



Texaco Refining  
and Marketing Inc.

10 University  
University City

ENVIRONMENTAL  
PROTECTION

07/12/96 PM 2:12

March 14, 1997

**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:

This letter presents the results of groundwater monitoring and sampling conducted by Blaine Tech Services, Inc. on December 5, 1996 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 Environmental Services' Standard Operating Procedures.

If you have any questions or comments regarding this site, please call me at (818) 505-3113.

Deborah R. Pryor  
Project Manager  
Texaco Refining & Marketing Inc. - EH&S

DRP:hs  
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Enclosure

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

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

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**Groundwater Monitoring and Sampling  
Fourth Quarter, 1996  
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

January 24, 1997

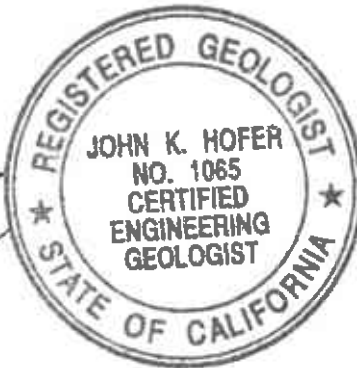
**Groundwater Monitoring and Sampling  
Fourth Quarter, 1996  
at the  
Former Texaco Service Station  
500 Grand Avenue  
Oakland, CA**

This letter presents the results of groundwater monitoring and sampling conducted by Blaine Tech Services, Inc. on December 5, 1996, 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 Environmental Services' Standard Operating Procedures.

James Keller  
Vice President  
Blaine Tech Services, Inc.

John K. Hofer, CEG  
Engineering Geologist, EG-1065  
Geoconsultants, Inc.



JPK:mc



**SOURCE:**

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



SCALE  
1" = 2200'



**TEXACO**

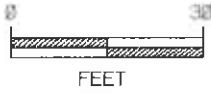
REFINING AND MARKETING, INC.  
TEXACO ENVIRONMENTAL SERVICES

PLATE 1

SITE VICINITY MAP

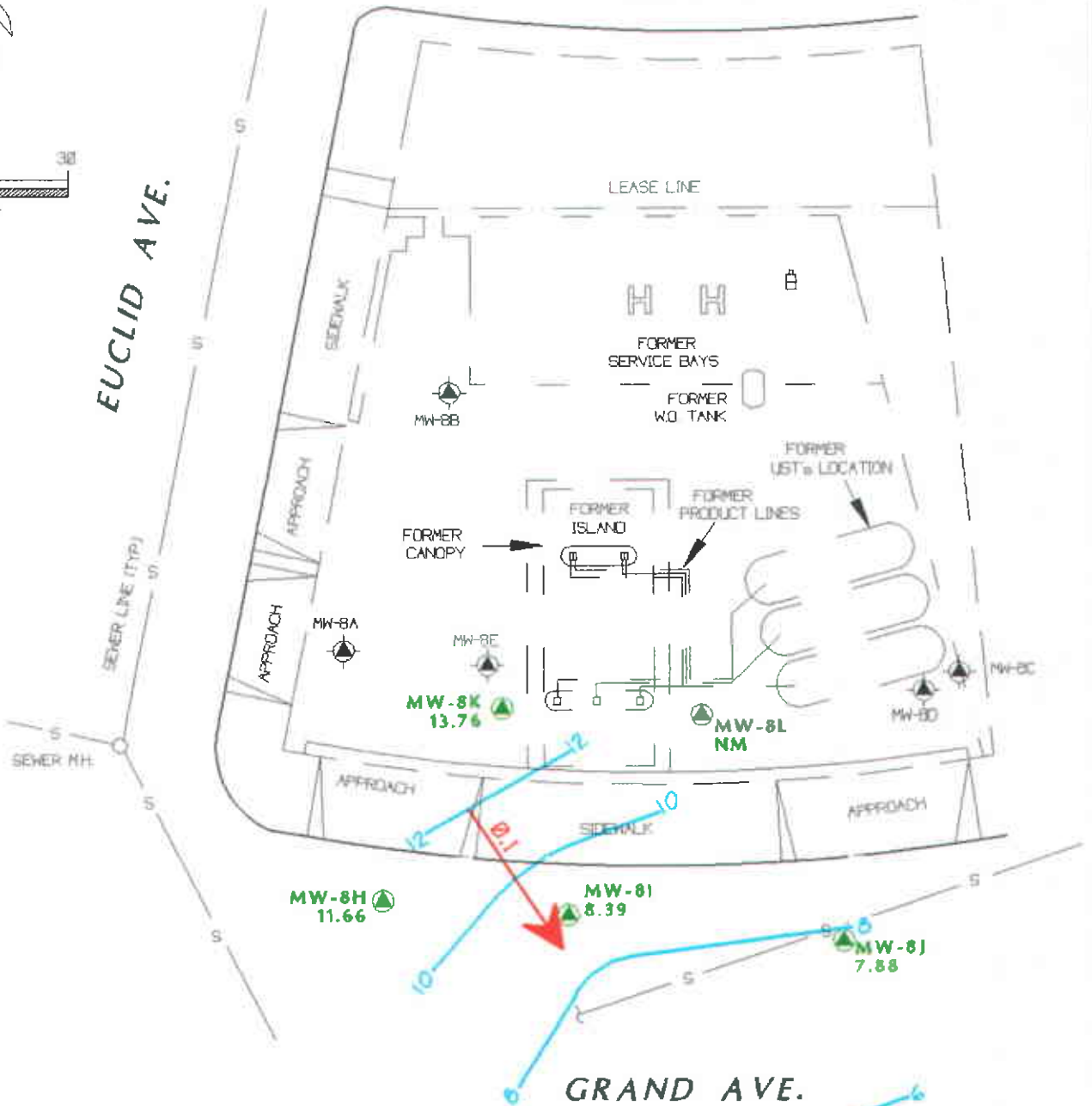
FORMER TEXACO SERVICE STATION

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



EUCLID AVE.

BURK ST.



**EXPLANATION**

- MW-8F GROUND-WATER MONITORING WELL LOCATION AND WELL NUMBER
- MW-8C ABANDONED GROUND-WATER MONITORING WELL LOCATION AND WELL NUMBER
- 5.88** GROUND-WATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- NM** NOT MEASURED
- GROUND-WATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL
- APPROXIMATE DIRECTION OF GROUND-WATER FLOW. GRADIENT INDICATED IN FEET / FEET



LAKE MERRIT PARK

TITLE : GROUND-WATER ELEVATION CONTOUR MAP -  
DECEMBER 5, 1996

LOCATION : FORMER TEXACO SERVICE STATION  
500 GRAND AVE./ EUCLID AVE., OAKLAND, CALIFORNIA

SOURCE : TEXACO; REFINING AND MARKETING ENVIRONMENTAL SERVICES

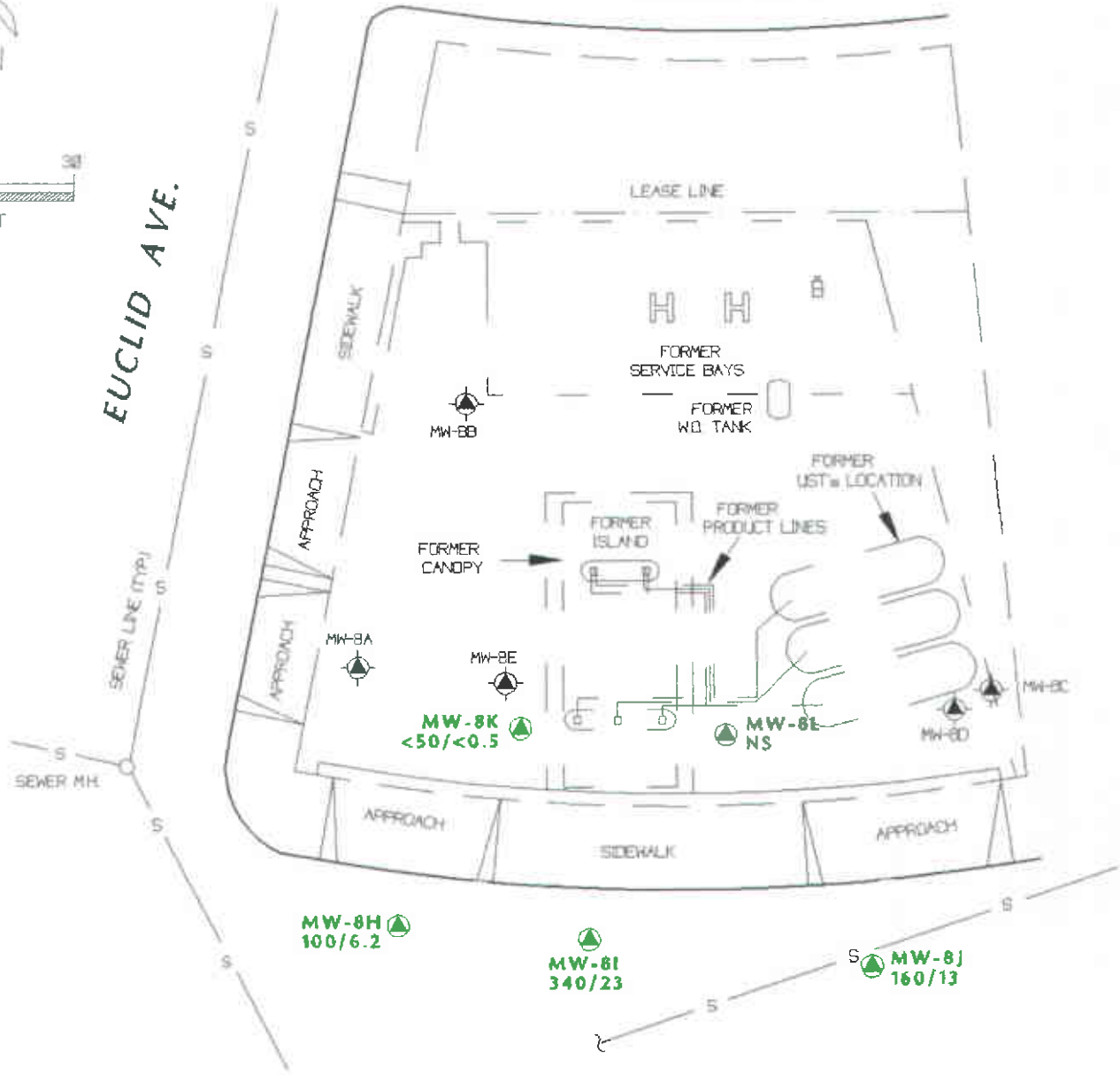


**GEOCONSULTANTS, INC**  
SAN JOSE, CALIFORNIA  
Project No. 0758-11  
DRAWING NO. TEXACO/DK-GR-EU/1120596

BURK ST.



EUCLID AVE.



GRAND AVE.

**EXPLANATION**

- MW-8I GROUNDWATER MONITORING WELL LOCATION AND WELL NUMBER
- MW-8C ABANDONED GROUNDWATER MONITORING WELL LOCATION AND WELL NUMBER
- 340/23** TPH AS GASOLINE / BENZENE CONCENTRATIONS (ug / L)
- NS** NOT SAMPLED



LAKE MERRIT  
PARK

TITLE : TPH AS GASOLINE AND BENZENE CONCENTRATIONS MAP -  
DECEMBER 5, 1996

LOCATION : FORMER TEXACO SERVICE STATION  
500 GRAND AVE./ EUCLID AVE., OAKLAND, CALIFORNIA

SOURCE : TEXACO, REFINING AND MARKETING ENVIRONMENTAL SERVICES



**GEOCONSULTANTS, INC**  
SAN JOSE, CALIFORNIA  
Project No. G756-11  
DRAWING NO. TEXACO/OK-OR-EU/G120536

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

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	
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	



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-8I	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	
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	

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-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
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	
* = 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	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-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	NA		
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	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-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	NA	
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	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-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	NA
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	Not Sampled							
	01/31/95	Not Sampled							
	05/18/95	Not Sampled							
	08/29/95	Not Sampled							
	11/02/95	Not Sampled							
	02/05/96	Not Sampled							
	04/30/96	Not Sampled							
08/28/96	Not Sampled								
12/05/96	Not Sampled								
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.									

801 Western Avenue  
Glendale, CA 91201  
818/247-5737  
Fax: 818/247-9797

LOG NO: G96-12-166

Received: 06 DEC 96

Mailed: **DEC 18 1996**

Ms. Rebecca Digerness  
Texaco Environmental Services  
108 Cutting Boulevard  
Richmond, CA 94804

Purchase Order: 94-1446346+4370

Requisition: 624880235  
Project: FKEP9037L

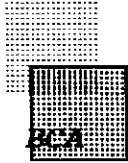
REPORT OF ANALYTICAL RESULTS

Page 1

AQUEOUS

SAMPLE DESCRIPTION	DATE SAMPLED	TRPH (CADHS/418.1) mg/L	TPH (CADHS/3510)	Date Extracted Date	Date Analyzed Date	Dilution Factor Times	TPH-d mg/L	Carbon Range	TPH/BTEX (CADHS/8020) Date Analyzed Date	Dilution Factor Times	TPH-g ug/L
RDL		5					0.05			1	50
1*MW-8F	12/05/96	<5	12/09/96	12/11/96		1	0.11	C10-C25	12/09/96	1	210
2*MW-8G	12/05/96	<5	12/09/96	12/11/96		1	0.057	C10-C25	12/09/96	1	190
3*MW-8H	12/05/96	<5	12/09/96	12/12/96		1	0.35	C10-C25	12/09/96	1	100
4*MW-8I	12/05/96	<5	12/09/96	12/11/96		1	0.053	C10-C25	12/09/96	1	340
5*MW-8J	12/05/96	<5	12/09/96	12/11/96		1	<0.05	C10-C25	12/09/96	1	160
6*MW-8K	12/05/96	<5	12/09/96	12/11/96		1	<0.05	C10-C25	12/09/96	1	<50

Deborah Pryor  
500 Grand Ave., Oakland  
Alameda County



801 Western Avenue  
 Glendale, CA 91201  
 818/247-5737  
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Ms. Rebecca Digerness  
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 108 Cutting Boulevard  
 Richmond, CA 94804

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 Project: FKEP9037L

REPORT OF ANALYTICAL RESULTS

Page 2

AQUEOUS

SAMPLE DESCRIPTION	DATE SAMPLED	TPH/BTEX (CADHS/8020)						
		Benzene ug/L	Toluene ug/L	Ethyl-Benzene ug/L	Methyl-tert-butylether ug/L	Total Xylenes Isomers ug/L	Carbon Range	
RDL		0.5	0.5	0.5	30	0.5		
1*MW-8F	12/05/96	17	17	11	<30	46	C6-C12	
2*MW-8G	12/05/96	16	16	9.0	<30	39	C6-C12	
3*MW-8H	12/05/96	6.2	7.3	5.0	<30	22	C6-C12	
4*MW-8I	12/05/96	23	8.7	11	<30	26	C6-C12	
5*MW-8J	12/05/96	13	14	8.9	<30	38	C6-C12	
6*MW-8K	12/05/96	<0.5	<0.5	<0.5	<30	<0.5	C6-C12	





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 108 Cutting Boulevard  
 Richmond, CA 94804

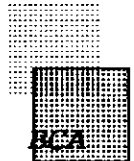
Purchase Order: 94-1446346+4370

Requisition: 624880235  
 Project: FKEP9037L

REPORT OF ANALYTICAL RESULTS

AQUEOUS

SAMPLE DESCRIPTION	DATE SAMPLED	TRPH	TPH				TPH/BTEX					
		(CADHS/418.1)	(CADHS/3510)	mg/L	Date Extracted Date	Date Analyzed Date	Dilution Factor Times	TPH-d mg/L	Carbon Range	Date Analyzed Date	Dilution Factor Times	TPH-g ug/L
RDL		5					0.05				1	50
7*EB	12/05/96	<5	12/09/96	12/11/96	1	<0.05	C10-C25	12/09/96	1	<50		



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 Project: FKEP9037L

REPORT OF ANALYTICAL RESULTS

Page 4

AQUEOUS

SAMPLE DESCRIPTION	DATE SAMPLED	TPH/BTEX (CADHS/8020)						Carbon Range
		Benzene ug/L	Toluene ug/L	Ethyl-Benzene ug/L	Methyl-tert-butylether ug/L	Total Xylenes Isomers ug/L		
RDL		0.5	0.5	0.5	30	0.5		
7*EB	12/05/96	<0.5	<0.5	<0.5	<30	<0.5	C6-C12	

*[Handwritten Signature]*  
 Greta Galoustian, 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				
9612166*1	MW-8F	IR.PETROHC	12.14.96	418.1	533-17	96251	8106
		DIESEL.3520.TES	12.11.96	8015M	536-25	96221	1010
		GAS.MTBE.TESNC	12.09.96	8015M.TX	536-36	966192	6843
9612166*2	MW-8G	IR.PETROHC	12.14.96	418.1	533-17	96251	8106
		DIESEL.3520.TES	12.11.96	8015M	536-25	96221	1010
		GAS.MTBE.TESNC	12.09.96	8015M.TX	536-36	966192	6843
9612166*3	MW-8H	IR.PETROHC	12.14.96	418.1	533-17	96251	8106
		DIESEL.3520.TES	12.12.96	8015M	536-01	96221	1010
		GAS.MTBE.TESNC	12.09.96	8015M.TX	536-36	966192	6843
9612166*4	MW-8I	IR.PETROHC	12.14.96	418.1	533-17	96251	8106
		DIESEL.3520.TES	12.11.96	8015M	536-25	96221	1010
		GAS.MTBE.TESNC	12.09.96	8015M.TX	536-36	966192	6843
9612166*5	MW-8J	IR.PETROHC	12.14.96	418.1	533-17	96251	8106
		DIESEL.3520.TES	12.11.96	8015M	536-25	96221	1010
		GAS.MTBE.TESNC	12.09.96	8015M.TX	536-36	966192	6843
9612166*6	MW-8K	IR.PETROHC	12.14.96	418.1	533-17	96251	8106
		DIESEL.3520.TES	12.11.96	8015M	536-25	96221	1010
		GAS.MTBE.TESNC	12.09.96	8015M.TX	536-36	966192	6843
9612166*7	EB	IR.PETROHC	12.14.96	418.1	533-17	96251	8106
		DIESEL.3520.TES	12.11.96	8015M	536-25	96221	1010
		GAS.MTBE.TESNC	12.09.96	8015M.TX	536-36	966192	6843

\*\*\*

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

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

AQUEOUS SAMPLES

----- METHOD BLANK -----			----- LAB CONTROL -----								----- MATRIX QC -----								
UNITS	RESULT	RDL	FLG	LCS		LCSD		RPD		RPD		MS		MSD		RPD		RPD	
				%REC	FLG	%REC	FLG	LCL	UCL	RPD	UCL	FLG	%REC	FLG	%REC	FLG	LCL	UCL	RPD

Batch: IR\*96251 Method: 418.1 - Petroleum Hydrocarbons, Total, Spectrophotometric, Infrared

TRPH	mg/L	0	0.5	-	95	-	-	-	43	168	-	-	-	110	-	114	-	34	129	4	30	-
------	------	---	-----	---	----	---	---	---	----	-----	---	---	---	-----	---	-----	---	----	-----	---	----	---

Batch: GAS\*966192 Method: 8015M.TX - Modified 8015

Benzene	ug/L	0	0.5	-	116	-	-	-	76	155	-	-	-	106	-	120	-	70	153	6	25	-
Toluene	ug/L	0	0.5	-	97	-	-	-	72	121	-	-	-	95	-	96	-	69	119	1	25	-
Ethylbenzene	ug/L	0	0.5	-	101	-	-	-	72	115	-	-	-	100	-	98	-	68	116	1	25	-
Methyl-tert-butylether	ug/L	0	30	-	98	-	-	-	62	159	-	-	-	112	-	121	-	80	176	9	25	-
Total Xylene Isomers	ug/L	0	0.5	-	100	-	-	-	68	115	-	-	-	97	-	97	-	61	118	1	25	-
TPH (Gasoline Range)	ug/L	0	50	-	93	-	-	-	85	120	-	-	-	94	-	86	-	78	124	7	25	-
[a,a,a-Trifluorotoluene]	Percent	107	-	-	112	-	-	-	85	118	-	-	-	100	-	105	-	85	118	-	-	-

Batch: DIESEL\*96221 Method: 8015M - Modified 8015

TPH (Diesel Range)	mg/L	0	0.5	-	100	-	90	-	53	155	11	-	-	132	Q	127	Q	88	122	4	20	-
[Naphthalene]	Percent	69	-	-	110	-	86	-	55	127	-	-	-	127	-	123	-	55	127	-	-	-

METHOD	ANALYTE	BATCH	ANALYZED	REPORTED	TRUE	%REC	FLAG
9612166*1							
8015M	Naphthalene	96221	12/11/96	0.0323	0.0500	65	
8015M.TXa,	a,a-Trifluorotoluene	Re966192	12/09/96	47.9	50.0	96	
9612166*2							
8015M	Naphthalene	96221	12/11/96	0.0324	0.0500	65	
8015M.TXa,	a,a-Trifluorotoluene	Re966192	12/09/96	47.2	50.0	94	
9612166*3							
8015M	Naphthalene	96221	12/12/96	0.0456	0.0500	91	
8015M.TXa,	a,a-Trifluorotoluene	Re966192	12/09/96	47.3	50.0	95	
9612166*4							
8015M	Naphthalene	96221	12/11/96	0.0431	0.0500	86	
8015M.TXa,	a,a-Trifluorotoluene	Re966192	12/09/96	47.9	50.0	96	
9612166*5							
8015M	Naphthalene	96221	12/11/96	0.0350	0.0500	70	
8015M.TXa,	a,a-Trifluorotoluene	Re966192	12/09/96	48.4	50.0	97	
9612166*6							
8015M	Naphthalene	96221	12/11/96	0.0312	0.0500	62	
8015M.TXa,	a,a-Trifluorotoluene	Re966192	12/09/96	45.9	50.0	92	
9612166*7							
8015M	Naphthalene	96221	12/11/96	0.0344	0.0500	69	
8015M.TXa,	a,a-Trifluorotoluene	Re966192	12/09/96	45.0	50.0	90	

METHOD	ANALYTE	BATCH	ANALYZED	REPORTED	TRUE	%REC	FLAG
9612166*2*R1							
8015M	Naphthalene	96221	12/11/96	0.0324	0.0500	65	
8015M.TXa	a,a,a-Trifluorotoluene	Re966192	12/09/96	47.2	50.0	94	
9612166*2*S1							
8015M	Naphthalene	96221	12/12/96	0.0634	0.0500	127	
8015M.TXa	a,a,a-Trifluorotoluene	Re966192	12/09/96	49.8	50.0	100	
9612166*2*S2							
8015M	Naphthalene	96221	12/12/96	0.0617	0.0500	123	
8015M.TXa	a,a,a-Trifluorotoluene	Re966192	12/09/96	52.4	50.0	105	
9612166*2*T							
8015M	Naphthalene	96221	12/12/96	0.0500	0.0500	100	
8015M.TXa	a,a,a-Trifluorotoluene	Re966192	12/09/96	50.0	50.0	100	
B612600*1*MB							
8015M	Naphthalene	96221	12/11/96	0.0343	0.0500	69	
B612633*1*MB							
8015M.TXa	a,a,a-Trifluorotoluene	Re966192	12/09/96	53.5	50.0	107	
C6121142*1*LC							
8015M	Naphthalene	96221	12/11/96	0.0548	0.0500	110	
C6121142*1*LT							
8015M	Naphthalene	96221	12/11/96	0.0500	0.0500	100	
C6121143*1*LC							
8015M	Naphthalene	96221	12/11/96	0.0430	0.0500	86	
C6121143*1*LT							
8015M	Naphthalene	96221	12/11/96	0.0500	0.0500	100	
C6121200*1*LC							
8015M.TXa	a,a,a-Trifluorotoluene	Re966192	12/09/96	56.0	50.0	112	
C6121200*1*LT							
8015M.TXa	a,a,a-Trifluorotoluene	Re966192	12/09/96	50.0	50.0	100	

296-12-166

Chain-of-Custody

Page

Texaco Environmental Services

100 Cutting Boulevard  
 Richmond, California 94804  
 Phone: (510) 236-3541  
 FAX: (510) 237-7821

Forward Results to the Attention of Rebecca Digerness

Texaco Project Coordinator Karen Petryna

Site Name: Texaco Loc. #624880235  
 Site Address: 500 Grand Ave Oakland, CA  
 Contractor Project Number: 961205-F2  
 Contractor Name: Blaine Tech Services, Inc.  
 Address: 985 Timothy Dr., San Jose, CA 95133  
 Project Contact: Jim Keller  
 Phone/FAX: (408) 995-5535 / (408) 293-8773

Laboratory: B C Analytical  
 Turn Around Time: normal (10 day)  
 Samplers (PRINT NAME): Tim Graft  
 Sampler Signature: [Signature]  
 Date Samples Collected: 12/5/96

ANALYSIS											Comments	
TPH gas/STEX	TPH Diesel	OSG/TRPH (<1B.1)	TPH Ex. (C8-C36+)	VOCs 8240/624	P. Halocarbons 8010/60	P. Aromatics 8020/602	Organic Lead					
mw-8F		12-5/	7	NEW HCL	X	X	X					
mw-8G		12-5/	7		X	X	X					
mw-8H		12-5/	7		X	X	X					
mw-8I		12-5/	7		X	X	X					
mw-8J		12-5/	7		X	X	X					
mw-8K		12-5/	7		X	X	X					
EB		12-5/	7		X	X	X					

Relinquished by: [Signature] Date: 12-6-96 Time: 11:03  
 Relinquished by: [Signature] Date: 12-6-96 Time: 1:10  
 Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Received by: [Signature] Date: 12-6-96 Time: 11:03  
 Received by: [Signature] Date: 12/6/96 Time: 2:00  
 Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Method of Shipment: \_\_\_\_\_

Lab Comments: \_\_\_\_\_

500 Grand Ave., Oakland

Well Gauging Data

Project Name: 624880235  
Project Number: 961205-F2

Date: 12/5/96  
Recorded By: TF

Well ID	TOC Elev.	DTB (ft. TOC)	Well Dia. (in.)	DTP (ft.)	DTW (ft.)	PT (ft.)	Comments
MW-8 F		14.68	4		8.16		
MW-8 G		14.63	4		9.22		
MW-8 H		14.91	4		3.38		
MW-8 I		14.68	4		6.01		
MW-8 J		14.89	4		5.94		
MW-8 K		16.42	2		1.42		
MW-8 L		INACCESSABLE	2	INACCESSABLE			

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>961205-F2</u>	Texaco ID#: <u>624880235</u>
Sampler: <u>TG</u>	Date: <u>12/5/96</u>
Well I.D.: <u>MW-8F</u>	Well Diameter: 2 3 <u>(4)</u> 6 8 <u>    </u>
Total Well Depth: <u>14.68</u>	Depth to Water: <u>8.16</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 <sup>2</sup> * 0.164

Purge Method: <u>S.S. Bailer</u> <u>Teflon Bailer</u> <u>Middleburg</u> <u>Electric Submersible</u> ✓ <u>Extraction Pump</u> Other: _____	Sampling Method: <u>S.S. Bailer</u> ✓ <u>Teflon Bailer</u> <u>Extraction Port</u> Other: _____
--	---

<u>4.3</u>	<u>x</u>	<u>3</u>	<u>=</u>	<u>12.9</u>	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Color/Odor
<u>1351</u>	<u>62.8</u>	<u>7.0</u>	<u>2200</u>	<u>94</u>	<u>5</u>	
<u>1352</u>	<u>63.6</u>	<u>6.8</u>	<u>1800</u>	<u>66</u>	<u>9</u>	
<u>1354</u>	<u>63.2</u>	<u>6.8</u>	<u>1700</u>	<u>54</u>	<u>13</u>	

Did well dewater? Yes (No) Gallons actually evacuated: 13.0

Sampling Time: 1410 Sampling Date: 12/5/96

Sample I.D.: MW-8F Laboratory: BC Analytical

Analyzed for: Tph-G BTEX Tph-D Other: Oil + GREASE

Equipment Blank I.D.: Analyzed for same as primary sample

## TEXACO WELL MONITORING DATA SHEET

Project #: 961205-F2	Texaco ID#: 624880235
Sampler: TG	Date: 12/5/96
Well I.D.: MW-86	Well Diameter: 2 3 (4) 6 8 _____
Total Well Depth: 14.63	Depth to Water: 9.22
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 <sup>2</sup> * 0.164

Purge Method: S.S. Bailer                      Sampling Method: S.S. Bailer ~~✓~~  
 Teflon Bailer    Teflon Bailer  
 Middleburg    Extraction Port  
 Electric Submersible ~~✓~~                                      Other: \_\_\_\_\_  
 Extraction Pump

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

3.6	X	3	=	10.8	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Color/Odor
1326	61.4	7.2	2200	7200	4	
1327	61.6	7.2	2100	7200	8	
1328	62.6	7.2	2200	7200	11	

Did well dewater? Yes (No)	Gallons actually evacuated: 11.0
Sampling Time: 1340	Sampling Date: 12/5/96
Sample I.D.: MW-86	Laboratory: BC Analytical
Analyzed for: Tph-G BTEX Tph-D	Other: OIL + GREASE
Equipment Blank I.D.:	Analyzed for same as primary sample

## TEXACO WELL MONITORING DATA SHEET

Project #: <u>961205-F2</u>	Texaco ID#: <u>624880235</u>
Sampler: <u>TG</u>	Date: <u>12/5/96</u>
Well I.D.: <u>MW-8H</u>	Well Diameter: 2 3 <b>4</b> 6 8 <u>    </u>
Total Well Depth: <u>14.91</u>	Depth to Water: <u>3.38</u>
Depth to Free Product: <u>    </u>	Thickness of Free Product: <u>    </u>
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 <sup>2</sup> * 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: <u>    </u>	Sampling Method: <input checked="" type="checkbox"/> S.S. Bailer <input type="checkbox"/> Teflon Bailer <input type="checkbox"/> Extraction Port Other: <u>    </u>
---	--

<u>7.6</u>	$\times$	<u>3</u>	$=$	<u>22.8</u>	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Color/Odor
<u>1453</u>	<u>68.2</u>	<u>7.3</u>	<u>1000</u>	<u>7200</u>	<u>8</u>	
<u>1454</u>	<u>68.4</u>	<u>7.0</u>	<u>900</u>	<u>113</u>	<u>16</u>	
<u>1455</u>	<u>69.2</u>	<u>7.0</u>	<u>920</u>	<u>51</u>	<u>23</u>	

Did well dewater? Yes <input checked="" type="checkbox"/> <b>No</b>	Gallons actually evacuated: <u>23.0</u>
Sampling Time: <u>1505</u>	Sampling Date: <u>12/5/96</u>
Sample I.D.: <u>MW-8H</u>	Laboratory: <u>BC Analytical</u>
Analyzed for: <u>Tph-G BTEX Tph-D</u>	Other: <u>Oil &amp; GREASE</u>
Equipment Blank I.D.: <u>    </u>	Analyzed for same as primary sample

## TEXACO WELL MONITORING DATA SHEET

Project #: <u>961205-F2</u>	Texaco ID#: <u>624880235</u>
Sampler: <u>TE</u>	Date: <u>12/5/96</u>
Well I.D.: <u>mw-8I</u>	Well Diameter: 2 3 <u>④</u> 6 8 <u>    </u>
Total Well Depth: <u>14.68</u>	Depth to Water: <u>6.01</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 <sup>2</sup> * 0.164

Purge Method:     S.S. Bailer Teflon Bailer Middleburg Electric Submersible $\times$ Extraction Pump Other: _____	Sampling Method: S.S. Bailer $\times$ Teflon Bailer Extraction Port Other: _____
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<u>5.7</u>	X	<u>3</u>	=	<u>17.1</u>	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Color/Odor
<u>1521</u>	<u>68.4</u>	<u>7.0</u>	<u>1000</u>	<u>41</u>	<u>6</u>	
<u>1522</u>	<u>70.0</u>	<u>6.9</u>	<u>1000</u>	<u>29</u>	<u>12</u>	
<u>1523</u>	<u>70.4</u>	<u>6.8</u>	<u>980</u>	<u>23</u>	<u>18</u>	

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Gallons actually evacuated: <u>18.0</u>
Sampling Time: <u>1535</u>	Sampling Date: <u>12/5/96</u>
Sample I.D.: <u>mw-8I</u>	Laboratory: <u>BC Analytical</u>
Analyzed for: <u>Tph-G BTEX Tph-D</u>	Other: <u>OIL &amp; GREASE</u>
Equipment Blank I.D.:	Analyzed for same as primary sample

# TEXACO WELL MONITORING DATA SHEET

Project #: <u>961205-F2</u>	Texaco ID#: <u>624880235</u>
Sampler: <u>TG</u>	Date: <u>12/5/96</u>
Well I.D.: <u>MW-8J</u>	Well Diameter: 2 3 <u>(4)</u> 6 8 <u>   </u>
Total Well Depth: <u>14.89</u>	Depth to Water: <u>5.94</u>
Depth to Free Product: <u>   </u>	Thickness of Free Product: <u>   </u>
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 <sup>2</sup> * 0.164

Purge Method:    S.S. Bailer Teflon Bailer Middleburg Electric Submersible <input checked="" type="checkbox"/> Extraction Pump Other: _____	Sampling Method: S.S. Bailer <input checked="" type="checkbox"/> Teflon Bailer Extraction Port Other: _____
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<u>5.9</u>	<u>x</u>	<u>3</u>	<u>=</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>1424</u>	<u>68.8</u>	<u>6.9</u>	<u>1000</u>	<u>100</u>	<u>6</u>	
<u>1425</u>	<u>69.4</u>	<u>6.9</u>	<u>1000</u>	<u>76</u>	<u>12</u>	
<u>1426</u>	<u>69.8</u>	<u>6.9</u>	<u>1000</u>	<u>62</u>	<u>18</u>	

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Gallons actually evacuated: <u>18.0</u>
Sampling Time: <u>1440</u>	Sampling Date: <u>12/5/96</u>
Sample I.D.: <u>MW-8J</u>	Laboratory: <u>BC Analytical</u>
Analyzed for: <u>Tph-G BTEX Tph-D</u>	Other: <u>OIL &amp; GREASE</u>
Equipment Blank I.D.: <u>   </u>	Analyzed for same as primary sample

## TEXACO WELL MONITORING DATA SHEET

Project #: 961205 - F2	Texaco ID#: 624880235
Sampler: TG	Date: 12/5/96
Well I.D.: MW-8K	Well Diameter: (2) 3 4 6 8
Total Well Depth: 16.32	Depth to Water: 1.42
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 <sup>2</sup> * 0.164

Purge Method: S.S. Bailer <input checked="" type="checkbox"/> Teflon Bailer Middleburg Electric Submersible Extraction Pump Other: _____	Sampling Method: S.S. Bailer <input checked="" type="checkbox"/> Teflon Bailer Extraction Port Other: _____
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2.5	x	3	=	7.5	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Color/Odor
1247	65.0	7.2	1000	7200	2.5	
1249	65.0	7.0	1000	7200	5.0	
1251	65.4	7.0	1000	7200	7.5	

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Gallons actually evacuated: 7.5
Sampling Time: 1255	Sampling Date: 12/5/96
Sample I.D.: MW-8K	Laboratory: BC Analytical
Analyzed for: <u>Tph-G BTEX Tph-D</u>	Other: OIL & GREASE
Equipment Blank I.D.: CB @ 1310	Analyzed for same as primary sample

## TEXACO WELL MONITORING DATA SHEET

Project #: <u>961205-F2</u>	Texaco ID#: <u>624880235</u>
Sampler: <u>TG</u>	Date: <u>12/5/96</u>
Well I.D.: <u>MW-8L</u>	Well Diameter: <u>(2)</u> 3 4 6 8 <u>    </u>
Total Well Depth:	Depth to Water:
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 <sup>2</sup> * 0.164

Purge Method: <del>S.S. Bailer</del> <del>Teflon Bailer</del> <del>Middleburg</del> <del>Electric Submersible</del> <del>Extraction Pump</del> Other: _____	Sampling Method: <del>S.S. Bailer</del> <del>Teflon Bailer</del> <del>Extraction Port</del> Other: _____
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_____	X	_____	=	_____	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Color/Odor
	<u>INACCESSIBLE</u>			<u>- CAR</u>	<u>OVER</u>	<u>WELL</u>

Did well dewater? Yes      No	Gallons actually evacuated: _____
Sampling Time: _____	Sampling Date: _____
Sample I.D.: _____	Laboratory: <u>BC Analytical</u>
Analyzed for: <u>Tph-G</u> <u>BTEX</u> <u>Tph-D</u> Other: _____	
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 PURGE-  
 WATER WHICH HAS BEEN RECOVERED FROM GROUND-  
 WATER WELLS IS COLLECTED BY THE CONTRACTOR,  
 MADE UP INTO LOADS OF APPROPRIATE SIZE AND  
 HAULED TO THE DESTINATION DESIGNATED BY TEXACO  
 ENVIRONMENTAL SERVICES (TES).

Contractor: Blaine Tech Services, Inc.  
 Address: 985 Timothy Drive  
 City, State, ZIP: San Jose, CA 95133  
 Phone: (408) 995-5535

is authorized by Texaco Environmental Services 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 TEXACO ENVIRONMENTAL  
 SERVICES in either Redwood City, California or in Richmond,  
 California. Transport routing of the Non-Hazardous Well  
 Purgewater may be directed 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 via the contractor's facility, or any combination  
 thereof. The Non-Hazardous Well Purgewater is and remains the  
 property of Texaco Environmental Services (TES).

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.
<u>Purge 1</u>		<u>/</u>	
<u>WATER 1</u>	<u>90.5</u>	<u>/</u>	
<u>/</u>		<u>/</u>	
<u>/</u>		<u>/</u>	
<u>/</u>		<u>/</u>	
<u>/</u>		<u>/</u>	
<u>/</u>		<u>/</u>	
<u>/</u>		<u>/</u>	
<u>/</u>		<u>/</u>	
<u>/</u>		<u>/</u>	
<u>/</u>		<u>/</u>	
<u>/</u>		<u>/</u>	
<u>/</u>		<u>/</u>	
<u>/</u>		<u>/</u>	
Total gals.	<u>5.0</u>	added rinse	
Total Gals.		water	
Recovered	<u>95.5</u>		

Job #: 961205 - F2  
 Date: 12/5/96  
 Time: 1545  
 Signature: Tim Shaf

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REC'D AT: ETS  
 Date: 12/5/96  
 Time: 1630  
 Signature: Tim Shaf



**Texaco Environmental Services  
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 it 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 designated "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 thicknesses 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 contacts 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 should then be raised slowly to the hydrocarbon/water interface until the point where the 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 [umhos]), 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 disposition can be controlled. Forms will be filled out with waterproof ink. The following are 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 the 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 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.

**QUARTERLY SUMMARY REPORT**  
Former Texaco Service Station/Current Parking Lot  
500 Grand Avenue, Oakland, California  
Alameda County  
Fourth Quarter, 1996

**HISTORY OF INVESTIGATIVE AND REMEDIAL ACTIONS**

A site preliminary subsurface investigation was conducted in May 1988. During the initial investigation, a soil gas survey was conducted, 15 soil borings were drilled, and 5 on-site groundwater monitoring wells were installed. In 1989 5 off-site wells were installed. The initial 5 on-site wells have been abandoned and replaced by 2 wells located at the southern perimeter of the site. Over 2,400 cubic yards of hydrocarbon-impacted soil have been excavated and removed from within the property boundaries. The waste oil tank, tank backfill material, and impacted soil were excavated and disposed of in September 1990. Clay sewer pipes and contaminated soil from an abandoned utility trench near the former waste oil tank were removed from the site in early 1991. Site structures, 3 underground storage tanks, dispenser islands and associated piping, and stockpiled soils were removed from the site in April 1992. The excavated area was backfilled and compacted using clean imported material.

**WORK PERFORMED DURING THIS QUARTER**

Quarterly groundwater monitoring and sampling was performed.

**CHARACTERIZATION STATUS**

All petroleum impacted soils underlying the site, with a possible exception of a very narrow band along the Grand Avenue sidewalk, have been removed by the extensive soil excavation activities. Groundwater at the site has been affected by gasoline, diesel, and hydrocarbons above the range of diesel. Since the removal of on-site contaminated soils, significant reductions in TPH-g and TPH-d concentrations in groundwater have been reported for samples taken from on- and off-site wells.

**REMEDICATION STATUS**

No further investigation or remediation of the vadose-zone soils is planned. It is proposed that down gradient wells continue to be monitored to document the biodegradation of the remaining dissolved-phase hydrocarbons in the groundwater.

**WORK TO BE PERFORMED NEXT QUARTER**

Continue quarterly monitoring and sampling to record fluctuations in hydrocarbon concentrations.

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