



BP OIL

ENVIRONMENTAL PROTECTION
BP Oil Company
Environmental Remediation Management
295 SW 41st Street
Region Washington 98055-4931
99 MAR 26 PM 5:05
(425) 291-0667
Fax No: (425) 251-0736

March 24, 1999

Alameda County Health Care Services Agency
Attention Mr. Amir K. Gholami
1131 Harbor Bay Parkway, STE 250
Alameda, CA 94502-6577

RE: Former BP Oil Site No. 11107
18501 Hesperian Boulevard (at Bockman)
San Lorenzo, CA
STID 780

Assigned to March 29

Dear Mr. Gholami:

This transmits the *Fourth Quarter 1998 Groundwater Monitoring* report and responds to Alameda Health Care Services Agency (AHCSA) correspondence dated 16 March 1999.

The groundwater monitoring report includes MTBE concentration data obtained by US EPA Methods 8260B and 8020A. Both analyses corroborate the presence of MTBE in samples obtained from well MW-6 on 7 December 1998.

I have let a contract to identify adjacent properties and structures so that we may forward a workplan to assess the extent of MTBE in the groundwater. I expect to forward a proposal to you attention sometime within the next 60 days (on or before 15 May 1999). This letter, then, also serves as a request for an extension to the 15 April 1999 deadline listed in the 16 March 1999 ACHCSA letter.

I trust that you will find these arrangements to be satisfactory. If not, please contact me at (425) 251-0689 so that we may make the arrangements necessary to resolve this matter.

Sincerely,

Scott Hooton

Review
Final Review

attachment

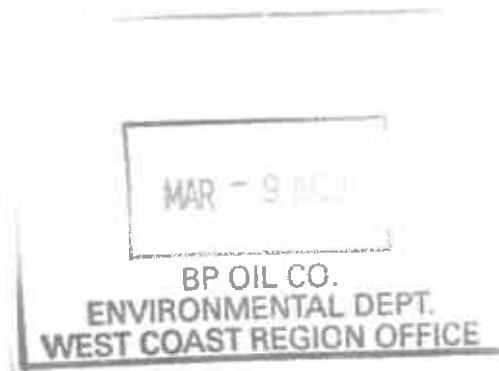
cc: site file
David Camille - Tosco (w/attachment)



1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112
(408) 573-7771 FAX
(408) 573-0555 PHONE

February 22, 1999

Scott Hooton
BP Oil Company
295 SW 41st Street, Bldg. 13, Suite N
Renton, WA 98055-4931



4th Quarter 1998 Monitoring at 11107

Fourth Quarter 1998 Groundwater Monitoring
BP Service Station Number 11107
18501 Hesperian Boulevard
San Lorenzo, CA

Monitoring Performed on December 7, 1998

Groundwater Sampling Report 981207-Z-2

This report covers the routine monitoring of groundwater wells at this BP facility. Blaine Tech Services, Inc.'s work at the site includes inspection, gauging, evacuation, purgewater containment, sample collection and sample handling in accordance with standard procedures that conform to Regional Water Quality Control Board requirements.

Routine field data collection includes depth to water, total well depth, thickness of any separate immiscible layer, water column volume, the appropriate calculated purge volume, elapsed evacuation time, total volume of water removed, and standard water parameter instrument readings. Sample material is collected, contained, stored, and transported to the laboratory in conformance with EPA standards. Purgewater is, likewise, collected and transported to Seaport Petroleum Corporation for disposal.

Basic field information is presented alongside analytical values excerpted from the laboratory report in the cumulative table of **WELL DATA AND ANALYTICAL RESULTS**. The full analytical report for the most recent samples is located in the **Analytical Appendix**. The **Professional Engineering Appendix** contains a **Groundwater Elevation Map** and a **Dissolved Petroleum Hydrocarbon Concentration Map**.

At a minimum, Blaine Tech Services, Inc. field personnel are certified upon completion of a forty-hour Hazardous Materials and Emergency Response training course per 29 CFR 1910.120. Field personnel are also enrolled in annual eight hour refresher courses.

Blaine Tech Services, Inc. conducts sampling and documentation assignments of this type as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. concentrates on objective data collection and does not participate in the interpretation of analytical results, the definition of geological or hydrological conditions, the formulation of recommendations, or the marketing of remedial systems.

Please call if you have any questions.

Yours truly,

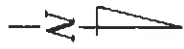
A handwritten signature in black ink, appearing to read "Francis Thie". The signature is fluid and cursive, with a large initial "F" and a long horizontal stroke.

Francis Thie
Vice President

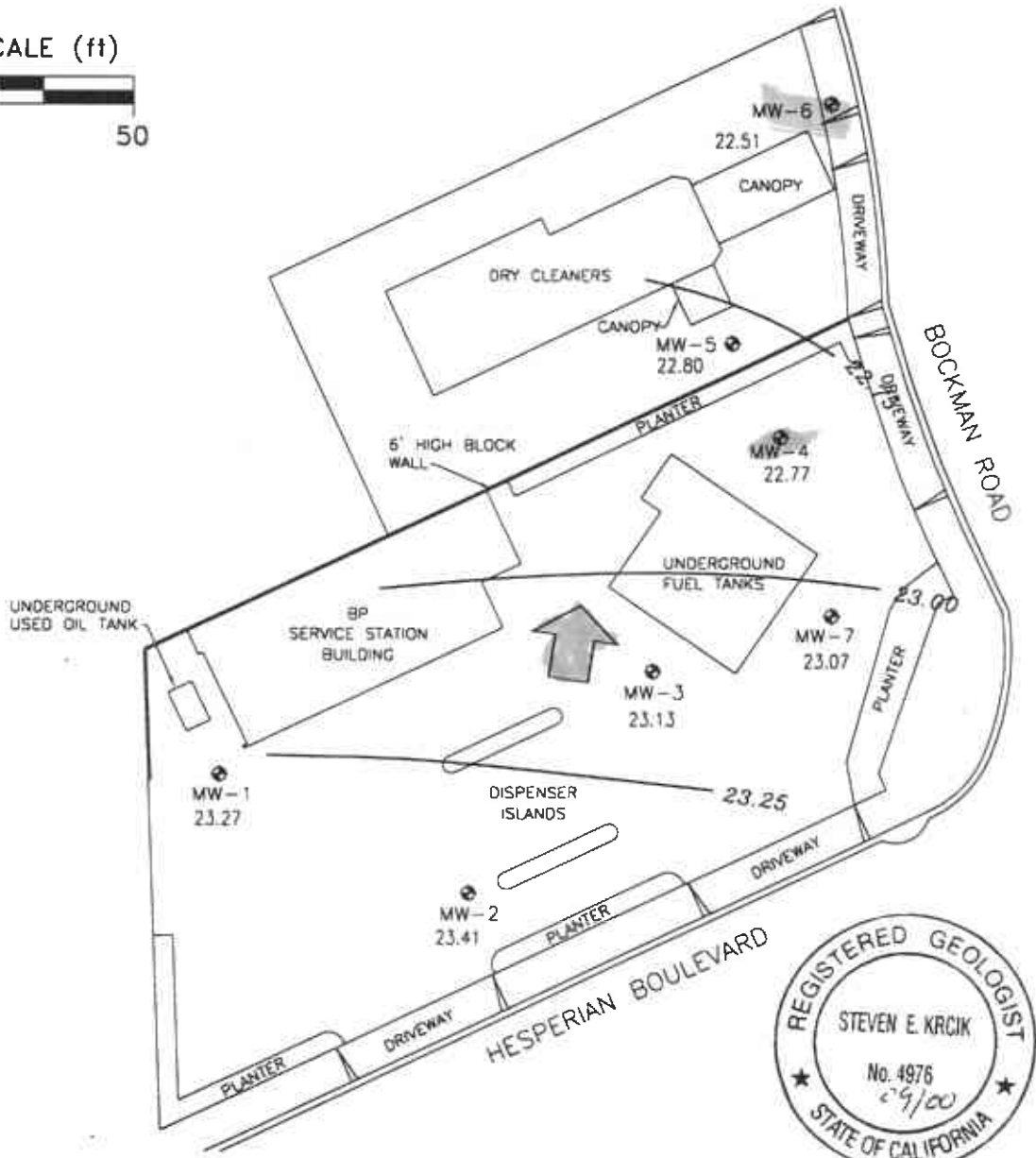
FPT/ck

attachments: Professional Engineering Appendix
Cumulative Table of Well Data and Analytical Results
Analytical Appendix
Field Data Sheets

Professional Engineering Appendix



SCALE (ft)



EXPLANATION

- ⊕ GROUNDWATER MONITORING WELL
- 23.27 GROUNDWATER ELEVATION (FT, MSL)
- 22.75 — GROUNDWATER ELEVATION CONTOUR (FT. MSL)
- ↑ APPROXIMATE GROUNDWATER FLOW DIRECTION;
APPROXIMATE GRADIENT = 0.005

Ref. 111107bm.dwg
Basemap from Alisto Engineering Group

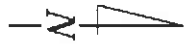
PREPARED BY



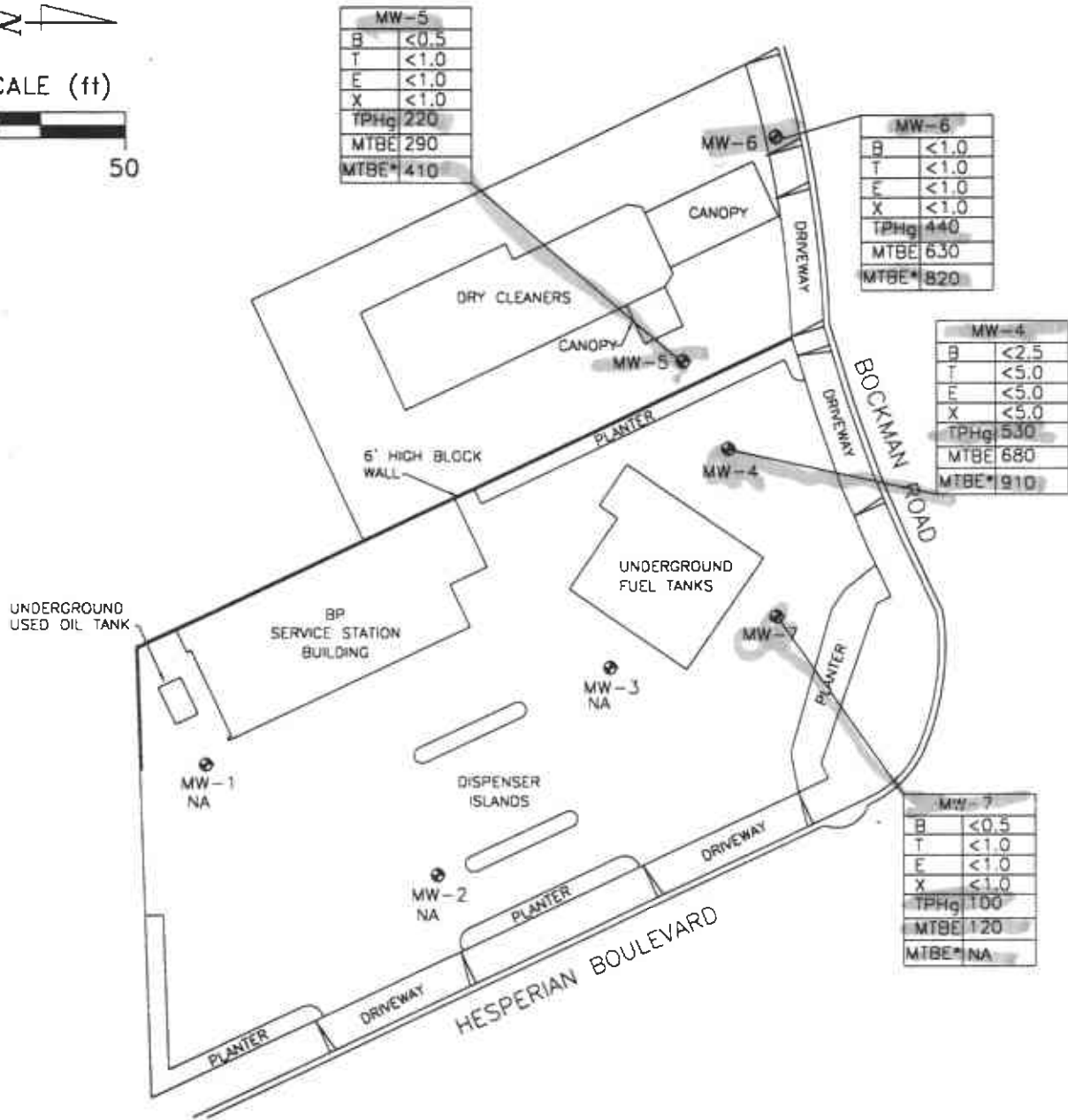
BP Service Station No. 1107
18501 Hesperian Boulevard
San Lorenzo, California

GROUNDWATER ELEVATION CONTOUR MAP,
DECEMBER 7, 1998

FIGURE:
1
PROJECT:
DAC04



SCALE (ft)



MW-5	
B	<0.5
T	<1.0
E	<1.0
X	<1.0
TPHg	220
MTBE	290
MTBE*	410

MW-6	
B	<1.0
T	<1.0
E	<1.0
X	<1.0
TPHg	440
MTBE	630
MTBE*	820

MW-4	
B	<2.5
T	<5.0
E	<5.0
X	<5.0
TPHg	530
MTBE	680
MTBE*	910

MW-7	
B	<0.5
T	<1.0
E	<1.0
X	<1.0
TPHg	100
MTBE	120
MTBE*	NA

EXPLANATION

- ⊕ GROUNDWATER MONITORING WELL
- TPHg TOTAL PETROLEUM HYDROCARBON CALCULATED AS GASOLINE IN PARTS PER BILLION (ppb)
- B BENZENE, ppb
- T TOLUENE, ppb
- E ETHYLBENZENE, ppb
- X XYLENE, ppb
- MTBE METHYL-TERT-BUTYL-ETHER, ppb
- MTBE* MTBE BY 8260
- NA DATA NOT AVAILABLE

Ref. 111107b(lex.dwg)
Basemap from Alisto Engineering Group

PREPARED BY

BP Service Station No. 11107
18501 Hesperian Boulevard
San Lorenzo, California

HYDROCARBON CONCENTRATION MAP,
DECEMBER 7, 1998

FIGURE:
2
PROJECT:
DAC04

Table of Well Data and Analytical Results

Table 1 - Summary of Results of Groundwater Sampling

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO GROUNDWATER		TPH-G (b) (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	1,1,1-TCA (ug/l)	PCE (ug/l)	DO (ppm)	LAB
			WATER (Feet)	ELEVATION (Feet)												
MW-1	11/04/92	41.07	20.78	20.29	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	2.8	ND	---	PACE
QC-1 (c)	11/04/92	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
MW-1	02/24/94	41.07	20.7	20.37	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	1.5	0.9	---	PACE
MW-1	05/12/94	41.07	18.12	22.95	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	1.0	ND<0.5	7	PACE
MW-1	09/09/94	41.07	21.74	19.33	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	ND<0.5	ND<0.5	2.3	PACE
MW-1	11/03/94	41.07	20.01	21.06	ND<50	50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	ND<0.5	ND<0.5	4.3	PACE
MW-1	03/01/95	41.07	17.44	23.63	ND<50	ND<500	ND<0.5	ND<0.50	ND<0.50	ND<1.0	---	420	0.54	0.3	2.3	ATI
MW-1	06/06/95	41.07	17.55	23.52	---	---	---	---	---	---	---	---	---	---	---	---
MW-1	09/01/95	41.07	18.19	22.88	ND<50	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	60	---	---	8.8	ATI
MW-1	11/29/95	41.07	18.84	22.23	---	---	---	---	---	---	---	---	---	---	---	---
MW-1	03/23/96	41.07	16.97	24.10	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	---	9.6	SPL
MW-1	09/05/96	41.07	17.74	23.33	110	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	3.6	SPL
MW-1	03/11/97	41.07	17.62	23.45	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	5.2	SPL
MW-1	12/08/97	41.07	16.30	24.77	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	5.3	SPL
MW-1	07/08/98	41.07	16.66	24.41	---	---	---	---	---	---	---	---	---	---	---	---
MW-1	12/07/98	41.07	17.80	20.25	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	11/04/92	40.56	20.16	20.40	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
MW-2	02/24/94	40.56	20.12	20.44	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
MW-2	05/12/94	40.56	17.49	23.07	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	7.4	PACE
MW-2	09/09/94	40.56	21.12	19.44	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	2.1	PACE
MW-2	11/03/94	40.56	19.36	21.20	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	4.2	PACE
MW-2	03/01/95	40.56	16.83	23.73	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	2.2	ATI
MW-2	06/06/95	40.56	16.96	23.60	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	09/01/95	40.56	17.54	23.02	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	---	7.9	ATI
MW-2	11/29/95	40.56	18.19	22.37	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	03/23/96	40.56	16.35	24.21	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	---	8.5	SPL
MW-2	09/05/96	40.56	17.55	23.01	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	3.2	SPL
MW-2	03/11/97	40.56	16.95	23.61	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	2.9	SPL
MW-2	12/08/97	40.56	16.01	24.55	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	3.0	SPL
MW-2	07/08/98	40.56	16.41	24.15	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	12/07/98	40.56	17.15	23.41	---	---	---	---	---	---	---	---	---	---	---	SPL

Table 1 - Summary of Results of Groundwater Sampling

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	1,1,1-TCA (ug/l)	PCE (ug/l)	DO (ppm)	LAB
MW-3	11/04/92	40.45	20.23	20.22	760	---	3.7	15	1.9	57	---	---	---	---	---	PACE
MW-3	02/24/94	40.45	20.24	20.21	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
MW-3	05/12/94	40.45	17.61	22.84	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	7.3	PACE
MW-3	09/09/94	40.45	21.22	19.23	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	2	PACE
MW-3	11/03/94	40.45	19.48	20.97	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	3.6	PACE
MW-3	03/01/95	40.45	17.08	23.37	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	1.9	ATI
MW-3	06/06/95	40.45	17.21	23.24	---	---	---	---	---	---	---	---	---	---	---	---
MW-3	09/01/95	40.45	17.69	22.76	200	---	2.7	33	7.2	43	ND<5.0	---	---	---	7.8	ATI
MW-3	09/01/95	40.45	18.29	22.16	---	---	---	---	---	---	---	---	---	---	---	---
MW-3	03/23/96	40.45	16.59	23.86	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	---	7.3	SPL
MW-3	09/05/96	40.45	17.71	22.74	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	3.2	SPL
MW-3	03/11/97	40.45	17.17	23.28	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	1.5	SPL
MW-3	12/08/97	40.45	16.12	24.33	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	1.9	SPL
MW-3	07/08/98	40.45	16.40	24.05	---	---	---	---	---	---	---	---	---	---	---	---
MW-3	12/07/98	40.45	17.32	23.13	---	---	---	---	---	---	---	---	---	---	---	SPL

Table 1 - Summary of Results of Groundwater Sampling

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (Feet)	TPH-G (b) (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	1,1,1-TCA (ug/l)	PCE (ug/l)	DO (ppm)	LAB
MW-4	11/04/92	39.24	19.18	20.06	900	---	150	4.1	0.8	53	---	---	---	---	---	PACE
MW-4	02/24/94	39.24	19.22	20.02	240	---	110	3.8	1.8	11	1400 (d)	---	---	---	---	PACE
QC-1 (c)	02/24/94	---	---	---	310	---	95	5.3	2.2	17	1500 (d)	---	---	---	---	PACE
MW-4	05/12/94	39.24	16.62	22.62	ND<50	---	2.2	1.0	ND<0.5	ND<0.5	860 (d)	---	---	---	7.3	PACE
QC-1 (c)	05/12/94	---	---	---	430	---	2.6	1.3	ND<0.5	ND<0.5	780 (d)	---	---	---	---	PACE
MW-4	09/09/94	39.24	20.27	18.97	240	---	9.1	1.3	0.6	2.5	---	---	---	---	2.2	PACE
QC-1 (c)	09/09/94	---	---	---	57	---	1.7	ND<0.5	ND<0.5	0.5	---	---	---	---	---	PACE
MW-4	11/03/94	39.24	18.46	20.78	250	---	3.1	2.8	1.0	3.3	---	---	---	---	3.2	PACE
QC-1 (c)	11/03/94	---	---	---	110	---	2.4	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
MW-4	03/01/95	39.24	16.15	23.09	8900	---	1800	26	450	400	---	---	---	---	2.0	ATI
QC-1 (c)	03/01/95	---	---	---	7600	---	1700	25	410	370	---	---	---	---	---	ATI
MW-4	06/06/95	39.24	16.28	22.96	3100	---	(e) 530	25	170	85	---	---	---	---	---	ATI
QC-1 (c)	06/06/95	---	---	---	3000	---	530	27	170	92	---	---	---	---	---	ATI
MW-4 (f)	09/01/95	39.24	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-4	11/29/95	39.24	17.31	21.93	ND<50	---	1.8	ND<0.50	ND<0.50	ND<1.0	440	---	---	---	3.2	ATI
QC-1 (c)	11/29/95	---	---	---	ND<50	---	1.5	ND<0.50	ND<0.50	ND<1.0	490	---	---	---	---	ATI
MW-4	03/23/96	39.24	15.74	23.50	2700	---	480	ND<25	180	176	13000	---	---	---	7.8	SPL
MW-4	09/05/96	39.24	16.75	22.49	1100	---	ND<12	ND<25	ND<25	ND<25	3200	---	---	---	4.0	SPL
MW-4	03/11/97	39.24	16.10	23.14	2400	---	46	ND<10	66	106	3400	---	---	---	4.0	SPL
MW-4	12/08/97	39.24	15.96	23.28	590	---	11	ND<1.0	ND<1.0	ND<1.0	1200	---	---	---	4.4	SPL
QC-1 (c)	12/08/97	---	---	---	620	---	11	ND<1.0	ND<1.0	ND<1.0	1100	---	---	---	---	SPL
MW-4	07/08/98	39.24	16.28	22.96	1700	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	1200	---	---	---	3.9	SPL
QC-1 (c)	07/08/98	---	---	---	1600	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	1100	---	---	---	---	SPL
MW-4	12/07/98	39.24	16.47	22.77	530	---	ND<2.5	ND<5.0	ND<5.0	ND<5.0	680/910 (h)	---	---	---	---	SPL
MW-5	06/06/95	39.07	16.16	22.91	1100	---	(e) 42	ND<2.5	15	4.0	---	---	---	---	---	ATI
MW-5	09/01/95	39.07	16.63	22.44	1600	---	55	ND<2.5	15	8.0	1200	---	---	---	7.4	ATI
QC-1 (c)	09/01/95	---	---	---	1200	---	64	ND<2.5	14	3.1	---	---	---	---	---	ATI
MW-5	11/29/95	39.07	17.19	21.88	2300	---	140	4.0	36	11	1500	---	---	---	4.1	ATI
MW-5	03/23/96	39.07	15.54	23.53	90	---	2.8	ND<1	ND<1	ND<1	1500	---	---	---	7.5	SPL
MW-5	09/05/96	39.07	16.72	22.35	2300	---	5.1	ND<1.0	ND<1.0	ND<1.0	3300	---	---	---	3.2	SPL
QC-1 (c)	09/05/96	---	---	---	2000	---	4.9	ND<1.0	ND<1.0	ND<1.0	2900	---	---	---	---	SPL
MW-5	03/11/97	39.07	16.12	22.95	470	---	ND<5.0	ND<5.0	ND<5.0	ND<5.0	580	---	---	---	3.0	SPL
QC-1 (c)	03/11/97	---	---	---	460	---	ND<5.0	ND<5.0	ND<5.0	ND<5.0	540	---	---	---	---	SPL
MW-5	12/08/97	39.07	15.85	23.22	370	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	840	---	---	---	3.0	SPL
MW-5	07/08/98	39.07	16.11	22.96	430	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	330	---	---	---	2.5	SPL
MW-5	12/07/98	39.07	16.27	22.80	220	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	290/410 (h)	---	---	---	---	SPL

Table 1 - Summary of Results of Groundwater Sampling

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO GROUNDWATER WATER (Feet)	ELEVATION (Feet)	TPH-G (b) (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	1,1,1-TCA (ug/l)	PCE (ug/l)	DO (ppm)	LAB
MW-6	03/01/95	38.46	15.66	22.80	270	---	11	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	1.6	ATI
MW-6	06/06/95	38.46	15.82	22.64	220	---	(e) 2.3	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	---	ATI
MW-6	09/01/95	38.46	16.25	22.21	780	---	ND<2.5	ND<2.5	ND<2.5	ND<5.0	2800	---	---	---	7.5	ATI
MW-6	11/29/95	38.46	16.80	21.66	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	1100	---	---	---	3.9	ATI
MW-6	03/23/96	38.46	15.27	23.19	50	---	ND<0.5	ND<1	ND<1	ND<1	910	---	---	---	8.0	SPL
MW-6	09/05/96	38.46	16.30	22.16	4400	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	7400	---	---	---	3.0	SPL
MW-6	03/11/97	38.46	15.75	22.71	1100	---	ND<5.0	ND<5.0	ND<5.0	ND<5.0	2000	---	---	---	3.1	SPL
MW-6	12/08/97	38.46	15.51	22.95	150	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	140	---	---	---	3.4	SPL
MW-6	05/08/98	38.46	15.78	22.68	370	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	250	---	---	---	3.6	SPL
MW-6	12/07/98	38.46	15.95	22.51	---	---	ND<1.0	ND<1.0	ND<1.0	ND<1.0	630/820 (h)	---	---	---	---	---
MW-7	03/01/95	39.50	16.21	23.29	1400	---	14	ND<1.0	14	27	---	---	---	---	1.8	ATI
MW-7	06/06/95	39.50	16.34	23.16	540	---	(e) 5.5	ND<0.50	15	1.1	---	---	---	---	---	ATI
MW-7	09/01/95	39.50	16.74	22.76	190	---	2.8	ND<0.50	5.0	ND<1.0	10	---	---	---	7.5	ATI
MW-7	11/29/95	39.50	17.33	22.17	230	---	31	ND<0.50	3.8	1.9	ND<5.0	---	---	---	4.6	ATI
MW-7	03/23/96	39.50	15.86	23.64	ND<50	---	5.0	ND<1	ND<1	ND<1	330	---	---	---	7.2	SPL
QC-1 (c)	03/23/96	---	---	---	60	---	7.6	ND<1	ND<1	ND<1	360	---	---	---	---	SPL
MW-7	09/05/96	39.50	16.80	22.70	200	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	430	---	---	---	3.1	SPL
MW-7	03/11/97	39.50	18.32	21.18	120	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	140	---	---	---	4.7	SPL
MW-7	12/08/97	39.50	16.02	23.48	240	---	0.8	ND<1.0	ND<1.0	ND<1.0	200	---	---	---	5.2	SPL
MW-7	07/08/98	39.50	16.32	23.18	270	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	170	---	---	---	4.8	SPL
MW-7	12/07/98	39.50	15.50	23.97	100	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	120	---	---	---	---	SPL

Table 1 - Summary of Results of Groundwater Sampling

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO GROUNDWATER WATER (Feet)	ELEVATION (Feet)	TPH-G (b) (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	1,1,1-TCA (ug/l)	PCE (ug/l)	DO (ppm)	LAB
QC-2 (g)	11/04/92	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
QC-2 (g)	11/04/92	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
QC-2 (g)	03/01/95	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1.0	---	---	---	---	---	PACE
QC-2 (g)	05/12/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
QC-2 (g)	09/09/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
QC-2 (g)	11/03/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	PACE
QC-2 (g)	06/06/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	---	ATI
QC-2 (g)	09/01/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	---	---	ATI
QC-2 (g)	11/29/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	---	---	ATI
QC-2 (g)	03/23/96	---	---	---	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	---	---	SPL

ABBREVIATIONS:

TPH-G Total petroleum hydrocarbons as gasoline
 TPH-D Total petroleum hydrocarbons as diesel
 B Benzene
 T Toluene
 E Ethylbenzene
 X Total xylenes
 MTBE Methyl tert butyl ether
 TOG Total oil and grease
 1,1,1-TCA 1,1,1-Trichloroethane
 PCE Tetrachloroethene
 DO Dissolved oxygen
 ug/l Micrograms per liter
 ppm Parts per million
 ND Not detected above reported detection limit
 --- Not measured/analyzed/applicable
 PACE Pace, Inc.
 ATI Analytical Technologies, Inc.
 SPL Southern Petroleum Laboratories

NOTES:

- (a) Top of casing elevations surveyed relative to an established benchmark with an elevation of 39.95 feet above mean sea level.
- (b) Groundwater elevations in feet above mean sea level.
- (c) Blind duplicate.
- (d) A copy of the documentation for this data is included in Appendix C of Alisto report 10-060-07-001.
- (e) MTBE peak present. See documentation in Appendix C of Alisto report 10-060-07-001.
- (f) Well inaccessible.
- (g) Travel blank.
- (h) EPA methods 8020/8260 used

Analytical Appendix



HOUSTON LABORATORY

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 660-0901

December 22, 1998

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

The following report contains analytical results for the sample(s) received at Southern Petroleum Laboratories (SPL) on December 9, 1998. The sample(s) was assigned to Certificate of Analysis No.(s) 9812446 and analyzed for all parameters as listed on the chain of custody.

Any data flags or quality control exceptions 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

A handwritten signature in cursive script that reads 'Sonia West'. The signature is written in dark ink and is positioned above a horizontal line.

Sonia West
Senior Project Manger



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

Southern Petroleum Laboratories, Inc.

Certificate of Analysis Number: 98-12-446

Approved for Release by:

Sonia West

Sonia West, Senior Project Manager

12-22-98

Date

Greg Grandits
Laboratory Director

Cynthia Schreiner
Quality Assurance Officer

The attached analytical data package may not be reproduced except in full without the express written approval of this laboratory.
The results relate only to the samples tested.
Results reported on a Wet Weight Basis unless otherwise noted.



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

Certificate of Analysis No. H9-9812446-01

BP Oil Company
 295 SW 41 Street Bldg.13,Ste
 Renton, WA 98055
 ATTN: Scott Hooton

P.O.#
 , COC#107250
 DATE: 12/22/98

PROJECT: #11107, 18501 Hesperian Blvd
SITE: San Lorenzo, CA
SAMPLED BY: Blaine Tech Services
SAMPLE ID: A

PROJECT NO: 981207-Z2
MATRIX: WATER
DATE SAMPLED: 12/07/98 15:00:00
DATE RECEIVED: 12/09/98

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	120	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 107
 4-Bromofluorobenzene 100
 Method 8020A***
 Analyzed by: CJ
 Date: 12/10/98

Gasoline Range Organics 0.10 0.05 P mg/L

Surrogate % Recovery
 1,4-Difluorobenzene 100
 4-Bromofluorobenzene 83
 California LUFT Manual for Gasoline
 Analyzed by: CJ
 Date: 12/10/98 18:00:00

(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. H9-9812446-02

BP Oil Company
 295 SW 41 Street Bldg.13,Ste
 Renton, WA 98055
 ATTN: Scott Hooton

P.O.#
 N/A , COC#107250
 DATE: 12/22/98

PROJECT: #11107, 18501 Hesperian Blvd
 SITE: San Lorenzo, CA
 SAMPLED BY: Blaine Tech Services
 SAMPLE ID: B

PROJECT NO: 981207-Z2
 MATRIX: WATER
 DATE SAMPLED: 12/07/98 15:25:00
 DATE RECEIVED: 12/09/98

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	630	10 P	ug/L
Benzene	ND	1.0 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 110
 4-Bromofluorobenzene 100

Method 8020A***
 Analyzed by: CJ
 Date: 12/10/98

Gasoline Range Organics 0.44 0.05 P mg/L

Surrogate % Recovery
 1,4-Difluorobenzene 97
 4-Bromofluorobenzene 83

California LUFT Manual for Gasoline
 Analyzed by: CJ
 Date: 12/10/98 17:07:00

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

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

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

Certificate of Analysis No. H9-9812446-02

BP Oil Company
 295 SW 41 Street Bldg.13,Ste
 Renton, WA 98055
 ATTN: Scott Hooton

P.O.#
 , COC#107250
 DATE: 12/22/98

PROJECT: #11107, 18501 Hesperian Blvd
 SITE: San Lorenzo, CA
 SAMPLED BY: Blaine Tech Services
 SAMPLE ID: B

PROJECT NO: 981207-22
 MATRIX: WATER
 DATE SAMPLED: 12/07/98 15:25:00
 DATE RECEIVED: 12/09/98

PARAMETER	ANALYTICAL DATA		DETECTION LIMIT	UNITS
	RESULTS			
MTBE	820		50 P	ug/L
Surrogate	% Recovery			
1,2-Dichloroethane-d4	102			
Toluene-d8	102			
4-Bromofluorobenzene	106			
Method 8260B ***				
Analyzed by: LT				
Date: 12/17/98				

(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.

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

Certificate of Analysis No. H9-9812446-03

BP Oil Company
 295 SW 41 Street Bldg.13,Ste
 Renton, WA 98055
 ATTN: Scott Hooton

P.O.#
 N/A , COC#107250
 DATE: 12/22/98

PROJECT: #11107, 18501 Hesperian Blvd
 SITE: San Lorenzo, CA
 SAMPLED BY: Blaine Tech Services
 SAMPLE ID: C

PROJECT NO: 981207-22
 MATRIX: WATER
 DATE SAMPLED: 12/07/98 15:35:00
 DATE RECEIVED: 12/09/98

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	290	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 107
 4-Bromofluorobenzene 100

Method 8020A***
 Analyzed by: TB
 Date: 12/12/98

Gasoline Range Organics 0.22 0.05 P mg/L

Surrogate % Recovery
 1,4-Difluorobenzene 97
 4-Bromofluorobenzene 83

California LUFT Manual for Gasoline
 Analyzed by: DN
 Date: 12/13/98 21:45:00

(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.

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

Certificate of Analysis No. H9-9812446-03

BP Oil Company
 295 SW 41 Street Bldg.13,Ste
 Renton, WA 98055
 ATTN: Scott Hooton

P.O.#
 N/A , COC#107250
 DATE: 12/22/98

PROJECT: #11107, 18501 Hesperian Blvd
 SITE: San Lorenzo, CA
 SAMPLED BY: Blaine Tech Services
 SAMPLE ID: C

PROJECT NO: 981207-Z2
 MATRIX: WATER
 DATE SAMPLED: 12/07/98 15:35:00
 DATE RECEIVED: 12/09/98

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
MTBE	410	25 P		ug/L
Surrogate	% Recovery			
1,2-Dichloroethane-d4	94			
Toluene-d8	104			
4-Bromofluorobenzene	108			
Method 8260B ***				
Analyzed by: LT				
Date: 12/17/98				

(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.

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 HOUSTON, TEXAS 77054
 PHONE (713) 660-0901

Certificate of Analysis No. H9-9812446-04

BP Oil Company
 295 SW 41 Street Bldg.13,Ste
 Renton, WA 98055
 ATTN: Scott Hooton

P.O.#
 N/A , COC#107250
 DATE: 12/22/98

PROJECT: #11107, 18501 Hesperian Blvd
SITE: San Lorenzo, CA
SAMPLED BY: Blaine Tech Services
SAMPLE ID: D

PROJECT NO: 981207-Z2
MATRIX: WATER
DATE SAMPLED: 12/07/98 15:55:00
DATE RECEIVED: 12/09/98

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	680	50 P	ug/L
Benzene	ND	2.5 P	ug/L
Toluene	ND	5.0 P	ug/L
Ethylbenzene	ND	5.0 P	ug/L
Total Xylene	ND	5.0 P	ug/L

Surrogate	% Recovery
1,4-Difluorobenzene	107
4-Bromofluorobenzene	100

Method 8020A***
 Analyzed by: TB
 Date: 12/12/98

Gasoline Range Organics	0.53	0.25 P	mg/L
-------------------------	------	--------	------

Surrogate	% Recovery
1,4-Difluorobenzene	93
4-Bromofluorobenzene	87

California LUFT Manual for Gasoline
 Analyzed by: DN
 Date: 12/13/98 20:53:00

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

Certificate of Analysis No. H9-9812446-04

BP Oil Company
 295 SW 41 Street Bldg.13,Ste
 Renton, WA 98055
 ATTN: Scott Hooton

P.O.#
 N/A , COC#107250
 DATE: 12/22/98

PROJECT: #11107, 18501 Hesperian Blvd
 SITE: San Lorenzo, CA
 SAMPLED BY: Blaine Tech Services
 SAMPLE ID: D

PROJECT NO: 981207-Z2
 MATRIX: WATER
 DATE SAMPLED: 12/07/98 15:55:00
 DATE RECEIVED: 12/09/98

PARAMETER	ANALYTICAL DATA			UNITS
	RESULTS	DETECTION LIMIT		
MTBE	910	100 P		ug/L
Surrogate	% Recovery			
1,2-Dichloroethane-d4	98			
Toluene-d8	106			
4-Bromofluorobenzene	110			
Method 8260B ***				
Analyzed by: LT				
Date: 12/17/98				

(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.

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QUALITY CONTROL

DOCUMENTATION

3B

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPL

Contract:

Lab Code:

Case No: 9812531

SAS No: SDG No:

Matrix Spike - EPA

Sample No: SW-6

Level(low/med) Low

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
1,1-Dichloroethene	50	0	48	96	61-145
Trichloroethene	50	0	43	86	71-120
Benzene	50	21	62	82	76-127
Toluene	50	0	40	80	76-125
Chlorobenzene	50	0	40	80	75-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC.	#	% RPD #	QC LIMITS	
						RPD	REC.
1,1-Dichloroethene	50	52	104	8	22	61-145	
Trichloroethene	50	46	92	7	24	71-120	
Benzene	50	67	92	11	21	76-127	
Toluene	50	44	88	10	21	76-125	
Chlorobenzene	50	41	82	2	21	75-130	

Column to be used to flag recovery and RPD values with an asterisk

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

SPL Houston Labs

RECOVERY REPORT

Client Name: Client SDG: 1981216
 Sample Matrix: LIQUID Fraction: VOA
 Lab Smp Id: LCS Operator: LT
 Level: LOW SampleType: METHSPIKE
 Data Type: MS DATA Quant Type: ISTD
 SpikeList File: 8260_water.spk
 Sublist File: 8260_lcs.sub
 Method File: /var/chem/l.i/1981216.b/l8260awa.m
 Misc Info: L350W2//L350CW2

SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
8 1,1-Dichloroethene	50	60	120.00	61-145
29 Trichloroethene	50	51	102.00	71-120
25 Benzene	50	54	108.00	76-127
37 Toluene	50	52	104.00	76-125
45 Chlorobenzene	50	48	96.00	75-130

SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
\$ 21 1,2-Dichloroethane	50	50	100.00	80-120
\$ 36 Toluene-d8	50	51	102.00	88-110
\$ 56 Bromofluorobenzene	50	54	108.00	86-115



SPL Blank QC Report

HOUSTON LABORATORY

8880 INTERCHANGE DRIVE

HOUSTON, TEXAS 77054

PHONE (713) 682-0000

1

Matrix: Aqueous
Sample ID: VBLK
Batch: L981216104646

Reported on: 12/18/98 17:43
Analyzed on: 12/17/98 01:59
Analyst: LT

METHOD 8260 L350B02

Compound	Result	Detection Limit	Units
Methyl t-Butyl Ether	ND	10	ug/L

Surrogate	Result	QC Criteria	Units
1,2-Dichloroethane-d4	98	80-120	% Recovery
Toluene-d8	104	88-110	% Recovery
Bromofluorobenzene	106	86-115	% Recovery

Samples in Batch 9812446-02 9812446-03 9812446-04

Notes

ND - Not detected.



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_U981210023700

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	46	92.0	72 - 128
Benzene	ND	50	47	94.0	61 - 119
Toluene	ND	50	48	96.0	65 - 125
EthylBenzene	ND	50	48	96.0	70 - 118
O Xylene	ND	50	48	96.0	72 - 117
M & P Xylene	ND	100	93	93.0	72 - 116

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
MTBE	120	20	160	NC	170	NC	NC	20	39 - 150
BENZENE	ND	20	19	95.0	20	100	5.13	21	32 - 164
TOLUENE	ND	20	19	95.0	20	100	5.13	20	38 - 159
ETHYLBENZENE	ND	20	19	95.0	20	100	5.13	19	52 - 142
O XYLENE	ND	20	19	95.0	18	90.0	5.41	18	53 - 143
M & P XYLENE	ND	40	36	90.0	34	85.0	5.71	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
 $\% \text{ Recovery} = [(\langle 1 \rangle - \langle 2 \rangle) / \langle 3 \rangle] \times 100$
 $\text{LCS } \% \text{ Recovery} = (\langle 1 \rangle / \langle 3 \rangle) \times 100$
 $\text{Relative Percent Difference} = [(\langle 4 \rangle - \langle 5 \rangle) / [(\langle 4 \rangle + \langle 5 \rangle) \times 0.5]] \times 100$
 (**) = Source: SPL-Houston Historical Data (1st Q '97)
 (***) = Source: SPL-Houston Historical Data (1st Q '97)

Analyst: CJ
 Sequence Date: 12/10/98
 SPL ID of sample spiked: 9812446-01A
 Sample File ID: U_L1144.TX0
 Method Blank File ID:
 Blank Spike File ID: U_L1128.TX0
 Matrix Spike File ID: U_L1135.TX0
 Matrix Spike Duplicate File ID: U_L1136.TX0

SAMPLES IN BATCH(SPL ID):

9812446-01A	9812335-02A	9812335-03A	9812335-10A
9812087-01A	9812290-05A	9812290-03A	9812232-01A
9812290-01A	9812249-01A	9812245-03A	9812245-04A
9812245-05A	9812500-02A	9812500-03A	9812446-02A



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_U981212070400

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	47	94.0	72 - 128
Benzene	ND	50	48	96.0	61 - 119
Toluene	ND	50	48	96.0	65 - 125
EthylBenzene	ND	50	49	98.0	70 - 118
O Xylene	ND	50	48	96.0	72 - 117
M & P Xylene	ND	100	94	94.0	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	20.0	19	95.0	20	100
BENZENE	ND	20.0	20	100	19	95.0	5.13	21	32 - 164
TOLUENE	ND	20.0	20	100	19	95.0	5.13	20	38 - 159
ETHYLBENZENE	ND	20.0	20	100	19	95.0	5.13	19	52 - 142
O XYLENE	ND	20.0	20	100	20	100	0	18	53 - 143
M & P XYLENE	ND	40.0	39	97.5	37	92.5	5.26	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: TB

Sequence Date: 12/12/98

SPL ID of sample spiked: 9812591-05A

Sample File ID: U_L1225.TX0

Method Blank File ID:

Blank Spike File ID: U_L1215.TX0

Matrix Spike File ID: U_L1218.TX0

Matrix Spike Duplicate File ID: U_L1220.TX0

SAMPLES IN BATCH(SPL ID):

9812430-04A 9812446-04A 9812591-01A 9812591-04A
 9812446-03A 9812386-01A 9812386-02A 9812386-03A
 9812386-04A 9812386-05A 9812386-06A 9812591-03A
 9812591-05A 9812430-01A



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

**** SPL BATCH QUALITY CONTROL REPORT ****

California LUFT Manual for Gasoline

Matrix: Aqueous
 Units: mg/L

Batch Id: HP_U981212073100

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	0.83	83.0	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	ND	0.90	1.1			

* = 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: TB
 Sequence Date: 12/12/98
 SPL ID of sample spiked: 9812591-03A
 Sample File ID: UUL1224.TX0
 Method Blank File ID:
 Blank Spike File ID: UUL1216.TX0
 Matrix Spike File ID: UUL1221.TX0
 Matrix Spike Duplicate File ID: UUL1222.TX0

SAMPLES IN BATCH(SPL ID):

9812386-01A	9812386-02A	9812386-03A	9812386-04A
9812386-05A	9812386-06A	9812591-04A	9812591-03A
9812591-01A	9812591-05A	9812446-04A	9812591-02A
9812446-03A			

CHAIN OF CUSTODY
AND
SAMPLE RECEIPT CHECKLIST



9812446

CHAIN OF CUSTODY

No. 107250

Page 1 of 1

CONSULTANT'S NAME: **Blaine Teeh** CONSULTANT'S ADDRESS: **1680 Rodgers Rd. San Jose, CA**

BP SITE NUMBER: **11107** BP SITE / FACILITY ADDRESS: **18501 Hesperian Blvd, San Lorenzo** CONSULTANT PROJECT NUMBER: **981207-22**

CONSULTANT PROJECT MANGER: _____ PHONE NUMBER: _____ FAX NUMBER: _____ CONSULTANT CONTRACT NUMBER: _____

BP CONTACT: _____ BP ADDRESS: _____ PHONE NUMBER: _____ FAX NO: _____

LAB CONTACT: _____ LABORATORY ADDRESS: _____ PHONE NUMBER: _____ FAX NO: _____

BP CONTACT REQUESTING RUSH TAT (Print BP Contact Name): _____ RUSH REQUESTED OF (Print Consultant Contact Name): _____ DATE/TIME: _____ SHIPMENT DATE: _____ SHIPMENT METHOD: _____

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

ANALYSIS REQUIRED: _____

AIRBILL NUMBER: **804039445081**

SAMPLE DESCRIPTION	COLLECTION DATE	COLLECTION TIME	MATRIX SOIL/WATER	CONTAINERS		PRESERVATIVE	TPHG	BTEX	MTBE	MIBK	8260	COMMENTS
				NO.	TYPE (VOL.)	LAB SAMPLE #						
A	12/7	1500	U	3			X	X	X			
B	↓	1525	↓	5			X	X	X			
C	↓	1535	↓	5			X	X	X			
D	↓	1555	↓	5			X	X	X			

SAMPLED BY (Please Print Name): **Jeremy** SIGNATURE: *[Signature]*

ACCEPTED BY / AFFILIATION (Print Name / Signature): **Jinal Cochrane** SIGNATURE: *[Signature]*

RELINQUISHED BY / AFFILIATION (Print Name / Signature): *[Signature]* DATE: **12/9/98** TIME: **4:20**

DATE: **12-9-98** TIME: **1000**

ADDITIONAL COMMENTS: **30**

SPL Houston Environmental Laboratory

Sample Login Checklist

Date: 12-9-98	Time: 1000
--	---

SPL Sample ID: 9812446
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		<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:	3° C	
10	Method of sample delivery to SPL:	SPL Delivery	
		Client Delivery	
		FedEx Delivery (airbill #) 804039445081	
		Other:	
11	Method of sample disposal:	SPL Disposal	
		HOLD	
		Return to Client	

Name: Vina Beckrum	Date: 12-9-98
--	---

Field Data Sheets

WELL MONITORING DATA SHEET

Project #: 981207-23	Client: BP # 11107
Sampler: JR	Start Date: 12-7-98
Well I.D.: MW4	Well Diameter: (2) 3 4 6 8
Total Well Depth: 25.40	Depth to Water: 16.47
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH

Purge Method: Bailer Sampling Method: Bailer
 Disposable Bailer Disposable Bailer
 Middleburg Extraction Port
 Electric Submersible
 Extraction Pump

Other: _____

1.4	(Gals.) X	3	=	4.2	Gals.
1 Case Volume		Specified Volumes		Calculated Volume	

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius ² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1545	67.8	7.0	1000	>200	1.5	LWSJ
1547	67.6	6.8	980	>200	3	
1549	67.4	6.8	780	>200	4.5	

Did well dewater? Yes (No) Gallons actually evacuated: 4.5

Sampling Time: 1555 Sampling Date: 12-7-98

Sample I.D.: D Laboratory: SPL

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

Equipment Blank I.D.: @ Time Duplicate I.D.:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 981207-23	Client: BP # 11107
Sampler: JR	Start Date: 12-7-98
Well I.D.: MW-5	Well Diameter: (2) 3 4 6 8
Total Well Depth: 24.78	Depth to Water: 16.27
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH

Purge Method: Bailer
 Disposable Bailer
 Middleburg
 Electric Submersible
 Extraction Pump

Sampling Method: Bailer
 Disposable Bailer
 Extraction Port
 Other: _____

Other: _____

1.3	(Gals.) X 3	= 3.9
1 Case Volume	Specified Volumes	Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius ² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1528	67.8	7.1	1000	>200	1.5	
1530	67.2	7.1	980	>200	3	
1532	67.0	7.0	960	>200	4.0	

Did well dewater? Yes No Gallons actually evacuated: 4

Sampling Time: 1535 Sampling Date: 12-7-98

Sample I.D.: C Laboratory: SPL

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

Equipment Blank I.D.: @ Time Duplicate I.D.:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mf
ORP (if req'd):	Pre-purge:	mV	Post-purge:	

WELL MONITORING DATA SHEET

Project #: 981207-23	Client: BP # 11107
Sampler: JR	Start Date: 12-7-98
Well I.D.: MW 6	Well Diameter: (2) 3 4 6 8
Total Well Depth: 25.08	Depth to Water: 15.95
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH

Purge Method: Bailer Sampling Method: Bailer

Disposable Bailer Disposable Bailer

Middleburg Extraction Port

Electric Submersible Other: _____

Extraction Pump

Other: _____

$$\frac{1.5 \text{ (Gals.)} \times 3 \text{ Specified Volumes}}{1 \text{ Case Volume}} = 4.5 \text{ Gals. Calculated Volume}$$

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius ² * 0.165

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1515	66.6	7.0	960	7200	1.5	
1518	66.4	6.9	920	7200	3	
1521	66.2	6.9	880	7200	4.5	

Did well dewater? Yes No Gallons actually evacuated: 4.5

Sampling Time: 1525 Sampling Date: 12-7-98

Sample I.D.: B Laboratory: SPL

Analyzed for: TPH-G BTEX MIBE TPH-D Other:

Equipment Blank I.D.: @ Time Duplicate I.D.:

Analyzed for: TPH-G BTEX MIBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 981207-23	Client: BP # 11107
Sampler: JR	Start Date: 12-7-98
Well I.D.: MW7	Well Diameter: (2) 3 4 6 8
Total Well Depth: 24.58	Depth to Water: 16.43
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH

Purge Method: Bailer Sampling Method: Bailer

Disposable Bailer Disposable Bailer

Middleburg Extraction Port

Electric Submersible Other: _____

Extraction Pump

Other: _____

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius ² * 0.163

1.3	(Gals.) X	3	=	3.9	Gals.
1 Case Volume		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1450	69.0	7.1	1000	7200	1.5	turbid
1453	68.6	7.0	920	7200	3.0	
1456	68.4	7.0	910	7200	4.0	

Did well dewater? Yes No Gallons actually evacuated: 4

Sampling Time: 1500 Sampling Date: 12-7-98

Sample I.D.: A Laboratory: SPL

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

Equipment Blank I.D.: @ Time Duplicate I.D.:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:	mV