



February 20, 1996

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 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

MPDS-UN3538-09 February 8, 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 #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 16, 1996. Prior to sampling, the wells were each purged of between 6 and 8 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. Trip blank and Field blank samples (denoted as ES1 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 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.

MPDS-UN3538-08 February 8, 1996 Page 2

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 Mrs. Susan Hugo 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.

JOEL G. GREGER
No. EG 1633
CERTIFIED
ENGINEERING

GEOLOGIST

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

Laboratory Analyses

Chain of Custody documentation

cc: Mr. Thomas Berkins, Kaprealian Engineering, Inc.

TABLE 1
SUMMARY OF MONITORING DATA

100000000000000000000000000000000000000	<u></u>					A
(Ground Water Elevation	Depth to Water	Total Well Depth	Product Thickness		Water Purged
Well #	(feet)	water (feet)◆	Depth (feet)◆	(feet)	Sheen	(qallons)
	(Moni	tored and S	ampled on J	anuary 16, 1	995)	
MW1*	54.90	17.20	21.33	0		0
MW2	54.80	16.58	28.05	0	No	0
MW3	53.91	17.95	25.15	0	No	8 6
MW4 *	55.19	16.45	28.78	0	NO	0
MW5*	54.12	17.11	30.18	0		0
MW6*	55.06	16.38	30.11	0		0
	(Moni	tored and S	ampled on O	ctober 26, 1	995)	
		4.5.55		•		
MW1*	53.43	18.67	27.25	0		0
MW2	53.17	18.21	26.93	0	No	6
MW3	53.54	18.32	25.02	0	No	5
MW4 *	53.47	18.17	28.74	0		0
MW5*	53.13	18.10	30.02	0		0
MW6*	53.56	17.88	30.17	0		0
	(Mo	nitored and	Sampled on	July 19, 19	95)	
MW1	54.07	18.03	23.25	0	No	4
MW2	53.37	18.01	28.00	0	No	7
MW3	53.66	18.20	25.07	0	No	5
MW4	53.82	17.82	28.71	0	No	7.5
MW5	53.64	17.52	30.12	0	No	9
MW6	59.12	12.32	30.12	0	No	12.5
MAG	59.12	12.52	30.05	U	NO	12.5
	(Mon	itored and	Sampled on	April 17, 19	95)	
MW1*	54.88	17.22	23.22	0		О
MW2	53.88	17.50	28.01	0	No	7.5
MW3	54.18	17.68	25.10	Ō	No	5.5
MW4*	54.43	17.21	28.72	0		0
MW5*	54.18	17.05	30.15	0		0
MW6*	60.14	11.30	30.17	o		o
-				•		Ť

TABLE 1 (Continued)

SUMMARY OF MONITORING DATA

Well #	Well Casing Elevation <u>(feet)**</u>
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

1000000000 00.0000000000000000000000000	paga 1000 1000 1000 1000 1000 1000 1000 1	·				
Well #	Date	TPH as <u>Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	Ethyl- Benzene	Xylenes
2 1 2 2 2 2 2 2 2 2						
MWl	9/15/89	${f N}{f D}$	\mathbf{N} D	0.61	ND	ND
	1/23/90	ND	1.5	2.3	ND	4.3
	4/19/90	ND	ND	ND	ND	\mathbf{N} D
	7/17/90	ND	ND	ND	ND	ND
	10/16/90	ND	ND	ND	ND	ND
	1/15/91	ND	ND	ND	\mathbf{N} D	ND
	4/12/91	ND	ND	ND	ND	ND
	7/15/91	ND	ND	ND	ND	ND
	7/14/92	ND	ND	ND	ND	ND
	7/14/93	ND	2.2	2.1	1.1	6.2
	7/07/94	ND	ND	ND	ND	ND
	10/05/94	SAMPLED ANNU				
	7/19/95	ND	ND	ND	ND	ND
	10/26/95	SAMPLED ANNU				
	1/16/96	SAMPLED ANNU	JALLY			
MW2	9/15/89	290	ND	12	ND	ND
	1/23/90	400	73	36	10	40
	4/19/90	3,900	550	5.1	91	390
	7/17/90	490	76	0.59	11	46
	10/16/90	1,400	430	2.0	48	240
	1/15/91	680	170	0.7	19	81
	4/12/91	2,200	160	4.3	23	62
	7/15/91	2,200	770	12	72	370
	10/15/91	140	44	0.56	1.5	12
	1/15/92	220	37	0.52	1.1	7.0
	4/14/92	150	6.2	ND	ND	1.4
	7/14/92	130	3.7	ND	\mathbf{N} D	ИD
	10/12/92	370	3.4	0.56	ND	11
	1/08/93	510♦	ИD	ND	ND	ND
	4/13/93	410♦♦	42	7.7	6.4	28
	7/14/93	110♦	6.5	ND	ND	1.1
	10/14/93	230♦	5.3	ND	ND	2.1
	1/12/94	300	7.8	3.8	1.8	10
	4/09/94	120	10	0.88	1.1	4.9
	7/07/94	110♦	4.4	ND	ND	ND

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES WATER

0.690.000.000.0000000000000000000000000		and the second of the second s	******************************			
Well #	<u>Date</u>	TPH as <u>Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	Ethyl- <u>Benzene</u>	Xylenes
<u> </u>						00000000 000 at 1400 at 1400 at 1400 at 1400 at 1
MW2	10/05/94	720♦	20	ND	ND	3.1
(Cont)	1/09/95	ND	ND	ND	ND	ND
	4/17/95	93	5.6	0.62	1.7	5.5
	7/19/95	77	32	0.58	1.7	4.1
	10/26/95	54♦♦	13	ND	ND	0.72
	1/16/96▼	120	23	ND	ND	0.99
MW3	9/15/89	32	ND	ND	ND	ND
	1/23/90	450	110	1.2	4.4	11
	4/19/90	3,100	600	27	54	220
	7/17/90	4,000	270	48	130	250
	10/16/90	740	210	1.4	2.5	82
	1/15/91	3,200	460	1.5	120	270
	4/12/91	880	170	1.1	34	110
	7/15/91	9,200	1,300	230	490	1,900
	10/15/91	3,100	390	34	150	390
	1/15/92	3,000	590	14	310	750
	4/14/92	14,000	660	48	560	2,000
	7/14/92	21,000	890	200	1,200	4,300
	10/12/92	3,200	160	10	230	540
	1/08/93	1,100♦♦	48	0.99	0.90	93
	4/13/93	12,000♦♦	290	38	760	2,300
	7/14/93	6,300	190	ND	430	1,000
	10/14/93	2,500	52	ND	110	250
	1/12/94	3,800	78	ND	180	390
	4/09/94	1,800	22	ND	140	280
	7/07/94	110♦	4.5	ND	\mathbf{N} D	ND
	10/05/94	ND	ND	ND	ND	ND
	1/09/95	ND	0.68	ND	ND	ND
	4/17/95	3,700	80	10	270	510
	7/19/95	15,000	330	27	990	2,400
	10/26/95	14,000	420	180	750	1,600
	1/16/96▼	920	38	ND	30	57

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES WATER

5255 W 500 500 500 500 1 100 100 100 100 100 1	N - W N - LO N - M M - M - M - M - M - M - M - M - M			************************************		
Well #	<u>Date</u>	TPH a Gasoli	an ann ann ach i meann ann ann an ann an ann an an an an an	<u>Toluene</u>	Ethyl- <u>Benzene</u>	Xylenes
				000000	9000000 	·········
MW4	9/15/89	ND	ND	ND	ND	ND
	1/23/90	ND	ND	0.40	ND	ND
	4/19/90	ND	ND	0.48	ND 	ND
	7/17/90	ND	ND	ND	ND	ND
	10/16/90	ND	ND	ND	ND	ND
	1/15/91	ND	ND	ND		ND
	4/12/91	ND	ND	ND	ND	ND
	7/15/91	ND	ND	ND	ND	ND
	7/14/92	ND	1.3	2.5	ND	1.0
	7/14/93	ND	ND	ND	ND	ND
	7/07/94	ND	ND	ND	ND	ND
	10/05/94	SAMPLED	ANNUALLY			
	7/19/95	ND	ND	ND	ND	ND
	10/26/95	SAMPLED	ANNUALLY			
	1/16/96	SAMPLED	ANNUALLY			
MW5	11/30/92	ND	ND	ND	ND	ND
	1/08/93	ND	ND	ND	ND	ND
	4/13/93	ND	ND	ND	ND	\mathbf{N} D
	7/14/93	ND	ND	0.57	ND	ND
	10/14/93	ND	ND	$\mathbf{N}\mathbf{D}$	ND	ND
	1/12/94	ND	ND	0.84	ND	1.6
	7/07/94	ND	ND	ND	ND	ND
	10/05/94	SAMPLED	ANNUALLY			
	7/19/95	ND	ND	ND	ND	ND
	10/26/95	SAMPLED	ANNUALLY			
	1/16/96	SAMPLED	ANNUALLY			
MW6	11/30/92	ND	ND	ND	ND	ND
	1/08/93	ND	ND	ND	ND	ND
	4/13/93	ND	ND	ND	ND	ND
	7/14/93	ND	0.99	2.4	ND	1.9
	10/14/93	ND	ND	0.64	ND	ND
	1/12/94	ND	ND	1.2	ND	2.9
	7/07/94	ND	ND	ND	ND	ND
	10/05/94		ANNUALLY			
	7/19/95	ND	ND	ND	ND	ND
	10/26/95					
	1/16/96	SAMPLED	ANNUALLY			

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES WATER

- Sequoia Analytical Laboratory has identified the presence of MTBE at a level above or equal to the taste and odor threshold of 40 $\mu g/L$ in the sample collected from this well.
- 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 $(\mu g/L)$, unless otherwise indicated.

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

TABLE 3
SUMMARY OF LABORATORY ANALYSES
WATER

Well ‡	<u>Date</u>	TPH as <u>Diesel</u>	Total Oil & Grease (mg/L)	Tetrachloro- ethene*	MTBE
MWl	9/15/89	ND	ND	2.7	
	1/23/90	ND	1.5	2.1	
	4/19/90	ND	ND	2.2	
	7/17/90	ND	ND	1.7	
	10/16/90	ND	ND	2.0	
	1/15/91	ND	ND	2.1	
	4/12/91	ND	ND	2.0	
	7/15/91	ND	ND	1.8	<u></u>
	7/14/92			1.4	
	7/14/93		- -	0.95	
	7/07/94			0.83	 -
	7/19/95			0.52	
MW2	4/13/93			- -	200
	7/14/93			- -	250
	10/26/95				220
MW3	4/13/93				1,400
	7/14/93	- -			860
	10/26/95				4,800

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

MTBE = methyl tert butyl ether.

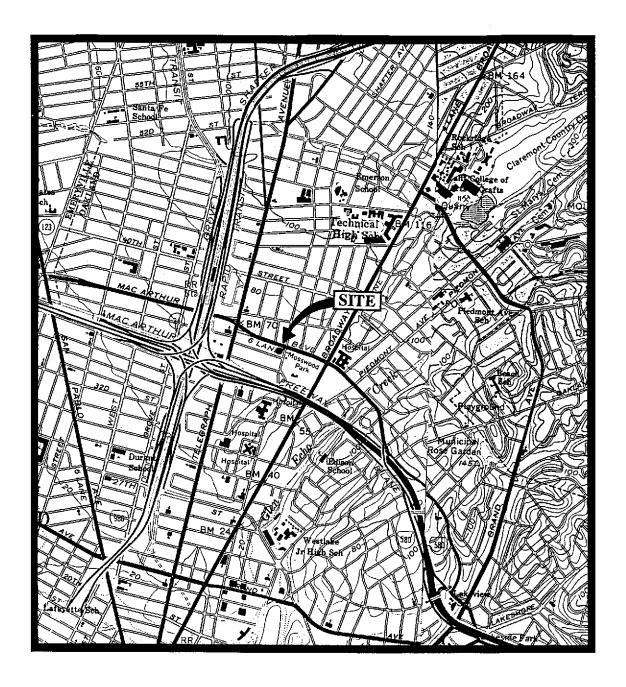
ND = Non-detectable.

mg/L = milligrams per liter.

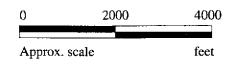
Results are in micrograms per liter $(\mu g/L)$, unless otherwise indicated.

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

⁻⁻ Indicates analysis was not performed.

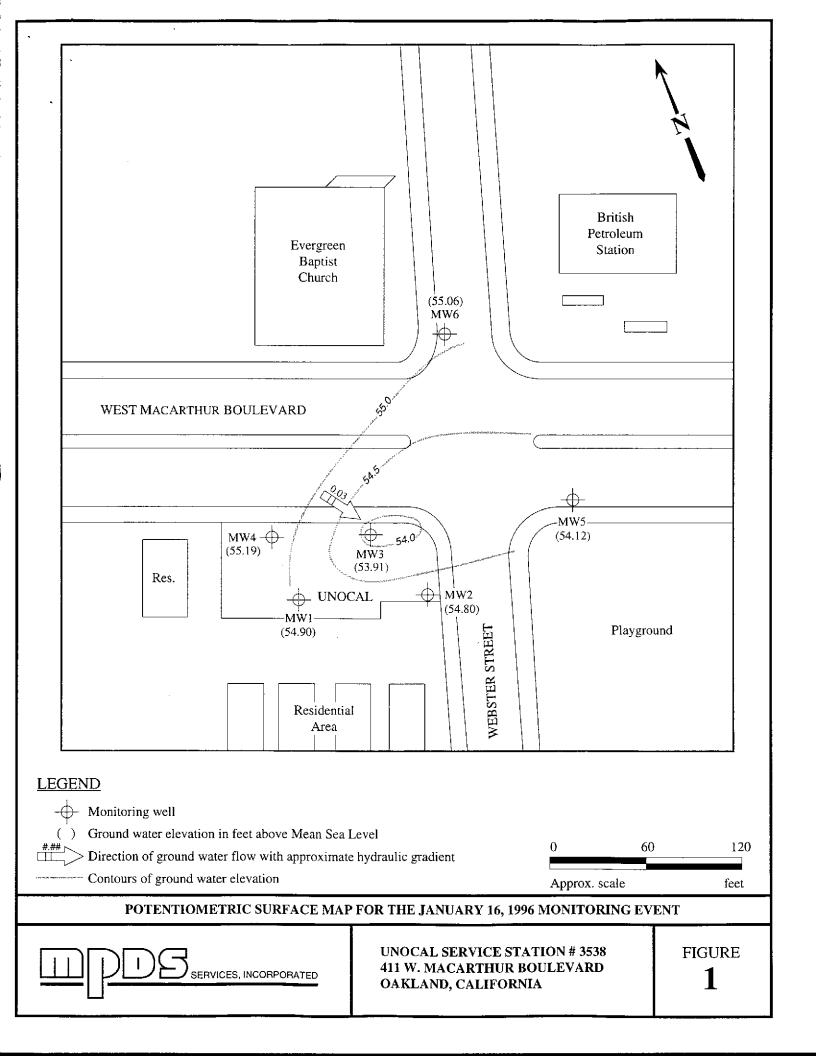


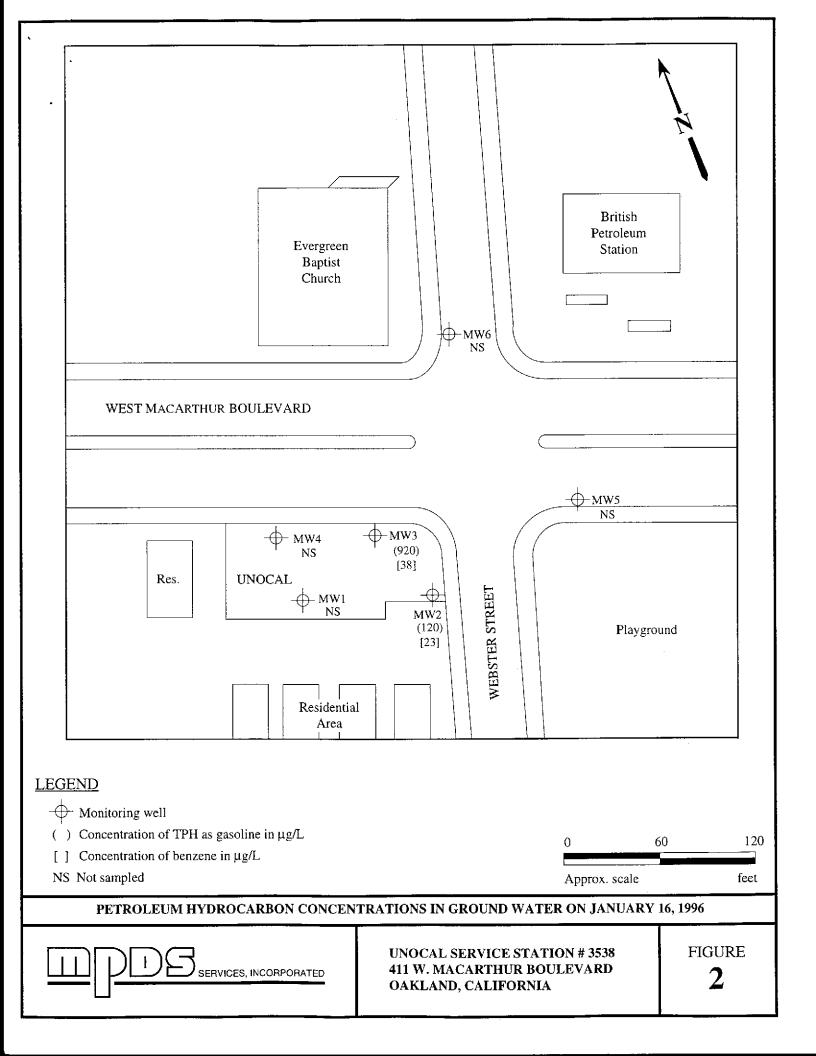
Base modified from 7.5 minute U.S.G.S. Oakland East & West Quadrangles (both photorevised 1980)





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







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

Client Project ID: Matrix Descript:

: Unocal #3538, 411 W. McArthur, Oakland

Sampled: Jan 1 Received:

Jan 16, 1996 Jan 16, 1996

Attention: Jarrel Crider

Analysis Method: First Sample #:

Water EPA 5030/8015 Mod./8020

Reported:

Feb 1, 1996

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

601-0979

Sample Number	Sample Description	Purgeable Hydrocarbons $\mu { m g/L}$	Benzene μg/L	Toluene μg/L	Ethyl Benzene μg/L	Total Xylenes μg/L
601-0979	MW-2	120	23	ND	ND	0.99
601-0980	мw-з	920	38	ND	30	57
601-0981	ES1	ND	ND	ND	ND	ND
601-0982	ES3	ND	ND	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

Page 1 of 2

公



680 Chesapeake Drive 404 N. Wiget Lane 819 Striker Avenue, Suite 8 Sacramento, CA 95834

Redwood City, CA 94063 Walnut Creek, CA 94598

(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

Client Project ID: Matrix Descript:

Unocal #3538, 411 W. McArthur, Oakland Sampled: Jan 16, 1996 Water

Jan 16, 1996

Attention: Jarrel Crider

Analysis Method:

EPA 5030/8015 Mod./8020

Received: Reported:

Feb 1, 1996

First Sample #: 601-0979

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
601-0979	MW-2	Gasoline	1.0	1/25/96	HP-2	115
601-0980	MW-3	Gasoline	10	1/26/96	HP-4	98
601-0981	ES1		1.0	1/27/96	HP-5	87
601-0982	ES3		1.0	1/27/96	HP-5	91

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp Project Manager





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

Client Project ID: Unocal #3538, 411 W. McArthur, Oakland

Matrix: Liquid

QC Sample Group: 6010979-982

Reported:

Feb 1, 1996

QUALITY CONTROL DATA REPORT

Method: EPA 8020	ANALYTE	Benzene	Toluene	Ethyl	Xylenes	
MS/MSD Batch#: 6010809 6010809 6010809 6010809				Denzene		
MS/MSD Batch#: 6010809 6010809 6010809 6010809 Date Prepared: 1/26/96 1/26/96 1/26/96 1/26/96 Date Analyzed: 1/26/96 1/26/96 1/26/96 1/26/96 Instrument 1.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: 95 100 100 103 Matrix Spike Duplicate % Recovery: 110 110 110 112 Relative % Difference: 15 9.5 9.5 7.8 LCS Batch#: 2LCS012696 2LCS012696 2LCS012696 Date Prepared: 1/26/96 1/26/96 1/26/96 Date Analyzed: 1/26/96 1/26/96 1/26/96	Method:	EPA 8020	EPA 8020			
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Date Analyzed: 1/26/96 1/26/96		6010809	6010809	6010809	6010809	
Date Analyzed: 1/26/96 1/26/96						•
Instrument I.D.#: HP-4						
Conc. Spiked: 20 μg/L 20 μg/L 20 μg/L 60 μg/L Matrix Spike % Recovery: 95 100 100 103 Matrix Spike Duplicate % Recovery: 110 110 110 112 Relative % Difference: 15 9.5 9.5 7.8 LCS Batch#: 2LCS012696 2LCS012696 2LCS012696 Date Prepared: 1/26/96 1/26/96 1/26/96 Date Analyzed: 1/26/96 1/26/96 1/26/96			• •			
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% Recovery: 95 100 100 103 Matrix Spike Duplicate % Recovery: 110 110 110 112 Relative % Difference: 15 9.5 9.5 7.8 LCS Batch#: 2LCS012696 2LCS012696 2LCS012696 2LCS012696 Date Prepared: 1/26/96 1/26/96 1/26/96 1/26/96 Date Analyzed: 1/26/96 1/26/96 1/26/96 1/26/96	Matrix Spike					
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Relative % Difference: 15 9.5 9.5 7.8 LCS Batch#: 2LCS012696 2LCS012696 2LCS012696 Date Prepared: 1/26/96 1/26/96 1/26/96 Date Analyzed: 1/26/96 1/26/96 1/26/96						
Relative % Difference: 15 9.5 9.5 7.8 LCS Batch#: 2LCS012696 2LCS012696 2LCS012696 Date Prepared: 1/26/96 1/26/96 1/26/96 1/26/96 Date Analyzed: 1/26/96 1/26/96 1/26/96						
Difference: 15 9.5 9.5 7.8 LCS Batch#: 2LCS012696 2LCS012696 2LCS012696 2LCS012696 Date Prepared: 1/26/96 1/26/96 1/26/96 1/26/96 Date Analyzed: 1/26/96 1/26/96 1/26/96	Hecovery:	110	110	110	112	
Difference: 15 9.5 9.5 7.8 LCS Batch#: 2LCS012696 2LCS012696 2LCS012696 Date Prepared: 1/26/96 1/26/96 1/26/96 1/26/96 Date Analyzed: 1/26/96 1/26/96 1/26/96	Relative %					
Date Prepared: 1/26/96 1/26/96 1/26/96 Date Analyzed: 1/26/96 1/26/96 1/26/96		15	9.5	9.5	7.8	
Date Prepared: 1/26/96 1/26/96 1/26/96 Date Analyzed: 1/26/96 1/26/96 1/26/96						
Date Analyzed: 1/26/96 1/26/96 1/26/96	LCS Batch#:	2LCS012696	2LCS012696	2LCS012696	2LCS012696	
Date Analyzed: 1/26/96 1/26/96 1/26/96	Date Prepared:	1/26/96	1/26/96	1/26/96	1/26/96	
LCS %	LCS %					
Recovery: 105 105 110 108		105	105	110	108	
% Recovery	% Recovery					

| т

SEQUOIA ANALYTICAL, #1271

71-133

Signature on File

Alan B. Kemp Project Manager

Control Limits:

Please Note:

72-128

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.

71-120



72-130



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 Client Project ID: Un

Unocal #3538, 411 W. McArthur, Oakland

Matrix:

Liquid

QC Sample Group: 6010979-982

Reported:

Feb 1, 1996

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl	Xylenes	
			Benzene		
Method:	EBA 8000	EDA 8000	EE14 0000	EPÅ 8020	
	EPA 8020	EPA 8020	EPA 8020		
Analyst:	L. Huang	L. Huang	L. Huang	L. Huang	
MS/MSD					
Batch#:	6010824	6010824	6010824	6010824	
Date Prepared:	1/25/96	1/25/96	1/25/96	1/25/96	
Date Analyzed:	1/25/96	1/25/96	1/25/96	1/25/96	
Instrument I.D.#:	HP-9	HP-9	HP-9	HP-9	
Conc. Spiked:	20 μg/L	20 μg/L	20 μg/L	60 μg/L	
Matrix Spike					
% Recovery:	105	100	95	100	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
Matrix Spike					
Duplicate %					
Recovery:	105	105	100	103	
Relative %					
Difference:	0.0	4.9	5.1	3.3	
LCS Batch#:	4LCS012596	4LCS012596	4LCS012596	4LC\$012596	
Data Pranaradi	1 /05 /06	1 (05 (06	1 (25 /06	1 /05 /06	

LCS Batch#:	4LCS012596	4LCS012596	4LCS012596	4LCS012596
Date Prepared:	1/25/96	1/25/96	1/25/96	1/25/96
Date Analyzed:	1/25/96	1/25/96	1/25/96	1/25/96
Instrument I.D.#:	HP-9	HP-9	HP-9	HP-9
LCS %				
Recovery:	100	95	90	95
% Recovery	<u> </u>		<u>. </u>	
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.





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

Unocal #3538, 411 W. McArthur, Oakland Client Project ID:

Matrix: Liquid

QC Sample Group: 6010979-982

Reported:

Feb 1, 1996

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl	Xylenes	
			Benzene		
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	
Analyst:	S. Chullakorn	S. Chullakorn	S. Chullakorn	S. Chullakorn	
MS/MSD					
Batch#:	6010981	6010981	6010981	6010981	
Date Prepared:	1/27/96	1/27/96	1/27/96	1/27/96	
Date Analyzed:	1/27/96	1/27/96	1/27/96	1/27/96	
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	95	100	98	
Matrix Spike Duplicate % Recovery:	105	100	100	103	
Relative % Difference:	4.9	5.1	0.0	5.0	
LCS Batch#:	3LCS012796	3LCS012796	3LCS012796	3LCS012796	
Date Prepared: Date Analyzed: Instrument I.D.#:	1/27/96 1/27/96 HP-5	1/27/96 1/27/96 HP-5	1/27/96 1/27/96 HP-5	1/27/96 1/27/96 HP-5	

95

72-130

Please Note:

94

72-128

97

71-133

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.

96

71-120

SEQUOIA ANALYTICAL, #1271

LCS % Recovery:

% Recovery **Control Limits:**

Signature on File

Alan B. Kemp Project Manager





680 Chesapeake Drive 404 N. Wiget Lane 819 Striker Avenue, Suite 8 Sacramento, CA 95834

Redwood City, CA 94063 Walnut Creek, CA 94598

(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

2/1/96 Date:

Attention: Jarrel Crider

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 #3538, Oakland

Sequoia Work Order # - 9601244

Sample Number:

6010979

6010980

Sample Description:

MW2

MW3

SEQUOIA ANALYTICAL, #1271

Project Manager



CHAIN OF CUSTODY

SAMPLER				S/S # 3538 CITY: ONCAN				ANALYSES REQUESTED								TURN AROUND TIME:
RAY MARANGOSIAN WITHESSING AGENCY			ADDRESS: 411 W. Mc ATTLUT WATER GRAB COMP NO. OF CONT. SAMPLING LOCATION			H-GAS	TPH- DIESEL	TOG	8010					REMARKS		
SAMPLE ID NO.	DATE	TIME	WATER	GRAB	сомр	NO. OF CONT.	SAMPUNG LOCATION	TP BJ	TF	T	80			1	,	TIEST, THE
MWZ	1-16-56	10:45	*	x		2	well	X				979	ł i			,
MW3	٧	11:30				2	u	×			6010	980	1			
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() RELINQUISI	HED BY:	DATE/T	IME		F	ECEIVED BY:	DA	TE/TIME	THE FO	LLOWING	MUST BE	COMPLETED	BY THE L	ABORATOR	Y ACCEPT	ING SAMPLES FOR ANALYSES:
Levy Marcusman 12:10 mulitale						(310 ,146	,. I									
ISIGNATURE) // (SIGNATURE) 1/16/96						145	2. WILL SAMPLES REMAIN HEFHIGERATED DIVIL ANALYZED									
				(1)		3. DID ANY SAMPLES RECEIVED FOR ANALTSIS HAVE HEAD STREET 1600 4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? 45										
(SIGNATURE)				ISIGN	ATURE						IN APPROP	THIATE CON	HAINERS A			
(SIGNATURE)				(SIGN	ATURE)			SIGNATI	URE:	1 tol	U_		7111 <u>A</u> 4	LE: <u>(m) </u>	DATE:

ote: 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.



CHAIN OF CUSTODY

ANALYSES REQUESTED UNOCAL 3538 CITY: DAKCHND SAMPLER TURN AROUND TIME: TPH-GAS BTEX RAY MARANGOSIAN ADDRESS: 411 W. Me Alhur TPH-DIESEL WITNESSING AGENCY TOG 8010 SAMPLING LOCATION NO. OF CONT. TIME DATE WATER GRAB SAMPLE ID NO. 6010981 × 6010982 Rey Marcy nous THE FOLLOWING MUST BE COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES: RECEIVED BY: DATE/TIME 1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE7 4.55 1310 1/16/96 1/16 1600 (SIGNATURE) (SIGNATURE) DATE: SIGNATURE: (SIGNATURE) ISIGNATURE)

ots: 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.