



R0456



Scott T. Hooton  
Portfolio Manager

BP Oil Company  
Midwest Environmental Services  
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Bldg. 13, Suite N  
Renton, WA 98055

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November 7, 2001

Mr. Don Hwang  
Alameda County Health Care Services  
Agency  
1131 Harbor Bay Parkway, Room 250  
Alameda, CA 94502-6577

NOV 15 2001

RE: Former BP Oil Site No. 11102  
100 McArthur Boulevard  
Oakland, CA

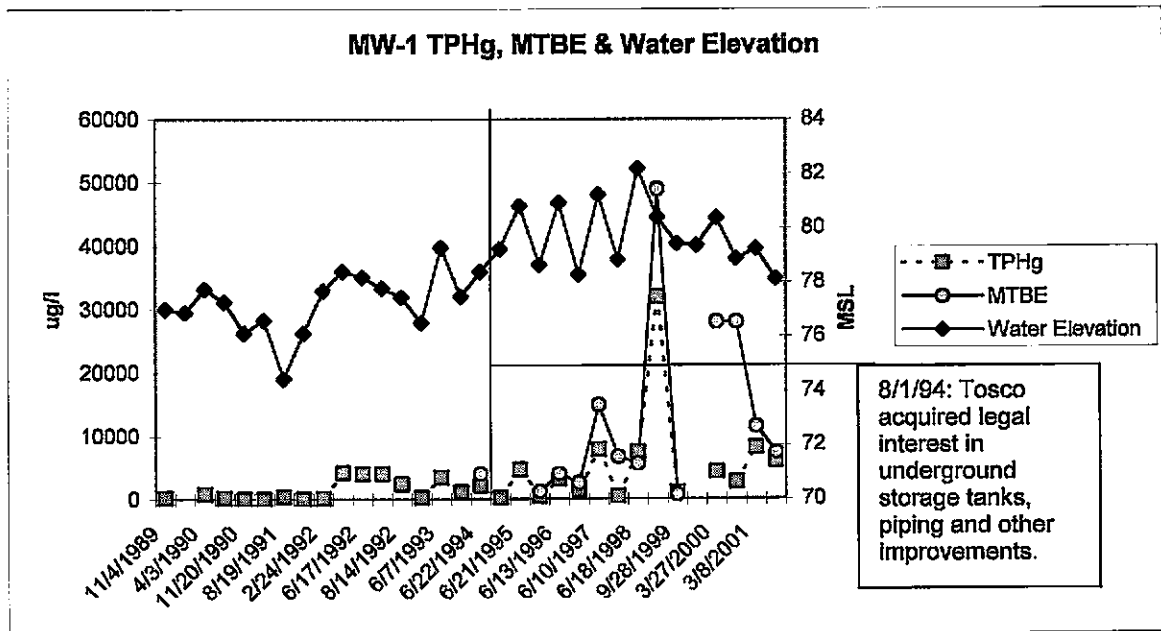
Direct: 425/251-0689  
Cell: 206/335-0689  
hootonst@bp.com  
www.bp.com

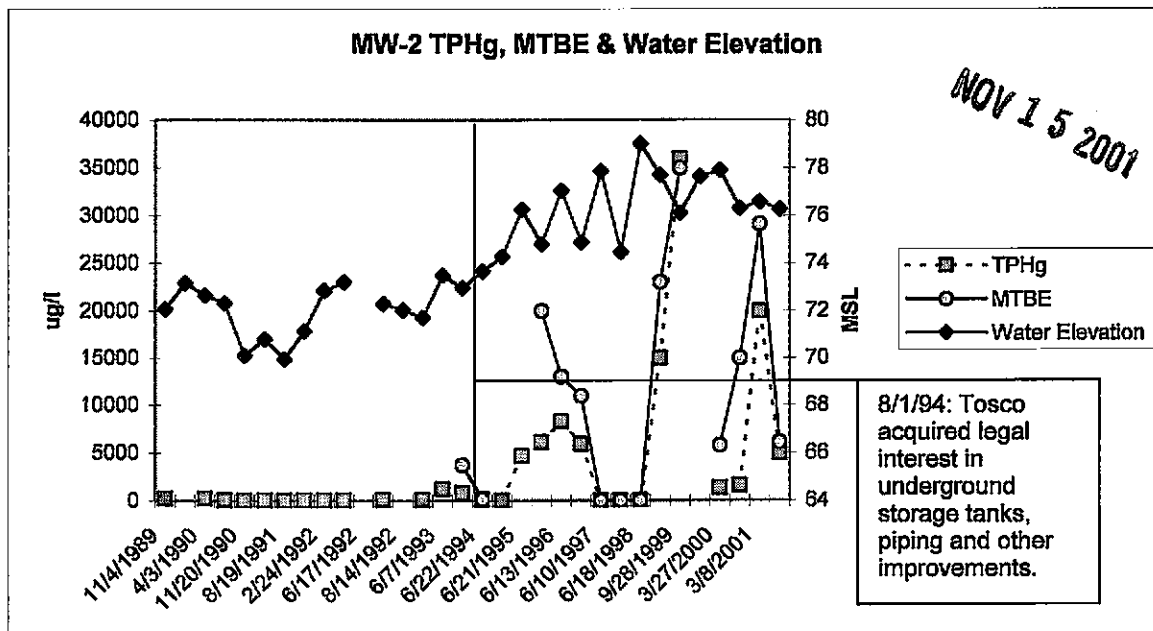
Dear Mr. Hwang:

This transmits the 29 October 2001 *Third Quarter 2001 Groundwater Monitoring* report prepared by Blaine Tech Services on behalf of BP. The report summarizes chemical data obtained since 1989, including results for samples recently obtained on 21 September 2001.

The report shows that aromatic hydrocarbons were detected in one of the three wells sampled on 21 September 2001. MTBE was also detected in samples obtained from all of the monitoring wells sampled on 21 September 2001, with the highest concentrations associated with wells MW-1 (7,370 µg/l) and MW-2 (6,110 µg/l).

MTBE, TPHg and water elevation data for these wells is shown on the following graphs.





Alameda County Health Care Services notes that additional actions will be required if these monitoring results are consistent with data from the proceeding quarter. These actions include increasing the frequency of sampling, the installation of additional monitoring wells, and the preparation of a Corrective Action Plan. To the extent that these requirements arise from increasing concentrations documented during Tosco's operations, BP will look to Tosco to perform the required corrective action.

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

Sincerely,

Scott Hooton

Attachment

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

BLAINE  
TECH SERVICES, INC.



1680 ROGERS AVENUE  
SAN JOSE, CA 95112-1105  
(408) 573-7771 FAX  
(408) 573-0555 PHONE  
CONTRACTOR'S LICENSE #746684  
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NOV 15 2001

October 29, 2001

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

### 3rd Quarter 2001 Monitoring at 11102

Third Quarter 2001 Groundwater Monitoring  
BP Service Station Number 11102  
100 MacArthur Blvd.  
Oakland, CA

Monitoring Performed on September 21, 2001

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#### Groundwater Sampling Report 010921-C-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', with a stylized flourish at the end.

Francis Thie  
Vice President

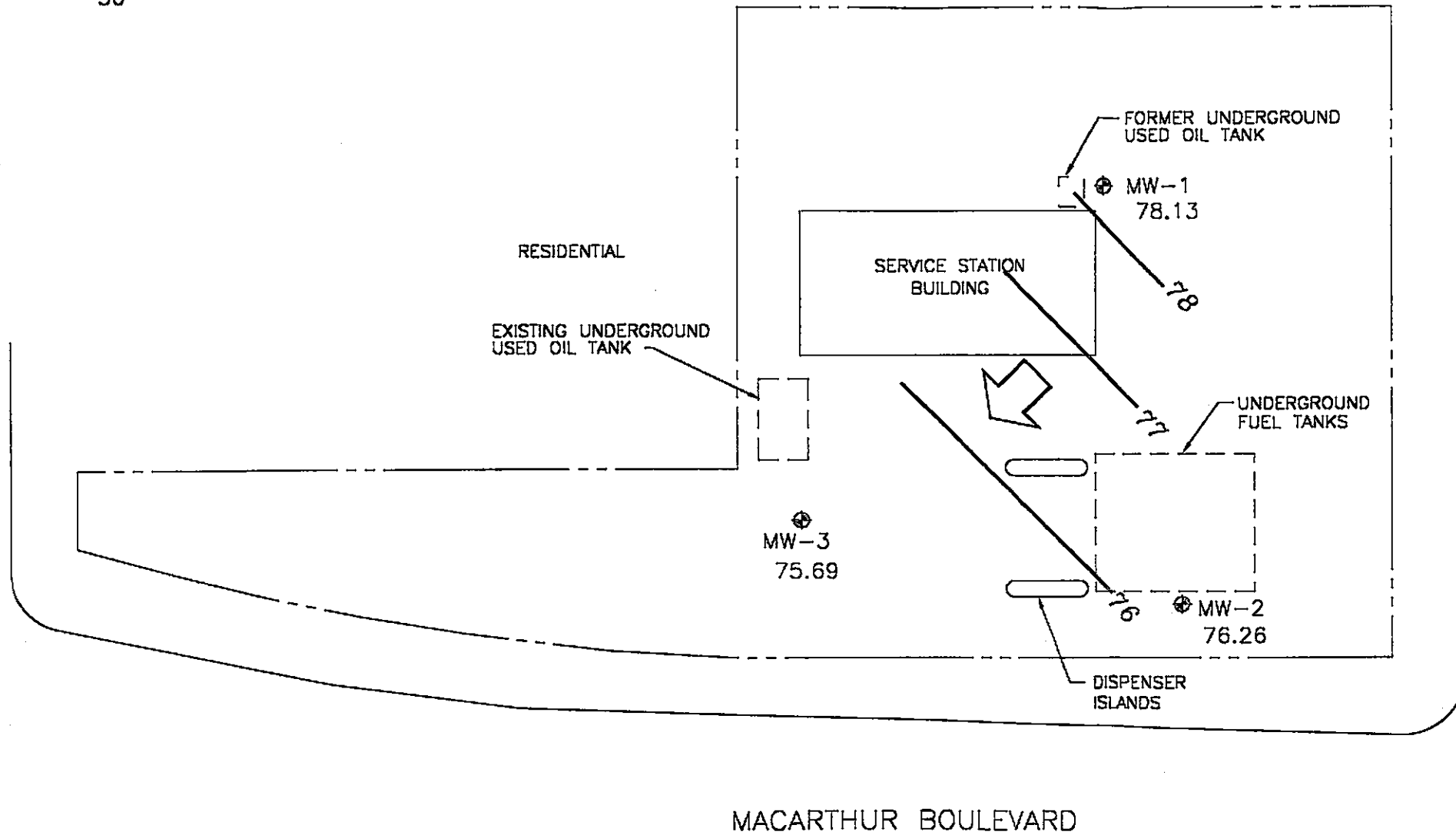
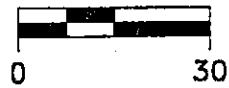
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attachments: Professional Engineering Appendix  
Cumulative Table of Well Data and Analytical Results  
Analytical Appendix  
Field Data Sheets

# **Professional Engineering Appendix**

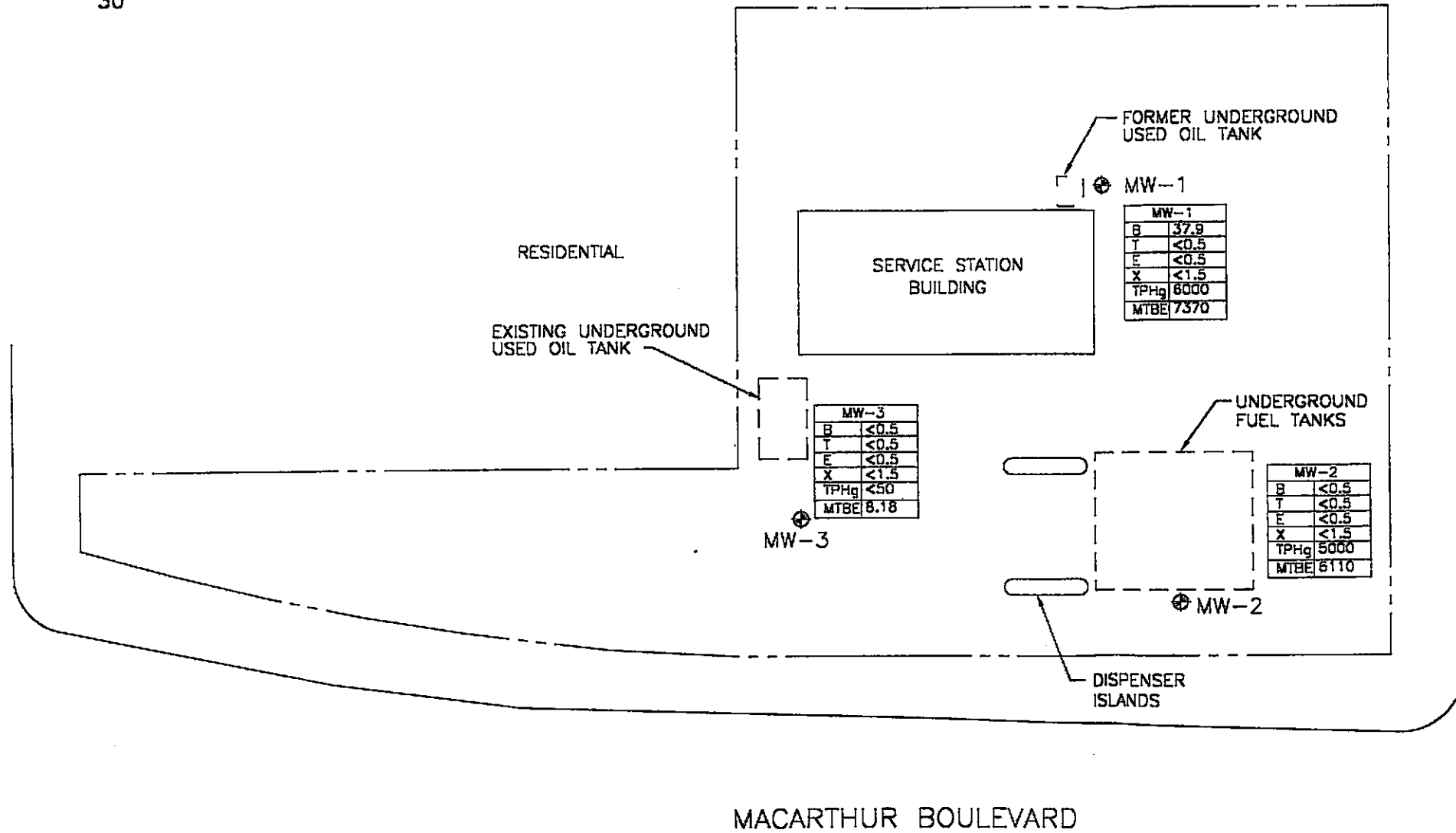
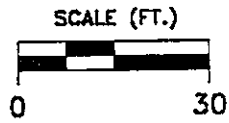


SCALE (FT.)



- EXPLANATION**
- ⊕ GROUNDWATER MONITORING WELL
  - 79.24 GROUNDWATER ELEVATION (FT, MSL)
  - 78 — GROUNDWATER ELEVATION CONTOUR (FT, MSL)
  - ↙ APPROXIMATE GROUNDWATER FLOW DIRECTION; APPROXIMATE GRADIENT = 0.03





**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 EPA 8260

MW-1	
B	37.9
T	<0.5
E	<0.5
X	<1.5
TPHg	8000
MTBE	7370

MW-3	
B	<0.5
T	<0.5
E	<0.5
X	<1.5
TPHg	450
MTBE	8.18

MW-2	
B	<0.5
T	<0.5
E	<0.5
X	<1.5
TPHg	5000
MTBE	6110

# **Table of Well Data and Analytical Results**



TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER RESULTS

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-DCA (ug/l)	1,2-DCA (ug/l)	HVOC's (ug/l)	DO (ppm)	LAB
MW-1	11/04/89	90.20	13.21	76.99	ND<500	ND<50	3.4	0.6	ND<0.3	ND<0.3	--	ND<5000	--	0.9	--	--	SAL
MW-1	11/11/89	90.20	13.32	76.88	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	04/03/90	90.20	12.46	77.74	820	--	64	1.9	23	34	--	--	--	--	--	--	ANA
MW-1	07/30/90	90.20	12.92	77.28	190	ND<50	11	ND<5.0	ND<5.0	ND<5.0	--	ND<5000	--	ND	--	--	ANA
MW-1	11/20/90	90.20	14.08	76.12	50	79	2.4	ND<0.3	ND<0.3	ND<0.3	--	ND<5000	--	4.0	--	--	SAL
MW-1	03/01/91	90.20	13.61	76.59	ND<1000	ND<1000	0.9	ND<0.3	ND<0.3	0.3	--	14000	--	ND	--	--	SAL
MW-1	08/19/91	90.20	15.74	74.46	370	ND<50	35	0.73	6.4	5.6	--	ND<5000	--	1.4	--	--	SEQ
MW-1	11/13/91	90.20	14.08	76.12	60	ND<50	0.68	ND<0.3	ND<0.3	ND<0.3	--	ND<5000	--	1.0	--	--	SEQ
MW-1	02/24/92	90.20	12.52	77.68	140	100	3.9	0.66	1.2	3.8	--	ND<5000	--	1.7	--	--	SEQ
MW-1	05/19/92	90.20	11.8	78.40	4200	910	440	21	250	37	--	ND<5000	--	ND	--	--	SEQ
MW-1	06/17/92	90.20	12.01	78.19	4000	560	350	14	150	17	--	ND<5000	--	ND	--	--	SEQ
MW-1	07/22/92	90.20	12.42	77.78	4000	--	ND<5.0	19	210	61	--	--	--	--	--	--	ANA
MW-1	08/14/92	90.20	12.75	77.45	2400	1700	330	20	150	47	--	ND<5000	--	ND<2.5	--	--	SEQ
MW-1	11/11/92	90.20	13.69	76.51	260	92	30	3.4	7.6	6.8	--	ND<5000	--	ND<2.5	--	--	ANA
MW-1	06/07/93	90.20	10.93	79.27	3400	440	98	11	21	7.6	--	--	6.2	0.9	--	--	PACE
QC-1 (c)	06/07/93	--	--	--	3700	--	120	12	26	9.5	--	--	--	--	--	--	PACE
MW-1	12/02/93	90.20	12.72	77.48	1100	120	8.3	3.6	0.6	1.5	--	ND<5000	2.6	1.8	--	--	PACE
MW-1	06/22/94	90.20	11.81	78.39	2100	ND<50	32	3.8	2.2	17	4000 (d)	ND<5000	2.3	3.3	--	3.2	PACE
QC-1 (c)	06/22/94	--	--	--	2100	--	30	3.2	2.0	15	2000 (d)	--	--	--	--	--	PACE
MW-1	01/10/95	90.20	10.97	79.23	ND<500	420	120	ND<5	ND<5	ND<10	--	--	ND<1	1	--	3.9	ATI
QC-1 (c)	01/10/95	--	--	--	ND<500	--	120	ND<5	5	ND<10	--	--	--	--	--	--	ATI
MW-1	06/21/95	90.20	9.38	80.82	4700	1300	16	ND<5.0	ND<5.0	ND<10	--	2900	2.0	0.38	0.6 (e)	6.7	ATI
QC-1 (c)	06/21/95	--	--	--	3600	--	ND<13	ND<5.0	ND<5.0	ND<10	--	--	--	--	--	--	ATI
MW-1	12/27/95	90.20	11.55	78.65	430	2100	ND<2.5	ND<2.5	ND<2.5	ND<5.0	1200	640	0.67	ND<0.20	--	6.3	ATI
MW-1	06/13/96	90.20	9.28	80.92	3200	920	51	ND<12	ND<12	ND<12	4000	2000	--	--	--	6.3	SPL
MW-1	12/04/96	90.20	11.91	78.29	1400	280	6.2	ND<5	ND<5	ND<5	2600	2000	ND<5.0	ND<5.0	6.0 (f)	6.7	SPL
MW-1	06/10/97	90.20	8.97	81.23	7900	1700	12	ND<10	ND<10	ND<10	15000	ND<5	ND<250	ND<250	ND	6.0	SPL
QC-1 (c)	06/10/97	--	--	--	7700	--	14	ND<25	ND<25	ND<25	13000	--	--	--	--	--	SPL
MW-1	12/12/97	90.20	11.37	78.83	440	760	8.8	ND<1.0	2.6	9.4	6700	1200	ND<1.0	ND<1.0	ND	5.5	SPL
MW-1	06/18/98	90.20	8.02	82.18	7500	2900	ND<2.5	ND<5.0	ND<5.0	ND<5.0	5600	ND<5	ND<5.0	ND<5.0	ND	4.9	SPL
MW-1	03/09/99	90.20	9.80	80.40	32000	--	100	16	72	110	49000	--	--	--	--	--	SPL
MW-1	09/28/99	90.20	10.78	79.42	1000	--	ND<5.0	ND<5.0	ND<5.0	ND<5.0	730	--	ND<1.0	ND<1.0	ND<1.0	--	SPL
MW-1	10/14/99	90.20	10.84	79.36	--	660	--	--	--	--	--	--	--	--	--	--	SPL
MW-1	03/27/00	90.20	9.83	80.37	4300	--	160	19	37	43	28000	--	--	ND<500	--	--	PACE
MW-1	09/28/00	90.20	11.33	78.87	2700	--	10	2.6	1.1	2.7	28000	--	--	--	--	--	PACE
MW-1	03/08/01	90.20	10.96	79.24	8200	--	23.5	6.09	5.23	8.97	11600	--	--	--	--	--	PACE
MW-1	09/21/01	90.20	12.07	78.13	6000	--	37.9	ND<0.5	ND<0.5	ND<1.5	7370	--	--	--	--	--	PACE

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER RESULTS

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-DCA (ug/l)	1,2-DCA (ug/l)	HVOC's (ug/l)	DO (ppm)	LAB
MW-2	11/04/89	87.91	15.84	72.07	ND<500	---	6.5	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	---	---	SAL
MW-2	11/11/89	87.91	14.75	73.16	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	04/03/90	87.91	15.25	72.66	ND<500	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	---	ANA
MW-2	07/30/90	87.91	15.59	72.32	61	---	6.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	---	ANA
MW-2	11/20/90	87.91	17.81	70.10	ND<50	---	0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	---	---	SAL
MW-2	03/01/91	87.91	17.11	70.80	ND<100	---	0.4	ND<0.3	ND<0.3	ND<0.3	---	---	---	4.0	---	---	SAL
MW-2	08/19/91	87.91	17.97	69.94	ND<30	---	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	---	---	SEQ
MW-2	11/13/91	87.91	16.76	71.15	38	---	0.32	ND<0.3	ND<0.3	ND<0.3	---	---	---	---	---	---	SEQ
MW-2	02/24/92	87.91	15.07	72.84	ND<50	---	ND<0.5	ND<0.5	ND<0.5	0.58	---	---	---	16	---	---	SEQ
MW-2	05/19/92	87.91	14.7	73.21	ND<50	---	0.55	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	---	SEQ
MW-2	07/22/92	87.91	15.6	72.31	90	---	1.3	0.6	0.9	1.9	---	---	---	---	---	---	ANA
MW-2	08/14/92	87.91	15.88	72.03	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	11/11/92	87.91	16.19	71.72	52	---	2.8	ND<0.5	ND<0.5	0.9	---	---	---	---	---	---	ANA
QC-1 (c)	11/11/92	---	---	---	65	---	3.2	ND<0.5	ND<0.5	1.0	---	---	---	---	---	---	ANA
MW-2	06/07/93	87.91	14.42	73.49	1200	---	14	2.8	1.9	1.7	---	---	---	---	---	---	PACE
MW-2	12/02/93	87.91	14.94	72.97	790	---	3.4	0.5	10	ND<0.5	3700 (d)	---	---	---	---	---	PACE
QC-1 (c)	12/02/93	---	---	---	2100	---	32	3.8	2.2	17	3700 (d)	---	2.3	---	---	---	PACE
MW-2	06/22/94	87.91	14.25	73.66	110	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	120 (d)	---	---	---	---	---	3.9 PACE
MW-2	01/10/95	87.91	13.64	74.27	ND<50	---	ND<0.5	ND<0.5	0.6	1	---	---	---	---	---	---	4.3 ATI
MW-2	06/21/95	87.91	11.66	76.25	4700	---	ND<10	ND<10	ND<10	ND<20	---	---	---	---	---	---	7.8 ATI
MW-2	12/27/95	87.91	13.11	74.80	6100	---	ND<25	ND<25	ND<25	ND<50	20000	---	---	---	---	---	6.7 ATI
QC-1 (c)	12/27/95	---	---	---	6300	---	ND<25	ND<25	ND<25	ND<50	19000	---	---	---	---	---	ATI
MW-2	06/13/96	87.91	10.86	77.05	8300	---	ND<2.5	ND<2.5	ND<2.5	ND<2.5	13000	---	---	---	---	---	6.5 SPL
QC-1 (c)	06/13/96	---	---	---	8700	---	ND<5	ND<5	ND<5	ND<5	13000	---	---	---	---	---	SPL
MW-2	12/04/96	87.91	13.03	74.88	5900	---	ND<2.5	ND<5	ND<5	ND<5	11000	---	---	---	---	---	6.3 SPL
QC-1 (c)	12/04/96	---	---	---	5900	---	ND<2.5	ND<5	ND<5	ND<5	11000	---	---	---	---	---	SPL
MW-2	06/10/97	87.91	10.04	77.87	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	---	---	5.8 SPL
MW-2	12/12/97	87.91	12.44	75.47	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	---	---	5.7 SPL
MW-2	06/18/98	87.91	8.89	79.02	50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	---	---	5.3 SPL
QC-1 (c)	06/18/98	---	---	---	ND<50	---	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	---	---	---	---	SPL
MW-2	03/09/99	87.91	10.20	77.71	15000	---	ND<5.0	ND<5.0	ND<5.0	ND<5.0	23000	---	---	---	---	---	SPL
MW-2	09/28/99	87.91	11.81	76.10	36000	---	ND<5.0	12	7.0	26	35000	---	ND<5.0	7.7	ND<5.0	---	SPL
MW-2	10/14/99	87.91	10.27	77.64	---	100	---	---	---	---	---	---	---	---	---	---	SPL
MW-2	03/27/00	87.91	9.98	77.93	1300	---	ND<0.5	ND<0.5	0.51	ND<0.5	5800	---	---	ND<100	---	---	PACE
MW-2	09/28/00	87.91	11.40	76.51	1600	---	1.8	1.7	0.54	2.2	15000	---	---	---	---	---	PACE
MW-2	03/08/01	87.91	11.16	76.75	20000	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	29100	---	---	---	---	---	PACE
MW-2	09/21/01	87.91	11.65	76.26	5000	---	ND<0.5	ND<0.5	ND<0.5	ND<1.5	6110	---	---	---	---	---	PACE

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER RESULTS

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-DCA (ug/l)	1,2-DCA (ug/l)	HVOC's (ug/l)	DO (ppm)	LAB
MW-3	11/04/89	87.02	15.4	71.62	ND<500	--	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	--	--	--	--	--	SAL
MW-3	11/11/89	87.02	14.1	72.92	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	04/03/90	87.02	13.90	73.12	ND<100	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	ANA
MW-3	07/30/90	87.02	13.77	73.25	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	ND<5000	--	--	--	--	ANA
MW-3	11/20/90	87.02	14.67	72.35	ND<50	--	0.3	0.8	0.4	1.5	--	--	--	--	--	--	SAL
MW-3	03/01/91	87.02	15.22	71.80	ND<100	--	0.4	ND<0.3	ND<0.3	ND<0.3	--	--	--	ND	--	--	SAL
MW-3	08/19/91	87.02	13.15	73.87	ND<30	--	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	--	--	--	--	--	SEQ
MW-3	11/13/91	87.02	15.66	71.36	ND<30	--	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	--	--	--	--	--	SEQ
MW-3	02/24/92	87.02	15.01	72.01	ND<50	--	0.65	1.4	0.66	4.4	--	--	--	ND	--	--	SEQ
MW-3	05/19/92	87.02	15.52	71.50	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	SEQ
MW-3	07/22/92	87.02	15.63	71.39	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	ND<5000	--	ND<0.50	--	--	ANA
MW-3	08/14/92	87.02	13.57	73.45	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	11/11/92	87.02	14.13	72.89	ND<50	--	ND<0.5	0.7	ND<0.5	1.3	--	--	--	--	--	--	ANA
MW-3	06/07/93	87.02	12.13	74.89	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	PACE
MW-3	12/02/93	87.02	13.29	73.73	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	--	PACE
MW-3	06/22/94	87.02	12.78	74.24	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--	--	--	2.9	PACE
MW-3	01/10/95	87.02	12.01	75.01	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<1	--	--	--	1	--	3.8	ATI
MW-3	06/21/95	87.02	11.57	75.45	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1.0	--	--	--	--	--	7.4	ATI
MW-3	12/27/95	87.02	13.47	73.55	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1.0	5.7	--	--	--	--	7.3	ATI
MW-3	06/13/96	87.02	11.22	75.80	60	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<10	--	--	--	--	6.8	SPL
MW-3	12/04/96	87.02	13.28	73.74	ND<50	--	ND<0.5	ND<1	ND<1	ND<1	ND<10	--	--	--	--	6.7	SPL
MW-3	06/10/97	87.02	10.22	76.80	ND<50	--	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	--	--	--	--	6.1	SPL
MW-3	12/12/97	87.02	12.61	74.41	ND<50	--	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	--	--	--	--	5.6	SPL
QC-1 (c)	12/12/97	--	--	--	ND<50	--	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	--	--	--	--	--	SPL
MW-3	06/18/98	87.02	9.07	77.95	50	--	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	--	--	--	--	5.3	SPL
MW-3	06/18/98	87.02	12.80	74.22	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	09/28/99	87.02	13.76	73.26	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	03/27/00	87.02	13.77	73.25	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.6	--	--	--	--	--	PACE
MW-3	09/28/00	87.02	11.28	75.74	ND<50	--	ND<0.5	7.4	ND<0.5	1.3	2.0	--	--	--	--	--	PACE
MW-3	03/08/01	87.02	11.75	75.27	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	60.4	--	--	--	--	--	PACE
MW-3	09/21/01	87.02	11.33	75.69	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<1.5	8.18	--	--	--	--	--	PACE

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER RESULTS

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-DCA (ug/l)	1,2-DCA (ug/l)	HVOC's (ug/l)	DO (ppm)	LAB
QC-2 (g)	11/11/92	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	---	ANA
QC-2 (g)	06/07/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	---	PACE
QC-2 (g)	12/02/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	---	PACE
QC-2 (g)	06/22/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	---	PACE
QC-2 (g)	01/10/95	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	---	---	---	---	ATI
QC-2 (g)	06/21/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	---	---	---	ATI
QC-2 (g)	12/27/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	---	---	---	ATI
QC-2 (g)	06/13/96	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<10	---	---	---	---	---	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER RESULTS

ADDITIONAL ANALYSES

Well ID	DATE OF SAMPLING/ MONITORING	MTBE (ug/l)	DIPE (ug/l)	ETBE (ug/l)	TAME (ug/l)	1,2-DBA (ug/l)	LAB
MW-1	03/27/00	26000	ND<500	ND<500	ND<500	ND<500	PACE
MW-2	03/27/00	6000	ND<100	ND<100	190	ND<100	PACE

ABBREVIATIONS:

TPH-G	Total petroleum hydrocarbons as gasoline	(a)	Top of casing elevations surveyed to the nearest 0.01 foot above mean sea level.
TPH-D	Total petroleum hydrocarbons as diesel	(b)	Groundwater elevations in feet above mean sea level.
B	Benzene	(c)	Blind duplicate.
T	Toluene	(d)	A copy of the documentation for this data is included in Appendix C of Alisto report 10-076-06-002.
E	Ethylbenzene	(e)	Tetrachloroethene.
X	Total xylenes	(f)	Trans-1,2-Dichloroethene
TOG	Total oil and grease	(g)	Travel blank.
1,1-DCA	1,1-Dichloroethane		
1,2-DCA	1,2-Dichloroethane		
1,2-DBA	1,2-Dibromoethane		
HVOC's	Halogenated volatile organic compounds		
MTBE	Methyl tert butyl ether		
DIPE	Di-Isopropyl Ether		
ETBE	Ethyl t-Butyl Ether		
TAME	t-Amyl Methyl Ether		
DO	Dissolved oxygen		
ug/l	Micrograms per liter		
ppm	Parts per million		
ND	Not detected above reported detection limit		
—	Not analyzed/measured/applicable		
SAL	Superior Analytical Laboratory		
ANA	Anametrix, Inc.		
SEQ	Sequoia Analytical Laboratory		
PACE	Pace, Inc.		
ATI	Analytical Technologies, Inc.		
SPL	Southern Petroleum Laboratories		

# **Analytical Appendix**



**Pace Analytical Services, Inc.**  
900 Gemini Avenue  
Houston, TX 77058  
Phone: 281.488.1810  
Fax: 281.488.4661

October 05, 2001

Ms. Cindy Magyar  
Blaine Tech Services, Inc.  
1680 Rogers Ave.  
San Jose, CA 95112

RE: Lab Project Number: 8523490  
Client Project ID: BP Site# 11102

Dear Ms. Magyar:

Enclosed are the analytical results for sample(s) received by the laboratory on September 26, 2001. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,



Paula Kirtley  
Project Manager

Enclosures

## REPORT OF LABORATORY ANALYSIS

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Blaine Tech Services, Inc.  
1680 Rogers Ave.  
San Jose, CA 95112

Lab Project Number: 8523490  
Client Project ID: BP Site# 11102

Attn: Ms. Cindy Magyar  
Phone:

Lab Sample No: 851712200      Project Sample Number: 8523490-001      Date Collected: 09/21/01 11:09  
Client Sample ID: MW-1 (11102)      Matrix: Water      Date Received: 09/26/01 08:55

Parameters	Results	Units	Report Limit	Dilution	Analyzed	CAS No.	Ftnote	Reg Limi
<b>GC Volatiles</b>								
GAS by Mod 8015, Water      Prep/Method: EPA 8015 Modified / EPA 8015 Modified								
Gasoline Range Organics	6000	ug/l	1200	25.0	10/05/01 15:11	LJAS		
1,4-Difluorobenzene (S)	84	%		1.0	10/05/01 15:11	LJAS		
4-Bromofluorobenzene (S)	86	%		1.0	10/05/01 15:11	LJAS 460-00-4		
SW8021 Aromatics, Water      Prep/Method: See analytical meth / EPA 8021								
Benzene	37.9	ug/l	0.500	1.0	10/05/01 13:17	LJAS 71-43-2		
Ethylbenzene	ND	ug/l	0.500	1.0	10/05/01 13:17	LJAS 100-41-4		
Toluene	ND	ug/l	0.500	1.0	10/05/01 13:17	LJAS 108-88-3		
Xylene (Total)	ND	ug/l	1.50	1.0	10/05/01 13:17	LJAS 1330-20-7		
Methyl-tert-butyl ether	7370	ug/l	12.5	25.0	10/05/01 13:17	LJAS 1634-04-4		
1,4-Difluorobenzene (S)	98	%		1.0	10/05/01 13:17	LJAS		
4-Bromofluorobenzene (S)	98	%		1.0	10/05/01 13:17	LJAS 460-00-4		

## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 8523490  
Client Project ID: BP Site# 11102

Lab Sample No: 851712201      Project Sample Number: 8523490-002      Date Collected: 09/21/01 11:30  
Client Sample ID: MW-2      Matrix: Water      Date Received: 09/26/01 08:55

Parameters	Results	Units	Report Limit	Dilution	Analyzed	CAS No.	Ftnote	Reg	Limi
<b>GC Volatiles</b>									
GAS by Mod 8015, Water      Prep/Method: EPA 8015 Modified / EPA 8015 Modified									
Gasoline Range Organics	5000	ug/l	1200	25.0	10/05/01 14:51	LJAS			
1,4-Difluorobenzene (S)	84	%		1.0	10/05/01 14:51	LJAS			
4-Bromofluorobenzene (S)	87	%		1.0	10/05/01 14:51	LJAS	460-00-4		
SW8021 Aromatics, Water      Prep/Method: See analytical meth / EPA 8021									
Benzene	ND	ug/l	0.500	1.0	10/05/01 13:36	LJAS	71-43-2		
Ethylbenzene	ND	ug/l	0.500	1.0	10/05/01 13:36	LJAS	100-41-4		
Toluene	ND	ug/l	0.500	1.0	10/05/01 13:36	LJAS	108-88-3		
Xylene (Total)	ND	ug/l	1.50	1.0	10/05/01 13:36	LJAS	1330-20-7		
Methyl-tert-butyl ether	6110	ug/l	12.5	25.0	10/05/01 13:36	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	99	%		1.0	10/05/01 13:36	LJAS			
4-Bromofluorobenzene (S)	101	%		1.0	10/05/01 13:36	LJAS	460-00-4		

## REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 8523490  
Client Project ID: BP Site# 11102

Lab Sample No: 851712202      Project Sample Number: 8523490-003      Date Collected: 09/21/01 10:49  
Client Sample ID: MW-3      Matrix: Water      Date Received: 09/26/01 08:55

Parameters	Results	Units	Report Limit	Dilution	Analyzed	CAS No.	Ftnote	Reg	Limit
<b>GC Volatiles</b>									
GAS by Mod 8015, Water      Prep/Method: EPA 8015 Modified / EPA 8015 Modified									
Gasoline Range Organics	ND	ug/l	50.	1.0	10/05/01 12:57	LJAS			
1,4-Difluorobenzene (S)	84	%		1.0	10/05/01 12:57	LJAS			
4-Bromofluorobenzene (S)	87	%		1.0	10/05/01 12:57	LJAS	460-00-4		
SW8021 Aromatics, Water      Prep/Method: See analytical meth / EPA 8021									
Benzene	ND	ug/l	0.500	1.0	10/05/01 12:57	LJAS	71-43-2		
Ethylbenzene	ND	ug/l	0.500	1.0	10/05/01 12:57	LJAS	100-41-4		
Toluene	ND	ug/l	0.500	1.0	10/05/01 12:57	LJAS	108-88-3		
Xylene (Total)	ND	ug/l	1.50	1.0	10/05/01 12:57	LJAS	1330-20-7		
Methyl-tert-butyl ether	8.18	ug/l	0.500	1.0	10/05/01 12:57	LJAS	1634-04-4		
1,4-Difluorobenzene (S)	99	%		1.0	10/05/01 12:57	LJAS			
4-Bromofluorobenzene (S)	101	%		1.0	10/05/01 12:57	LJAS	460-00-4		

**REPORT OF LABORATORY ANALYSIS**

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Lab Project Number: 8523490  
Client Project ID: BP Site# 11102

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**PARAMETER FOOTNOTES**

ND Not Detected  
NC Not Calculable  
(S) Surrogate

Date: 10/05/01

Page: 4

**REPORT OF LABORATORY ANALYSIS**

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QUALITY CONTROL DATA

Lab Project Number: 8523490  
Client Project ID: BP,Site# 11102

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 851714022 851714023

Parameter	Units	851712202	Spike Conc.	MS	MSD	MS	MSD	RPD	Footnotes
		Result		Result	Result	% Rec	% Rec		
Methyl-tert-butyl ether	ug/l	8.182	50.00	63.72	63.06	111	110	1	
1,4-Difluorobenzene (S)						100	99		
4-Bromofluorobenzene (S)						101	101		

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Lab Project Number: 8523490  
Client Project ID: BP Site# 11102

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**QUALITY CONTROL DATA PARAMETER FOOTNOTES**

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

- LCS(D)Laboratory Control Sample (Duplicate)
- MS(D)Matrix Spike (Duplicate)
- DUP Sample Duplicate
- ND Not Detected
- NC Not Calculable
- RPD Relative Percent Difference
- (S) Surrogate

**REPORT OF LABORATORY ANALYSIS**

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# CHAIN OF CUSTODY

CONSULTANT'S NAME Blaine Tech Services, Inc.		CONSULTANT'S ADDRESS 1680 Rogers Ave., San Jose CA 95112	
BP SITE NUMBER 11102	BP SITE / FACILITY ADDRESS 100 MacArthur Blvd., Oakland		CONSULTANT PROJECT NUMBER 010921-24
CONSULTANT PROJECT MANAGER Scott Boor		PHONE NUMBER (408) 573-0555 x 223	FAX NUMBER (408) 573-7771
BP CONTACT Scott Hooton		BP ADDRESS 295 SW 41st Street, Suite N, Renton WA	CONSULTANT CONTRACT NUMBER J588458
LAB CONTACT Pace - Paula Kirtley		PHONE NUMBER (425) 251-0689	FAX NO. (425) 251-0736
BP CONTACT REQUESTING RUSH TAT (Print BP Contact Name)		LABORATORY ADDRESS 900 Gemini Ave., Houston, TX 77058	PHONE NUMBER (281) 488-1810
RUSH REQUESTED OF (Print Consultant Contact Name)		DATE/TIME	SHIPMENT DATE
			SHIPMENT METHOD

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

ANALYSIS REQUIRED

AIRBILL NUMBER

SAMPLE DESCRIPTION	COLLECTION DATE	COLLECTION TIME	MATRIX SOIL/WATER	CONTAINERS		PRESERVATIVE	TPH-G + BTEX / MTBE (8015M)	TPH-D (8015M)	FUEL OXYGENATES (8267)	1,2-DCA + EDB (8010)									COMMENTS	
				NO.	TYPE (VOL)	LAB SAMPLE #														
MW-1	9-21	1109	W	3	40mL VOA		X													851712200
MW-2	9-21	1130	W	3			X													201
MW-3	9-21	1049	W	3			X													202

SAMPLED BY (Please Print Name) Hank Castro			SAMPLED BY (Signature) <i>Hank Castro</i>			ADDITIONAL COMMENTS Cooler temp = 2.4°C		
RELINQUISHED BY / AFFILIATION (Print Name / Signature)	DATE	TIME	ACCEPTED BY / AFFILIATION Name / Signature	DATE	TIME			
Hank Castro	9-21							
<i>Hank Castro</i>	9-25-01	1227	AIRBORNE EXPRESS	9/25/01	1227			
Airborne	9-26-01	0855	Trace Monitor / Para.	9/26/01	0855			



# **Field Data Sheets**



## BP WELL MONITORING DATA SHEET

Project #: 010921-C2	Station # 11102
Sampler: Hank	Date: 9-21-01
Well I.D.: MW-1	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth: 32.01	Depth to Water: 12.07
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Purge Method:  Bailer      Sampling Method:  Bailer

Disposable Bailer       Disposable Bailer

Middleburg       Extraction Port

Electric Submersible      Other: \_\_\_\_\_

Extraction Pump

Other: \_\_\_\_\_

<u>12.9</u>	X	<u>3</u>	=	<u>38.7</u> Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume

Time	Temp (°F)	pH	Cond.	Gals. Removed	Observations
1100	67.4	7.1	804	13	
1102	68.1	6.9	826	26	
1104	67.2	6.8	841	39	

Did well dewater? Yes  No  Gallons actually evacuated: 39

Sampling Time: 1109      Sampling Date: 9-21-01

Sample I.D. (Blind): MW-1      Laboratory: Pace 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 #: <u>010921-C2</u>	Station # <u>11102</u>
Sampler: <u>Hank</u>	Date: <u>9-21-01</u>
Well I.D.: <u>MW-3</u>	Well Diameter: 2 3 <u>4</u> 6 8 <u>    </u>
Total Well Depth: <u>32.55</u>	Depth to Water: <u>11.33</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Purge Method: <u>Bailer</u>	Sampling Method: <u>Bailer</u>
<input type="checkbox"/> Disposable Bailer <input type="checkbox"/> Middleburg <input checked="" type="checkbox"/> Electric Submersible <input type="checkbox"/> Extraction Pump Other: _____	<input checked="" type="checkbox"/> Disposable Bailer <input type="checkbox"/> Extraction Port Other: _____

<u>13.7</u>	X	<u>3</u>	=	<u>41.1</u>	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Cond.	Gals. Removed	Observations
<u>1040</u>	<u>67.7</u>	<u>7.0</u>	<u>688</u>	<u>13.7</u>	
<u>1042</u>	<u>67.4</u>	<u>7.2</u>	<u>714</u>	<u>27.4</u>	
<u>1044</u>	<u>66.8</u>	<u>7.1</u>	<u>697</u>	<u>41.1</u>	

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Gallons actually evacuated: <u>41.1</u>
Sampling Time: <del><u>1049</u></del>	Sampling Date: <u>9-21-01</u>
Sample I.D. (Blind): <u>MW-3</u>	Laboratory: <u>Pace</u> Other: _____
Analyzed for: <u>TPH-G BTEX MTBE</u> 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