MONITORING
PURGING
DISPOSING
SAMPLING

MPDS SERVICES, INCORPORATED

February 14, 1995

Alameda County Health Care Services
1131 Harbor Bay Parkway
Alameda, California 94502

Attention: Ms. Susan Hugo

RE: Unocal Service Station #3538
411 W. MacArthur Boulevard
Oakland, California

Dear Ms. Hugo:

Per the request of the Unocal Corporation Project Manager, Ms. Tina R. Berry, enclosed please find our report (MPDS-UN3538-05) dated February 6, 1995 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

2401 Stanwell Drive, Suite 300, Concord, CA 94520
TEL: (510) 602-5120 FAX: (510) 689-1918

MONITORING
PURGING
DISPOSING
SAMPLING

MPDS SERVICES, INCORPORATED

MPDS-UN3538-05
February 6, 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 #3538
411 W. MacArthur Boulevard
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 January 9, 1995. Prior to sampling, the wells were each purged of between 5 and 6.5 gallons of water. Samples were then collected using a clean Teflon bailer. The samples were decanted into clean VOA vials, which were then sealed with Teflon-lined screw caps, labeled, and stored in a cooler, on ice, until delivery to a state-certified laboratory. MPDS Services, Inc. transported the purged ground water to the 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 and 3. 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 Figure 2. Copies of the laboratory analytical results and the Chain of Custody documentation are attached to this report.

2401 Stanwell Drive, Suite 300, 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 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 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 & 3
Location Map
Figures 1 & 2
Laboratory Analyses
Chain of Custody documentation

cc: Mr. Thomas Berkins, 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 January 9, 1995)						
MW1*	54.20	17.90	27.28	0	--	0
MW2	53.98	17.40	26.94	0	No	6.5
MW3	54.17	17.69	25.05	0	No	5
MW4*	54.26	17.38	28.71	0	--	0
MW5*	54.10	17.13	30.04	0	--	0
MW6*	57.71	13.73	30.20	0	--	0
(Monitored and Sampled on October 5, 1994)						
MW1*	53.55	18.55	27.25	0	--	0
MW2	53.05	18.33	27.90	0	No	7
MW3	53.28	18.58	25.09	0	No	5
MW4*	53.36	18.28	29.01	0	--	0
MW5*	53.25	17.98	30.12	0	--	0
MW6*	57.28	14.16	30.08	0	--	0
(Monitored and Sampled on July 7, 1994)						
MW1	53.82	18.28	27.30	0	No	6.5
MW2	53.57	17.81	26.95	0	No	6.5
MW3	53.65	18.21	25.03	0	No	5
MW4	53.84	17.80	28.72	0	No	7.5
MW5	53.73	17.50	30.05	0	No	9
MW6	57.39	14.05	30.19	0	No	11
(Monitored and Sampled on April 9, 1994)						
MW2	53.41	17.97	27.93	0	--	7
MW3	53.67	18.19	25.11	0	--	5

TABLE 1 (Continued)

SUMMARY OF MONITORING DATA

Well #	Well Casing Elevation (feet)**
MW1	72.10
MW2	71.38
MW3	71.86
MW4	71.64
MW5	71.23
MW6	71.44

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

* Monitored only.

** The elevations of top of well casings are relative to Mean Seal Level (MSL), per the City of Oakland Benchmark #9NW10 (elevation = 75.50' MSL).

-- Sheen determination was not performed.

TABLE 2

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Well #	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes
1/09/95	MW1	SAMPLED ANNUALLY				
	MW2	ND	ND	ND	ND	ND
	MW3	ND	0.68	ND	ND	ND
	MW4	SAMPLED ANNUALLY				
	MW5	SAMPLED ANNUALLY				
	MW6	SAMPLED ANNUALLY				
10/05/94	MW1	SAMPLED ANNUALLY				
	MW2	720♦	20	ND	ND	3.1
	MW3	ND	ND	ND	ND	ND
	MW4	SAMPLED ANNUALLY				
	MW5	SAMPLED ANNUALLY				
	MW6	SAMPLED ANNUALLY				
7/07/94	MW1	ND	ND	ND	ND	ND
	MW2	110♦	4.4	ND	ND	ND
	MW3	110♦	4.5	ND	ND	ND
	MW4	ND	ND	ND	ND	ND
	MW5	ND	ND	ND	ND	ND
	MW6	ND	ND	ND	ND	ND
4/09/94	MW2	120	10	0.88	1.1	4.9
	MW3	1,800	22	ND	140	280
1/12/94	MW2	300	7.8	3.8	1.8	10
	MW3	3,800	78	ND	180	390
	MW5	ND	ND	0.84	ND	1.6
	MW6	ND	ND	1.2	ND	2.9
10/14/93	MW2	230♦	5.3	ND	ND	2.1
	MW3	2,500	52	ND	110	250
	MW5	ND	ND	ND	ND	ND
	MW6	ND	ND	0.64	ND	ND

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Well #	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes
7/14/93	MW1	ND	2.2	2.1	1.1	6.2
	MW2	110♦	6.5	ND	ND	1.1
	MW3	6,300	190	ND	430	1,000
	MW4	ND	ND	ND	ND	ND
	MW5	ND	ND	0.57	ND	ND
	MW6	ND	0.99	2.4	ND	1.9
4/13/93	MW2	410♦♦	42	7.7	6.4	28
	MW3	12,000♦♦	290	38	760	2,300
	MW5	ND	ND	ND	ND	ND
	MW6	ND	ND	ND	ND	ND
1/08/93	MW2	510♦	ND	ND	ND	ND
	MW3	1,100♦♦	48	0.99	0.90	93
	MW5	ND	ND	ND	ND	ND
	MW6	ND	ND	ND	ND	ND
11/30/92	MW5	ND	ND	ND	ND	ND
	MW6	ND	ND	ND	ND	ND
10/12/92	MW2	370	3.4	0.56	ND	11
	MW3	3,200	160	10	230	540
7/14/92	MW1	ND	ND	ND	ND	ND
	MW2	130	3.7	ND	ND	ND
	MW3	21,000	890	200	1,200	4,300
	MW4	ND	1.3	2.5	ND	1.0
4/14/92	MW2	150	6.2	ND	ND	1.4
	MW3	14,000	660	48	560	2,000
1/15/92	MW2	220	37	0.52	1.1	7.0
	MW3	3,000	590	14	310	750
10/15/91	MW2	140	44	0.56	1.5	12
	MW3	3,100	390	34	150	390

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Well #	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes
7/15/91	MW1	ND	ND	ND	ND	ND
	MW2	2,200	770	12	72	370
	MW3	9,200	1,300	230	490	1,900
	MW4	ND	ND	ND	ND	ND
4/12/91	MW1	ND	ND	ND	ND	ND
	MW2	2,200	160	4.3	23	62
	MW3	880	170	1.1	34	110
	MW4	ND	ND	ND	ND	ND
1/15/91	MW1	ND	ND	ND	ND	ND
	MW2	680	170	0.7	19	81
	MW3	3,200	460	1.5	120	270
	MW4	ND	ND	ND	--	ND
10/16/90	MW1	ND	ND	ND	ND	ND
	MW2	1,400	430	2.0	48	240
	MW3	740	210	1.4	2.5	82
	MW4	ND	ND	ND	ND	ND
7/17/90	MW1	ND	ND	ND	ND	ND
	MW2	490	76	0.59	11	46
	MW3	4,000	270	48	130	250
	MW4	ND	ND	ND	ND	ND
4/19/90	MW1	ND	ND	ND	ND	ND
	MW2	3,900	550	5.1	91	390
	MW3	3,100	600	27	54	220
	MW4	ND	ND	0.48	ND	ND
1/23/90	MW1	ND	1.5	2.3	ND	4.3
	MW2	400	73	36	10	40
	MW3	450	110	1.2	4.4	11
	MW4	ND	ND	0.40	ND	ND

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Well #	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes
9/15/89	MW1	ND	ND	0.61	ND	ND
	MW2	290	ND	12	ND	ND
	MW3	32	ND	ND	ND	ND
	MW4	ND	ND	ND	ND	ND

♦ 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 a non-gasoline mixture.

ND = Non-detectable.

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

Note: Laboratory analyses data prior to January 12, 1994, were provided by Kaprealian Engineering, Inc.

TABLE 3 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

* All EPA method 8010 constituents were non-detectable, except for tetrachloroethene as indicated.

-- Indicates analysis was not performed.

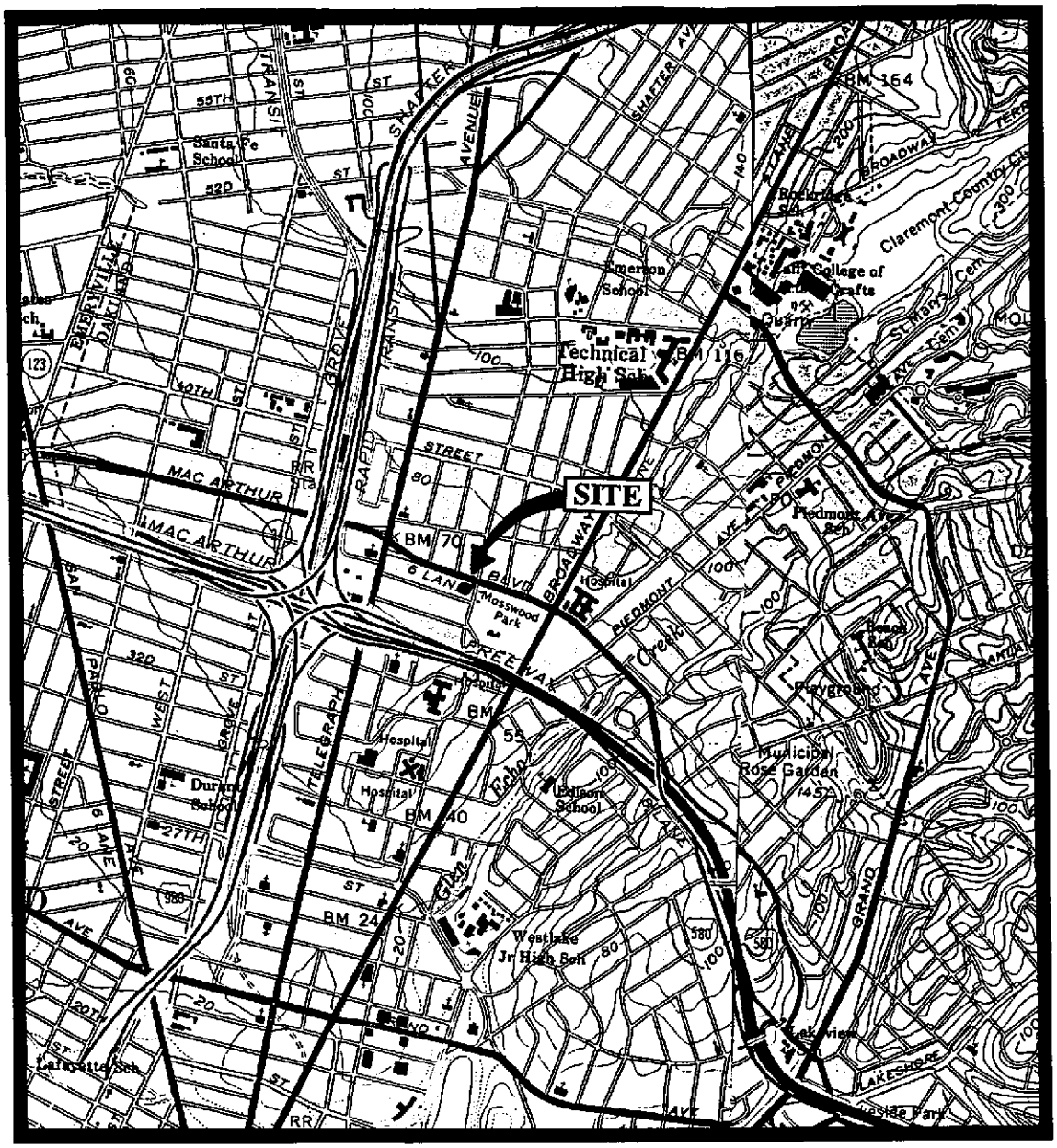
MTBE = methyl tert butyl ether.

ND = Non-detectable.

mg/L = milligrams per liter.

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

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



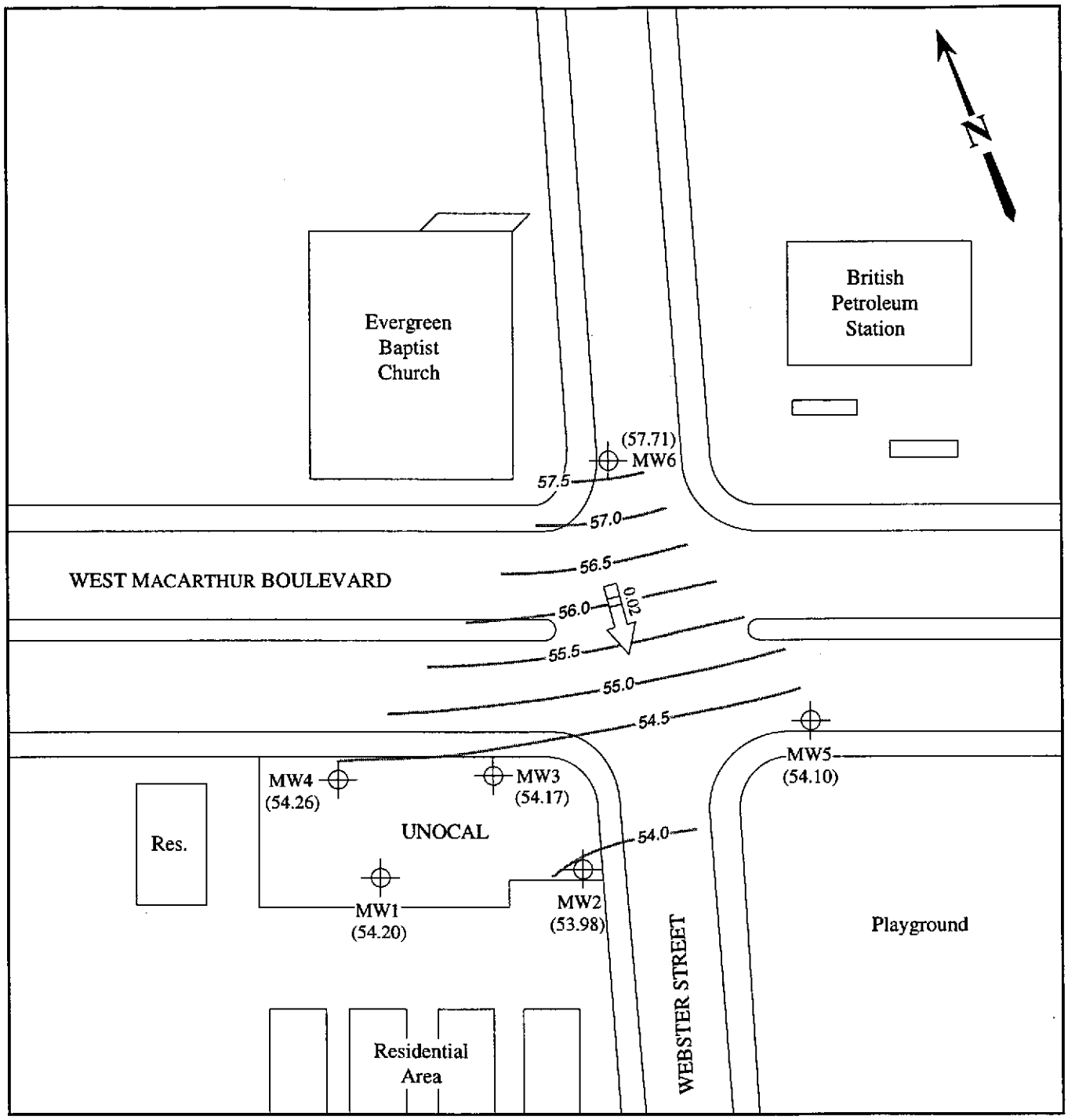
N

0 2000 4000

Approx. scale feet

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

mpds SERVICES, INCORPORATED	**UNOCAL SERVICE STATION # 3538** **411 W. MACARTHUR BOULEVARD** **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

0 60 120

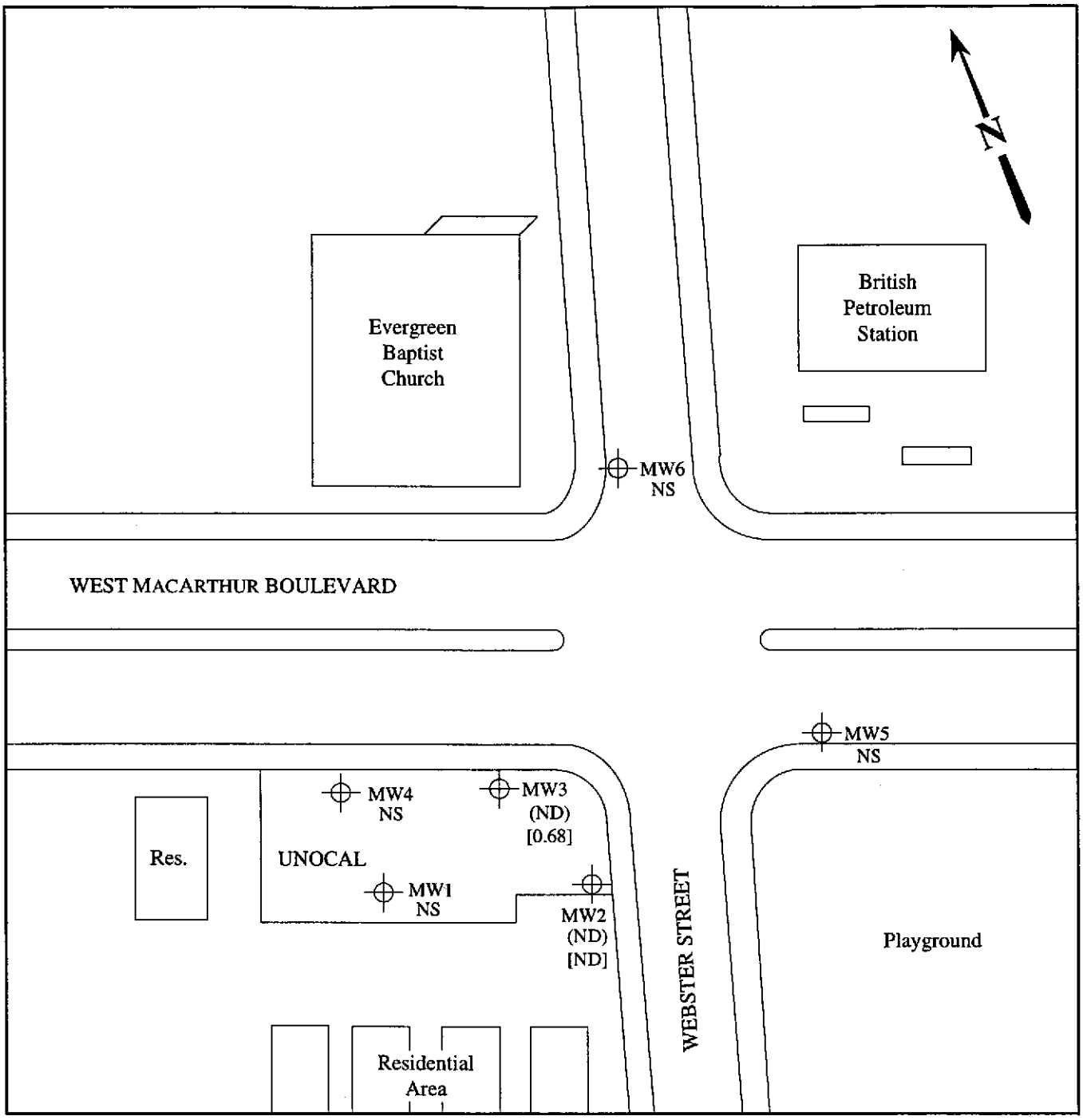
Approx. scale feet

POTENTIOMETRIC SURFACE MAP FOR THE JANUARY 9, 1995 MONITORING EVENT

mpds SERVICES, INCORPORATED

UNOCAL SERVICE STATION # 3538
411 W. MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

FIGURE
1



LEGEND

- Monitoring well
- ( ) Concentration of TPH as gasoline in µg/L
- [ ] Concentration of benzene in µg/L

ND = Non-detectable, NS = Not sampled

0 60 120

Approx. scale feet

PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON JANUARY 9, 1995

mpds SERVICES, INCORPORATED

UNOCAL SERVICE STATION # 3538
411 W. MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

FIGURE
2

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 #3538, 411 W. MacArthur Blvd., Oakland	Sampled:	Jan 9, 1995
2401 Stanwell Dr., Ste. 400	Matrix Descript:	Water	Received:	Jan 9, 1995
Concord, CA 94520	Analysis Method:	EPA 5030/8015/8020	Reported:	Jan 24, 1995
Attention: Avo Avedissian	First Sample #:	501-0419		

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
501-0419	MW-2	ND	ND	ND	ND	ND
501-0420	MW-3	ND	0.68	ND	ND	ND

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

5010419.MPD <1>

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 #3538, 411 W. MacArthur Blvd., Oakland	Sampled:	Jan 9, 1995
2401 Stanwell Dr., Ste. 400	Matrix Descript:	Water	Received:	Jan 9, 1995
Concord, CA 94520	Analysis Method:	EPA 5030/8015/8020	Reported:	Jan 24, 1995
Attention: Avo Avedissian	First Sample #:	501-0419		

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
501-0419	MW-2	--	1.0	1/12/95	HP-5	92
501-0420	MW-3	--	1.0	1/12/95	HP-5	90

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager

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

Client Project ID: Unocal #3538, 411 W. MacArthur Blvd., Oakland
Matrix: Liquid
QC Sample Group: 5010419-20

Reported: Jan 24, 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#:	5010417	5010417	5010417	5010417
Date Prepared:	1/12/95	1/12/95	1/12/95	1/12/95
Date Analyzed:	1/12/95	1/12/95	1/12/95	1/12/95
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:	105	105	105	105
Matrix Spike Duplicate % Recovery:	100	100	100	100
Relative % Difference:	4.9	4.9	4.9	4.9
LCS Batch#:	3LCS011295	3LCS011295	3LCS011295	3LCS011295
Date Prepared:	1/12/95	1/12/95	1/12/95	1/12/95
Date Analyzed:	1/12/95	1/12/95	1/12/95	1/12/95
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
LCS % Recovery:	89	93	93	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.

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: (JOE) HOVSIA AJEMIAN
WITNESSING AGENCY:
UNOCAL S/S # 3538 CITY: Oakland
ADDRESS: 411 W. MacArthur Blvd

SAMPLE ID NO	DATE	TIME	WATER	GRAB	COMP	NO OF CONT	SAMPLING LOCATION	TPH-GAS BTEX	TPH-DIESEL	TOG	8010					ANALYSES REQUESTED
MW-2	1-9-95	11:00 A.M	✓	✓		2(VOA)	wells	✓				5010419			A,B	VOA-s preserved
MW-3	"	10:30 A.M	✓	✓		"	"	✓				5010420			↓	

TURN AROUND TIME: Regular

REMARKS: VOA-s preserved

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
(SIGNATURE) Joe Lewis	1-9-95 3:00 P.M	(SIGNATURE)
(SIGNATURE)	1/10/95 8:00 AM	(SIGNATURE)
(SIGNATURE)	1-10	(SIGNATURE) J D Daluz 1/10/95 3:30
(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 (4°C)
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: TITLE: OM DATE: 1-9-95