



Texaco Refining
and Marketing Inc

108 Cutting Boulevard
Richmond, CA 94804

April 1, 1998

ENV - STUDIES, SURVEYS, & REPORTS

**500 Grand Avenue
Oakland, California**

Ms. Susan Hugo
Alameda County Environmental
Health Department
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

Dear Ms. Hugo:

Enclosed is the First Quarter 1998 Groundwater Monitoring and Sampling Report for the subject site.

If you have any questions or comments regarding this site, please call me (510) 236-1770.

Best Regards,
Texaco Refining and Marketing Inc

R. R. Zielinski
Project Manager
Environment, Health and Safety

RRZ:rd

P:\RBD\BLAINES\500\QMRLET.DOC

Enclosure

cc: Mr. Richard Hiatt
CRWQCB - San Francisco Bay Region
2101 Webster St., Suite 500
Oakland, CA 94612

Mr. Keith Winemiller
Pacific Environmental Group, Inc.
2025 Gateway Place, Suite 440
San Jose, CA 95110

RAOFile (w/enclosures)

pr: KEP

**Groundwater Monitoring and Sampling
First Quarter, 1998
at the
Former Texaco Service Station
500 Grand Avenue
Oakland, CA**

BLAINE
TECH SERVICES INC



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

March 25, 1998

**Groundwater Monitoring and Sampling
First Quarter, 1998
at the
Former Texaco Service Station
500 Grand Avenue
Oakland, CA**

This letter presents the results of groundwater monitoring and sampling conducted by Blaine Tech Services, Inc. on January 21, 1998, at the site referenced above (see Plate 1, Site Vicinity Map). Based on groundwater level measurements, the areal hydraulic gradient was estimated to be southeast (see Plate 2, Groundwater Gradient Map). TPHg and benzene concentrations are shown on Plate 3. Tables 1 and 2 list historical groundwater monitoring data and analytical results, respectively.

The certified analytical report, chain-of-custody, field data sheets, bill of lading, and quarterly summary report are in the Appendix, along with Texaco Refining and Marketing Inc., Environment Health & Safety's' Standard Operating Procedures.

Kent Brown
Project Coordinator
Blaine Tech Services, Inc.

Steve E. Krcik
Registered Geologist No. 4976
RRM, Inc.



KEB:dg



SOURCE

1993 THE THOMAS GUIDE
ALAMEDA COUNTY, PAGE 9 (D4)



MILE

1" = 2200'



TEXACO

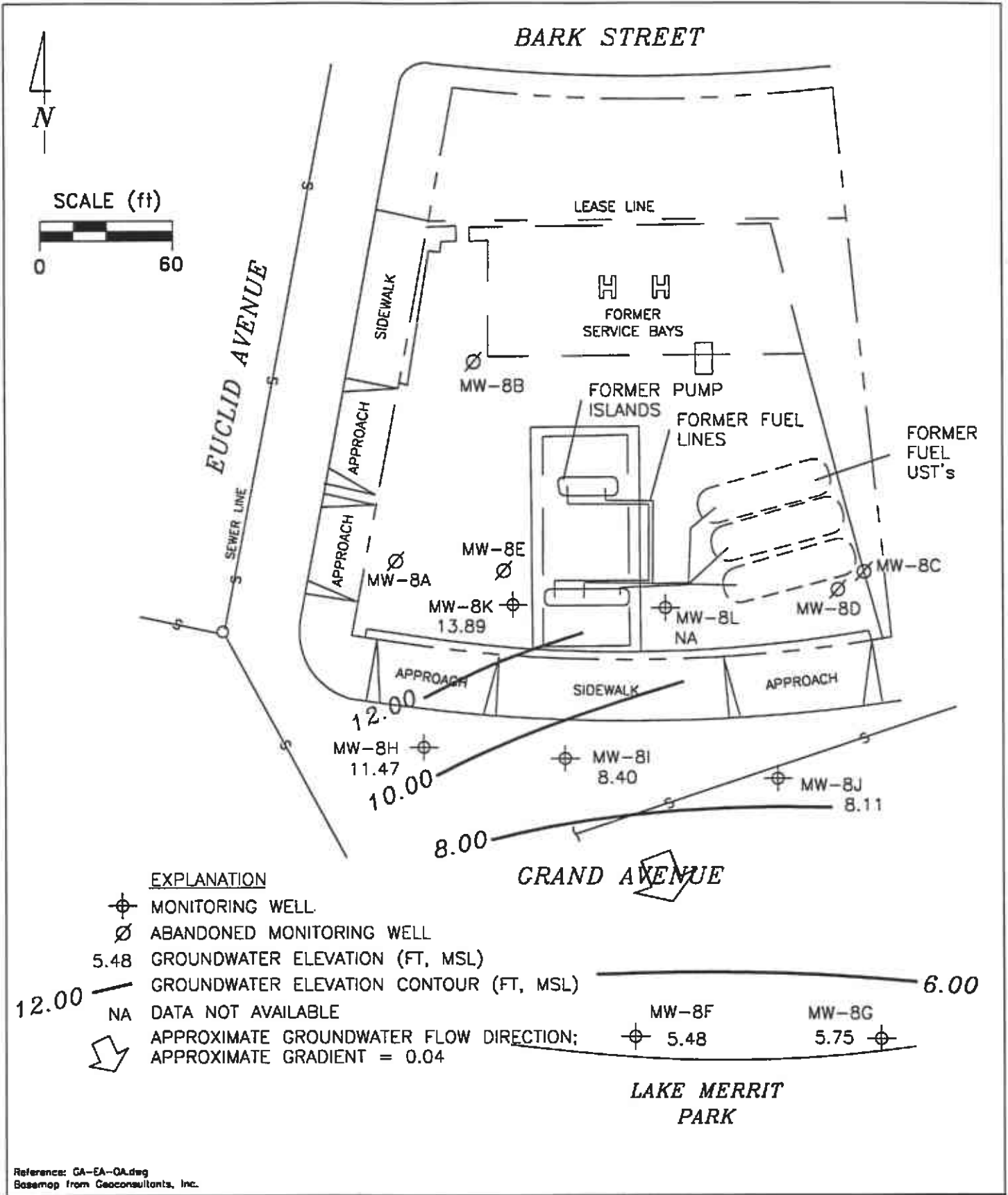
REFINING AND MARKETING, INC.
TEXACO ENVIRONMENTAL SERVICES

PLATE 1

SITE VICINITY MAP

FORMER TEXACO SERVICE STATION

500 GRAND AVE. / EUCLID AVE.,
OAKLAND, CALIFORNIA



Reference: GA-EA-QA.dwg
 Basemap from Geoconsultants, Inc.

PREPARED BY



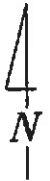
Former Texaco Service Station
 500 Grand Ave./Euclid Ave.
 Oakland, California

**GROUNDWATER ELEVATION CONTOUR MAP,
 JANUARY 21, 1998**

FIGURE:
 2

PROJECT:
 DAC04

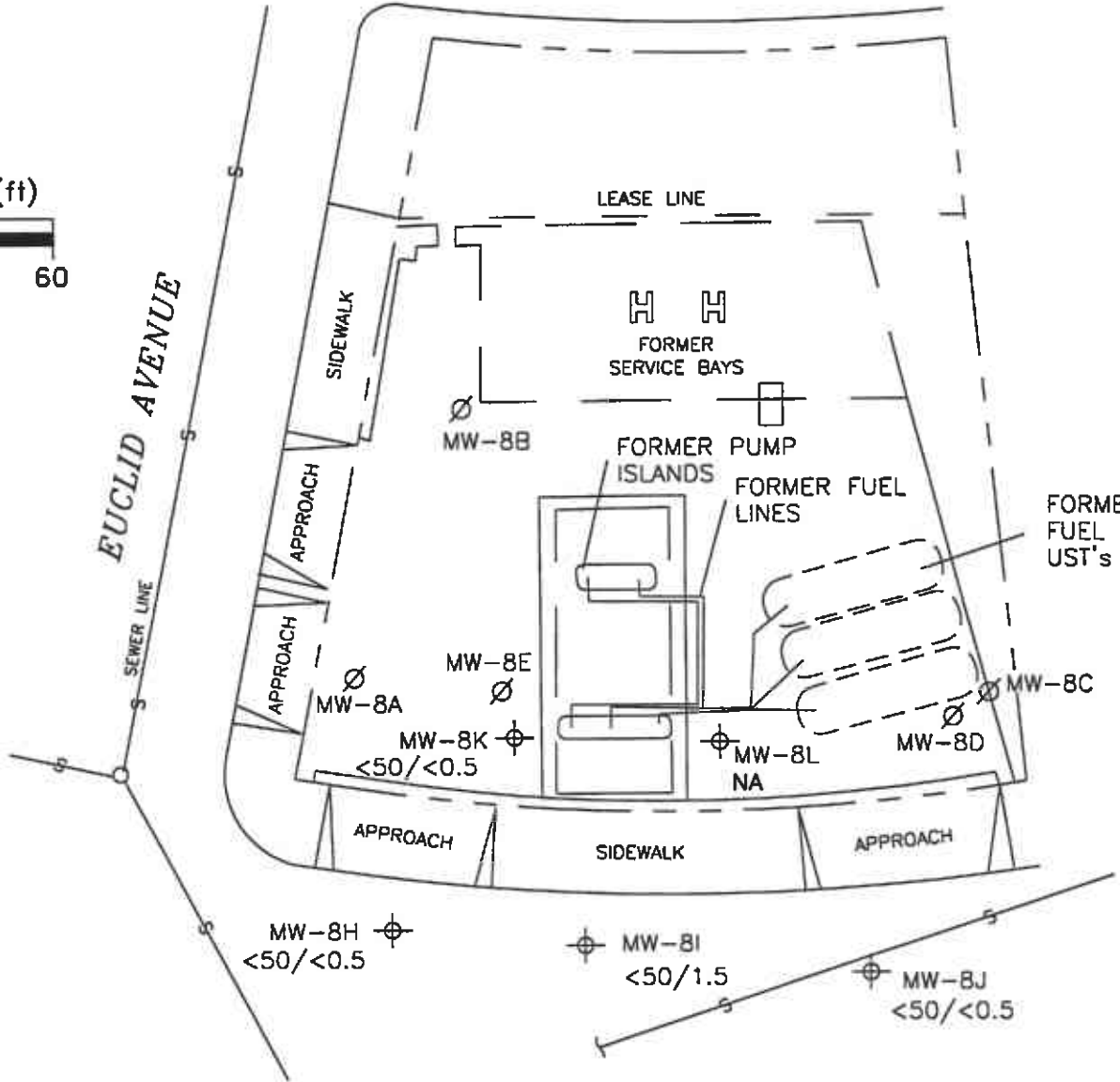
BARK STREET



SCALE (ft)

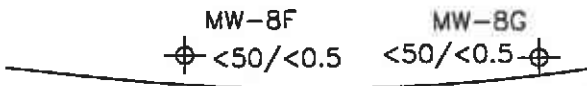


EUCLID AVENUE



- EXPLANATION**
- MONITORING WELL
 - ABANDONED MONITORING WELL
 - <50/<0.5 TPHG/BENZENE CONCENTRATION IN GROUNDWATER, IN PPB
 - NA DATA NOT AVAILABLE

GRAND AVENUE



LAKE MERRIT PARK

Reference: GA-EA-0A.dwg
Basemap from Geoconsultants, Inc.

PREPARED BY



engineering contracting firm

Former Texaco Service Station
 500 Grand Ave./Euclid Ave.
 Oakland, California

TPHG/BENZENE CONCENTRATION MAP,
 JANUARY 21, 1998

FIGURE:
 3
 PROJECT:
 DAC04

Table 1
Groundwater Elevation Data
500 Grand Avenue, Oakland, CA

Well Number	Date Gauged	Top of Casing Elevation (feet, MSL)	Depth to Water (feet, TOC)	Elevation of Groundwater (feet, MSL)
MW-8A	Well Properly Abandoned			
MW-8B	Well Properly Abandoned			
MW-8C	Well Properly Abandoned			
MW-8D	Well Properly Abandoned			
MW-8E	Well Properly Abandoned			
MW-8F	03/29/91	97.94		
	01/23/92		10.24	87.70
	02/28/92		9.93	88.01
	03/26/92		8.78	89.16
	04/30/92		9.36	88.58
	09/28/92		11.83	86.11
	11/19/92		11.22	86.72
	02/12/93		9.66	88.28
	05/06/93		8.83	89.11
	08/16/93	14.04 *	10.16	3.88
	10/12/93		10.60	3.44
	02/03/94		9.29	4.75
	05/31/94		9.34	4.70
	08/25/94		10.14	3.90
	11/02/94		10.42	3.62
	01/31/95		7.47	6.57
	05/18/95		8.00	6.04
	08/29/95		8.08	5.96
	11/02/95		8.70	5.34
	02/05/96		7.16	6.88
	04/30/96		7.25	6.79
	08/28/96		8.72	5.32
	12/05/96		8.16	5.88
	02/21/97		5.53	8.51
	05/02/97		7.85	6.19
	07/30/97		8.87	5.17
	11/05/97		9.16	4.88
	01/21/98		8.56	5.48

Table 1
Groundwater Elevation Data
500 Grand Avenue, Oakland, CA

Well Number	Date Gauged	Top of Casing Elevation (feet, MSL)	Depth to Water (feet, TOC)	Elevation of Groundwater (feet, MSL)
MW-8G	04/23/91	97.24		
	01/23/92		11.30	85.94
	02/28/92		10.83	86.41
	03/26/92		9.20	88.04
	04/30/92		9.00	88.24
	09/28/92		13.32	83.92
	11/19/92		Well Inaccessible	
	02/12/93		Well Inaccessible	
	05/06/93		11.18	86.06
	08/16/93	13.32 *	9.51	3.81
	10/12/93		10.93	2.39
	02/03/94		9.69	3.63
	05/31/94		9.24	4.08
	08/25/94		9.74	3.58
	11/02/94		10.08	3.24
	01/31/95		5.75	7.57
	05/18/95		6.60	6.72
	08/29/95		8.14	5.18
	11/02/95		9.16	4.16
	02/05/96		7.18	6.14
	04/30/96		7.00	6.32
	08/28/96		8.94	4.38
	12/05/96		9.22	4.10
	02/21/97		6.11	7.21
	05/02/97		7.54	5.78
	07/30/97		Well Inaccessible	
	11/05/97		9.65	3.67
	01/21/98		7.57	5.75

Table 1
Groundwater Elevation Data
500 Grand Avenue, Oakland, CA

Well Number	Date Gauged	Top of Casing Elevation (feet, MSL)	Depth to Water (feet, TOC)	Elevation of Groundwater (feet, MSL)
MW-8H	03/29/91	98.90		
	01/23/92		3.74	95.16
	02/28/92		4.44	94.46
	03/26/92		4.21	94.69
	04/30/92		3.46	95.44
	09/28/92		Well Inaccessible	
	11/19/92		3.75	95.15
	02/12/93		4.12	94.78
	05/06/93		3.85	95.05
	08/16/93	15.04 *	3.88	11.16
	10/12/93		3.80	11.24
	02/03/94		3.71	11.33
	05/31/94		3.80	11.24
	08/25/94		3.89	11.15
	11/02/94		3.64	11.40
	01/31/95		3.58	11.46
	05/18/95		3.53	11.51
	08/29/95		3.55	11.49
	11/02/95		3.49	11.55
	02/05/96		3.54	11.50
	04/30/96		3.50	11.54
	08/28/96		3.62	11.42
	12/05/96		3.38	11.66
	02/21/97		3.77	11.27
	05/02/97		3.64	11.40
	07/30/97		3.65	11.39
	11/05/97		3.61	11.43
	01/21/98		3.57	11.47

Table 1
Groundwater Elevation Data
500 Grand Avenue, Oakland, CA

Well Number	Date Gauged	Top of Casing Elevation (feet, MSL)	Depth to Water (feet, TOC)	Elevation of Groundwater (feet, MSL)
MW-81	03/29/91	98.27		
	01/23/92		6.33	91.94
	02/28/92		6.55	91.72
	03/26/92		6.45	91.82
	04/30/92		6.48	91.79
	09/28/92		Well Inaccessible	
	11/19/92		6.37	91.90
	02/12/93		6.44	91.83
	05/06/93		6.36	91.91
	08/16/93	14.40 *	6.35	8.05
	10/12/93		5.99	8.41
	02/03/94		5.84	8.56
	05/31/94		6.25	8.15
	08/25/94		6.31	8.09
	11/02/94		6.10	8.30
	01/31/95		5.83	8.57
	05/18/95		6.09	8.31
	08/29/95		6.09	8.31
	11/02/95		6.26	8.14
	02/05/96		5.97	8.43
	04/30/96		6.04	8.36
	08/28/96		6.20	8.20
	12/05/96		6.01	8.39
	02/21/97		6.15	8.25
	05/02/97		6.20	8.20
	07/30/97		6.12	8.28
	11/05/97		6.26	8.14
	01/21/98		6.00	8.40

Table 1
Groundwater Elevation Data
500 Grand Avenue, Oakland, CA

Well Number	Date Gauged	Top of Casing Elevation (feet, MSL)	Depth to Water (feet, TOC)	Elevation of Groundwater (feet, MSL)
MW-8J	03/29/91	97.69		
	01/23/92		6.31	91.38
	02/28/92		6.28	91.41
	03/26/92		6.20	91.49
	04/30/92		6.48	91.21
	09/28/92		Well Inaccessible	
	11/19/92		6.55	91.14
	02/12/93		7.46	90.23
	05/06/93		6.21	91.48
	08/16/93	13.82 *	6.29	7.53
	10/12/93		5.87	7.95
	02/03/94		5.98	7.84
	05/31/94		6.10	7.72
	08/25/94		6.01	7.81
	11/02/94		5.90	7.92
	01/31/95		5.07	8.75
	05/18/95		5.33	8.49
	08/29/95		3.50	10.32
	11/02/95		5.94	7.88
	02/05/96		5.34	8.48
	04/30/96		5.96	7.86
	08/28/96		6.38	7.44
	12/05/96		5.94	7.88
02/21/97		5.60	8.22	
05/02/97		6.22	7.60	
07/30/97		6.28	7.54	
11/05/97		6.03	7.79	
01/21/98		5.71	8.11	
MW-8K	08/16/93	15.18 *	2.08	13.10
	10/12/93		1.95	13.23
	02/03/94		1.48	13.70
	05/31/94		1.59	13.59
	08/25/94		2.00	13.18
	11/02/94		2.10	13.08
	01/31/95		1.35	13.83
	05/18/95		1.36	13.82
	08/29/95		1.55	13.63
	11/02/95		1.88	13.30
	02/05/96		1.46	13.72
	04/30/96		1.43	13.75
	08/28/96		1.75	13.43
	12/05/96		1.42	13.76
	02/21/97		1.49	13.69
05/02/97		1.60	13.58	
07/30/97		1.66	13.52	
11/05/97		1.62	13.56	
01/21/98		1.29	13.89	

Table 1
Groundwater Elevation Data
500 Grand Avenue, Oakland, CA

Well Number	Date Gauged	Top of Casing Elevation (feet, MSL)	Depth to Water (feet, TOC)	Elevation of Groundwater (feet, MSL)
MW-8L	08/16/93	14.44*	2.47	11.97
	10/12/93		2.36	12.08
	02/03/94		2.82	11.62
	05/31/94		2.66	11.78
	08/25/94		2.34	12.10
	11/02/94		Well Obstructed	
	01/31/95		0.08	14.36
	05/18/95		0.42	14.02
	08/29/95		Well Inaccessible	
	11/02/95		Well Inaccessible	
	02/05/96		Well Inaccessible	
	04/30/96		Well Inaccessible	
	08/28/96		0.75	13.69
	12/05/96		Well Inaccessible	
	02/21/97		Well Inaccessible	
	05/02/97		0.60	13.84
	07/30/97		Well Inaccessible	
	11/05/97		0.67	13.77
	01/21/98		No Longer Monitored	
* = New well elevation survey performed on August 16, 1993 based on mean sea level (MSL). Prior data based on arbitrary site data.				
TOC = Top of Casing				

Table 2
Groundwater Analytical Data
500 Grand Avenue, Oakland, CA

Well Number	Date Sampled	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	MTBE (ppb)	TPHd (ppm)	TPH as Other* (ppm)
MW-8A	Well properly abandoned								
MW-8B	Well properly abandoned								
MW-8C	Well properly abandoned								
MW-8D	Well properly abandoned								
MW-8E	Well properly abandoned								
MW-8F	01/23/92	<50	4.0	1.3	<0.5	1.9	NA	1.3	NA
	04/30/92	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<500
	09/28/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	11/19/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	02/12/93	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	NA
	05/06/93	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.1	<50
	08/16/93	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<50
	10/12/93	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<50
	02/03/94	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<50
	05/31/94	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	0.53
	08/25/94	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	1.4
	11/02/94	<50	<0.5	<0.5	<0.5	<0.5	NA	0.52	<5
	01/31/95	<50	<0.5	<0.5	<0.5	<0.5	NA	0.29	<5
	05/18/95	<50	<0.5	<0.5	<0.5	<0.5	NA	0.054	<5
	08/29/95	<50	<0.5	<0.5	<0.5	<0.5	<10	0.083	<5
	11/02/95	<50	<0.5	<0.5	<0.5	<0.5	<10	0.051	<5
	02/05/96	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	0.89
	04/30/96	<50	<0.5	<0.5	<0.5	<0.5	NA	0.062	<.005
	08/28/96	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<5
	12/05/96	210	17	17	11	46	<30	0.11	<5
	02/21/97	<50	<0.5	<0.5	<0.5	<0.5	<30	0.085	<5
	05/02/97	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	0.81
	07/30/97	<50	<0.5	<0.5	<0.5	<0.5	<30	0.093	<0.5
	11/05/97	<50	<0.5	<0.5	<0.5	<0.5	<30	0.14	<0.5
	01/21/98	<50	<0.5	<0.5	<0.5	<0.5	<30	<0.05	NA

Table 2
Groundwater Analytical Data
500 Grand Avenue, Oakland, CA

Well	Date	TPHg	Benzene	Toluene	Ethyl- benzene	Xylenes	MTBE	TPHd	TPH as Other*
Number	Sampled	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppm)	(ppm)
MW-8G	** 01/24/92	<50	<0.5	<0.5	<0.5	<0.5	NA	0.98	NA
	04/30/92	<50	1.7	<0.5	<0.5	<0.5	NA	<0.05	<500
	09/28/92	Well Dry							
	11/19/92	Well Inaccessible							
	02/12/93	Well Inaccessible							
	04/29/93	<50	<0.5	<0.5	<0.5	<0.5	NA	0.06	<250
	08/16/93	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<50
	10/12/93	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<50
	02/03/94	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<50
	05/31/94	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<0.2
	08/25/94	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	0.86
	11/02/94	<50	<0.5	<0.5	<0.5	<0.5	NA	0.53	<5
	01/31/95	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<5
	05/18/95	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<5
	08/29/95	<50	<0.5	<0.5	<0.5	<0.5	<10	0.12	<5
	11/02/95	<50	<0.5	<0.5	<0.5	<0.5	<10	0.14	<5
	02/05/96	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	0.51
	04/30/96	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<.005
	08/28/96	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<5
	12/05/96	190	16	16	9.0	39	<30	0.057	<5
	02/21/97	<50	<0.5	<0.5	<0.5	<0.5	<30	0.054	<5
	05/02/97	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<5
	07/30/97	Well Inaccessible							
	11/05/97	<50	<0.5	<0.5	<0.5	<0.5	<30	<0.05	<0.5
	11/05/97	<50	<0.5	<0.5	<0.5	<0.5	<30	<0.05	<0.5
	01/21/98	<50	<0.5	<0.5	<0.5	<0.5	<30	<0.05	NA

Table 2
Groundwater Analytical Data
500 Grand Avenue, Oakland, CA

Well Number	Date Sampled	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	MTBE (ppb)	TPHd (ppm)	TPH as Other* (ppm)
MW-8H	01/23/92	110	7.2	1.2	4.7	3.2	NA	<0.06	NA
	04/30/92	190	11	1.5	5.6	3.6	NA	0.09	<500
	09/28/92	Well Inaccessible							
	11/19/92	130	6.8	<0.5	1.1	1.5	NA	NA	NA
	02/12/93	73	5.9	<0.5	0.8	<0.5	NA	NA	NA
	05/06/93	57	1.7	<0.5	<0.5	<0.5	NA	<0.1	<50
	08/16/93	<50	0.5	<0.5	0.5	1.4	NA	<0.05	<50
	10/12/93	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<50
	02/03/94	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<50
	05/31/94	<50	0.79	<0.5	<0.5	<0.5	NA	<0.05	1.6
	08/25/94	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	4.0
	11/02/94	<50	<0.5	<0.5	<0.5	<0.5	NA	0.76	<5
	01/31/95	<50	<0.5	<0.5	<0.5	<0.5	NA	0.19	<5
	05/18/95	<50	<0.5	<0.5	<0.5	<0.5	NA	0.37	6.6
	08/29/95	<50	<0.5	<0.5	<0.5	<0.5	<10	1.0	<5
	11/02/95	<50	<0.5	<0.5	<0.5	<0.5	<10	<0.05	5.8
	02/05/96	<50	<0.5	<0.5	<0.5	<0.5	NA	0.19	2.3
	04/30/96	<50	<0.5	<0.5	<0.5	<0.5	NA	1.80	0.0087
	08/28/96	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	7.7
	12/05/96	100	6.2	7.3	5.0	22	<30	0.35	<5
	02/21/97	<50	<0.5	<0.5	<0.5	<0.5	<30	0.90	<13
	05/02/97	<50	<0.5	<0.5	<0.5	<0.5	NA	0.45	<5
	07/30/97	<50	<0.5	0.62	<0.5	<0.5	<30	0.18	13
	11/05/97	<50	<0.5	<0.5	<0.5	<0.5	<30	0.28	4.1
	01/21/98	<50	<0.5	<0.5	<0.5	<0.5	<30	<0.05	NA

Table 2
Groundwater Analytical Data
500 Grand Avenue, Oakland, CA

Well	Date	TPHg	Benzene	Toluene	Ethyl- benzene	Xylenes	MTBE	TPHd	TPH as Other*
Number	Sampled	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppm)	(ppm)
MW-8I	01/23/92	820	420	7	27	20	NA	0.21	NA
	04/30/92	2,200	1,800	19	180	25	NA	0.43	<500
	09/28/92	Well Inaccessible							
	11/19/92	720	120	1.1	29	13	NA	NA	NA
	02/12/93	4,000	970	9.2	52	36	NA	NA	NA
	05/06/93	1,400	370	2.4	40	8.4	NA	<0.01	<50
	08/16/93	<50	3.1	<0.5	6	<0.5	NA	<0.05	<50
	10/12/93	<50	1.4	<0.5	<0.5	<0.5	NA	<0.05	<50
	02/03/94	1,000	270	3.2	51	14	NA	<0.05	<50
	05/31/94	1,400	330	4.6	52	16	NA	<0.05	0.33
	08/25/94	540	14	0.58	30	4.3	NA	<0.05	0.73
	11/02/94	310	5.7	0.74	20	<0.5	NA	0.37	<5
	01/31/95	840	290	4.5	45	1.6	NA	0.91	<5
	05/18/95	1,700	390	7.8	80	10	NA	1.1	<5
	08/29/95	300	81	<0.5	13	0.63	<10	0.56	<5
	11/02/95	81	<0.5	4.1	1.5	<0.5	<10	0.16	<5
	02/05/96	300	75	0.75	8.4	1.2	NA	0.14	<0.5
	04/30/96	350	150	0.77	3.2	1.3	NA	<0.05	<.005
	08/28/96	1100	300	2.9	3.2	2.1	NA	0.38	<5
	12/05/96	340	23	8.7	11	26	<30	0.053	<5
	02/21/97	<50	<0.5	<0.5	<0.5	<0.5	<30	0.33	<5
	05/02/97	110	39	<0.5	0.92	<0.5	NA	<0.05	<5
	07/30/97	<50	4.2	<0.5	<0.5	<0.5	<30	0.17	1.2
	11/05/97	<50	<0.5	<0.5	<0.5	<0.5	<30	<0.05	<0.5
	01/21/98	<50	1.5	<0.5	<0.5	<0.5	<30	<0.05	NA

Table 2
Groundwater Analytical Data
500 Grand Avenue, Oakland, CA

Well	Date	TPHg	Benzene	Toluene	Ethyl-	Xylenes	MTBE	TPHd	TPH as
Number	Sampled	(ppb)	(ppb)	(ppb)	benzene (ppb)	(ppb)	(ppb)	(ppm)	Other* (ppm)
MW-8J	01/23/92	<50	1	<0.5	<0.5	<0.5	NA	<0.05	NA
	04/30/92	<50	2	<0.5	<0.5	<0.5	NA	<0.05	<500
	09/28/92	Well Inaccessible							
	11/19/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	02/12/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NA
	05/06/93	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.01	<50
	08/16/93	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<50
	10/12/93	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<50
	02/03/94	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<50
	05/31/94	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<0.2
	08/25/94	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	1.0
	11/02/94	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<5
	01/31/95	<50	3.7	<0.5	<0.5	<0.5	NA	<0.05	<5
	08/29/95	<50	<0.5	<0.5	<0.5	<0.5	<10	0.25	<5
	05/18/95	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<5
	08/29/95	<50	<0.5	<0.5	<0.5	<0.5	<10	0.25	<5
	11/02/95	<50	<0.5	<0.5	<0.5	<0.5	<10	0.52	<5
	02/05/96	<50	<0.5	<0.5	<0.5	<0.5	NA	0.065	1.0
	04/30/96	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<.005
	08/28/96	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<5
	12/05/96	160	13	14	8.9	38	<30	<0.05	<5
	02/21/97	<50	<0.5	<0.5	<0.5	<0.5	<30	<0.05	<5
	05/02/97	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<5
	07/30/97	<50	<0.5	<0.5	<0.5	<0.5	<30	<0.05	<0.5
	11/05/97	<50	<0.5	<0.5	<0.5	<0.5	<30	<0.05	<0.5
	01/21/98	<50	<0.5	<0.5	<0.5	<0.5	<30	<0.05	NA

Table 2
Groundwater Analytical Data
500 Grand Avenue, Oakland, CA

Well	Date	TPHg	Benzene	Toluene	Ethyl- benzene	Xylenes	MTBE	TPHd	TPH as Other*
Number	Sampled	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppm)	(ppm)
MW-8K	05/21/93	54	12	<0.5	<0.5	<0.5	NA	<0.05	<50
	08/16/93	<50	<0.5	<0.5	1.0	<0.5	NA	<0.05	<50
	10/24/93	<50	4.2	<0.5	<0.5	<0.5	NA	<0.05	<50
	02/03/94	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<50
	05/31/94	<50	1.0	0.57	<0.5	<0.5	NA	<0.05	<0.2
	08/25/94	<50	0.78	<0.5	<0.5	<0.5	NA	<0.05	0.98
	11/02/94	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<5
	01/31/95	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<5
	05/18/95	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<5
	08/29/95	<50	<0.5	<0.5	<0.5	<0.5	<10	0.16	<5
	11/02/95	<50	<0.5	<0.5	<0.5	<0.5	<10	<0.05	<5
	02/05/96	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<0.5
	04/30/96	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<.005
	08/28/96	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<5
	12/05/96	<50	<0.5	<0.5	<0.5	<0.5	<30	<0.05	<5
	02/21/97	<50	<0.5	<0.5	<0.5	<0.5	<30	<0.05	<5
	05/02/97	<50	<0.5	<0.5	<0.5	<0.5	NA	<0.05	<5
	07/30/97	<50	<0.5	<0.5	<0.5	<0.5	<30	<0.05	<0.5
	11/05/97	<50	<0.5	<0.5	<0.5	<0.5	<30	0.30	<0.5
	01/21/98	<50	<0.5	<0.5	<0.5	<0.5	<30	<0.05	<0.5

Table 2
Groundwater Analytical Data
500 Grand Avenue, Oakland, CA

Well Number	Date Sampled	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	MTBE (ppb)	TPHd (ppm)	TPH as Other* (ppm)
MW-8L	05/21/93	76	1.1	<0.5	<0.5	6	NA	<0.05	<50
	08/16/93	<50	<0.5	<0.5	0.7	1.1	NA	<0.05	<50
	10/12/93	110	13	<0.5	6	<0.5	NA	<0.05	<50
	02/03/94	590	61	2.4	<0.5	110	NA	<0.05	<50
	05/31/94	410	77	<0.5	20	1.1	NA	<0.05	<0.2
	08/25/94	260	16	<0.5	2.5	<0.5	NA	<0.05	1.1
	11/02/94	Well Inaccessible							
	01/31/95	Well Inaccessible							
	05/18/95	Well Inaccessible							
	08/29/95	Well Inaccessible							
	11/02/95	Well Inaccessible							
	02/05/96	Well Inaccessible							
	04/30/96	Well Inaccessible							
	08/28/96	Well Inaccessible							
	12/05/96	Well Inaccessible							
	02/21/97	Well Inaccessible							
	05/02/97	Well Inaccessible							
	07/30/97	Well Inaccessible							
	11/05/97	Not Sampled							
	01/21/98	No Longer Sampled							
TPHg = Total Petroleum Hydrocarbons as gasoline.									
TPHd = Total Petroleum Hydrocarbons as diesel.									
MTBE = Methyl-tert-butylether									
ppb = parts per billion									
ppm = parts per million									
NA = Not Analyzed									
< = Less than the detection limit for the specified method of analysis.									
* = Includes "heavy" petroleum hydrocarbons such as waste oil, mineral spirits, jet fuel, or fuel oil.									
** = Non-diesel mix >C16. The certified analytical report for sample MW-8G was revised on 10/21/93.									



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ANALYTICAL REPORT

LOG NO: G98-01-418

Received: 22 JAN 98

Mailed: FEB 19 1998

Mr. Kent Brown
Blaine Tech Services
1680 Rogers Avenue
San Jose, California 95112

Purchase Order: 94-1446346+4370

Requisition: 624880235
Project: FKEP9037L

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES					DATE SAMPLED
01-418-1	MW-8F					21 JAN 98
01-418-2	MW-8G					21 JAN 98
01-418-3	MW-8H					21 JAN 98
01-418-4	MW-8I					21 JAN 98
01-418-5	MW-8J					21 JAN 98
PARAMETER	01-418-1	01-418-2	01-418-3	01-418-4	01-418-5	
Oil&Grease/SM5520F (418.1), ug/L	0	0	4700	760	340	
TPH (8015M)						
Date Analyzed	01/28/98	01/31/98	01/30/98	01/30/98	01/31/98	
Date Extracted	01/30/98	01/28/98	01/28/98	01/28/98	01/28/98	
Dilution Factor, Times	1	1	1	1	1	
TPH (Diesel Range), mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	
Carbon Range, .	C10-C25	C10-C25	C10-C25	C10-C25	C10-C25	
Surrogates **						
Naphthalene Reported, mg/L	0.0381	0.0349	0.0313	0.0338	0.0391	
Naphthalene Theoretical, mg/L	0.0500	0.0500	0.0500	0.0500	0.0500	
o-Terphenyl Reported, mg/L	0.0420	0.0403	0.0320	0.0408	0.0420	
o-Terphenyl Theoretical, mg/L	0.0500	0.0500	0.0500	0.0500	0.0500	

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Page 2

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES					DATE SAMPLED
01-418-1	MW-8F					21 JAN 98
01-418-2	MW-8G					21 JAN 98
01-418-3	MW-8H					21 JAN 98
01-418-4	MW-8I					21 JAN 98
01-418-5	MW-8J					21 JAN 98
PARAMETER	01-418-1	01-418-2	01-418-3	01-418-4	01-418-5	
GRO (8015M.TX)						
Date Analyzed	01/26/98	01/26/98	01/26/98	01/26/98	01/27/98	
Dilution Factor, Times	1	1	1	1	1	
Benzene, ug/L	<0.5	<0.5	<0.5	1.5	<0.5	
Toluene, ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Ethylbenzene, ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Methyl-tert-butylether, ug/L	<30	<30	<30	<30	<30	
Total Xylene Isomers, ug/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Carbon Range, .	C6-C12	C6-C12	C6-C12	C6-C12	C6-C12	
TPH (Gasoline Range), ug/L	<50	<50	<50	<50	<50	
Other GRO (8015M.TX)	---	---	---	---	---	
Surrogates **						
a,a,a-Trifluorotoluene Rep., ug/L	43.5	44.9	43.8	44.7	44.8	
a,a,a-Trifluorotoluene Th., ug/L	50.0	50.0	50.0	50.0	50.0	

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REPORT OF ANALYTICAL RESULTS

Page 3

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
01-418-6	MW-8K	21 JAN 98
PARAMETER	01-418-6	
Oil&Grease/SM5520F (418.1), ug/L	120	
TPH (8015M)		
Date Analyzed	01/31/98	
Date Extracted	01/28/98	
Dilution Factor, Times	1	
TPH (Diesel Range), mg/L	<0.05	
Carbon Range, .	C10-C25	
Surrogates **		
Naphthalene Reported, mg/L	0.0369	
Naphthalene Theoretical, mg/L	0.0500	
o-Terphenyl Reported, mg/L	0.0410	
o-Terphenyl Theoretical, mg/L	0.0500	

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REPORT OF ANALYTICAL RESULTS

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
01-418-6	MW-8K	21 JAN 98
PARAMETER		01-418-6
GRO (8015M.TX)		
Date Analyzed		01/26/98
Dilution Factor, Times		1
Benzene, ug/L		<0.5
Toluene, ug/L		<0.5
Ethylbenzene, ug/L		<0.5
Methyl-tert-butylether, ug/L		<30
Total Xylene Isomers, ug/L		<0.5
Carbon Range, .		C6-C12
TPH (Gasoline Range), ug/L		<50
Other GRO (8015M.TX)		---
Surrogates **		
a,a,a-Trifluorotoluene Rep., ug/L		60.1
a,a,a-Trifluorotoluene Th., ug/L		50.0

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REPORT OF ANALYTICAL RESULTS

Page 5

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
01-418-7	EB	21 JAN 98
PARAMETER	01-418-7	
TPH (8015M)		
Date Analyzed	01/31/98	
Date Extracted	01/28/98	
Dilution Factor, Times	1	
TPH (Diesel Range), mg/L	<0.05	
Carbon Range, .	C10-C25	
Surrogates **		
Naphthalene Reported, mg/L	0.0407	
Naphthalene Theoretical, mg/L	0.0500	
o-Terphenyl Reported, mg/L	0.0503	
o-Terphenyl Theoretical, mg/L	0.0500	

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REPORT OF ANALYTICAL RESULTS

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
01-418-7	EB	21 JAN 98
PARAMETER	01-418-7	
GRO (8015M.TX)		
Date Analyzed	01/26/98	
Dilution Factor, Times	1	
Benzene, ug/L	<0.5	
Toluene, ug/L	<0.5	
Ethylbenzene, ug/L	<0.5	
Methyl-tert-butylether, ug/L	<30	
Total Xylene Isomers, ug/L	<0.5	
Carbon Range, .	C6-C12	
TPH (Gasoline Range), ug/L	<50	
Other GRO (8015M.TX)	---	
Surrogates **		
a,a,a-Trifluorotoluene Rep., ug/L	56.2	
a,a,a-Trifluorotoluene Th., ug/L	50.0	

LOG NO: G98-01-418

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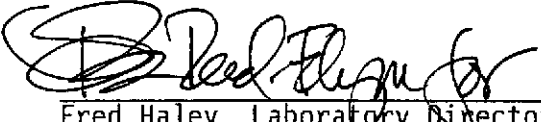
Purchase Order: 94-1446346+4370

Requisition: 624880235
Project: FKEP9037L

REPORT OF ANALYTICAL RESULTS

Page 7

Deborah Pryor
500 Grand Ave., Oakland.


Fred Haley, Laboratory Director

The analytical results within this report relate only to the specific compounds and samples investigated and may not necessarily reflect other apparently similar material from the same or a similar location.

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SAMPLES...	SAMPLE DESCRIPTION..	DETERM.....	DATE.....	METHOD.....	EQUIP.	BATCH..	ID.NO
			ANALYZED				
9801418*1	MW-8F	IR.PET.TESNC	02.06.98	418.1	533-17	9816	8106
		DIESEL.3520.TES	01.31.98	8015M	536-01	9824	7396
		GAS.MTBE.TESNC	01.26.98	8015M.TX	536-30	986014	6843
9801418*2	MW-8G	IR.PET.TESNC	02.06.98	418.1	533-17	9816	8106
		DIESEL.3520.TES	01.31.98	8015M	536-01	9824	7396
		GAS.MTBE.TESNC	01.26.98	8015M.TX	536-30	986014	6843
9801418*3	MW-8H	IR.PET.TESNC	02.06.98	418.1	533-17	9816	8106
		DIESEL.3520.TES	01.30.98	8015M	536-01	9824	7396
		GAS.MTBE.TESNC	01.26.98	8015M.TX	536-30	986014	6843
9801418*4	MW-8I	IR.PET.TESNC	02.06.98	418.1	533-17	9816	8106
		DIESEL.3520.TES	01.30.98	8015M	536-01	9824	7396
		GAS.MTBE.TESNC	01.26.98	8015M.TX	536-30	986014	6843
9801418*5	MW-8J	IR.PET.TESNC	02.06.98	418.1	533-17	9816	8106
		DIESEL.3520.TES	01.31.98	8015M	536-01	9824	7396
		GAS.MTBE.TESNC	01.27.98	8015M.TX	536-30	986015	6843
9801418*6	MW-8K	IR.PET.TESNC	02.06.98	418.1	533-17	9816	8106
		DIESEL.3520.TES	02.02.98	8015M	536-01	9824	7396
		GAS.MTBE.TESNC	01.26.98	8015M.TX	536-23	985012	7424
9801418*7	EB	DIESEL.3520.TES	01.31.98	8015M	536-01	9824	7396
		GAS.MTBE.TESNC	01.26.98	8015M.TX	536-23	985012	7424

Notes: Equipment = VOC Analytical identification number for a particular piece of analytical equipment.

ID.NO = VOC Analytical employee identification number of analyst.

AQUEOUS SAMPLES

	----- METHOD BLANK -----				----- LAB CONTROL -----								----- MATRIX QC -----									
	UNITS	RESULT	RDL	FLG	LCS %REC	FLG	LCS %REC	FLG	LCL	UCL	RPD	UCL	FLG	MS %REC	FLG	MSD %REC	FLG	LCL	UCL	RPD	UCL	FLG
Batch: IR*9816 Method: 418.1 - Petroleum Hydrocarbons, Total, Spectrophotometric, Infrared																						
Oil&Grease/SM5520F	-	0	-	-	113	-	129	-	-	-	13	-	-	-	-	-	-	-	-	-	-	-
Batch: GAS*985012 Method: 8015M.TX - Modified 8015																						
Benzene	ug/L	0	0.5	-	94	-	-	-	76	155	-	-	-	88	-	88	-	70	153	1	25	-
Toluene	ug/L	0.26	0.5	-	96	-	-	-	72	121	-	-	-	79	-	80	-	69	119	1	25	-
Ethylbenzene	ug/L	0	0.5	-	95	-	-	-	72	115	-	-	-	89	-	86	-	68	116	3	25	-
Methyl-tert-butylether	ug/L	0	30	-	84	-	-	-	62	159	-	-	-	108	-	111	-	80	176	2	25	-
Total Xylene Isomers	ug/L	0	0.5	-	99	-	-	-	68	115	-	-	-	78	-	78	-	61	118	1	25	-
TPH (Gasoline Range)	ug/L	0	50	-	105	-	-	-	85	120	-	-	-	102	-	104	-	78	124	2	25	-
[a,a,a-Trifluorotoluene]	Percent	112	-	-	104	-	-	-	85	118	-	-	-	115	-	116	-	85	118	-	-	-
Batch: GAS*986014 Method: 8015M.TX - Modified 8015																						
Benzene	ug/L	0	0.5	-	102	-	93	-	76	155	9	-	-	-	-	-	-	-	-	-	-	-
Toluene	ug/L	0.22	0.5	-	103	-	95	-	72	121	9	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	ug/L	0.042	0.5	-	103	-	96	-	72	115	7	-	-	-	-	-	-	-	-	-	-	-
Methyl-tert-butylether	ug/L	0	30	-	101	-	112	-	62	159	10	-	-	-	-	-	-	-	-	-	-	-
Total Xylene Isomers	ug/L	0.18	0.5	-	108	-	102	-	68	115	6	-	-	-	-	-	-	-	-	-	-	-
TPH (Gasoline Range)	ug/L	0	50	-	97	-	95	-	85	120	3	-	-	-	-	-	-	-	-	-	-	-
[a,a,a-Trifluorotoluene]	Percent	103	-	-	110	-	95	-	85	118	-	-	-	-	-	-	-	-	-	-	-	-
Batch: GAS*986015 Method: 8015M.TX - Modified 8015																						
Benzene	ug/L	0	0.5	-	101	-	-	-	76	155	-	-	-	97	-	100	-	70	153	3	25	-
Toluene	ug/L	0.23	0.5	-	103	-	-	-	72	121	-	-	-	83	-	84	-	69	119	1	25	-
Ethylbenzene	ug/L	0	0.5	-	102	-	-	-	72	115	-	-	-	88	-	89	-	68	116	1	25	-
Methyl-tert-butylether	ug/L	0	30	-	94	-	-	-	62	159	-	-	-	146	-	148	-	80	176	1	25	-
Total Xylene Isomers	ug/L	0.21	0.5	-	108	-	-	-	68	115	-	-	-	78	-	78	-	61	118	1	25	-
TPH (Gasoline Range)	ug/L	0	50	-	93	-	-	-	85	120	-	-	-	102	-	98	-	78	124	4	25	-
[a,a,a-Trifluorotoluene]	Percent	112	-	-	105	-	-	-	85	118	-	-	-	128	Q	130	Q	85	118	-	-	-
Batch: DIESEL*9824 Method: 8015M - Modified 8015																						
TPH (Diesel Range)	mg/L	0	0.5	-	98	-	108	-	53	155	10	-	-	116	-	106	-	53	128	9	30	-
[Naphthalene]	Percent	73	-	-	63	-	75	-	55	127	-	-	-	99	-	89	-	55	127	-	-	-
[o-Terphenyl]	Percent	80	-	-	90	-	102	-	50	163	-	-	-	129	-	124	-	50	163	-	-	-

! SURROGATE RECOVERIES :
: BC ANALYTICAL : GLEN LAB : 15:32:55 19 FEB 1998 - P. 1 :
=====

METHOD	ANALYTE	BATCH	ANALYZED	REPORTED	TRUE	%REC	FLAG
9801418*1							
8015M	Naphthalene	9824	01/31/98	0.0381	0.0500	76	
	o-Terphenyl	9824	01/31/98	0.0420	0.0500	84	
8015M.TXa	a,a,a-Trifluorotoluene	Re986014	01/26/98	43.5	50.0	87	
9801418*2							
8015M	Naphthalene	9824	01/31/98	0.0349	0.0500	70	
	o-Terphenyl	9824	01/31/98	0.0403	0.0500	81	
8015M.TXa	a,a,a-Trifluorotoluene	Re986014	01/26/98	44.9	50.0	90	
9801418*3							
8015M	Naphthalene	9824	01/30/98	0.0313	0.0500	63	
	o-Terphenyl	9824	01/30/98	0.0320	0.0500	64	
8015M.TXa	a,a,a-Trifluorotoluene	Re986014	01/26/98	43.8	50.0	88	
9801418*4							
8015M	Naphthalene	9824	01/30/98	0.0338	0.0500	68	
	o-Terphenyl	9824	01/30/98	0.0408	0.0500	82	
8015M.TXa	a,a,a-Trifluorotoluene	Re986014	01/26/98	44.7	50.0	89	
9801418*5							
8015M	Naphthalene	9824	01/31/98	0.0391	0.0500	78	
	o-Terphenyl	9824	01/31/98	0.0420	0.0500	84	
8015M.TXa	a,a,a-Trifluorotoluene	Re986015	01/27/98	44.8	50.0	90	
9801418*6							
8015M	Naphthalene	9824	02/02/98	0.0369	0.0500	74	
	o-Terphenyl	9824	02/02/98	0.0410	0.0500	82	
8015M.TXa	a,a,a-Trifluorotoluene	Re985012	01/26/98	60.1	50.0	120	
9801418*7							
8015M	Naphthalene	9824	01/31/98	0.0407	0.0500	81	
	o-Terphenyl	9824	01/31/98	0.0503	0.0500	101	
8015M.TXa	a,a,a-Trifluorotoluene	Re985012	01/26/98	56.2	50.0	112	

G98-01-418

Chain of Custody

TRMI EH&S
 100 Cutting Boulevard
 Richmond, California 94804
 Phone: (510) 238-3541
 FAX: (510) 237-7021
 Forward Results to Blaine Tech, ATTN: Kent Brown
 Texaco Project Coordinator Deborah Pryor

Site Name: Texaco Loc. #624880235
 Site Address: 500 Grand Ave. Oakland, CA
 Contractor Project Number: 98021-H1
 Contractor Name: Blaine Tech Services, Inc.
 Address: 1680 Rogers Ave., San Jose CA 95112
 Project Contact: Kent Brown
 Phone/FAX: (408) 573-0555 / (408) 573-7771

Laboratory: B C Analytical
 Turn Around Time: normal (10 day)
 Samplers (PRINT NAME): Morgan Hargrove
 Sampler Signature: [Signature]
 Date Samples Collected: 1-21-98

ANALYSIS

Sample Number	Lab Sample Number	Date/Time Collected	No. of Containers	Type of Container	Sample Matrix	Preservative	TPH Gas/STEX	TPH Diesel	Oil/G/TPH (418.1)	TPH Ex. (CB-C36 +)	VOCs B240/624	P. Halocarbons 8010/80	P. Aromatics 8020/802	Organic Lead	Comments
MW-8F X		1/21 950	7				X	X	X						
MW-8G X		920													
MW-8H X		1015													
MW-8I X		840													
MW-8J X		815													
MW-8K X		1035													
EB			5												

Relinquished by: [Signature] Date: 1/22/98 Time: 11:10
 Relinquished by: _____ Date: _____ Time: _____
 Relinquished by: _____ Date: _____ Time: _____
 Method of Shipment: _____

Received by: [Signature] Date: 1/22/98 Time: 11:10
 Received by: _____ Date: _____ Time: _____
 Received by: _____ Date: _____ Time: _____
 Lab Comments: _____

Well Gauging Data

Project Name: TEXACO # 624880235
 Project Number: 980121-N1

Date: 1/21/98
 Recorded By: Morgan H.

	Well ID	TOC Elev.	DTB (ft. TOC)	Well Dia. (in.)	DTP (ft.)	DTW (ft.)	PT (ft.)	Comments
4	MW-8F		14.46	4		8.56		
3	MW-8G		14.49	4		7.57		
5	MW-8H		14.89	4		3.57		
2	MW-8I		14.57	4		6.00		Gauged w/ORC in well
1	MW-8J		14.75	4		5.71		
6	MW-8K		16.51	2		1.29		

* All wells are slow to recharge *

TOC = Top of casing
 DTB = Depth to bottom in feet below TOC
 DTP = Depth to product in feet below TOC
 DTW = Depth to water in feet below TOC
 PT = Product thickness in feet

TEXACO WELL MONITORING DATA SHEET

Project #: <u>980121-N1</u>	Texaco ID#: <u>624880235</u>
Sampler: <u>MH</u>	Date: <u>1/21/98</u>
Well I.D.: <u>MW-8F</u>	Well Diameter: 2 3 <u>(4)</u> 6 8 ____
Total Well Depth: <u>14.46</u>	Depth to Water: <u>8.56</u>
Depth to Free Product:	Thickness of Free Product:
All Measurements are referenced to TOC. Meter used is Myron LpDS pH/EC Meter. All temperatures taken in degrees Fahrenheit.	

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.17	5"	1.02
3"	0.38	6"	1.50
4"	0.66	8"	2.60
4.5"	0.83	Other	radius ² * 0.164

Purge Method: S.S. Bailer Teflon Bailer Middleburg <input checked="" type="checkbox"/> Electric Submersible Extraction Pump Other: _____	Sampling Method: S.S. Bailer <input checked="" type="checkbox"/> Teflon Bailer Extraction Port Other: _____
--	--

<u>3.8</u>	x	<u>3</u>	=	<u>11.4</u>	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Color/Odor
<u>936</u>	<u>61.0</u>	<u>6.7</u>	<u>2500</u>	<u>39</u>	<u>4</u>	
<u>937</u>	<u>60.6</u>	<u>6.7</u>	<u>2400</u>	<u>14</u>	<u>8</u>	
<u>938</u>	<u>60.8</u>	<u>6.7</u>	<u>2900</u>	<u>11</u>	<u>12</u>	

Did well dewater? Yes <input type="checkbox"/> <input checked="" type="checkbox"/> <u>(No)</u>	Gallons actually evacuated: <u>12</u>
Sampling Time: <u>950</u>	Sampling Date: <u>1/21</u>
Sample I.D.: <u>MW-8F</u>	Laboratory: <u>BC Analytical</u>
Analyzed for: <input checked="" type="checkbox"/> <u>Tph-G</u> <input checked="" type="checkbox"/> <u>BTEX</u> <input checked="" type="checkbox"/> <u>Tph-D</u>	Other: <u>O&G</u>
Equipment Blank I.D.:	Analyzed for same as primary sample

TEXACO WELL MONITORING DATA SHEET

Project #: <i>980121-41</i>	Texaco ID#: <i>624880235</i>
Sampler: <i>MW</i>	Date: <i>1/21/98</i>
Well I.D.: <i>MW-8G</i>	Well Diameter: 2 3 <u>4</u> 6 8 _____
Total Well Depth: <i>14.49</i>	Depth to Water: <i>7.57</i>
Depth to Free Product:	Thickness of Free Product:
All Measurements are referenced to TOC. Meter used is Myron LpDS pH/EC Meter. All temperatures taken in degrees Fahrenheit.	

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.17	5"	1.02
3"	0.38	6"	1.50
4"	0.66	8"	2.60
4.5"	0.83	Other	radius ² * 0.164

Purge Method: S.S. Bailer Teflon Bailer Middleburg <input checked="" type="checkbox"/> Electric Submersible Extraction Pump Other: _____	Sampling Method: S.S. Bailer <input checked="" type="checkbox"/> Teflon Bailer Extraction Port Other: _____
--	--

<u>4.5</u>	x	<u>3</u>	=	<u>12.5</u>	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Color/Odor
<i>906</i>	<i>60.0</i>	<i>6.6</i>	<i>2000</i>	<i>72</i>	<i>5</i>	
<i>907</i>	<i>60.8</i>	<i>6.7</i>	<i>2200</i>	<i>51</i>	<i>10</i>	
<i>908</i>	<i>61.0</i>	<i>6.7</i>	<i>2200</i>	<i>43</i>	<i>15</i>	

Did well dewater? Yes <input type="checkbox"/> <u>No</u>	Gallons actually evacuated: <i>15</i>
Sampling Time: <i>920</i>	Sampling Date: <i>1/21</i>
Sample I.D.: <i>MW-8G</i>	Laboratory: <i>BC Analytical</i>
Analyzed for: <u>Tph-G</u> <u>BTEX</u> <u>Tph-D</u>	Other: <i>OE G</i>
Equipment Blank I.D.: <i>EB</i>	Analyzed for same as primary sample

TEXACO WELL MONITORING DATA SHEET

Project #: <u>980121-H1</u>	Texaco ID#: <u>624860235</u>
Sampler: <u>MW</u>	Date: <u>1/21/98</u>
Well I.D.: <u>MW-8H</u>	Well Diameter: 2 3 <u>4</u> 6 8 _____
Total Well Depth: <u>14.89</u>	Depth to Water: <u>3.57</u>
Depth to Free Product:	Thickness of Free Product:
All Measurements are referenced to TOC. Meter used is Myron LpDS pH/EC Meter. All temperatures taken in degrees Fahrenheit.	

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.17	5"	1.02
3"	0.38	6"	1.50
4"	0.66	8"	2.60
4.5"	0.83	Other	radius ² * 0.164

Purge Method: <input type="checkbox"/> S.S. Bailer <input type="checkbox"/> Teflon Bailer <input type="checkbox"/> Middleburg <input checked="" type="checkbox"/> Electric Submersible <input type="checkbox"/> Extraction Pump Other: _____	Sampling Method: <input checked="" type="checkbox"/> S.S. Bailer <input type="checkbox"/> Teflon Bailer <input type="checkbox"/> Extraction Port Other: _____
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<u>7.4</u>	x	<u>3</u>	=	<u>22.2</u>	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Color/Odor
1005	66.4	7.3	920	86	8	Odor
1006	67.2	7.1	890	51	16	"
1007	67.4	7.1	850	36	24	"

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Gallons actually evacuated: <u>24</u>
Sampling Time: <u>1015</u>	Sampling Date: <u>1/21</u>
Sample I.D.: <u>MW-8H</u>	Laboratory: <u>BC Analytical</u>
Analyzed for: <u>Tph-G</u> <u>BTEX</u> <u>Tph-D</u>	Other: <u>O & G</u>
Equipment Blank I.D.:	Analyzed for same as primary sample

TEXACO WELL MONITORING DATA SHEET

Project #: <u>980121-H1</u>	Texaco ID#: <u>624880235</u>
Sampler: <u>MM</u>	Date: <u>1/21/98</u>
Well I.D.: <u>MW-81</u>	Well Diameter: 2 3 <u>(4)</u> 6 8 _____
Total Well Depth: <u>14.57</u>	Depth to Water: <u>6.00</u>
Depth to Free Product:	Thickness of Free Product:
All Measurements are referenced to TOC. Meter used is Myron LpDS pH/EC Meter. All temperatures taken in degrees Fahrenheit.	

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.17	5"	1.02
3"	0.38	6"	1.50
4"	0.66	8"	2.60
4.5"	0.83	Other	radius ² * 0.164

Purge Method: S.S. Bailer Teflon Bailer Middleburg <input checked="" type="checkbox"/> Electric Submersible Extraction Pump Other: _____	Sampling Method: S.S. Bailer <input checked="" type="checkbox"/> Teflon Bailer Extraction Port Other: _____
--	--

$$\frac{\underline{5.6}}{\text{1 Case Volume (Gals.)}} \times \frac{\underline{3}}{\text{Specified Volumes}} = \frac{\underline{16.8}}{\text{Calculated Volume}} \text{ Gals.}$$

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Color/Odor
<u>829</u>	<u>66.0</u> 63.0	<u>1.8</u>	<u>550</u>	<u>9</u>	<u>6</u>	
<u>830</u>	<u>66.8</u> 52.6	<u>8.0</u>	<u>650</u>	<u>5</u>	<u>12</u>	
<u>831</u>	<u>67.2</u>	<u>8.0</u>	<u>720</u>	<u>3</u>	<u>18</u>	

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Gallons actually evacuated: <u>18</u>
Sampling Time: <u>840</u>	Sampling Date: <u>1/21</u>
Sample I.D.: <u>MW-81</u>	Laboratory: <u>BC Analytical</u>
Analyzed for: <input checked="" type="checkbox"/> Tph-G <input checked="" type="checkbox"/> BTEX <input checked="" type="checkbox"/> Tph-D	Other: <u>o&g</u>
Equipment Blank I.D.:	Analyzed for same as primary sample

TEXACO WELL MONITORING DATA SHEET

Project #: <u>980121-41</u>	Texaco ID#: <u>624880235</u>
Sampler: <u>MH</u>	Date: <u>1/21/98</u>
Well I.D.: <u>MW-8J</u>	Well Diameter: 2 3 <u>(4)</u> 6 8 _____
Total Well Depth: <u>4.75</u>	Depth to Water: <u>5.71</u>
Depth to Free Product:	Thickness of Free Product:
All Measurements are referenced to TOC. Meter used is Myron LpDS pH/EC Meter. All temperatures taken in degrees Fahrenheit.	

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.17	5"	1.02
3"	0.38	6"	1.50
4"	0.66	8"	2.60
4.5"	0.83	Other	radius ² * 0.164

Purge Method: S.S. Bailer Teflon Bailer Middleburg <input checked="" type="checkbox"/> Electric Submersible Extraction Pump Other: _____	Sampling Method: S.S. Bailer <input checked="" type="checkbox"/> Teflon Bailer Extraction Port Other: _____
--	--

<u>5.9</u>	x	<u>3</u>	=	<u>17.7</u>	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Color/Odor
<u>811</u>	<u>66.8</u>	<u>6.2</u>	<u>1400</u>	<u>41</u>	<u>6</u>	
<u>812</u>	<u>67.4</u>	<u>6.5</u>	<u>1400</u>	<u>28</u>	<u>12</u>	
<u>813</u>	<u>67.6</u>	<u>6.4</u>	<u>1400</u>	<u>21</u>	<u>18</u>	

Did well dewater? Yes <input type="checkbox"/> <u>No</u>	Gallons actually evacuated: <u>18</u>
Sampling Time: <u>815</u>	Sampling Date: <u>1/21</u>
Sample I.D.: <u>MW-8J</u>	Laboratory: <u>BC Analytical</u>
Analyzed for: <u>Tph-G</u> <u>BTEX</u> <u>Tph-D</u>	Other: <u>O&G</u>
Equipment Blank I.D.:	Analyzed for same as primary sample

TEXACO WELL MONITORING DATA SHEET

Project #: <u>980121-H1</u>	Texaco ID#: <u>624-880235</u>
Sampler: <u>MH</u>	Date: <u>1/21/98</u>
Well I.D.: <u>MW-8K</u>	Well Diameter: <u>(2)</u> 3 4 6 8 _____
Total Well Depth: <u>16.59 16.51</u>	Depth to Water: <u>4.21 1.29</u>
Depth to Free Product:	Thickness of Free Product:
All Measurements are referenced to TOC. Meter used is Myron LpDS pH/EC Meter. All temperatures taken in degrees Fahrenheit.	

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.17	5"	1.02
3"	0.38	6"	1.50
4"	0.66	8"	2.60
4.5"	0.83	Other	radius ² * 0.164

Purge Method: <input checked="" type="checkbox"/> S.S. Bailer <input type="checkbox"/> Teflon Bailer <input type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Extraction Pump Other: _____	Sampling Method: S.S. Bailer <input checked="" type="checkbox"/> <input type="checkbox"/> Teflon Bailer <input type="checkbox"/> Extraction Port Other: _____
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<u>2.3</u>	x	<u>3</u>	=	<u>6.9</u>	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Color/Odor
<u>1024</u>	<u>62.2</u>	<u>7.3</u>	<u>1500</u>	<u>7200</u>	<u>3</u>	
<u>1027</u>	<u>63.0</u>	<u>7.2</u>	<u>1400</u>	<u>121</u>	<u>6</u>	
<u>1030</u>	<u>63.2</u>	<u>7.2</u>	<u>1400</u>	<u>73</u>	<u>9</u>	

Did well dewater? Yes <input checked="" type="checkbox"/> <u>No</u>	Gallons actually evacuated: <u>9</u>
Sampling Time: <u>1035</u>	Sampling Date: <u>1/21</u>
Sample I.D.: <u>MW-8K</u>	Laboratory: <u>BC Analytical</u>
Analyzed for: <u>Tph-G</u> <u>BTEX</u> <u>Tph-D</u>	Other: <u>O & G</u>
Equipment Blank I.D.:	Analyzed for same as primary sample

SOURCE RECORD **BILL OF LADING**

FOR NON-HAZARDOUS PURGEWATER RECOVERED FROM GROUNDWATER WELLS AT TEXACO FACILITIES IN THE STATE OF CALIFORNIA. THE NON-HAZARDOUS PURGEWATER WHICH HAS BEEN RECOVERED FROM GROUNDWATER WELLS IS COLLECTED BY THE CONTRACTOR, MADE UP INTO LOADS OF APPROPRIATE SIZE AND HAULED TO THE DESTINATION DESIGNATED BY TRMI EH&S.

Contractor: Blaine Tech Services, Inc.
Address: 1680 Rogers Ave.
City, State, ZIP: San Jose, CA 95112
Phone: (408) 573-0555

is authorized by TRMI EH&S to recover, collect, apportion into loads, and haul the NON HAZARDOUS WELL PURGEWATER that is drawn from wells at the Texaco facility listed below and to deliver that purgewater to an appropriate destination designated by TRMI EH&S in either Redwood City, California or in Richmond, California. Transport routing of the Non-Hazardous Well Purgewater may be direct from one Texaco facility to the designated destination point; from one Texaco facility to the designated destination point via another Texaco facility; from a Texaco facility to the designated destination point via the contractor's facility, or any combination thereof. The Non-Hazardous Well Purgewater is and remains the property of TRMI EH&S.

This **SOURCE RECORD BILL OF LADING** was initiated to cover the recovery of Non-Hazardous Well Purgewater from wells at the Texaco facility described below:

Texaco#: 624880235
Address: 500 Grand Ave.
City, State, ZIP: Oakland, CA

WELL I.D. GALS.

WELL I.D. GALS.

Total _____
Purge _____
Water _____
⇒ 95 _____

Total gals. 1595

added rinse
water 15

Total Gals.
Recovered 110

Job#: 980121-41
Date: 1/21/98
Time: 1100
Signature: [Signature]

REC'D AT: _____
Date: _____
Time: _____
Signature: _____

Texaco Refining and Marketing Inc., Environmental Health and Safety
Standard Operating Procedures
for Groundwater Monitoring and Sampling

The following are routine procedures to be followed by personnel obtaining field information concerning petroleum product thickness and samples of groundwater during the monitoring and sampling of Texaco sites. These procedures are designed to assure that:

- Information and samples are properly collected.
- Samples are identified, preserved and transported in a manner such that they are representative of field conditions.
- Monitoring and sampling results are reproducible.

Water Level Measurements

Water level measurements are needed to document groundwater flow directions and calculate gradient. By gauging the level of water in a groundwater monitoring well and comparing the compiled data, calculations can be made that determine the direction the groundwater at the monitored well is flowing and the groundwater gradient between successive monitoring wells.

- An interface probe or electronic probe is generally used to gauge the level of water in a monitoring well. When using either probe, it is slowly lowered into the well until the oscillating alarm indicating water is heard. Raise the interface probe above the water level and lower back into the water at least three times to verify that the true depth to water is measured. The depth to water should always be measured from the same spot on the top of the well casing. The designate "Top of Casing" mark should be at the North side of the casing. Without moving the probe, read the numbers on the tape to determine the distance to water from the top of the well casing. A chalked, steel add-tape may also be used to gauge the level of water in a monitoring well. When using the steel tape, it is slowly lowered into the well until the chalked portion of the tape encounters water. Read the numbers on the tape to determine the distance from the predetermined top of the well casing. Raise the tape to the surface grade, re-chalk and lower it back into the water at least two times to verify that the true depth to water is measured. Record the depth to water on the Well Gauging Form and Groundwater Sampling Form.

Petroleum Product Thickness Measurements

If free phase petroleum hydrocarbons (product) are observed floating on the groundwater surface during the water level measurement, the thickness of the product will be measured in each appropriate well. Groundwater samples will not be collected for chemical analysis from wells containing product (even a sheen) unless specifically requested by the Project Coordinator. If the Project Coordinator requests that wells containing product be sampled, only those wells with product thickness of less than 0.01 foot will be sampled. Arrangements to bail, store, and dispose of product must be made separately. When product is stored, according to Texaco policy, it will be double-contained and disposed of within 90 days of generation. Product thickness will be measured using interface probes, and/or acrylic (clear plastic) bailers. The procedures for obtaining level and thickness measurements using each instrument are:

- The level of the top of the product will be measured with an interface probe. When product is suspected but not measurable with the interface probe, a visual evaluation can be made using clear bailers. A bailer will be lowered into the water/product surface so that the top of the bailer is NOT submerged; the bailer is then removed from the well

and the thickness of the product visually measured and documented on the Well Gauging Form.

- When the interface probe contact liquid, the visual/audible alarm on the reel will be activated. An oscillating alarm indicates water, a continuous alarm indicates hydrocarbon*. To determine the exact thickness of a hydrocarbon layer, the probe should be slowly lowered to the air/hydrocarbon interface until the alarm is activated. With the probe at the exact point where the alarm comes on, read the numbers on the tape to determine the distance from the top of casing elevation mark. Next, lower the probe through the hydrocarbon layer and well into the water. An oscillating alarm will be obtained. The probe alarm changes from oscillating to continuous. The thickness of the hydrocarbon layer is determined by subtracting the first reading from the second reading. Record the calculated value on the Well Gauging Form and Groundwater Sampling Form.

* The process described here is equipment specific. Follow the procedures applicable for your monitoring equipment.

Groundwater Sampling

Groundwater samples will be collected from selected groundwater monitoring wells to provide data which will be statistically representative of local groundwater conditions at the site. Groundwater samples will be collected as follows:

- All measuring and sampling equipment will be decontaminated prior to sample collection from each well and documented on the Groundwater Sampling Form.
- Prior to sampling activity, the water level in the well will be measured and the minimum purge volume of each well will be calculated using the purge volume calculation portion of the Groundwater Sampling Form. A minimum of three casing volumes will be purged prior to sample collection. The actual total volume purged will be recorded on Groundwater Sampling Form.
- Prior to sampling, a submersible pump, centrifugal pump, peristaltic pump, or a Teflon or stainless steel bailer will be used to purge a minimum of three casing volumes from each well. Purge volumes will be estimated using a flow meter or a stopwatch and a bucket to estimate flow rate, from which a time to purge the required volume will be calculated. The pump will be lowered to a depth of two to three feet from bottom of the well. When bailers are used for purging, the bailer should be gently lowered into the water and allowed to fill, then removed. Purged water may be placed into 5-gallon buckets to determine the volume of groundwater removed. Care should be taken to not agitate the water which could release volatile organics.
- Whenever possible, groundwater parameters pH, temperature (in degrees Celsius [C]), specific conductance (in micromhos per centimeters squared [μmhos]), and turbidity (in National Turbidity Units [NTU]) will be monitored and recorded on the Groundwater Sampling Form.
- If a well is purged dry before three casing volumes have been removed, the sample will be taken after the well has recovered to at least 80 percent of the static water level prior to purging or after 4 hours when sufficient water volume is available to meet analytical requirements, whichever comes first. Reasonable efforts will be made to avoid dewatering wells by using low-yield pumps as necessary.
- Water samples will be collected with a stainless steel or Teflon bailer. To reduce potential cross contamination, sampling should take place in order from least to most

contaminated wells. Bailer strings should be replaced between each well to avoid cross contamination from a bailer string which has absorbed contamination.

- Sample containers will be filled directly from the bailer.
- Use only sample containers prepared and provided by an analytical laboratory. Preservatives are required for some types of samples. Sample containers containing preservatives should be supplied by an analytical laboratory.
- For volatile organics analysis, each sample vial will be filled with sample water so that water stands above the lip of the vial. The cap should then be quickly placed on the vial and tightened securely. The vial should then be checked to ensure that no air bubbles are present prior to labeling the sample.
- Take site blank samples (trip and rinsate) using distilled water or laboratory supplied water from a known uncontaminated source. One trip blank and one rinsate blank sample for each site will be analyzed for each site sampling event.
- Once collected and labeled, all samples will be stored in a cooler maintained at 4 degrees Celsius using frozen water ice.

Sample Custody Procedures

Sample custody procedures will be followed through sample collection, transfer, analysis and ultimate disposal. The purpose of these procedures is to assure that the integrity of samples is maintained during their collection and transfer. Sample quantities, types and locations will be determined before the actual field work begins. As few people as possible will handle samples. The field sampler is personally responsible for the care and custody of the collected samples until they are properly transferred.

Each sample will be labeled and sealed properly immediately after collection. Sample identification documents will be carefully prepared so that identification and chain-of-custody records can be maintained and sample identification documents that will be utilized during the field operations.

- Sample Identification Label
- Chain-of-Custody

Each separate sample will be identified using a label obtained from the laboratory. The sampler will complete all information, using a black waterproof pen, as follows:

The Site ID This is the name assigned to the particular sampling station.

The Sample Source This will be the name of the well location.

The Analysis Required This will be indicated for each sample using proper EPA reference number indicating analytical method.

The Date Taken This will be the date the sample was collected, using the format MM-DD-YY Example: 06-15-91

Noting the Time The time the sample was collected will be given in military time. Example: 1430

The Method of Preservation Preservation methods will be provided, specifying the type of preservation. For non-acidified samples, "ice" will be indicated.

The Sampler's Name This will be printed in the "Sampled By" section. The sampler's signature will be written in the "Signed" section.

There is potential that samples and analyses could be of an evidentiary nature. Therefore, the possession of samples must be traceable from the time samples are collected in the field until the analysis is completed and the data are entered as evidence. The tracing of the samples through the laboratory is accomplished by "chain-of-custody" procedures. Chain-of-Custody Forms will be completed for each set of samples. The sampler will sign the first "Relinquished By" line at the bottom of the chain of custody record, and will indicate the date and time of the custody transfer. Samples will not leave custody of the field technician until relinquished to another party. Custody is defined by the following criteria.

In the Actual Physical Possession When field personnel have sample in possession, they have "custody".

In View The samples are in the field personnel's view after being in their physical possession.

Special Areas Sample is kept in a locked area after being in physical possession.

Designated Area Sample is in a designated, locked-storage area.

Transfer of samples to an analytical laboratory will be done by use of a common carrier or personal delivery. Carrier personnel will personally secure samples and sample containers in such a way that no containers can be opened in transit. The person to whom the custody is being transferred will sign on the first "Received By" line of the chain-of-custody record, indicating that custody is being accepted by the carrier for all the samples listed on the sheet. For subsequent transfers of custody, the succeeding relinquish and receipt lines will be used.

Equipment Decontamination

All equipment that comes in contact with potentially contaminated soil or water will be decontaminated prior to and after each use (for example, after each sampling event). All purging and sampling equipment will be decontaminated with an Alconox wash and rinsed with deionized water. Decontamination water generated will be added to the purge water.