

MONITORING
PURGING
DISPOSING
SAMPLING



SERVICES, INCORPORATED

MPDS-UN7376-04
January 16, 1996

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

Attention: Mr. Robert A. Boust

RE: Quarterly Data Report
Unocal Service Station #7376
4191 First Street
Pleasanton, California

Dear Mr. Boust:

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 directions during the most recent quarter are shown on the attached Figures 1 and 2.

Ground water samples were collected on December 12, 1995. Prior to sampling, the wells were each purged of between 6.5 and 11.5 gallons of water. During purging operations, the field parameters pH, temperature, and electrical conductivity were recorded and are presented in Table 2. Once the field parameters were observed to stabilize, and where possible, a minimum of approximately four casing volumes had been removed from each well, 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. Field blank, Trip blank, and Equipment blank samples (denoted as ES1, ES2, and ES3 respectively) were also collected for quality assurance and control. 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 documenta-

tion. The analytical results of the ground water samples collected to date are summarized in Table 3. 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 3. 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 Mr. Scott Seery of the Alameda County Health Care Services Agency.

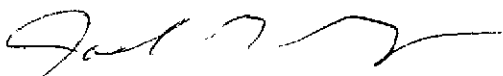
If you have any questions regarding this report, please do not hesitate to call Mr. Nubar Srabian at (510) 602-5120.

Sincerely,

MPDS Services, Inc.



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

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

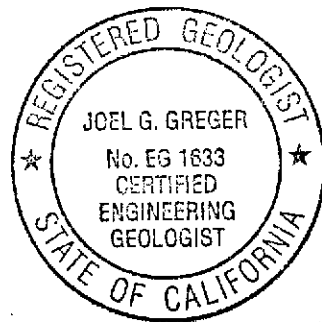


TABLE 1

SUMMARY OF MONITORING DATA

<u>Well #</u>	<u>Ground Water Elevation (feet)</u>	<u>Depth to Water (feet)♦</u>	<u>Total Well Depth (feet)♦</u>	<u>Product Thickness (feet)</u>	<u>Sheen</u>	<u>Water Purged (gallons)</u>
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(Monitored and Sampled on December 12, 1995)

MW1	289.44	77.55	86.47	0	No	6.5
MW2B	289.09	75.96	85.33	0	No	6.5
MW3	289.28	77.73	94.20	0	No	11.5

(Monitored and Sampled on September 9, 1995)

MW1	287.99	79.00	86.38	0	No	5
MW2B	287.51	77.54	85.25	0	No	5.5
MW3	287.73	79.28	94.17	0	No	10

(Monitored and Sampled on June 1, 1995)

MW1	289.46	77.53	86.44	0	No	6.5
MW2B	289.36	75.69	85.32	0	No	7
MW3	289.41	77.60	94.17	0	No	11.5

(Monitored and Sampled on March 1, 1995)

MW1	286.90	80.09	86.39	0	No	1
MW2B	284.25	80.80	85.25	0	No	2
MW3	283.81	83.20	94.10	0	No	4

<u>Well #</u>	<u>Well Casing Elevation (feet)*</u>
MW1	366.99
MW2B	365.05
MW3	367.01

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.
- * The elevations of the top of the well casings were surveyed relative to City of Pleasanton Benchmark V1, a brass disk on the north curb of Ray Street, approximately 200 feet northwest of the centerline of First Street (elevation = 367.17 feet Mean Sea Level).
- Sheen determination was not performed.

Note: Monitoring data prior to March 1, 1995 were provided by Kaprealian Engineering, Inc.

TABLE 2

RECORD OF THE TEMPERATURE, CONDUCTIVITY, AND pH VALUES
 IN THE MONITORING WELLS DURING PURGING AND PRIOR TO SAMPLING

(Measured on December 12, 1995)

Well #	Gallons per Casing Volume	Time	Gallons Purged	Casing Volumes Purged	Temper- ature (°F)	Conductivity ([μmhos/cm] x100)	pH
MW1	1.52	10:45	0	0	66.8	8.50	6.81
			1.5	0.99	67.9	8.50	6.51
			3	1.97	68.0	8.80	6.52
			4.5	2.96	68.1	8.50	6.48
			6.5	4.28	68.1	8.50	6.48
MW2B	1.59	11:30	0	0	65.8	10.37	6.41
			1.5	0.94	67.1	10.63	6.38
			3	1.89	67.5	10.71	6.37
			4.5	2.83	67.4	10.66	6.37
			6.5	4.09	67.4	10.63	6.37
MW3	2.80	12:15	0	0	65.8	6.64	6.70
			3	1.07	66.9	6.59	6.63
			6	2.14	66.9	6.76	6.67
			9	3.21	66.8	6.73	6.69
			11.5	4.11	66.7	6.70	6.68

TABLE 3

SUMMARY OF LABORATORY ANALYSES
 WATER

<u>Date</u>	<u>Well #</u>	<u>TPH as Diesel</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl-benzene</u>	<u>Xylenes</u>	
12/12/95	MW1	190◆◆	ND	ND	ND	ND	ND	
9/06/95	MW1▲	690	ND	ND	ND	ND	ND	
6/01/95	MW1	54◆◆	130	1.0	2.9	0.79	4.5	
3/01/95	MW1	120	ND	ND	1.1	ND	1.3	
12/07/94	MW1	--	ND	ND	ND	ND	ND	
12/07/94	MW2	--	WELL DAMAGED					
12/12/95	MW2B▲▲	850◆	1,200	630	ND	15	57	
9/06/95	MW2B▲	ND	ND	90	ND	ND	ND	
6/01/95	MW2B	280	350	19	5.8	ND	7.7	
3/01/95	MW2B	320	ND	ND	ND	ND	ND	
12/12/95	MW3▲▲	3,100◆	19,000	600	380	2,100	5,300	
9/06/95	MW3▲	880◆◆	4,100	380	490	130	710	
6/01/95	MW3	140◆◆	62	7.8	0.90	ND	1.6	
3/01/95	MW3	140◆	ND	ND	1.1	ND	1.1	
12/07/94	MW3	--	ND	ND	ND	ND	ND	

TABLE 3

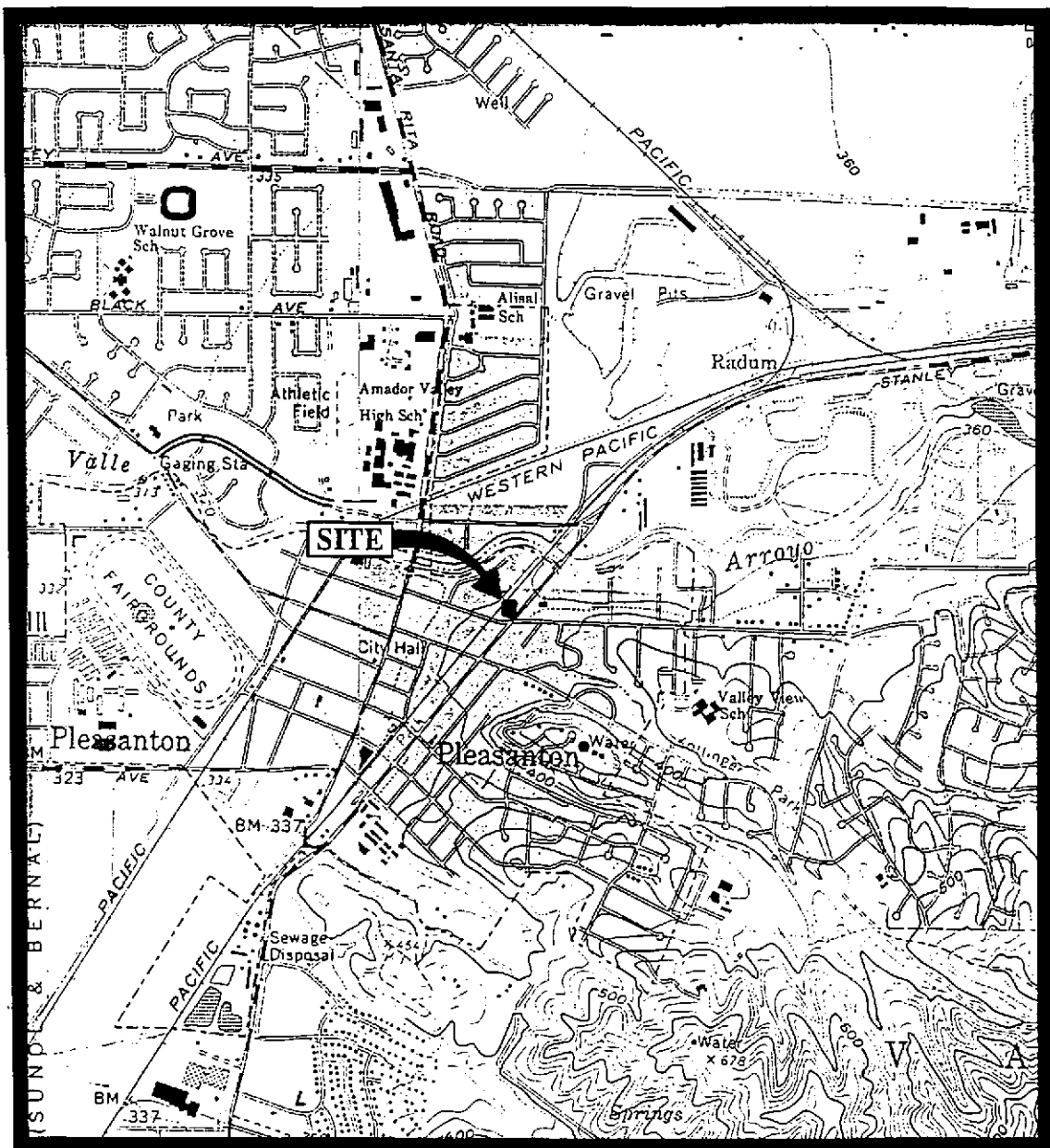
SUMMARY OF LABORATORY ANALYSES
WATER

ND = Non-detectable.

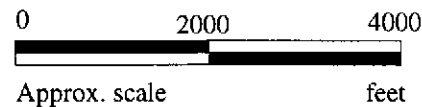
- ◆ Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be a diesel and non-diesel mixture.
- ◆◆ Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be diesel.
- ▲ Sequoia Analytical Laboratory has potentially identified the presence of MTBE at reportable levels in the ground water sample collected from this well.
- ▲▲ Sequoia Analytical Laboratory has identified the presence of ~~MTBE~~ at a level above or equal to the taste and odor threshold of 40 $\mu\text{g/L}$ in the sample collected from this well.

Results are in micrograms per liter ($\mu\text{g/L}$), unless otherwise indicated.

Note: Laboratory analyses data prior to March 1, 1995 were provided by Kaprealian Engineering, Inc.



Base modified from 7.5 minute U.S.G.S. Dublin and Livermore Quadrangles
(both photorevised 1980)



MPDS SERVICES, INCORPORATED

**UNOCAL SERVICE STATION #7376
4191 1ST STREET
PLEASANTON, CALIFORNIA**

**LOCATION
MAP**

Retaining Wall

U.G. Fuel Storage Tank (Typ. 2)

MW2B (289.09)

MW1 (289.44)

MW3 (289.28)

Pump Islands

Existing Building

Pump Islands

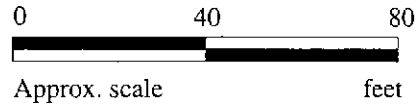
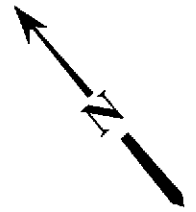
Planter

Planter




Planter

1ST STREET

RAY STREET



LEGEND

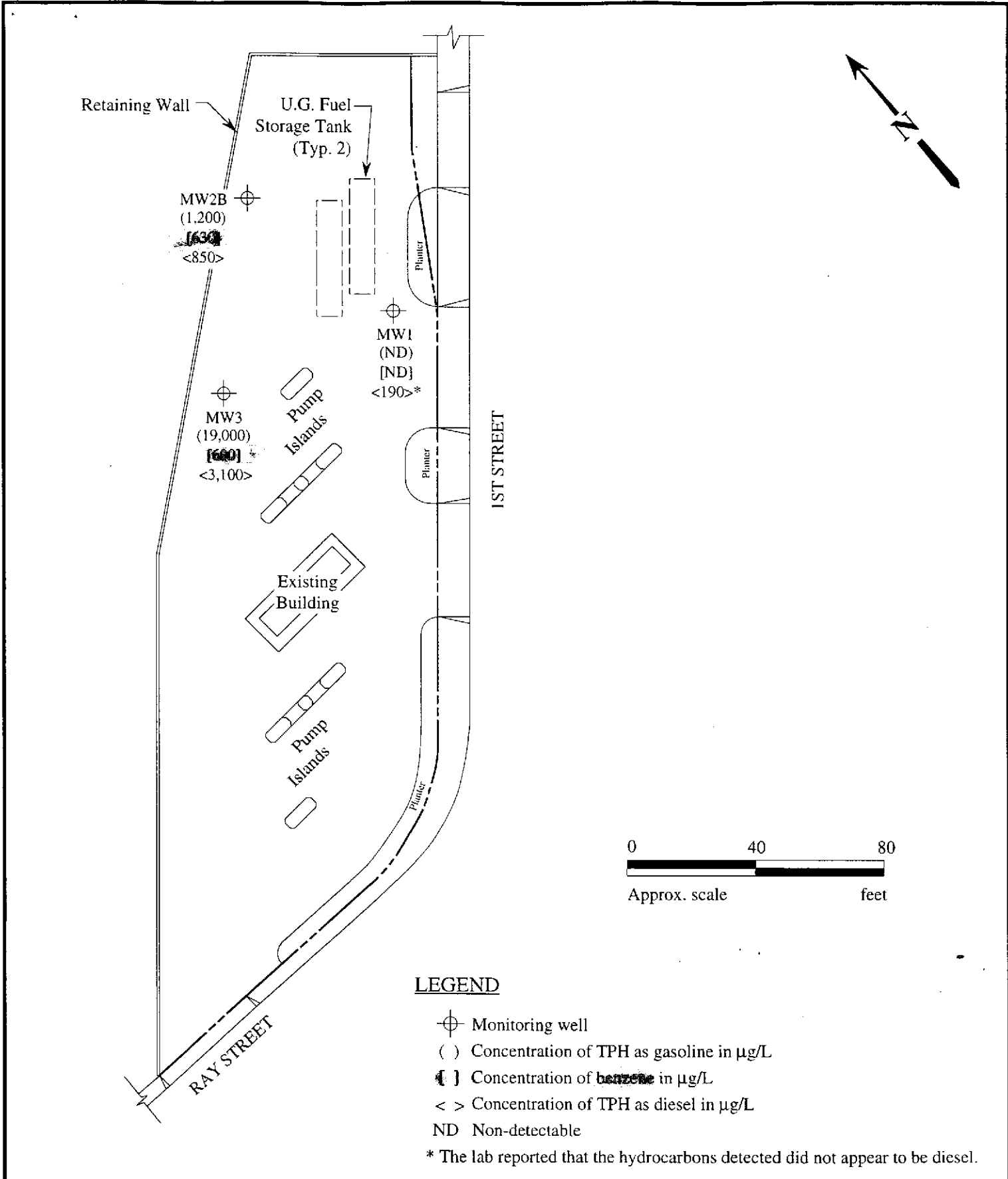
-  Monitoring well
-  Ground water elevation in feet above Mean Sea Level
-  Direction of ground water flow with approximate hydraulic gradient

GROUND WATER FLOW DIRECTION MAP FOR THE DECEMBER 12, 1995 MONITORING EVENT



**UNOCAL SERVICE STATION #7376
4191 1ST STREET
PLEASANTON, CALIFORNIA**

**FIGURE
1**



PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON DECEMBER 12, 1995

mpds SERVICES, INCORPORATED

UNOCAL SERVICE STATION #7376
 4191 1ST STREET
 PLEASANTON, CALIFORNIA

FIGURE
2



MPDS Services 2401 Stanwell Dr., Ste. 300 Concord, CA 94520 Attention: Jarrel Crider	Client Project ID: Unocal #7376, 4191 First St., Pleasanton Matrix Descript: Water Analysis Method: EPA 5030/8015 Mod./8020 First Sample #: 512-1157	Sampled: Dec 12, 1995 Received: Dec 12, 1995 Reported: Jan 10, 1996
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TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Sample Number	Sample Description	Purgeable Hydrocarbons µg/L	Benzene µg/L	Toluene µg/L	Ethyl Benzene µg/L	Total Xylenes µg/L
512-1157	MW-1	ND	ND	ND	ND	ND
512-1158	MW-2B	1,200	630	ND	15	57
512-1159	MW-3	19,000	600	380	2,100	5,300
512-1160	ES1	ND	ND	ND	ND	ND
512-1161	ES2	ND	ND	ND	ND	ND
512-1162	ES3	ND	ND	ND	ND	ND

Detection Limits:	50	0.50	0.50	0.50	0.50
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Total Purgeable Petroleum Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as ND were not present above the stated limit of detection.

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager





MPDS Services	Client Project ID: Unocal #7376, 4191 First St., Pleasanton	Sampled: Dec 12, 1995
2401 Stanwell Dr., Ste. 300	Matrix Descript: Water	Received: Dec 12, 1995
Concord, CA 94520	Analysis Method: EPA 5030/8015 Mod./8020	Reported: Jan 10, 1996
Attention: Jarrel Crider	First Sample #: 512-1157	

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
512-1157	MW-1	--	1.0	12/23/95	HP-9	100
512-1158	MW-2B	Gasoline	20	12/26/95	HP-9	93
512-1159	MW-3	Gasoline	100	12/26/95	HP-9	90
512-1160	ES1	--	1.0	12/23/95	HP-5	89
512-1161	ES2	--	1.0	12/23/95	HP-5	90
512-1162	ES3	--	1.0	12/23/95	HP-5	86

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 #7376, 4191 First St., Pleasanton Sample Matrix: Water Analysis Method: EPA 3510/8015 Mod. First Sample #: 512-1157	Sampled: Dec 12, 1995 Received: Dec 12, 1995 Reported: Jan 10, 1996
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TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit µg/L	Sample I.D. 512-1157 MW-1*	Sample I.D. 512-1158 MW-2B^	Sample I.D. 512-1159 MW-3^
Extractable Hydrocarbons	50	190	850	3100
Chromatogram Pattern:		Unidentified Hydrocarbons >C16	Diesel & Unidentified Hydrocarbons <C15	Diesel & Unidentified Hydrocarbons <C15

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0
Date Extracted:	12/19/95	12/19/95	12/19/95
Date Analyzed:	12/19/95	12/19/95	12/19/95
Instrument Identification:	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 & grease range.

^This sample appears to contain diesel and a non-diesel mixture. Unidentified hydrocarbons <C15 are probably gasoline.





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

Client Project ID: Unocal #7376, 4191 First St., Pleasanton
Matrix: Liquid

QC Sample Group: 5121157-162

Reported: Jan 10, 1996

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes	Diesel
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015
Analyst:	N. Beaman	N. Beaman	N. Beaman	N. Beaman	J. Dinsay

MS/MSD Batch#:	5121218	5121218	5121218	5121218	BLK121995
Date Prepared:	12/26/95	12/26/95	12/26/95	12/26/95	12/19/95
Date Analyzed:	12/26/95	12/26/95	12/26/95	12/26/95	12/19/95
Instrument I.D.#:	HP-9	HP-9	HP-9	HP-9	GCHP-3A
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	300 µg/L
Matrix Spike % Recovery:	120	120	120	135	123
Matrix Spike Duplicate % Recovery:	105	110	110	122	127
Relative % Difference:	13	8.7	8.7	10	3.2

LCS Batch#:	4LCS122695	4LCS122695	4LCS122695	4LCS122695	LCS121995
Date Prepared:	12/26/95	12/26/95	12/26/95	12/26/95	12/19/95
Date Analyzed:	12/26/95	12/26/95	12/26/95	12/26/95	12/19/95
Instrument I.D.#:	HP-9	HP-9	HP-9	HP-9	GCHP-3A
LCS % Recovery:	115	115	115	128	97

% Recovery Control Limits:	71-133	72-128	72-130	71-120	38-122
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Please Note:

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager





Sequoia Analytical

680 Chesapeake Drive
404 N. Wiget Lane
819 Striker Avenue, Suite 8

Redwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834

(415) 364-9600
(510) 988-9600
(916) 921-9600

FAX (415) 364-9233
FAX (510) 988-9673
FAX (916) 921-0100

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

Date: 1/10/96

Sequoia Analytical has identified the presence of MTBE at a level above or equal to the taste and odor threshold of 40 µg/L in the following site(s):

Client Project I.D. - **Unocal #7376- Pleasanton**

Sequoia Work Order # - **9512256**

Sample Number:

5121158

5121159

Sample Description:

MW-2B

MW-3

SEQUOIA ANALYTICAL, #1271

Alan B. Kemp
Project Manager



CHAIN OF CUSTODY


9512256

SAMPLER			UNOCAL					ANALYSES REQUESTED							TURN AROUND TIME:	
STEVE BALIAN			S/S # <u>7376</u> CITY: <u>PLEASANTON</u>					TPH-GAS BTEX	TPH-DIESEL	TOG	8010					REGULAR
WITNESSING AGENCY			ADDRESS: <u>4191 - FIRST STREET</u>													
SAMPLE ID NO.	DATE	TIME	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION									
MW-1	12-12-95	11:20	X	X		3	WELL	X	X		5121157	A-C				
MW-2B	"	12:00	X	X		3	"	X	X		5121158	↓				
MW-3	"	12:50	X	X		3	"	X	X		5121159	↓				
RELINQUISHED BY:		DATE/TIME	RECEIVED BY:			DATE/TIME	THE FOLLOWING <u>MUST BE</u> COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:									
STEVE BALIAN		13:45				12/12	1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? <u>Y</u>									
(SIGNATURE)		12-12-95	(SIGNATURE)			1345	2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? <u>Y</u>									
(SIGNATURE)			(SIGNATURE)				3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? <u>N</u>									
(SIGNATURE)			(SIGNATURE)				4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? <u>Y</u>									
(SIGNATURE)			(SIGNATURE)				SIGNATURE: TITLE: DATE: 12/12/95									

e: 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.

CHAIN OF CUSTODY

9512256

SAMPLER			UNOCAL					ANALYSES REQUESTED								TURN AROUND TIME:	
STEVE BALIAN			SIS # <u>7376</u> CITY: <u>PLEASANTON</u>					TPH-GAS BTEX	TPH-DIESEL	TOG	8010						REGULAR
WITNESSING AGENCY			ADDRESS: <u>4191 - FIRST STREET</u>														
SAMPLE ID NO.	DATE	TIME	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION										
ES1	12-12-95		X	X		1		X		5121160							
ES2	"		X	X		1		X		5121161							
ES3	"		X	X		1		X		5121162							
RELINQUISHED BY:	DATE/TIME	RECEIVED BY:					DATE/TIME	THE FOLLOWING <u>MUST BE</u> COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:									
STEVE BALIAN	12:45 12-12-95						12/12 1345	1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? _____									
(SIGNATURE)		(SIGNATURE)						2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? _____									
(SIGNATURE)		(SIGNATURE)						3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? _____									
(SIGNATURE)		(SIGNATURE)						4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? _____									
(SIGNATURE)		(SIGNATURE)						SIGNATURE:			TITLE:			DATE:			

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