: 10-155-9-1
MATRIX: WATER
DATE SAMPLED: 09/02/98
DATE RECEIVED: 09/04/98

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	250000	10000 P	ug/L
Benzene	2500	25 P	ug/L
Toluene	56	50 P	ug/L
Ethylbenzene	1400	50 P	ug/L
Total Xylene	3070	50 P	ug/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	97		
4-Bromofluorobenzene	90		
Method 8020A***			
Analyzed by: YN			
Date: 09/13/98			
Gasoline Range Organics	260	50 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	77		
4-Bromofluorobenzene	87		
California LUFT Manual for Gasoline			
Analyzed by: YN			
Date: 09/13/98 10:27:00			

(P) - Practical Quantitation Limit

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

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

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

Certificate of Analysis No. H9-9809204-06

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

P.O.#
, COC#095805
DATE: 09/16/98

PROJECT: #11104, N/A
SITE: Alameda, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-6

PROJECT NO: 10-155-9-1
MATRIX: WATER
DATE SAMPLED: 09/02/98
DATE RECEIVED: 09/04/98

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	230000	10000 P	ug/L
Benzene	3900	25 P	ug/L
Toluene	ND	50 P	ug/L
Ethylbenzene	1900	50 P	ug/L
Total Xylene	1000	50 P	ug/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	97		
4-Bromofluorobenzene	90		
Method 8020A***			
Analyzed by: YN			
Date: 09/13/98			
Gasoline Range Organics	230	50 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	77		
4-Bromofluorobenzene	87		
California LUFT Manual for Gasoline			
Analyzed by: YN			
Date: 09/13/98 11:05:00			

(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. H9-9809204-07

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

P.O.#
, COC#095805
DATE: 09/16/98

PROJECT: #11104, N/A
SITE: Alameda, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-7

PROJECT NO: 10-155-9-1
MATRIX: WATER
DATE SAMPLED: 09/02/98
DATE RECEIVED: 09/04/98

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	270000	10000 P	ug/L
Benzene	2400	25 P	ug/L
Toluene	ND	50 P	ug/L
Ethylbenzene	1400	50 P	ug/L
Total Xylene	3170	50 P	ug/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	93		
4-Bromofluorobenzene	90		
Method 8020A***			
Analyzed by: YN			
Date: 09/13/98			
Gasoline Range Organics	280	50 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	77		
4-Bromofluorobenzene	83		
California LUFT Manual for Gasoline			
Analyzed by: YN			
Date: 09/13/98 11:43:00			

(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

QUALITY CONTROL

DOCUMENTATION

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

** SPL BATCH QUALITY CONTROL REPORT **
Method 8020A***

Matrix: Aqueous
Units: ug/L

Batch Id: HP_S980913102400

L A B O R A T O R Y C O N T R O L S A M P L E

S P I K E C O M P O U N D S	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
MTBE	ND	50	42	84.0	72 - 128
Benzene	ND	50	43	86.0	61 - 119
Toluene	ND	50	44	88.0	65 - 125
EthylBenzene	ND	50	43	86.0	70 - 118
O Xylene	ND	50	45	90.0	72 - 117
M & P Xylene	ND	100	88	88.0	72 - 116

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 Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
MTBE	ND	20	27	135	25	125	7.69	20	39 - 150
BENZENE	ND	20	23	115	21	105	9.09	21	32 - 164
TOLUENE	ND	20	23	115	22	110	4.44	20	38 - 159
ETHYLBENZENE	ND	20	23	115	20	100	14.0	19	52 - 142
O XYLENE	ND	20	24	120	23	115	4.26	18	53 - 143
M & P XYLENE	ND	40	47	118	45	112	5.22	17	53 - 144

Analyst: YN
Sequence Date: 09/13/98
SPL ID of sample spiked: 9809324-05A
Sample File ID: S_I1152.TX0
Method Blank File ID:
Blank Spike File ID: S_I1145.TX0
Matrix Spike File ID: S_I1147.TX0
Matrix Spike Duplicate File ID: S_I1148.TX0

* = Values outside QC Range due to Matrix Interference (except RPD)
« = 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 (1ST Q '97)
(***) = Source: SPL-Houston Historical Data (1ST Q '97)

SAMPLES IN BATCH(SPL ID):

9809204-01A 9809203-05A 9809203-06A 9809204-05A
9809204-06A 9809204-07A 9809324-01A 9809324-02A
9809324-03A 9809324-04A 9809324-08A 9809324-07A
9809324-05A 9809324-06A 9809204-02A

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

** SPL BATCH QUALITY CONTROL REPORT **
METHOD 8020

Matrix: Aqueous
Units: ug/L

Batch Id: HP_S980911164800

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	43	86.0	72 - 128
Benzene	ND	50	44	88.0	61 - 119
Toluene	ND	50	46	92.0	65 - 125
EthylBenzene	ND	50	45	90.0	70 - 118
O Xylene	ND	50	44	88.0	72 - 117
M & P Xylene	ND	100	89	89.0	72 - 116

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	83	20	97	NC	100	NC	NC	20	39 - 150
BENZENE	ND	20	20	100	18	90.0	10.5	21	32 - 164
TOLUENE	ND	20	20	100	18	90.0	10.5	20	38 - 159
ETHYLBENZENE	ND	20	19	95.0	16	80.0	17.1	19	52 - 142
O XYLENE	ND	20	20	100	18	90.0	10.5	18	53 - 143
M & P XYLENE	ND	40	40	100	37	92.5	7.79	17	53 - 144

Analyst: YN
Sequence Date: 09/11/98
SPL ID of sample spiked: 9809397-01A
Sample File ID: S_I1122.TX0
Method Blank File ID:
Blank Spike File ID: S_I1114.TX0
Matrix Spike File ID: S_I1117.TX0
Matrix Spike Duplicate File ID: S_I1118.TX0

* = Values outside QC Range due to Matrix Interference (except RPD)
« = 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 (1st Q '97)
(***) = Source: SPL-Houston Historical Data (1st Q '97)

SAMPLES IN BATCH(SPL ID):

9809203-02A 9809203-03A 9809203-04A 9809203-05A
9809203-06A 9809204-03A 9809204-04A 9809204-05A
9809204-06A 9809204-07A 9809187-08A 9809397-01A
9809398-01A 9809203-01A

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

** SPL BATCH QUALITY CONTROL REPORT **

California LUFT Manual for Gasoline

Matrix: Aqueous

Batch Id: HP_S980913123200

Units: mg/L

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 Range Organics	ND	1.00	0.90	90.0	64 - 131

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	0.13	0.90	0.94	90.0	0.83	77.8	14.5	36	36 - 160

Analyst: YN

Sequence Date: 09/13/98

SPL ID of sample spiked: 9809324-06A

Sample File ID: SSI1153.TX0

Method Blank File ID:

Blank Spike File ID: SSI1146.TX0

Matrix Spike File ID: SSI1149.TX0

Matrix Spike Duplicate File ID: SSI1150.TX0

* = Values outside QC Range due to Matrix Interference (except RPD)

« = 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 (1st Q '97)

(***) = Source: SPL-Houston Historical Data (1st Q '97)

SAMPLES IN BATCH(SPL ID):

9809204-01A 9809204-05A 9809204-06A 9809204-07A
9809324-01A 9809324-02A 9809324-03A 9809324-04A
9809324-08A 9809324-07A 9809324-05A 9809324-06A

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

** SPL BATCH QUALITY CONTROL REPORT **

California LUFT Manual for Gasoline

Matrix: Aqueous

Batch Id: HP_S980911172900

Units: mg/L

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 Range Organics	ND	1.0	0.81	81.0	64 - 131

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	0.23	0.90	1.4	130	1.2	108	18.5	36	36 - 160

Analyst: YN
Sequence Date: 09/11/98
SPL ID of sample spiked: 9809398-01A
Sample File ID: SSI1123.TX0
Method Blank File ID:
Blank Spike File ID: SSI1115.TX0
Matrix Spike File ID: SSI1119.TX0
Matrix Spike Duplicate File ID: SSI1120.TX0

* = Values outside QC Range due to Matrix Interference (except RPD)
« = 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 (1st Q '97)
(***) = Source: SPL-Houston Historical Data (1st Q '97)

SAMPLES IN BATCH(SPL ID):

9809203-02A 9809203-03A 9809203-04A 9809203-05A
9809203-06A 9809204-01A 9809204-02A 9809204-03A
9809204-04A 9809398-01A 9809203-01A

CHAIN OF CUSTODY

AND

SAMPLE RECEIPT CHECKLIST

SPL Houston Environmental Laboratory

Sample Login Checklist

Date:	Time:
9-4-98	1000

SPL Sample ID:
980904

			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:		2° C	
10	Method of sample delivery to SPL:	SPL Delivery		
		Client Delivery		
		FedEx Delivery (airbill #)	805188475438	
		Other:		
11	Method of sample disposal:	SPL Disposal	✓	
		HOLD		
		Return to Client		

Name:	Date:
[signature]	9-4-98

9809204

CHAIN OF CUSTODY

No. 095805

Page 1 of 1

CONSULTANT'S NAME: Alisto Engineering	CONSULTANT'S ADDRESS: 1575 Tice Blvd #201 W.C. Ca 94598		
BP SITE NUMBER: 11104	BP SITE / FACILITY ADDRESS: Alameda, Ca		CONSULTANT PROJECT NUMBER: 10-155-9-1
CONSULTANT PROJECT MANGER: Brady Nagle	PHONE NUMBER: (925) 295-1650	FAX NUMBER: (925) 295-1650	CONSULTANT CONTRACT NUMBER: Pending H176917
BP CONTACT: Scott Hooton	BP ADDRESS: Lenton	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	SHIPMENT DATE: 9/3/98

SHIPMENT METHOD: Fed Ex

AIRBILL NUMBER: 805188475438

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

ANALYSIS REQUIRED

SAMPLE DESCRIPTION	COLLECTION DATE	COLLECTION TIME	MATRIX SOIL/WATER	CONTAINERS NO.	CONTAINERS TYPE (VOL.)	PRESERVATIVE LAB SAMPLE #	BTEX 8020	TPH-G	COMMENTS
S-1	9/2/98		H2O	3	HCL		X	X	
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
[signature]	9/3/98	1355	Nora J. Buchholz	9/3/98	1355
Nora J. Buchholz	9/3/98	1355	[signature] Alisto	9/4/98	1000

2°

CLV-16722-A (2/97)
PKG/50

DISTRIBUTION: WHITE - ORIGINAL (WITH DATA) YELLOW - BP PINK - LAB BLUE - CONSULTANT FIELD STAFF

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

BP Site Number:	11104
ERM Contact:	H176917
Sampling Date:	9/2/98
Matrix Description:	Water
Date Final Report Received:	9/21/98
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?	_X_	____	____
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%?	_X_	____	____
7. Are holding times met?	_X_	____	____
8. Are surrogates within limits using laboratory criteria?	_X_	____	____
9. Are MS/MSD acceptable using laboratory criteria?	See Below	____	____
10. Are LCS results acceptable using laboratory criteria?	_X_	____	____

MS/MSD recovery and relative % difference for MTBE in one of two matrix spikes was not calculated due to sample exceeding spike by a factor of 4 or more. MS/MSD limits are advisory only; as stated in SW-846, Section 8.7 to 8.8, if the MS/MSD results fall outside the advisable ranges, a laboratory control samples (LCS) must be analyzed and fall within those ranges. LCS results are within quality control limits.

Data Validation Completed by: Brady Nagle

(signature): _____

Date: 12/29/98