



BP OIL

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

April 13, 1998

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

*Scott believes a recent release (after 1997)
should be responsibility of Tosco
left msg w/ T Berry to call about
leaks and/or remediation*

Dear Ms. Chu:

Enclosed find a Groundwater Monitoring and Sampling Report, dated 16 March 1998. The report summarizes chemical data obtained since 1992, including the results associated with samples obtained on 27 January 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 (4400 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 wells RW-1 and MW-1 have been increasing since the August 1996 sampling event.

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 overfill 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
T. Berry - Tosco (w/attachment)

GROUNDWATER MONITORING AND SAMPLING REPORT

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

Project No. 10-155-07-002

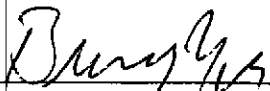
Prepared for:


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

Prepared by:

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

March 16, 1998


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. 10-155-07-002

March 16, 1998

INTRODUCTION

This report presents the results and findings of the January 27, 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.

Groundwater monitoring was performed on February 4, 1998 at the neighboring Chevron service station, 1802 Webster Street. The results are presented in Table 2.

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 (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
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)	---	---	---
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	5.63	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-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	6.81	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	---	---	---	---	---	---	---	---	---

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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 (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	---	---	---	---
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-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	6.28	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	3.98	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	---	---	---	---	---	---	---	---	---

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 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
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	---	---	---	PAGE
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	---	---	---	PAGE
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	---	---	---	PAGE
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	PAGE
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	PAGE
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	PAGE
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	6.81	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	---	---	---	---	---	---	---	---	---
RW-1	01/06/94	11.84	5.59	6.25	23000	3800	210	840	2100	4600 (c)	---	---	PAGE
QC-1 (d)	01/06/94	---	---	---	24000	3700	210	830	2000	4700 (c)	---	---	PAGE
RW-1	04/26/94	11.84	5.21	6.63	24000	3500	120	800	1700	8100 (c)	---	6.4	PAGE
QC-1 (d)	04/26/94	---	---	---	22000	3300	110	700	1700	6900 (c)	---	---	PAGE
RW-1	07/25/94	11.84	5.52	6.32	31000	4800	290	1100	1700	21000 (c)	---	5.5	PAGE
QC-1 (d)	07/25/94	---	---	---	28000	4400	240	960	1400	19000 (c)	---	---	PAGE
RW-1	10/13/94	11.84	6.05	5.79	20000	4200	48	990	440	---	---	6.8	PAGE
RW-1	01/17/95	11.84	4.02	7.62	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	7.64	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
RW-1	01/27/98	11.84	3.80	8.04	52000	380	330	490	2970	39000	---	6.1	SPL
QC-1 (d)	01/27/98	---	---	---	51000	380	300	480	2980	36000	---	---	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)	07/08/83	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (g)	10/08/83	---	---	---	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:\01110-155\10-155GW.W02

TABLE 2 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING
 CHEVRON STATION 9-0290
 1802 WEBSTER STREET, ALAMEDA, CALIFORNIA
 ALISTO 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
A-1	02/04/98	11.56	3.20	0.04	8.39
B-1	02/15/95	12.12	5.37	---	6.75
B-1	05/01/95	12.12	5.12	---	7.00
B-1	05/08/96	12.12	4.80	---	7.32
B-1	08/23/96	12.12	5.54	---	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-1	02/04/98	12.12	3.01	---	9.11
B-5	02/15/95	10.18	4.15	---	6.03
B-5	05/01/95	10.18	4.43	---	5.75
B-5	05/08/96	10.18	4.40	---	5.78
B-5	08/23/96	10.18	4.99	---	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-5	02/04/98	10.18	2.53	---	7.65
B-6	02/15/95	11.97	4.70	---	7.27
B-6	05/01/95	11.97	5.03	---	6.94
B-6	05/08/96	11.97	5.23	---	6.74
B-6	08/23/96	11.97	6.05	---	5.92
B-6	02/10/97	11.97	4.37	---	7.60
B-6	08/05/97	11.97	5.75	---	6.22
B-6	02/04/98	11.97	2.71	---	9.26
B-7	02/15/95	10.54	4.22	---	6.32
B-7	05/01/95	10.54	4.50	---	6.04
B-7	08/23/96	---	---	---	---
B-7	02/10/97	---	---	---	---
B-7	08/05/97	---	---	---	---
B-7	02/04/98	---	---	---	---
B-8	02/15/95	11.99	4.72	---	7.27
B-8	05/01/95	11.99	5.00	---	6.99
B-8	08/23/96	---	---	---	---
B-8	02/10/97	---	---	---	---
B-8	08/05/97	---	---	---	---
B-8	02/04/98	---	---	---	---

TABLE 2 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING
 CHEVRON STATION 9-0290
 1802 WEBSTER STREET, ALAMEDA, CALIFORNIA
 ALISTO PROJECT NO. 10-155

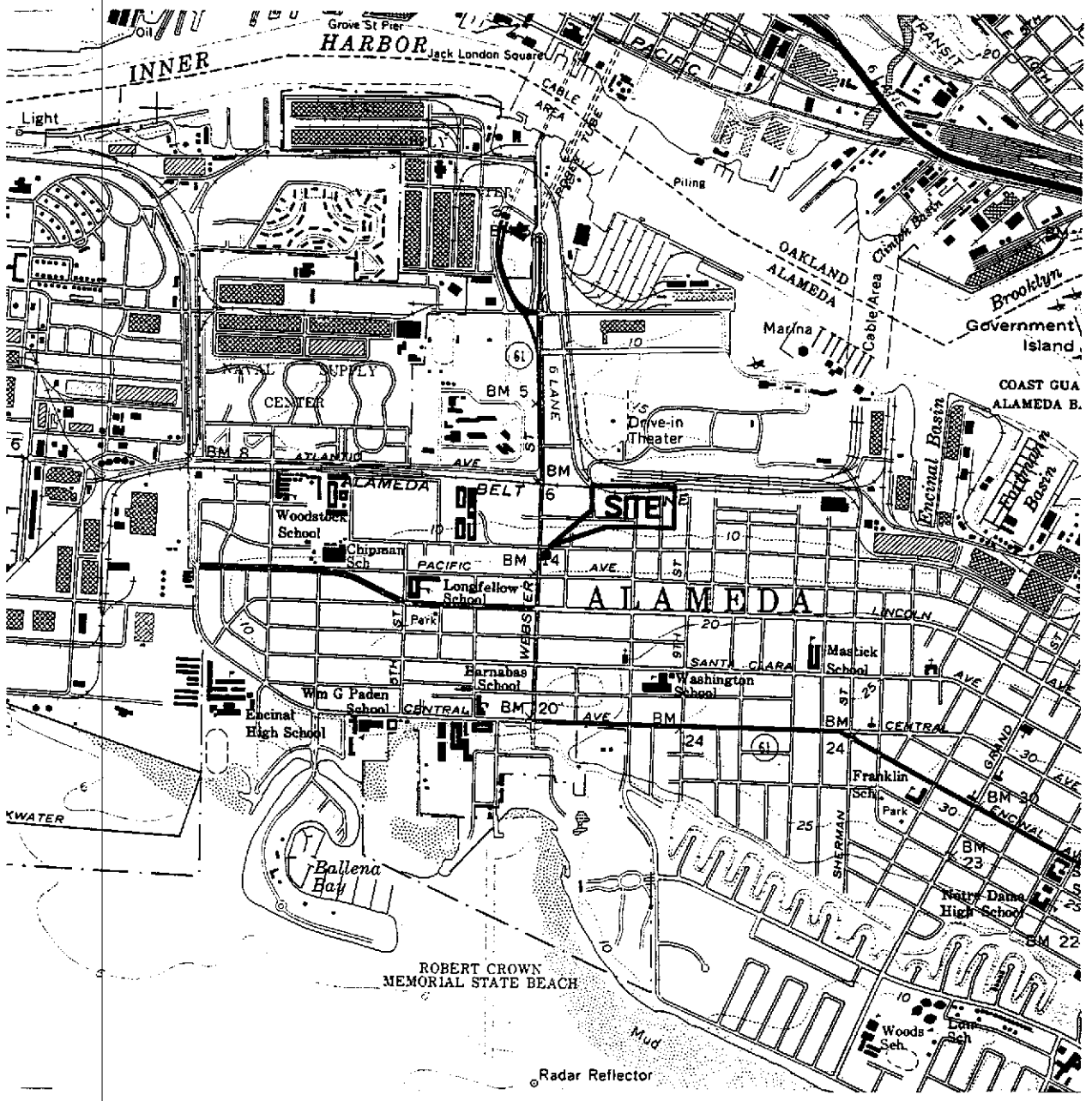
WELL ID	DATE OF MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)
B-9	02/15/95	10.70	3.61	---	7.09
B-9	05/01/95	10.70	4.29	---	6.41
B-9	08/23/96	---	---	---	---
B-9	02/10/97	---	---	---	---
B-9	08/05/97	---	---	---	---
B-9	02/04/98	---	---	---	---
B-10	05/08/96	11.42	5.55	---	5.87
B-10	08/23/96	11.42	6.19	---	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-10	02/04/98	11.42	2.89	---	8.53
B-11	05/08/96	11.98	5.00	---	6.98
B-11	08/23/96	11.98	5.61	---	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-11	02/04/98	11.98	2.59	---	9.39
B-12	05/08/96	11.16	5.08	---	6.08
B-12	08/23/96	11.16	5.65	---	5.51
B-12	02/10/97	11.16	4.11	---	7.05
B-12	08/05/97	11.16	5.61	---	5.55
B-12	02/04/98	11.16	2.63	---	8.53
B-13	05/08/96	11.17	4.97	---	6.20
B-13	08/23/96	11.17	5.63	---	5.54
B-13	02/10/97	11.17	4.12	---	7.05
B-13	08/05/97	11.17	5.65	---	5.52
B-13	02/04/98	11.17	2.69	---	8.48

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.

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



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

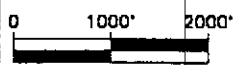
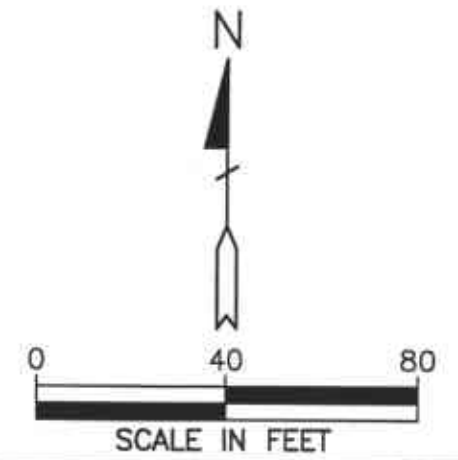
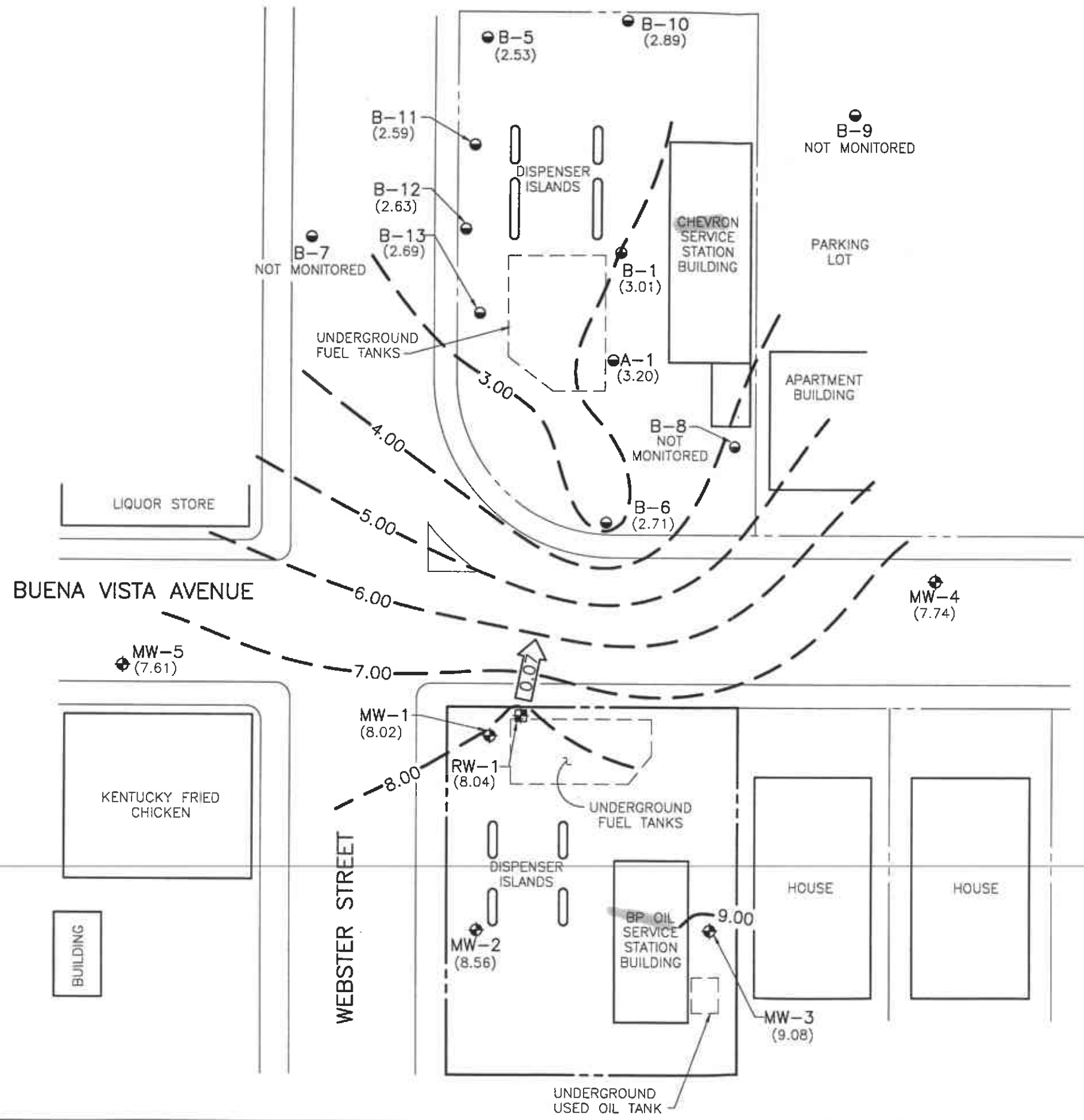


FIGURE 1
SITE VICINITY MAP
 BP OIL SERVICE STATION NO. 11104
 1716 WEBSTER STREET
 ALAMEDA, CALIFORNIA
 PROJECT NO. 10-155

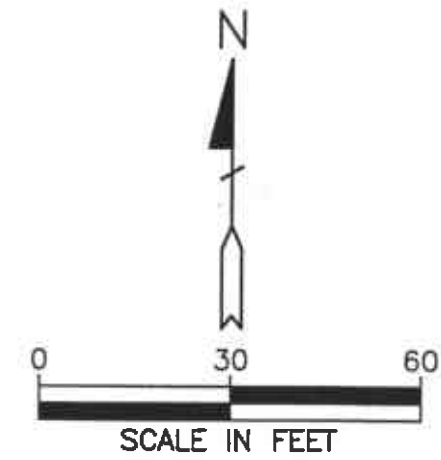
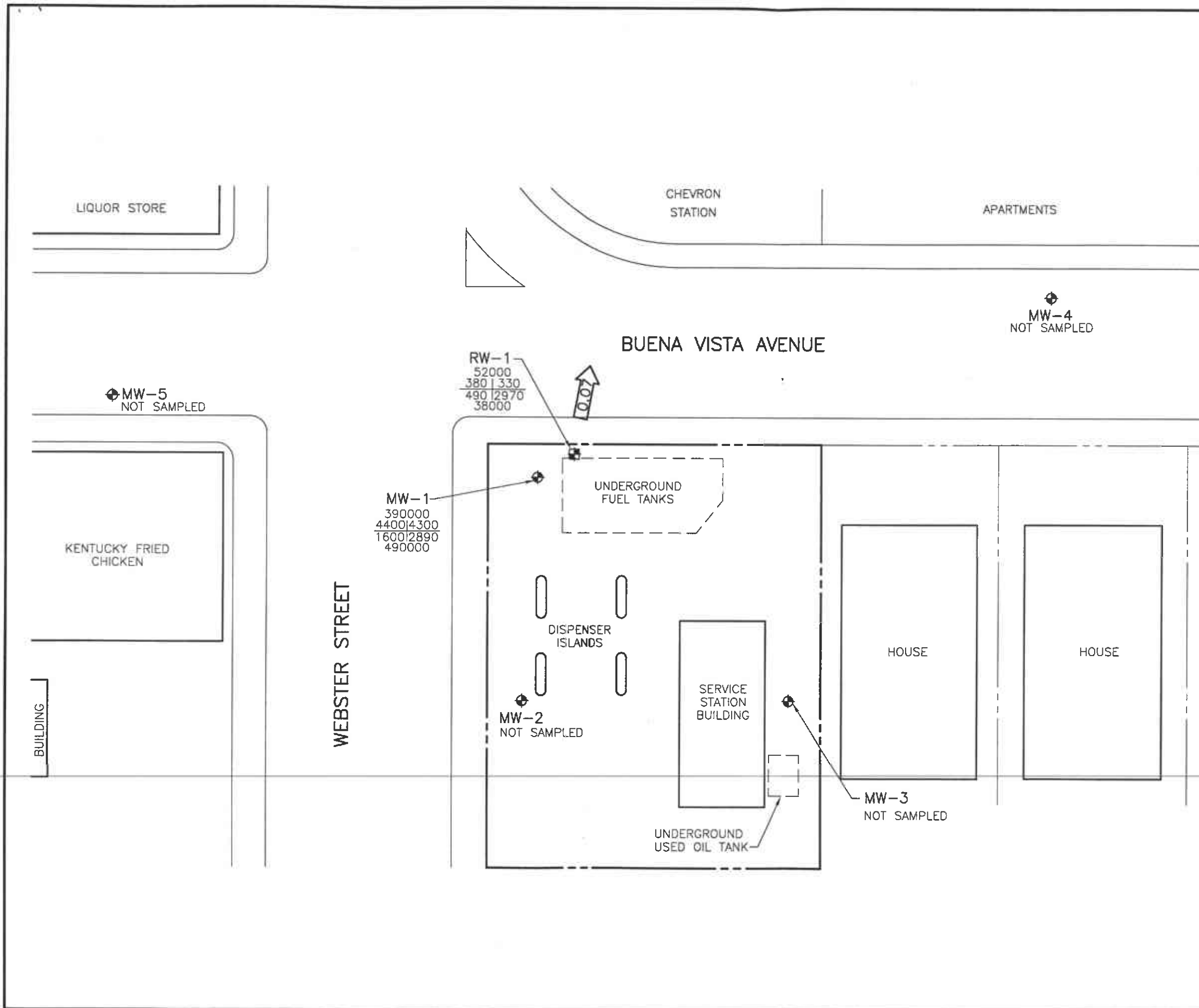




- LEGEND**
- ◆ BP OIL GROUNDWATER MONITORING WELL
 - ⊠ GROUNDWATER RECOVERY WELL
 - CHEVRON GROUNDWATER MONITORING WELL
 - (2.69) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
 - 3.00 - GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL - 1.00 FOOT)
 - ← 0.07 → CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

NOTE:
Chevron wells were monitored on February 4, 1998. All other wells were monitored on January 27, 1998.

FIGURE 2
POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP
JANUARY 27 & FEBRUARY 4, 1998
 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 I T
E I 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
- ← 0.07
CALCULATED GROUNDWATER
GRADIENT DIRECTION AND
MAGNITUDE IN FOOT PER FOOT

FIGURE 3
**CONCENTRATIONS OF PETROLEUM
 HYDROCARBONS IN GROUNDWATER**
JANUARY 27, 1998
 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. 10-155-07-002

Address 1716 Webster St.

Contract No. H176917

Station No. BP 11104

Date: 11/27/98

Day: M T W T H F

City: Alameda

Sampler: LB

DEPTH TO GROUNDWATER SUMMARY

WELL ID	SAMPLE ID	WELL DIAM	TOTAL DEPTH	DEPTH TO WATER	PRODUCT THICKNESS	TIME MONITORED	COMMENTS:
MW-1	S-1	2"	16.88	3.96	∅	1230	SEMI-SAMPLE THIS EVENT
MW-2	NIS	2"	15.84	4.42	↓	1207	ANNUAL
MW-3	↓	2"	16.60	4.30	↓	1215	ANNUAL
MW-4	↓	2"	14.80	4.06	↓	1220	ANNUAL
MW-5	↓	2"	20.00	4.01	↓	1224	ANNUAL
RW-1	S-2	6"	21.61	3.80	↓	1233	SEMI-SAMPLE THIS EVENT QC-1 S-3

FIELD INSTRUMENT CALIBRATION DATA

pH METER Imm 4.00 4 7.00 7 10.00 _____ TEMPERATURE COMPENSATED N TIME 1245 WEATHER Cloudy/Rain
 D.O. METER Imm ZERO d.O. SOLUTION _____ BAROMETRIC PRESSURE 760 TEMP 60
 CONDUCTIVITY METER Imm 10,000 _____ TURBIDITY METER _____ 5.0 NTU _____ OTHER X
 LEAK DETECTOR: _____ ALARM MODE X NON ALARM MODE

Well ID	Depth to Water	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.	
MW-1	3.96	2"	Replaced	∅	Y (N)	7	1310	59.6	7.26	617µs	6.1	<input type="radio"/> EPA 601 _____ <input checked="" type="radio"/> TPH-G/BTEX _____ <input type="radio"/> TPH Diesel _____ <input type="radio"/> TOG 5520 _____
Total Depth - Water Level=						4		59.8	7.11	637µs		TIME/SAMPLE ID <u>1325</u>
$16.88 - 3.96 = 12.92 \times 1.16 = 2.07 \times 3 = 6.21$						7	1320	60.4	7.05	646µs	6.4	
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												
Comments:												

Well ID	Depth to Water	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.	
RW-1	3.80	6"	OK	∅	Y (N)	28	1357	57.4	7.74	410µs	5.8	<input type="radio"/> EPA 601 _____ <input checked="" type="radio"/> TPH-G/BTEX _____ <input type="radio"/> TPH Diesel _____ <input type="radio"/> TOG 5520 _____
Total Depth - Water Level=						56		59.1	7.50	371µs		TIME/SAMPLE ID <u>1444</u>
$21.61 - 3.80 = 17.81 \times 1.47 = 26.19 \times 3 = 78.54$						79	1440	60.1	7.38	371µs	6.1	
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												
Comments:												

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD



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

February 9, 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 January 29, 1998. The sample(s) was assigned to Certificate of Analysis No.(s) 9801D54 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).

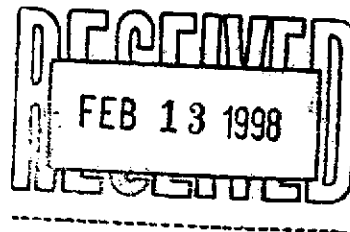
If you have any questions or comments pertaining to this data report, please do not hesitate to contact me. Please reference the above Certificate of Analysis No. during any inquiries.

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
Project Manager






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

Southern Petroleum Laboratories, Inc.

Certificate of Analysis Number: 98-01-D54

Approved for Release by:



Joel Grice, Project Manager

Date: 2/9/98

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. H9-9801D54-01

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

P.O.#
 H176917, COC#085840
 DATE: 02/09/98

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

PROJECT NO: 10-155-7-002
MATRIX: WATER
DATE SAMPLED: 01/27/98
DATE RECEIVED: 01/29/98

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	490000	10000 P	µg/L
Benzene	4400	125 P	µg/L
Toluene	4300	250 P	µg/L
Ethylbenzene	1600	250 P	µg/L
Total Xylene	2890	250 P	µg/L

Surrogate

% Recovery

1,4-Difluorobenzene

100

4-Bromofluorobenzene

103

Method 8020A***

Analyzed by: SB/

Date: 02/06/98

Gasoline Range Organics

390

12.5 P

mg/L

Surrogate

% Recovery

1,4-Difluorobenzene

69

4-Bromofluorobenzene

109

California LUFT Manual for Gasoline

Analyzed by: SB/

Date: 02/05/98 12:25:00

(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. H9-9801D54-02

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

P.O.#
 H176917, COC#085840
 DATE: 02/09/98

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

PROJECT NO: 10-155-7-002
 MATRIX: WATER
 DATE SAMPLED: 01/27/98
 DATE RECEIVED: 01/29/98

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	38000	1000 P	µg/L
Benzene	380	25 P	µg/L
Toluene	330	50 P	µg/L
Ethylbenzene	490	50 P	µg/L
Total Xylene	2970	50 P	µg/L

Surrogate

% Recovery

1,4-Difluorobenzene 103
 4-Bromofluorobenzene 107

Method 8020A***

Analyzed by: SB/
 Date: 02/06/98

Gasoline Range Organics	52	2.5 P	mg/L
-------------------------	----	-------	------

Surrogate

% Recovery

1,4-Difluorobenzene 67
 4-Bromofluorobenzene 107

California LUFT Manual for Gasoline

Analyzed by: SB/
 Date: 02/05/98 11:29:00

(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. H9-9801D54-03

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

P.O.#
 H176917, COC#085840
 DATE: 02/09/98

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

PROJECT NO: 10-155-7-002
 MATRIX: WATER
 DATE SAMPLED: 01/27/98
 DATE RECEIVED: 01/29/98

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	36000	1000 P	µg/L
Benzene	380	12.5 P	µg/L
Toluene	300	25 P	µg/L
Ethylbenzene	480	25 P	µg/L
Total Xylene	2980	25 P	µg/L

Surrogate

% Recovery

1,4-Difluorobenzene
 4-Bromofluorobenzene

103
 103

Method 8020A***

Analyzed by: SB/

Date: 02/07/98

Gasoline Range Organics

51

1.25 P

mg/L

Surrogate

% Recovery

1,4-Difluorobenzene
 4-Bromofluorobenzene

68
 109

California LUFT Manual for Gasoline

Analyzed by: SB/

Date: 02/05/98 11:57:00

(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

QUALITY CONTROL

DOCUMENTATION



Batch Id: HP_0980206081400

Units: $\mu\text{g/L}$

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike		QC Limits(**) (Mandatory) % Recovery Range
			Result <1>	Recovery %	
MTBE	ND	50	51	102	72 - 128
Benzene	ND	50	55	110	61 - 119
Toluene	ND	50	57	114	65 - 125
EthylBenzene	ND	50	55	110	70 - 118
O Xylene	ND	50	55	110	72 - 117
M & P Xylene	ND	100	110	110	72 - 116

MATRIX SPIKES

SPIKE COMPOUNDS	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	4	20	23		95.0	22
BENZENE	ND	20	18	90.0	15	75.0	18.2	21	32 - 164
TOLUENE	ND	20	18	90.0	14	70.0	25.0 *	20	38 - 159
ETHYLBENZENE	ND	20	17	85.0	14	70.0	19.4 *	19	52 - 142
O XYLENE	ND	20	18	90.0	15	75.0	18.2 *	18	53 - 143
M & P XYLENE	ND	40	35	87.5	28	70.0	22.2 *	17	53 - 144

* = 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 = $[(<1> - <2>) / <3>] \times 100$

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

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

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

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

Analyst: SB/

Sequence Date: 02/06/98

SPL ID of sample spiked: 9801D41-08A

Sample File ID: O_B1156.TX0

Method Blank File ID:

Blank Spike File ID: O_B1147.TX0

Matrix Spike File ID: O_B1150.TX0

Matrix Spike Duplicate File ID: O_B1151.TX0

SAMPLES IN BATCH (SPL ID):

9801D54-02A 9801D33-03A 9801D33-05A 9801D41-09A
 9801D33-06A 9801D53-01A 9801D28-01A 9801D28-02A
 9801D28-03A 9801D26-03A 9801D26-05A 9801D33-07A
 9801D41-08A 9801D41-07A 9801D54-01A



SPL BATCH QUALITY CONTROL REPORT **
METHOD 8020

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

Batch Id: HP_0980207135800

Units: µg/L

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike		QC Limits(**) (Mandatory) % Recovery Range
			Result <1>	Recovery %	
MTBE	ND	50	49	98.0	72 - 128
Benzene	ND	50	53	106	61 - 119
Toluene	ND	50	55	110	65 - 125
EthylBenzene	ND	50	53	106	70 - 118
O Xylene	ND	50	53	106	72 - 117
M & P Xylene	ND	100	110	110	72 - 116

MATRIX SPIKES

SPIKE COMPOUNDS	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	16	80.0	21	105
BENZENE	ND	20	16	80.0	21	105	27.0 *	21	32 - 164
TOLUENE	ND	20	18	90.0	22	110	20.0	20	38 - 159
ETHYLBENZENE	ND	20	14	70.0	21	105	40.0 *	19	52 - 142
O XYLENE	ND	20	15	75.0	21	105	33.3 *	18	53 - 143
M & P XYLENE	ND	40	30	75.0	42	105	33.3 *	17	53 - 144

* = 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)

Analyst: SB/

Sequence Date: 02/07/98

SPL ID of sample spiked: 9802009-01A

Sample File ID: O_B1207.TX0

Method Blank File ID:

Blank Spike File ID: O_B1200.TX0

Matrix Spike File ID: O_B1203.TX0

Matrix Spike Duplicate File ID: O_B1204.TX0

SAMPLES IN BATCH(SPL ID):

9801D26-01A 9801D26-02A 9801D26-05A 9801D26-06A
 9802329-01A 9801E15-07A 9801E05-02A 9801E05-01A
 9801E05-03A 9802009-02A 9802009-04A 9802009-05A
 9802009-06A 9802009-01A 9802009-03A 9802329-02A
 9801D54-03A



SPL BATCH QUALITY CONTROL REPORT **
California LUFT Manual for Gasoline

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

Batch Id: HP_0980204175700

Units: mg/L

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 %	
Gasoline Range Organics	ND	1.0	1.3	130	64 - 131

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
GASOLINE RANGE ORGANICS	0.99	0.90	2.1	123	2.1	123	0	36	36 - 160

Analyst: SB/

Sequence Date: 02/04/98

SPL ID of sample spiked: 9801D29-04A

Sample File ID: OOB1089.TX0

Method Blank File ID:

Blank Spike File ID: OOB1085.TX0

Matrix Spike File ID: OOB1083.TX0

Matrix Spike Duplicate File ID: OOB1084.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 = $[(<1> - <2>) / <3>] \times 100$

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

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

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

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

SAMPLES IN BATCH(SPL ID):

9801D33-04A 9801D33-06A 9801D33-07A 9801D33-05A
9801D54-02A 9801D54-03A 9801D54-01A 9801D33-01A
9801D29-04A 9801D33-02A 9801D33-03A

CHAIN OF CUSTODY

AND

SAMPLE RECEIPT CHECKLIST

SPL Houston Environmental Laboratory

Sample Login Checklist

Date: 1-29-98	Time: 1550
---	--

SPL Sample ID:
9801DS4

		Yes	No
1	Chain-of-Custody (COC) form is present.	✓	
2	COC is properly completed.	✓	
3	If no, Non-Conformance Worksheet has been completed.		
4	Custody seals are present on the shipping container.	✓	
5	If yes, custody seals are intact.	✓	
6	All samples are tagged or labeled.	✓	
7	If no, Non-Conformance Worksheet has been completed.		
8	Sample containers arrived intact	✓	
9	Temperature of samples upon arrival:	3	C
10	Method of sample delivery to SPL:		
	SPL Delivery		
	Client Delivery		
	FedEx Delivery (airbill #)	3848472250	
	Other:		
11	Method of sample disposal:		
	SPL Disposal	✓	
	HOLD		
	Return to Client		

Name: 	Date: 1-29-98
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9801054

CHAIN OF CUSTODY

No. 085840

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 10-155-7-002
CONSULTANT PROJECT MANGER Brady Nagle	PHONE NUMBER (510) 295-1650	FAX NUMBER 295-1823	CONSULTANT CONTRACT NUMBER H176917
BP CONTACT Scott Hooton	BP ADDRESS Kenton, WA	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
			1/28/98
			SHIPMENT METHOD Fed Ex

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

ANALYSIS REQUIRED

AIRBILL NUMBER **3848472250**

SAMPLE DESCRIPTION	COLLECTION DATE	COLLECTION TIME	MATRIX SOIL/WATER	CONTAINERS		PRESERVATIVE	LAB SAMPLE #	TPH-GI	SYX	MTBE	COMMENTS
				NO.	TYPE (VOL.)						
S-1	1/27/98		W	3	Hel			XXX	XXX		
S-2	↓		↓	↓	↓			XXX	XXX		
S-3	↓		↓	↓	↓			XXX	XXX		

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
<i>[Signature]</i>			1/27/98		P. Yeeton		1/28/98	0800
<i>P. Yeeton</i>			1/28/98	1500	<i>[Signature]</i>		1-29-98	1000

Temp 30°C

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

BP Site Number: 11104
 ERM Contact: H176917
 Sampling Date: 1/27/98
 Matrix Description: Water
 Date Final Report Received: 2/13/98
 Laboratory & Location: SPL, Houston, Texas

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

MS/MSD relative % difference for toluene, ethylbenzene, and xylenes values in one of two matrix spikes and for MTBE, benzene, ethylbenzene, and xylenes values in the other were outside QC range due to matrix interference. 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): Brady Nagle
 Date: 3/12/98