Texaco Refining and Marketing Inc
108 Cutting Boulevard
Richmond CA 94804

May 17, 1995

April 16 ppm TPH-G
May 45 " " from VE unit.

ENV - STUDIES, SURVEYS, & REPORTS
930 Springtown Blvd., Livermore, California

Ms. Eva Chu
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, Fl. 2
Alameda, CA 94502-6577

Dear Ms. Chu:

This letter presents the results of groundwater monitoring and sampling conducted by Blaine Tech Services, Inc. on February 20, 1995, at the site referenced above (see Plate 1, Site Vicinity Map). Based on groundwater level measurements, the areal hydraulic gradient was estimated to be north-northeast (see Plate 2, Groundwater Gradient Map) at 0.047 ft. per ft. The gradient map has been reviewed by a registered professional. 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 Enviornmental Services' Standard Operating Procedures.

If you have any questions or comments regarding this site, please call the Texaco Environmental Services' site Project Coordinator, Ms. Karen Petryna at (510) 236-9139.

Best Regards,

Rebecca Digerness
Environmental Assistant

Karen E. Petryna
Engineer
Texaco Environmental Services

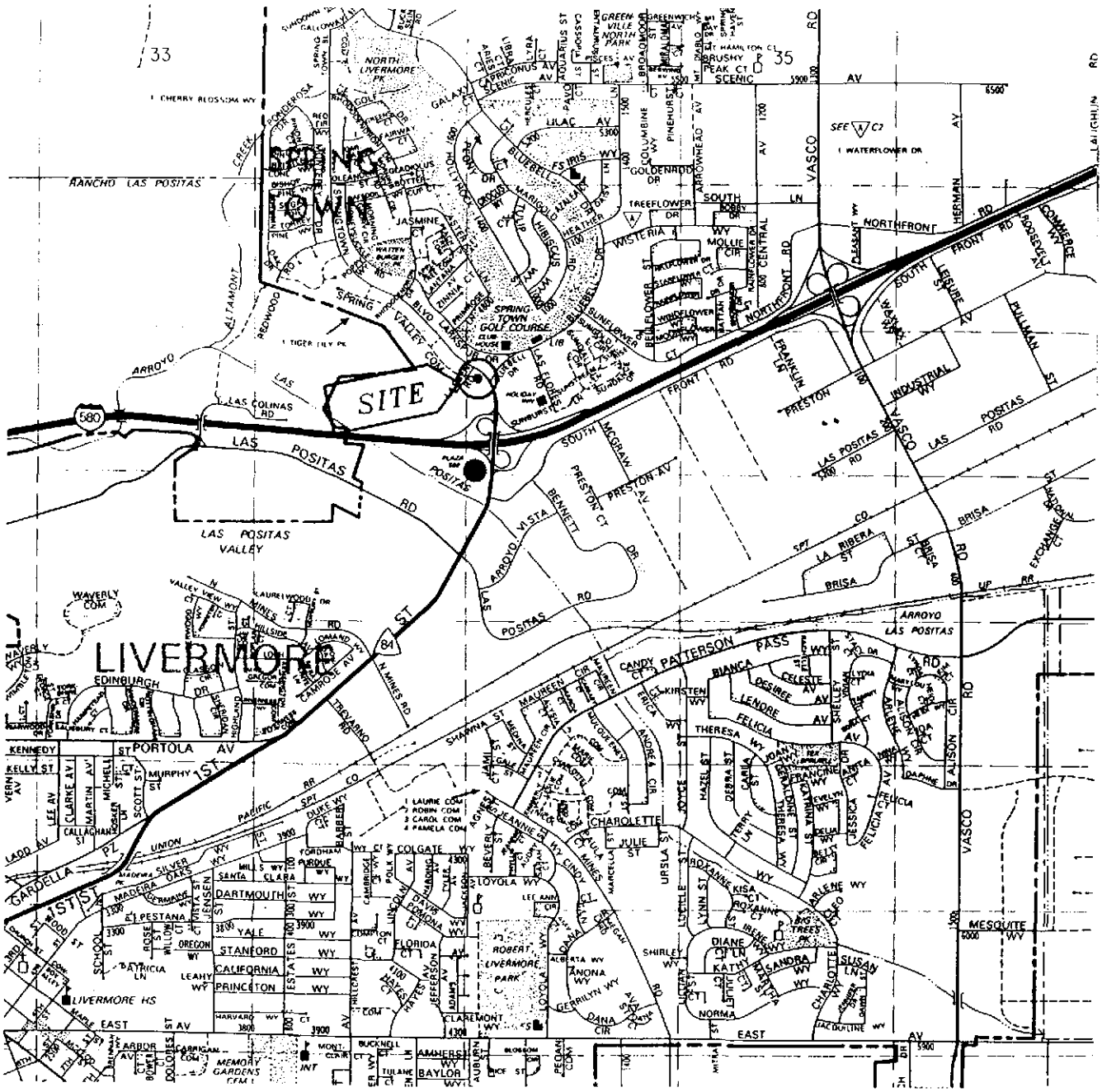
RBD:hs
C:\QMR\930S\QMR.LET

Enclosures

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

PR: KEP

GROUNDWATER MONITORING AND SAMPLING
First Quarter, 1995
at the
Former Texaco Station
930 Springtown Boulevard
Livermore, California



SOURCE:

1993 THE THOMAS GUIDE
ALAMEDA COUNTY, PAGE 51 (C3)

N

0 1/4 1/2 3/4

MILE

1" = 2200'

TEXACO

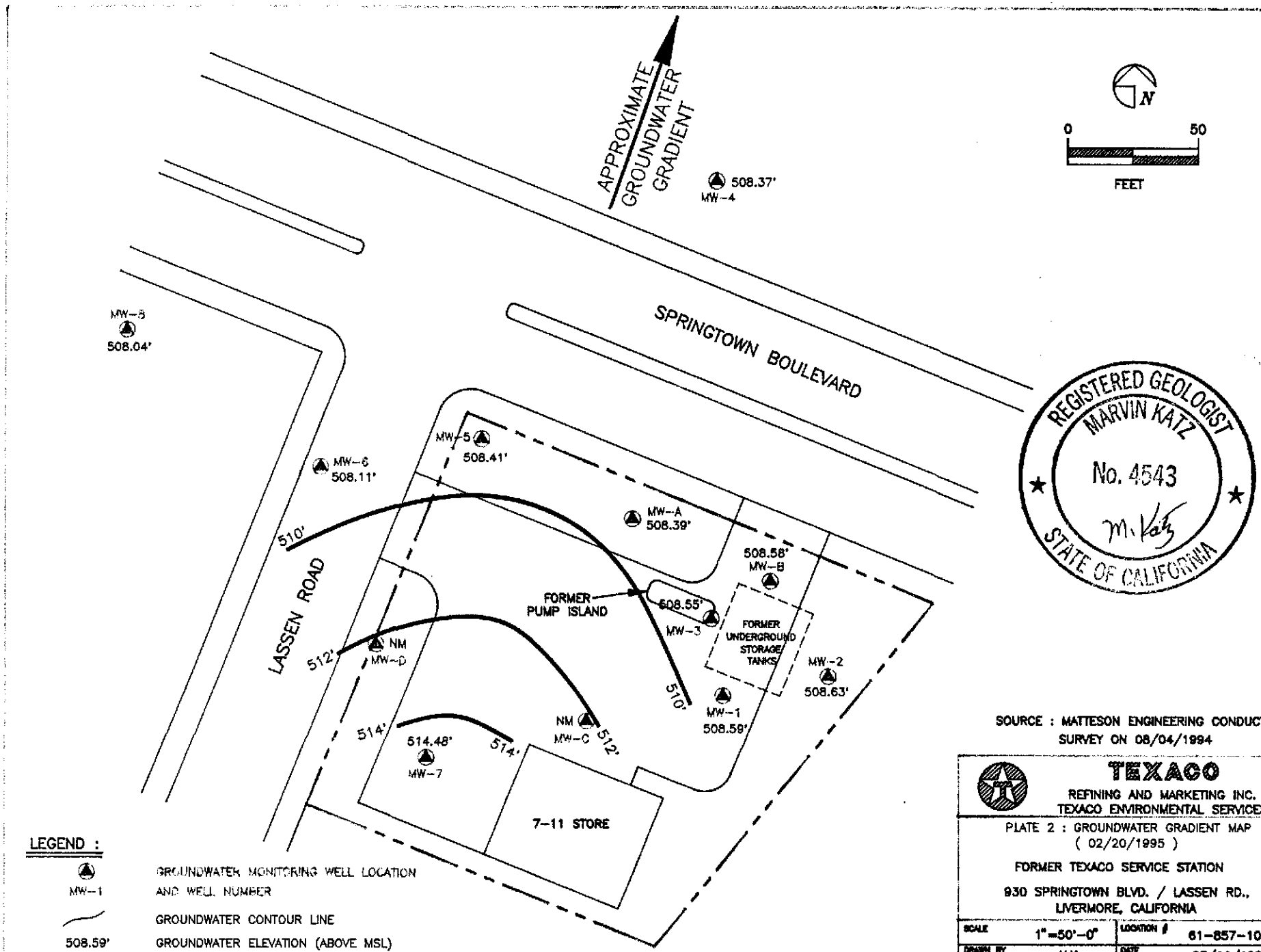
REFINING AND MARKETING, INC.
TEXACO ENVIRONMENTAL SERVICES

PLATE 1

SITE VICINITY MAP

FORMER TEXACO SERVICE STATION

930 SPRINGTOWN BLVD. / LASSEN RD.,
LIVERMORE, CALIFORNIA



SOURCE : MATTESON ENGINEERING CONDUCTED SURVEY ON 08/04/1994

LEGEND :

▲ MW-1	GROUNDWATER MONITORING WELL LOCATION AND WELL NUMBER
~	GROUNDWATER CONTOUR LINE
508.59'	GROUNDWATER ELEVATION (ABOVE MSL)
NM	WELL NOT MONITORED

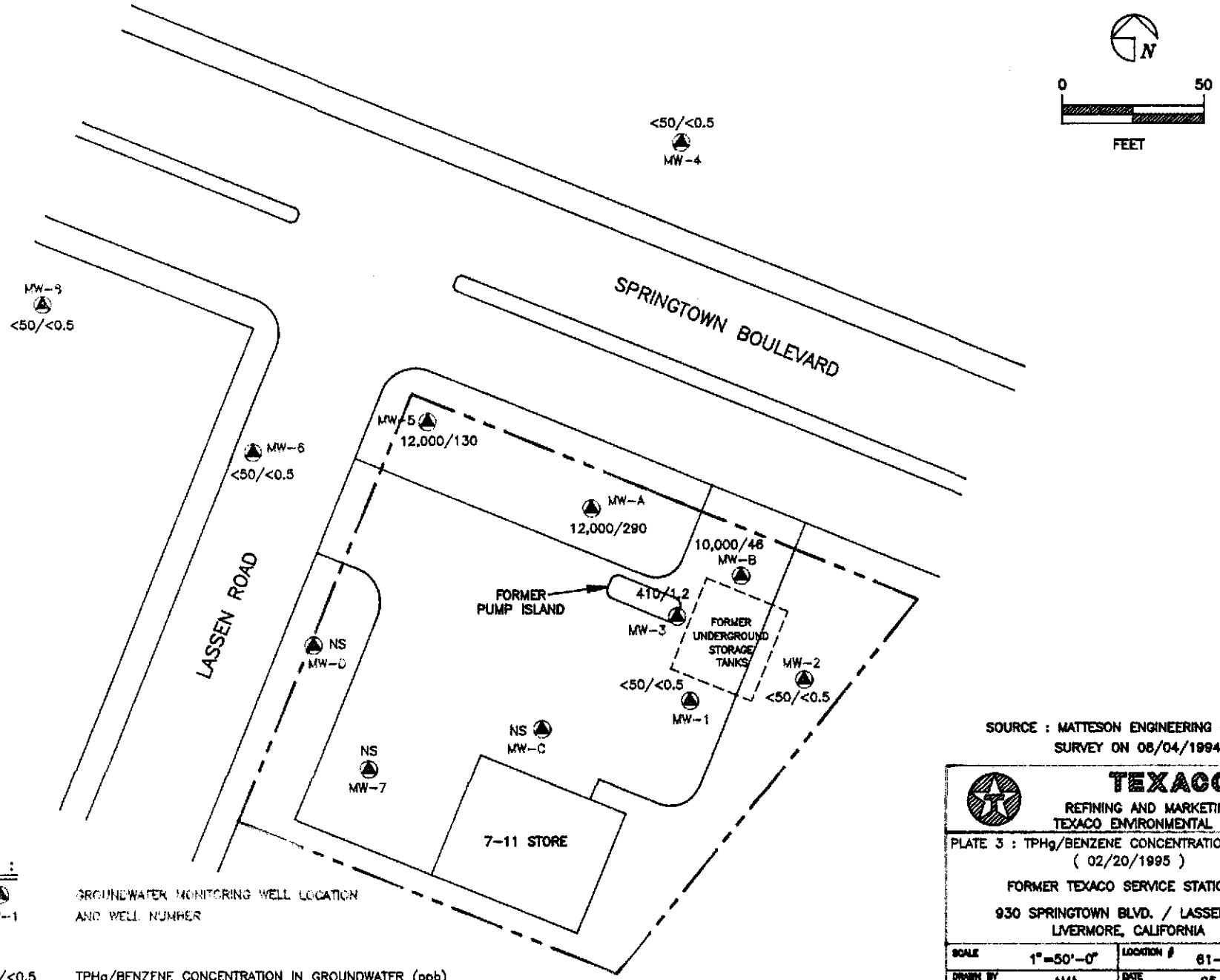
TEXACO
REFINING AND MARKETING INC.
TEXACO ENVIRONMENTAL SERVICES

PLATE 2 : GROUNDWATER GRADIENT MAP
(02/20/1995)

FORMER TEXACO SERVICE STATION

930 SPRINGTOWN BLVD. / LASSEN RD.,
LIVERMORE, CALIFORNIA

SCALE	1"=50'-0"	LOCATION #	61-857-1050
DRAWN BY	AMA	DATE	05/11/1995
CHECKED BY	RD	DATE	5/15/95
DRAWING NO.	(LIVERMORE) ST-LA-LI.DWG		



LEGEND :

MW-1 — GROUNDWATER MONITORING WELL LOCATION AND WELL NUMBER

<50/<0.5 — TPHg/BENZENE CONCENTRATION IN GROUNDWATER (ppb)

NS — WELL NOT SAMPLED

SOURCE : MATTESON ENGINEERING CONDUCTED SURVEY ON 08/04/1994

TEXACO
REFINING AND MARKETING INC.
TEXACO ENVIRONMENTAL SERVICES

PLATE 3 : TPHg/BENZENE CONCENTRATION IN GROUND (02/20/1995)

FORMER TEXACO SERVICE STATION

930 SPRINGTOWN BLVD. / LASSEN RD.,
LIVERMORE, CALIFORNIA

SCALE	1"=50'-0"	LOCATION #	61-857-1050
DRAWN BY	AMA	DATE	05/11/1995
CHECKED BY	RO	DATE	5/15/95
DRAWING NO.	(LIVERMORE) ST-LA-LL.DWG		

Table 1
Groundwater Elevation Data
930 Springtown Boulevard, Livermore, CA

Well Number	Date Gauged	Top of Casing Elevation (feet, MSL)		Depth to Water (feet, TOC)	Elevation of Groundwater (feet, MSL)	Floating Product
MW-A						
	1/10/91	519.85				
	1/2/92			13.61	506.24	---
	4/2/92			12.44	507.41	---
	7/21/92			13.35	506.50	---
	10/9/92			12.92	506.93	SD
	1/11/93			11.78	508.07	SD
	5/5/93			11.39	508.46	SD
	8/9/93			12.80	507.05	SD
	10/14/93			13.48	506.37	SD
	1/24/94			12.74	507.11	SD
	5/31/94			12.28	507.57	---
	8/31/94	520.10	*	13.20	506.90	SD
	11/2/94			13.15	506.95	SD
	2/20/95			11.71	508.39	---
MW-B						
	1/10/91	518.16				
	1/2/92			11.27	506.89	---
	4/2/92			10.18	507.98	---
	7/21/92			11.27	506.89	---
	10/9/92			11.64	506.52	SD
	1/11/93			9.65	508.51	SD
	5/5/93			9.28	508.88	SD
	8/9/93			11.02	507.14	SD
	10/14/93			11.34	506.82	SD
	1/24/94			10.54	507.62	SD
	5/31/94			10.19	507.97	---
	8/31/94	518.05	*	10.98	507.07	SD
	11/2/94			10.90	507.15	SD
	2/20/95			9.47	508.58	---

Table 1
Groundwater Elevation Data
930 Springtown Boulevard, Livermore, CA

Well Number	Date Gauged	Top of Casing Elevation (feet, MSL)		Depth to Water (feet, TOC)	Elevation of Groundwater (feet, MSL)	Floating Product
MW-1						
	1/10/91	520.76				
	1/2/92			14.11	506.65	---
	4/2/92			12.98	507.78	---
	7/21/92			13.92	506.84	---
	10/9/92			14.25	506.51	---
	1/11/93			12.30	508.46	---
	5/5/93			11.88	508.88	---
	8/9/93			13.63	507.13	---
	10/14/93			13.91	506.85	---
	1/24/93			13.12	507.64	---
	5/31/94			12.74	508.02	---
	8/31/94	520.61	*	13.68	506.93	---
	11/2/94			13.48	507.13	---
	2/20/95			12.02	508.59	---
MW-2						
	1/10/91	518.46				
	1/2/92			11.96	506.50	---
	4/2/92			10.89	507.57	---
	7/21/92			11.55	506.91	---
	10/9/92			Not Monitored		
	1/11/93			Not Monitored		
	5/5/93			Not Monitored		
	8/9/93			Not Monitored		
	10/14/93			Not Monitored		
	1/24/94			Not Monitored		
	5/31/94			10.37	508.09	---
	8/31/94	518.29	*	11.16	507.13	---
	11/2/94			11.07	507.22	---
	2/20/95			9.66	508.63	---

Table 1
Groundwater Elevation Data
930 Springtown Boulevard, Livermore, CA

Well Number	Date Gauged	Top of Casing Elevation (feet, MSL)		Depth to Water (feet, TOC)	Elevation of Groundwater (feet, MSL)	Floating Product
MW-3						
	1/10/91	519.30				
	1/2/92			12.87	506.43	---
	4/2/92			11.97	507.33	---
	7/21/92			12.60	506.70	---
	10/9/92			12.93	506.37	---
	1/11/93			11.16	508.14	---
	5/5/93			10.72	508.58	---
	8/9/93			12.34	506.96	---
	10/14/93			12.71	506.59	---
	1/24/94			12.03	507.27	---
	5/31/94			11.54	507.76	---
	8/31/94	519.60	*	12.60	507.00	---
	11/2/94			12.16	507.44	---
	2/20/95			11.05	508.55	---
MW-4						
	1/10/91	518.75				
	1/2/92			12.22	506.53	---
	4/2/92			11.03	507.72	---
	7/21/92			12.36	506.39	---
	10/9/92			12.40	506.35	---
	1/11/93			10.72	508.03	---
	5/5/93			10.21	508.54	---
	8/9/93			12.25	506.50	---
	10/14/93			12.58	506.17	---
	1/24/94			11.72	507.03	---
	5/31/94			11.29	507.46	---
	8/31/94	518.79	*	12.00	506.79	---
	11/2/94			11.96	506.83	---
	2/20/95			10.42	508.37	---

Table 1
Groundwater Elevation Data
930 Springtown Boulevard, Livermore, CA

Well Number	Date Gauged	Top of Casing Elevation (feet, MSL)		Depth to Water (feet, TOC)	Elevation of Groundwater (feet, MSL)	Floating Product
MW-5						
	1/10/91	520.50				
	1/2/92			14.56	505.94	---
	4/2/92			13.58	506.92	---
	7/21/92			13.77	506.73	---
	10/9/92			14.09	506.41	---
	1/11/93			12.24	508.26	---
	5/5/93			11.90	508.60	---
	8/9/93			13.35	507.15	---
	10/14/93			13.89	506.61	---
	1/24/94			13.32	507.18	---
	5/31/94			12.75	507.75	---
	8/31/94	521.19	*	14.34	506.85	---
	11/2/94			14.22	506.97	---
	2/20/95			12.78	508.41	SD
MW-6						
	1/10/91	522.26				
	1/2/92			16.64	505.62	---
	4/2/91			15.61	506.65	---
	7/21/92			15.53	506.73	---
	10/9/92			15.69	506.57	---
	1/11/93			Not Monitored		
	5/5/93			Not Monitored		
	8/9/93			14.50	507.76	---
	10/14/93			Not Monitored		
	1/24/94			15.09	507.17	---
	5/31/94			14.64	507.62	---
	8/31/94	522.18	*	15.32	506.86	---
	11/2/94			15.32	506.86	---
	2/20/95			14.07	508.11	---

Table 1
Groundwater Elevation Data
930 Springtown Boulevard, Livermore, CA

Well Number	Date Gauged	Top of Casing Elevation (feet, MSL)		Depth to Water (feet, TOC)	Elevation of Groundwater (feet, MSL)	Floating Product
MW-7						
	1/10/91	522.17				
	1/2/92			11.17	511.00	---
	4/2/92			10.34	511.83	---
	7/21/92			9.02	513.15	---
	10/9/92			Not Monitored		
	1/11/93			Not Monitored		
	5/5/93			Not Monitored		
	8/9/93			Not Monitored		
	10/14/93			Not Monitored		
	1/24/94			Not Monitored		
	5/31/94			9.42	512.75	---
	8/31/94	522.19	*	6.84	515.35	---
	11/2/94			6.48	515.71	---
	2/20/95			7.71	514.48	---
MW-8						
	1/10/91	524.04				
	1/2/92			18.42	505.62	---
	4/2/92			17.39	506.65	---
	7/21/92			14.02	510.02	---
	10/9/92			Not Monitored		
	1/11/93			Not Monitored		
	5/5/93			Not Monitored		
	8/9/93			Not Monitored		
	10/14/93			Not Monitored		
	1/24/94			Not Monitored		
	5/31/94			19.65	504.39	---
	8/31/94	524.03	*	17.40	506.63	---
	11/2/94			17.38	506.65	---
	2/20/95			15.99	508.04	---
*Wells resurveyed on 8/4/94						
MSL = Mean Sea Level						
TOC = Top of Casing						
--- = None Present						
SD = Sheen detected in purge water						

Table 2
Groundwater Analytical Data
930 Springtown Boulevard, Livermore, CA

Well Number	Date Sampled	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)
MW-A						
	1/2/92	SP	SP	SP	SP	SP
	4/2/92	27,000	1,200	570	1,700	2,300
	7/21/92	57,000	1,500	1,800	2,700	7,100
	10/9/92	56,000	2,900	2,600	4,600	12,000
	1/11/93	NS	NS	NS	NS	NS
	5/5/93	NS	NS	NS	NS	NS
	8/9/93	NS	NS	NS	NS	NS
	10/14/93	NS	NS	NS	NS	NS
	1/24/94	1,400,000	6,900	2,100	15,000	38,000
	5/31/94	48,000	1,200	900	1,900	4,200
	8/31/94	24,000	140	120	830	1,500
	11/2/94	15,000	230	360	1,100	1,800
	2/20/95	12,000	290	330	570	1,300
MW-B						
	1/2/92	SP	SP	SP	SP	SP
	4/2/92	1,900	ND	39	24	35
	7/21/92	16,000	180	1,600	270	1,100
	10/9/92	38,000	490	8,300	1,400	5,100
	1/11/93	NS	NS	NS	NS	NS
	5/5/93	NS	NS	NS	NS	NS
	8/9/93	NS	NS	NS	NS	NS
	10/14/93	NS	NS	NS	NS	NS
	1/24/94	23,000	110	1,700	600	1,900
	5/31/94	13,000	780	310	370	1,400
	8/31/94	35,000	160	2,800	1,000	4,500
	11/2/94	2,500	170	3,200	1,100	4,700
	2/20/95	10,000	40	1,400	330	1,200
MW-1						
	1/2/92	16	6	ND	ND	ND
	4/2/92	ND	ND	ND	ND	ND
	7/21/92	<50	3.2	<0.5	<0.5	<0.5
	10/9/92	<50	8.5	<0.5	<0.5	<0.5
	1/11/93	<50	<0.5	<0.5	<0.5	<0.5
	5/5/93	<50	<0.5	<0.5	<0.5	<0.5
	8/9/93	<50	<0.5	<0.5	<0.5	<0.5
	10/14/93	440	16	2.9	2.9	11
	5/31/94	<50	<0.5	<0.5	<0.5	<0.5
	8/31/94	<50	<0.5	<0.5	<0.5	<0.5
	11/2/94	<50	<0.5	<0.5	<0.5	<0.5
	2/20/95	<50	<0.5	<0.5	<0.5	<0.5

Table 2
Groundwater Analytical Data
930 Springtown Boulevard, Livermore, CA

Well Number	Date Sampled	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)
MW-2						
	1/2/92	ND	ND	ND	ND	ND
	4/2/91	ND	ND	ND	ND	ND
	7/21/92	NS	NS	NS	NS	NS
	10/9/92	NS	NS	NS	NS	NS
	1/11/93	NS	NS	NS	NS	NS
	5/5/93	NS	NS	NS	NS	NS
	8/9/93	NS	NS	NS	NS	NS
	10/14/93	NS	NS	NS	NS	NS
	1/24/94	NS	NS	NS	NS	NS
	5/31/94	NS	NS	NS	NS	NS
	8/31/94	<50	<0.5	<0.5	<0.5	<0.5
	11/2/94	NS	NS	NS	NS	NS
	2/20/95	<50	<0.5	<0.5	<0.5	<0.5
MW-3						
	1/2/92	340	0.4	ND	ND	ND
	4/2/92	160	5	ND	0.3	0.5
	7/21/92	260	1.7	<0.5	<0.5	<0.5
	10/9/92	88	<0.5	<0.5	<0.5	<0.5
	1/11/93	130	<0.5	<0.5	<0.5	<0.5
	5/5/93	340	1.8	<0.5	1.3	<0.5
	8/9/93	610	18	<0.5	2.4	0.9
	10/14/93	<50	<0.5	<0.5	<0.5	<0.5
	1/24/94	320	3.5	<0.5	<0.5	<0.5
	5/31/94	830	11	12	5.0	1.2
	8/31/94	660	2	<0.5	1	<0.5
	11/2/94	1,500	260	36	34	76
	2/20/95	410	1.2	1.9	1.4	2.2
MW-4						
	1/2/92	ND	ND	ND	ND	ND
	4/2/92	ND	ND	ND	ND	ND
	7/21/92	<50	<0.5	<0.5	<0.5	<0.5
	10/9/92	<50	<0.5	<0.5	<0.5	<0.5
	1/11/93	<50	<0.5	<0.5	<0.5	<0.5
	5/5/93	<50	<0.5	<0.5	<0.5	<0.5
	8/9/93	<50	<0.5	<0.5	<0.5	<0.5
	10/14/93	<50	<0.5	<0.5	<0.5	<0.5
	1/24/94	<50	<0.5	<0.5	<0.5	<0.5
	5/31/94	NS	NS	NS	NS	NS
	8/31/94	<50	<0.5	<0.5	<0.5	<0.5
	11/2/94	NS	NS	NS	NS	NS
	2/20/95	<50	<0.5	<0.5	<0.5	<0.5

Table 2
Groundwater Analytical Data
930 Springtown Boulevard, Livermore, CA

Well Number	Date Sampled	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)
MW-5						
	1/2/92	1,800	74	41	84	94
	4/2/92	ND	ND	ND	ND	ND
	7/21/92	1,000	69	16	40	31
	10/9/92	3,400	890	51	110	110
	1/11/93	15,000	460	110	900	370
	5/5/93	4,500	160	19	280	110
	8/9/93	2,300	180	19	130	80
	10/14/93	2,200	160	27	90	64
	1/24/94	2,600	69	11	65	25
	5/31/94	3,100	130	64	140	120
	8/31/94	600	20	2.9	14	7.1
	11/2/94	2,300	68	18	52	54
	2/20/95	12,000	130	<30	240	138
MW-6						
	1/2/92	23	ND	0.3	0.6	3
	4/2/92	ND	ND	ND	ND	ND
	7/21/92	<50	<0.5	<0.5	<0.5	<0.5
	10/9/92	<50	<0.5	<0.5	<0.5	<0.5
	1/11/93	NS	NS	NS	NS	NS
	5/5/93	NS	NS	NS	NS	NS
	8/9/93	<50	<0.5	<0.5	<0.5	<0.5
	10/14/93	NS	NS	NS	NS	NS
	1/24/94	<50	<0.5	<0.5	<0.5	<0.5
	5/31/94	NS	NS	NS	NS	NS
	8/31/94	<50	<0.5	<0.5	<0.5	<0.5
	11/2/94	NS	NS	NS	NS	NS
	2/20/95	<50	<0.5	<0.5	<0.5	<0.5
MW-7						
	1/2/92	NS	NS	NS	NS	NS
	4/2/92	ND	ND	ND	ND	ND
	7/21/92	NS	NS	NS	NS	NS
	10/9/92	NS	NS	NS	NS	NS
	1/11/93	NS	NS	NS	NS	NS
	5/5/93	NS	NS	NS	NS	NS
	8/9/93	NS	NS	NS	NS	NS
	10/14/93	NS	NS	NS	NS	NS
	1/24/94	NS	NS	NS	NS	NS
	5/31/94	NS	NS	NS	NS	NS
	8/31/94	NS	NS	NS	NS	NS
	11/2/94	NS	NS	NS	NS	NS
	2/20/95	NS	NS	NS	NS	NS

Table 2
Groundwater Analytical Data
930 Springtown Boulevard, Livermore, CA

Well Number	Date Sampled	TPHg (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)
MW-8						
	1/2/92	12,000	32	980	200	760
	4/2/92	ND	ND	ND	ND	ND
	7/21/92	NS	NS	NS	NS	NS
	10/9/93	NS	NS	NS	NS	NS
	1/11/93	NS	NS	NS	NS	NS
	5/5/93	NS	NS	NS	NS	NS
	8/9/93	NS	NS	NS	NS	NS
	10/14/93	NS	NS	NS	NS	NS
	1/24/94	NS	NS	NS	NS	NS
	5/31/94	NS	NS	NS	NS	NS
	8/31/94	<50	<0.5	<0.5	<0.5	<0.5
	11/2/94	NS	NS	NS	NS	NS
	2/20/95	<50	<0.5	<0.5	<0.5	<0.5

NS = Not Sampled
ND = None Detected
SP = Separate-phase petroleum hydrocarbons
TPHg = Total petroleum hydrocarbons as gasoline analyzed by EPA method 5030/602.
BTEX: Analyzed by EPA method 5030/602.
< = Less than the detection limit for the specified method of analysis.

B C Analytical

ANALYTICAL REPORT

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

LOG NO: G95-02-335
Received: 21 FEB 95
Mailed: MAR 10 1995

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

Purchase Order: 94-1446346+4370
Requisition: 618571050
Project: FKEP1012L

REPORT OF ANALYTICAL RESULTS

AQUEOUS

SAMPLE DESCRIPTION	DATE SAMPLED	TPH/BTEX (CADHS/8020) Date Analyzed Date	Dilution Factor Times	TPH-g ug/L	Benzene ug/L	Toluene ug/L	Ethyl-Benzene ug/L	Total Xylenes Isomers ug/L
RDL			1		0.5	0.5	0.5	0.5
1*MW A	02/20/95	03/06/95	10	12000	290	330	570	1300
2*MW B	02/20/95	03/03/95	10	10000	46	1400	330	1200
3*MW 1	02/20/95	03/03/95	1	<50	<0.5	<0.5	<0.5	<0.5
4*MW 2	02/20/95	03/03/95	1	<50	<0.5	<0.5	<0.5	<0.5
5*MW 3	02/20/95	03/03/95	1	410	1.2	1.9	1.4	2.2
6*MW 4	02/20/95	03/04/95	1	<50	<0.5	<0.5	<0.5	<0.5
7*MW 5	02/20/95	03/06/95	50	12000	130	<30	240	138
8*MW 6	02/20/95	03/06/95	1	<50	<0.5	<0.5	<0.5	<0.5
9*MW 8	02/20/95	03/04/95	1	<50	<0.5	<0.5	<0.5	<0.5
10*EB	02/20/95	03/06/95	1	<50	<0.5	<0.5	<0.5	<0.5
11*TB	02/20/95	03/04/95	1	<50	<0.5	<0.5	<0.5	<0.5

Karen Petryna
930 Springtown Blvd., Livermore
Alameda County

Janice Winter for
Mark A. Valentini, PhD, Laboratory Director

SAMPLES...	SAMPLE DESCRIPTION..	DETERM.....	DATE..... ANALYZED	METHOD.....	EQUIP.	BATCH..	ID.NO
9502335*1	MW A	GAS.BTX.TESNC	03.06.95	8015M.TX	516-24	957188	8658
9502335*2	MW B	GAS.BTX.TESNC	03.03.95	8015M.TX	516-20	958107	8658
9502335*3	MW 1	GAS.BTX.TESNC	03.03.95	8015M.TX	516-20	958107	8658
9502335*4	MW 2	GAS.BTX.TESNC	03.03.95	8015M.TX	516-20	958107	8658
9502335*5	MW 3	GAS.BTX.TESNC	03.03.95	8015M.TX	516-20	958107	8658
9502335*6	MW 4	GAS.BTX.TESNC	03.04.95	8015M.TX	516-20	958107	8658
9502335*7	MW 5	GAS.BTX.TESNC	03.06.95	8015M.TX	516-24	957188	8607
9502335*8	MW 6	GAS.BTX.TESNC	03.06.95	8015M.TX	516-24	957188	8607
9502335*9	MW 8	GAS.BTX.TESNC	03.04.95	8015M.TX	516-20	958107	8658
9502335*10	EB	GAS.BTX.TESNC	03.06.95	8015M.TX	516-24	957188	8658
9502335*11	TB	GAS.BTX.TESNC	03.04.95	8015M.TX	516-20	958107	8658

***

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 G9502335

DATE REPORTED : 03/09/95

LABORATORY CONTROL STANDARDS
FOR BATCHES WHICH INCLUDE THIS ORDER

PARAMETER	DATE ANALYZED	BATCH NUMBER	LC RESULT	LT RESULT	UNIT	PERCENT RECOVERY
1. TPH-gas/BTEX (CADHS/80 C503585*1						
Date Analyzed	03.07.95	957188	03/07/95	03/074/	Date	N/A
Benzene	03.07.95	957188	16.3	12.5	ug/L	130
Toluene	03.07.95	957188	57.7	55.5	ug/L	104
Ethylbenzene	03.07.95	957188	12.6	12.5	ug/L	101 Q
Total Xylene Isomers	03.07.95	957188	59.1	66.5	ug/L	89 Q
TPH (as Gasoline)	03.07.95	957188	775	1000	ug/L	78
2. TPH-gas/BTEX (CADHS/80 C503468*1						
Date Analyzed	03.03.95	958107	03/03/95	03/03/95	Date	N/A
Benzene	03.03.95	958107	14.0	12.5	ug/L	112
Toluene	03.03.95	958107	50.6	55.5	ug/L	91
Ethylbenzene	03.03.95	958107	11.7	12.5	ug/L	94 Q
Total Xylene Isomers	03.03.95	958107	58.3	66.5	ug/L	88 Q
TPH (as Gasoline)	03.03.95	958107	986	1000	ug/L	99

BC ANALYTICAL

ORDER QC REPORT FOR G9502335

DATE REPORTED : 03/09/95

MATRIX QC ACCURACY (SPIKES)
BATCH QC REPORT

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	MS %	MSD %	TRUE RESULT	UNIT
1. TPH-gas/BTEX (CADHS/80 9502334*3							
Benzene		03.07.95	957188	103	120	12.5	ug/L
Toluene		03.07.95	957188	108	106	55.5	ug/L
Ethylbenzene		03.07.95	957188	106	105	12.5	ug/L
Total Xylene Isomers		03.07.95	957188	97	97	66.5	ug/L
TPH (as Gasoline)		03.07.95	957188	88	83	1000	ug/L
2. TPH-gas/BTEX (CADHS/80 9502335*3							
Benzene		03.03.95	958107	90	85	12.5	ug/L
Toluene		03.03.95	958107	74	74	55.5	ug/L
Ethylbenzene		03.03.95	958107	73	70	12.5	ug/L
Total Xylene Isomers		03.03.95	958107	70	70	66.5	ug/L
TPH (as Gasoline)		03.03.95	958107	71	72	1000	ug/L

BC ANALYTICAL

ORDER QC REPORT FOR G9502335

DATE REPORTED : 03/09/95

MATRIX QC PRECISION (DUPLICATE SPIKES)
BATCH QC REPORT

PARAMETER	SAMPLE NUMBER	DATE ANALYZED	BATCH NUMBER	MS RESULT	MSD RESULT	UNIT	RELATIVE % DIFF
1. TPH-gas/BTEX (CADHS/80 9502334*3							
Date Analyzed		03.07.95	957188	03/07/95	03/07/95	Date	N/A
Benzene		03.07.95	957188	12.9	15.0	ug/L	15
Toluene		03.07.95	957188	60.0	58.8	ug/L	2
Ethylbenzene		03.07.95	957188	13.2	13.1	ug/L	1
Total Xylene Isomers		03.07.95	957188	64.7	64.3	ug/L	1
TPH (as Gasoline)		03.07.95	957188	879	829	ug/L	6
2. TPH-gas/BTEX (CADHS/80 9502335*3							
Date Analyzed		03.03.95	958107	03/03/95	03/03/95	Date	N/A
Benzene		03.03.95	958107	11.2	10.6	ug/L	6
Toluene		03.03.95	958107	41.1	40.8	ug/L	1
Ethylbenzene		03.03.95	958107	9.1	8.8	ug/L	3
Total Xylene Isomers		03.03.95	958107	46.5	46.3	ug/L	0
TPH (as Gasoline)		03.03.95	958107	714	718	ug/L	1

BC ANALYTICAL

ORDER QC REPORT FOR G9502335

DATE REPORTED : 03/09/95

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

PARAMETER	DATE ANALYZED	BATCH NUMBER	BLANK RESULT	RDL	UNIT	METHOD
1. TPH-gas/BTEX (CADHS/80 B503318*1						
Date Analyzed	03.07.95	957188	03/07/95	NA	Date	8015M.TX
Benzene	03.07.95	957188	0.232	0.5	ug/L	8015M.TX
Toluene	03.07.95	957188	0.40	0.5	ug/L	8015M.TX
Ethylbenzene	03.07.95	957188	0.18	0.5	ug/L	8015M.TX
Total Xylene Isomers	03.07.95	957188	0.31	0.5	ug/L	8015M.TX
TPH (as Gasoline)	03.07.95	957188	8.9	50	ug/L	8015M.TX
2. TPH-gas/BTEX (CADHS/80 B503268*1						
Date Analyzed	03.03.95	958107	03/03/95	NA	Date	8015M.TX
Benzene	03.03.95	958107	0	0.5	ug/L	8015M.TX
Toluene	03.03.95	958107	0.26	0.5	ug/L	8015M.TX
Ethylbenzene	03.03.95	958107	0	0.5	ug/L	8015M.TX
Total Xylene Isomers	03.03.95	958107	0	0.5	ug/L	8015M.TX
TPH (as Gasoline)	03.03.95	958107	23	50	ug/L	8015M.TX

: SURROGATE RECOVERIES :
: BC ANALYTICAL : GLEN LAB : 16:00:14 09 MAR 1995 - P. 1 :

METHOD	ANALYTE	BATCH	ANALYZED	REPORTED	TRUE	%REC	FLAG
9502335*1							
8015M.TX	a,a,a-Trifluorotoluene	957188	03/06/95	50.0	50.0	100	
9502335*2							
8015M.TX	a,a,a-Trifluorotoluene	958107	03/03/95	54.2	50.0	108	
9502335*3							
8015M.TX	a,a,a-Trifluorotoluene	958107	03/03/95	50.2	50.0	100	
9502335*4							
8015M.TX	a,a,a-Trifluorotoluene	958107	03/03/95	49.5	50.0	99	
9502335*5							
8015M.TX	a,a,a-Trifluorotoluene	958107	03/03/95	51.1	50.0	102	
9502335*6							
8015M.TX	a,a,a-Trifluorotoluene	958107	03/04/95	50.8	50.0	102	
9502335*7							
8015M.TX	a,a,a-Trifluorotoluene	957188	03/06/95	50.6	50.0	101	
9502335*8							
8015M.TX	a,a,a-Trifluorotoluene	957188	03/06/95	48.7	50.0	97	
9502335*9							
8015M.TX	a,a,a-Trifluorotoluene	958107	03/04/95	49.6	50.0	99	
9502335*10							
8015M.TX	a,a,a-Trifluorotoluene	957188	03/06/95	48.8	50.0	98	
9502335*11							
8015M.TX	a,a,a-Trifluorotoluene	958107	03/04/95	50.0	50.0	100	

: SURROGATE RECOVERIES :
: BC ANALYTICAL : GLEN LAB : 16:00:37 09 MAR 1995 - P. 1 :

METHOD ANALYTE	BATCH	ANALYZED	REPORTED	TRUE	%REC	FLAG
9502334*3*R1						
8015M.TXa,a,a-Trifluorotoluene	957188	03/07/95	47.6	50.0	95	
9502334*3*S1						
8015M.TXa,a,a-Trifluorotoluene	957188	03/07/95	58.3	50.0	117	
9502334*3*S2						
8015M.TXa,a,a-Trifluorotoluene	957188	03/07/95	57.0	50.0	114	
9502334*3*T						
8015M.TXa,a,a-Trifluorotoluene	957188	03/07/95	50.0	50.0	100	
9502335*3*R1						
8015M.TXa,a,a-Trifluorotoluene	958107	03/03/95	50.2	50.0	100	
9502335*3*S1						
8015M.TXa,a,a-Trifluorotoluene	958107	03/03/95	51.9	50.0	104	
9502335*3*S2						
8015M.TXa,a,a-Trifluorotoluene	958107	03/03/95	51.1	50.0	102	
9502335*3*T						
8015M.TXa,a,a-Trifluorotoluene	958107	03/03/95	50.0	50.0	100	
B503268*1*MB						
8015M.TXa,a,a-Trifluorotoluene	958107	03/03/95	50.4	50.0	101	
B503318*1*MB						
8015M.TXa,a,a-Trifluorotoluene	957188	03/07/95	47.0	50.0	94	
C503468*1*LC						
8015M.TXa,a,a-Trifluorotoluene	958107	03/03/95	52.3	50.0	105	
C503468*1*LT						
8015M.TXa,a,a-Trifluorotoluene	958107	03/03/95	50.0	50.0	100	
C503585*1*LC						
8015M.TXa,a,a-Trifluorotoluene	957188	03/07/95	62.1	50.0	124	
C503585*1*LT						
8015M.TXa,a,a-Trifluorotoluene	957188	03/07/95	50.0	50.0	100	

G9502335

Chain-of-Custody

Page 1 of 1

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 Corordinator: Karen Petryna

Site Name: Texaco Loc.# 618571050
Site Address: 930 Springtown Blvd. Livermore, CA
Contractor Project Number: 950220-G1
Contractor Name: Blaine Tech Services, Inc.
Address: 985 Timothy Dr., San Jose, CA 95133
Project Contact: Don Weltz
Phone/FAX: (408) 995-5535 / (408) 293-8773

Laboratory: B C Analytical
Turn Around Time: normal (10 day)
Samplers (PRINT NAME): GRANT MOHR
Sampler Signature:
Date Samples Collected: 2-20-95

Sample Number	Lab Sample Number	Date/Time Collected	No. of Containers	Type of Containers	Sample Matrix	Preservative	TPH gas/BTEX	TPH Diesel	O&G/TRPH (418.1)	TPH Ex. (C8-C36+)	VOCs 8240/624	P. Halocarbons 8010/80	P. Aromatics 8020/802	Organic Lead			Comments
MWA		2-20 1250	3	VOA	W	HCl	X										
MWB		1230	3				X										
MW1		1040	3				X										
MW2		1100	3				X										
MW3		1145	3				X										
MW4		1130	3				X										
MW5		1210	3				X										
MW6		1020	3				X										
MW6		1060	3				X										
EB		1030	3				X										
TB			2				X										

ANALYSIS

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	2/21/95	1623	Bill Lyons	2-21-95	1623
Bill Lyons	2-21-95	1623	Jan Winter	2-22-95	0800

Method of Shipment:

Lab Comments:

P:\GWMP\FORMS\TEX-COC.XLS

Well Gauging Data

Project Name: 61-857-1050
Project Number: 950220-G1

Date: 2-20-95
Recorded By: GRANT

Well ID	TOC Elev.	DTB (ft. TOC)	Well Dia. (in.)	DTP (ft.)	DTW (ft.)	PT (ft.)	Comments
MW A		16.79	2		11.71		
MW B		21.12	2		9.47		
MW 1		25.41	4		12.02		
MW 2		22.49	4		9.66		
MW 3		24.61	4		11.05		
MW 4		25.01	4		10.42		
MW 5		28.12	2		12.78		
MW 6		24.53	2		14.07		
MW 7		23.73	4		7.71		
MW8		24.22	4		15.99		

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

Project Name 61-857-1050 | Well No. MW-A
Project Number 950220-G1 | Well Type [X] Monitor [ ] Extraction [ ] Other
Recorded By GRANT | Sampled by G | Date 2-20-95

WELL PURGING

PURGE VOLUME

Well casing diameter
[X] 2-inch [ ] 4-inch [ ] Other
Well Total Depth (TD, ft. below TOC) 16.79
Depth to Water (WL, ft. below TOC) 11.71
Depth to free phase hydrocarbons (FP, ft. below TOC)
Number of well volumes to be purged
[X] 3 [ ] 10 [ ] Other ,8

PURGE METHOD

[ ] Bailer - Type SS
[ ] Pump - Type ELECTRIC SUB
[ ] Other MIDDLEBURG

PUMP INTAKE

[ ] Near top Depth (ft)
[ ] Near Bottom Depth (ft)
[ ] Other

Pumping Rate gpm

PURGE VOLUME CALCULATION

5.08 (Water Column Length) x .17 (Multiplier) x 3 (No. Vols) = 2.6 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

3.0 gals ACTUAL PURGE VOLUME

GROUNDWATER PARAMETER MEASUREMENT

Meter Type HYDRON

Time/Gallons	pH	Cond. (uomhos/cm)	Temp [X] deg F	Turbidity (NTU)	Color/Odor
1240 / 1.0	7.5	1600	64.2	>200	ODOR
1242 / 2.0	7.3	1500	64.4	>200	
1244 / 3.0	7.3	1500	64.4	>200	
/					
/					
/					
/					
/					

Comments during well purge
Well Pumped dry: YES (NO)
Purge water storage/disposal [ ] Drummed onsite [X] Other BTS

WELL SAMPLING

SAMPLING METHOD

Date/Time Sampled 2-20 / 1250
Bailer - Type [X] SS
Sample port [ ] Other [ ]

GROUNDWATER SAMPLE PARAMETER MEASUREMENTS

Meter Type

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

SAMPLING PROGRAM

Sample No.	Container #/Volume	Analysis	Preservatives	Laboratory	Comments
MW-A	VOA	TPHG	HC	BC	
		BTEX			

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 61-857-1050 | Well No. MW-B
Project Number 950220-G1 | Well Type [X] Monitor [ ] Extraction [ ] Other
Recorded By GRANT | Sampled by G | Date 2-20-95

WELL PURGING

PURGE VOLUME

Well casing diameter
[/] 2-inch [ ] 4-inch [ ] Other
Well Total Depth (TD, ft. below TOC) 21.12
Depth to Water (WL, ft. below TOC) 9.47
Depth to free phase hydrocarbons (FP, ft. below TOC)
Number of well volumes to be purged
[X] 3 [ ] 10 [ ] Other 20

PURGE METHOD

[/] Bailer - Type SS
[ ] Pump - Type ELECTRIC SUB
[ ] Other MIDDLEBURG

PUMP INTAKE

[ ] Near top Depth (ft)
[ ] Near Bottom Depth (ft)
[ ] Other
Pumping Rate gpm

PURGE VOLUME CALCULATION

11.65 (Water Column Length) x .17 (Multiplier) x 3 (No. Vols) = 5.9 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

6.0 gals ACTUAL PURGE VOLUME

GROUNDWATER PARAMETER MEASUREMENT

Meter Type MYRON

Time/Gallons	pH	Cond. (uomhos/cm)	Temp [ ] deg C [X] deg F	Turbidity (NTU)	Color/Odor
1219 / 2.0	7.4	1800	62.6	>200	ODOR
1224 / 4.0	7.3	1750	62.4	>200	
1227 / 6.0	7.2	1700	62.4	>200	
/					
/					
/					
/					
/					

Comments during well purge
Well Pumped dry: YES (NO)
Purge water storage/disposal [ ] Drummed onsite [X] Other BTS

WELL SAMPLING

SAMPLING METHOD

Date/Time Sampled 2-20 / 1230
Bailer - Type [X] SS
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-B	VOA	TPHG	HC	BC	
		BTEX			

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 61-857-1050 Well No. HW-1

Project Number 950220-G1 Well Type [X] Monitor [ ] Extraction [ ] Other

Recorded By GRANT Sampled by G Date 2-20-95

WELL PURGING

PURGE VOLUME

Well casing diameter

[ ] 2-inch [/] 4-inch [ ] Other

Well Total Depth (TD, ft. below TOC) 25.41

Depth to Water (WL, ft. below TOC) 12.02

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

Number of well volumes to be purged

[X] 3 [ ] 10 [ ] Other

8.8

PURGE VOLUME CALCULATION

13.39 (Water Column Length) x .16 (Multiplier) x 3 (No. Vols) = 26.5 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

26.5 gals ACTUAL PURGE VOLUME

PURGE METHOD

[ ] Bailer - Type SS

[/] Pump - Type ELECTRIC SUB

[ ] Other MIDDLEBURG

PUMP INTAKE

[ ] Near top Depth (ft)

[/] Near Bottom Depth (ft)

[ ] Other

Pumping Rate 5 gpm

GROUNDWATER PARAMETER MEASUREMENT

Meter Type MYRON

Time/Gallons	pH	Cond. (uomhos/cm)	Temp [ ] deg C [X] deg F	Turbidity (NTU)	Color/Odor
1031 / 9.0	6.9	2000	64.0	103.7	
1033 / 18.0	6.9	2100	64.0	>200	
1035 / 26.5	7.0	2100	64.4	>200	
/					
/					
/					
/					
/					

Comments during well purge

Well Pumped dry: YES (NO)

Purge water storage/disposal [ ] Drummed onsite [X] Other BTS

WELL SAMPLING

SAMPLING METHOD

Date/Time Sampled 2-20 / 1040

Bailer - Type [X] SS 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
HW-1	VOA	TPHG	HC	BC	
		BTEX			

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Trip	
Rinsate	EB @ 1030
Transfer	
Other:	

Groundwater Sampling Form

Project Name 61-857-1050 | Well No. HW-2
Project Number 950220-G1 | Well Type [X] Monitor [ ] Extraction [ ] Other
Recorded By GRANT | Sampled by G | Date 2-20-95

WELL PURGING

PURGE VOLUME

Well casing diameter
[ ] 2-inch [X] 4-inch [ ] Other
Well Total Depth (TD, ft. below TOC) 22.41
Depth to Water (WL, ft. below TOC) 9.64
Depth to free phase hydrocarbons (FP, ft. below TOC)
Number of well volumes to be purged
[X] 3 [ ] 10 [ ] Other 8.1

PURGE METHOD

[ ] Bailer - Type SS
[X] Pump - Type ELECTRIC SUB
[ ] Other MIDDLEBURG

PUMP INTAKE

[ ] Near Top Depth (ft)
[X] Near Bottom Depth (ft)
[ ] Other
Pumping Rate 5 gpm

PURGE VOLUME CALCULATION

12.77 (Water Column Length) x .66 (Multiplier) x 3 (No. Vols) = 25.3 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

25.5 gals ACTUAL PURGE VOLUME

GROUNDWATER PARAMETER MEASUREMENT Meter Type HYDRON

Time/Gallons	pH	Cond. (uomhos/cm)	Temp [ ] deg C [X] deg F	Turbidity (NTU)	Color/Odor
1047 / 9.0	7.0	1850	64.0	>200	
1050 / 18.0	7.0	1800	63.8	>200	
1053 / 25.5	7.0	1800	64.2	>200	
/					
/					
/					
/					
/					

Comments during well purge
Well Pumped dry: YES (NO) Purge water storage/disposal [ ] Drummed onsite [X] Other BTS

WELL SAMPLING

SAMPLING METHOD Date/Time Sampled 2-20 / 1100
Bailer - Type [X] SS 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
HW-2	VOA	TPHG	HC	BC	
		BTEX			

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 61-857-1050 | Well No. MW-3
Project Number 950220-G1 | Well Type [X] Monitor [ ] Extraction [ ] Other
Recorded By GRANT | Sampled by G | Date 2-20-95

WELL PURGING

PURGE VOLUME

Well casing diameter
[ ] 2-inch [X] 4-inch [ ] Other
Well Total Depth (TD, ft. below TOC) 24.61
Depth to Water (WL, ft. below TOC) 11.05
Depth to free phase hydrocarbons (FP, ft. below TOC)
Number of well volumes to be purged
[X] 3 [ ] 10 [ ] Other

PURGE METHOD

[ ] Bailer - Type SS
[X] Pump - Type ELECTRIC SUB
[ ] Other MIDDLEBURG

PUMP INTAKE

[ ] Near top Depth (ft)
[X] Near Bottom Depth (ft)
[ ] Other
Pumping Rate 5 gpm

PURGE VOLUME CALCULATION

13.56 (Water Column Length) x .66 (Multiplier) x 3 (No. Vols) = 26.82 gals CALCULATED PURGE VOLUME

MULTIPLIER (Casing Dia.[inches] = Gallons/linear ft)
2 = 0.17 | 3 = 0.38 | 4 = 0.66 | 4.5 = 0.63 | 5 = 1.02 | 6 = 1.5 | 8 = 2.6

27.0 gals ACTUAL PURGE VOLUME

GROUNDWATER PARAMETER MEASUREMENT

Meter Type MYRON

Time/Gallons	pH	Cond. (uomhos/cm)	Temp	[X] deg F	Turbidity (NTU)	Color/Odor
1134 / 9.0	7.2	1900	67.2		82.1	ODOR
1141 / 18.0	7.2	2000	67.4		111.3	
1143 / 27.0	7.1	1900	67.4		147.8	
/						
/						
/						
/						
/						

Comments during well purge
Well Pumped dry: YES (NO)
Purge water storage/disposal [ ] Drummed onsite [X] Other BTS

WELL SAMPLING

SAMPLING METHOD

Date/Time Sampled 2-20 / 1145
Bailer - Type [X] SS
Sample port [ ] Other [ ]

GROUNDWATER SAMPLE PARAMETER MEASUREMENTS

Meter Type

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

SAMPLING PROGRAM

Sample No.	Container #/Volume	Analysis	Preservatives	Laboratory	Comments
MW-3	VOA	TPHG	HC	BC	
		BTEX			

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 61-857-1050 | Well No. MW-4
Project Number 950220-G1 | Well Type [X] Monitor [ ] Extraction [ ] Other
Recorded By GRANT | Sampled by G | Date 2-20-95

WELL PURGING

PURGE VOLUME

Well casing diameter
[ ] 2-inch [X] 4-inch [ ] Other
Well Total Depth (TD, ft. below TOC) 25.01
Depth to Water (WL, ft. below TOC) 10.42
Depth to free phase hydrocarbons (FP, ft. below TOC)
Number of well volumes to be purged
[X] 3 [ ] 10 [ ] Other

PURGE METHOD

[ ] Bailer - Type SS
[ ] Pump - Type ELECTRIC SUB
[ ] Other MIDDLEBURG

PUMP INTAKE

[ ] Near top Depth (ft)
[ ] Near Bottom Depth (ft)
[ ] Other
Pumping Rate 2 gpm

PURGE VOLUME CALCULATION

14.59 (Water Column Length) x .66 (Multiplier) x 3 (No. Vols) = 9.6

28.40 gals CALCULATED PURGE VOLUME

29.10 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 HYDRON

Time/Gallons	pH	Cond. (uomhos/cm)	Temp [X] deg C [ ] deg F	Turbidity (NTU)	Color/Odor
1110 / 10.0	7.0	1500	65.2	184.8	
1116 / 20.0	7.2	1400	66.0	121.2	
1121 / 29.0	7.2	1400	66.2	103.3	
/					
/					
/					
/					
/					

Comments during well purge

Well Pumped dry: YES (NO)

Purge water storage/disposal [ ] Drummed onsite [X] Other BTS

WELL SAMPLING

SAMPLING METHOD

Date/Time Sampled 2-20 / 1130
Bailer - Type [X] SS
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-4	VOA	TPHG	HC	BC	
		BTEX			

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 61-857-1050 Well No. MW-5

Project Number 950220-G1 Well Type [X] Monitor [ ] Extraction [ ] Other

Recorded By GRANT Sampled by G Date 2-20-95

WELL PURGING

PURGE VOLUME

Well casing diameter

[X] 2-inch [ ] 4-inch [ ] Other

Well Total Depth (TD, ft. below TOC) 28.12

Depth to Water (WL, ft. below TOC) 12.76

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

Number of well volumes to be purged

[X] 3 [ ] 10 [ ] Other

26

PURGE METHOD

[X] Bailer - Type SS

[ ] Pump - Type ELECTRIC SUB

[ ] Other MIDDLEBURG

PUMP INTAKE

[ ] Near top Depth (ft)

[ ] Near Bottom Depth (ft)

[ ] Other

Pumping Rate ____ gpm

PURGE VOLUME CALCULATION

15.34 (Water Column Length) x 3.17 (Multiplier) x 3 (No. Vols) = 7.8 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

8.0 gals ACTUAL PURGE VOLUME

GROUNDWATER PARAMETER MEASUREMENT

Meter Type MYRON

Time/Gallons	pH	Cond. (uomhos/cm)	Temp [ ] deg C [X] deg F	Turbidity (NTU)	Color/Odor
1153 / 3.0	7.2	1700	66.6	>200	CLOR
1157 / 6.0	7.1	1650	67.0	>200	LT. SHEEN
1200 / 8.0	7.1	1600	67.2	>200	
/					
/					
/					
/					
/					

Comments during well purge

Well Pumped dry: YES (NO)

Purge water storage/disposal [ ] Drummed onsite [X] Other BTS

WELL SAMPLING

SAMPLING METHOD

Date/Time Sampled 2-20 / 1210

Bailer - Type [X] SS 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-5	VOA	TPHG	HC	BC	
		BTEX			

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 61-857-1050 Well No. MW-6

Project Number 950220-G1 Well Type [X] Monitor [ ] Extraction [ ] Other

Recorded By GRANT Sampled by G Date 2-20-95

WELL PURGING

PURGE VOLUME

Well casing diameter

[X] 2-inch [ ] 4-inch [ ] Other

Well Total Depth (TD, ft. below TOC) 24.53

Depth to Water (WL, ft. below TOC) 14.07

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

Number of well volumes to be purged

[X] 3 [ ] 10 [ ] Other

PURGE METHOD

[ ] Bailer - Type SS

[ ] Pump - Type ELECTRIC SUB

[ ] Other MIDDLEBURG

PUMP INTAKE

[ ] Near top Depth (ft)

[ ] Near Bottom Depth (ft)

[ ] Other

Pumping Rate gpm

PURGE VOLUME CALCULATION

1.7

10.46 (Water Column Length) x .17 (Multiplier) x 3 (No. Vols) = 5.3 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

5.5 gals ACTUAL PURGE VOLUME

GROUNDWATER PARAMETER MEASUREMENT

Meter Type MYRON

Time/Gallons	pH	Cond. (uomhos/cm)	Temp [ ] deg C [X] deg F	Turbidity (NTU)	Color/Odor
1011 / 2.0	7.1	1000	66.0	>200	
1014 / 4.0	6.9	1000	66.2	>200	
1017 / 5.5	7.0	975	66.4	>200	
/					
/					
/					
/					
/					

Comments during well purge

Well Pumped dry: YES (NO)

Purge water storage/disposal [ ] Drummed onsite [X] Other BTS

WELL SAMPLING

SAMPLING METHOD

Date/Time Sampled 2-20 / 1020

Bailer - Type [X] SS

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-6	VOA	TPHG	HC	BC	
		BTEX			

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 61-857-1050 | Well No. MW-6
Project Number 950220-G1 | Well Type [X] Monitor [ ] Extraction [ ] Other
Recorded By GRANT | Sampled by G | Date 2-20-95

WELL PURGING

PURGE VOLUME

Well casing diameter
[ ] 2-inch [/] 4-inch [ ] Other
Well Total Depth (TD, ft. below TOC) 24.22
Depth to Water (WL, ft. below TOC) 15.99
Depth to free phase hydrocarbons (FP, ft. below TOC)
Number of well volumes to be purged
[X] 3 [ ] 10 [ ] Other 5.4

PURGE METHOD

[ ] Bailer - Type SS
[/] Pump - Type ELECTRIC SUB
[ ] Other MIDDLEBURG

PUMP INTAKE

[ ] Near top Depth (ft)
[ ] Near Bottom Depth (ft)
[ ] Other
Pumping Rate 5 gpm

PURGE VOLUME CALCULATION

8.23 (Water Column Length) x .66 (Multiplier) x 3 (No. Vols) = 16.3 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

17.0 gals ACTUAL PURGE VOLUME

GROUNDWATER PARAMETER MEASUREMENT

Meter Type MYRON

Time/Gallons	pH	Cond. (uomhos/cm)	Temp	[X] deg F	Turbidity (NTU)	Color/Odor
951 / 6.0	6.0	1600	64.6		153.6	
953 / 12.0	6.9	1700	64.2		123.2	
956 / 17.0	6.8	1600	63.6		81.1	
/						
/						
/						
/						
/						

Comments during well purge
Well Pumped dry: YES (NO)
Purge water storage/disposal [ ] Drummed onsite [X] Other BTS

WELL SAMPLING

SAMPLING METHOD

Date/Time Sampled 2-20 / 1000
Bailer - Type [X] SS
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-6	VOA	TPHG	HC	BC	
		BTEX			

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Trip	
Rinsate	
Transfer	
Other:	

Chain-of-Custody

Texaco Environmental Services
108 Cutting Boulevard
Richmond, California 94804
Phone: (510) 236-3541
FAX: (510) 237-7621

Forward Results to the Attention of Rebecca Digerness
Texaco Project Coordinator: Karen Petryna

Page 1 of 1

Site Name: Texaco Loc.# 618571050
Site Address: 930 Springtown Blvd. Livermore, CA
Contractor Project Number: 950220-G1
Contractor Name: Blaine Tech Services, Inc.
Address: 985 Timothy Dr., San Jose, CA 95133
Project Contact: Don Weltz
Phone/FAX: (408) 995-5535 / (408) 293-8773

Laboratory: B C Analytical
Turn Around Time: normal (10 day)
Samplers (PRINT NAME): GRANT MOHR
Sampler Signature:
Date Samples Collected: 2-20-95

Sample Number	Lab Sample Number	Date/Time Collected	No. of Containers	Type of Containers	Sample Matrix	Preservative	TPH gas/BTEX	TPH Diesel	O&G/TRPH (418.1)	TPH Ex. (C8-C36+)	VOCs 8240/624	P. Halocarbons 8010/60	P. Aromatics 8020/802	Organic Lead			Comments
MWA		2-20 1250	3	VOA	W	HCl	X										
MWB		1230	3				X										
MW1		1040	3				X										
MW2		1100	3				X										
MW3		1145	3				X										
MW4		1130	3				X										
MW5		1210	3				X										
MW6		1020	3				X										
MW8		1060	3				X										
EB		1030	3				X										
TB			2				X										

Relinquished by: (Signature)	Date: 2/21/95	Time: 1623	Received by: (Signature) Bill Rogers
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Method of Shipment:			Lab Comments:

Date: 2-21-95 Time: 423

P:\GWMP\FORMS\TEX-COC.XLS

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 desitnation 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 #: 6185710SD
Address: 930 SPRINGTOWN
City, State, ZIP: LIVERMORE

Well I.D.	Gals.	Well I.D.	Gals.
	/		/
MW-A	/		/
	/		/
	/		/
	/		/
	/		/
MW8	/ 140		/
	/		/
	/		/

Total gals. _____

added rinse water 15

Total Gals. Recovered 163

Job #: 950220-61
Date 2-20-95
Time 1300
Signature: [signature]

REC'D AT: BTS
Date: 2-20-95
Time:
Signature: [signature]

P:\GWM\FORMS\TEX_BOL.WK4

QUARTERLY SUMMARY REPORT
Former Texaco Service Station/Current Seven-Eleven Store
930 Springtown, Livermore, California
Alameda County
Fourth Quarter, 1994

HISTORY OF INVESTIGATIVE AND REMEDIAL ACTIONS

Subsurface investigation was initiated in September, 1984 with the installation of two groundwater monitoring wells (MW-A and MW-B). Underground storage tanks removed in June, 1985. Investigation continued in 1985, 1986, and 1989 to define extent of plume. Monitoring wells MW-1 through MW-3 were installed in June, 1985, MW-4 was installed in September, 1985, and MW-5 and MW-6 were installed in November, 1986. One soil boring and two additional monitoring wells (MW-7 and MW-8) were drilled in December, 1989 to fully define the extent of subsurface hydrocarbons.

WORK PERFORMED DURING THIS QUARTER

Quarterly groundwater monitoring and sampling and operation of the soil vapor extraction system.

How effective is system?
What about ORC at boundary wells

CHARACTERIZATION STATUS

Petroleum hydrocarbons plume has been delineated.

REMEDIATION STATUS

Soil vapor extraction in operation.

WORK TO BE PERFORMED NEXT QUARTER

Continue quarterly monitoring and sampling to record fluctuations in hydrocarbons concentrations and operate soil vapor extraction system.

COMPANY CONTACT: Karen Petryna (510) 236-9139

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W:\QSR_RAO\930S.QSR

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 complied 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

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.