

MPDS-UN0752-07  
August 8, 1995

Unocal Corporation  
2000 Crow Canyon Place, Suite 400  
P.O. Box 5155  
San Ramon, California 94583

Attention: Ms. Tina R. Berry

RE: Quarterly Data Report  
Unocal Service Station #0752  
800 Harrison Street  
Oakland, California

Dear Ms. Berry:

This data report presents the results of the most recent quarter of 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 during this quarter are indicated in Table 1. 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 the most recent quarter is shown on the attached Figure 1.

Ground water samples were collected on July 14, 1995. Prior to sampling, the wells were each purged of between 7.5 and 11 gallons of water. Samples were then collected using a clean Teflon bailer. The samples were decanted into clean VOA vials and/or one-liter amber bottles, as appropriate, 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 Unocal 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, 3, and 4. The concentrations of Total Petroleum Hydrocarbons (TPH) as gasoline and benzene detected in the ground water samples collected this quarter are shown

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August 8, 1995  
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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

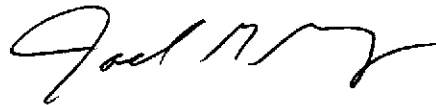
A copy of this report should be sent to Ms. Jennifer Eberle of the Alameda County Health Care Services Agency.

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.

  
Sarkis A. Karkarian  
Staff Engineer



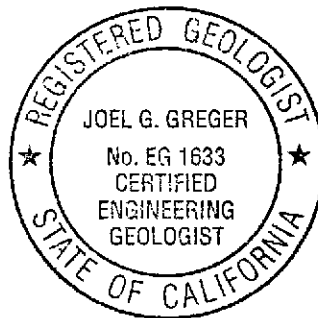
Joel G. Greger, C.E.G.  
Senior Engineering Geologist

License No. EG 1633  
Exp. Date 8/31/96

/bp

Attachments: Tables 1 through 4  
Location Map  
Figures 1 & 2  
Laboratory Analyses  
Chain of Custody documentation

cc: Mr. Robert H. Kezerian, Kaprealian Engineering, Inc.



**TABLE 1**

**SUMMARY OF MONITORING DATA**

<u>Well #</u>	<u>Ground Water Elevation (feet)</u>	<u>Depth to Water (feet)◆</u>	<u>Total Well Depth (feet)◆</u>	<u>Product Thickness (feet)</u>	<u>Sheen</u>	<u>Water Purged (gallons)</u>
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**(Monitored and Sampled on July 14, 1995)**

MW1	16.11	18.58	33.45	0	No	10.5
MW2	16.42	18.30	30.72	0	No	8.5
MW3	15.65	17.49	30.74	0	No	9.5
MW4	15.70	17.01	32.57	0	No	11
MW5	15.77	17.18	31.95	0	No	10.5
MW6	15.53	16.63	31.18	0	No	10
MW7	15.15	17.05	32.22	0	No	10.5
MW8	15.19	16.81	27.27	0	No	7.5

**(Monitored and Sampled on April 3, 1995)**

MW1	17.08	17.61	33.37	0	No	11
MW2	17.23	17.49	30.26	0	No	9
MW3	16.76	16.38	30.61	0	No	10
MW4	16.84	15.87	32.52	0	No	12
MW5	16.80	16.15	31.92	0	No	11
MW6	16.68	15.48	31.15	0	No	11
MW7	16.39	15.81	31.20	0	No	11
MW8	16.46	15.54	26.96	0	No	8

**(Monitored and Sampled on January 2, 1995)**

MW1	15.02	19.67	33.50	0	No	10
MW2	15.47	19.25	31.00	0	No	8.5
MW3	14.78	18.36	31.35	0	No	9
MW4	14.96	17.75	32.60	0	No	10.5
MW5	15.03	17.92	31.96	0	No	10
MW6	14.65	17.51	31.62	0	No	10
MW7	14.53	17.67	32.10	0	No	10
MW8	14.42	17.58	28.77	0	No	8

**TABLE 1 (Continued)**

**SUMMARY OF MONITORING DATA**

<u>Well #</u>	<u>Ground Water Elevation (feet)</u>	<u>Depth to Water (feet)♦</u>	<u>Total Well Depth (feet)♦</u>	<u>Product Thickness (feet)</u>	<u>Sheen</u>	<u>Water Purged (gallons)</u>
(Monitored and Sampled on October 6, 1994)						
MW1	13.82	20.87	33.60	0	No	4.5
MW2	14.17	20.55	30.10	0	No	6.5
MW3	13.41	19.73	30.61	0	No	7.5
MW4	13.46	19.25	32.33	0	No	4.5
MW5	13.58	19.37	31.50	0	No	8
MW6	13.31	18.85	31.15	0	No	4
MW7	12.95	19.25	31.17	0	No	8.5
MW8	13.02	18.98	26.02	0	No	5

<u>Well #</u>	<u>Well Casing Elevation (feet)*</u>
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**

Date	Well #	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
6/05/91	MW1	47	ND	ND	ND	ND
9/30/91	MW1	ND	ND	ND	ND	ND
12/30/91	MW1	ND	ND	ND	ND	ND
4/02/92	MW1	ND	ND	ND	ND	ND
6/30/92	MW1	ND	ND	ND	ND	ND
9/15/92	MW1	76	1.0	ND	ND	ND
12/21/92	MW1	95	0.69	ND	ND	1.0
4/28/93	MW1	920	3.1	2.3	1.2	9.7
7/23/93	MW1	ND	0.50	0.66	ND	ND
10/05/93	MW1	92**	1.5	ND	ND	0.72
1/03/94	MW1	ND	ND	ND	ND	ND
4/02/94	MW1	ND	ND	ND	ND	ND
7/05/94	MW1	250	4.8	13	1.2	7.3
10/06/94	MW1	540	1.4	ND	0.66	11
1/02/95	MW1	140	ND	ND	ND	ND
4/03/95	MW1	580	3.6	0.75	ND	4.0
7/14/95	MW1	260	2.1	ND	ND	1.2
6/05/91	MW2	49	ND	ND	ND	ND
9/30/91	MW2	130	18	0.53	14	9.6
12/30/91	MW2	91	16	0.89	11	1.9
4/02/92	MW2	88	12	0.32	6.3	7.2
6/30/92	MW2	76	9.3	0.76	4.8	6.9
9/15/92	MW2	1,300	91	5.7	80	110
12/21/92	MW2	960	97	3.2	74	96
4/28/93	MW2	1,300	76	1.9	130	87
7/23/93	MW2	66	1.8	ND	2.5	2.0
10/05/93	MW2	120	12	ND	2.1	12
1/03/94	MW2	260	25	ND	5.5	26
4/02/94	MW2	ND	0.65	ND	ND	0.99
7/05/94	MW2	160	16	ND	0.73	10
10/06/94	MW2	170	15	ND	1.4	11
1/02/95	MW2	190	27	ND	0.95	11
4/03/95	MW2	2,400	65	6.6	19	63
7/14/95	MW2	750	270	ND	ND	13

**TABLE 2 (Continued)**

**SUMMARY OF LABORATORY ANALYSES  
 WATER**

Date	Well #	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
6/05/91	MW3	5,800	1,200	40	140	97
9/30/91	MW3	6,800	1,400	130	290	240
12/30/91	MW3	7,200	2,100	690	410	550
4/02/92	MW3	8,000	1,400	200	300	310
6/30/92	MW3	8,900	1,900	210	430	550
9/15/92	MW3	10,000	1,900	330	400	580
12/21/92	MW3	8,500	1,500	150	310	330
4/28/93	MW3	2,600	220	7.6	41	27
7/23/93	MW3	4,400	660	26	160	82
10/05/93	MW3	9,200	720	88	140	140
1/03/94	MW3	4,900	830	100	170	150
4/02/94	MW3	6,000	800	30	140	110
7/05/94	MW3	25,000**	ND	ND	ND	ND
10/06/94	MW3	49,000*	1,300	200	280	300
1/02/95	MW3	480	1.6	ND	1.4	ND
4/03/95	MW3	8,100**	65	ND	ND	ND
7/14/95	MW3	ND	1,300	ND	ND	ND
10/19/92	MW4	480	0.51	2.1	2.8	6.8
12/21/92	MW4	220*	ND	ND	0.97	0.74
4/28/93	MW4	ND	ND	ND	ND	ND
7/23/93	MW4	85*	ND	ND	ND	ND
10/05/93	MW4	130**	ND	ND	ND	ND
1/03/94	MW4	210	ND	ND	0.76	1.6
4/02/94	MW4	89	ND	ND	ND	ND
7/05/94	MW4	190**	ND	ND	ND	ND
10/06/94	MW4	170	0.85	ND	ND	0.74
1/02/95	MW4	ND	ND	ND	ND	ND
4/03/95	MW4	98**	ND	ND	ND	ND
7/14/95	MW4	ND	ND	ND	ND	ND
10/19/92	MW5	2,700	61	5.0	100	61
12/21/92	MW5	1,700	51	4.7	83	34
4/28/93	MW5	6,700	200	190	250	430
7/23/93	MW5	2,000	122	8.0	68	47
10/05/93	MW5	1,700	70	6.2	54	40
1/03/94	MW5	1,500	44	ND	42	46

**TABLE 2 (Continued)**

**SUMMARY OF LABORATORY ANALYSES  
 WATER**

<u>Date</u>	<u>Well #</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl-benzene</u>	<u>Xylenes</u>
4/02/94	MW5	1,800	46	5.1	38	35
7/05/94	MW5	2,200	97	8.4	37	36
10/06/94	MW5	1,600	79	5.7	28	22
1/02/95	MW5	1,700	50	8.6	30	28
4/03/95	MW5	5,400**	190	240	170	420
7/14/95	MW5	3,800	210	100	130	190
10/19/92	MW6	3,900	420	12	60	28
12/21/92	MW6	2,300	370	11	39	15
4/28/93	MW6	1,200	54	1.5	11	5.3
7/23/93	MW6	580	19	0.99	3.4	2.7
10/05/93	MW6	1,400	34	ND	5.3	7.3
1/03/94	MW6	1,400	57	ND	8.5	11
4/02/94	MW6	5,300*	ND	ND	ND	ND
7/05/94	MW6	ND	ND	ND	ND	ND
10/06/94	MW6	11,000**	ND	ND	ND	ND
1/02/95	MW6	550	18	0.92	2.0	1.8
4/03/95	MW6	6,600**	ND	ND	ND	ND
7/14/95	MW6	ND	ND	ND	ND	ND
4/28/93	MW7	110	2.8	1.3	1.4	1.7
7/23/93	MW7	790	23	3.3	28	5.4
10/05/93	MW7	360	10	1.2	0.91	0.99
1/03/94	MW7	ND	0.93	ND	0.75	1.9
4/02/94	MW7	360	2.0	ND	ND	0.80
7/05/94	MW7	ND	ND	ND	ND	ND
10/06/94	MW7	340	5.6	0.85	ND	1.2
1/02/95	MW7	ND	ND	ND	ND	ND
4/03/95	MW7	570	24	ND	3.4	5.8
7/14/95	MW7	ND	14	ND	ND	ND
4/28/93	MW8	450	18	1.8	1.8	1.4
7/23/93	MW8	260	5.1	ND	0.60	ND
10/05/93	MW8	120**	1.7	ND	ND	ND
1/03/94	MW8	ND	ND	ND	ND	ND
4/02/94	MW8	150	1.2	ND	ND	ND
7/05/94	MW8	730	17	ND	1.6	ND

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES  
WATER

<u>Date</u>	<u>Well #</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl-benzene</u>	<u>Xylenes</u>
10/06/94	MW8	140**	ND	ND	ND	ND
1/02/95	MW8	440	18	0.72	2.0	1.8
4/03/95	MW8	960	11	ND	ND	ND
7/14/95	MW8	280	4.2	2.6	1.1	3.3

\* 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 ( $\mu\text{g/L}$ ), unless otherwise indicated.

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



**TABLE 3**

**SUMMARY OF LABORATORY ANALYSES  
 WATER**

Date	Well #	TPH as Diesel	Chloroform	Tetrachloroethene	Trichloroethene
6/05/91	MW1	ND	7.8	2.9	1.3
9/30/91	MW1	ND	--	--	--
12/30/91	MW1	ND	6.4	2.1	0.9
4/02/92	MW1	94	7.1	2.6	1.4
6/30/92	MW1	120	9.5	2.2	1.3
9/15/92	MW1	ND	12	2.2	1.3
12/21/92	MW1	ND	12	1.4	0.83
4/28/93	MW1◆◆	470▲▲	12	0.89	0.85
7/23/93	MW1	ND	16	1.3	0.91
10/05/93	MW1	57▲	13	1.3	0.66
1/03/94	MW1*	ND	18	1.4	0.93
4/02/94	MW1	ND	15	1.1	0.68
1/03/94	MW4**	--	9.0	1.0	ND
1/03/94	MW8◆	--	1.5	1.2	ND

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TABLE 3 (Continued)

SUMMARY OF LABORATORY ANALYSES  
WATER

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- \* 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 make-up.
- \*\* Methyl tert butyl ether (MTBE) was detected at a concentration of 240 µg/L.
- ◆ 1,2-dichloroethane was detected at a concentration of 4.0 µg/L, and MTBE was detected at a concentration of 51 µg/L.
- ◆◆ 1,2-dichloroethane was detected at a concentration of 1.1 µg/L.
- ▲ 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

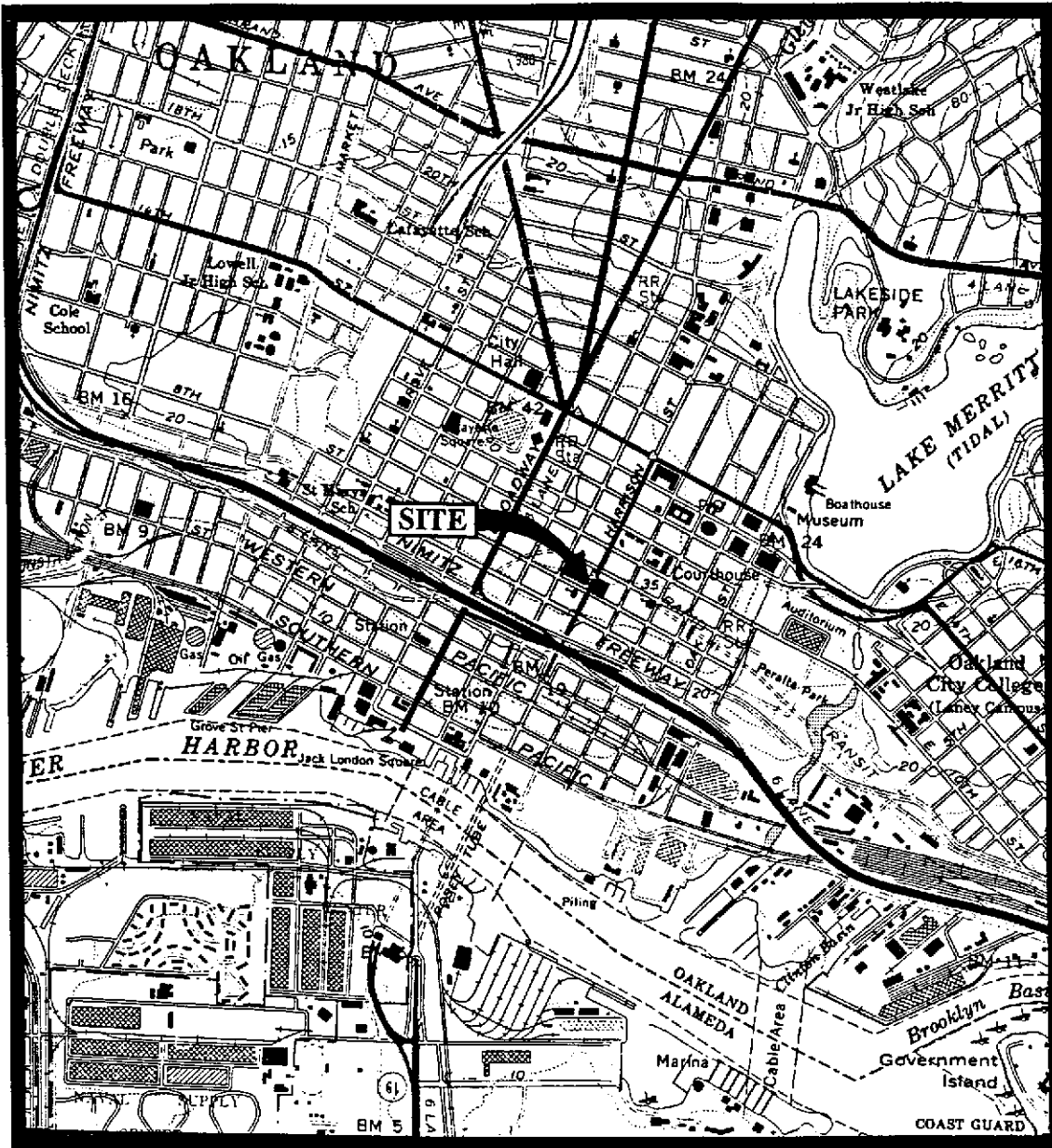
<u>Date</u>	<u>Well #</u>	<u>TOG</u>	<u>Cadmium</u>	<u>Chromium</u>	<u>Lead</u>	<u>Nickel</u>	<u>Zinc</u>
6/30/92	MW1	ND	ND	0.079	0.0090	0.10	0.087
4/02/92	MW1	ND	ND	0.015	0.016	ND	0.020
12/30/91	MW1	ND	ND	0.0078	0.0057	ND	0.046
9/30/91	MW1	ND	ND	0.019	ND	ND	0.11
6/05/91	MW1	ND	ND	0.0083	0.011	0.063	0.023

TOG = Total Oil & Grease.

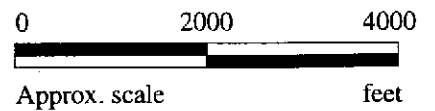
ND = Non-detectable.

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

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



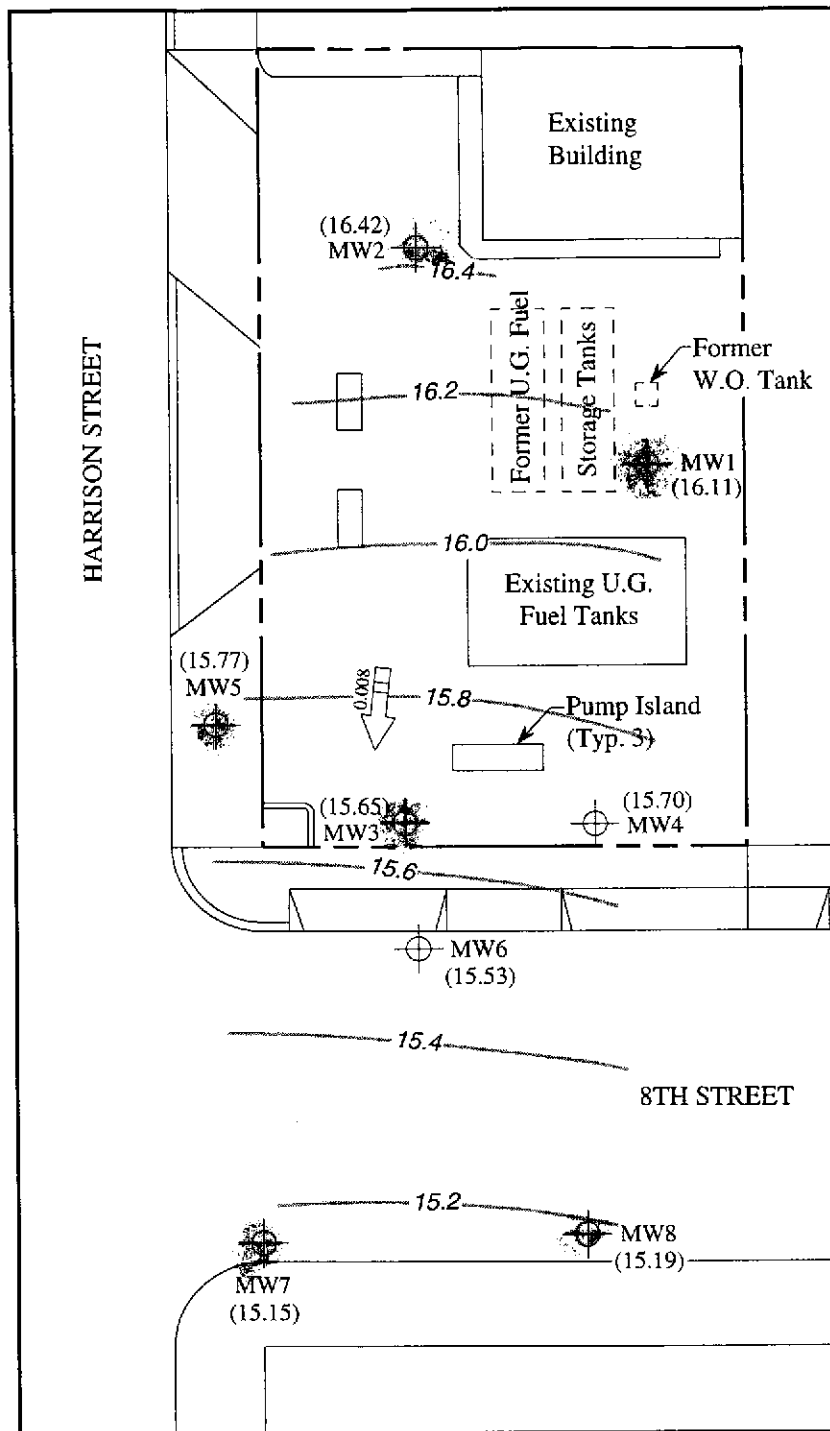
Base modified from 7.5 minute U.S.G.S. Oakland West Quadrangle  
(photorevised 1980)







**mpds** SERVICES, INCORPORATED

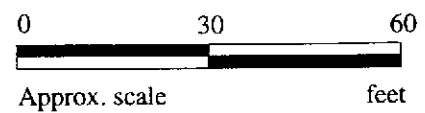
**UNOCAL SERVICE STATION #0752  
800 HARRISON STREET  
OAKLAND, CALIFORNIA**

**LOCATION  
MAP**

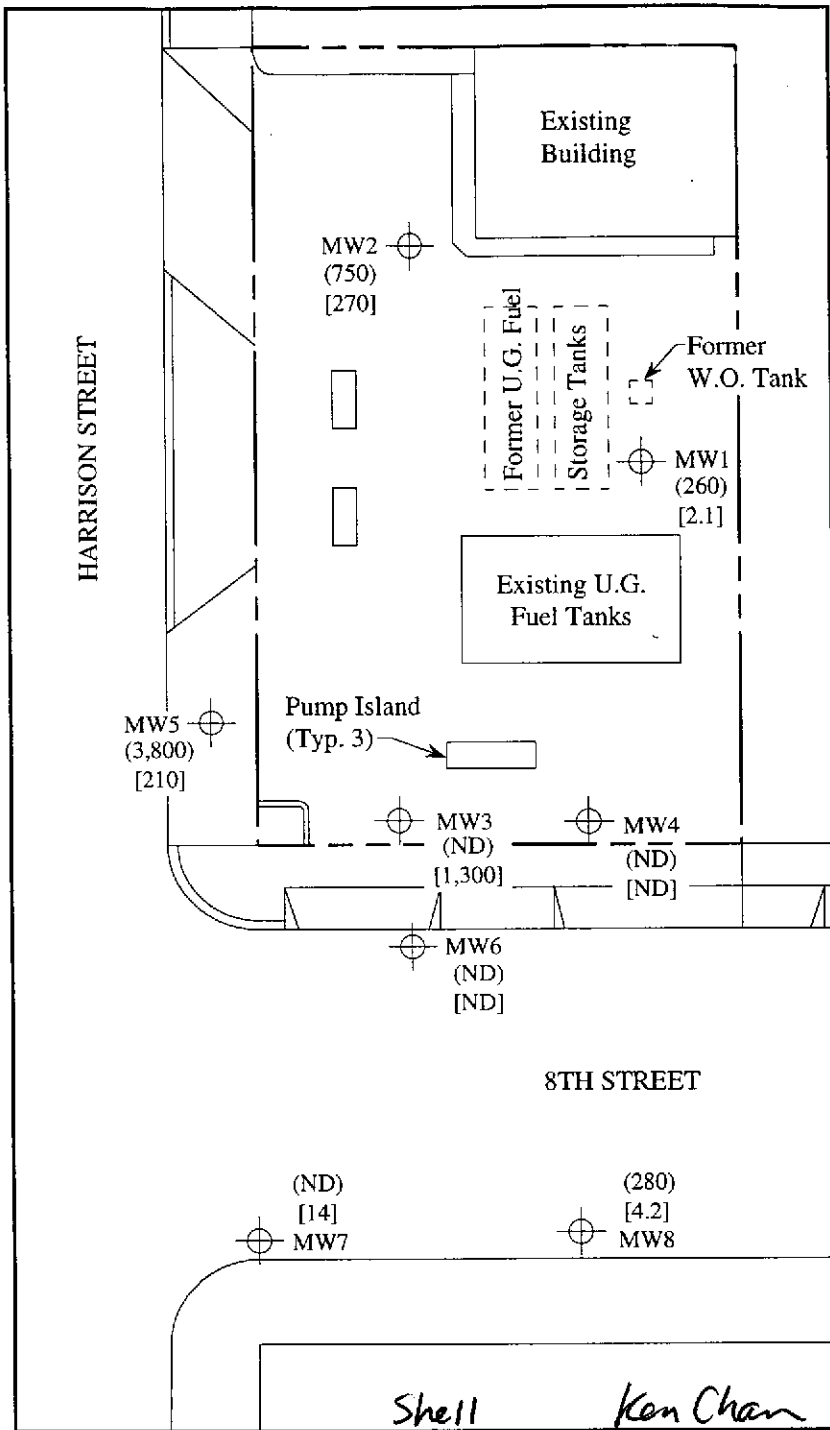


**LEGEND**

-  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

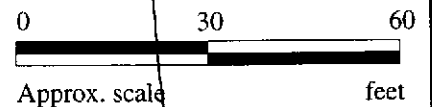


**POTENTIOMETRIC SURFACE MAP FOR THE JULY 14, 1995 MONITORING EVENT**



**LEGEND**

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



**PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON JULY 14, 1995**

**mpds** SERVICES, INCORPORATED

UNOCAL SERVICE STATION #0752  
800 HARRISON STREET  
OAKLAND, CALIFORNIA

FIGURE  
**2**

*Bo Gin former area*



MPDS Services 2401 Stanwell Dr., Ste. 300 Concord, CA 94520 Attention: Sarkis Karkarian	Client Project ID: Unocal #0752, 800 Harrison, Oakland Matrix Descript: Water Analysis Method: EPA 5030/8015 Mod./8020 First Sample #: 507-0686	Sampled: Jul 14, 1995 Received: Jul 14, 1995 Reported: Jul 28, 1995
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**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
507-0686	MW-1	260	2.1	ND	ND	1.2
507-0687	MW-2	750	270	ND	ND	13
507-0688	MW-3	ND	1,300	ND	ND	ND
507-0689	MW-4	ND	ND	ND	ND	ND
507-0690	MW-5	3,800	210	100	130	190
507-0691	MW-6	ND	ND	ND	ND	ND
507-0692	MW-7	ND	14	ND	ND	ND
507-0693	MW-8	280	4.2	2.6	1.1	3.3

<b>Detection Limits:</b>	<b>50</b>	<b>0.50</b>	<b>0.50</b>	<b>0.50</b>	<b>0.50</b>
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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 2401 Stanwell Dr., Ste. 300 Concord, CA 94520 Attention: Sarkis Karkarian	Client Project ID: Unocal #0752, 800 Harrison, Oakland Matrix Descript: Water Analysis Method: EPA 5030/8015 Mod./8020 First Sample #: 507-0686	Sampled: Jul 14, 1995 Received: Jul 14, 1995 Reported: Jul 28, 1995
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**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
507-0686	MW-1	Gasoline	1.0	7/17/95	HP-4	106
507-0687	MW-2	Gasoline	10	7/18/95	HP-4	109
507-0688	MW-3	--	200*	7/17/95	HP-4	107
507-0689	MW-4	--	1.0	7/17/95	HP-4	105
507-0690	MW-5	Gasoline	20	7/18/95	HP-4	115
507-0691	MW-6	--	20*	7/17/95	HP-4	105
507-0692	MW-7	--	20*	7/17/95	HP-4	105
507-0693	MW-8	Gasoline	1.0	7/18/95	HP-5	94

**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp  
Project Manager

Please Note:

\*Dilution is due to the presence of an unidentified peak in the MTBE range.







MPDS Services  
2401 Stanwell Dr., Ste. 300  
Concord, CA 94520  
Attention: Sarkis Karkarian

Client Project ID: Unocal #0752, 800 Harrison, Oakland  
Matrix: Liquid

QC Sample Group: 5070686-93

Reported: Jul 28, 1995

**QUALITY CONTROL DATA REPORT**

<b>ANALYTE</b>	Benzene	Toluene	Ethyl Benzene	Xylenes
<b>Method:</b>	EPA 8020	EPA 8020	EPA 8020	EPA 8020
<b>Analyst:</b>	A. Tuzon	A. Tuzon	A. Tuzon	A. Tuzon

<b>MS/MSD Batch#:</b>	5070698	5070698	5070698	5070698
<b>Date Prepared:</b>	7/17/95	7/17/95	7/17/95	7/17/95
<b>Date Analyzed:</b>	7/17/95	7/17/95	7/17/95	7/17/95
<b>Instrument I.D.#:</b>	HP-4	HP-4	HP-4	HP-4
<b>Conc. Spiked:</b>	20 µg/L	20 µg/L	20 µg/L	60 µg/L
<b>Matrix Spike % Recovery:</b>	100	110	115	115
<b>Matrix Spike Duplicate % Recovery:</b>	100	110	115	115
<b>Relative % Difference:</b>	0.0	0.0	0.0	0.0

<b>LCS Batch#:</b>	2LCS071795	2LCS071795	2LCS071795	2LCS071795
<b>Date Prepared:</b>	7/17/95	7/17/95	7/17/95	7/17/95
<b>Date Analyzed:</b>	7/17/95	7/17/95	7/17/95	7/17/95
<b>Instrument I.D.#:</b>	HP-4	HP-4	HP-4	HP-4
<b>LCS % Recovery:</b>	97	107	110	110

<b>% Recovery Control Limits:</b>	71-133	72-128	72-130	71-120
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**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: Sarkis Karkarian

Client Project ID: Unocal #0752, 800 Harrison, Oakland  
Matrix: Liquid

QC Sample Group: 5070686-93

Reported: Jul 28, 1995

**QUALITY CONTROL DATA REPORT**

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
<b>Method:</b>	EPA 8020	EPA 8020	EPA 8020	EPA 8020
<b>Analyst:</b>	M. Creusere	M. Creusere	M. Creusere	M. Creusere

<b>MS/MSD Batch#:</b>	5070681	5070681	5070681	5070681
<b>Date Prepared:</b>	7/18/95	7/18/95	7/18/95	7/18/95
<b>Date Analyzed:</b>	7/18/95	7/18/95	7/18/95	7/18/95
<b>Instrument I.D.#:</b>	HP-4	HP-4	HP-4	HP-4
<b>Conc. Spiked:</b>	20 µg/L	20 µg/L	20 µg/L	60 µg/L
<b>Matrix Spike % Recovery:</b>	85	105	110	112
<b>Matrix Spike Duplicate % Recovery:</b>	75	90	95	97
<b>Relative % Difference:</b>	13	15	15	14

<b>LCS Batch#:</b>	2LCS071895	2LCS071895	2LCS071895	2LCS071895
<b>Date Prepared:</b>	7/18/95	7/18/95	7/18/95	7/18/95
<b>Date Analyzed:</b>	7/18/95	7/18/95	7/18/95	7/18/95
<b>Instrument I.D.#:</b>	HP-4	HP-4	HP-4	HP-4
<b>LCS % Recovery:</b>	88	106	111	111

<b>% Recovery Control Limits:</b>	71-133	72-128	72-130	71-120
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**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: Sarkis Karkarian

Client Project ID: Unocal #0752, 800 Harrison, Oakland  
Matrix: Liquid

QC Sample Group: 5070686-93

Reported: Jul 28, 1995

### QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
<b>Method:</b>	EPA 8020	EPA 8020	EPA 8020	EPA 8020
<b>Analyst:</b>	M. Creusere	M. Creusere	M. Creusere	M. Creusere

<b>MS/MSD Batch#:</b>	5070801	5070801	5070801	5070801
<b>Date Prepared:</b>	7/18/95	7/18/95	7/18/95	7/18/95
<b>Date Analyzed:</b>	7/18/95	7/18/95	7/18/95	7/18/95
<b>Instrument I.D.#:</b>	HP-5	HP-5	HP-5	HP-5
<b>Conc. Spiked:</b>	20 µg/L	20 µg/L	20 µg/L	60 µg/L
<b>Matrix Spike % Recovery:</b>	85	95	100	100
<b>Matrix Spike Duplicate % Recovery:</b>	80	95	100	102
<b>Relative % Difference:</b>	6.1	0.0	0.0	2.0

<b>LCS Batch#:</b>	3LCS071895	3LCS071895	3LCS071895	3LCS071895
<b>Date Prepared:</b>	7/18/95	7/18/95	7/18/95	7/18/95
<b>Date Analyzed:</b>	7/18/95	7/18/95	7/18/95	7/18/95
<b>Instrument I.D.#:</b>	HP-5	HP-5	HP-5	HP-5
<b>LCS % Recovery:</b>	89	98	100	102

<b>% Recovery Control Limits:</b>	71-133	72-128	72-130	71-120
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**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



**CHAIN OF CUSTODY**

SAMPLER			UNOCAL					ANALYSES REQUESTED							TURN AROUND TIME:		
NICHOLAS FERROW			S/S # <u>0752</u> CITY: <u>OAKLAND</u>					TPH-GAS BTEX	TPH- DIESEL	TOG	8010						REGULAR
WITNESSING AGENCY			ADDRESS: <u>300 HARRISON ST.</u>														
SAMPLE ID NO.	DATE	TIME	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION										
MW-1	7/14/95	8:25	✓	✓		2 VOAS	WREN	✓			5070686	AB					
MW-2	"	9:45	✓	✓		"	"	✓			5070687						
MW-3	"	10:10	✓	✓		"	"	✓			5070688						
MW-4	"	7:30	✓	✓		"	"	✓			5070689						
MW-5	"	10:40	✓	✓		"	"	✓			5070690						
MW-6	"	8:00	✓	✓		"	"	✓			5070691						
MW-7	"	9:20	✓	✓		"	"	✓			5070692						
MW-8	"	8:50	✓	✓		"	"	✓			5070693	↓					
RELINQUISHED BY:			DATE/TIME		RECEIVED BY:			DATE/TIME		THE FOLLOWING <u>MUST BE</u> COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:							
(SIGNATURE)			7/14/95 12:25		(SIGNATURE)			7/14/95 12:25		1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? <u>Yes</u>							
(SIGNATURE)					(SIGNATURE)					2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? <u>Yes</u>							
(SIGNATURE)					(SIGNATURE)					3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? <u>No</u>							
(SIGNATURE)					(SIGNATURE)					4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? <u>Yes</u>							
(SIGNATURE)					(SIGNATURE)					SIGNATURE: <u>[Signature]</u> TITLE: <u>Analyst</u> DATE: <u>7/14/95</u>							

Note: All water containers to be sampled for TPHG/BTEX, 8010 & B240 are preserved with HCL. All water containers to be sampled for Lead or Metals are preserved with HNO3. All other containers are unpreserved.