

MPDS-UN0752-13
August 20, 1997

Tosco Marketing Company
Environmental Compliance Department
2000 Crow Canyon Place, Suite 400
San Ramon, California 94583

Attention: Ms. Tina R. Berry

RE: Semi-Annual Data Report
Unocal Service Station #0752
800 Harrison Street
Oakland, California

Dear Ms. Berry:

This data report presents the results of the most recent monitoring and sampling of the monitoring wells at the referenced site by MPDS Services, Inc.

RECENT FIELD ACTIVITIES

The monitoring wells that were monitored and sampled are indicated in Table 1. Oxygen Release Compound (ORC[®]) filter socks were present in all the monitoring wells. Prior to sampling, the wells were checked for depth to water and the presence of free product or sheen. The monitoring data and the ground water elevations are summarized in Table 1. The ground water flow direction during this semi-annual period is shown on the attached Figure 1.

Ground water samples were collected on July 23, 1997. Prior to sampling, the wells were each purged of between 5.5 and 7.5 gallons of water. In addition, dissolved oxygen concentrations were measured and are presented in Table 7. During purging operations, the field parameters pH, temperature, and electrical conductivity were recorded on the purging/sampling data sheets which are attached to this report. Once the field parameters were observed to stabilize, and where possible, a minimum of approximately three casing volumes had been removed from each well, samples were then collected using a clean Teflon bailer. The samples were decanted into clean VOA vials, which were then sealed with Teflon-lined screw caps, labeled, and stored in a cooler, on ice, until delivery to a state-certified laboratory. MPDS Services, Inc. transported the purged ground water to the Tosco Refinery located in Rodeo, California, for treatment and discharge to San Pablo Bay under NPDES permit.

ANALYTICAL RESULTS

The ground water samples were analyzed at Sequoia Analytical Laboratory and were accompanied by properly executed Chain of Custody documentation. The analytical results of the ground water samples collected to date are summarized in Tables 2 through 6. The concentrations of Total Petroleum Hydrocarbons (TPH) as gasoline and benzene detected in the ground water samples collected this semi-annual period are shown on the attached Figure 2. Copies of the laboratory analytical results and the Chain of Custody documentation are attached to this report.

LIMITATIONS

Environmental changes, either naturally-occurring or artificially-induced, may cause changes in ground water levels and flow paths, thereby changing the extent and concentration of any contaminants.

DISTRIBUTION

A copy of this report should be sent to Ms. Jennifer Eberle of the Alameda County Health Care Services Agency.

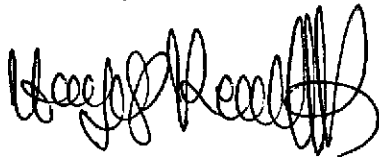
If you have any questions regarding this report, please do not hesitate to call Mr. Nubar Srabian at (510) 602-5120.

Sincerely,

MPDS Services, Inc.



Armond A. Balaian
Staff Engineer



Hagop Kevork, P.E.
Senior Staff Engineer



License No. C 55734
Exp. Date December 31, 2000

/aab

Attachments: Tables 1 through 7
Location Map
Figures 1 & 2
Laboratory Analyses
Chain of Custody documentation
Purging/Sampling Data Sheets

cc: Mr. Sarkis A. Soghomonian, Kaprealian Engineering, Inc.

Table 1
 Summary of Monitoring Data

Well #	Ground Water Elevation (feet)	Depth to Water (feet)*	Total Well Depth (feet)*	Product Thickness (feet)	Sheen	Water Purged (gallons)
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(Monitored and Sampled on July 23, 1997)

MW1	15.27	19.42	33.55	0	No	7.5
MW2	15.59	19.13	30.34	0	No	6
MW3	14.76	18.38	30.49	0	No	6.5
MW4	14.84	17.87	32.32	0	No	7.5
MW5	14.87	18.08	31.70	0	No	7
MW6	14.63	17.53	30.90	0	No	7
MW7	14.21	17.99	31.50	0	No	7
MW8	14.31	17.69	27.93	0	No	5.5

(Monitored and Sampled on January 24, 1997)

MW1	16.97	17.72	33.70	0	No	8.5
MW2	17.13	17.59	30.35	0	No	6.5
MW3	16.57	16.57	30.61	0	No	7.5
MW4	16.67	16.04	32.41	0	No	8.5
MW5	16.59	16.36	31.75	0	No	8
MW6	16.47	15.69	30.94	0	No	8
MW7	16.12	16.08	31.58	0	No	8
MW8	16.21	15.79	27.77	0	No	6.5

(Monitored and Sampled on July 9, 1996)

MW1	16.17	18.52	33.70	0	No	10.5
MW2	16.50	18.22	30.33	0	No	8.5
MW3	15.71	17.43	30.57	0	No	9
MW4	15.75	16.96	32.35	0	No	10.5
MW5	15.84	17.11	31.80	0	No	10
MW6	15.57	16.59	30.94	0	No	10
MW7	15.21	16.99	31.60	0	No	10
MW8	15.22	16.78	27.75	0	No	7.5

(Monitored and Sampled on April 10, 1996)

MW1	17.04	17.65	33.90	0	No	11.5
MW2	17.37	17.35	30.45	0	No	9
MW3	16.74	16.40	31.80	0	No	10.5
MW4	16.71	16.00	32.51	0	No	11.5
MW5	16.90	16.05	31.95	0	No	11
MW6	16.60	15.56	31.03	0	No	11
MW7	16.39	15.81	31.95	0	No	11
MW8	16.30	15.70	27.60	0	No	8.5

Table 1
Summary of Monitoring Data

Well #	Well Casing Elevation (feet)*
MW1	34.69
MW2	34.72
MW3	33.14
MW4	32.71
MW5	32.95
MW6	32.16
MW7	32.20
MW8	32.00

- ◆ The depth to water level and total well depth measurements were taken from the top of the well casings.
- * The elevations of the top of the well casings are relative to Mean Sea Level (MSL), per the City of Oakland benchmark disk stamped "25/A" at the northeast corner of 7th and Harrison (elevation = 28.81 feet MSL).

Table 2
 Summary of Laboratory Analyses
 Water

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl Benzene	Xylenes
MW1	6/5/91	47	ND	ND	ND	ND
	9/30/91	ND	ND	ND	ND	ND
	12/30/91	ND	ND	ND	ND	ND
	4/2/92	ND	ND	ND	ND	ND
	6/30/92	ND	ND	ND	ND	ND
	9/15/92	76	1.0	ND	ND	ND
	12/21/92	95	0.69	ND	ND	1.0
	4/28/93	920	3.1	2.3	1.2	9.7
	7/23/93	ND	0.5	0.66	ND	ND
	10/5/93	92**	1.5	ND	ND	0.72
	1/3/94	ND	ND	ND	ND	ND
	4/2/94	ND	ND	ND	ND	ND
	7/5/94	250	4.8	13	1.2	7.3
	10/6/94	540	1.4	ND	0.66	11
	1/2/95	140	ND	ND	ND	ND
	4/3/95	580	3.6	0.75	ND	4.0
	7/14/95	260	2.1	ND	ND	1.2
	10/10/95	220	2.0	ND	25	5.6
	1/3/96	190	2.4	ND	0.71	1.2
	4/10/96	540	8.9	1.7	1.5	7.4
	7/9/96	490	3.0	1.4	1.3	2.5
	1/24/97	760	27	0.89	5.2	10
7/23/97	ND	ND	ND	ND	ND	
MW2	6/5/91	49	ND	ND	ND	ND
	9/30/91	130	18	0.53	14	9.6
	12/30/91	91	16	0.89	11	1.9
	4/2/92	88	12	0.32	6.3	7.2
	6/30/92	76	9.3	0.76	4.8	6.9
	9/15/92	1,300	91	5.7	80	110
	12/21/92	960	97	3.2	74	96
	4/28/93	1,300	76	1.9	130	87
	7/23/93	66	1.8	ND	2.5	2.0
	10/5/93	120	12	ND	2.1	12
	1/3/94	260	25	ND	5.5	26
	4/2/94	ND	0.65	ND	ND	0.99
	7/5/94	160	16	ND	0.73	10
	10/6/94	170	15	ND	1.4	11
	1/2/95	190	27	ND	0.95	11
	4/3/95	2,400	65	6.6	19	63
	7/14/95	750	270	ND	ND	13
	10/10/95	50	1.6	ND	ND	ND
	1/3/96	ND	ND	ND	ND	ND
	4/10/96	300	42	ND	2.4	9.0
	7/9/96	760	230	ND	1.3	2.4
	1/24/97	2,900	400	350	190	720
7/23/97	ND	ND	ND	ND	ND	

Table 2
 Summary of Laboratory Analyses
 Water

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl- Benzene	Xylenes
MW3	6/5/91	5,800	1,200	40	140	97
	9/30/91	6,800	1,400	130	290	240
	12/30/91	7,200	2,100	690	410	550
	4/2/92	8,000	1,400	200	300	310
	6/30/92	8,900	1,900	210	430	550
	9/15/92	10,000	1,900	330	400	580
	12/21/92	8,500	1,500	150	310	330
	4/28/93	2,600	220	7.6	41	27
	7/23/93	4,400	660	26	160	82
	10/5/93	9,200	720	88	140	140
	1/3/94	4,900	830	100	170	150
	4/2/94	6,000	800	30	140	110
	7/5/94	25,000**	ND	ND	ND	ND
	10/6/94	49,000*	1,300	200	280	300
	1/2/95	480	1.6	ND	1.4	ND
	4/3/95	8,100**	65	ND	ND	ND
	7/14/95	ND	1,300	ND	ND	ND
	10/10/95	3,100	1,400	36	50	53
	1/03/96†	ND	2,300	110	150	140
	4/10/96	940	38	33	39	47
7/9/96	ND	2,000	ND	150	160	
1/24/97	540	8.0	ND	11	9.9	
7/23/97	7,400	1,900	180	140	340	
MW4	10/19/92	480	0.51	2.1	2.8	6.8
	12/21/92	220*	ND	ND	0.97	0.74
	4/28/93	ND	ND	ND	ND	ND
	7/23/93	85*	ND	ND	ND	ND
	10/5/93	130**	ND	ND	ND	ND
	1/3/94	210	ND	ND	0.76	1.6
	4/2/94	89	ND	ND	ND	ND
	7/5/94	190**	ND	ND	ND	ND
	10/6/94	170	0.85	ND	ND	0.74
	1/2/95	ND	ND	ND	ND	ND
	4/3/95	98**	ND	ND	ND	ND
	7/14/95	ND	ND	ND	ND	ND
	10/10/95	ND	ND	ND	ND	ND
	1/03/96†	ND	ND	ND	ND	ND
	4/10/96	ND	ND	ND	ND	ND
	7/9/96	ND	ND	ND	ND	ND
1/24/97	ND	ND	ND	ND	ND	
7/23/97	ND	ND	ND	ND	ND	
MW5	10/19/92	2,700	61	5.0	100	61
	12/21/92	1,700	51	4.7	83	34
	4/28/93	6,700	200	190	250	430
	7/23/93	2,000	122	8.0	68	47

Table 2
 Summary of Laboratory Analyses
 Water

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes
MW5 (Cont.)	10/5/93	1,700	70	6.2	54	40
	1/3/94	1,500	44	ND	42	46
	4/2/94	1,800	46	5.1	38	35
	7/5/94	2,200	97	8.4	37	36
	10/6/94	1,600	79	5.7	28	22
	1/2/95	1,700	50	8.6	30	28
	4/3/95	5,400**	190	240	170	420
	7/14/95	3,800	210	100	130	190
	10/10/95	1,300	92	14	15	39
	1/03/96†	630	53	4.4	8.3	13
	4/10/96	500	25	18	7.0	20
	7/9/96	1,000	44	20	10	34
	1/24/97	4,000	190	400	160	430
	7/23/97	1,700	200	23	18	45
	MW6	10/19/92	3,900	420	12	60
12/21/92		2,300	370	11	39	15
4/28/93		1,200	54	1.5	11	5.3
7/23/93		580	19	0.99	3.4	2.7
10/5/93		1,400	34	ND	5.3	7.3
1/3/94		1,400	57	ND	8.5	11
4/2/94		5,300*	ND	ND	ND	ND
7/5/94		ND	ND	ND	ND	ND
10/6/94		11,000**	ND	ND	ND	ND
1/2/95		550	18	0.92	2.0	1.8
4/3/95		6,600**	ND	ND	ND	ND
7/14/95		ND	ND	ND	ND	ND
10/10/95		ND	81	ND	ND	ND
1/03/96†		70	9.9	0.58	ND	0.81
4/10/96		300	25	4.7	0.94	2.7
7/9/96		1,800	410	ND	12	ND
1/24/97		ND	0.80	ND	ND	ND
7/23/97		5,700	1,100	240	240	700
MW7	4/28/93	110	2.8	1.3	1.4	1.7
	7/23/93	790	23	3.3	28	5.4
	10/5/93	360	10	1.2	0.91	0.99
	1/3/94	ND	0.93	ND	0.75	1.9
	4/2/94	360	2.0	ND	ND	0.8
	7/5/94	ND	ND	ND	ND	ND
	10/6/94	340	5.6	0.85	ND	1.2
	1/2/95	ND	ND	ND	ND	ND
	4/3/95	570	24	ND	3.4	5.8
	7/14/95	ND	14	ND	ND	ND
	10/10/95	740	170	ND	ND	ND
	1/03/96†	360	16	1.3	2.7	1.4

Table 2
 Summary of Laboratory Analyses
 Water

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes
MW7 (Cont.)	4/10/96	120	4.1	1.5	ND	0.88
	7/9/96	ND	ND	ND	ND	ND
	1/24/97	ND	16	ND	ND	ND
	7/23/97	ND	1.5	ND	ND	0.62
MW8	4/28/93	450	18	1.8	1.8	1.4
	7/23/93	260	5.1	ND	0.6	ND
	10/5/93	120**	1.7	ND	ND	ND
	1/3/94	ND	ND	ND	ND	ND
	4/2/94	150	1.2	ND	ND	ND
	7/5/94	730	17	ND	1.6	ND
	10/6/94	140**	ND	ND	ND	ND
	1/2/95	440	18	0.72	2.0	1.8
	4/3/95	960	11	ND	ND	ND
	7/14/95	280	4.2	2.6	1.1	3.3
	10/10/95	110	1.3	0.62	0.67	ND
	1/03/96†	63	ND	0.51	ND	1.8
	4/10/96	ND	1.1	0.61	ND	ND
	7/9/96	72	1.0	ND	ND	ND
	1/24/97	ND	ND	ND	ND	ND
7/23/97	ND	ND	ND	ND	ND	

† Sequoia Analytical Laboratory has identified the presence of MTBE at a level above or equal to the taste and odor threshold of 40 µg/L in the sample collected from this well.

* Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.

** Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be gasoline.

ND = Non-detectable

-- Indicates analysis was not performed.

Results are in micrograms per liter (µg/L), unless otherwise indicated.

Note: - The detection limit for results reported as ND by Sequoia Analytical Laboratory is equal to the stated direction limit times the dilution factor indicated on the laboratory analytical sheets.

- Prior to August 1, 1995, the total purgeable petroleum hydrocarbon (TPH as gasoline) quantification range used by Sequoia Analytical Laboratory was C4 - C12. Since August 1, 1995, the quantification range used by Sequoia Analytical Laboratory is C6 - C12.

- Laboratory analyses data prior to January 3, 1994, were provided by Kaprealian Engineering, Inc.

Table 3
 Summary of Laboratory Analyses
 Water

Well #	Date	TPH as Diesel	Chloroform	Tetrachloro-ethene	Trichloro-ethene	MTBE
MW1	6/5/91	ND	7.8	2.9	1.3	--
	9/30/91	ND	--	--	--	--
	12/30/91	ND	6.4	2.1	0.9	--
	4/2/92	94	7.1	2.6	1.4	--
	6/30/92	120	9.5	2.2	1.3	--
	9/15/92	ND	12	2.2	1.3	--
	12/21/92	ND	12	1.4	0.83	--
	4/28/93♦	470**	12	0.89	0.85	--
	7/23/93	ND	16	1.3	0.91	--
	10/5/93	57*	13	1.3	0.66	--
	1/3/94†	ND	18	1.4	0.93	--
	4/2/94	ND	15	1.1	0.68	--
	10/10/95	--	--	--	--	29
	4/10/96	--	--	--	--	50
	7/9/96	--	--	--	--	150
1/24/97	--	--	--	--	510	
7/23/97	--	--	--	--	550	
MW2	10/10/95	--	--	--	--	200
	4/10/96	--	--	--	--	620
	7/9/96	--	--	--	--	1,500
	1/24/97	--	--	--	--	1,300
	7/23/97	--	--	--	--	65
MW3	10/10/95	--	--	--	--	190,000
	4/10/96	--	--	--	--	69,000
	7/9/96	--	--	--	--	140,000
	1/24/97	--	--	--	--	45
	7/23/97	--	--	--	--	45,000
MW4	1/3/94	--	9.0	1.0	ND	240
	10/10/95	--	--	--	--	120
	4/10/96	--	--	--	--	240
	7/9/96	--	--	--	--	480
	1/24/97	--	--	--	--	270
	7/23/97	--	--	--	--	460
MW5	10/10/95	--	--	--	--	1,100
	4/10/96	--	--	--	--	640
	7/9/96	--	--	--	--	150
	1/24/97	--	--	--	--	600
	7/23/97	--	--	--	--	2,500

Table 3
 Summary of Laboratory Analyses
 Water

Well #	Date	TPH as Diesel	Chloroform	Tetrachloro-ethene	Trichloro-ethene	MTBE
MW6	10/10/95	--	--	--	--	75,000
	4/10/96	--	--	--	--	53,000
	7/9/96	--	--	--	--	76,000
	1/24/97	--	--	--	--	390
	7/23/97	--	--	--	--	16,000
MW7	10/10/95	--	--	--	--	13,000
	4/10/96	--	--	--	--	3,200
	7/9/96	--	--	--	--	3,400
	1/24/97	--	--	--	--	6,600
	7/23/97	--	--	--	--	10,000
MW8	1/3/94♦	--	1.5	1.2	ND	51
	10/10/95	--	--	--	--	170
	4/10/96	--	--	--	--	60
	7/9/96	--	--	--	--	140
	1/24/97	--	--	--	--	76
	7/23/97	--	--	--	--	270

† A fuel fingerprint analysis was conducted on this sample. Sequoia Analytical Laboratory reported that total extractable petroleum hydrocarbons in this sample were not detected in high enough concentrations to compare with known standards and approximate their makeup.

♦ 1,2-dichloroethane was detected in MW8 at a concentration of 4.0 µg/L on 1/03/94, and 1.1 µg/L in MW1 on 4/28/93.

* Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be diesel.

** Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be a diesel and non-diesel mixture.

ND = Non-detectable.

-- Indicates analysis was not performed.

Results are in micrograms per liter (µg/L), unless otherwise indicated.

Note: - All EPA method 8010 constituents were non-detectable, except as indicated above.

- Laboratory analyses data prior to January 3, 1994, were provided by Kaprealian Engineering, Inc.

Table 4
Summary of Laboratory Analyses
Water

Well #	Date	TOG	Cadmium	Chromium	Lead	Nickel	Zinc
MW1	6/30/92	ND	ND	0.079	0.009	0.1	0.087
MW1	4/2/92	ND	ND	0.015	0.016	ND	0.02
MW1	12/30/91	ND	ND	0.0078	0.0057	ND	0.046
MW1	9/30/91	ND	ND	0.019	ND	ND	0.11
MW1	6/5/91	ND	ND	0.0083	0.011	0.063	0.023

TOG = Total Oil & Grease.

ND = Non-detectable.

Results are in milligrams per liter (mg/L), unless otherwise indicated.

Note: Laboratory analyses data were provided by Kaprealian Engineering, Inc.

Table 5
Summary of Laboratory Analyses
Water

Date	Well #	Heterotrophic Plate Count (CFU/mL)
1/3/96	MW2	> 5,700
	MW3	350
	MW4	1,000
	MW5	> 5,700
	MW8	> 5,700

CFU/mL = Colony Forming Units per milliliter.

Table 6
 Summary of Laboratory Analyses
 Water

Date	Well #	BOD	Bicarbonate		Iron	Manganese	Nitrate	Sulfate
			Alkalinity	Calcium				
4/10/96	MW1	--	160	21	15	2.6	--	--
	MW2	--	460	58	60	7.0	--	--
	MW3	--	360	40	60	3.7	--	--
	MW4	--	160	25	43	2.0	--	--
	MW5	--	240	22	18	2.4	--	--
	MW6	--	240	35	61	3.7	--	--
	MW7	--	210	44	120	4.8	--	--
	MW8	--	380	37	63	3.6	--	--
1/3/96	MW2	2.2	130	27	77	3.0	0.22	97
	MW3	4.3	430	43	61	5.4	0.23	16
	MW4	ND	120	20	61	3.3	10	44
	MW5	3.4	240	31	80	3.3	ND	17
	MW8	ND	310	37	62	3.3	0.57	20

-- Indicates analysis was not performed.

ND = Non-detectable.

BOD = Biochemical Oxygen Demand

Results are in milligrams per liter (mg/L), unless otherwise indicated.

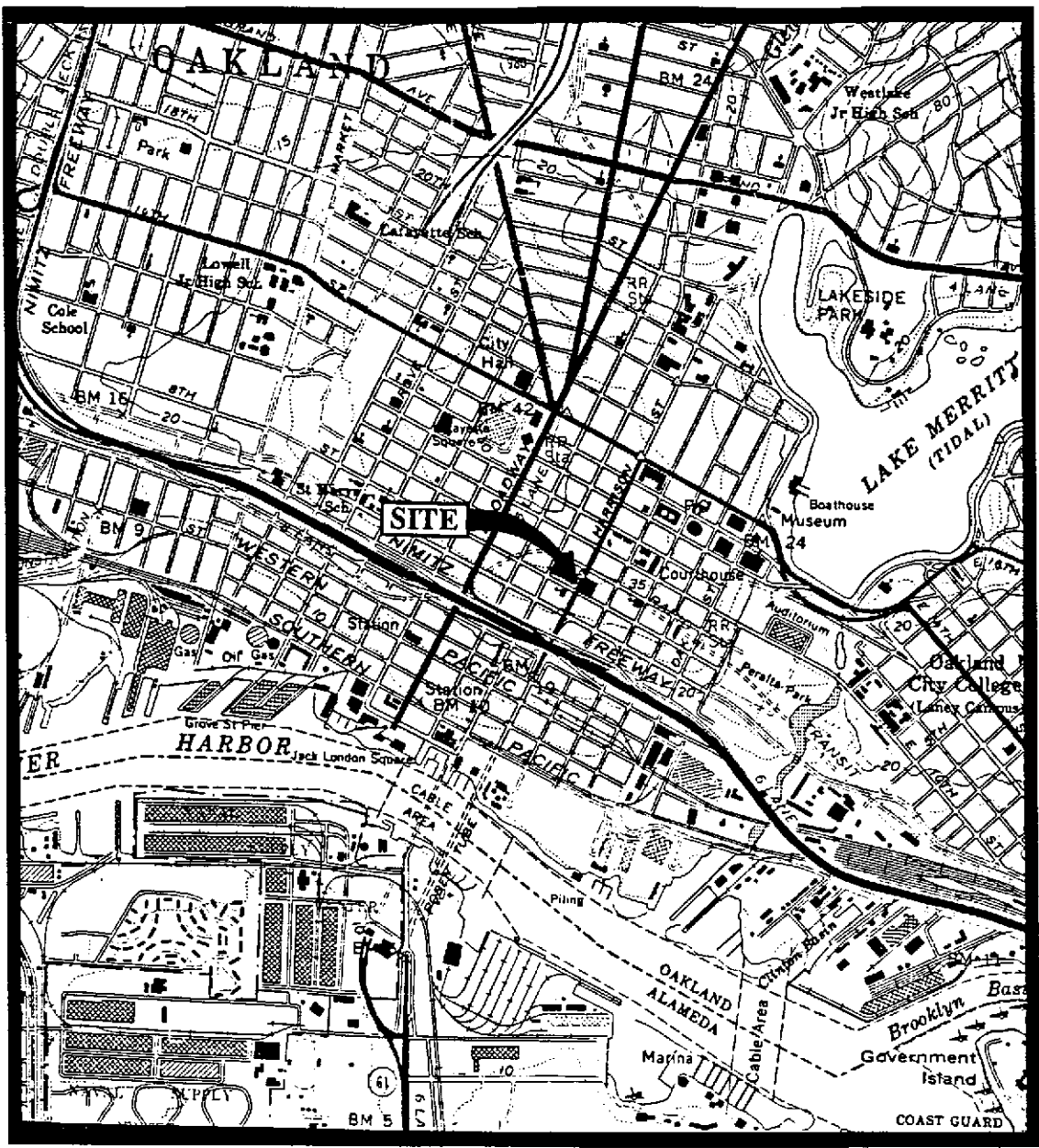
Table 7
 Summary of Monitoring Data

Date	Well #	Dissolved Oxygen Concentrations Before Purging	Dissolved Oxygen Concentrations After Purging
7/23/97	MW1	2.26	2.81
	MW2	1.40	0.97
	MW3	3.84	1.37
	MW4	9.28	3.68
	MW5	7.96	4.56
	MW6	10.90	3.31
	MW7	3.25	2.83
	MW8	4.08	3.27
1/24/97	MW1	--	2.56
	MW2	--	2.37
	MW3	--	1.46
	MW4	--	3.04
	MW5	--	1.47
	MW6	--	6.21
	MW7	--	1.91
	MW8	--	2.09
7/9/96	MW1	--	3.13
	MW2	--	0.71
	MW3	--	1.04
	MW4	--	4.91
	MW5	--	3.25
	MW6	--	3.62
	MW7	--	2.34
	MW8	--	1.32
4/10/96	MW1	--	3.04
	MW2	--	5.88
	MW3	--	4.63
	MW4	--	5.23
	MW5	--	3.73
	MW6	--	4.50
	MW7	--	5.10
	MW8	--	4.80
1/3/96	MW2	--	1.80
	MW3	--	1.50
	MW4	--	1.20
	MW5	--	2.80
	MW8	--	1.30

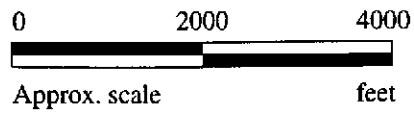
Results are in milligrams per liter (mg/L).

-- Indicates measurement was not taken.

Note: Measurements were taken using a LaMotte DO4000 dissolved oxygen meter.



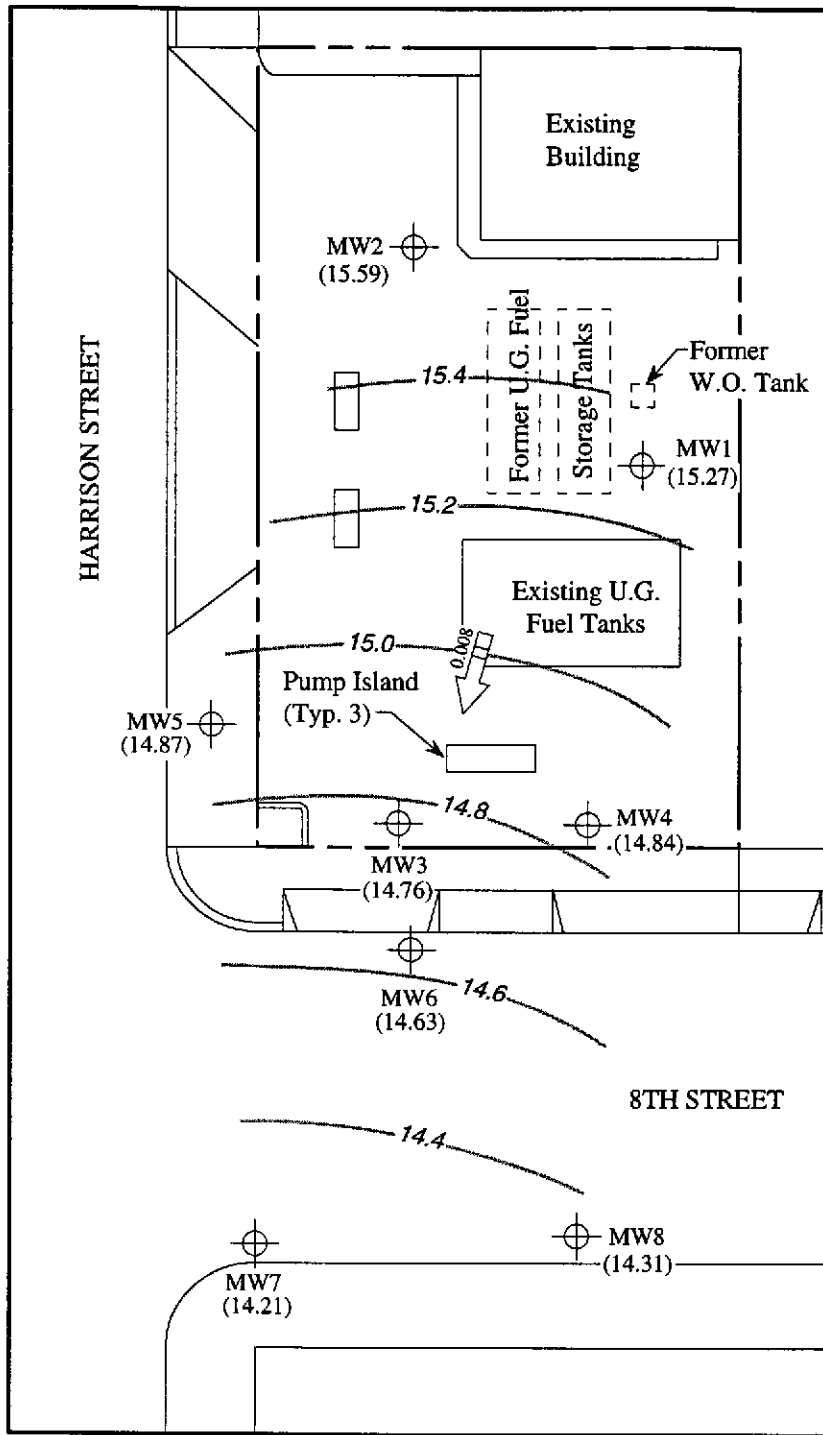
Base modified from 7.5 minute U.S.G.S. Oakland West Quadrangle
(photorevised 1980)







MPDS SERVICES, INCORPORATED

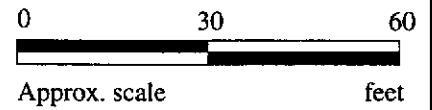
UNOCAL SERVICE STATION #0752
800 HARRISON STREET
OAKLAND, CALIFORNIA

LOCATION
MAP



LEGEND

-  Monitoring well
-  () Ground water elevation in feet above Mean Sea Level
-  Direction of ground water flow with approximate hydraulic gradient
-  Contours of ground water elevation

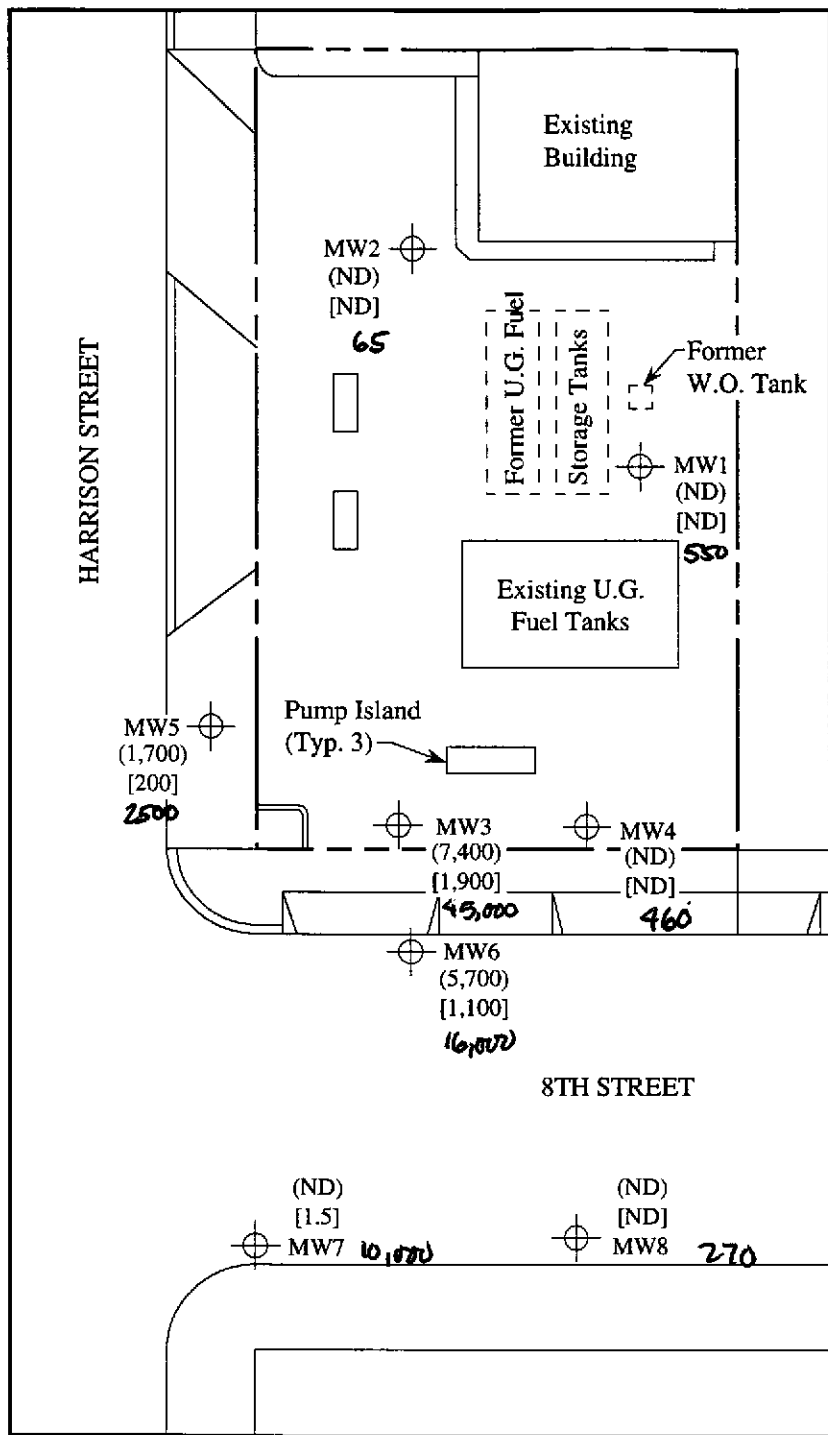


POTENTIOMETRIC SURFACE MAP FOR THE JULY 23, 1997 MONITORING EVENT

mpds SERVICES, INCORPORATED

**UNOCAL SERVICE STATION #0752
800 HARRISON STREET
OAKLAND, CALIFORNIA**

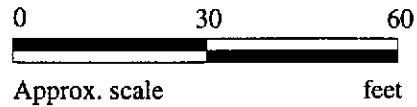
**FIGURE
1**



LEGEND

- ⊕ Monitoring well
- () Concentration of TPH as gasoline in $\mu\text{g/L}$
- [] Concentration of benzene in $\mu\text{g/L}$
- ND Non-detectable

MTBE



PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON JULY 23, 1997



**UNOCAL SERVICE STATION #0752
800 HARRISON STREET
OAKLAND, CALIFORNIA**

**FIGURE
2**

PURGING/SAMPLING DATA SHEET

SAMPLING LOCATION: #0752 OAKLAND DATE & TIME SAMPLED: 7-23-97 13:05 A.M.
P.M.

800 HARRISON ST. FIELD TECHNICIAN: STEVE BALIAN

PURGE METHOD: PUMP DATE(S) PURGED: 7-23-97

WELL NUMBER: MW-1

WATER LEVEL-INITIAL: 19.42 SAMPLING METHOD: BAIL

WATER LEVEL-FINAL: 19.48 CONTAINERS: 2

WELL DEPTH: 33.55 PRESERVATIVES: Hcl

WELL CASING VOLUME: 2.40 †CASING DIAMETER: 2"

TIME	GALLONS PURGED	TEMPERATURE (°F)	ELECTRICAL CONDUCTIVITY (µmhos/cm x 100) or µS/cm	pH
12:40	0	84.3	265 uv	6.85
↓	2.5	80.1	177 uv	6.72
↓	5	77.4	166 uv	6.56
12:50	7.5	76.8	174 uv	6.53

† Conversion Factors:

Well Diameter	Factor
2"	0.17
3"	0.37
4"	0.65
4.5"	0.82
6"	1.46
8"	2.60
12"	5.87

S = Siemens = mhos

Stabilization Criteria:
 Temperature = ± 1 °F
 Conductivity = ± 10% of total
 pH = ± 0.2

PURGING/SAMPLING DATA SHEET

SAMPLING LOCATION: #0752 OAKLAND

DATE & TIME SAMPLED 7-23-97 14:30 P.M. A.M.

800 HARRISON ST.

FIELD TECHNICIAN STEVE BAIAN

PURGE METHOD PUMP

DATE(S) PURGED 7-23-97

WELL NUMBER MW-2

WATER LEVEL-INITIAL 19.13

SAMPLING METHOD BAIL

WATER LEVEL-FINAL 19.17

CONTAINERS 2

WELL DEPTH 30.34

PRESERVATIVES HCL

WELL CASING VOLUME 1.91

†CASING DIAMETER 2"

TIME	GALLONS PURGED	TEMPERATURE (°F)	ELECTRICAL CONDUCTIVITY (μ mhos/cm \times 100) or μ S/cm	pH
14:05	0	83.4	329 μ v	6.86
↓	2	79.9	343 μ v	6.58
↓	4	77.0	330 μ v	6.57
14:15	6	76.5	302 μ v	6.60

† Conversion Factors: Well Diameter Factor

2"	0.17
3"	0.37
4"	0.65
4.5"	0.82
6"	1.46
8"	2.60
12"	5.87

S = Siemens = mhos

Stabilization Criteria:

Temperature = \pm 1 °F
Conductivity = \pm 10% of total
pH = \pm 0.2

PURGING/SAMPLING DATA SHEET

SAMPLING LOCATION: # 0752 OAKLAND DATE & TIME SAMPLED 7-23-97 12:25 A.M.
(P.M.)

800 HARRISON ST. FIELD TECHNICIAN STEVE BALIAN

PURGE METHOD pump DATE(S) PURGED 7-23-97

WELL NUMBER MW-3

WATER LEVEL-INITIAL 18.38 SAMPLING METHOD BAIL

WATER LEVEL-FINAL 18.47 CONTAINERS 2

WELL DEPTH 30.49 PRESERVATIVES Hcl

WELL CASING VOLUME 2.06 †CASING DIAMETER 2"

TIME	GALLONS PURGED	TEMPERATURE (°F)	ELECTRICAL CONDUCTIVITY (µmhos/cm x 100) or µS/cm	pH
12:00	0	80.0	381 uv	6.70
↓	2.5	77.5	344 uv	6.67
↓	4.5	77.0	332 uv	6.56
12:10	6.5	76.5	335 uv	6.57

† Conversion Factors: Well Diameter Factor

2"	0.17
3"	0.37
4"	0.65
4.5"	0.82
6"	1.46
8"	2.60
12"	5.87

S = Siemens = mhos

Stabilization Criteria:
 Temperature = ± 1 °F
 Conductivity = ± 10% of total
 pH = ± 0.2

PURGING/SAMPLING DATA SHEET

SAMPLING LOCATION: # 0752 OAKLAND DATE & TIME SAMPLED 7-23-97 9:45 A.M.
800 HARRISON ST. FIELD TECHNICIAN STEVE BALIAN
 PURGE METHOD PUMP DATE(S) PURGED 7-23-97
 WELL NUMBER MW-4
 WATER LEVEL-INITIAL 17.87 SAMPLING METHOD BAIL
 WATER LEVEL-FINAL 17.97 CONTAINERS 2
 WELL DEPTH 32.32 PRESERVATIVES Hcl
 WELL CASING VOLUME 2.46 †CASING DIAMETER 2"

TIME	GALLONS PURGED	TEMPERATURE (°F)	ELECTRICAL CONDUCTIVITY (µmhos/cm x 100) or µS/cm	pH
9:20	0	69.2	423 uv	6.90
↓	2.5	72.4	263 uv	6.63
↓	5	73.2	243 uv	6.47
9:30	7.5	73.5	229 uv	6.43

† Conversion Factors:

Well Diameter	Factor
2"	0.17
3"	0.37
4"	0.65
4.5"	0.82
6"	1.46
8"	2.60
12"	5.87

S = Siemens = mhos

Stabilization Criteria:
 Temperature = ± 1 °F
 Conductivity = ± 10% of total
 pH = ± 0.2

PURGING/SAMPLING DATA SHEET

SAMPLING LOCATION: #0752 OAKLAND DATE & TIME SAMPLED 7-23-97 13:45 A.M.
P.M.

800 HARRISON ST. FIELD TECHNICIAN STEVE BAIAN

PURGE METHOD pump DATE(S) PURGED 7-23-97

WELL NUMBER MW-5

WATER LEVEL-INITIAL 18.08 SAMPLING METHOD BAIL

WATER LEVEL-FINAL 18.19 CONTAINERS 2

WELL DEPTH 31.70 PRESERVATIVES Hcl

WELL CASING VOLUME 2.32 †CASING DIAMETER 2"

TIME	GALLONS PURGED	TEMPERATURE (°F)	ELECTRICAL CONDUCTIVITY (µmhos/cm x 100) or µS/cm	pH
13:20	0	87.6	283 uv	6.77
↓	2.5	83.3	305 uv	6.73
↓	5	79.8	285 uv	6.69
13:30	7	79.2	274 uv	6.69

† Conversion Factors: Well Diameter Factor

2"	0.17
3"	0.37
4"	0.65
4.5"	0.82
6"	1.46
8"	2.60
12"	5.87

S = Siemens = mhos

Stabilization Criteria:

Temperature = ± 1 °F
Conductivity = ± 10% of total
pH = ± 0.2

PURGING/SAMPLING DATA SHEET

SAMPLING LOCATION: #0752 OAKLAND DATE & TIME SAMPLED: 7-23-97 11:05 A.M.
800 HARRISON ST. FIELD TECHNICIAN: STEVE BALIAN
 PURGE METHOD: pump DATE(S) PURGED: 7-23-97
 WELL NUMBER: MW-6
 WATER LEVEL-INITIAL: 17.53 SAMPLING METHOD: BAIL
 WATER LEVEL-FINAL: 17.60 CONTAINERS: 2
 WELL DEPTH: 30.90 PRESERVATIVES: Hcl
 WELL CASING VOLUME: 2.27 †CASING DIAMETER: 2"

TIME	GALLONS PURGED	TEMPERATURE (°F)	ELECTRICAL CONDUCTIVITY (µmhos/cm x 100) or µS/cm	pH
10:40	0	82.2	276 uv	6.59
↓	2.5	80.1	265 uv	6.46
↓	5	77.5	240 uv	6.47
10:50	7	77.1	243 uv	6.42

† Conversion Factors: Well Diameter Factor

2"	0.17
3"	0.37
4"	0.65
4.5"	0.82
6"	1.46
8"	2.60
12"	5.87

S = Siemens = mhos

Stabilization Criteria:
 Temperature = ± 1 °F
 Conductivity = ± 10% of total
 pH = ± 0.2

PURGING/SAMPLING DATA SHEET

SAMPLING LOCATION: #0752 OAKLAND DATE & TIME SAMPLED 7-23-97 11:45 A.M.
800 HARRISON ST. FIELD TECHNICIAN STEVE BAIAN
 PURGE METHOD PUMP DATE(S) PURGED 7-23-97
 WELL NUMBER MW-7
 WATER LEVEL-INITIAL 17.99 SAMPLING METHOD BAIL
 WATER LEVEL-FINAL 18.04 CONTAINERS 2
 WELL DEPTH 31.50 PRESERVATIVES Hcl
 WELL CASING VOLUME 2.30 †CASING DIAMETER 2"

TIME	GALLONS PURGED	TEMPERATURE (°F)	ELECTRICAL CONDUCTIVITY (µmhos/cm x 100) or µS/cm	pH
11:20	0	81.1	322 uv	6.73
↓	2.5	79.0	370 uv	6.47
↓	5	77.6	349 uv	6.45
11:30	7	77.4	338 uv	6.40

† Conversion Factors: Well Diameter Factor

2"	0.17
3"	0.37
4"	0.65
4.5"	0.82
6"	1.46
8"	2.60
12"	5.87

S = Siemens = mhos

Stabilization Criteria:

Temperature = ± 1 °F
 Conductivity = ± 10% of total
 pH = ± 0.2

PURGING/SAMPLING DATA SHEET

SAMPLING LOCATION: # 0752 OAKLAND

DATE & TIME SAMPLED 7-23-97 10:25 A.M. P.M.

800 HARRISON ST.

FIELD TECHNICIAN STEVE BAIAN

PURGE METHOD PUMP

DATE(S) PURGED 7-23-97

WELL NUMBER MW-8

WATER LEVEL-INITIAL 17.69

SAMPLING METHOD BAIL

WATER LEVEL-FINAL 17.74

CONTAINERS 2

WELL DEPTH 27.93

PRESERVATIVES Hcl

WELL CASING VOLUME 1.74

† CASING DIAMETER 2"

TIME	GALLONS PURGED	TEMPERATURE (°F)	ELECTRICAL CONDUCTIVITY (µmhos/cm x 100) or µS/cm	pH
10:00	0	75.9	312 uv	6.64
↓	2	76.4	310 uv	6.53
↓	4	75.8	281 uv	6.43
10:10	5.5	75.9	285 uv	6.39

† Conversion Factors: Well Diameter Factor

2"	0.17
3"	0.37
4"	0.65
4.5"	0.82
6"	1.46
8"	2.60
12"	5.87

S = Siemens = mhos

Stabilization Criteria:

Temperature = ± 1 °F
 Conductivity = ± 10% of total
 pH = ± 0.2



MPDS Services	Client Project ID: Tosco #0752, 800 Harrison St. Oakland	Sampled: Jul 23, 1997
2401 Stanwell Dr., Ste. 300	Matrix Descript: Water	Received: Jul 23, 1997
Concord, CA 94520	Analysis Method: EPA 5030/8015 Mod./8020	Reported: Aug 6, 1997
Attention: Jarrel Crider	First Sample #: 707-1211	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Sample Number	Sample Description	Purgeable Hydrocarbons µg/L	Benzene µg/L	Toluene µg/L	Ethyl Benzene µg/L	Total Xylenes µg/L
707-1211	MW-1	ND	ND	ND	ND	ND
707-1212	MW-2	ND	ND	ND	ND	ND
707-1213	MW-3	7,400	1,900	180	140	340
707-1214	MW-4	ND	ND	ND	ND	ND
707-1215	MW-5	1,700	200	23	18	45
707-1216	MW-6	5,700	1,100	240	240	700
707-1217	MW-7	ND	1.5	ND	ND	0.62
707-1218	MW-8	ND	ND	ND	ND	ND

Detection Limits:	50	0.50	0.50	0.50	0.50
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Total Purgeable Petroleum Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as ND were not present above the stated limit of detection.

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager





MPDS Services	Client Project ID:	Tosco #0752, 800 Harrison St. Oakland	Sampled:	Jul 23, 1997
2401 Stanwell Dr., Ste. 300	Matrix Descript:	Water	Received:	Jul 23, 1997
Concord, CA 94520	Analysis Method:	EPA 5030/8015 Mod./8020	Reported:	Aug 6, 1997
Attention: Jarrel Crider	First Sample #:	707-1211		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Sample Number	Sample Description	Chromatogram Pattern	DL Mult. Factor	Date Analyzed	Instrument ID	Surrogate Recovery, % QC Limits: 70-130
707-1211	MW-1	--	1.0	07/30/97	HP-2	77
707-1212	MW-2	--	1.0	07/30/97	HP-2	80
707-1213	MW-3	Gasoline	100	07/30/97	HP-2	82
707-1214	MW-4	--	1.0	07/30/97	HP-2	79
707-1215	MW-5	Gasoline	5.0	07/30/97	HP-5	84
707-1216	MW-6	Gasoline	100	07/31/97	HP-2	83
707-1217	MW-7	--	1.0	07/30/97	HP-5	88
707-1218	MW-8	--	1.0	07/30/97	HP-5	99

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager





MPDS Services 2401 Stanwell Dr., Ste. 300 Concord, CA 94520 Attention: Jarrel Crider	Client Project ID: Tosco #0752, 800 Harrison St. Oakland Sample Descript: Water Analysis for: MTBE (Modified EPA 8020) First Sample #: 707-1211	Sampled: Jul 23, 1997 Received: Jul 23, 1997 Analyzed: Jul 30-31, 97 Reported: Aug 6, 1997
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LABORATORY ANALYSIS FOR: MTBE (Modified EPA 8020)

Sample Number	Sample Description	Detection Limit µg/L	Sample Result µg/L
707-1211	MW-1	5.0	550
707-1212	MW-2	5.0	65
707-1213	MW-3	250	45,000
707-1214	MW-4	5.0	460
707-1215	MW-5	13	2,500
707-1216	MW-6	250	16,000
707-1217	MW-7	250	10,000
707-1218	MW-8	5.0	270

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager





MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Tosco #0752, 800 Harrison St. Oakland
Matrix: Liquid

QC Sample Group: 7071211-218

Reported: Aug 11, 1997

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb

MS/MSD Batch#:	7071109	7071109	7071109	7071109
Date Prepared:	7/30/97	7/30/97	7/30/97	7/30/97
Date Analyzed:	7/30/97	7/30/97	7/30/97	7/30/97
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike % Recovery:	90	110	95	103
Matrix Spike Duplicate % Recovery:	85	105	95	102
Relative % Difference:	5.7	4.7	0.0	1.7

LCS Batch#:	2LCS073097	2LCS073097	2LCS073097	2LCS073097
Date Prepared:	7/30/97	7/30/97	7/30/97	7/30/97
Date Analyzed:	7/30/97	7/30/97	7/30/97	7/30/97
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
LCS % Recovery:	85	100	100	98

% Recovery Control Limits:	70-130	70-130	70-130	70-130
---------------------------------------	--------	--------	--------	--------

Please Note:

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager





MPDS Services 2401 Stanwell Dr., Ste. 300 Concord, CA 94520 Attention: Jarrel Crider	Client Project ID: Tosco #0752, 800 Harrison St. Oakland Matrix: Liquid QC Sample Group: 7071211-218	Reported: Aug 11, 1997
--	---	-------------------------------

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb

MS/MSD				
Batch#:	7071127	7071127	7071127	7071127
Date Prepared:	7/31/97	7/31/97	7/31/97	7/31/97
Date Analyzed:	7/31/97	7/31/97	7/31/97	7/31/97
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike				
% Recovery:	90	105	100	100
Matrix Spike Duplicate %				
Recovery:	85	105	100	98
Relative % Difference:	5.7	0.0	0.0	1.7

LCS Batch#:	2LCS073197	2LCS073197	2LCS073197	2LCS073197
Date Prepared:	7/31/97	7/31/97	7/31/97	7/31/97
Date Analyzed:	7/31/97	7/31/97	7/31/97	7/31/97
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
LCS % Recovery:	85	105	100	98

% Recovery Control Limits:	70-130	70-130	70-130	70-130
-----------------------------------	--------	--------	--------	--------

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager





MPDS Services 2401 Stanwell Dr., Ste. 300 Concord, CA 94520 Attention: Jarrel Crider	Client Project ID: Tosco #0752, 800 Harrison St. Oakland Matrix: Liquid QC Sample Group: 7071211-218	Reported: Aug 11, 1997
---	--	------------------------

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb

MS/MSD Batch#:	7071119	7071119	7071119	7071119
Date Prepared:	7/30/97	7/30/97	7/30/97	7/30/97
Date Analyzed:	7/30/97	7/30/97	7/30/97	7/30/97
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike % Recovery:	95	95	95	97
Matrix Spike Duplicate % Recovery:	90	90	90	97
Relative % Difference:	5.4	5.4	5.4	0.0

LCS Batch#:	5LCS073097	5LCS073097	5LCS073097	5LCS073097
Date Prepared:	7/30/97	7/30/97	7/30/97	7/30/97
Date Analyzed:	7/30/97	7/30/97	7/30/97	7/30/97
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
LCS % Recovery:	100	100	100	105

% Recovery Control Limits:	70-130	70-130	70-130	70-130
-----------------------------------	--------	--------	--------	--------

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL, #1271

Signature on File
Alan B. Kemp
Project Manager



M P D S Services, Inc.

2401 Stanwell Drive, Suite 400, Concord, CA 94520

Tel: (510) 602-5120 Fax: (510) 689-1918

CHAIN OF CUSTODY

9/23/97

SAMPLER			TOSCO S/S # <u>0752</u> CITY: <u>OAKLAND</u>					ANALYSES REQUESTED						TURN AROUND TIME:	
WITNESSING AGENCY			ADDRESS: <u>800 HARRISON STREET</u>					TPH-G/ BTEX	TPH-D	MTBE	80/0	TOG			REGULAR
SAMPLE ID NO.	DATE	TIME	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION							REMARKS	
MW-1	7-23-97	13:05	X	X		2	WELL	X		X		7071211	A-B	MTBE 5 PP6	
MW-2	"	14:30	X	X		2	"	X		X		7071212			
MW-3	"	12:25	X	X		2	"	X		X		7071213			
MW-4	"	9:45	X	X		2	"	X		X		7071214			
MW-5	"	13:45	X	X		2	"	X		X		7071215			
MW-6	"	11:05	X	X		2	"	X		X		7071216			
MW-7	"	11:45	X	X		2	"	X		X		7071217			
MW-8	"	10:25	X	X		2	"	X		X		7071218	✓		

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME	THE FOLLOWING <u>MUST BE</u> COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:
STEVE BALIAN	16:30 7-23-97	<i>Sharma</i>	7/23/97 1630	1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? <u>Y</u>
(SIGNATURE)		(SIGNATURE)		2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? <u>Y</u>
(SIGNATURE)		(SIGNATURE)		3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? <u>N</u>
(SIGNATURE)		(SIGNATURE)		4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? <u>Y</u>
(SIGNATURE)		(SIGNATURE)		SIGNATURE: <i>Sharma</i> TITLE: <u>Analyst</u> DATE: <u>7/23/97</u>