

MONITORING  
PURGING  
DISPOSING  
SAMPLING

**MPDS**

SERVICES, INCORPORATED

March 8, 1996

# 3693

~~Ms. Cynthia Chapman~~  
Alameda County Health Care Services  
1131 Harbor Bay Parkway  
Alameda, California 94501

RE: Unocal Service Station #3135  
845 - 66th Avenue  
Oakland, California

Dear Ms. Chapman:

Per the request of the Unocal Corporation Project Manager, Ms. Tina R. Berry, enclosed please find our most recent data report for the above referenced site.

Should you have any questions regarding the reporting of data, please feel free to call our office at (510) 602-5120. Any other questions may be directed to the Project Manager at (510) 277-2321.

Sincerely,

MPDS Services, Inc.



Jarrel F. Crider

/jfc

Enclosure

cc: Ms. Tina R. Berry

MONITORING  
PURGING  
DISPOSING  
SAMPLING

**MPDS**

SERVICES, INCORPORATED

January 2, 1996

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

103108

Attention: Ms. Tina R. Berry

RE: Quarterly Data Report  
Unocal Service Station #3135  
845 66th Avenue  
Oakland, California

94621

Dear Ms. Berry:

In reference to our Quarterly Data Report (MPDS-UN3135-08) dated December 8, 1995, please replace Figure 2 with the attached corrected figure.

Should you have any questions, please do not hesitate to contact me at (510) 602-5120.

Sincerely,

MPDS Services, Inc.



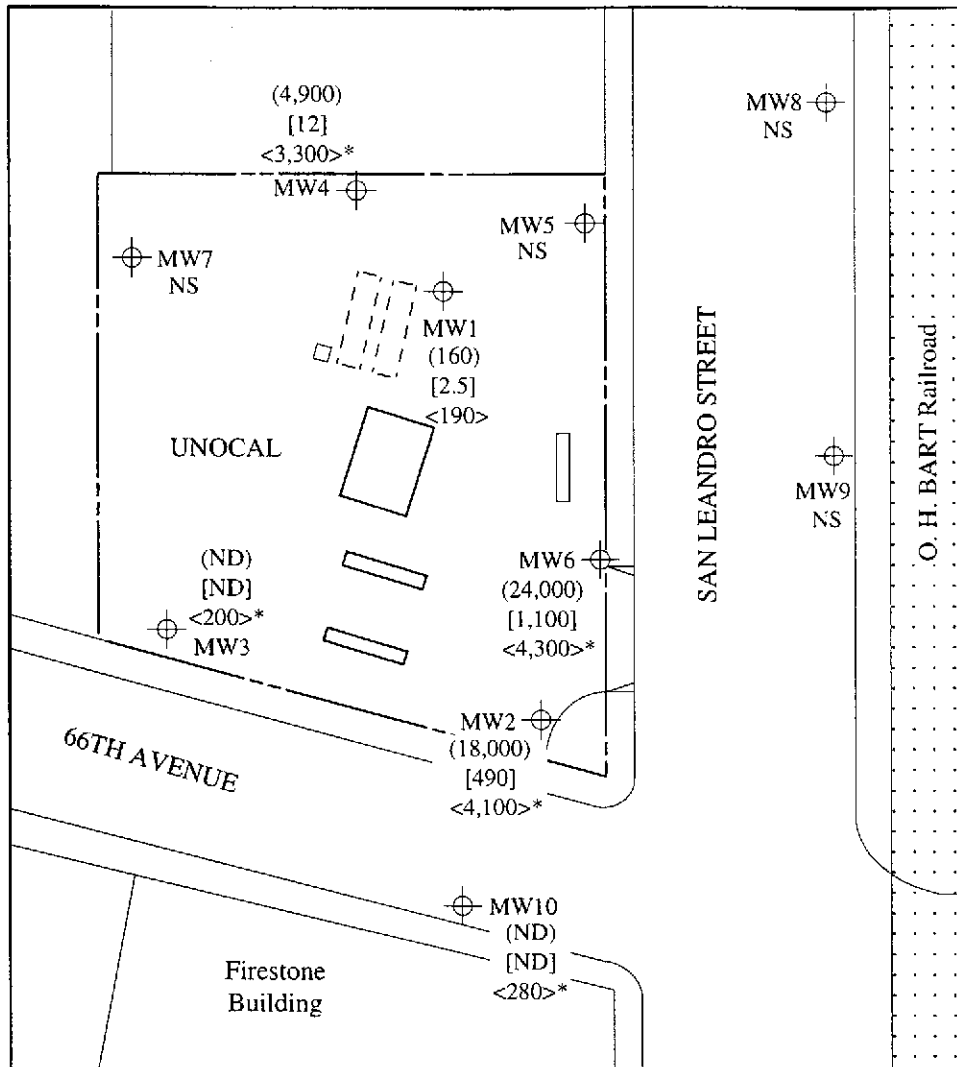
Jarrel F. Crider

/jfc

Enclosure

cc: Mr. Robert H. Kezerian, Kaprealian Engineering, Inc.  
Ms. Cynthia Chapman, Alameda County Health Care Services.

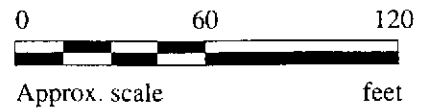
55 JAN -3 PM 1:20  
ENVIRONMENTAL  
PROTECTION



**LEGEND**

- ⊕ Monitoring well
- ( ) Concentration of TPH as gasoline in µg/L
- [ ] Concentration of benzene in µg/L
- <> Concentration of TPH as diesel in µg/L
- ND Non-detectable, NS Not sampled

\* The lab reported that the hydrocarbons detected did not appear to be diesel.



**PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON NOVEMBER 1, 1995**

MPDS-UN3135-09  
February 23, 1996

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 #3135  
845 - 66th Avenue  
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 February 1, 1996. Prior to sampling, the wells were each purged of between 10 and 14.5 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 Table 2. The concentrations of Total Petroleum Hydrocarbons (TPH) as gasoline, TPH as diesel, and benzene detected in the ground water samples collected this quarter 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. Cynthia Chapman of the Alameda County Health Care Services Agency.

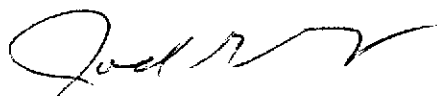
If you have any questions regarding this report, please do not hesitate to call Mr. Joel G. Greger at (510) 602-5120.

Sincerely,

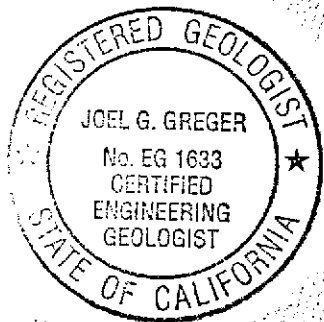
MPDS Services, Inc.



Haig (Gary) Tejirian  
Senior Staff Geologist



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



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

/bp

Attachments: Tables 1 & 2  
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**

Well #	Ground Water Elevation (feet)	Depth to Water (feet)◆	Total Well Depth (feet)◆	Product Thickness (feet)	Sheen	Water Purged (gallons)
--------	-------------------------------------	------------------------------	--------------------------------	--------------------------------	-------	------------------------------

**(Monitored and Sampled on February 1, 1996)**

MW1	-1.23	6.22	22.70	0	No	11.5
MW2	-1.00	4.57	22.54	0	No	12.5
MW3	-1.17	4.29	21.66	0	No	12
MW4	0.29	4.64	25.17	0	No	14
MW5	-1.18	5.45	26.09	0	No	14.5
MW6	-1.06	5.09	25.81	0	No	14.5
MW7	-1.35	5.77	19.87	0	No	10
MW8	-1.09	5.52	23.54	0	No	12.5
MW9	-0.54	5.14	23.10	0	No	12.5
MW10	-1.62	4.31	23.10	0	No	13

**(Monitored and Sampled on November 1, 1995)**

MW1	-4.09	9.08	22.75	0	No	9.5
MW2	-3.73	7.30	22.30	0	No	10.5
MW3	-3.53	6.65	21.71	0	No	11
MW4	-4.23	9.16	25.13	0	No	11
MW5*	-4.13	8.40	26.11	0	--	0
MW6	-4.07	8.10	25.85	0	No	12.5
MW7*	-4.16	8.58	19.91	0	--	0
MW8*	-4.55	8.98	23.60	0	--	0
MW9*	-4.06	8.66	23.15	0	--	0
MW10	-4.26	6.95	23.15	0	No	11.5

**(Monitored and Sampled on August 1, 1995)**

MW1	-2.71	7.70	22.71	0	No	11
MW2	-2.59	6.16	22.55	0	No	12
MW3	-1.98	5.10	21.70	0	No	12
MW4	-2.85	7.78	25.21	0	No	12
MW5	-2.73	7.00	26.12	0	No	13
MW6	-2.73	6.76	24.80	0	No	13
MW7	-3.20	7.62	19.88	0	No	10
MW8	-2.68	7.11	23.11	0	No	11
MW9	-2.70	7.30	23.10	0	No	11
MW10	-3.10	5.79	23.11	0	No	12

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 May 2, 1995)

MW1	-1.58	6.57	22.71	0	No	11
MW2	-1.46	5.03	22.55	0	No	12
MW3	-0.99	4.11	21.67	0	No	12
MW4	-0.81	5.74	25.08	0	No	13.5
MW5*	-1.58	5.85	26.11	0	--	0
MW6	-1.55	5.58	25.80	0	No	14
MW7*	-1.31	5.73	19.86	0	--	0
MW8*	-1.30	5.73	23.10	0	--	0
MW9*	-1.26	5.86	23.08	0	--	0
MW10	-2.11	4.80	23.10	0	No	12.5

<u>Well #</u>	<u>Well Casing Elevation (feet)**</u>
MW1	4.99
MW2	3.57
MW3	3.12
MW4	4.93
MW5	4.27
MW6	4.03
MW7	4.42
MW8	4.43
MW9	4.60
MW10	2.69

◆ The depth to water level and total well depth measurements were taken from the top of the well casings.

\* Monitored only.

\*\* The elevations of the top of the well casings are relative to Mean Sea Level (MSL), per the City of Oakland Benchmark No. 3881 (elevation = 4.72 feet MSL).

-- Sheen determination was not performed.

**TABLE 2**

**SUMMARY OF LABORATORY ANALYSES  
 WATER**

Well #	Date	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE
MW1	2/01/96	90♦	240	8.7	2.0	ND	0.66	250
	11/01/95	190♦♦	160	2.5	ND	0.82	0.57	280
	8/01/95	86♦	190	4.0	ND	3.7	2.4	--
	5/02/95	120♦	460	14	ND	14	13	--
	2/01/95	ND	120	1.7	ND	ND	ND	--
	11/07/94	270♦	890	16	ND	31	21	--
	8/02/94	130♦♦	700	13	0.62	2.0	3.6	--
	5/05/94	ND	96*	ND	ND	ND	ND	--
	2/10/94	ND	170*	0.90	2.3	ND	ND	--
	11/11/93	160♦♦	930	7.3	ND	25	19	--
	8/13/93	170♦♦	860	3.5	ND	17	20	--
	5/17/93	490♦♦	960**	39	ND	57	60	--
	2/03/93	ND	94**	ND	ND	1.4	1.6	--
	11/03/92	400♦	1,100	28	ND	80	78	--
	8/03/92	220♦	980	22	0.69	77	82	--
	5/05/92	120	310	5.7	ND	7.1	15	--
	2/07/92	ND	220	2.1	ND	10	16	--
	11/05/91	260	4,900	80	ND	150	160	--
	8/05/91	200	1,200	95	6.2	230	80	--
	2/21/91	690	26,000	280	39	1,200	1,900	--
	11/26/90	--	2,900	160	2.3	330	320	--
	8/28/90	--	1,700	140	1.4	180	150	--
Duplicate	8/28/90	--	2,600	180	3.0	810	270	--
	5/11/90	--	22,000	590	42	1,200	3,600	--
MW2	2/01/96	5,500♦	22,000	470	77	1,400	5,900	ND
	11/01/95	4,100♦	18,000	490	110	1,300	4,600	190
	8/01/95	2,900♦	13,000	700	140	1,400	5,500	--
	5/02/95	2,300♦♦	5,600	150	ND	150	180	--
	2/01/95	1,800♦	9,300	300	210	630	2,600	--
	11/07/94	3,100♦♦	49,000	1,700	2,000	3,000	10,000	--
	8/02/94	8,500♦	32,000	2,400	2,200	2,900	12,000	--
	5/05/94	3,100♦♦	36,000	3,200	670	2,700	9,600	--
	2/10/94	2,000♦♦	12,000	1,000	17	880	940	--
	11/11/93	7,000♦♦	36,000	4,800	970	3,000	8,100	--
	8/13/93	2,800♦♦	44,000	5,100	600	2,900	8,500	--
	5/17/93	5,500♦♦	46,000	4,400	510	2,900	9,900	--
	2/03/93▲	3,900♦	9,300	780	68	830	1,200	--
	11/03/92▲	9,600♦	40,000	5,600	130	3,000	6,100	--
	8/03/92▲	3,300♦♦	37,000	4,500	480	3,300	9,700	--
	5/05/92▲	4,600	26,000	2,300	110	2,700	6,900	--
	2/07/92▲	2,300	11,000	1,400	30	1,900	1,400	--
	11/05/91▲▲	3,900	110,000	4,200	200	3,400	8,600	--
	8/05/91▲	4,200	33,000	2,900	190	3,400	7,900	--
	2/21/91▲	7,000	3,400	160	61	200	490	--



**TABLE 2 (Continued)**

**SUMMARY OF LABORATORY ANALYSES  
 WATER**

Well #	Date	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE
MW2 (Cont)	11/26/90▲	3,800	15,000	1,600	450	1,100	2,100	--
	8/28/90▲	3,100	27,000	2,600	1,300	1,900	3,000	--
	5/11/90	--	65,000	3,300	3,300	4,100	12,000	--
MW3	2/01/96	160♦	ND	ND	ND	ND	ND	190
	11/01/95	200♦	ND	ND	ND	ND	ND	200
	8/01/95	ND	ND	ND	ND	ND	ND	--
	5/02/95	56	360*	ND	ND	ND	ND	--
	2/01/95	ND	100*	ND	ND	ND	ND	--
	11/07/94	ND	94*	ND	ND	ND	ND	--
	8/02/94	76	150*	ND	ND	ND	ND	--
	5/05/94	66	62*	ND	ND	ND	ND	--
	2/10/94	50♦♦	ND	ND	ND	ND	0.84	--
	11/11/93	51	ND	ND	ND	ND	ND	--
	8/13/93	ND	ND	ND	ND	ND	ND	--
	5/17/93	53	ND	ND	ND	ND	ND	--
	2/03/93	ND	ND	ND	ND	ND	ND	--
	11/03/92	52♦	ND	ND	ND	ND	ND	--
	8/03/92	58	ND	ND	ND	ND	ND	--
	5/05/92	56	ND	ND	ND	0.43	1.8	--
	2/07/92	ND	ND	ND	ND	ND	ND	--
	11/05/91	ND	31	ND	ND	ND	0.65	--
	8/05/91	63	ND	ND	ND	ND	ND	--
	2/21/91	--	ND	ND	ND	ND	0.64	--
11/26/90	--	ND	ND	ND	ND	ND	--	
8/28/90	--	ND	ND	ND	ND	0.70	--	
5/11/90	--	ND	ND	ND	ND	ND	--	
MW4	2/01/96	ND	91	2.7	ND	1.2	6.8	7.8
	11/01/95	3,300♦	4,900	12	ND	190	710	210
	8/01/95	3,400♦	7,900	21	ND	210	860	--
	5/02/95	2,500♦	5,400	36	ND	130	710	--
	2/01/95	ND	ND	ND	ND	ND	ND	--
	11/07/94	2,200♦	20,000	84	17	1,500	3,000	--
	8/02/94	2,500♦♦	17,000	38	ND	1,800	4,300	--
	5/05/94	2,000♦♦	6,900	17	ND	480	1,300	--
	2/10/94	170♦	830	3.5	1.4	36	80	--
	11/11/93	4,000♦	16,000	110	12	1,800	3,800	--
	8/13/93	2,000♦♦	19,000	ND	ND	1,600	4,100	--
	5/17/93	3,100♦	2,500	ND	ND	170	410	--
	2/03/93	720♦♦	370	2.6	ND	1.2	53	--
	11/03/92	8,300♦	36,000	69	ND	3,000	7,400	--
	8/03/92	2,400♦	24,000	61	ND	2,100	5,400	--
	5/05/92	3,200	15,000	82	12	2,000	5,600	--
	2/07/92	2,300	8,100	24	4.9	1,800	3,200	--
	11/05/91	7,700	140,000	320	ND	4,800	13,000	--
	8/05/91	6,200	37,000	310	70	3,600	9,700	--

**TABLE 2 (Continued)**

**SUMMARY OF LABORATORY ANALYSES  
 WATER**

Well #	Date	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE
MW4	2/21/91	4,100	33,000	210	21	3,800	12,000	--
(Cont)	11/26/90	--	49,000	360	36	3,800	11,000	--
	8/28/90	--	62,000	810	72	4,400	4,600	--
MW5	2/01/96	ND	ND	ND	ND	ND	ND	0.72
	11/01/95	SAMPLED SEMI-ANNUALLY						
	8/01/95	ND	ND	ND	ND	ND	ND	--
	5/02/95	SAMPLED SEMI-ANNUALLY						
	2/01/95	ND	ND	ND	ND	ND	ND	--
	11/07/94	SAMPLED SEMI-ANNUALLY						
	8/02/94	ND	ND	ND	ND	ND	ND	--
	5/05/94	SAMPLED SEMI-ANNUALLY						
	2/10/94	ND	ND	ND	ND	ND	0.59	--
	11/11/93	ND	ND	ND	ND	ND	ND	--
	8/13/93	ND	ND	ND	ND	ND	ND	--
	5/17/93	ND	ND	ND	ND	ND	ND	--
	2/03/93	ND	ND	ND	ND	ND	ND	--
	11/03/92	ND	ND	ND	ND	ND	ND	--
	8/03/92	ND	ND	ND	ND	ND	ND	--
	5/05/92	72	ND	ND	ND	0.42	1.4	--
	2/07/92	ND	ND	ND	ND	0.36	0.94	--
	11/05/91	ND	ND	ND	ND	ND	ND	--
	8/05/91	ND	ND	ND	ND	ND	ND	--
	2/21/91	--	56	ND	ND	ND	4.7	--
	11/26/90	--	ND	ND	ND	ND	ND	--
	8/28/90	--	ND	ND	ND	ND	1.2	--
MW6	2/01/96	3,700♦	58,000	2,700	1,800	4,200	17,000	ND
	11/01/95	4,300♦	24,000	1,100	200	1,900	6,000	170
	8/01/95	2,800♦	23,000	1,400	510	940	7,300	--
	5/02/95	3,600♦♦	59,000	4,700	4,400	4,000	18,000	--
	2/01/95	2,700♦♦	55,000	7,700	9,100	4,500	20,000	--
	11/07/94	770♦	23,000	3,800	970	1,400	4,700	--
	8/02/94	2,400♦♦	28,000	2,200	940	1,600	7,500	--
	5/05/94	630♦♦	2,600	430	99	24	420	--
	2/10/94	ND	ND	3.5	ND	1.5	ND	--
	11/11/93	650♦♦	3,000	470	ND	220	270	--
	8/13/93	440♦♦	2,300	330	ND	95	40	--
	5/17/93	1,400♦	4,900	890	46	210	530	--
	2/03/93▲	ND	ND	1.2	ND	ND	ND	--
	11/03/92	220♦	920	45	0.76	12	110	--
	8/03/92	170♦	1,100	180	1.1	62	78	--
	5/05/92▲	47	ND	ND	ND	ND	1.3	--
	2/07/92▲	ND	180	22	0.68	22	20	--
	11/05/91▲	300	7,100	200	ND	190	580	--
	8/05/91▲	130	860	130	11	92	150	--

**TABLE 2 (Continued)**

SUMMARY OF LABORATORY ANALYSES  
 WATER

Well #	Date	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE
MW6	2/21/91▲	160	750	77	14	23	140	--
(Cont)	11/26/90▲	320	4,800	1,000	200	340	650	--
Duplicate	11/26/90	--	4,000	800	120	250	440	--
	8/28/90▲▲	1,000	12,000	1,700	1,400	230	2,100	--
MW7	2/01/96	96♦	ND	ND	ND	ND	ND	1.4
	11/01/95	SAMPLED	SEMI-ANNUALLY					
	8/01/95	ND	ND	ND	ND	ND	ND	--
	5/02/95	SAMPLED	SEMI-ANNUALLY					
	2/01/95	ND	ND	ND	ND	ND	ND	--
	11/07/94	SAMPLED	SEMI-ANNUALLY					
	8/02/94	ND	ND	ND	ND	ND	0.63	--
	5/05/94	SAMPLED	SEMI-ANNUALLY					
	2/10/94	ND	ND	ND	ND	ND	ND	--
	11/11/93	66	ND	ND	ND	ND	ND	--
	8/13/93	ND	ND	ND	ND	ND	ND	--
	5/17/93	ND	ND	ND	ND	ND	ND	--
MW8	2/01/96	110♦	ND	ND	ND	ND	ND	1.3
	11/01/95	SAMPLED	SEMI-ANNUALLY					
	8/01/95	ND	ND	ND	ND	ND	ND	--
	5/02/95	SAMPLED	SEMI-ANNUALLY					
	2/01/95	ND	ND	ND	ND	ND	ND	--
	11/07/94	SAMPLED	SEMI-ANNUALLY					
	8/02/94	ND	ND	ND	ND	ND	ND	--
	5/05/94	SAMPLED	SEMI-ANNUALLY					
	2/10/94	ND	ND	ND	ND	ND	ND	--
	11/11/93	ND	ND	ND	ND	ND	ND	--
	8/13/93	ND	ND	ND	ND	ND	ND	--
	5/17/93	ND	ND	ND	ND	ND	ND	--
	2/03/93	ND	ND	ND	ND	ND	ND	--
	11/03/92	ND	ND	ND	ND	ND	ND	--
MW9	2/01/96	76♦	ND	ND	ND	ND	ND	ND
	11/01/95	SAMPLED	SEMI-ANNUALLY					
	8/01/95	ND	ND	ND	ND	ND	ND	--
	5/02/95	SAMPLED	SEMI-ANNUALLY					
	2/01/95	65♦	ND	ND	ND	ND	ND	--
	11/07/94	SAMPLED	SEMI-ANNUALLY					
	8/02/94	ND	ND	ND	ND	ND	ND	--
	5/05/94	SAMPLED	SEMI-ANNUALLY					
	2/10/94	ND	ND	ND	ND	ND	ND	--
	11/11/93	ND	ND	ND	ND	ND	ND	--
	8/13/93	ND	ND	ND	ND	ND	ND	--
	5/17/93	ND	ND	ND	ND	ND	ND	--

**TABLE 2 (Continued)**

SUMMARY OF LABORATORY ANALYSES  
 WATER

Well #	Date	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE
MW9	2/03/93	ND	ND	ND	ND	ND	ND	--
(Cont)	11/03/92	ND	ND	ND	ND	ND	ND	--
MW10	2/01/96	320♦	ND	ND	ND	ND	ND	1,300
	11/01/95	280	ND	ND	ND	ND	ND	830
	8/01/95	260	ND	ND	ND	ND	ND	--
	5/02/95	99	840*	ND	ND	ND	9.5	--
	2/01/95	72♦	560*	ND	ND	ND	ND	--
	11/07/94	120♦♦	1,100*	ND	ND	ND	ND	--
	8/02/94	110	95*	ND	ND	ND	ND	--
	5/05/94	55	1,000*	ND	ND	ND	ND	--
	2/10/94	71	1,480*	ND	ND	ND	ND	--
	11/11/93	88♦♦	1,600*	ND	ND	ND	ND	--
	8/13/93	97♦♦	1,500**	ND	ND	41	21	--
	5/17/93	ND	1,200*	ND	ND	ND	ND	--
	2/03/93	ND	1,200*	ND	ND	ND	ND	--
	11/03/92	160♦	740	11	2.1	32	56	--
MWD Duplicate (MW6)	2/21/91	--	740	74	12	33	140	--

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

\*\* 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 diesel.

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

▲ Total Oil and Grease (TOG) was non-detectable.

▲▲ TOG was detected at a concentration of 78 µg/L (Nov. 91)  
 TOG was detected at a concentration of 16 µg/L (Aug. 90)

ND = Non-detectable.

-- Indicates analysis was not performed.

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

---

---

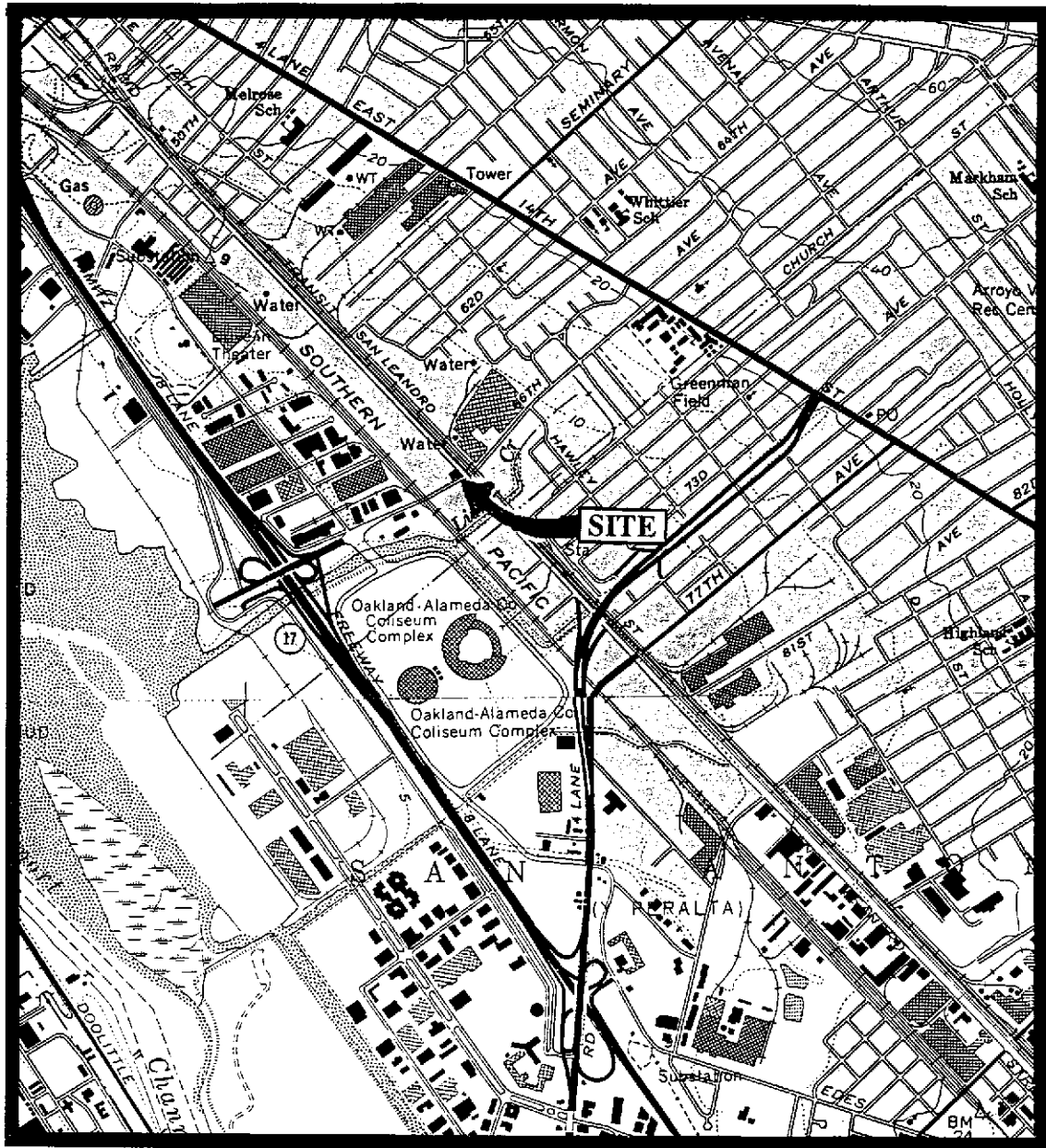
**TABLE 2 (Continued)**

SUMMARY OF LABORATORY ANALYSES  
WATER

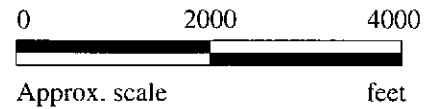
---

---

- Note:** - The detection limit for results reported as ND by Sequoia Analytical Laboratory is equal to the stated detection 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 February 10, 1994, were provided by Kaprealian Engineering, Inc.



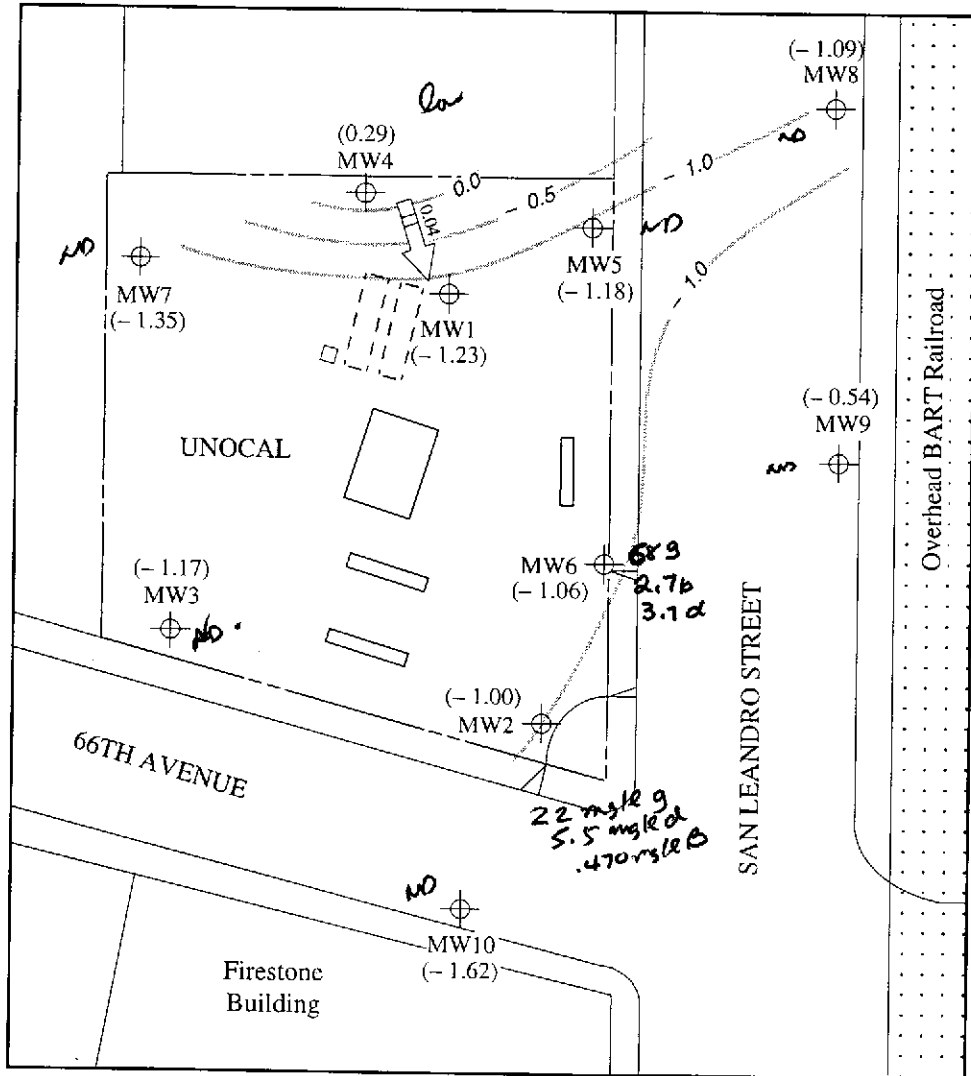
Base modified from 7.5 minute U.S.G.S.  
 Oakland East and San Leandro Quadrangles  
 (both photorevised 1980)



**MPDS** SERVICES, INCORPORATED

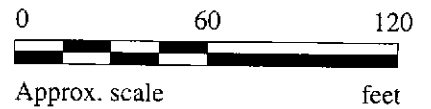
**UNOCAL SERVICE STATION #3135  
 845 - 66TH AVENUE  
 OAKLAND, CALIFORNIA**

**LOCATION  
 MAP**



**LEGEND**

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

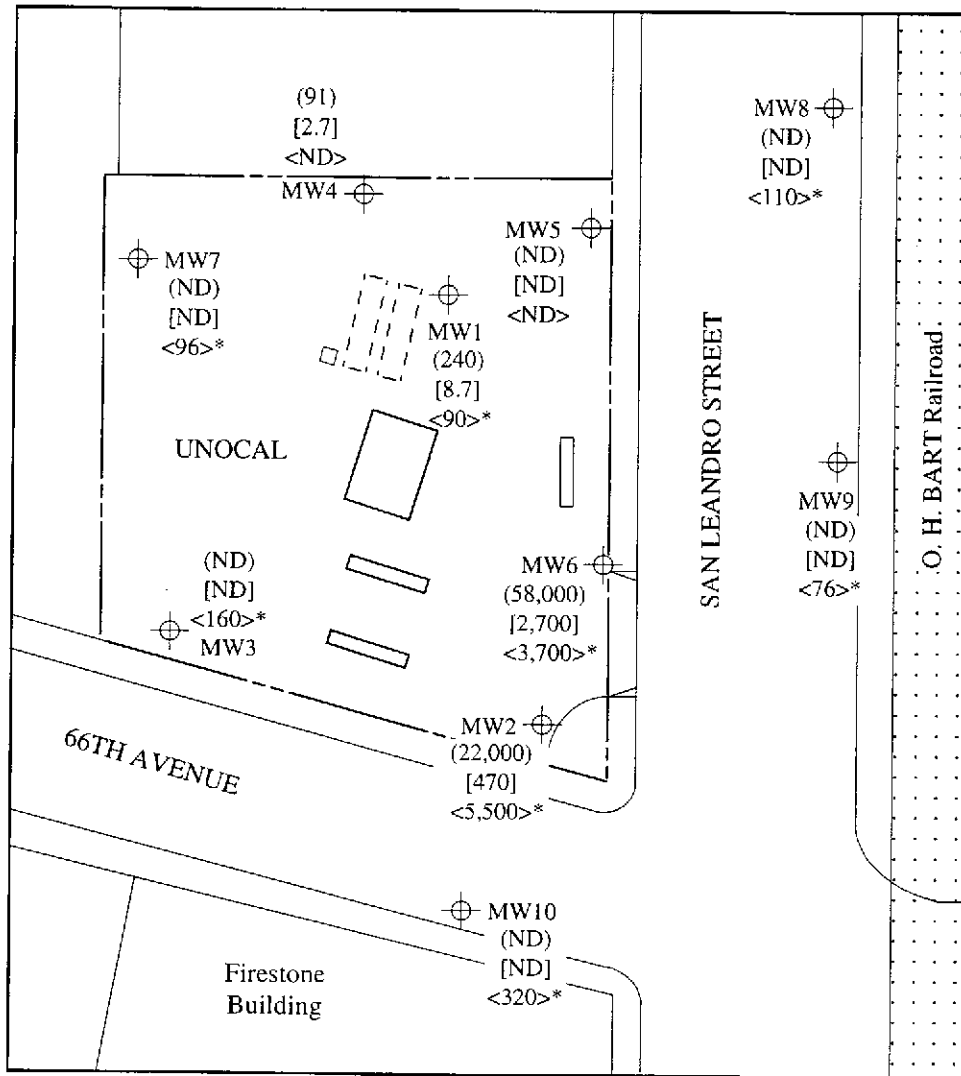


**POTENTIOMETRIC SURFACE MAP FOR THE FEBRUARY 1, 1996 MONITORING EVENT**

**MPDS**  
SERVICES, INCORPORATED

UNOCAL SERVICE STATION #3135  
845 - 66TH AVENUE  
OAKLAND, CALIFORNIA

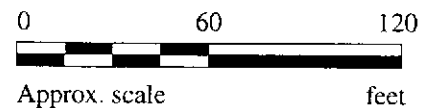
FIGURE  
**1**



**LEGEND**

- ⊕ Monitoring well
- ( ) Concentration of TPH as gasoline in µg/L
- [ ] Concentration of benzene in µg/L
- <> Concentration of TPH as diesel in µg/L
- ND Non-detectable, NS Not sampled

\* The lab reported that the hydrocarbons detected did not appear to be diesel.



**PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON FEBRUARY 1, 1996**



**UNOCAL SERVICE STATION #3135  
845 - 66TH AVENUE  
OAKLAND, CALIFORNIA**

**FIGURE  
2**





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

Client Project ID: Unocal #3135, 845 - 66th Ave., Oakland  
Matrix Descript: Water  
Analysis Method: EPA 5030/8015 Mod./8020  
First Sample #: 602-0094

Sampled: Feb 1, 1996  
Received: Feb 1, 1996  
Reported: Feb 16, 1996

**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
602-0094	MW-1	240	8.7	2.0	ND	0.66
602-0095	MW-2	22,000	470	77	1,400	5,900
602-0096	MW-3	ND	ND	ND	ND	ND
602-0097	MW-4	91	2.7	ND	1.2	6.8
602-0098	MW-5	ND	ND	ND	ND	ND
602-0099	MW-6	58,000	2,700	1,800	4,200	17,000
602-0100	MW-7	ND	ND	ND	ND	ND
602-0101	MW-8	ND	ND	ND	ND	ND
602-0102	MW-9	ND	ND	ND	ND	ND
602-0103	MW-10	ND	ND	ND	ND	ND

<b>Detection Limits:</b>	<b>50</b>	<b>0.50</b>	<b>0.50</b>	<b>0.50</b>	<b>0.50</b>
--------------------------	-----------	-------------	-------------	-------------	-------------

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: Jarrel Crider

Client Project ID: Unocal #3135, 845 - 66th Ave., Oakland  
Matrix Descript: Water  
Analysis Method: EPA 5030/8015 Mod./8020  
First Sample #: 602-0094

Sampled: Feb 1, 1996  
Received: Feb 1, 1996  
Reported: Feb 16, 1996

**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
602-0094	MW-1	Gasoline	1.0	2/12/96	HP-5	111
602-0095	MW-2	Gasoline	100	2/14/96	HP-5	88
602-0096	MW-3	--	1.0	2/12/96	HP-5	87
602-0097	MW-4	Gasoline	1.0	2/13/96	HP-9	96
602-0098	MW-5	--	1.0	2/12/96	HP-5	92
602-0099	MW-6	Gasoline	200	2/14/96	HP-5	87
602-0100	MW-7	--	1.0	2/13/96	HP-9	98
602-0101	MW-8	--	1.0	2/13/96	HP-9	109
602-0102	MW-9	--	1.0	2/12/96	HP-5	90
602-0103	MW-10	--	1.0	2/12/96	HP-5	82

**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: Unocal #3135, 845 - 66th Ave., Oakland  
Sample Descript: Water  
Analysis for: MTBE (Modified EPA 8020)  
First Sample #: 602-0094

Sampled: Feb 1, 1996  
Received: Feb 1, 1996  
Analyzed: Feb 12-14, 1996  
Reported: Feb 16, 1996

**LABORATORY ANALYSIS FOR: MTBE (Modified EPA 8020)**

Sample Number	Sample Description	Detection Limit µg/L	Sample Result µg/L
602-0094	MW-1	0.60	250
602-0095	MW-2	60	N.D.
602-0096	MW-3	0.60	190
602-0097	MW-4	0.60	7.8
602-0098	MW-5	0.60	0.72
602-0099	MW-6	120	N.D.
602-0100	MW-7	0.60	1.4
602-0101	MW-8	0.60	1.3
602-0102	MW-9	0.60	N.D.
602-0103	MW-10	12	1,300

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: Unocal #3135, 845 - 66th Ave., Oakland  
Sample Matrix: Water  
Analysis Method: EPA 3510/8015 Mod.  
First Sample #: 602-0094

Sampled: Feb 1, 1996  
Received: Feb 1, 1996  
Reported: Feb 16, 1996

**TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS**

Analyte	Reporting Limit µg/L	Sample I.D. 602-0094 MW-1*	Sample I.D. 602-0095 MW-2*	Sample I.D. 602-0096 MW-3*	Sample I.D. 602-0097 MW-4	Sample I.D. 602-0098 MW-5	Sample I.D. 602-0099 MW-6 *
Extractable Hydrocarbons	50	90	5500	160	N.D.	N.D.	3700
Chromatogram Pattern:		Unidentified Hydrocarbons >C16	Unidentified Hydrocarbons <C15	Unidentified Hydrocarbons >C16	--	--	Unidentified Hydrocarbons <C15 >C16

**Quality Control Data**

Report Limit Multiplication Factor:	1.0	10	1.0	1.0	1.0	1.0
Date Extracted:	2/5/96	2/5/96	2/5/96	2/5/96	2/5/96	2/5/96
Date Analyzed:	2/5/96	2/5/96	2/5/96	2/5/96	2/5/96	2/5/96
Instrument Identification:	HP-3A	HP-3A	HP-3A	HP-3A	HP-3A	HP-3A

Extractable Hydrocarbons are quantitated against a fresh diesel standard.  
Analytes reported as N.D. were not detected above the stated reporting limit.

**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp  
Project Manager

**Please Note:**

\* This sample does not appear to contain diesel. "Unidentified Hydrocarbons >C16" refers to unidentified peaks in the total oil and grease range; "<C15" are probably gasoline.





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

Client Project ID: Unocal #3135, 845 - 66th Ave., Oakland  
Sample Matrix: Water  
Analysis Method: EPA 3510/8015 Mod.  
First Sample #: 602-0100

Sampled: Feb 1, 1996  
Received: Feb 1, 1996  
Reported: Feb 16, 1996

**TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS**

Analyte	Reporting Limit µg/L	Sample I.D. 602-0100 MW-7*	Sample I.D. 602-0101 MW-8*	Sample I.D. 602-0102 MW-9*	Sample I.D. 602-0103 MW-10*
Extractable Hydrocarbons	50	96	110	76	320

Chromatogram Pattern:

Unidentified Hydrocarbons >C16	Unidentified Hydrocarbons >C16	Unidentified Hydrocarbons >C16	Unidentified Hydrocarbons >C16
-----------------------------------	-----------------------------------	-----------------------------------	-----------------------------------

**Quality Control Data**

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0
Date Extracted:	2/5/96	2/5/96	2/5/96	2/5/96
Date Analyzed:	2/5/96	2/5/96	2/5/96	2/5/96
Instrument Identification:	HP-3A	HP-3A	HP-3B	HP-3B

Extractable Hydrocarbons are quantitated against a fresh diesel standard.  
Analytes reported as N.D. were not detected above the stated reporting limit.

**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp  
Project Manager

Please Note:

\* This sample does not appear to contain diesel. "Unidentified Hydrocarbons >C16" refers to unidentified peaks in the total oil and grease range; "<C15" are probably gasoline.





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

Client Project ID: Unocal #3135, 845 - 66th Ave., Oakland  
Matrix: Liquid

QC Sample Group: 6020094-103

Reported: Feb 16, 1996

**QUALITY CONTROL DATA REPORT**

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes	Diesel
<b>Method:</b>	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015
<b>Analyst:</b>	L. Huang	L. Huang	L. Huang	L. Huang	J. Dinsay

**MS/MSD**

<b>Batch#:</b>	6011776	6011776	6011776	6011776	BLK020596
<b>Date Prepared:</b>	2/12/96	2/12/96	2/12/96	2/12/96	2/5/96
<b>Date Analyzed:</b>	2/12/96	2/12/96	2/12/96	2/12/96	2/5/96
<b>Instrument I.D.#:</b>	HP-5	HP-5	HP-5	HP-5	HP-3A
<b>Conc. Spiked:</b>	20 µg/L	20 µg/L	20 µg/L	60 µg/L	300 µg/L
<b>Matrix Spike % Recovery:</b>	105	100	105	105	77
<b>Matrix Spike Duplicate % Recovery:</b>	90	90	90	92	80
<b>Relative % Difference:</b>	15	11	15	14	4.3

<b>LCS Batch#:</b>	3LCS021296	3LCS021296	3LCS021296	3LCS021296	LCS020596
<b>Date Prepared:</b>	2/12/96	2/12/96	2/12/96	2/12/96	2/5/96
<b>Date Analyzed:</b>	2/12/96	2/12/96	2/12/96	2/12/96	2/5/96
<b>Instrument I.D.#:</b>	HP-5	HP-5	HP-5	HP-5	HP-3A
<b>LCS % Recovery:</b>	100	100	100	103	70

<b>% Recovery Control Limits:</b>	71-133	72-128	72-130	71-120	50-150
---------------------------------------	--------	--------	--------	--------	--------

**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: Unocal #3135, 845 - 66th Ave., Oakland  
Matrix: Liquid

QC Sample Group: 6020094-103

Reported: Feb 16, 1996

**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>	L. Huang	L. Huang	L. Huang	L. Huang

<b>MS/MSD Batch#:</b>	6020606	6020606	6020606	6020606
<b>Date Prepared:</b>	2/13/96	2/13/96	2/13/96	2/13/96
<b>Date Analyzed:</b>	2/13/96	2/13/96	2/13/96	2/13/96
<b>Instrument I.D.#:</b>	HP-9	HP-9	HP-9	HP-9
<b>Conc. Spiked:</b>	20 µg/L	20 µg/L	20 µg/L	60 µg/L
<b>Matrix Spike % Recovery:</b>	110	110	95	108
<b>Matrix Spike Duplicate % Recovery:</b>	110	105	95	105
<b>Relative % Difference:</b>	0.0	4.7	0.0	3.1

<b>LCS Batch#:</b>	9LCS021396	9LCS021396	9LCS021396	9LCS021396
<b>Date Prepared:</b>	2/13/96	2/13/96	2/13/96	2/13/96
<b>Date Analyzed:</b>	2/13/96	2/13/96	2/13/96	2/13/96
<b>Instrument I.D.#:</b>	HP-9	HP-9	HP-9	HP-9
<b>LCS % Recovery:</b>	115	110	105	112

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

**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: Unocal #3135, 845 - 66th Ave., Oakland  
Matrix: Liquid

QC Sample Group: 6020094-103

Reported: Feb 16, 1996

**QUALITY CONTROL DATA REPORT**

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
<b>Method:</b>	EPA 8020	EPA 8020	EPA 8020	EPA 8020
<b>Analyst:</b>	L. Huang	L. Huang	L. Huang	L. Huang

**MS/MSD**

<b>Batch#:</b>	60220246	60220246	60220246	60220246
<b>Date Prepared:</b>	2/14/96	2/14/96	2/14/96	2/14/96
<b>Date Analyzed:</b>	2/14/96	2/14/96	2/14/96	2/14/96
<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>	95	90	95	93
<b>Matrix Spike Duplicate % Recovery:</b>	95	95	95	97
<b>Relative % Difference:</b>	0.0	5.4	0.0	3.5

<b>LCS Batch#:</b>	5LCS021496	5LCS021496	5LCS021496	5LCS021496
<b>Date Prepared:</b>	2/14/96	2/14/96	2/14/96	2/14/96
<b>Date Analyzed:</b>	2/14/96	2/14/96	2/14/96	2/14/96
<b>Instrument I.D.#:</b>	HP-5	HP-5	HP-5	HP-5
<b>LCS % Recovery:</b>	100	95	100	100

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

**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**

9011001

SAMPLER			UNOCAL					ANALYSES REQUESTED						TURN AROUND TIME:	
NICHOLAS PERROW			S/S # <u>3135</u> CITY: <u>OAKLAND</u>					TPH-GAS BTEX	TPH- DIESEL	TOG	8010	MTBE			REGULAR REMARKS
WITNESSING AGENCY			ADDRESS: <u>845 66TH AVE</u>												
SAMPLE ID NO.	DATE	TIME	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION								
X Mw-1	2/1/96	11:50	✓	✓		4 VOAS 1 AMBER	WELL	✓	✓			✓		6020094	A-E
X Mw-2	"	12:15	✓	✓		"	"	✓	✓			✓		6020095	↓
X Mw-3	"	11:20	✓	✓		"	"	✓	✓			✓		6020096	
X Mw-4	"	12:40	✓	✓		"	"	✓	✓			✓		6020097	
X Mw-5	"	9:20	✓	✓		"	"	✓	✓			✓		6020098	
X Mw-6	"	1:10	✓	✓		"	"	✓	✓			✓		6020099	
X Mw-7	"	9:45	✓	✓		"	"	✓	✓			✓		6020100	
X Mw-8	"	10:15	✓	✓		"	"	✓	✓			✓		6020101	
X Mw-9	"	10:45	✓	✓		"	"	✓	✓			✓		6020102	
X Mw-10	"	8:50	✓	✓		"	"	✓	✓			✓		6020103	

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME	THE FOLLOWING MUST BE COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:
(SIGNATURE)		(SIGNATURE)	2-1-96 1400	1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? <u>YES</u>
(SIGNATURE)	2/1/96 14:00	(SIGNATURE)	1350 2-1	2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? <u>YES</u>
(SIGNATURE)	2-1	(SIGNATURE)	17:50 2-1-96	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: _____ TITLE: <u>Deanna</u> DATE: <u>2/1/96</u>

**Note:** All water containers to be sampled for TPHG/BTEX, 8010 & 8240 are preserved with HCL. All water containers to be sampled for Lead or Metals are preserved with HN03. All other containers are unpreserved.