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MONITORING PURGING DISPOSING SAMPLING

MPDS SERVICES, INCORPORATED

December 15, 1994

Alameda County Health Care Services
1131 Harbor Bay Parkway
Alameda, CA 94501

RE: Unocal Service Station #0746
3943 Broadway
Oakland, California

Per the request of the Unocal Corporation Project Manager, Mr. Edward C. Ralston, enclosed please find our report (MPDS-UN0746-05) dated December 7, 1994 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) 277-2311.

Sincerely,

MPDS Services, Inc.

Jarrel F. Crider

/jfc

Enclosure

cc: Mr. Edward C. Ralston

① If they wish to do MMA. must do risk assessment for indoor air

② Do sewer main investigation

③ Consider other alternatives including air sparge, H_2O_2, etc

2401 Stanwell Drive, Suite 400, Concord, CA 94520
TEL: (510) 602-5120 FAX: (510) 689-1918

MONITORING PURGING DISPOSING SAMPLING

mpds SERVICES, INCORPORATED

MPDS-UN0746-05
December 7, 1994

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

Attention: Mr. Edward C. Ralston

RE: Quarterly Data Report
Unocal Service Station #0746
3943 Broadway
Oakland, California

Dear Mr. Ralston:

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. Skimmers were present in wells MW3 and MW5. The monitoring data and the ground water elevations are summarized in Table 1. The ground water flow directions during the most recent quarter are shown on the attached Figures 1, 2, and 3.

Ground water samples were collected on November 10, 1994. Prior to sampling, the wells were each purged of between 3 and 10 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 and benzene detected in the ground water samples collected this quarter are shown on the attached Figures 4 and 5. Copies of the laboratory analytical results and the Chain of Custody documentation are attached to this report.

2401 Stanwell Drive, Suite 400, Concord, CA 94520
TEL: (510) 602-5120 FAX: (510) 689-1918

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 through 5
Laboratory Analyses
Chain of Custody documentation

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

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 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ふし"	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 Purged on October 11, 1994)							
MW1	72.18	8.36	19.58	0	--	0	0
MW2	71.37	9.95	19.80	0	--	0	0
MW3	71.01**	10.41	22.10	0.01	N/A	30	0
MW4	69.79	11.50	19.98	0	--	0	0
MW5	70.95**	10.45	17.77	0.02	N/A	50	3
MW6	71.89	8.05	19.55	0	--	0	0
MW7	72.41	9.23	19.95	0	--	0	0
MW8	69.91	11.50	21.23	0	--	0	0
MW9	69.33	11.20	21.90	0	--	0	0
MW10	66.81	14.80	21.69	0	--	0	0
MW11	64.78	13.40	19.30	0	--	0	0
MW12	65.36	14.25	17.58	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 Purged on September 27, 1994)							
MW1	72.17	8.37	★	0	--	0	0
MW2	71.37	9.95	★	0	--	0	0
MW3	71.19	10.22	★	0	--	50	0
MW4	71.20	10.09	★	0	--	0	0
MW5	71.00	10.38	★	<0.01	N/A	50	6
MW6	71.91	8.03	★	0	--	0	0
MW7	72.42	9.22	★	0	--	0	0
MW8	WELL INACCESSIBLE (PARKED OVER)						
MW9	69.43	11.10	★	0	--	0	0
MW10	67.89	13.72	★	0	--	0	0
MW11	63.30	14.88	★	0	--	0	0
MW12	64.95	14.66	★	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
(Monitored and Sampled on February 16, 1994)							
MW1	73.08	7.46	19.56	0	No	9	0
MW2	72.41	8.91	19.78	0	No	8	0
MW3	72.54	8.87	22.03	0	Yes	9	0
MW4	72.08	9.21	19.97	0	No	8	0
MW5*	72.45**	8.95	19.76	0.02	N/A	0	0
MW6	72.81	7.13	19.54	0	No	9	0
MW7	73.28	8.36	19.95	0	No	8	0
MW8	71.55	9.86	21.20	0	No	8	0
MW9	71.32	9.21	21.90	0	No	9	0
MW10	69.18	12.43	21.68	0	No	7	0
MW11	65.42	12.76	19.08	0	No	5	0
MW12	66.85	12.76	17.55	0	No	3.5	0
RW1*	72.81	7.82	16.04	0	--	0	0

TABLE 1 (Continued)

SUMMARY OF MONITORING DATA

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

◆ 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 was 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
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
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

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Well #	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
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
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

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Well #	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
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
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

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Well #	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
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
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

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Well #	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
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
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

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Well #	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
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.

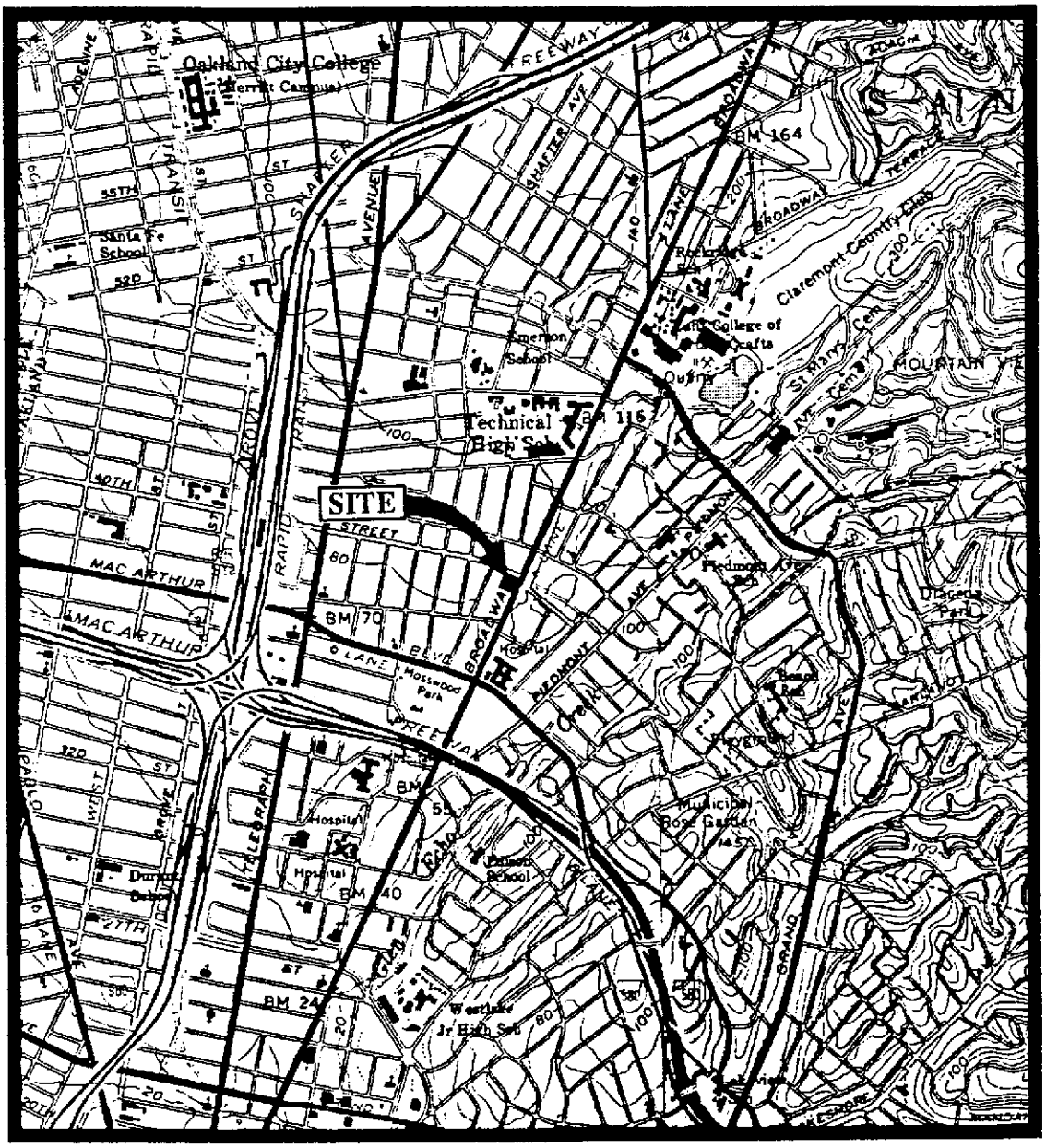
* Methyl tert butyl ether (MTBE) was detected at a concentration of:

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.

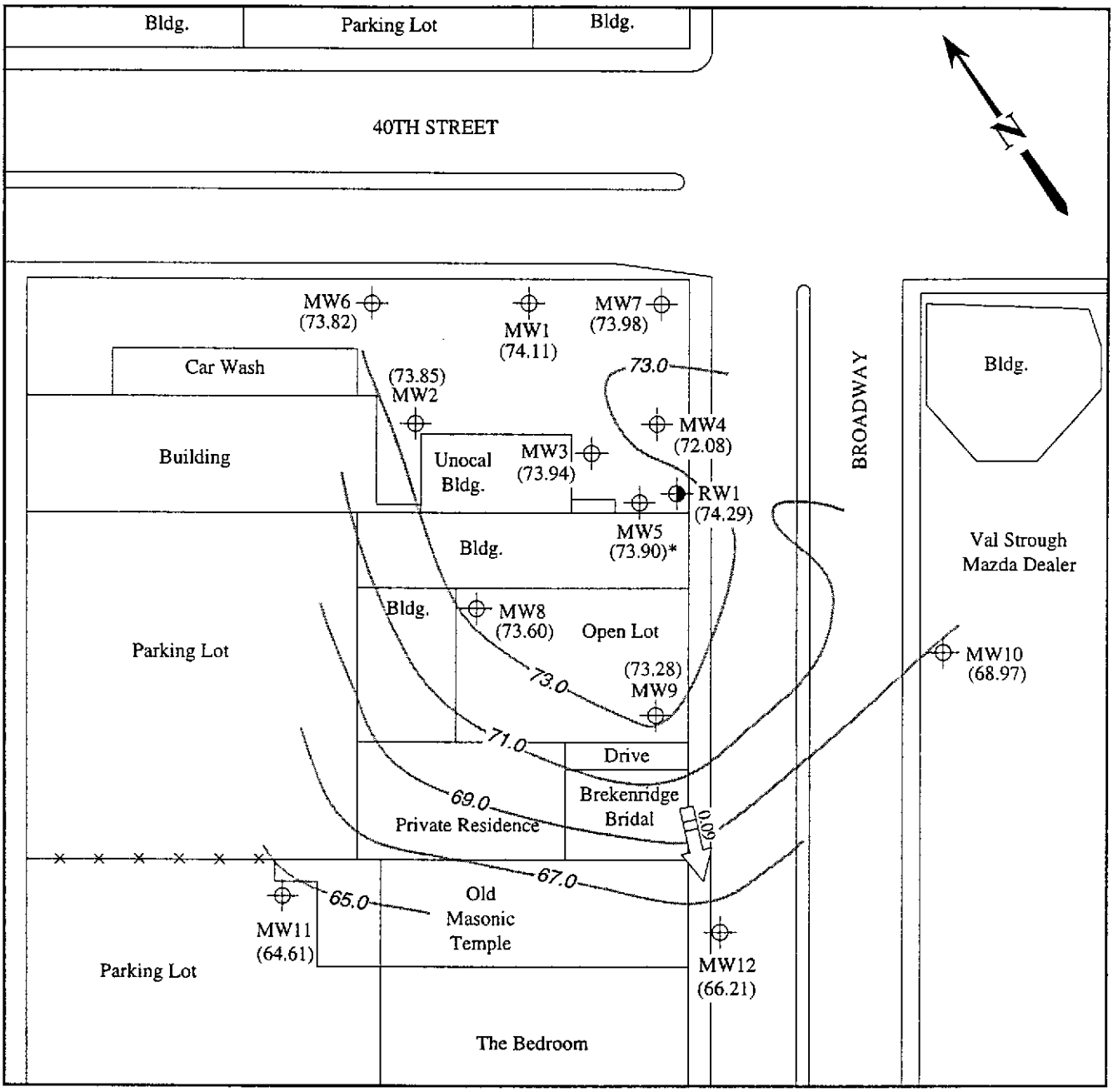


Base modified from 7.5 minute U.S.G.S. Oakland East and West Quadrangles (both photorevised 1980)

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
- * Ground water elevation corrected due to the presence of free product.

0 60 120

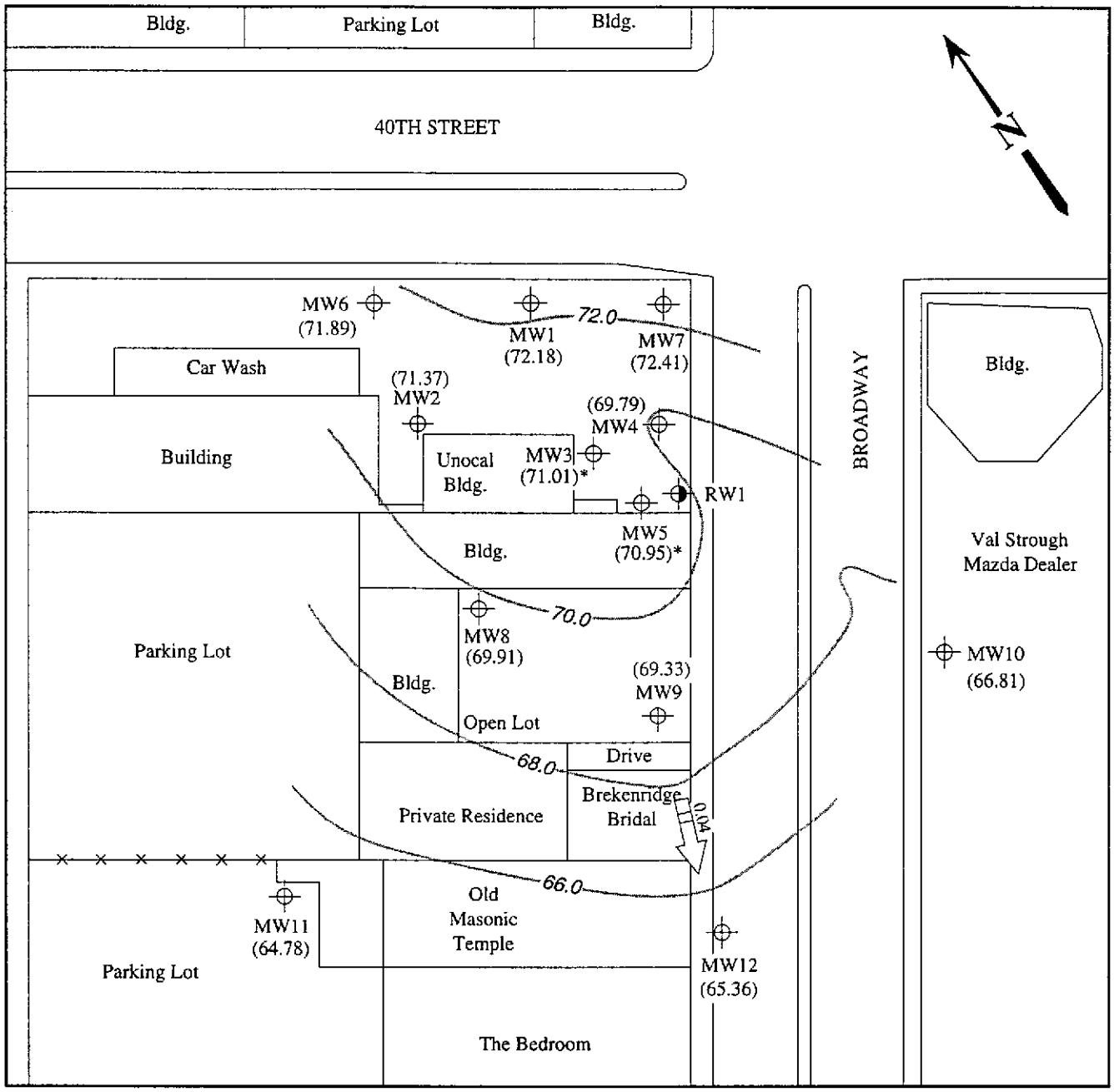
Approx. scale feet

POTENTIOMETRIC SURFACE MAP FOR THE NOVEMBER 10, 1994 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

* Ground water elevation corrected due to the presence of free product.

0 60 120

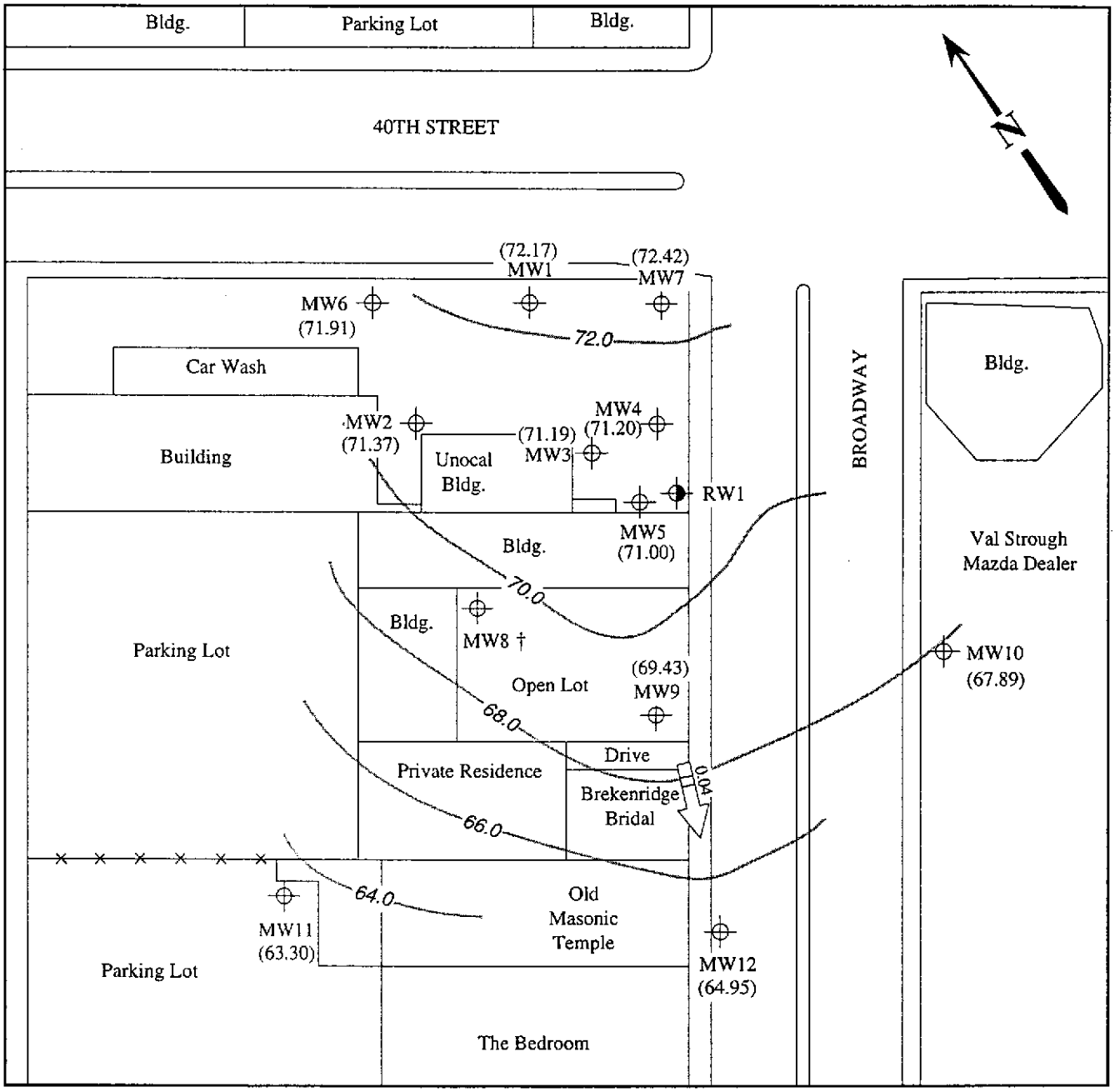
Approx. scale feet

POTENTIOMETRIC SURFACE MAP FOR THE OCTOBER 11, 1994 MONITORING EVENT

mpds SERVICES, INCORPORATED

UNOCAL SERVICE STATION #0746
3943 BROADWAY
OAKLAND, CALIFORNIA

FIGURE
2



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 (parked over).

0 60 120

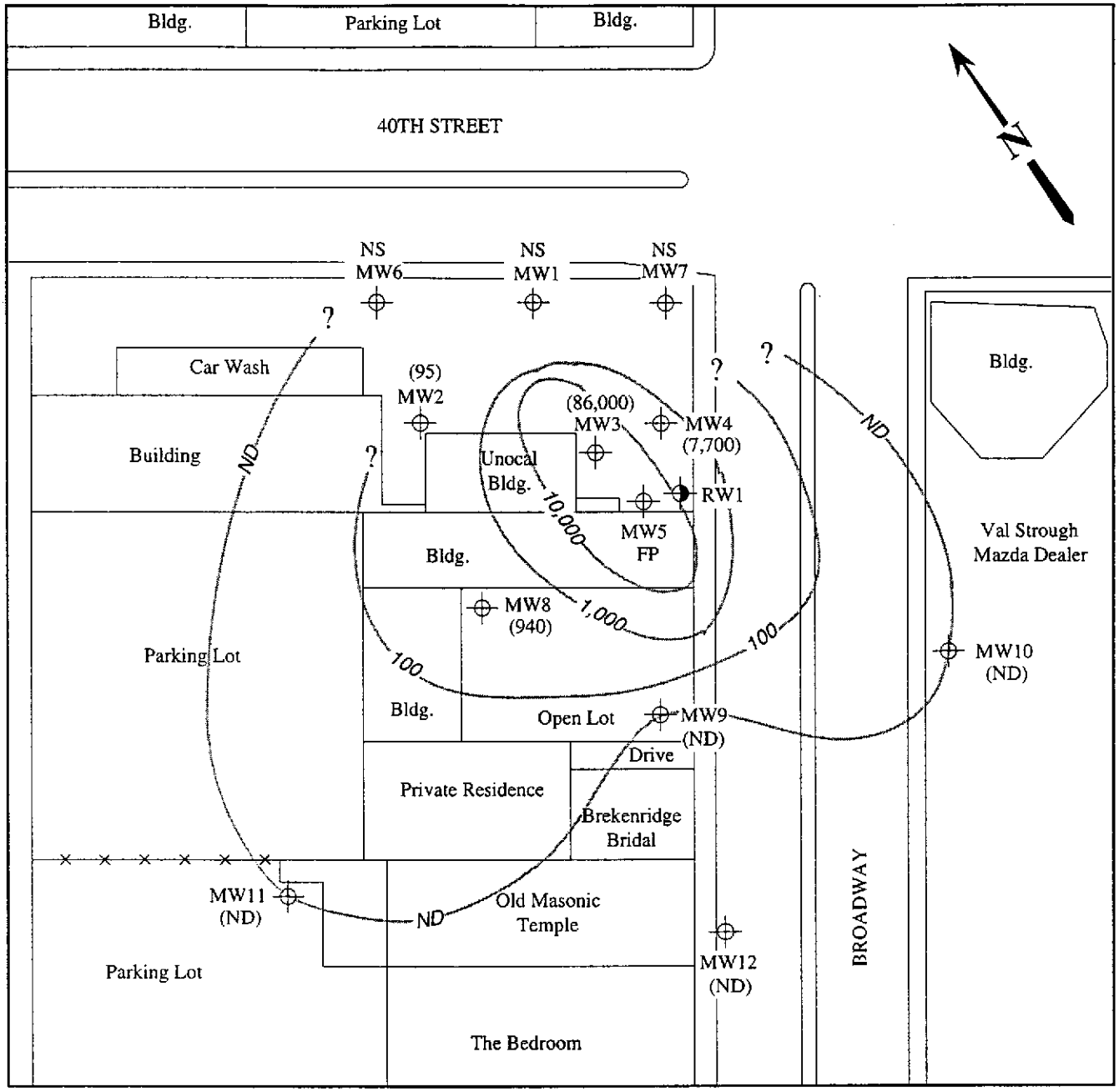
Approx. scale feet

POTENTIOMETRIC SURFACE MAP FOR THE SEPTEMBER 27, 1994 MONITORING EVENT

mpds SERVICES, INCORPORATED

UNOCAL SERVICE STATION #0746
3943 BROADWAY
OAKLAND, CALIFORNIA

FIGURE
3



LEGEND

- Monitoring well
- 6-inch diameter recovery well
- ( ) Concentration of TPH as gasoline in µg/L
- Approximate iso-concentration contours of TPH as gasoline contamination in ground water in µg/L

ND = Non-detectable, NS = Not sampled, FP = Free product

0 60 120

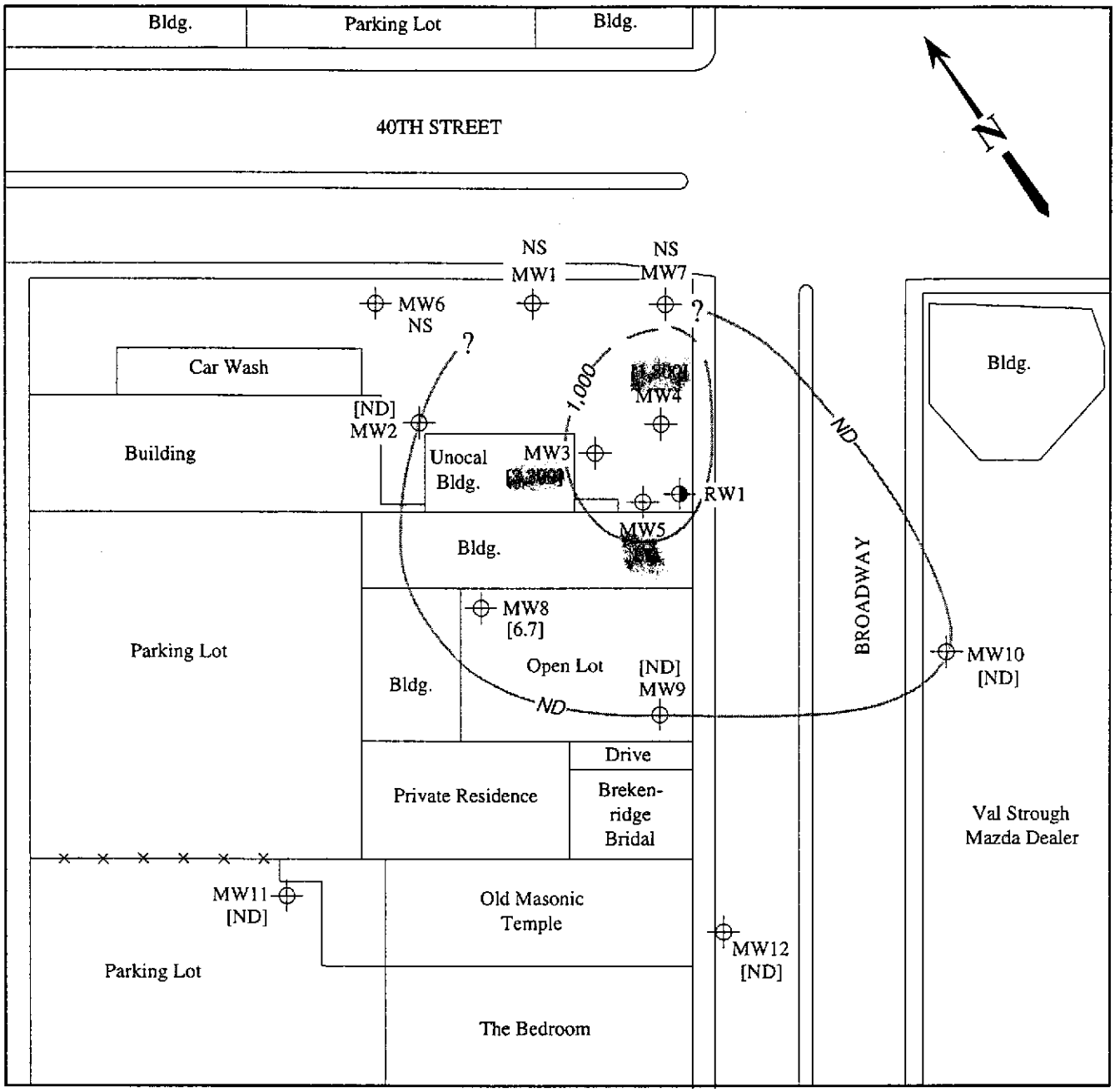
Approx. scale feet

CONCENTRATIONS OF TPH AS GASOLINE IN GROUND WATER ON NOVEMBER 10, 1994

mpds SERVICES, INCORPORATED

UNOCAL SERVICE STATION #0746
3943 BROADWAY
OAKLAND, CALIFORNIA

FIGURE
4



LEGEND

- Monitoring well
- 6-inch diameter recovery well
- [ ] Concentration of benzene in µg/L
- Approximate iso-concentration contours of benzene contamination in ground water in µg/L

ND = Non-detectable, NS = Not sampled, FP = Free product

0 60 120

Approx. scale feet

CONCENTRATIONS OF BENZENE IN GROUND WATER ON NOVEMBER 10, 1994

MPDS SERVICES, INCORPORATED

UNOCAL SERVICE STATION #0746
3943 BROADWAY
OAKLAND, CALIFORNIA

FIGURE
5

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: Nov 10, 1994
2401 Stanwell Dr., Ste. 400	Matrix Descript:	Water	Received: Nov 10, 1994
Concord, CA 94520	Analysis Method:	EPA 5030/8015/8020	Reported: Nov 29, 1994
Attention: Avo Avedessian	First Sample #:	411-0543	

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
411-0543	MW2	95^	ND	ND	ND	ND
411-0544	MW3	86,000	3,300	3,800	1,800	8,300
411-0545	MW4	7,700	1,800	280	460	1,300
411-0546	MW8	940	6.7	6.3	ND	16
411-0547	MW9	ND	ND	ND	ND	ND
411-0548	MW10	ND	ND	ND	ND	ND
411-0549	MW11	ND	ND	ND	ND	ND
411-0550	MW12	ND	ND	ND	ND	ND

^ Hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.

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:	Nov 10, 1994
2401 Stanwell Dr., Ste. 400	Matrix Descript:	Water	Received:	Nov 10, 1994
Concord, CA 94520	Analysis Method:	EPA 5030/8015/8020	Reported:	Nov 29, 1994
Attention: Avo Avedessian	First Sample #:	411-0543		

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
411-0543	MW2	Gasoline and Discrete Peak^	1.0	11/16/94	HP-4	96
411-0544	MW3	Gasoline	400	11/15/94	HP-4	89
411-0545	MW4	Gasoline	20	11/15/94	HP-4	90
411-0546	MW8	Gasoline	5.0	11/16/94	HP-5	85
411-0547	MW9	--	1.0	11/22/94	HP-4	89
411-0548	MW10	--	1.0	11/22/94	HP-4	94
411-0549	MW11	--	1.0	11/22/94	HP-4	92
411-0550	MW12	--	1.0	11/22/94	HP-4	87

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager

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 Avedessian

Client Project ID: Unocal #0746, 3943 Broadway, Oakland
Matrix: Liquid
QC Sample Group: 4110543-550

Reported: Nov 30, 1994

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	M. Creusere	M. Creusere	M. Creusere	M. Creusere
MS/MSD Batch#:	4110665	4110665	4110665	4110665
Date Prepared:	11/15/94	11/15/94	11/15/94	11/15/94
Date Analyzed:	11/15/94	11/15/94	11/15/94	11/15/94
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	90	95
Matrix Spike Duplicate % Recovery:	85	90	90	82
Relative % Difference:	6.1	0.0	0.0	15
LCS Batch#:	2LCS111594	2LCS111594	2LCS111594	2LCS111594
Date Prepared:	11/15/94	11/15/94	11/15/94	11/15/94
Date Analyzed:	11/15/94	11/15/94	11/15/94	11/15/94
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
LCS % Recovery:	76	86	90	91
% 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 Avedessian

Client Project ID: Unocal #0746, 3943 Broadway, Oakland
Matrix: Liquid
QC Sample Group: 4110543-550

Reported: Nov 30, 1994

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#:	4110604	4110604	4110604	4110604
Date Prepared:	11/16/94	11/16/94	11/16/94	11/16/94
Date Analyzed:	11/16/94	11/16/94	11/16/94	11/16/94
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:	100	105	105	100
Matrix Spike Duplicate % Recovery:	105	105	100	100
Relative % Difference:	4.9	0.0	4.9	0.0
LCS Batch#:	3LCS111694	3LCS111694	3LCS111694	3LCS111694
Date Prepared:	11/16/94	11/16/94	11/16/94	11/16/94
Date Analyzed:	11/16/94	11/16/94	11/16/94	11/16/94
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
LCS % Recovery:	89	97	96	95
% Recovery Control Limits:	71-133	72-128	72-130	71-120

SEQUOIA ANALYTICAL, #1271

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Project Manager

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

Client Project ID: Unocal #0746, 3943 Broadway, Oakland
Matrix: Liquid
QC Sample Group: 4110543-550

Reported: Nov 30, 1994

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#:	4110603	4110603	4110603	4110603
Date Prepared:	11/16/94	11/16/94	11/16/94	11/16/94
Date Analyzed:	11/16/94	11/16/94	11/16/94	11/16/94
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:	85	95	95	95
Matrix Spike Duplicate % Recovery:	85	95	95	96
Relative % Difference:	0.0	0.0	0.0	1.0
LCS Batch#:	2LCS111694	2LCS111694	2LCS111694	2LCS111694
Date Prepared:	11/16/94	11/16/94	11/16/94	11/16/94
Date Analyzed:	11/16/94	11/16/94	11/16/94	11/16/94
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
LCS % Recovery:	75	85	88	90
% Recovery Control Limits:	71-133	72-128	72-130	71-120

SEQUOIA ANALYTICAL, #1271

Signature on File

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

Client Project ID: Unocal #0746, 3943 Broadway, Oakland
Matrix: Liquid
QC Sample Group: 4110543-550

Reported: Nov 30, 1994

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	J. Fontecha	J. Fontecha	J. Fontecha	J. Fontecha
MS/MSD Batch#:	4110547	4110547	4110547	4110547
Date Prepared:	11/22/94	11/22/94	11/22/94	11/22/94
Date Analyzed:	11/22/94	11/22/94	11/22/94	11/22/94
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	75	90	82
Matrix Spike Duplicate % Recovery:	90	85	100	93
Relative % Difference:	12	13	11	13
LCS Batch#:	2LCS112294	2LCS112294	2LCS112294	2LCS112294
Date Prepared:	11/22/94	11/22/94	11/22/94	11/22/94
Date Analyzed:	11/22/94	11/22/94	11/22/94	11/22/94
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
LCS % Recovery:	78	89	93	94
% 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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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

SAMPLER: RAY MARANGOSIAN
WITNESSING AGENCY:

UNOCAL S/S # 0714 CITY: OAKLAND
ADDRESS: 3743 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
MW2	11.10.94	12:00	X	X		2	Well	X					4110543		→	MW2 1 Bad Key in Transit
MW3	"	14:45	X	X		"	"	X					4110544		A,B	
MW4	"	12:30	X	X		"	"	X					4110545			
MW5	"	13:15	X	X		"	"	X					4110546			
MW9	"	13:50	X	X		"	"	X					4110547			
MW10	"	10:00	X	X		"	"	X					4110548			
MW11	"	11:20	X	X		"	"	X					4110549			
MW12	"	10:30	X	X		"	"	X					4110550		↓	

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	THE FOLLOWING MUST BE COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:
(SIGNATURE) Ray Marangosian	11.10.94 18:45	(SIGNATURE) 1845 11.10.94	1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? YES
(SIGNATURE) Mendel	11-11 1230	(SIGNATURE)	2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? YES
(SIGNATURE)		(SIGNATURE) I & Dahm 1245 11/11/94	3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? NO
(SIGNATURE)		(SIGNATURE)	4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? YES
(SIGNATURE)		(SIGNATURE)	SIGNATURE: TITLE: Analyst DATE: 11.10.94