



Texaco Refining
and Marketing Inc

STD 1109

108 Cutting Blvd
Richmond CA 94804

ALCO
HAZMAT

95 JAN 18 AM 7:55

November 28, 1994

ENV - STUDIES, SURVEYS, & REPORTS

**500 Grand Avenue
Oakland, California**

Ms. Susan Hugo
Alameda County Environmental
Health Department
80 Swan Way, Room 200
Oakland, CA 94621

Dear Ms. Hugo:

This letter presents the results of groundwater monitoring and sampling conducted by Blaine Tech Services, Inc. on November 2, 1994, at the site referenced above (see Plate 1, Site Vicinity Map). Based on groundwater level measurements, the areal hydraulic gradient was estimated to be south-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.

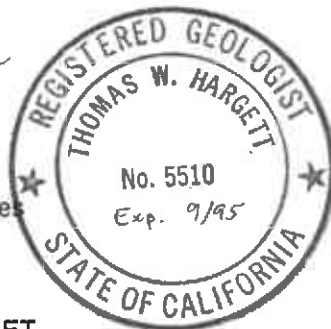
The certified analytical report, chain-of-custody, field data sheets, bill of lading, and quarterly summary report are in the Appendix, along with Texaco Environmental Services' Standard Operating Procedures.

If you have any questions or comments regarding this site, please call the Texaco Environmental Services' site Project Coordinator, Tom Hargett at (818) 505-2733.

Best Regards,

Rebecca Digerness
Environmental Technician

Tom Hargett, R. G.
Project Coordinator
Texaco Environmental Services



RBD:hs
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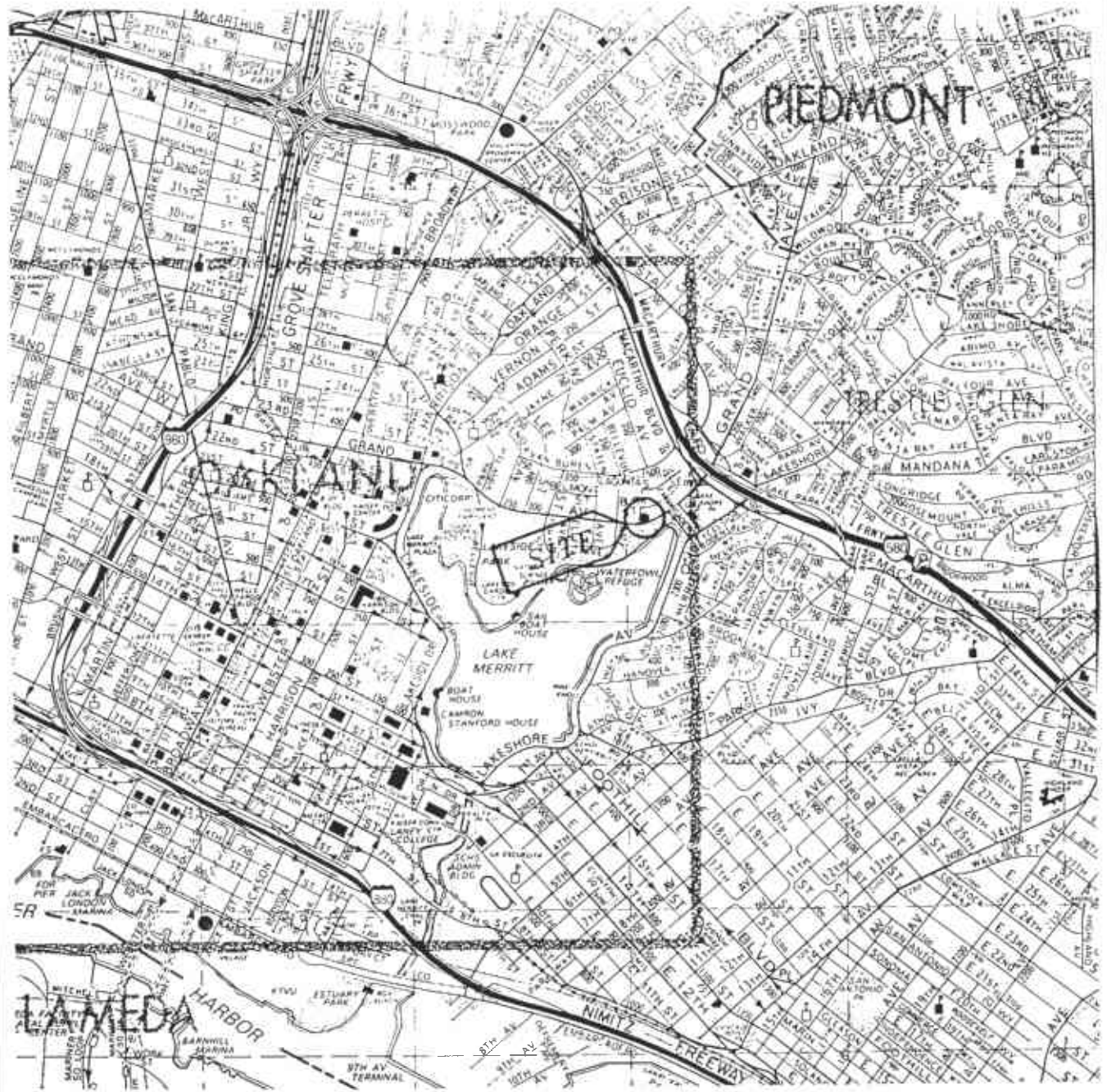
Enclosures

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

RAOFile-UCPFile-TWHargett (w/enclosures) RRZielinski (w/o enclosures)

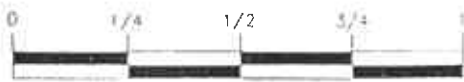
PR: KEP

**Groundwater Monitoring and Sampling
Fourth Quarter, 1994
at the
Former Texaco Station
500 Grand Avenue
Oakland, CA**



SOURCE

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



MILE

1" = 2200'

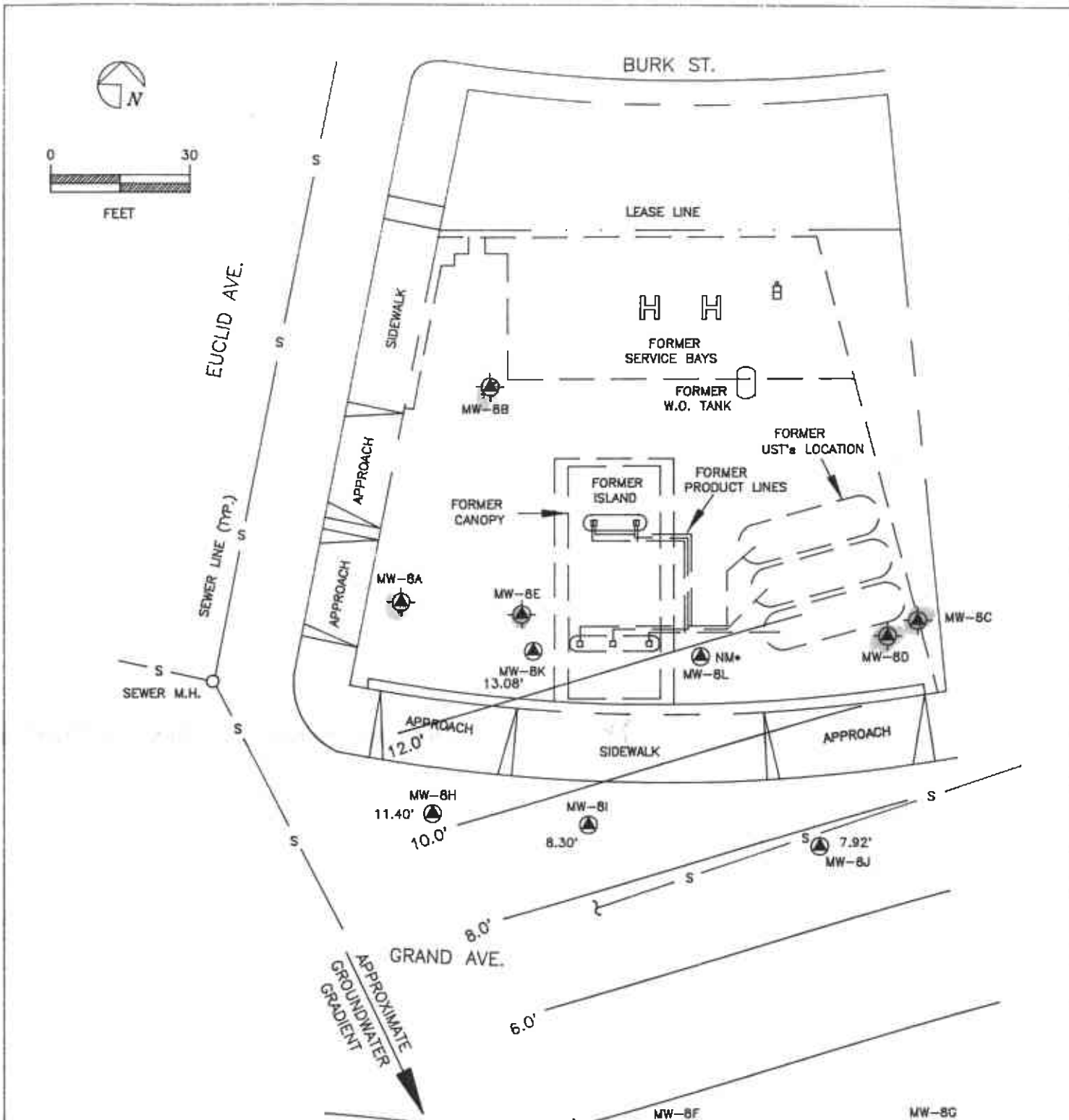


TEXACO

REFINING AND MARKETING, INC.
TEXACO ENVIRONMENTAL SERVICES

PLATE 1

SITE VICINITY MAP
FORMER TEXACO SERVICE STATION
500 GRAND AVE / EUCLID AVE.,
OAKLAND, CALIFORNIA



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 TEXACO ENVIRONMENTAL SERVICES

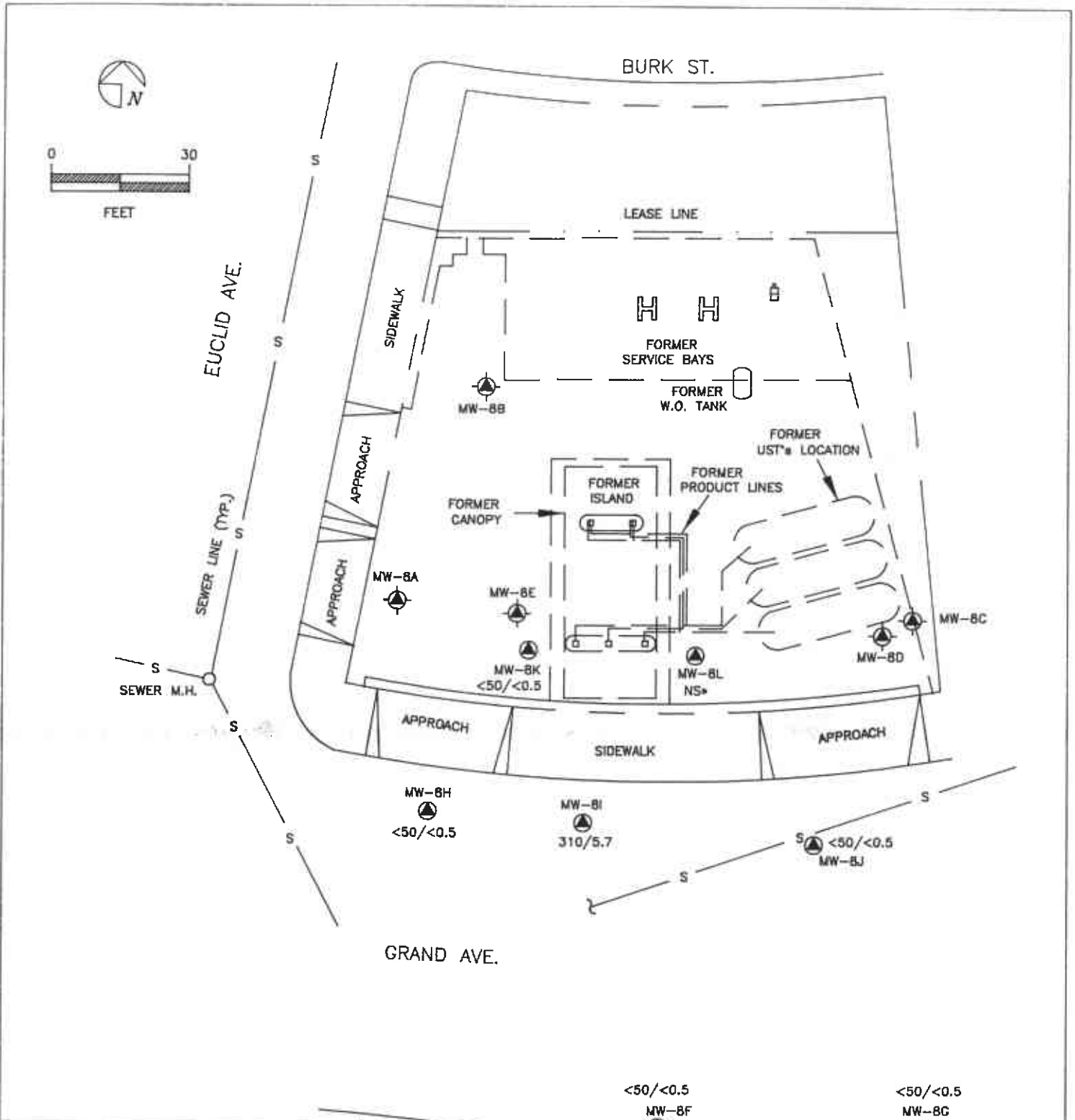
PLATE 2 : GROUNDWATER GRADIENT MAP
 (11/02/1994)

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

SCALE	1"=30'-0"	LOCATION #	82-486-0235
DRAWN BY	AMA	DATE	11/28/1994
CHECKED BY	RD	DATE	11/28/1994
DRAWING NO. (OAKLAND) GR-EU-OK.DWG			

- LEGEND :**
- GROUNDWATER MONITORING WELL LOCATION, AND WELL NUMBER
 - ABANDONED GROUNDWATER MONITORING WELL LOCATION, AND WELL NUMBER
 - GROUNDWATER CONTOUR LINE
 - GROUNDWATER ELEVATION (ABOVE MSL)
 - NOT MEASURED, WELL OBSTRUCTED

LAKE MERRITT
 PARK



TEXACO
 REFINING AND MARKETING INC.
 TEXACO ENVIRONMENTAL SERVICES

PLATE J : TPH_g/BENZENE CONCENTRATION IN GROUNDWATER
 (11/02/1994)

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

SCALE	1"=30'-0"	LOCATION #	62-468-0235
DRAWN BY	AMA	DATE	11/28/1994
CHECKED BY	RD	DATE	11/28/1994
DRAWING NO. (OAKLAND) GR-EU-OK.DWG			

LAKE MERRITT
 PARK

LEGEND :



-  GROUNDWATER MONITORING WELL LOCATION, AND WELL NUMBER
-  ABANDONED GROUNDWATER MONITORING WELL LOCATION, AND WELL NUMBER
- $<50/<0.5</math> TPH_g/BENZENE CONCENTRATION IN GROUNDWATER (ppb)$
- NS* NOT SAMPLED, WELL OBSTRUCTED

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	03/29/91	99.72		
	01/23/92		2.57	97.15
	02/28/92		2.48	97.24
	03/26/92		2.13	97.59
	04/30/92		2.10	97.62
	08/03/92		----- Well Properly Abandoned -----	
MW-8B	03/29/91	101.11		
	01/23/92		0.54	100.57
	02/28/92		0.29	100.82
	03/26/92		0.07	101.04
	04/30/92		0.60	100.51
	09/28/92		----- Not Monitored -----	
	11/19/92		----- Not Monitored -----	
	02/12/93		----- Not Monitored -----	
04/01/93		----- Well Properly Abandoned -----		
MW-8C	03/29/91	98.41		
	01/23/92		6.88	91.53
	02/28/92		6.69	91.72
	03/26/92		6.69	91.72
	04/30/92		5.90	92.51
	09/28/92		----- Not Monitored -----	
	11/19/92		----- Not Monitored -----	
	02/12/93		----- Not Monitored -----	
04/01/93		----- Well Properly Abandoned -----		
MW-8D			----- Well Properly Abandoned -----	
MW-8E	03/29/91	99.38		
	01/23/92		3.57	95.81
	02/28/92		3.35	96.03
	03/26/92		3.01	96.37
	04/30/92		3.76	95.62
	08/03/92		----- Well Properly Abandoned -----	

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-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	
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	
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	

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	
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	
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

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 -----	
* = 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)	TPHd (ppm)	TPH as Other* (ppm)
MW-8A	01/23/92	<50	<0.5	<0.5	<0.5	<0.5	0.7	NA
	04/30/92	<50	<0.5	<0.5	<0.5	<0.5	<0.05	<500
	08/03/92	----- Well Properly Abandoned -----						
MW-8B	01/23/92	<50	<0.5	<0.5	<0.5	<0.5	0.55	NA
	04/30/92	<50	<0.5	<0.5	<0.5	<0.5	<0.05	<500
	09/28/92	----- Not Sampled -----						
	11/19/92	----- Not Sampled -----						
	02/12/93	----- Not Sampled -----						
	04/01/93	----- Well Properly Abandoned -----						
MW-8C	01/23/92	<50	1.2	<0.5	<0.5	<0.5	0.84	NA
	04/30/92	<50	<0.5	<0.5	<0.5	<0.5	0.15	<500
	09/28/92	----- Not Sampled -----						
	11/19/92	----- Not Sampled -----						
	02/12/93	----- Not Sampled -----						
	04/01/93	----- Well Properly Abandoned -----						
MW-8D	----- Well Properly Abandoned -----							
MW-8E	01/23/92	38,000	3,800	2,800	610	4,800	9.8	NA
	04/23/92	41,000	20,000	3,700	500	3,900	9.6	<500
	08/03/92	----- Well Properly Abandoned -----						
MW-8F	01/23/92	<50	4.0	1.3	<0.5	1.9	1.3	NA
	04/30/92	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<500
	09/28/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	11/19/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	02/12/93	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	05/06/93	<50	<0.5	<0.5	<0.5	<0.5	<0.1	<50
	08/16/93	<50	<0.5	<0.5	<0.5	<0.5	<0.05	<50
	10/12/93	<50	<0.5	<0.5	<0.5	<0.5	<0.05	<50
	02/03/94	<50	<0.5	<0.5	<0.5	<0.5	<0.05	<50
	05/31/94	<50	<0.5	<0.5	<0.5	<0.5	<0.05	0.53
	08/25/94	<50	<0.5	<0.5	<0.5	<0.5	<0.05	1.4
11/02/94	<50	<0.5	<0.5	<0.5	<0.5	0.52	<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)	TPHd (ppm)	TPH as Other* (ppm)
MW-8G	01/24/92	<50	<0.5	<0.5	<0.5	<0.5	0.98	NA
	04/30/92	<50	1.7	<0.5	<0.5	<0.5	<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	0.06	<250
	08/16/93	<50	<0.5	<0.5	<0.5	<0.5	<0.05	<50
	10/12/93	<50	<0.5	<0.5	<0.5	<0.5	<0.05	<50
	02/03/94	<50	<0.5	<0.5	<0.5	<0.5	<0.05	<50
	05/31/94	<50	<0.5	<0.5	<0.5	<0.5	<0.05	<0.2
	08/25/94	<50	<0.5	<0.5	<0.5	<0.5	<0.05	0.86
11/02/94	<50	<0.5	<0.5	<0.5	<0.5	0.53	<5	
MW-8H	01/23/92	110	7.2	1.2	4.7	3.2	<0.06	NA
	04/30/92	190	11	1.5	5.6	3.6	0.09	<500
	09/28/92	----- Well Inaccessible -----						
	11/19/92	130	6.8	<0.5	1.1	1.5	NA	NA
	02/12/93	73	5.9	<0.5	0.8	<0.5	NA	NA
	05/06/93	57	1.7	<0.5	<0.5	<0.5	<0.1	<50
	08/16/93	<50	0.5	<0.5	0.5	1.4	<0.05	<50
	10/12/93	<50	<0.5	<0.5	<0.5	<0.5	<0.05	<50
	02/03/94	<50	<0.5	<0.5	<0.5	<0.5	<0.05	<50
	05/31/94	<50	0.79	<0.5	<0.5	<0.5	<0.05	1.6
	08/25/94	<50	<0.5	<0.5	<0.5	<0.5	<0.05	4.0
11/02/94	<50	<0.5	<0.5	<0.5	<0.5	0.76	<5	
MW-8I	01/23/92	820	420	7	27	20	0.21	NA
	04/30/92	2,200	1,800	19	180	25	0.43	<500
	09/28/92	----- Well Inaccessible -----						
	11/19/92	720	120	1.1	29	13	NA	NA
	02/12/93	4,000	970	9.2	52	36	NA	NA
	05/06/93	1,400	370	2.4	40	8.4	<0.01	<50
	08/16/93	<50	3.1	<0.5	6	<0.5	<0.05	<50
	10/12/93	<50	1.4	<0.5	<0.5	<0.5	<0.05	<50
	02/03/94	1,000	270	3.2	51	14	<0.05	<50
	05/31/94	1,400	330	4.6	52	16	<0.05	0.33
	08/25/94	540	14	0.58	30	4.3	<0.05	0.73
11/02/94	310	5.7	0.74	20	<0.5	0.37	<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)	TPHd (ppm)	TPH as Other* (ppm)	
MW-8J	01/23/92	<50	1	<0.5	<0.5	<0.5	<0.05	NA	
	04/30/92	<50	2	<0.5	<0.5	<0.5	<0.05	<500	
	09/28/92	----- Well Inaccessible -----							
	11/19/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	
	02/12/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	
	05/06/93	<50	<0.5	<0.5	<0.5	<0.5	<0.01	<50	
	08/16/93	<50	<0.5	<0.5	<0.5	<0.5	<0.05	<50	
	10/12/93	<50	<0.5	<0.5	<0.5	<0.5	<0.05	<50	
	02/03/94	<50	<0.5	<0.5	<0.5	<0.5	<0.05	<50	
	05/31/94	<50	<0.5	<0.5	<0.5	<0.5	<0.05	<0.2	
	08/25/94	<50	<0.5	<0.5	<0.5	<0.5	<0.05	1.0	
	11/02/94	<50	<0.5	<0.5	<0.5	<0.5	<0.05	<5	
	MW-8K	05/21/93	54	12	<0.5	<0.5	<0.5	<0.05	<50
08/16/93		<50	<0.5	<0.5	1.0	<0.5	<0.05	<50	
10/24/93		<50	4.2	<0.5	<0.5	<0.5	<0.05	<50	
02/03/94		<50	<0.5	<0.5	<0.5	<0.5	<0.05	<50	
05/31/94		<50	1.0	0.57	<0.5	<0.5	<0.05	<0.2	
08/25/94		<50	0.78	<0.5	<0.5	<0.5	<0.05	0.98	
11/02/94		<50	<0.5	<0.5	<0.5	<0.5	<0.05	<5	
MW-8L	05/21/93	76	1.1	<0.5	<0.5	6	<0.05	<50	
	08/16/93	<50	<0.5	<0.5	0.7	1.1	<0.05	<50	
	10/12/93	110	13	<0.5	6	<0.5	<0.05	<50	
	02/03/94	590	61	2.4	<0.5	110	<0.05	<50	
	05/31/94	410	77	<0.5	20	1.1	<0.05	<0.2	
	08/25/94	260	16	<0.5	2.5	<0.5	<0.05	1.1	
	11/02/94	----- Not Sampled -----							
EB	08/25/94	69	<0.5	<0.5	<0.5	<0.5	<0.05	0.71	
	11/02/94	<50	<0.5	<0.5	<0.5	<0.5	<0.05	<5	
TB	08/25/94	52	<0.5	<0.5	<0.5	<0.5	NA	NA	
	11/02/94	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	
EB = Equipment Blank									
TB = Trip Blank									
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.									

APPENDIX

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

LOG NO: G94-11-050

Received: 03 NOV 94

Mailed: NOV 21 1994

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

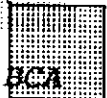
Purchase Order: 94-1446346+4370

Requisition: 624880235
 Project: FKEP1014L

REPORT OF ANALYTICAL RESULTS

AQUEOUS

SAMPLE DESCRIPTION	DATE SAMPLED	TPH		Dilution Factor Times	TPH-d mg/L	TPH/BTEX (CADHS/8020)		TPH-g ug/L	Benzene ug/L
		(CADHS/418.1) mg/L	(CADHS/3520)			Date Analyzed Date	Date Analyzed Date		
RDL		5			0.05			1	0.5
1*MW-8F	11/02/94	<5	11/09/94	1	0.52	11/11/94	1	<50	<0.5
2*MW-8G	11/02/94	<5	11/09/94	1	0.53	11/11/94	1	<50	<0.5
3*MW-8H	11/02/94	<5	11/09/94	1	0.76	11/11/94	1	<50	<0.5
4*MW-8I	11/02/94	<5	11/09/94	1	0.37	11/11/94	1	310	5.7
5*MW-8J	11/02/94	<5	11/09/94	1	<0.05	11/11/94	1	<50	<0.5
6*MW-8K	11/02/94	<5	11/09/94	1	<0.05	11/11/94	1	<50	<0.5
7*EB	11/02/94	<5	11/09/94	1	<0.05	11/11/94	1	<50	<0.5
8*TB	11/02/94	---	---	---	---	11/11/94	1	<50	<0.5



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

LOG NO: G94-11-050

Received: 03 NOV 94

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

Purchase Order: 94-1446346+4370

Requisition: 624880235
 Project: FKEP1014L

REPORT OF ANALYTICAL RESULTS

Page 2

AQUEOUS

SAMPLE DESCRIPTION	DATE SAMPLED	TPH/BTEX (CADHS/8020)		
		Toluene ug/L	Ethyl-Benzene ug/L	Total Xylenes Isomers ug/L
RDL		0.5	0.5	0.5
1*MW-8F	11/02/94	<0.5	<0.5	<0.5
2*MW-8G	11/02/94	<0.5	<0.5	<0.5
3*MW-8H	11/02/94	<0.5	<0.5	<0.5
4*MW-8I	11/02/94	0.74	20	<0.5
5*MW-8J	11/02/94	<0.5	<0.5	<0.5
6*MW-8K	11/02/94	<0.5	<0.5	<0.5
7*EB	11/02/94	<0.5	<0.5	<0.5
8*TB	11/02/94	<0.5	<0.5	<0.5

Tom Hargett
 500 Grand Avenue, Oakland
 Alameda County

Mark A. Valentini
 Mark A. Valentini, PhD, Laboratory Director



ORDER PLACED FOR CLIENT: Texaco Environmental Services 9411050 :
 : BC ANALYTICAL : GLEN LAB : 13:53:04 19 NOV 1994 - P. 1 :
 =====

SAMPLES...	SAMPLE DESCRIPTION..	DETERM.....	DATE.....	METHOD.....	EQUIP.	BATCH..	ID.NO
			ANALYZED				
9411050*1	MW-8F	IR.PET.TES.AQ	11.08.94	418.1	533-17	94112	7772
		DIESEL.3520.TES	11.12.94	8015M	536-01	94229	7325
		GAS.BTX.TESNC	11.11.94	8015M.TX	536-21	94150	8042
9411050*2	MW-8G	IR.PET.TES.AQ	11.08.94	418.1	533-17	94112	7772
		DIESEL.3520.TES	11.12.94	8015M	536-01	94229	7325
		GAS.BTX.TESNC	11.11.94	8015M.TX	536-21	94150	8042
9411050*3	MW-8H	IR.PET.TES.AQ	11.08.94	418.1	533-17	94112	7772
		DIESEL.3520.TES	11.12.94	8015M	536-01	94229	7325
		GAS.BTX.TESNC	11.11.94	8015M.TX	536-21	94150	8042
9411050*4	MW-8I	IR.PET.TES.AQ	11.08.94	418.1	533-17	94112	7772
		DIESEL.3520.TES	11.12.94	8015M	536-01	94229	7325
		GAS.BTX.TESNC	11.11.94	8015M.TX	536-21	94150	8042
9411050*5	MW-8J	IR.PET.TES.AQ	11.08.94	418.1	533-17	94112	7772
		DIESEL.3520.TES	11.17.94	8015M	536-01	94233	7325
		GAS.BTX.TESNC	11.11.94	8015M.TX	536-21	94150	8042
9411050*6	MW-8K	IR.PET.TES.AQ	11.08.94	418.1	533-17	94112	7772
		DIESEL.3520.TES	11.12.94	8015M	536-01	94229	7325
		GAS.BTX.TESNC	11.11.94	8015M.TX	536-21	94150	8042
9411050*7	EB	IR.PET.TES.AQ	11.08.94	418.1	533-17	94112	7772
		DIESEL.3520.TES	11.17.94	8015M	536-01	94233	7325
		GAS.BTX.TESNC	11.11.94	8015M.TX	536-21	94150	8042
9411050*8	TB	GAS.BTX.TESNC	11.11.94	8015M.TX	536-21	94150	8042

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

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

BC ANALYTICAL

ORDER QC REPORT FOR G9411050

DATE REPORTED : 11/19/94

Page 1

LABORATORY CONTROL STANDARDS
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER		DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
1. TRPH/CADHS/418.1	C411918*1	11.08.94	94112	2.23	2.55	mg/L	87
2. TPH - (8015M/3520)	C4111584*1						
Date Analyzed		11.12.94	94229	11/12/94	11/12/94	Date	N/A
Date Extracted		11.12.94	94229	11/09/94	11/09/94	Date	N/A
TPH (as diesel)		11.12.94	94229	0.996	1.00	mg/L	100
3. TPH - (8015M/3520)	C4111585*1						
Date Analyzed		11.12.94	94229	11/12/94	11/12/94	Date	N/A
Date Extracted		11.12.94	94229	11/09/94	11/09/94	Date	N/A
TPH (as diesel)		11.12.94	94229	1.16	1.00	mg/L	116
4. TPH-gas/BTEX (CADHS/80	C4111318*1						
Date Analyzed		11.10.94	94150	11/10/94	11/10/94	Date	N/A
Benzene		11.10.94	94150	14.4	15.4	ug/L	94
Toluene		11.10.94	94150	54.2	70.5	ug/L	77 Q
Ethylbenzene		11.10.94	94150	11.6	16.7	ug/L	69 Q
Total Xylene Isomers		11.10.94	94150	63.8	55.2	ug/L	116
TPH (as Gasoline)		11.10.94	94150	871	1000	ug/L	87

BC ANALYTICAL

ORDER QC REPORT FOR G9411050

DATE REPORTED : 11/19/94

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ADDITIONAL LCS PRECISION (DUPLICATES)
BATCH QC REPORT

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	LC1 RESULT	LC2 RESULT	UNIT	RELATIVE % DIFF
1. TPH - (8015M/3520)							
Date Analyzed		11.12.94	94229	11/12/94	11/12/94	Date	N/A
Date Extracted		11.12.94	94229	11/09/94	11/09/94	Date	N/A
TPH (as diesel)		11.12.94	94229	0.996	1.16	mg/L	15
2. TPH-gas/BTEX (CADHS/80)							
Date Analyzed		11.10.94	94150	11/10/94		Date	N/A

BC ANALYTICAL

ORDER QC REPORT FOR G9411050

DATE REPORTED : 11/19/94

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MATRIX QC PRECISION (DUPLICATE SPIKES)
 BATCH QC REPORT

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	MS RESULT	MSD RESULT	UNIT	RELATIVE % DIFF
1. TRPH/CADHS/418.1	9411050*7	11.08.94	94112	4.14	4.14	mg/L	0
2. TPH-gas/BTEX (CADHS/80	9411050*6						
Date Analyzed		11.11.94	94150	11/11/94	11/11/94	Date	N/A
Benzene		11.11.94	94150	14.1	14.0	ug/L	1
Toluene		11.11.94	94150	55.3	55.9	ug/L	1
Ethylbenzene		11.11.94	94150	11.7	11.3	ug/L	3
Total Xylene Isomers		11.11.94	94150	63.3	60.5	ug/L	5
TPH (as Gasoline)		11.11.94	94150	792	745	ug/L	6

BC ANALYTICAL

ORDER QC REPORT FOR G9411050

DATE REPORTED : 11/19/94

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MATRIX QC ACCURACY (SPIKES)
BATCH QC REPORT

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	MS %	MSD %	TRUE RESULT	UNIT
1. TRPH/CADHS/418.1	9411050*7	11.08.94	94112	101	101	4.08	mg/L
2. TPH-gas/BTEX (CADHS/80	9411050*6						
Benzene		11.11.94	94150	92	91	15.4	ug/L
Toluene		11.11.94	94150	78	79	70.5	ug/L
Ethylbenzene		11.11.94	94150	70	68	16.7	ug/L
Total Xylene Isomers		11.11.94	94150	115	110	55.2	ug/L
TPH (as Gasoline)		11.11.94	94150	79	75	1000	ug/L

BC ANALYTICAL

ORDER QC REPORT FOR G9411050

DATE REPORTED : 11/19/94

Page 1

METHOD BLANKS AND REPORTING DETECTION LIMIT (RDL)
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER		DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
1. TRPH/CADHS/418.1	B411751*1	11.08.94	94112	0.099	0.2	mg/L	418.1
2. TPH - (8015M/3520)	B4111258*1						
Date Analyzed		11.12.94	94229	11/12/94	NA	Date	8015M
Date Extracted		11.12.94	94229	11/09/94	NA	Date	8015M
TPH (as diesel)		11.12.94	94229	0	0.05	mg/L	8015M
3. TPH-gas/BTEX (CADHS/80	B4111071*1						
Date Analyzed		11.10.94	94150	11/10/94	NA	Date	8015M.TX
Benzene		11.10.94	94150	0	0.5	ug/L	8015M.TX
Toluene		11.10.94	94150	0	0.5	ug/L	8015M.TX
Ethylbenzene		11.10.94	94150	0	0.5	ug/L	8015M.TX
Total Xylene Isomers		11.10.94	94150	0	0.5	ug/L	8015M.TX
TPH (as Gasoline)		11.10.94	94150	0	50	ug/L	8015M.TX

: SURROGATE RECOVERIES :
: BC ANALYTICAL : GLEN LAB : 13:53:52 19 NOV 1994 - P. 1 :

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METHOD	ANALYTE	BATCH	ANALYZED	REPORTED	TRUE	%REC	FLAG
9411050*1							
8015M	Napthalene reported	94229	11/12/94	0.0525	0.0600	88	
8015M.TXa,a,a-	Trifluorotoluene	94150	11/11/94	46.0	50.0	92	
9411050*2							
8015M	Napthalene reported	94229	11/12/94	0.0450	0.0600	75	
8015M.TXa,a,a-	Trifluorotoluene	94150	11/11/94	45.9	50.0	92	
9411050*3							
8015M	Napthalene reported	94229	11/12/94	0.0635	0.0600	106	
8015M.TXa,a,a-	Trifluorotoluene	94150	11/11/94	46.1	50.0	92	
9411050*4							
8015M	Napthalene reported	94229	11/12/94	0.0535	0.0600	89	
8015M.TXa,a,a-	Trifluorotoluene	94150	11/11/94	44.0	50.0	88	
9411050*5							
8015M	Napthalene reported	94233	11/17/94	0.0559	0.0600	93	
8015M.TXa,a,a-	Trifluorotoluene	94150	11/11/94	45.9	50.0	92	
9411050*6							
8015M	Napthalene reported	94229	11/12/94	0.0482	0.0600	80	
8015M.TXa,a,a-	Trifluorotoluene	94150	11/11/94	46.9	50.0	94	
9411050*7							
8015M	Napthalene reported	94233	11/17/94	0.0470	0.0600	78	
8015M.TXa,a,a-	Trifluorotoluene	94150	11/11/94	53.9	50.0	108	
9411050*8							
8015M.TXa,a,a-	Trifluorotoluene	94150	11/11/94	53.3	50.0	107	

: SURROGATE RECOVERIES :
 : BC ANALYTICAL : GLEN LAB : 13:53:54 19 NOV 1994 - P. 1 :

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METHOD  ANALYTE                BATCH  ANALYZED  REPORTED  TRUE %REC FLAG
9411050*6*R1
8015M.TXa,a,a-Trifluorotoluene  94150  11/11/94   46.9   50.0   94
9411050*6*S1
8015M.TXa,a,a-Trifluorotoluene  94150  11/11/94   50.4   50.0  101
9411050*6*S2
8015M.TXa,a,a-Trifluorotoluene  94150  11/11/94   52.4   50.0  105
9411050*6*T
8015M.TXa,a,a-Trifluorotoluene  94150  11/11/94   50.0   50.0  100
9411050*7*R1
8015M  Napthalene reported      94233  11/17/94   0.0470 0.0600  78
B4111071*1*MB
8015M.TXa,a,a-Trifluorotoluene  94150  11/10/94   46.1   50.0   92
B4111258*1*MB
8015M  Napthalene reported      94229  11/12/94   0.0456 0.0600  76
C4111318*1*LC
8015M.TXa,a,a-Trifluorotoluene  94150  11/10/94   49.9   50.0  100
C4111318*1*LT
8015M.TXa,a,a-Trifluorotoluene  94150  11/10/94   50.0   50.0  100
C4111319*1*LT
8015M.TXa,a,a-Trifluorotoluene  94150  11/11/94   50.0   50.0  100
C4111584*1*LC
8015M  Napthalene reported      94229  11/12/94   0.0484 0.0600  81
C4111584*1*LT
8015M  Napthalene reported      94229  11/12/94   0.0600 0.0600  100
C4111585*1*LC
8015M  Napthalene reported      94229  11/12/94   0.0560 0.0600  93
C4111585*1*LT
8015M  Napthalene reported      94229  11/12/94   0.0600 0.0600  100
  
```


Chain of Custody

Texaco Environmental Services

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

Forward Results to the Attention of Rebecca Digerness

Texaco Project Coordinator Tom Hargett

Site Name: Texaco Loc# 624880235

Site Address: 500 Grand Ave. Oakland, CA

Contractor Project Number: _____

Contractor Name: Blaine Tech Services, Inc.

Address: 985 Timothy Dr., San Jose, CA 95133

Project Contact: Don Weitz

Phone/FAX: (408) 995-5535 / (408) 293-8773

Laboratory: B C Analytical
 Turn Around Time: normal (10 day)
 Samplers (PRINT NAME): MIKE MYERS
 Sampler Signature: [Signature]
 Date Samples Collected: 11-2-94

ANALYSIS										Comments
TPH gas/BTEX	TPH Diesel	O&G/TRPH (418.1)	TPH Ex. (CB-C36+)	VOCs 8240/824	P. Halocarbons 8010/80	P. Aromatics 8020/602	Organic Lead			
X	X	X								
X	X	X								
X	X	X								
X	X	X								
X	X	X								
X	X	X								
X	X	X								
X										

Sample Number	Lab Sample Number	Date/Time Collected	No. of Containers	Type of Containers	Sample Matrix	Preservative
MW-8F		11-2	7	VOA	W	HCL
MW-8G		11-2	7	42LBS		
MW-8H		11-2	7			
MW-8I		11-2	7			
MW-8J		11-2	7			
MW-8K		11-2	7			
MW-8L						
EB		11-2	7	↓	↓	↓
TB		11-2	2	VOA	↓	↓

Relinquished by: <u>[Signature]</u> (Signature)	Date: <u>11/3/94</u> Time: <u>1130</u>	Received by: <u>[Signature]</u> (Signature)	Date: <u>11-3-94</u> Time: <u>1130</u>
Relinquished by: <u>[Signature]</u> (Signature)	Date: <u>11-3-94</u> Time: <u>330</u>	Received by: <u>[Signature]</u> (Signature)	Date: <u>11-3-94</u> Time: <u>1530</u>
Relinquished by: <u>[Signature]</u> (Signature)	Date: <u>11-3-94</u> Time: <u>1530</u>	Received by: _____ (Signature)	Date: _____ Time: _____
Method of shipment: _____		Lab Comments: _____	

Well Gauging Data

Project Name: 500 GLAND
Project Number: 941102-MI

Date: 11-02-84
Recorded By: MARK MYERS

Well ID	TOC Elev.	DTB (ft. TOC)	Well Dia. (in.)	DTP (ft.)	DTW (ft.)	PT (ft.)	Comments
MW-8F		14.44	4		10.42		
MW-8G		14.18	4		10.08		
MW-8H		14.80	4		5.68		
MW-8I		14.52	4		6.10		
MW-8J		14.72	4		5.90		
MW-8K		16.90	2		2.10		
MW-8L		1.0*	2		0.5*		WELL OBSTRUCTED

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

Groundwater Sampling Form

MN-8F

Project Name COOGRAND
 Project Number 941102-MN
 Recorded By MN

Well No. _____
 Well Type Monitor Extraction Other
 Sampled by MN Date 11-02-94

WELL PURGING

<p>PURGE VOLUME</p> <p>Well casing diameter <input type="checkbox"/> 2-inch <input checked="" type="checkbox"/> 4-inch <input type="checkbox"/> Other _____</p> <p>Well Total Depth (TD, ft. below TOC) <u>14.04</u></p> <p>Depth to Water (WL, ft. below TOC) <u>10.42</u></p> <p>Depth to free phase hydrocarbons (FP, ft. below TOC) _____</p> <p>Number of well volumes to be purged <input checked="" type="checkbox"/> 3 <input type="checkbox"/> 10 <input type="checkbox"/> Other _____</p> <p>PURGE VOLUME CALCULATION</p> <p style="text-align: center;"> $\frac{4.02}{\text{Water Column Length}} \times \frac{.66}{\text{Multiplier}} \times \frac{3}{\text{No. Vols}} = 2.7 \text{ case}$ </p> <p>MULTIPLIER (Casing Dia. [inches] = Gallons/linear ft) 2 = 0.17 3 = 0.38 4 = 0.66 4.5 = 0.83 5 = 1.02 6 = 1.5 8 = 2.6</p>	<p>PURGE METHOD</p> <p><input checked="" type="checkbox"/> Bailer - Type _____ <input checked="" type="checkbox"/> Pump - Type <u>ELECTRIC SUB</u> <input type="checkbox"/> Other _____</p> <p>PUMP INTAKE</p> <p><input type="checkbox"/> Near top Depth (ft) _____ <input checked="" type="checkbox"/> Near Bottom Depth (ft) <u>14.00</u> <input type="checkbox"/> Other _____</p> <p>Pumping Rate <u>6</u> gpm</p> <p style="text-align: right; font-size: 1.2em;">8.1 gals CALCULATED PURGE VOLUME</p> <p style="text-align: right; font-size: 1.2em;">3 gals ACTUAL PURGE VOLUME</p>
---	--

GROUNDWATER PARAMETER MEASUREMENT Meter Type MYRONL HFSCI

Time/Gallons	pH	Cond. (uomhos/cm)	Temp <input checked="" type="checkbox"/> deg C <input checked="" type="checkbox"/> deg F	Turbidity (NTU)	Color/Odor
<u>11:43, 3</u>	<u>7.1</u>	<u>2200</u>	<u>66.6</u>	<u>151.2</u>	
	<u>Well re-watered @ 3 gpc</u>				

Comments during well purge _____
 Well Pumped dry YES NO
 Purge water storage/disposal Drummed onsite Other TEXACO

WELL SAMPLING

SAMPLING METHOD Date/Time Sampled 11-2 14:50

Bailer - Type TEFLON Sample port Other

GROUNDWATER SAMPLE PARAMETER MEASUREMENTS Meter Type MYRONL HFSCI

Date/Time/% Recharge	pH	Cond. (uomhos/cm)	Temp <input checked="" type="checkbox"/> deg C <input type="checkbox"/> deg F	Turbidity (NTU)	Color/Odor
<u>11-2 14:50 180%</u>	<u>7.1</u>	<u>1200</u>	<u>21.4</u>	<u>7200</u>	

SAMPLING PROGRAM

Sample No.	Container #/Volume	Analysis	Preservatives	Laboratory	Comments
<u>MN-8F</u>	<u>340ML VOA</u>	<u>THG, BTEX</u>	<u>HCL</u>	<u>BC</u>	
<u>11</u>	<u>2 LITER</u>	<u>TPH/D</u>	<u>NONE</u>	<u>BC</u>	
<u>1</u>	<u>2 LITER</u>	<u>DIC/OLIGASE</u>	<u>HCL</u>	<u>BC</u>	

QUALITY CONTROL SAMPLES

Duplicate Samples		Blank Samples	
Original Sample No.	Duplicate Sample No.	Type	Sample No.
		Trip	
		Rinsate	
		Transfer	
		Other:	

Groundwater Sampling Form

Project Name 506 GRAND
 Project Number 941102-M1
 Recorded By MIKE MYERS

Well No. MW-86
 Well Type Monitor Extraction Other
 Sampled by MM Date 11-02-94

WELL PURGING

PURGE VOLUME:
 Well casing diameter: 2-inch 4-inch Other
 Well Total Depth (TD, ft. below TOC) 14.18
 Depth to Water (WL, ft. below TOC) 10.08
 Depth to free phase hydrocarbons (FP, ft. below TOC) _____
 Number of well volumes to be purged: 3 10 Other 2.7 vol

PURGE METHOD:
 Bailer - Type _____
 Pump - Type ELECTRIC SUB
 Other _____

PUMP INTAKE:
 Near top Depth (ft) _____
 Near Bottom Depth (ft) 14.00
 Other _____

Pumping Rate 6 gpm

Water Column Length 4.1 x Multiplier .65 x No. Vols 3 = 8.1 gals
CALCULATED PURGE VOLUME

MULTIPLIER (Casing Dia [inches] = Gallons/linear ft)
 2 = 0.17 | 3 = 0.38 | 4 = 0.66 | 4.5 = 0.83 | 5 = 1.02 | 6 = 1.5 | 8 = 2.6

ACTUAL PURGE VOLUME 3 gals

GROUNDWATER PARAMETER MEASUREMENT

Meter Type MYRON 2, HFSCI

Time/Gallons	pH	Cond. (uomhos/cm)	Temp (deg C / deg F)	Turbidity (NTU)	Color/Odor
<u>11:32 3</u>	<u>7.5</u>	<u>1100</u>	<u>63.6</u>	<u>7200</u>	

GWATERED AT 3 GAL

Comments during well purge _____
 Well Pumped dry YES NO
 Purge water storage/disposal: Drummed onsite Other TEXACO

WELL SAMPLING

SAMPLING METHOD: Date/Time Sampled 11-2 | 14:25
 Bailer - Type TEFLON Sample port Other

GROUNDWATER SAMPLE PARAMETER MEASUREMENTS: Meter Type _____

Date/Time/% Recharge	pH	Cond. (uomhos/cm)	Temp (deg C / deg F)	Turbidity (NTU)	Color/Odor
<u>11-2-94/14:25 85%</u>	<u>7.4</u>	<u>1200</u>	<u>70.4</u>	<u>172.8</u>	

SAMPLING PROGRAM

Sample No.	Container #/Volume	Analysis	Preservatives	Laboratory	Comments
<u>MW-86</u>	<u>3 40AL IBA</u>	<u>TPH, BTEX</u>	<u>HCL</u>	<u>BCA</u>	
<u>17</u>	<u>2 LITERS</u>	<u>DILUTE BTEX</u>	<u>HCL</u>	<u>"</u>	
<u>18</u>	<u>2 LITERS</u>	<u>TPHD</u>	<u>NONE</u>	<u>"</u>	

QUALITY CONTROL SAMPLES

Duplicate Samples		Blank Samples	
Original Sample No.	Duplicate Sample No.	Type	Sample No.
		Trip	
		Rinsate	
		Transfer	
		Other:	

Groundwater Sampling Form

Project Name 500 GRAND
 Project Number 941102-M1
 Recorded By MM

Well No. MW-84
 Well Type Monitor Extraction Other
 Sampled by MM Date 11-02-94

WELL PURGING

PURGE VOLUME

Well casing diameter
 2-inch 4-inch Other
 Well Total Depth (TD, ft. below TOC) 14.80
 Depth to Water (WL, ft. below TOC) 3.64
 Depth to free phase hydrocarbons (FP, ft. below TOC)
 Number of well volumes to be purged
 3 10 Other

PURGE METHOD

Bailor - Type
 Pump - Type ELECT SUB
 Other

PUMP INTAKE

Near top Depth (ft)
 Near Bottom Depth (ft) 13.80
 Other

PURGE VOLUME CALCULATION

11.16 x 1.6 x 3 = 7.4 case
 Water Column Length Multiplier No. Vols

Pumping Rate _____ gpm
22.2 gals
 CALCULATED PURGE VOLUME

MULTIPLIER (Casing Dia. [inches] = Gallons/linear ft)
 2 = 0.17 | 3 = 0.38 | 4 = 0.66 | 4.5 = 0.83 | 5 = 1.02 | 6 = 1.5 | 8 = 2.6

24 gals
 ACTUAL PURGE VOLUME

GROUNDWATER PARAMETER MEASUREMENT

Meter Type METRONL. HFC1

Time/Gallons	pH	Cond. (uomhos/cm)	Temp	<input checked="" type="checkbox"/> deg C <input type="checkbox"/> deg F	Turbidity (NTU)	Color/Odor
<u>12:39 10</u>	<u>7.0</u>	<u>1600</u>	<u>20.6</u>		<u>28.5</u>	
<u>12:40 16</u>	<u>6.9</u>	<u>1400</u>	<u>21.4</u>		<u>29.8</u>	
<u>12:42 24</u>	<u>7.0</u>	<u>1400</u>	<u>21.6</u>		<u>23.1</u>	

Comments during well purge _____

Well Pumped dry: YES NO Purge water storage/disposal Drummed onsite Other TEXACO

WELL SAMPLING

SAMPLING METHOD Date/Time Sampled 11-02 12:30

Bailor - Type TEFLON Sample port Other

GROUNDWATER SAMPLE PARAMETER MEASUREMENTS

Meter Type _____

Date/Time/% Recharge	pH	Cond. (uomhos/cm)	Temp	deg C deg F	Turbidity (NTU)	Color/Odor
/ /						

SAMPLING PROGRAM

Sample No.	Container #/Volume	Analysis	Preservatives	Laboratory	Comments
<u>MW-84</u>	<u>3 20ml BGA</u>	<u>TPH, BGA</u>	<u>HCL</u>	<u>BLA</u>	
<u>1</u>	<u>2 LITER</u>	<u>TPH, D</u>	<u>None</u>	<u>BLA</u>	
<u>1</u>	<u>2 LITER</u>	<u>HL + GUA</u>	<u>HCL</u>	<u>BLA</u>	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Trip	
Rinsate	<u>ES @</u>
Transfer	<u>12:45</u>
Other:	

Groundwater Sampling Form

Project Name 50 GRAND
 Project Number 941102-M1
 Recorded By MM

Well No. MW-81
 Well Type Monitor Extraction Other
 Sampled by MM Date 11-02-99

WELL PURGING

PURGE VOLUME

PURGE METHOD

Well casing diameter
 2-inch 4-inch Other
 Well Total Depth (TD, ft. below TOC) 14.52

Bailer - Type
 Pump - Type ELECTRIC SUB
 Other

Depth to Water (WL, ft. below TOC) 6.10

PUMP INTAKE

Depth to free phase hydrocarbons (FP, ft. below TOC)

Near top Depth (ft)
 Near Bottom Depth (ft) 13.52
 Other

Number of well volumes to be purged
 3 10 Other

Pumping Rate _____ gpm
16.8 gals

PURGE VOLUME CALCULATION

8.92 x 1.66 x 3 = _____

Water Column Length Multiplier No. Vols

CALCULATED PURGE VOLUME

MULTIPLIER (Casing Dia. [inches] = Gallons/linear ft)
 2 = 0.17 | 3 = 0.38 | 4 = 0.66 | 4.5 = 0.83 | 5 = 1.02 | 6 = 1.5 | 8 = 2.6

18 gals
 ACTUAL PURGE VOLUME

GROUNDWATER PARAMETER MEASUREMENT

Meter Type MANUAL / HFSCI

Time/Gallons	pH	Cond. (uomhos/cm)	Temp	<input checked="" type="checkbox"/> deg C <input type="checkbox"/> deg F	Turbidity (NTU)	Color/Odor
13:56 6	7.0	1400	20.4		180.2	
13:57 12	6.9	1400	20.8		165.4	
13:58 18	7.0	1400	20.2		160.1	
/						
/						
/						
/						

Comments during well purge

Well Pumped dry: YES NO Purge water storage/disposal Drummed onsite Other TEXACO

WELL SAMPLING

SAMPLING METHOD _____ Date/Time Sampled 11-2 14:10

Bailer - Type TEFLON Sample port Other

GROUNDWATER SAMPLE PARAMETER MEASUREMENTS

Meter Type _____

Date/Time/% Recharge	pH	Cond. (uomhos/cm)	Temp	deg C deg F	Turbidity (NTU)	Color/Odor
/ /						

SAMPLING PROGRAM

Sample No.	Container #/Volume	Analysis	Preservatives	Laboratory	Comments
<u>MW-81</u>	<u>3 40ML VIAL</u>	<u>TRIPHENYL</u>	<u>HCL</u>	<u>BCA</u>	
<u>"</u>	<u>2 LITERS</u>	<u>ORP/PH/SE</u>	<u>HCL</u>	<u>"</u>	
<u>"</u>	<u>2 LITERS</u>	<u>TRAD</u>	<u>None</u>	<u>"</u>	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Trip	
Rinsate	
Transfer	
Other:	

Groundwater Sampling Form

Project Name 500 GLAND
 Project Number 94102-M1
 Recorded By MM

Well No. NW-8J
 Well Type Monitor Extraction Other
 Sampled by MM Date 11-02-99

WELL PURGING

PURGE VOLUME
 Well casing diameter
 2-inch 4-inch Other
 Well Total Depth (TD, ft. below TOC) 14.72
 Depth to Water (WL, ft. below TOC) 5.50
 Depth to free phase hydrocarbons (FP, ft. below TOC) _____
 Number of well volumes to be purged
 3 10 Other 5.8 cases

PURGE VOLUME CALCULATION:
8.82 x .66 x 3 = _____
 Water Column Length Multiplier No. Vols

PURGE METHOD
 Bailer - Type _____
 Pump - Type ELECT SUB
 Other _____

PUMP INTAKE
 Near top Depth (ft) _____
 Near Bottom Depth (ft) 13.72
 Other _____

Pumping Rate 6 gpm

17.4 gals
CALCULATED PURGE VOLUME

18 gals
ACTUAL PURGE VOLUME

MULTIPLIER (Casing Dia. [inches] = Gallons/linear ft)
 2 = 0.17 | 3 = 0.38 | 4 = 0.66 | 4.5 = 0.83 | 5 = 1.02 | 6 = 1.5 | 8 = 2.6

GROUNDWATER PARAMETER MEASUREMENT Meter Type RAYMOND - HESCI

Time/Gallons	pH	Cond. (uomhos/cm)	Temp	deg C / deg F	Turbidity (NTU)	Color/Odor
12:12 6	6.9	2000	67.2		10.8	
12:13 12	6.9	2000	69.2		10.7	
12:14 18	7.0	2000	69.6		55.7	

Comments during well purge _____
 Well Pumped dry: YES NO Purge water storage/disposal Drummed onsite Other TEXACO

WELL SAMPLING

SAMPLING METHOD Date/Time Sampled 11-2-99 12:20
 Bailer - Type TEFLON Sample port Other

GROUNDWATER SAMPLE PARAMETER MEASUREMENTS Meter Type _____

Date/Time/% Recharge	pH	Cond. (uomhos/cm)	Temp	deg C / deg F	Turbidity (NTU)	Color/Odor

SAMPLING PROGRAM

Sample No.	Container #/Volume	Analysis	Preservatives	Laboratory	Comments
<u>NW-8J</u>	<u>3 40ml VOA</u>	<u>TPH, 6 SW</u>	<u>HCL</u>	<u>BC ANALYTICAL</u>	
<u>"</u>	<u>2 LITER HCL</u>	<u>OL/GA/RE</u>	<u>HCL</u>	<u>"</u>	
<u>"</u>	<u>2 LITER VIALS</u>	<u>TPH D</u>	<u>NONE</u>	<u>"</u>	

QUALITY CONTROL SAMPLES

Duplicate Samples		Blank Samples	
Original Sample No.	Duplicate Sample No.	Type	Sample No.
		Trip	
		Rinsate	
		Transfer	
		Other:	

Groundwater Sampling Form

Project Name 500 GRAND
 Project Number 941102-M1
 Recorded By JMM

Well No. MW-8K
 Well Type Monitor Extraction Other
 Sampled by JMM Date 11-02-84

WELL PURGING

PURGE VOLUME
 Well casing diameter: 2-inch 4-inch Other
 Well Total Depth (TD, ft. below TOC) 16.90
 Depth to Water (WL, ft. below TOC) 2.10
 Depth to free phase hydrocarbons (FP, ft. below TOC) _____
 Number of well volumes to be purged: 3 10 Other 2.5 cas

PURGE METHOD
 Bailer - Type TEFLON
 Pump - Type _____
 Other _____

PUMP INTAKE
 Near top Depth (ft) _____
 Near Bottom Depth (ft) _____
 Other _____

Pumping Rate _____ gpm

Water Column Length 14.80 x Multiplier 1.7 x No. Vols 3 = 7.5 gals
 CALCULATED PURGE VOLUME

MULTIPLIER (Casing Dia. [inches] = Gallons/linear ft)
 2 = 0.17 | 3 = 0.38 | 4 = 0.66 | 4.5 = 0.83 | 5 = 1.02 | 6 = 1.5 | 8 = 2.6

ACTUAL PURGE VOLUME 8.0 gals

GROUNDWATER PARAMETER MEASUREMENT Meter Type INTRON / HFSCI

Time/Gallons	pH	Cond. (uomhos/cm)	Temp	deg C / deg F	Turbidity (NTU)	Color/Odor
15:15 2.5	7.0	1200	21.4		<200	
13:18 5.0	7.1	1200	21.0		<200	
13:21 8.0	7.0	1200	21.2		<200	
/						
/						
/						
/						

Comments during well purge _____
 Well Pumped dry: YES NO
 Purge water storage/disposal Drummed onsite Other TEXACO

WELL SAMPLING

SAMPLING METHOD Date/Time Sampled 11-2 13:25
 Bailer - Type TEFLON Sample port Other

GROUNDWATER SAMPLE PARAMETER MEASUREMENTS Meter Type _____

Date/Time/% Recharge	pH	Cond. (uomhos/cm)	Temp	deg C / deg F	Turbidity (NTU)	Color/Odor
/ /						

SAMPLING PROGRAM

Sample No.	Container #/Volume	Analysis	Preservatives	Laboratory	Comments
MW-8K	240ml VOA	PH6,8,9	HCL	BCA	
"	2 LITER	TPH/D	NONE	"	
"	2 LITER	OIL/O&P	HCL	"	

QUALITY CONTROL SAMPLES

Duplicate Samples		Blank Samples	
Original Sample No.	Duplicate Sample No.	Type	Sample No.
		Trip	
		Rinsate	
		Transfer	
		Other:	

Groundwater Sampling Form

Project Name 50 GRAND
 Project Number 941102-M1
 Recorded By mm

Well No. MW-8L
 Well Type Monitor Extraction Other
 Sampled by mm Date 11-02-94

WELL PURGING

PURGE VOLUME

Well casing diameter
 2-inch 4-inch Other _____
 Well Total Depth (TD, ft. below TOC) _____
 Depth to Water (WL, ft. below TOC) _____
 Depth to free phase hydrocarbons (FP, ft. below TOC) _____
 Number of well volumes to be purged
 3 10 Other _____

PURGE METHOD

Bailer - Type _____
 Pump - Type _____
 Other _____

PUMP INTAKE

Near top Depth (ft) _____
 Near Bottom Depth (ft) _____
 Other _____

PURGE VOLUME CALCULATION

_____ X _____ X _____ = _____
 Water Column Length Multiplier No. Vols

MULTIPLIER (Casing Dia. [inches] = Gallons/linear ft)
 2 = 0.17 | 3 = 0.38 | 4 = 0.66 | 4.5 = 0.83 | 5 = 1.02 | 6 = 1.5 | 8 = 2.6

Pumping Rate _____ gpm
 _____ gals
CALCULATED PURGE VOLUME

_____ gals
ACTUAL PURGE VOLUME

GROUNDWATER PARAMETER MEASUREMENT Meter Type _____

Time/Gallons	pH	Cond. (uomhos/cm)	Temp	deg C deg F	Turbidity (NTU)	Color/Odor
INTERNALLY						
WELL IS OBSTRUCTED NOT SAMPLED						

Comments during well purge _____
 Well Pumped dry: YES NO Purge water storage/disposal Drummed onsite Other _____

WELL SAMPLING

SAMPLING METHOD _____ Date/Time Sampled _____

Bailer - Type Sample port Other

GROUNDWATER SAMPLE PARAMETER MEASUREMENTS Meter Type _____

Date/Time/% Recharge	pH	Cond. (uomhos/cm)	Temp	deg C deg F	Turbidity (NTU)	Color/Odor

SAMPLING PROGRAM

Sample No.	Container #/Volume	Analysis	Preservatives	Laboratory	Comments

QUALITY CONTROL SAMPLES

Duplicate Samples	
Original Sample No.	Duplicate Sample No.

Blank Samples	
Type	Sample No.
Trip	
Rinsate	
Transfer	
Other:	

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>MW-8F1</u>	<u>3</u>	<u> </u>	<u> </u>
<u>MW-8G1</u>	<u>3</u>	<u> </u>	<u> </u>
<u>MW-8H1</u>	<u>24</u>	<u> </u>	<u> </u>
<u>MW-8I</u>	<u>18</u>	<u> </u>	<u> </u>
<u>MW-8J</u>	<u>18</u>	<u> </u>	<u> </u>
<u>MW-8K</u>	<u>18</u>	<u> </u>	<u> </u>
<u>MW-8L</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>54</u>	added rinse water	<u>10</u>
Total Gals. Recovered	<u>64</u>		
Job #:	<u>941102-M1</u>		
Date	<u>11-02-94</u>		
Time	<u>10:00</u>		
Signature:	<u>[Signature]</u>		
REC'D AT:	<u>BTS</u>		
Date:	<u>11-02-94</u>		
Time:	<u>19:00</u>		
Signature:	<u>[Signature]</u>		

**THIRD-QUARTER 1994 PROGRESS REPORT
500 GRAND AVENUE
OAKLAND, CALIFORNIA**

HISTORY OF INVESTIGATIVE AND REMEDIAL ACTIONS

The site is the former location of a Texaco service station location. Currently the site is a fenced, vacant lot. 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, five off-site wells were installed. The initial five on-site wells have been abandoned and replaced by two 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. Three underground storage tanks, dispenser islands and associated piping, stockpiled soils, and site structures were removed from the site in April 1992. The excavated area was backfilled and compacted using clean imported material.

WORK PERFORMED THIRD QUARTER 1994

Ground-water monitoring was conducted during the quarter. Results are provided in a separate ground-water monitoring report.

PROPOSED INVESTIGATIONS OR REMEDIATION PLANS

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. No further investigation or remediation of the vadose-zone soils is proposed.

Ground water 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. It is proposed that downgradient wells continue to be monitored to document the biodegradation of the remaining dissolved-phase hydrocarbons in the ground water.

METHOD AND LOCATION OF DISPOSAL

Ground water purged during the quarterly monitoring was transported to the Texaco Terminal in Richmond, California, for disposal.

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. Without moving the probe, read the numbers on the tape to determine the distance from the predetermined 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 unless specifically requested by the Project Coordinator. 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 acrylic 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 predetermined 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.

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 of 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. 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 within 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 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 labelled 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 analysis 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 field personnel view after being in 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 hand bailers and will be decontamination with an Alconox wash with deionized (DI) water rinse.