KAPREALIAN ENGINEERING, INC.
Consulting Engineers
P.O. BOX 996 • BENICIA, CA 94510
(707) 746-6915 • (707) 746-6916 • FAX: (707) 746-5581

FILE # 5781 SS ✓ BP ____
RPT ____ QM ✓ TRANSMITTAL ____ KEI-P89-1204.QR4
1 ____ 2 ____ 3 ____ 4 ____ 5 ____ 6 ____

March 4, 1992

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

Attention: Mr. Robert Boust

RE: Quarterly Report
Unocal Service Station #5781
3535 Pierson Street
Oakland, California

Dear Mr. Boust:

This report presents the results of the most recent quarter of monitoring and sampling of the monitoring well at the referenced site by Kaprealian Engineering, Inc. (KEI), per proposal KEI-P89-1204.P4 dated January 21, 1991. The well is currently monitored monthly and sampled on a quarterly basis. This report covers the work performed by KEI from December 1991 through February 1992.

SITE DESCRIPTION AND BACKGROUND

The subject site is presently used as a gasoline station. The station occupies the northwest corner of the intersection of Pierson Street with MacArthur Boulevard in Oakland, California. In addition, the site is situated southwest of and adjacent to the Highway 580 off-ramp for MacArthur Boulevard. The site is located near the base of an east-northeast trending hillside area on relatively gently sloping, developed property. Also, a City sewer easement crosses the west corner of the subject site (as shown on the attached Site Plans, Figures 1 and 2). Based on review of the City of Oakland Public Works utility maps, the sewer pipeline that crosses the western corner of the site has a flow line (the bottom inside of the pipeline) at the northwest perimeter of the site of approximately 146.5 feet (Mean Sea Level [MSL]), with a flow line near the southwest perimeter of the site at approximately 142.5 feet (MSL). A Location Map and Site Plans are attached to this report.

KEI's initial field work was conducted on December 14, 1989, when three underground storage tanks were removed from the site. The tanks consisted of two 10,000 gallon fuel storage tanks and one 280 gallon waste oil tank. The fuel tanks were made of steel and no apparent holes or cracks were observed in either tank. However,

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 the Alameda County Health Care Services.

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 & 2
Location Map
Figures 1, 2 & 3
Laboratory Analyses
Chain of Custody documentation

cc: Mr. Timothy R. Ross, Kaprealian Engineering, Inc.

FILE # 0746 SS ✓ BP ____
RPT ____ QM ✓ TRANSMITTAL ____
1 ____ 2 ____ 3 ____ 4 ____ 5 ____ 6 ____

TABLE 1

SUMMARY OF MONITORING DATA

Well #	Ground Water Elevation (feet)	Depth to Water (feet)◆	Total Well Depth (feet)◆	Product Thick-ness (feet)	Sheen	Water Purged (gallons)	Product Purged (ounces)
(Monitored and Sampled on February 7, 1995)							
MW1	73.48	7.06	19.55	0	No	8.5	0
MW2	73.03	8.29	19.76	0	No	8	0
MW3	73.36	8.05	22.01	0	No	9.5	0
MW4	73.63	7.66	19.95	0	No	8.5	0
MW5	73.28	8.10	19.73	0	No	9	0
MW6	73.29	6.65	19.59	0	No	9	0
MW7	73.76	7.88	19.92	0	No	8.5	0
MW8	72.72	8.69	21.20	0	No	9	0
MW9	72.77	7.76	21.86	0	No	10	0
MW10*	71.32	10.29	21.66	0	No	8	0
MW11*	65.90	12.28	19.07	0	No	5	0
MW12*	67.89	11.72	17.54	0	No	4	0
RW1*	73.45	7.18	16.03	0	--	0	0
(Monitored and Purged on January 9, 1995)							
MW3	73.66	7.75	★	<0.01	N/A	50	0
MW5	73.52	7.86	★	<0.01	N/A	50	0
RW1	73.83	6.80	★	0	--	0	0
(Monitored and Purged on December 8, 1994)							
MW1	73.08	7.46	19.62	0	--	0	0
MW2	72.44	8.88	19.84	0	--	0	0
MW3	72.49	8.92	21.97	0	--	50	0
MW4	72.31	8.98	20.02	0	--	0	0
MW5	72.32	9.06	19.92	0	--	50	0
MW6	72.90	7.04	19.58	0	--	0	0
MW7	73.32	8.32	20.00	0	--	0	0
MW8	71.63	9.78	21.26	0	--	0	0
MW9	71.29	9.24	21.93	0	--	0	0
MW10	WELL WAS INACCESSIBLE (PARKED OVER)						
MW11	63.98	14.20	19.13	0	--	0	0
MW12	66.09	13.52	17.60	0	--	0	0
RW1	72.48	8.15	16.04	0	--	0	0

TABLE 1 (Continued)

SUMMARY OF MONITORING DATA

Well #	Ground Water Elevation (feet)	Depth to Water (feet)◆	Total Well Depth (feet)◆	Product Thick-ness (feet)	Sheen	Water Purged (gallons)	Product Purged (ounces)
(Monitored and Sampled on November 10, 1994)							
MW1*	74.11	6.43	19.60	0	--	0	0
MW2	73.85	7.47	19.75	0	No	9	0
MW3	73.94	7.47	21.98	0	Yes	10	0
MW4	72.08	9.21	19.92	0	No	8	0
MW5*	73.90**	7.54	19.91	0.08	N/A	0	4
MW6*	73.82	6.12	19.58	0	--	0	0
MW7*	73.98	7.66	19.98	0	--	0	0
MW8	73.60	7.81	21.18	0	No	10	0
MW9	73.28	7.25	21.94	0	No	10	0
MW10	68.97	12.64	21.72	0	No	7	0
MW11	64.61	13.57	19.13	0	No	4	0
MW12	66.21	13.40	17.60	0	No	3	0
RW1*	74.29	6.34	15.98	0	--	0	0
(Monitored and Sampled on August 31, 1994)							
MW1	72.27	8.27	19.58	0	No	8	0
MW2	71.47	9.85	19.80	0	No	7	0
MW3	71.33	10.08	22.03	0	No	8.5(50)	0
MW4	71.28	10.01	19.98	0	No	7	0
MW5*	71.15**	10.25	19.77	0.02	N/A	1(50)	0
MW6	72.01	7.93	19.53	0	No	8	0
MW7	72.52	9.12	19.97	0	No	7.5	0
MW8	70.04	11.37	21.22	0	No	7	0
MW9	69.56	10.97	21.90	0	No	7.5	0
MW10	68.14	13.47	21.68	0	No	6	0
MW11	65.21	12.97	19.10	0	No	4.5	0
MW12	66.79	12.82	17.57	0	No	3.5	0
RW1*	71.02	9.61	16.06	0	--	0	0

TABLE 1 (Continued)

SUMMARY OF MONITORING DATA

Well #	Ground Water Elevation (feet)	Depth to Water (feet)◆	Total Well Depth (feet)◆	Product Thick-ness (feet)	Sheen	Water Purged (gallons)	Product Purged (ounces)
(Monitored and Sampled on May 31, 1994)							
MW1*	72.74	7.80	19.58	0	--	0	0
MW2	71.96	9.36	19.79	0	No	7.5	0
MW3	71.93	9.48	22.03	<0.01	N/A	9	0
MW4	72.18	9.11	19.98	0	No	7.5	0
MW5	71.75	9.63	19.78	<0.01	N/A	7	0
MW6*	72.45	7.49	19.55	0	--	0	0
MW7*	72.97	8.67	19.95	0	--	0	0
MW8	70.80	10.61	21.20	0	No	7.5	0
MW9	70.38	10.15	21.89	0	No	8	0
MW10	68.92	12.69	21.69	0	No	6.5	0
MW11	65.39	12.79	19.09	0	No	4.5	0
MW12	66.97	12.64	17.57	0	No	3.5	0
RW1*	71.82	8.81	16.07	0	--	0	0

Well #	Well Casing Elevation (feet)▲
MW1	80.54
MW2	81.32
MW3	81.41
MW4	81.29
MW5	81.38
MW6	79.94
MW7	81.64
MW8	81.41
MW9	80.53
MW10	81.61
MW11	78.18
MW12	79.61
RW1	80.63

TABLE 1 (Continued)

SUMMARY OF MONITORING DATA

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

* Monitored only.

** Ground water elevation corrected due to the presence of free product (correction factor = 0.75).

▲ The elevations of the top of the well casings are relative to Mean Sea Level (MSL), per the City of Oakland Benchmark BM#1336 (elevation = 82.28 feet MSL).

★ Total well depth not measured.

(x) Amount of water purged after well sampling.

N/A = Not applicable.

-- Sheen determination was not performed.

TABLE 2

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Well #	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
2/07/95	MW1	6,100	670	ND	120	60
	MW2	1,600♦	ND	ND	ND	ND
	MW3	45,000	1,400	1,300	1,500	5,600
	MW4	540	47	ND	17	2.5
	MW5	25,000	1,400	740	990	3,000
	MW6	ND	ND	ND	ND	ND
	MW7	ND	ND	ND	ND	ND
	MW8	230	1.4	0.95	0.90	1.1
	MW9	57	0.70	ND	0.86	ND
	MW10	SAMPLED SEMI-ANNUALLY				
	MW11	SAMPLED SEMI-ANNUALLY				
	MW12	SAMPLED SEMI-ANNUALLY				
11/10/94	MW1	SAMPLED SEMI-ANNUALLY				
	MW2	95♦♦	ND	ND	ND	ND
	MW3	86,000	3,300	3,800	1,800	8,300
	MW4	7,700	1,800	280	460	1,300
	MW5	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	MW6	SAMPLED SEMI-ANNUALLY				
	MW7	SAMPLED SEMI-ANNUALLY				
	MW8	940	6.7	6.3	ND	16
	MW9	ND	ND	ND	ND	ND
	MW10	ND	ND	ND	ND	ND
	MW11	ND	ND	ND	ND	ND
	MW12	ND	ND	ND	ND	ND
8/31/94	MW1	ND	ND	0.98	ND	0.84
	MW2	310♦	ND	ND	ND	ND
	MW3	44,000	500	240	1,400	5,700
	MW4	400	17	0.94	14	5.2
	MW5	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	MW6	ND	ND	1.5	ND	1.6
	MW7	ND	ND	0.80	ND	0.75
	MW8	1,800♦	ND	ND	ND	ND
	MW9*	650	7.7	2.8	4.4	5.0
	MW10	ND	ND	0.64	ND	0.54
	MW11	ND	ND	1.5	ND	1.8
	MW12*	ND	ND	1.0	ND	1.0

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Well #	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
5/31/94	MW2	1,100♦	ND	ND	ND	ND
	MW3	39,000	670	630	1,500	6,200
	MW4	1,100	190	ND	100	58
	MW5	43,000	1,500	1,200	1,600	6,700
	MW8	350	3.0	1.0	0.73	1.7
	MW9	360	7.8	0.97	4.6	2.2
	MW10	ND	ND	0.90	ND	0.91
	MW11	ND	ND	ND	ND	ND
	MW12	ND	ND	0.81	ND	0.82
2/16/94	MW1	ND	0.84	ND	ND	0.59
	MW2	3,200♦	ND	ND	ND	ND
	MW3	57,000	910	2,500	2,100	9,000
	MW4	190	11	0.98	21	6.6
	MW5	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	MW6	ND	ND	ND	ND	ND
	MW7	ND	ND	ND	ND	0.70
	MW8	990	4.9	1.8	2.4	4.5
	MW9	250	5.1	1.3	4.4	1.5
	MW10	ND	ND	ND	ND	ND
	MW11	ND	ND	ND	ND	ND
	MW12	ND	ND	ND	ND	ND
11/30/93	MW1	SAMPLED SEMI-ANNUALLY				
	MW2	480♦	ND	ND	ND	ND
	MW3	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	MW4	200	28	ND	17	8.1
	MW5	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	MW6	SAMPLED SEMI-ANNUALLY				
	MW7	SAMPLED SEMI-ANNUALLY				
	MW8	3,500	18	ND	ND	ND
	MW9	200	5.6	ND	2.9	2.7
	MW10	WELL WAS INACCESSIBLE				
	MW11	ND	ND	ND	ND	ND
	MW12	ND	ND	ND	ND	ND

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Well #	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
8/25/93	MW1	ND	ND	ND	ND	ND
	MW2	190♦	ND	ND	ND	ND
	MW3	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	MW4	640	100	1.1	100	22
	MW5	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	MW6	ND	ND	ND	ND	ND
	MW7	ND	ND	ND	ND	ND
	MW8	1,800	11	17	8.9	29
	MW9	220	10	ND	6.8	1.4
	MW10	ND	ND	ND	ND	ND
	MW11	ND	ND	ND	ND	ND
	MW12	ND	ND	ND	ND	ND
5/25/93	MW1	260	27	4.9	2.6	54
	MW2*	1,300♦	ND	ND	ND	ND
	MW3	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	MW4	74	10	ND	4.6	1.8
	MW5	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	MW6	ND	ND	ND	ND	ND
	MW7	ND	ND	ND	ND	ND
	MW8	1,200	5.4	ND	9.0	21
	MW9	160	6.1	ND	7.4	1.1
	MW10	ND	ND	ND	ND	ND
	MW11	ND	ND	0.75	ND	1.0
	MW12	ND	ND	ND	ND	ND
2/24/93	MW1	1,100	280	4.9	120	140
	MW2	11,000♦	ND	ND	ND	ND
	MW3	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	MW4	140	12	0.64	9.4	3.7
	MW5	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	MW6	ND	ND	ND	ND	ND
	MW7	ND	ND	ND	ND	ND
	MW8	WELL WAS INACCESSIBLE				
	MW9	WELL WAS INACCESSIBLE				
	MW10	ND	ND	ND	ND	ND
	MW11	ND	ND	ND	ND	ND
	MW12	ND	ND	ND	ND	ND

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Well #	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
11/20/92	MW1	ND	0.75	ND	ND	ND
	MW2	510♦	ND	ND	ND	ND
	MW3	1,100,000♦♦	1,800	6,400	3,000	15,000
	MW4	ND	6.2	ND	1.2	0.52
	MW5	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	MW6	ND	ND	ND	ND	ND
	MW7	ND	ND	ND	ND	ND
	MW8	WELL WAS INACCESSIBLE				
	MW9	WELL WAS INACCESSIBLE				
	MW10	ND	ND	ND	ND	ND
	MW11	ND	ND	ND	ND	ND
	MW12	ND	ND	ND	ND	ND
8/26/92	MW1	ND	ND	ND	ND	ND
	MW2	ND	ND	ND	ND	ND
	MW3	20,000	690	1,900	1,300	5,700
	MW4	120	86	0.52	0.57	1.6
	MW5	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	MW6	ND	ND	ND	ND	ND
	MW7	ND	ND	ND	0.73	ND
	MW8	1,800	12	8.0	4.0	13
	MW9	250	13	ND	8.6	3.8
	MW10	ND	ND	ND	ND	ND
	MW11	ND	ND	ND	ND	ND
	MW12	ND	ND	ND	ND	ND
5/23/92	MW1	ND	ND	ND	ND	ND
	MW2	ND	ND	ND	ND	ND
	MW3	25,000	300	130	880	4,900
	MW4	ND	ND	ND	ND	ND
	MW5	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	MW6	ND	ND	ND	ND	ND
	MW7	ND	ND	ND	ND	ND
	MW8	2,100	8.6	1.6	1.7	28
	MW9	460	18	0.66	1.4	3.2
	MW10	ND	ND	ND	ND	ND
	MW11	ND	ND	ND	ND	ND

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Well #	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
2/06/92	MW1	ND	ND	ND	ND	ND
	MW2	ND	0.36	0.66	ND	0.62
	MW3	24,000	600	1,800	1,200	5,800
	MW4	5,700	2,200	140	57	980
	MW5	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	MW6	ND	ND	ND	ND	ND
	MW7	ND	ND	ND	ND	ND
	MW8	2,600	4.1	7.0	31	93
	MW9	660	41	1.0	33	15
	MW10	ND	ND	ND	ND	ND
	MW11	ND	ND	ND	ND	ND
11/19/91	MW1	ND	ND	ND	ND	ND
	MW2	ND	ND	ND	ND	ND
	MW3	22,000	250	440	660	3,000
	MW4	55	9.2	4.5	1.4	6.7
	MW5	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	MW6	ND	ND	ND	ND	ND
	MW7	32	ND	ND	ND	ND
	MW8	1,600	8.1	1.8	19	52
	MW9	360	17	0.45	15	11
8/28/91	MW1	ND	ND	ND	ND	ND
	MW2	ND	ND	ND	ND	ND
	MW3	16,000	650	2,200	1,100	5,400
	MW4	2,000	1,500	20	120	300
	MW5	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	MW6	ND	ND	ND	ND	ND
	MW7	ND	ND	ND	ND	ND
	MW8	1,800	3.2	1.9	19	74
	MW9	450	17	0.9	13	14
5/28/91	MW1	ND	ND	ND	ND	ND
	MW2	ND	ND	ND	ND	ND
	MW3	24,000	570	1,100	810	4,200
	MW4	38	ND	ND	ND	1.9
	MW5	24,000	2,300	3,400	1,300	6,000
	MW6	ND	ND	ND	ND	0.42
	MW7	39	ND	ND	ND	0.73
	MW8	4,800	4.2	1.3	5.1	170
	MW9	590	6.0	0.43	6.8	1.4

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Well #	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
2/25/91	MW1	ND	ND	ND	ND	ND
	MW2	ND	0.68	0.42	ND	0.86
	MW3	37,000	730	2,900	1,300	7,300
	MW4	22,000	600	1,300	780	2,800
	MW5	25,000	950	1,300	900	3,500
	MW6	ND	0.37	0.40	0.35	1.5
	MW7	70	ND	ND	ND	0.52
	MW8	5,300	17	6.1	53	300
	MW9	390	13	1.1	2.8	14
11/07/90	MW1	45	ND	ND	ND	ND
	MW2	ND	ND	ND	ND	ND
	MW3	42,000	1,400	5,000	1,800	7,500
	MW4	180	1.5	0.37	6.3	26
	MW5	20,000	640	1,100	670	3,000
	MW6	ND	ND	ND	ND	ND
	MW7	ND	ND	ND	ND	ND
	MW8	4,700	28	38	86	7,200
	MW9	480	7.8	1.2	13	47
8/16/90	MW1	ND	ND	ND	ND	ND
	MW2	ND	ND	6.7	ND	ND
	MW3	6,800	600	660	760	160
	MW4	3,600	480	17	230	260
	MW5	16,000	1,400	1,900	2,800	660
2/15/90	MW1	170	7.9	ND	2.2	2.8
	MW2	ND	ND	ND	ND	ND
	MW3	20,000	1,700	2,100	750	3,100
	MW4	150	8.0	8.0	10	45
	MW5	24,000	1,500	1,700	260	3,600
11/01/89	MW1	ND	ND	ND	ND	0.30
	MW2	200	ND	ND	3.0	1.2
	MW3	13,000	57	48	1.7	120

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

♦ 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 gasoline and non-gasoline mixture.

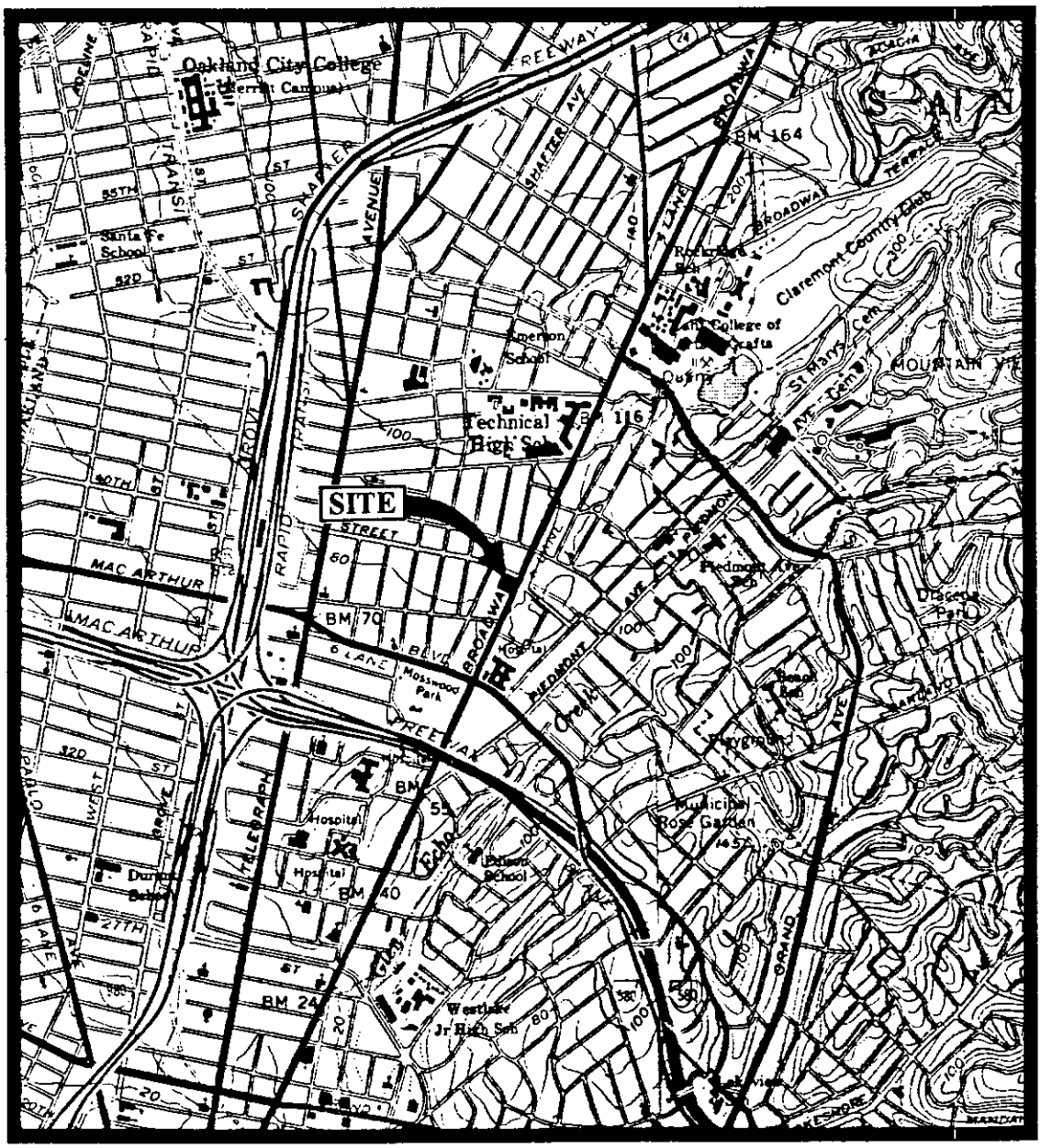
* Methyl tert butyl ether was detected at a concentration of:

2,700 µg/L in MW2 on May 25, 1993.
59 µg/L in MW9 on August 31, 1994.
ND in MW12 on August 31, 1994.

ND = Non-detectable.

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

Note: Laboratory analyses data prior to November 30, 1993, were provided by Kaprealian Engineering, Inc.

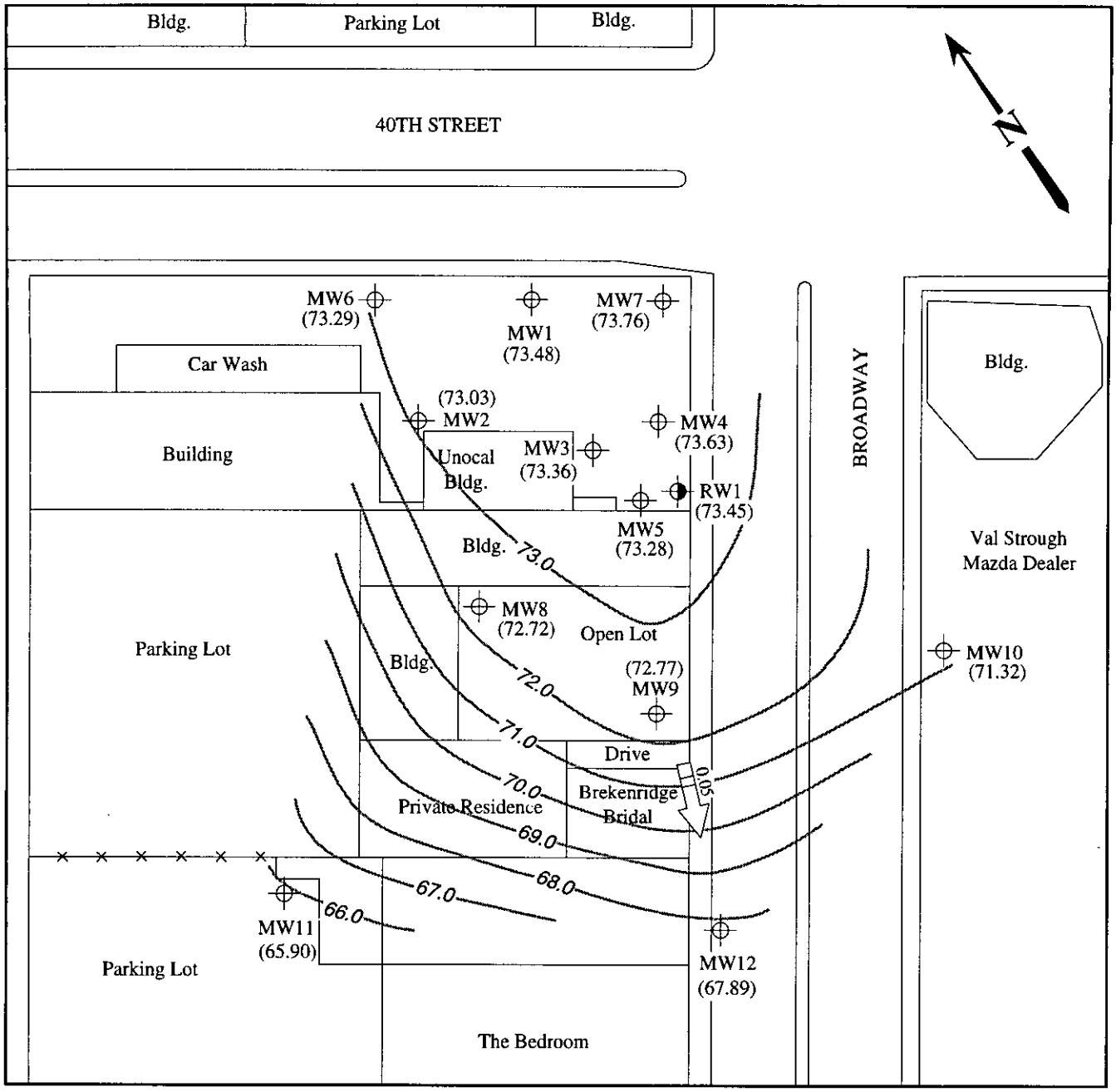


Base modified from 7.5 minute U.S.G.S. Oakland East and West Quadrangles (both photorevised 1980)

0 2000 4000

Approx. scale feet

mpds SERVICES, INCORPORATED	**UNOCAL SERVICE STATION #0746** **3943 BROADWAY** **OAKLAND, CALIFORNIA**	**LOCATION MAP**



LEGEND

- Monitoring well
- 6-inch diameter recovery well
- ( ) Ground water elevation in feet above Mean Sea Level
- #.## Direction of ground water flow with approximate hydraulic gradient
- Contours of ground water elevation

0 60 120

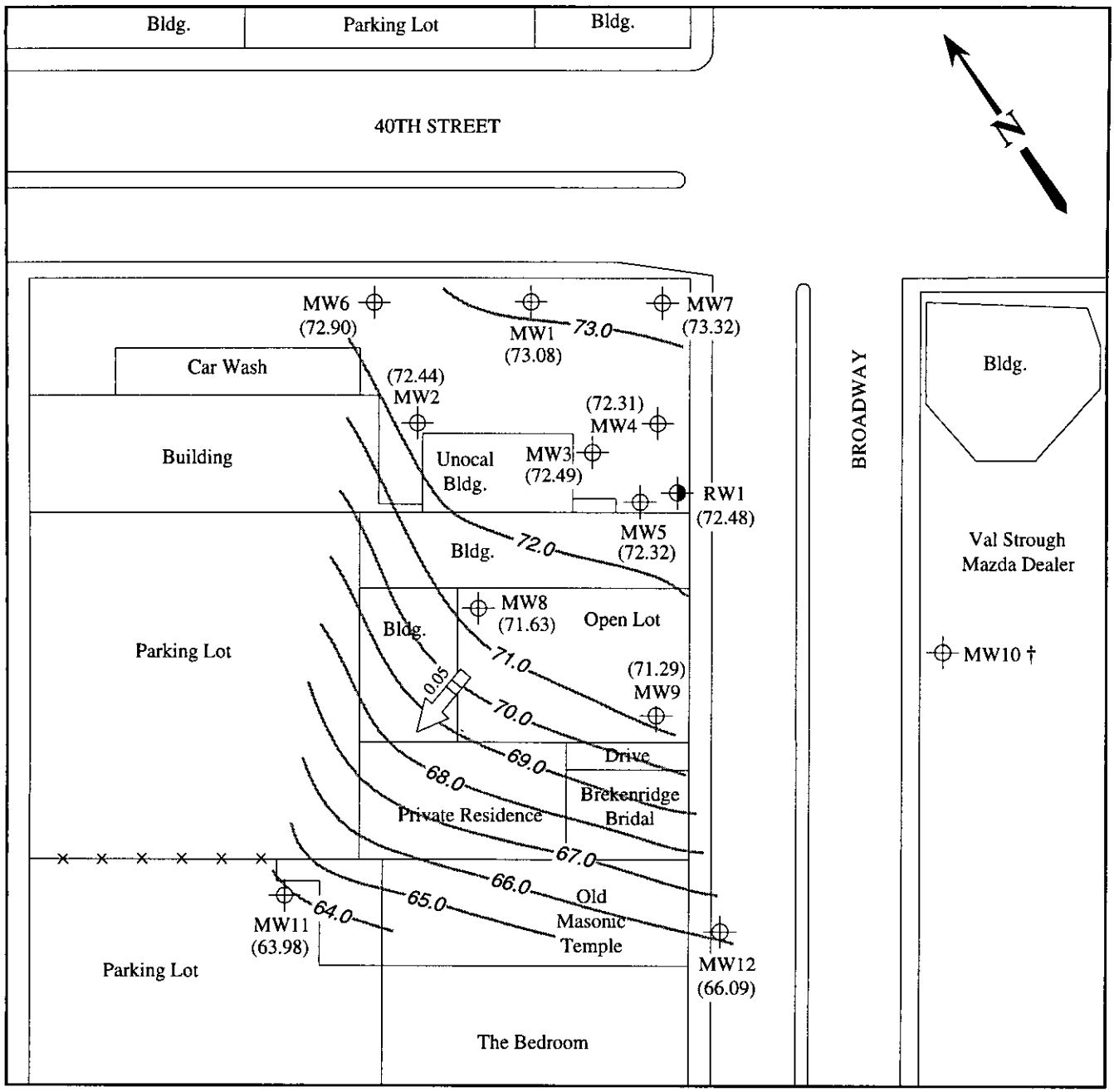
Approx. scale feet

POTENTIOMETRIC SURFACE MAP FOR THE FEBRUARY 7, 1995 MONITORING EVENT

mpds SERVICES, INCORPORATED

UNOCAL SERVICE STATION #0746
3943 BROADWAY
OAKLAND, CALIFORNIA

FIGURE
1



LEGEND

- Monitoring well
- 6-inch diameter recovery well
- ( ) Ground water elevation in feet above Mean Sea Level
- #.## Direction of ground water flow with approximate hydraulic gradient
- Contours of ground water elevation
- † Well was inaccessible

0 60 120

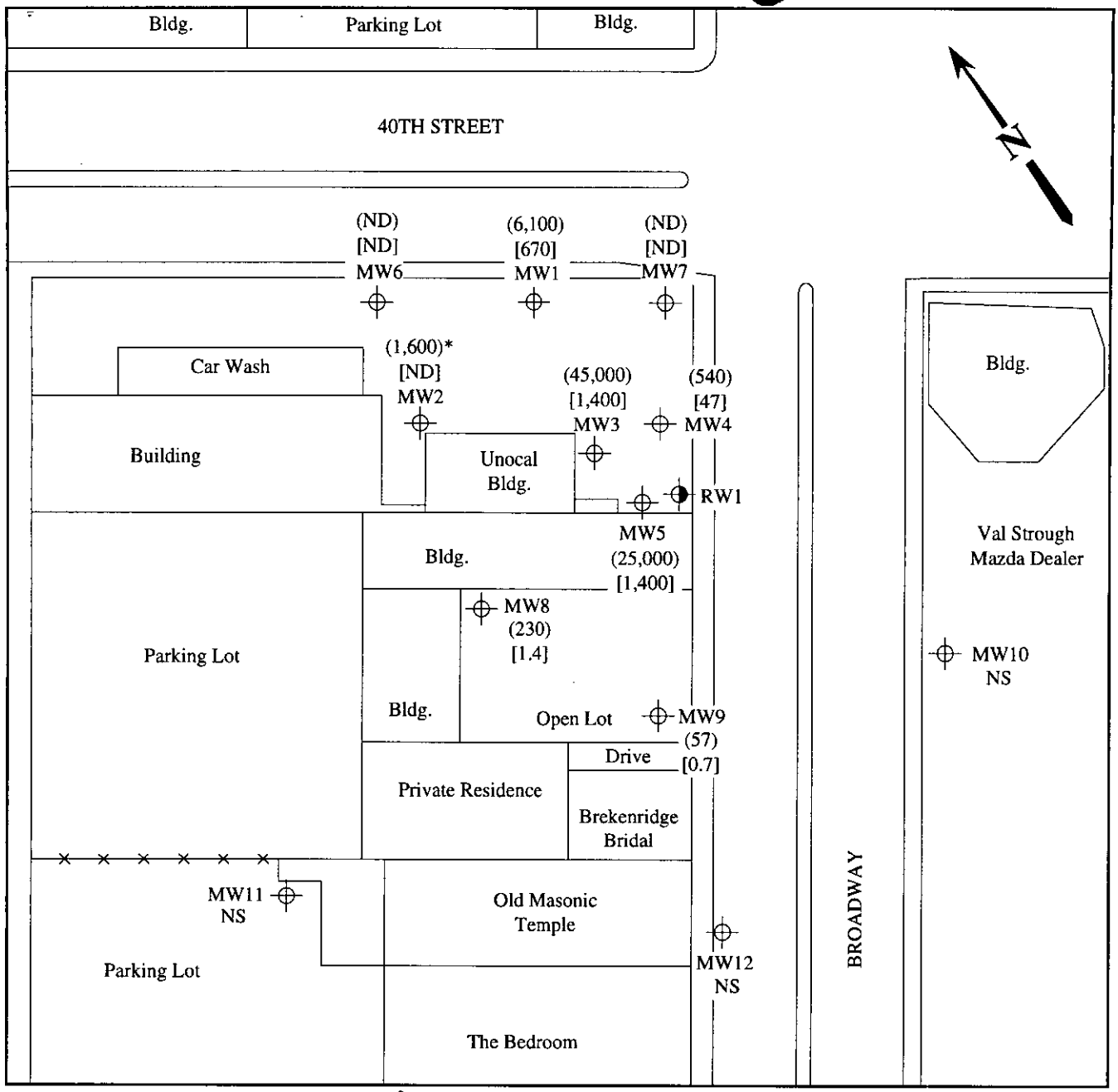
Approx. scale feet

POTENTIOMETRIC SURFACE MAP FOR THE DECEMBER 8, 1994 MONITORING EVENT

mpds SERVICES, INCORPORATED

UNOCAL SERVICE STATION #0746
3943 BROADWAY
OAKLAND, CALIFORNIA

FIGURE
2



LEGEND

- Monitoring well
- 6-inch diameter recovery well
- ( ) Concentration of TPH as gasoline in µg/L
- [ ] Concentration of TPH as gasoline in µg/L

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

ND = Non-detectable, NS = Not sampled

0 60 120

Approx. scale feet

PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON FEBRUARY 7, 1995

mpds SERVICES, INCORPORATED

UNOCAL SERVICE STATION #0746
3943 BROADWAY
OAKLAND, CALIFORNIA

FIGURE
3

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
1900 Bates Avenue, Suite L, Concord, CA 94520, (510) 686-9600, FAX (510) 686-9689
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

MPDS Services	Client Project ID:	Unocal #0746, 3943 Broadway, Oakland	Sampled:	Feb 7, 1995
2401 Stanwell Dr., Ste. 400	Matrix Descript:	Water	Received:	Feb 7, 1995
Concord, CA 94520	Analysis Method:	EPA 5030/8015/8020	Reported:	Feb 22, 1995
Attention: Avo Avedissian	First Sample #:	502-0477		

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
502-0477	MW-1	6,100	670	ND	120	60
502-0478	MW-2	1,600*	ND	ND	ND	ND
502-0479	MW-3	45,000	1,400	1,300	1,500	5,600
502-0480	MW-4	540	47	ND	17	2.5
502-0481	MW-5	25,000	1,400	740	990	3,000
502-0482	MW-6	ND	ND	ND	ND	ND
502-0483	MW-7	ND	ND	ND	ND	ND
502-0484	MW-8	230	1.4	0.95	0.90	1.1
502-0485	MW-9	57	0.70	ND	0.86	ND

* Hydrocarbons detected did not appear to be gasoline.

Detection Limits:	50	0.50	0.50	0.50	0.50

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

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

MPDS Services	Client Project ID:	Unocal #0746, 3943 Broadway, Oakland	Sampled:	Feb 7, 1995
2401 Stanwell Dr., Ste. 400	Matrix Descript:	Water	Received:	Feb 7, 1995
Concord, CA 94520	Analysis Method:	EPA 5030/8015/8020	Reported:	Feb 22, 1995
Attention: Avo Avedissian	First Sample #:	502-0477		

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
502-0477	MW-1	Gasoline	50	2/17/95	HP-5	89
502-0478	MW-2	Discrete Peak*	10	2/17/95	HP-5	92
502-0479	MW-3	Gasoline	100	2/9/95	HP-5	77
502-0480	MW-4	Gasoline	1.0	2/9/95	HP-5	76
502-0481	MW-5	Gasoline	100	2/9/95	HP-5	97
502-0482	MW-6	--	1.0	2/9/95	HP-5	91
502-0483	MW-7	--	1.0	2/9/95	HP-5	98
502-0484	MW-8	Gasoline	1.0	2/10/95	HP-4	87
502-0485	MW-9	Gasoline	1.0	2/10/95	HP-4	91

SEQUOIA ANALYTICAL, #1271

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Please Note:
* "Discrete Peak" refers to an unidentified peak in the MTBE range.

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MPDS Services
2401 Stanwell Dr., Ste. 400
Concord, CA 94520
Attention: Avo Avedissian

Client Project ID: Unocal #0746, 3943 Broadway, Oakland
Matrix: Liquid
QC Sample Group: 5020477-488

Reported: Feb 27, 1995

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	A. Tuzon	A. Tuzon	A. Tuzon	A. Tuzon
MS/MSD Batch#:	5020928	5020928	5020928	5020928
Date Prepared:	2/17/95	2/17/95	2/17/95	2/17/95
Date Analyzed:	2/17/95	2/17/95	2/17/95	2/17/95
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:	85	85	85	85
Matrix Spike Duplicate % Recovery:	90	85	85	90
Relative % Difference:	5.7	0.0	0.0	5.7
LCS Batch#:	3LCS021295	3LCS021295	3LCS021295	3LCS021295
Date Prepared:	2/17/95	2/17/95	2/17/95	2/17/95
Date Analyzed:	2/17/95	2/17/95	2/17/95	2/17/95
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
LCS % Recovery:	91	91	91	93
% Recovery Control Limits:	71-133	72-128	72-130	71-120

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager

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.

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MPDS Services
2401 Stanwell Dr., Ste. 400
Concord, CA 94520
Attention: Avo Avedissian

Client Project ID: Unocal #0746, 3943 Broadway, Oakland
Matrix: Liquid
QC Sample Group: 5020477-488

Reported: Feb 27, 1995

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	A. Tuzon	A. Tuzon	A. Tuzon	A. Tuzon
MS/MSD Batch#:	5020297	5020297	5020297	5020297
Date Prepared:	2/9/95	2/9/95	2/9/95	2/9/95
Date Analyzed:	2/9/95	2/9/95	2/9/95	2/9/95
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:	85	100	105	103
Matrix Spike Duplicate % Recovery:	85	95	100	100
Relative % Difference:	0.0	5.1	4.9	2.9
LCS Batch#:	3LCS020995	3LCS020995	3LCS020995	3LCS020995
Date Prepared:	2/9/95	2/9/95	2/9/95	2/9/95
Date Analyzed:	2/9/95	2/9/95	2/9/95	2/9/95
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
LCS % Recovery:	97	102	105	103
% Recovery Control Limits:	71-133	72-128	72-130	71-120

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager

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MPDS Services
2401 Stanwell Dr., Ste. 400
Concord, CA 94520
Attention: Avo Avedissian

Client Project ID: Unocal #0746, 3943 Broadway, Oakland
Matrix: Liquid
QC Sample Group: 5020477-0488

Reported: Feb 27, 1995

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	A. Tuzon	A. Tuzon	A. Tuzon	A. Tuzon
MS/MSD Batch#:	5020538	5020538	5020538	5020538
Date Prepared:	2/10/95	2/10/95	2/10/95	2/10/95
Date Analyzed:	2/10/95	2/10/95	2/10/95	2/10/95
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike % Recovery:	80	90	95	98
Matrix Spike Duplicate % Recovery:	80	95	100	102
Relative % Difference:	0.0	5.4	5.1	4.0
LCS Batch#:	2LCS021095	2LCS021095	2LCS021095	2LCS021095
Date Prepared:	2/10/95	2/10/95	2/10/95	2/10/95
Date Analyzed:	2/10/95	2/10/95	2/10/95	2/10/95
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
LCS % Recovery:	78	89	91	94
% Recovery Control Limits:	71-133	72-128	72-130	71-120

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager

Please Note:
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MPDS SERVICES, INCORPORATED
2401 Stanwell Drive, Suite 400
Concord, California 94520
Tel: (510) 602-5100, Fax: (510) 689-1918

CHAIN OF CUSTODY

SAMPLER: NICHOLAS PERROW
WITNESSING AGENCY:

UNOCAL S/S # 0746 CITY: OAKLAND
ADDRESS: 3943 BROADWAY

ANALYSES REQUESTED

TURN AROUND TIME: REGULAR

SAMPLE ID NO.	DATE	TIME	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	TPH-GAS BTEX	TPH-DIESEL	TOG	8010					REMARKS
MW-1	2/7/95	9:40AM	✓	✓		2VOAs	WELL	✓								5020477 AB
MW-2	"	12:45	✓	✓		"	"	✓								5020478
MW-3	"	2:50PM	✓	✓		"	"	✓								5020479
MW-4	"	2:25PM	✓	✓		"	"	✓								5020480
MW-5	"	3:15PM	✓	✓		"	"	✓								5020481
MW-6	"	10:10AM	✓	✓		"	"	✓								5020482
MW-7	"	10:35AM	✓	✓		"	"	✓								5020483
MW-8	"	1:25	✓	✓		"	"	✓								5020484
MW-9	"	2:00	✓	✓		"	"	✓								5020485
MW-10	"	11:10AM	✓	✓		"	"	✓								5020486

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
(SIGNATURE)		(SIGNATURE)	
(SIGNATURE)	2/7/95 4:45 R	(SIGNATURE) RJ Kelley	2/7/95 4:45pm
(SIGNATURE)		(SIGNATURE)	
(SIGNATURE)		(SIGNATURE)	

THE FOLLOWING MUST BE COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:

1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? Yes
2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? Yes
3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? No
4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? Yes

SIGNATURE: RJ Kelley TITLE: Senior Chemist DATE: 2/7/95

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 HNO3. All other containers are unpreserved.

mpds SERVICES, INCORPORATED
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Concord, California 94520
Tel: (510) 602-5100, Fax: (510) 689-1918

CHAIN OF CUSTODY

SAMPLER: NICHOLAS PERROW

WITNESSING AGENCY:

UNOCAL S/S # 0746 CITY: OAKLAND

ADDRESS: 3943 BROADWAY

TURN AROUND TIME: REGULAR

SAMPLE ID NO.	DATE	TIME	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	TPH-GAS BTEX	TPH-DIESEL	TOG	8010					REMARKS
MW-11	2/7/95	11:45AM	✓	✓		2 VOAS	WELL	✓								5020487 AB
MW-12	"	12:20PM	✓	✓		"	"	✓								5020488 ↓

Remarks: Cancel MW-10 MW-11 MW-12 As Per Nick 2-10-95 11:00 [illegible]

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
(SIGNATURE) [signature]	2/7/95 4:45 PM	(SIGNATURE) Rob Kelley	2/7/95 4:45 pm
(SIGNATURE)		(SIGNATURE)	
(SIGNATURE)		(SIGNATURE)	
(SIGNATURE)		(SIGNATURE)	

THE FOLLOWING MUST BE COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:

1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? Yes
2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? Yes
3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? No
4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? Yes

SIGNATURE: Rob Kelley TITLE: Sample Control DATE: [illegible]

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.