S. T. Hooton
Team Leader
Environmental Remediation Management

BP Exploration & Oil Inc.
295 SW 41st Street, Bldg., 13, STE N
Renton, WA 98055-4931
Phone: 425-251-0689
Fax: 425-251-0736

BP OIL

R066

October 26, 1999

Alameda County Health Care Services Agency
Attention Ms. Susan Hugo
1131 Harbour Bay Parkway, Room 250
Alameda, CA 94502-6577

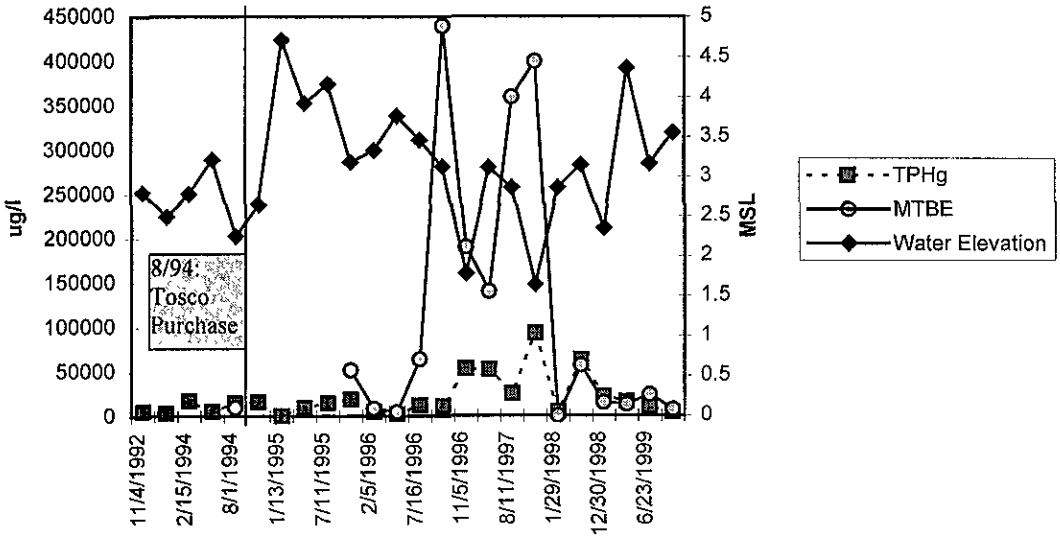
RE: Former BP Oil Site No. 11126
1700 Powell Street (at Christie)
Emeryville, CA

Dear Ms. Hugo:

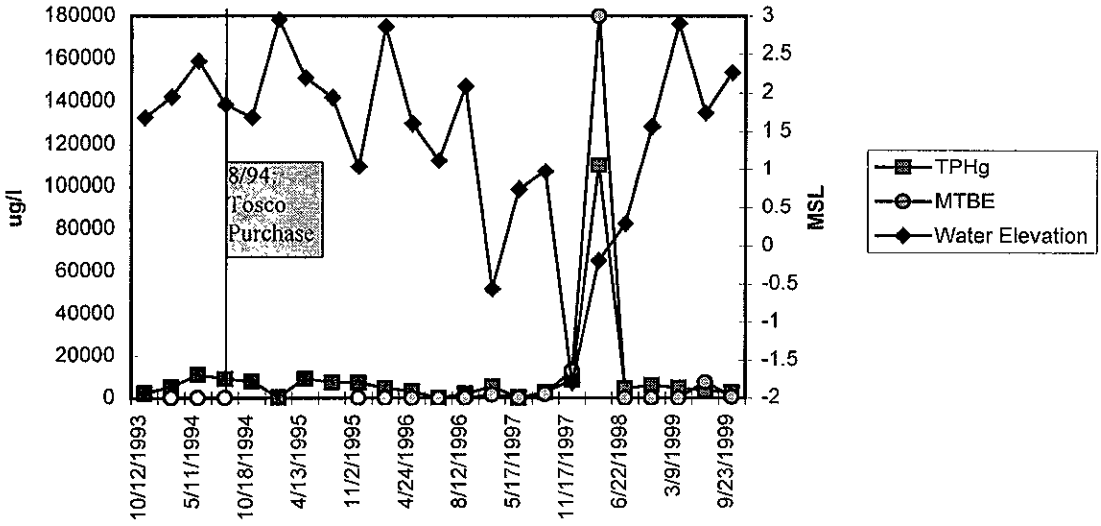
Enclosed find the 22 October 1999 groundwater monitoring and sampling report prepared on behalf of BP by Blaine Tech Services.

The enclosed report shows that MTBE and other aromatic hydrocarbons were detected in samples obtained from wells MW-1, MW-2, MW-5 and MW-9. Water elevation, TPHg and MTBE concentrations for these wells are depicted on the graphs shown below.

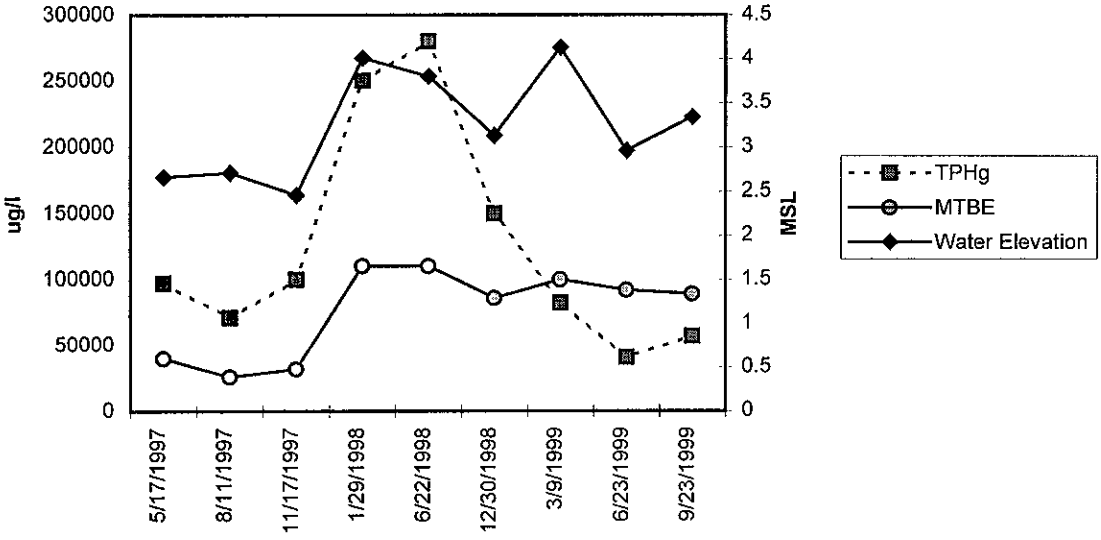
MW-1 TPHg, MTBE & Water Elevation



MW-5 TPHg, MTBE & Water Elevation



MW-9 TPHg, MTBE & Water Elevation



Please give me a call at (425) 251-0689 if you have any comments or questions regarding this matter.

Sincerely,

Scott Hooton

attachment

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

BLAINE
TECH SERVICES INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112-1105
(408) 573-7771 FAX
(408) 573-0555 PHONE

October 22, 1999

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

3rd Quarter 1999 Monitoring at 11126

Third Quarter 1999 Groundwater Monitoring
BP Service Station Number 11126
1700 Powell St.
Emeryville, CA

Monitoring Performed on September 23, 1999

Groundwater Sampling Report **990923-P-1**

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.

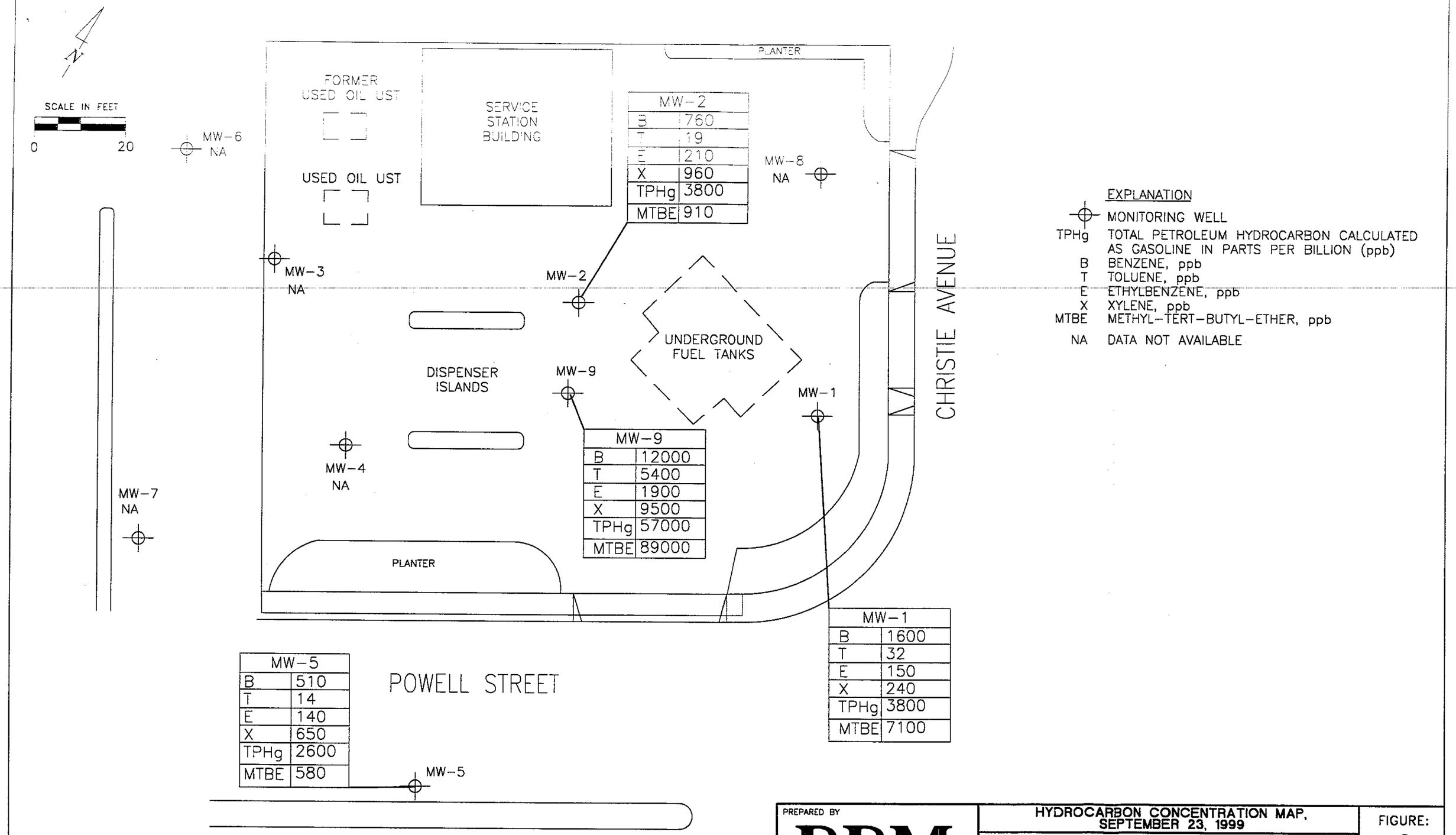
Yours truly,

Francis Thie
Vice President

FPT/cm

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

Professional Engineering Appendix



EXPLANATION

⊕ 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

NA DATA NOT AVAILABLE

Ref. 11126qm
Basemap from Alisto Engineering Group

PREPARED BY

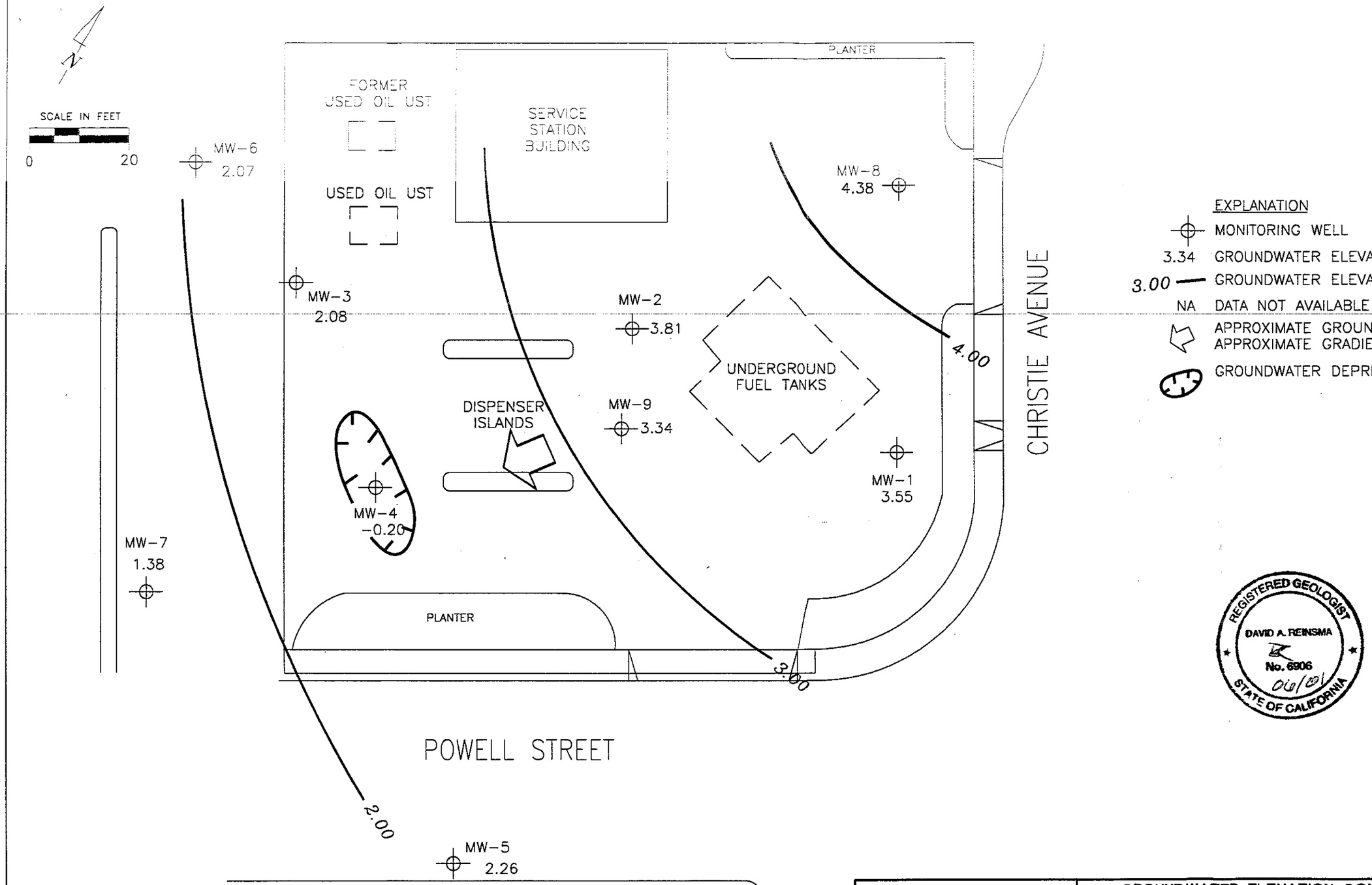
RRM
engineering contracting firm

HYDROCARBON CONCENTRATION MAP, SEPTEMBER 23, 1999

BP Oil Service Station No. 11126
1700 Powell Street
Emeryville, California

FIGURE: 2

PROJECT: DAC04



REGISTERED GEOLOGIST
DAVID A. REINSMA
No. 6906
06/01
STATE OF CALIFORNIA

Ref. 11126qm
Basemap from Alisto Engineering Group

PREPARED BY
RRM
engineering contracting firm

GROUNDWATER ELEVATION CONTOUR MAP, SEPTEMBER 23, 1999

BP Oil Service Station No. 11126
1700 Powell Street
Emeryville, California

FIGURE: 1
PROJECT: DAC04

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (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)	HVOC (ug/l)	DO (ppm)	LAB
MW-1	11/04/92	7.76	4.96	---	2.80	5300	—	1100	480	ND<0.5	1500	---	---	---	—	PACE
MW-1	10/12/93	7.76	5.26	---	2.50	3600	—	970	71	100	550	---	---	---	—	PACE
MW-1	02/15/94	7.76	4.98	---	2.78	17000	---	4200	510	360	1600	---	---	---	3.9	PACE
MW-1	05/11/94	7.76	4.55	---	3.21	5500	---	2900	37	56	64	—	---	---	8.0	PACE
MW-1	08/01/94	7.76	5.51	---	2.25	15000	---	3600	740	510	2800	9700 (d)	---	---	2.9	PACE
QC-1 (e)	08/01/94	---	---	---	---	16000	---	3600	750	510	2800	9800 (d)	---	---	---	PACE
MW-1	10/18/94	7.76	5.11	---	2.65	16000	---	1800	61	160	890	---	---	---	2.9	PACE
QC-1 (e)	10/18/94	---	---	---	---	16000	—	1900	64	170	950	---	---	---	---	PACE
MW-1	01/13/95	7.76	3.05	---	4.71	220	---	7	ND<0.5	1	23	---	---	---	6.6	ATI
QC-1 (e)	01/13/95	---	---	---	---	590	---	88	0.7	ND<0.5	55	---	—	---	---	ATI
MW-1	04/13/95	7.76	3.84	---	3.92	9300	—	4000	300	200	950	---	---	---	7.7	ATI
MW-1	07/11/95	7.76	3.60	---	4.16	15000	---	2200	84	ND<25	2500	---	---	---	8.8	ATI
MW-1	11/02/95	7.76	4.58	---	3.18	19000	—	920	ND<100	ND<100	430	52000	—	---	7.3	ATI
MW-1	02/05/96	7.76	4.43	---	3.33	4600	---	1400	330	54	247	8700	---	---	3.2	SPL
MW-1	04/24/96	7.76	4.00	---	3.76	2000	---	510	33	61	228	4500	---	---	7.5	SPL
MW-1	07/15/96	7.76	4.30	---	3.46	---	---	---	---	---	---	---	---	---	---	---
MW-1	07/16/96	7.76	---	---	---	12000	---	2800	170	390	1630	64000	---	---	7.9	SPL
QC-1 (e)	07/16/96	---	---	---	---	12000	---	2800	160	390	1610	63000	---	---	---	SPL
MW-1	07/30/96	7.76	4.64	---	3.12	---	---	---	---	---	---	---	---	---	---	---
MW-1	08/12/96	7.76	---	---	---	11000	---	2500	160	ND<10	1740	440000	---	---	7.0	SPL
MW-1	11/04/96	7.76	5.98	---	1.78	---	---	---	---	---	---	---	---	---	---	---
MW-1	11/05/96	7.76	---	---	---	53000	---	1300	43	100	349	42000/190000 (f)	---	---	6.6	SPL
MW-1	05/17/97	7.76	4.65	---	3.11	52000	---	1958	55	305	1216	140198	---	---	5.7	SPL
MW-1	08/11/97	7.76	4.90	---	2.86	25000	---	540	6.7	ND<5.0	57	360000	---	---	7.9	SPL
MW-1	11/17/97	7.76	6.12	---	1.64	93000	---	1200	31	180	40	400000	---	---	7.6	SPL
MW-1	01/29/98	7.76	4.90	---	2.86	4800	---	320	24	52	19.9	ND<50	---	---	6.6	SPL
MW-1	06/22/98	7.76	4.62	---	3.14	63000	---	180	ND<5.0	15	69	57000	---	---	6.0	
MW-1	12/30/98	7.76	5.41	---	2.35	22000	---	2500	24	120	400	15000/13000 (f)	---	---	---	SPL
MW-1	03/09/99	7.76	3.40	---	4.36	16000	---	2000	84	290	510	13000	---	---	---	SPL
MW-1	06/23/99	7.76	4.60	---	3.16	9600	---	4500	21	160	260	24000	---	---	---	SPL
MW-1	09/23/99	7.76	4.21	---	3.55	3800	---	1600	32	150	240	7100	---	---	---	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (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)	HVOC (ug/l)	DO (ppm)	LAB
MW-2	11/04/92	8.56	5.88	—	2.68	12000	---	3900	1300	ND<0.5	2300	---	—	---	---	PACE
QC-1 (e)	11/04/92	---	---	---		12000	---	3200	980	ND<0.5	1900	---	---	---	---	PACE
MW-2	10/12/93	8.56	6.29	---	2.27	4500	—	3400	180	230	940	—	—	---	—	PACE
MW-2	02/15/94	8.56	5.56	---	3.00	2000	---	430	270	28	390	—	----	---	4.0	PACE
QC-1 (e)	02/15/94	---	—	---		1800	—	290	160	14	250	—	---	---	---	PACE
MW-2	05/11/94	8.56	5.17	---	3.39	14000	---	3900	1200	440	1900	---	---	---	8.9	PACE
QC-1 (e)	05/11/94	---	---	---	---	15000	---	5600	1500	470	2000	740 (d)	---	---	---	PACE
MW-2	08/01/94	8.56	5.43	—	3.13	8200	---	3000	420	230	680	---	—	---	2.6	PACE
MW-2	10/18/94	8.56	5.71	---	2.85	9000	---	2000	140	150	420	---	---	---	7.2	PACE
MW-2	01/13/95	8.56	4.67	---	3.89	7900	---	2200	42	ND<5	770	---	---	---	6.8	ATI
MW-2	04/13/95	8.56	4.37	---	4.19	33000	---	8000	2500	1100	6600	---	---	---	7.5	ATI
QC-1 (e)	04/13/95	---	---	---	---	25000	---	6500	1500	110	5300	---	---	---	---	ATI
MW-2	07/11/95	8.56	4.51	---	4.05	19000	---	3300	99	7.5	4600	---	---	---	7.8	ATI
QC-1 (e)	07/11/95	---	---	---	---	28000	---	6800	1000	900	4900	---	---	---	---	ATI
MW-2	11/02/95	8.56	5.55	---	3.01	20000	---	3800	1200	570	2700	15000	---	---	7.3	ATI
QC-1 (e)	11/02/95	---	---	---	---	22000	---	4000	1200	600	2700	19000	---	---	---	ATI
MW-2	02/05/96	8.56	5.10	---	3.46	1200	---	320	220	26	187	99	---	---	2.2	SPL
QC-1 (e)	02/05/96	---	---	---	---	910	---	290	180	19	137	93	---	---	---	SPL
MW-2	04/24/96	8.56	4.95	---	3.61	ND<500	---	70	22	ND<10	61	ND<50	---	---	7.0	SPL
QC-1 (e)	04/24/96	---	---	---	---	ND<500	---	100	30	ND<10	71	ND<100	---	---	---	SPL
MW-2	07/15/96	8.56	5.40	---	3.16	---	---	---	---	---	---	---	---	---	---	---
MW-2	07/16/96	8.56	---	---	---	12000	---	3300	1400	250	2610	1400	---	---	7.8	SPL
MW-2	07/30/96	8.56	5.44	---	3.12	---	---	---	---	---	---	---	---	---	---	---
MW-2	11/04/96	8.56	7.06	---	1.50	---	---	---	---	---	---	---	---	---	---	---
MW-2	11/05/96	8.56	---	---	---	7200	---	1400	230	38	2110	1100	---	---	7.4	SPL
QC-1 (e)	11/05/96	---	---	---	---	9200	---	1300	170	ND<25	2240	1100	---	---	---	SPL
MW-2	05/17/97	8.56	5.77	---	2.79	570	---	42	ND<5.0	5.0	60	210	---	---	6.9	SPL
MW-2	08/11/97	8.56	5.71	---	2.85	6300	---	1800	130	86	397	2400	---	---	8.5	SPL
MW-2	11/17/97	8.56	6.91	---	1.65	2400	---	220	30	33	259	130	---	---	7.9	SPL
MW-2	01/29/98	8.56	4.61	---	3.95	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	6.2	SPL
MW-2	06/22/98	8.56	4.80	---	3.76	4200	---	640	150	120	650	560	---	---	5.4	SPL
MW-2	12/30/98	8.56	5.21	---	3.35	---	---	---	---	---	---	---	---	---	---	---
MW-2	06/23/99	8.56	5.30	---	3.26	---	---	---	---	---	---	---	---	---	---	SPL
MW-2	09/23/99	8.56	4.75	---	3.81	3800	---	760	19	210	960	910	---	---	---	SPL

Table of
Well Data and
Analytical Results

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (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)	HVOC (ug/l)	DO (ppm)	LAB
MW-3	11/04/92	8.25	6.38	---	1.87	200	690	1.6	ND<0.5	ND<0.5	1.1	---	ND<5000	ND	---	PACE
MW-3	10/12/93	8.25	5.84	---	2.41	270	2100	5.0	0.7	ND<0.5	2.6	---	ND<5000	ND	---	PACE
QC-1 (e)	10/12/93	---	---	---		150	---	5.6	0.6	ND<0.5	1.6	---	---	---	---	PACE
MW-3	02/15/94	8.25	6.60	---	1.65	140	2.3	5.7	ND<0.5	ND<0.5	ND<0.5	---	90	ND	3.9	PACE
MW-3	05/11/94	8.25	5.86	---	2.39	190	2500	2.7	1.9	ND<0.5	1.9	51	(d) ND<5000	ND	9.2	PACE
MW-3	08/01/94	8.25	6.13	---	2.12	120	1300	1.3	ND<0.5	0.5	1.1	---	ND<5000	ND	2.9	PACE
MW-3	10/18/94	8.25	6.39	---	1.86	100	2200	2.3	ND<0.5	ND<0.5	ND<0.5	---	ND<5000	ND	3.6	PACE
MW-3	01/13/95	8.25	5.47	---	2.78	ND<50	970	0.8	ND<0.5	ND<0.5	ND<1	---	---	ND	7.7	ATI
MW-3	04/13/95	8.25	5.17	---	3.08	530	ND<500	8.7	1.9	ND<0.5	3.9	---	2100	ND	8.4	ATI
MW-3	07/11/95	8.25	5.37	---	2.88	78	2100	0.57	ND<0.50	ND<0.50	ND<1.0	---	1900	ND	8.3	ATI
MW-3	11/02/95	8.25	6.29	---	1.96	250	2000	0.73	ND<0.50	ND<0.50	1.8	270	1400	ND	8.3	ATI
MW-3	02/05/96	8.25	5.80	---	2.45	ND<50	1600	ND<0.5	ND<1	ND<1	2.7	11	9000	ND	3.5	SPL
MW-3	04/24/96	8.25	5.69	---	2.56	ND<50	2800	ND<5	ND<10	ND<10	ND<10	150	6000	ND	8.6	SPL
MW-3	07/15/96	8.25	6.18	---	2.07	ND<250	3700	ND<2.5	ND<5	ND<5	ND<5	ND<50	1000	ND	7.7	SPL
MW-3	07/30/96	8.25	6.04	---	2.21	---	---	---	---	---	---	---	---	---	---	---
MW-3	11/04/96	8.25	7.84	---	0.41	---	---	---	---	---	---	---	---	---	---	---
MW-3	11/05/96	8.25	---	---	---	90	890	ND<0.5	ND<1.0	ND<1.0	ND<1.0	30	2000	ND	6.8	SPL
MW-3	05/17/97	8.25	6.49	---	1.76	ND<50	2100	ND<0.5	ND<1.0	ND<1.0	ND<1.0	52	700	ND	6.3	SPL
MW-3	08/11/97	8.25	6.15	---	2.10	490	1900	ND<2.5	ND<5.0	ND<5.0	ND<5.0	170	ND<5000	ND	7.4	SPL
MW-3	11/17/97	8.25	7.15	---	1.10	120	2500	ND<0.5	ND<1.0	ND<1.0	ND<1.0	46	ND<5000	ND	7.0	SPL
MW-3	01/29/98	8.25	5.10	---	3.15	270	1700	0.53	ND<1.0	ND<1.0	ND<1.0	330	2000	ND	6.4	SPL
MW-3	06/22/98	8.25	5.50	---	2.75	200	2200	ND<0.5	ND<1.0	ND<1.0	ND<1.0	130	ND<5	ND	5.5	SPL
MW-3	12/30/98	8.25	6.68	---	1.57	---	---	---	---	---	---	---	---	---	---	---
MW-3	03/09/99	8.25	5.53	---	2.72	60	840	ND<1.0	ND<1.0	ND<1.0	ND<1.0	19	7600	---	---	SPL
MW-3	06/23/99	8.25	6.60	---	1.65	---	---	---	---	---	---	---	---	---	---	SPL
MW-3	09/23/99	8.25	6.17	---	2.08	---	---	---	---	---	---	---	---	---	---	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (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)	HVOC (ug/l)	DO (ppm)	LAB
MW-4	11/04/92	8.12	6.66	—	1.46	340	---	4.5	ND<0.5	4.3	ND<0.5	—		---	—	—	PACE
MW-4	10/12/93	8.12	6.87	—	1.25	160	---	5.8	1.4	0.8	2.7	—		---	—	—	PACE
MW-4	02/15/94	8.12	6.61	---	1.51	110	—	4.4	0.7	ND<0.5	2.5	120	(d)	---	---	4.3	PACE
MW-4	05/11/94	8.12	5.89	---	2.23	120	---	0.5	0.8	ND<0.5	ND<0.5	140	(d)	---	---	9.3	PACE
MW-4	08/01/94	8.12	6.87	—	1.25	140	---	0.7	2.0	5.2	15	—		---	—	3.3	PACE
MW-4	10/18/94	8.12	6.62	---	1.50	140	—	3.5	ND<0.5	0.5	ND<0.5	---		---	---	3.0	PACE
MW-4	01/13/95	8.12	7.27	---	0.85	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---		---	—	7.9	ATI
MW-4	04/13/95	8.12	6.51	---	1.61	73	—	1.2	ND<0.5	ND<0.5	ND<1	---		---	---	9.9	ATI
MW-4	07/11/95	8.12	6.21	---	1.91	82	—	0.57	ND<0.50	ND<0.50	ND<1.0	---		---	—	7.2	ATI
MW-4	11/02/95	8.12	6.78	---	1.34	71	—	1.4	0.96	0.99	2.8	140		---	---	8.6	ATI
MW-4	02/05/96	8.12	6.41	---	1.71	ND<50	---	ND<5	ND<10	ND<10	ND<10	200		---	---	4.4	SPL
MW-4	04/24/96	8.12	6.18	---	1.94	ND<250	---	ND<2.5	ND<5	ND<5	ND<5	510		---	---	8.3	SPL
MW-4	07/15/96	8.12	6.63	---	1.49	ND<50	---	5.7	ND<1	ND<1	ND<1	550		---	---	7.4	SPL
MW-4	07/30/96	8.12	6.34	---	1.78	---	---	---	---	---	---	---		---	---	---	---
MW-4	11/04/96	8.12	8.27	---	-0.15	---	---	---	---	---	---	---		---	---	---	---
MW-4	11/05/96	8.12	---	---	---	460	---	ND<2.5	11	ND<5.0	ND<5.0	620/610	(f)	---	—	7.3	SPL
MW-4	05/17/97	8.12	7.00	---	1.12	---	---	---	---	---	---	---		---	---	---	---
MW-4	08/11/97	8.12	6.81	---	1.31	---	---	---	---	---	---	---		---	---	---	---
MW-4	11/17/97	8.12	9.19	---	-1.07	840	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	880		---	---	7.3	SPL
MW-4	01/29/98	8.12	7.94	---	0.18	---	---	---	---	---	---	---		---	---	---	---
MW-4	06/22/98	8.12	7.49	---	0.63	---	---	---	---	---	---	---		---	---	---	---
MW-4	12/30/98	8.12	8.21	---	-0.09	---	---	---	---	---	---	---		---	---	---	---
MW-4	03/09/99	8.12	7.70	---	0.42	1200	---	ND<1.0	ND<1.0	ND<1.0	ND<1.0	2000		---	---	---	SPL
MW-4	06/23/99	8.12	8.81	---	-0.69	---	---	---	---	---	---	---		---	---	---	---
MW-4	09/23/99	8.12	8.32	---	-0.20	---	---	---	---	---	---	---		---	---	---	---

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (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)	HVOC (ug/l)	DO (ppm)	LAB
MW-5	10/12/93	7.69	6.01	—	1.68	---	—	---	---	—	---	—		---	---	—	—
MW-5	10/13/93	7.69	---	---	---	2300	—	160	10	ND<0.5	26	—		—	—	—	PACE
MW-5	02/15/94	7.69	5.74	---	1.95	5100	---	710	16	33	35	100	(d)	---	---	4.0	PACE
MW-5	05/11/94	7.69	5.28	---	2.41	11000	---	1100	39	110	57	160	(d)	---	---	8.0	PACE
MW-5	08/01/94	7.69	5.84	---	1.85	9000	---	730	35	61	41	200	(d)	---	---	2.6	PACE
MW-5	10/18/94	7.69	6.01	---	1.68	7800	—	330	30	27	27	—		---	---	5.6	PACE
MW-5	01/13/95	7.69	4.74	---	2.95	ND<500	—	290	6	ND<5	18	—		---	---	6.8	ATI
MW-5	04/13/95	7.69	5.50	---	2.19	9100	---	400	15	52	27	---		---	---	7.4	ATI
MW-5	07/11/95	7.69	5.75	---	1.94	7300	---	390	13	28	23	---		---	---	7.2	ATI
MW-5	11/03/95	7.69	6.65	---	1.04	7200	---	270	15	38	23	200		---	---	8.4	ATI
MW-5	02/05/96	7.69	4.83	—	2.86	4600	---	370	15	53	28	ND<50		---	---	1.9	SPL
MW-5	04/24/96	7.69	6.09	---	1.60	3000	---	180	ND<10	32	14	ND<100		---	---	8.1	SPL
MW-5	07/15/96	7.69	6.57	---	1.12	---	---	---	---	---	---	---		---	---	---	---
MW-5	07/16/96	7.69	---	---	---	ND<50	---	190	ND<10	31	16	ND<100		---	---	8.3	SPL
MW-5	07/30/96	7.69	5.61	---	2.08	---	---	---	---	---	---	---		---	---	---	---
MW-5	08/12/96	7.69	---	---	---	2000	---	150	12	25	18.2	ND<50		---	---	7.6	SPL
MW-5	11/04/96	7.69	8.25	---	-0.56	---	---	---	---	---	---	---		---	---	---	---
MW-5	11/05/96	7.69	---	---	---	5200	---	42	5.5	13	ND<5.0	1700		---	---	7.4	SPL
MW-5	05/17/97	7.69	6.95	---	0.74	80	---	0.56	ND<1.0	ND<1.0	ND<1.0	46		---	---	6.7	SPL
MW-5	08/11/97	7.69	6.72	---	0.97	2700	---	20	12	6.7	9.7	1900		---	---	8.5	SPL
MW-5	11/17/97	7.69	9.49	---	-1.80	8400	---	25	12	8.7	5.4	13000		---	---	7.9	SPL
MW-5	01/29/98	7.69	7.88	---	-0.19	110000	---	2500	110	180	589	180000		---	---	6.8	SPL
MW-5	06/22/98	7.69	7.40	---	0.29	4400	---	47	10	29	20.5	47		---	---	6.6	SPL
MW-5	12/30/98	7.69	6.13	---	1.56	6000	---	18	9.1	22	16	63/44	(f)	---	---	---	SPL
MW-5	03/09/99	7.69	4.79	---	2.90	4600	---	8.8	5.5	12	11	24		---	---	---	SPL
MW-5	06/23/99	7.69	5.95	---	1.74	3400	---	1500	8.9	54	87	7500		---	---	---	SPL
MW-5	09/23/99	7.69	5.43	---	2.26	2600	---	510	14	140	650	580		---	---	---	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (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)	HVOC (ug/l)	DO (ppm)	LAB
MW-6	10/12/93	8.52	6.59	---	1.93	63	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---		---	---	---	PACE
MW-6	02/15/94	8.52	6.31	---	2.21	68	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	38	(d)	---	---	3.1	PACE
MW-6	05/11/94	8.52	6.15	---	2.37	68	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	48	(d)	---	---	8.7	PACE
MW-6	08/01/94	8.52	6.46	---	2.06	91	---	ND<0.5	ND<0.5	ND<0.5	0.6	---		---	---	2.4	PACE
MW-6	10/18/94	8.52	6.72	---	1.80	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---		---	---	6.0	PACE
MW-6	01/13/95	8.52	5.95	---	2.57	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---		---	---	7.0	ATI
MW-6	04/13/95	8.52	5.44	---	3.08	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---		---	---	8.5	ATI
MW-6	07/11/95	8.52	5.68	---	2.84	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---		---	---	8.4	ATI
MW-6	11/02/95	8.52	6.57	---	1.95	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	35		---	---	8.3	ATI
MW-6	02/05/96	8.52	6.27	---	2.25	ND<50	---	ND<5	ND<10	ND<10	ND<10	ND<100		---	---	2.2	SPL
MW-6	04/24/96	8.52	5.95	---	2.57	ND<250	---	ND<2.5	ND<5	ND<5	ND<5	62		---	---	8.0	SPL
MW-6	07/15/96	8.52	6.39	---	2.13	ND<250	---	ND<2.5	ND<5	ND<5	ND<5	ND<50		---	---	8.0	SPL
MW-6	07/30/96	8.52	6.44	---	2.08	---	---	---	---	---	---	---		---	---	---	---
MW-6	11/04/96	8.52	8.05	---	0.47	---	---	---	---	---	---	---		---	---	---	---
MW-6	11/05/96	8.52	---	---	---	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10		---	---	7.3	SPL
MW-6	05/17/97	8.52	6.75	---	1.77	---	---	---	---	---	---	---		---	---	---	---
MW-6	08/11/97	8.52	6.48	---	2.04	---	---	---	---	---	---	---		---	---	---	---
MW-6	11/17/97	8.52	9.27	---	-0.75	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10		---	---	7.7	SPL
MW-6	01/29/98	8.52	7.98	---	0.54	---	---	---	---	---	---	---		---	---	---	---
MW-6	06/22/98	8.52	7.68	---	0.84	---	---	---	---	---	---	---		---	---	---	---
MW-6	12/30/98	8.52	6.98	---	1.54	---	---	---	---	---	---	---		---	---	---	---
MW-6	03/09/99	8.52	5.90	---	2.62	---	---	---	---	---	---	---		---	---	---	---
MW-6	06/23/99	8.52	6.93	---	1.59	---	---	---	---	---	---	---		---	---	---	---
MW-6	09/23/99	8.52	6.45	---	2.07	---	---	---	---	---	---	---		---	---	---	---

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (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)	HVOC (ug/l)	DO (ppm)	LAB
MW-7	10/12/93	7.61	6.14	—	1.47	ND<50	---	ND<0.5	ND<0.5	ND<0.5	0.7	---	---	---	---	PACE
MW-7	02/15/94	7.61	5.88	—	1.73	78	---	ND<0.5	ND<0.5	ND<0.5	0.6	---	---	---	4.0	PACE
MW-7	05/11/94	7.61	5.76	---	1.85	70	---	ND<0.5	ND<0.5	ND<0.5	0.9	---	---	---	9.1	PACE
MW-7	08/01/94	7.61	5.97	---	1.64	77	---	ND<0.5	ND<0.5	ND<0.5	0.5	---	---	---	2.5	PACE
MW-7	10/18/94	7.61	6.24	---	1.37	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	6.3	PACE
MW-7	01/13/95	7.61	5.39	---	2.22	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	---	8.2	ATI
MW-7	04/13/95	7.61	5.17	---	2.44	63	---	ND<0.5	ND<0.5	ND<0.5	1.4	---	---	---	8.4	ATI
MW-7	07/11/95	7.61	5.25	---	2.36	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	7.9	ATI
MW-7	11/02/95	7.61	6.19	---	1.42	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	55	---	---	8.0	ATI
MW-7	02/05/96	7.61	5.69	---	1.92	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	40	---	---	1.9	SPL
MW-7	04/24/96	7.61	5.59	---	2.02	ND<250	---	ND<2.5	ND<5	ND<5	ND<5	53	---	---	8.2	SPL
MW-7	07/15/96	7.61	6.07	---	1.54	ND<250	---	ND<2.5	ND<5	ND<5	ND<5	ND<50	---	---	7.8	SPL
MW-7	07/30/96	7.61	6.04	---	1.57	---	---	---	---	---	---	---	---	---	---	---
MW-7	11/04/96	7.61	7.76	---	-0.15	---	---	---	---	---	---	---	---	---	---	---
MW-7	11/05/96	7.61	---	---	---	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	7.8	SPL
MW-7	05/17/97	7.61	6.42	---	1.19	---	---	---	---	---	---	---	---	---	---	---
MW-7	08/11/97	7.61	6.06	---	1.55	---	---	---	---	---	---	---	---	---	---	---
MW-7	11/17/97	7.61	9.07	---	-1.46	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	7.1	SPL
MW-7	01/29/98	7.61	7.44	---	0.17	---	---	---	---	---	---	---	---	---	---	---
MW-7	06/22/98	7.61	7.39	---	0.22	---	---	---	---	---	---	---	---	---	---	---
MW-7	12/30/98	7.61	5.51	---	2.10	---	---	---	---	---	---	---	---	---	---	---
MW-7	03/09/99	7.61	5.57	---	2.04	---	---	---	---	---	---	---	---	---	---	---
MW-7	06/23/99	7.61	6.69	---	0.92	---	---	---	---	---	---	---	---	---	---	---
MW-7	09/23/99	7.61	6.23	---	1.38	---	---	---	---	---	---	---	---	---	---	---

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (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)	HVOC (ug/l)	DO (ppm)	LAB
MW-8	10/12/93	8.60	5.86	---	2.74	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
MW-8	02/15/94	8.60	5.50	---	3.10	380	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	3.3	PACE
MW-8	05/11/94	8.60	5.09	---	3.51	330	---	ND<0.5	1.2	ND<0.5	1.9	---	---	---	8.5	PACE
MW-8	08/01/94	8.60	5.20	---	3.40	260	---	ND<0.5	1.2	2.9	5.8	---	---	---	2.3	PACE
MW-8	10/18/94	8.60	5.70	---	2.90	82	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	6.4	PACE
MW-8	01/13/95	8.60	4.96	---	3.64	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	---	6.9	ATI
MW-8	04/13/95	8.60	5.40	---	3.20	270	---	ND<0.5	ND<0.5	ND<0.5	4.4	---	---	---	8.4	ATI
MW-8	07/11/95	8.60	6.01	---	2.59	320	---	ND<0.50	ND<0.50	ND<0.50	3.5	---	---	---	8.0	ATI
MW-8	11/02/95	8.60	6.81	---	1.79	100	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	8.7	ATI
MW-8	02/05/96	8.60	6.12	---	2.48	ND<50	---	ND<5	ND<10	ND<10	ND<10	ND<100	---	---	1.5	SPL
MW-8	04/24/96	8.60	6.23	---	2.37	ND<50	---	ND<5	ND<10	ND<10	ND<10	ND<100	---	---	8.7	SPL
MW-8	07/15/96	8.60	6.70	---	1.90	ND<250	---	ND<2.5	ND<5	ND<5	ND<5	ND<50	---	---	8.4	SPL
MW-8	07/30/96	8.60	6.64	---	1.96	---	---	---	---	---	---	---	---	---	---	---
MW-8	11/04/96	8.60	8.36	---	0.24	---	---	---	---	---	---	---	---	---	---	---
MW-8	11/05/96	8.60	---	---	---	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	7.2	SPL
MW-8	05/17/97	8.60	7.03	---	1.57	---	---	---	---	---	---	---	---	---	---	---
MW-8	08/11/97	8.60	6.05	---	2.55	---	---	---	---	---	---	---	---	---	---	---
MW-8	11/17/97	8.60	9.14	---	-0.54	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	7.7	SPL
MW-8	01/29/98	8.60	7.90	---	0.70	---	---	---	---	---	---	---	---	---	---	---
MW-8	06/22/98	8.60	7.72	---	0.88	---	---	---	---	---	---	---	---	---	---	---
MW-8	12/30/98	8.60 (h)	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-8	03/09/99	8.60 (h)	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-8	06/23/99	8.60	4.70	---	3.90	---	---	---	---	---	---	---	---	---	---	---
MW-8	09/23/99	8.60	4.22	---	4.38	---	---	---	---	---	---	---	---	---	---	---

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (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)	HVOC (ug/l)	DO (ppm)	LAB
MW-9	10/12/93	8.08	5.66	0.08	2.48	—	—	—	—	—	—	—	—	—	—	—
MW-9	02/15/94	8.08	5.32	0.05	2.80	---	---	—	---	---	—	---	---	—	---	---
MW-9	05/11/94	8.08	5.57	---	2.51	---	---	---	—	—	---	---	---	---	—	---
MW-9	08/01/94	8.08	6.25	---	1.83	---	---	---	---	---	---	---	---	---	---	---
MW-9	10/18/94	8.08	5.59	0.13	2.59	---	---	—	---	---	—	---	---	—	—	---
MW-9	01/13/95	8.08	4.42	0.14	3.77	---	---	—	---	---	—	---	---	—	---	---
MW-9	04/13/95	8.08	4.06	0.11	4.10	---	---	—	---	---	—	---	---	—	---	---
MW-9	07/11/95	8.08	4.21	0.08	3.93	---	---	—	---	---	---	---	---	---	---	---
MW-9	11/02/95	8.08	5.22	0.05	2.90	---	---	—	---	---	---	---	---	---	---	---
MW-9	02/05/96	8.08	4.76	0.01	3.33	---	---	—	—	—	—	---	---	—	---	---
MW-9	04/24/96	8.08	4.62	0.09	3.53	---	---	—	—	—	—	---	---	—	---	---
MW-9	07/15/96	8.08	5.11	0.04	3.00	---	---	---	—	---	—	---	---	—	---	---
MW-9	07/30/96	8.08	5.15	---	2.93	---	---	---	---	---	---	---	---	---	---	---
MW-9	11/04/96	8.08	6.75	0.01	1.34	---	---	—	---	---	---	---	---	---	---	---
MW-9	05/17/97	8.08	5.42	---	2.66	97000	---	16000	7700	2300	18400	40000	---	---	7.0	SPL
QC-1 (e)	05/17/97	---	---	---	---	97000	---	16000	8200	2300	17300	39000	---	---	---	SPL
MW-9	08/11/97	8.08	5.37	---	2.71	71000	---	12000	340	2100	4300	26000	---	---	9.1	SPL
QC-1 (e)	08/11/97	---	---	---	---	100000	---	14000	360	3200	5790	27000	---	---	---	SPL
MW-9	11/17/97	8.08	5.62	Sheen	2.46	100000	---	22000	4800	3100	17900	32000	---	---	8.3	SPL
QC-1 (e)	11/17/97	---	---	---	---	100000	---	24000	5300	3500	19300	35000	---	---	---	SPL
MW-9	01/29/98	8.08	4.07	Sheen	4.01	250000	---	20000	21000	3100	18500	110000	---	---	6.6	SPL
QC-1 (e)	01/29/98	---	---	---	---	250000	---	20000	20000	3100	18400	110000	---	---	---	SPL
MW-9	06/22/98	8.08	4.28	---	3.80	280000	---	21000	18000	3800	21200	110000	---	---	5.8	SPL
QC-1 (e)	06/22/98	---	---	---	---	290000	---	20000	17000	3800	21200	110000	---	---	---	SPL
MW-9	12/30/98	8.08	4.95	---	3.13	150000	---	10000	3800	2000	9600	86000/89000 (f)	---	---	---	SPL
MW-9	03/09/99	8.08	3.95	---	4.13	82000	---	6800	570	1400	4700	100000	---	---	---	SPL
MW-9	06/23/99	8.08	5.12	---	2.96	41000	---	11000	820	2300	5200	92000	---	---	---	SPL
MW-9	09/23/99	8.08	4.74	---	3.34	57000	---	12000	5400	1900	9500	89000	---	---	---	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (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)	HVOC (ug/l)	DO (ppm)	LAB
QC-2 (g)	11/05/92	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (g)	10/12/93	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (g)	02/15/94	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (g)	05/11/94	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (g)	08/01/94	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (g)	10/18/94	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	PACE
QC-2 (g)	01/13/95	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	---	---	ATI
QC-2 (g)	04/13/95	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	---	---	ATI
QC-2 (g)	07/11/95	---	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	ATI
QC-2 (g)	11/02/95	---	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	---	ATI
QC-2 (g)	02/05/96	---	---	---	---	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	---	SPL
QC-2 (g)	04/24/96	---	---	---	---	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	---	SPL
QC-2 (g)	07/16/96	---	---	---	---	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	---	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING

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
HVOC	Halogenated volatile organic compounds
DO	Dissolved oxygen
ug/l	Micrograms per liter
ppm	Parts per million
ND	Not detected above reported detection limit
---	Not analyzed/applicable/measurable
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 8.11 feet above mean sea level.

(b) Groundwater elevations adjusted assuming a specific gravity of 0.75 for free product.

(c) Detection limits vary; see laboratory report.

(d) A copy of the documentation for this data is included in Appendix C of Alisto report 10-061-07-004.

(e) Blind duplicate.

(f) EPA Methods 8020/8260 used.

(g) Travel blank.

(h) Inaccessible

Analytical Appendix

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

October 4, 1999

Mr. Scott Hooton
BP OIL COMPANY
295 SW 41 Street 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 28, 1999. The sample(s) was assigned to Certificate of Analysis No. (s) 9909880 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 result 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

Sonia West
Senior Project Manager

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

Southern Petroleum Laboratories, Inc.

Certificate of Analysis Number: 99-09-880

Approved for Release by:

Sonia West, Senior Project Manager — 10-5-99 Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer

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

Certificate of Analysis No. H9-9909880-01

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

P.O.# N/A, COC#118682
DATE: 10/04/99

PROJECT: #11126, 1700 Powell Street
SITE: Emeryville
SAMPLED BY: Blaine Tech Services
SAMPLE ID: A

PROJECT NO: 990923-P1
MATRIX: WATER
DATE SAMPLED: 09/23/99 08:42:00
DATE RECEIVED: 09/28/99

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	580	5.0 P	ug/L
BENZENE	510	5.0 P	ug/L
TOLUENE	14	5.0 P	ug/L
ETHYLBENZENE	140	5.0 P	ug/L
TOTAL XYLENE	650	5.0 P	ug/L
TOTAL VOLATILE AROMATIC HYDROCARBONS	1314		ug/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	100		
4-Bromofluorobenzene	100		
Method 8020A ***			
Analyzed by: WLR			
Date: 09/30/99			
Gasoline Range Organics	2.6	0.25 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	93		
4-Bromofluorobenzene	93		
California LUFT Manual for Gasoline			
Analyzed by: WLR			
Date: 09/30/99 23:52:00			

(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. H9-9909880-02

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

P.O.# N/A, COC#118682
DATE: 10/04/99

PROJECT: #11126, 1700 Powell Street
SITE: Emeryville
SAMPLED BY: Blaine Tech Services
SAMPLE ID: B

PROJECT NO: 990923-P1
MATRIX: WATER
DATE SAMPLED: 09/23/99 09:00:00
DATE RECEIVED: 09/28/99

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	910	5.0 P	ug/L
BENZENE	760	5.0 P	ug/L
TOLUENE	19	5.0 P	ug/L
ETHYLBENZENE	210	5.0 P	ug/L
TOTAL XYLENE	960	5.0 P	ug/L
TOTAL VOLATILE AROMATIC HYDROCARBONS	1949		ug/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	100		
4-Bromofluorobenzene	100		
Method 8020A ***			
Analyzed by: WLR			
Date: 10/01/99			
Gasoline Range Organics	3.8	0.25 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	93		
4-Bromofluorobenzene	93		
California LUFT Manual for Gasoline			
Analyzed by: WLR			
Date: 10/01/99 00:23:00			

(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. H9-9909880-03

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

P.O.# N/A, COC#118682
DATE: 10/04/99

PROJECT: #11126, 1700 Powell Street
SITE: Emeryville
SAMPLED BY: Blaine Tech Services
SAMPLE ID: C

PROJECT NO: 990923-P1
MATRIX: WATER
DATE SAMPLED: 09/23/99 09:20:00
DATE RECEIVED: 09/28/99

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	7100	25 P	ug/L
BENZENE	1600	25 P	ug/L
TOLUENE	32	25 P	ug/L
ETHYLBENZENE	150	25 P	ug/L
TOTAL XYLENE	240	25 P	ug/L
TOTAL VOLATILE AROMATIC HYDROCARBONS	2022		ug/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	113		
4-Bromofluorobenzene	99		
Method 8020A ***			
Analyzed by: WLR			
Date: 10/01/99			
Gasoline Range Organics	3.8	1.2 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	89		
4-Bromofluorobenzene	93		
California LUFT Manual for Gasoline			
Analyzed by: WLR			
Date: 10/01/99 00:52:00			

(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. H9-9909880-04

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

P.O.# N/A, COC#118682
DATE: 10/04/99

PROJECT: #11126, 1700 Powell Street
SITE: Emeryville
SAMPLED BY: Blaine Tech Services
SAMPLE ID: D

PROJECT NO: 990923-P1
MATRIX: WATER
DATE SAMPLED: 09/23/99 09:40:00
DATE RECEIVED: 09/28/99

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	89000	250 P	ug/L
BENZENE	12000	250 P	ug/L
TOLUENE	5400	250 P	ug/L
ETHYLBENZENE	1900	250 P	ug/L
TOTAL XYLENE	9500	250 P	ug/L
TOTAL VOLATILE AROMATIC HYDROCARBONS	28800		ug/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	115		
4-Bromofluorobenzene	97		
Method 8020A ***			
Analyzed by: WLR			
Date: 10/01/99			
Gasoline Range Organics	57	12 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	89		
4-Bromofluorobenzene	92		
California LUFT Manual for Gasoline			
Analyzed by: WLR			
Date: 10/01/99 03:25:00			

(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

QUALITY CONTROL

DOCUMENTATION

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

** SPL BATCH QUALITY CONTROL REPORT **

METHOD 8020

Matrix: Aqueous

Batch Id: HP_S990930092100

Units: ug/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
MTBE	ND	50	46	92.0	72 - 128
Benzene	ND	50	48	96.0	61 - 119
Toluene	ND	50	49	98.0	65 - 125
EthylBenzene	ND	50	49	98.0	70 - 118
O Xylene	ND	50	49	98.0	72 - 117
M & P Xylene	ND	100	98	98.0	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	1100	20	1100	NC	1100	NC	NC	20	39 - 150
BENZENE	49	20	66	85.0	67	90.0	5.71	21	32 - 164
TOLUENE	ND	20	23	115	24	120	4.26	20	38 - 159
ETHYLBENZENE	ND	20	23	115	23	115	0	19	52 - 142
O XYLENE	ND	20	23	115	23	115	0	18	53 - 143
M & P XYLENE	ND	40	45	112	46	115	2.64	17	53 - 144

Analyst: WLR

Sequence Date: 09/30/99

SPL ID of sample spiked: 9909882-03A

Sample File ID: S_I4157.TX0

Method Blank File ID:

Blank Spike File ID: S_I4136.TX0

Matrix Spike File ID: S_I4152.TX0

Matrix Spike Duplicate File ID: S_I4153.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):

9909880-01A 9909880-02A 9909880-03A 9909880-04A
9909881-02A 9909881-03A 9909882-02A 9909882-04A
9909808-04A 9909819-03A 9909819-02A 9909819-04A
9909819-04A 9909882-01A 9909805-05A

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_S990930102100

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	0.96	96.0	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	0.07	0.90	0.97	100	0.92	94.4	5.76	36	36 - 160

Analyst: WLR

Sequence Date: 09/30/99

SPL ID of sample spiked: 9909882-01A

Sample File ID: SSI4158.TX0

Method Blank File ID:

Blank Spike File ID: SSI4138.TX0

Matrix Spike File ID: SSI4154.TX0

Matrix Spike Duplicate File ID: SSI4155.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):

9909819-03A 9909819-04A 9909880-01A 9909880-02A
9909880-03A 9909880-04A 9909881-01A 9909881-02A
9909881-03A 9909882-02A 9909882-04A 9909883-03A
9909882-03A 9909882-01A 9909819-02A

CHAIN OF CUSTODY

AND

SAMPLE RECEIPT CHECKLIST

9909880

CHAIN OF CUSTODY

No. 118682

Page 1 of 1

CONSULTANT'S NAME: Blain Tech Services, Inc.	CONSULTANT'S ADDRESS: 1680 Rogers Ave., San Jose, CA 95112		CONSULTANT PROJECT NUMBER: 990923-P1
BP SITE NUMBER: 11126	BP SITE / FACILITY ADDRESS: 1700 Powell Street, Emeryville		CONSULTANT CONTRACT NUMBER:
CONSULTANT PROJECT MANGER: Doug Sanders Morgan Hargrave	PHONE NUMBER: (408)573-0555 X218	FAX NUMBER: (408)573-7771	FAX NO.: (425)251-0736
BP CONTACT: Scott Hooton	BP ADDRESS: 295 SW 41st St., Renton, WA	PHONE NUMBER: (425)251-0689	FAX NO.: (713)660-8975
LAB CONTACT: SPL - Sonia West	LABORATORY ADDRESS: P.O. Box 20807, Houston, TX	PHONE NUMBER: (800)969-6775	
BP CONTACT REQUESTING RUSH TAT (Print BP Contact Name)	RUSH REQUESTED OF (Print Consultant Contact Name)	DATE/TIME	SHIPMENT DATE / SHIPMENT METHOD / AIRBILL NUMBER

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 #	TPH-G	BTEX	MTBE	COMMENTS
XA	9/13	8:42	W	3			X	X	X	
XB	↓	9:00	↓	↓			↓	↓	↓	
XC		9:20								
XD		9:40								

SAMPLED BY (Please Print Name): Paul Sanna

SAMPLED BY (Signature): Paul Sanna

ADDITIONAL COMMENTS: 5 L

RELINQUISHED BY / AFFILIATION (Print Name / Signature)	DATE	TIME	ACCEPTED BY / AFFILIATION (Print Name / Signature)	DATE	TIME
Paul Sanna	9/27/99	4:45PM			
				9/28/99	1000

CLV-18722-A (2/97)
PKG/50

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

SPL Houston Environmental Laboratory

Sample Login Checklist

Date:	Time:
9/28/99	1000

SPL Sample ID:
9909880

			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 #)	806949045983	
		Other:		
11	Method of sample disposal:	SPL Disposal	✓	
		HOLD		
		Return to Client		

Name:	Date:
[signature]	9/28/99

Field
Data
Sheets

WELL GAUGING DATA

Project # 990923-P1 Date 9-23-99 Client BP

Site 1700 Powell St. Emeryville

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	
MW-1	2					4.21	11.39		C
MW-2	2					4.75	10.60		B
MW-3	2					6.17	11.90		
MW-4	2					8.32	10.96		
MW-5	2					5.43	13.90		A
MW-6	2					6.45	13.50		
MW-7	2					6.23	13.95		
MW-8	2					4.22	13.80		
MW-9	4					4.74	13.79		D

BP WELL MONITORING DATA SHEET

Project #: 990923-P1	Station # 11126
Sampler: Paul	Date: 9-23-99
Well I.D.: MW-5	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 13.90	Depth to Water: 5.43
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

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

Purge Method: Bailer / Disposable Bailer ✓ / Middleburg / Electric Submersible / Extraction Pump / Other: ____

Sampling Method: Bailer / Disposable Bailer ✓ / Extraction Port / Other: ____

1.3	X	3	=	4.0 Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume

Time	Temp (°F)	pH	Cond.	Gals. Removed	Observations
8:36	68.8	6.7	2476	1.5	
8:37	67.6	6.7	2389	3.0	
8:38	67.4	6.6	2342	4.0	

Did well dewater? Yes (No) Gallons actually evacuated: 4.0

Sampling Time: 8:42 Sampling Date: 9-23-99

Sample I.D. (Blind): A Laboratory: (SPL) Other ____

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

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

BP WELL MONITORING DATA SHEET

Project #: 990923-P1	Station # 1126
Sampler: Paul	Date: 9-23-99
Well I.D.: MW-2	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 10.60	Depth to Water: 4.75
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

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

Purge Method: Bailer / Disposable Bailer ✓ / Middleburg / Electric Submersible / Extraction Pump / Other: ____

Sampling Method: Bailer / Disposable Bailer ✓ / Extraction Port / Other: ____

1 Case Volume (Gals.)	X	Specified Volumes	=	Calculated Volume
.93	X	3	=	2.8 Gals.

Time	Temp (°F)	pH	Cond.	Gals. Removed	Observations
8:54	67.6	7.2	2973	1	
8:55	67.4	7.1	2843	2	
8:56	67.2	7.1	2821	3	

Did well dewater? Yes (No)		Gallons actually evacuated: 3		
Sampling Time: 9:00		Sampling Date: 9-23-99		
Sample I.D. (Blind): B		Laboratory: (SPL)		Other____
Analyzed for: (TPH-G BTEX MTBE) TPH-D		Other:		
D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

BP WELL MONITORING DATA SHEET

Project #: 990923-P1	Station # 11126
Sampler: PAC 1	Date: 9-23-99
Well I.D.: MW-1	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 11.39	Depth to Water: 4.21
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

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

Purge Method: Bailer / Disposable Bailer ✓ / Middleburg / Electric Submersible / Extraction Pump / Other: ____

Sampling Method: Bailer / Disposable Bailer ✓ / Extraction Port / Other: ____

1 Case Volume (Gals.)	X	Specified Volumes	=	Calculated Volume
1.1	X	3	=	3.4 Gals.

Time	Temp (°F)	pH	Cond.	Gals. Removed	Observations
9:12	70.2	7.1	2214	1.0	
9:13	69.6	7.0	2112	2.0	
9:15	69.4	7.0	2089	3.5	

Did well dewater? Yes (No)		Gallons actually evacuated: 3.5	
Sampling Time: 9:20		Sampling Date: 9-23-99	
Sample I.D. (Blind): C		Laboratory: (SPL)	Other ____
Analyzed for: (TPH-G BTEX MTBE) TPH-D		Other:	
D.O. (if req'd):	Pre-purge: ____ mg/L	Post-purge:	____ mg/L
O.R.P. (if req'd):	Pre-purge: ____ mV	Post-purge:	____ mV

BP WELL MONITORING DATA SHEET

Project #: 990923-P1	Job # 11126
Sampler: Paul	Date: 9-23-99
Well I.D.: MW-9	Well Diameter: (2) 3 (4) 6 8 ___
Total Well Depth: 13.79	Depth to Water: 4.74
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

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

Purge Method: Bailer / Disposable Bailer / Middleburg / Electric Submersible ✓ / Extraction Pump / Other: ___

Sampling Method: Bailer / Disposable Bailer ✓ / Extraction Port / Other: ___

5.8 (1 Case Volume (Gals.)) X 3 (Specified Volumes) = 17.6 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
9:32	69.6	6.9	1979	/	6	
9:33	69.4	6.7	1968	/	12	
9:34	69.2	6.7	1942	/	18	

Did well dewater? Yes (No) Gallons actually evacuated: 18

Sampling Time: 9:40 Sampling Date: 9-23-99

Sample I.D.: ~~MW-9~~ D Laboratory: (SPL) Other ___

Analyzed for: (TPH-G BTEX ~~MTBE~~ TPH-D) Other:

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