

MPDS-UN5043-11 May 12, 1997

Tosco Marketing Company Environmental Compliance Department 2000 Crow Canyon Place, Suite 400 San Ramon, California 94583

Attention: Mr. David B. De Witt

RE: Quarterly Data Report

Unocal Service Station #5043

449 Hegenberger Road Oakland, California

Dear Mr. De Witt:

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 elevations during the most recent quarter are shown on the attached Figure 1.

Ground water samples were collected on April 15, 1997. Prior to sampling, the wells were purged of between 0.5 and 6 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 Tosco 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, TPH as diesel, 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-UN5043-11 May 12, 1997 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 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

Hagop Kevork, P.E. Senior Staff Engineer

License No. C55734

Exp. Date December 31, 2000

Attachments: Tables 1 & 2

Location Map Figures 1 & 2

Laboratory Analyses

Chain of Custody documentation

cc: Mr. Sarkis A. Soghomonian, Kaprealian Engineering, Inc.

Table 1Summary of Monitoring Data

	Oround Water Elevation	Depth to Water	Total Well Depth	Product Thickness		Water Purged
Well #	(feet)	(feet) ♦	(feet)◆	(feet)	Sheen	(galtons)
		(Monitored a	and Sampled on A	April 15, 1997)		
MW3	WELL WAS INAC	CCESSIBLE - (OBSTRUCTED W	TH DEBRIS AT	` A DEPTH O	F 1.61 FEET
MW6*	4.76†	4.90	12.74	1.03	N/A	0.5[65 oz.]
MW9	6.41	1.88	11.98	0	No	6
MW10	4.55	4.07	12.80	0	No	6
		(Monitored	and Purged on A	pril 15 , 199 7)		
MW6	4.67†	4.80	*	0.78	N/A	0[63 oz.]
		(Monitored a	nd Purged on Ma	arch 31, 1997)		
MW6	4.99†	4.65	*	1.00	N/A	0[65 oz.]
		(Monitored a	nd Purged on Ma	arch 17, 1997)		
MW6	5.06†	4.50	*	0.89	N/A	0[45 oz.]
		(Monitored a	nd Purged on Ma	arch 10, 1997)		
MW6	5.00†	4.60	*	0.95	N/A	0[60 oz.]
		(Monitored an	d Purged on Feb	ruary 24, 1997)		
MW6	4.91†	4.81	*	1.10	N/A	0[65 oz.]
	,	(Monitored an	d Purged on Febr	ruary 11, 1997)		
MW6	5.14†	4.65	*	1.20	N/A	0[80 oz.]

MPDS-UN5043-11 May 12, 1997 Page 2 of 7

Table 1
Summary of Monitoring Data

	Ground Water Elevation	Depth to Water	Total Well Depth	Product Thickness		Water
Well#	(feet)	(feet) ♦	Depui (feet) ♦	(feet)	Sheen	Purged (gallons)
	ı	(Monitored and	d Sampled on Jai	nuary 29 , 1997)		
MW3	WELL WAS INAC	CCESSIBLE - C	BSTRUCTED W	TTH DEBRIS AT	A DEPTH O	F 1.65 FEET
MW6*	5.87†	3.24	12.75	0.31	N/A	0.25[17.5]
MW9	7.24	1.05	11.96	0	No	6.5
MW10	5.68	2.94	12.80	0	No	7
		(Monitored an	d Sampled on Oc	tober 28, 1996)		
MW3	WELL WAS INAC	CESSIBLE (F	LLED WITH DI	RT)§		
MW6*	4.93†	4.10	12.85	0.21	N/A	0[17.5 oz.]
MW9	7.14	1.15	11.97	0	No	6
MW10	4.53	4.09	12.79	0	No	5
		(Monitored a	nd Sampled on J	uly 26, 1996)		
MW3	WELL WAS INAC	CESSIBLE (F)	LLED WITH DIE	RT)		
MW6*	5.03†	6.40	12.85	3.33	N/A	0[2.1 gal.]
MW9	8.01	0.28	11.97	0	No	8
MW10	4.54	4.08	12.79	0	No	6

(August 1995 to July 1996: Monitoring and Sampling Suspended Due to Site Construction Activities)

Table 1
Summary of Monitoring Data

	Well Casing
	Elevation
Well#	(feet)**
MW3	7.42
MW6	8.87
MW9	8.29
MW10	8.62

- ♦ The depth to water level and total well depth measurements were taken from the top of the well casings.
- Monitored only.
- ** The elevations of the top of the well casings are relative to Mean Sea Level (MSL), per the City of Oakland Benchmark #3880 (elevation = 20.37 feet MSL).
- The well was obstructed with debris at 0.55 feet. A water sample was collected but was not analyzed, as it was considered not representative of ground water in this well.
- \dagger The ground water elevation was corrected for the presence of free product (correction factor = 0.77).
- ★ Total well depth was not measured.
- [x] Amount of product purged.
- -- Sheen determination was not performed.

N/A = Not applicable.

Table 2
Summary of Laboratory Analyses
Water

200000000000000000000000000000000000000		~~						-
Well#	B	TPH as	TPH as			Ethyl-		
W.CIII #	Date	Diesel	Gasoline	Benzene	Toluene	Benzene	Xylenes	MTBE
MW1	2/18/92	13,000	150,000	17,000	26,000	5,200	26,000	
	5/20/92		LED DUE TO					
	8/31/92	8,900†	64,000	13,000	12,000	2,500	22,000	
	11/30/92		LED DUE TO					
	2/4/93		LED DUE TO					
	5/4/93		LED DUE TO					
	8/4/93		LED DUE TO					
	11/3/93		LED DUE TO					
	2/7/94		LED DUE TO					
	5/19/94		LED DUE TO					
	8/15/94		LED DUE TO					
	11/14/94		LED DUE TO					
	2/21/95		LED DUE TO					
	5/18/95		ROYED IN N			LL I KODO	CI	
			Itto I ED II I	MINCH 177.	,			
MW2	2/18/92	4,300	29,000	1,000	5,300	260	7,900	
	5/20/92	4,300†	24,000	2,200	7,600	630	11,000	
	8/31/92	1,600†	9,000	1,800	640	140	2,000	
	11/30/92	5,700†	29,000	2,000	3,400	1,200	6,900	
	2/4/93	6,100†	18,000	1,600	3,000	ND	6,900	
	5/4/93	7,100†	63,000	3,200	17,000	470	17,000	
	8/4/93	1,800††	45,000	2,100	6,600	1,400	12,000	
	11/3/93	2,600††	72,000	3,700	16,000	3,700	20,000	
	2/7/94		ED DUE TO					
	5/19/94	3,000††	42,000	2,500	1,300	2,300	13,000	
	8/15/94	2,800††	35,000	2,400	850	1,700	15,000	
	11/14/94	10,000†	43,000	2,200	6,500	1,800	14,000	
	2/21/95	2,000††	44,000	2,200	3,200	1,300	1,500	
	5/18/95		ROYED IN M			1,500	1,500	
				MINCH 1770	,			
MW3	2/18/92	ND	230	4.8	22	1.8	33	
	5/20/92		INACCESSIB		22	1,0	23	
	8/31/92	92††	210**	1	ND	ND	ND	
	11/30/92	94	790**	ND	ND	ND	ND	
	2/4/93	550††	3,300	320	ND	96	6.1	
	5/4/93	250††	1,800*	95	ND	ND	ND	
	8/4/93	100	210**	ND	ND	ND	ND	
	11/3/93	160	640**	ND	ND	ND	ND	
	2/7/94	620††	2,700	110	ND	17	ND	
	5/19/94	480††	1,800	83	ND	6.2	9.1	
	8/15/94	110††	130	1.1	0.54	ND	0.97	
	11/14/94	150††	1,600**	ND	ND	ND	ND	
	2/21/95	850††	3,800	350	ND	130	22	
	_	,	2,000	550	1112	150	44	

Table 2
Summary of Laboratory Analyses
Water

***************************************								***************************************
Well#	Dasa	TPH as	TPH as	ъ.	en i	Ethyl-	NOT Y	
Meii#	Date	Diesel	Gasoline	Benzene	Toluene	Benzene	Xylenes	МТВЕ
MW3	5/18/95	150†	1,300*	42	ND	ND	ND	
(Cont.)	8/17/95	•		BLE (FILLED			ND	
(Cont.)	7/26/96			BLE (FILLED				
	10/28/96			BLE (FILLED		•		
	1/29/97			•		. •	AT A DEPT	'H OF 1.65 FEE
	4/15/97							'H OF 1.61 FEE
				020111	OCTED III			0,
MW4	8/31/92	90††	240**	ND	ND	ND	0.54	
	11/30/92	61	420**	ND	ND	ND	ND	
	2/4/93	ND	ND	ND	ND	ND	ND	
	5/4/93	ND	110*	0.95	ND	ND	ND	
	8/4/93	81	250**	ND	3.5	ND	4.1	nter ster
	11/3/93	68	130**	ND	ND	ND	ND	
	2/7/94	ND	56**	ND	ND	ND	ND	
	5/19/94	90††	140**	ND	ND	ND	ND	
	8/15/94	72††	59**	ND	0.6	ND	ND	
	11/14/94	ND	130**	ND	ND	ND	ND	
	2/21/95	WELL DEST	ROYED IN .	JANUARY 19				
MW5	8/31/92	690†	78	0.89	ND	ND	13	
	11/30/92‡		930	70	290	0.79	14	
	2/4/93‡	5,500††	5,700	38	ND	620	170	
	5/4/93‡	4,600†	7,400	41	ND	1,000	35	
	8/4/93‡	970††	1,500	130	1	460	11	
	11/3/93	2,100††	13,000	350	ND	3,500	530	
	2/7/94	830††	2,000	87	ND	370	110	
	5/19/94	600††	260	44	ND	32	4.1	
	8/15/94	860††	1,600	110	ND	340	72	
	11/14/94	290†	250	40	ND	ND	5	**
	2/21/95	WELL DEST	ROYED IN .	JANUARY 19	95			
MW6	8/31/92	750++	MID	ND	NID	NID	NID	
141 44 ()	11/30/92	750††	ND 0.200	ND	ND	ND	ND	
	2/4/93	1,400† 890††	9,200	550	ND	740	1,600	
	2/4/93 5/4/93		3,600	340	ND	290	550	
	3/4/93 8/4/93	1,800†	4,900	360	18	450	430	
	11/3/93	1,100††	3,400	390	ND	440	190	
	2/7/94	390†† 970††	1,400	320	ND	200	7.7	
	5/19/94		4,900	650	ND	250	35	
		1,400††	3,600	300	1.7	210	41	
	8/15/94	790††	1,300	130	6.7	54 ND	57	
	11/14/94	800††	730	50	ND	ND	39 30	
	2/21/95	730††	2,000	250	4.6	25	30	
	5/18/95	WELL WAS	INACCESSIJ	BLE				

Table 2Summary of Laboratory Analyses
Water

		TPH as	TPH as			Ethyl-		
Well#	Date	Diesel	Gasoline	Benzene	Toluene	Benzene	Xylenes	MTBÉ
MW6	8/17/95	WELL WAS	INACCESSIE	DIE (DAVEN	OVED)			
(Cont.)	7/26/96		LED DUE TO	•	,	DEC DRADIA	CT	
(Cont.)	10/28/96							
	1/29/97		LED DUE TO					
	1/29/97	NOT SAMPI	LED DUE TO	THE PRESE	NCE OF FE	REE PRODU	CT	
MW9	2/21/95	71††	70**	ND	ND	ND	ND	
	5/18/95	ND	52	ND	1.1	ND	1.9	
	8/17/95	ND	ND	ND	ND	ND	ND	
	7/26/96	98	ND	ND	ND	ND	ND	ND
	10/28/96	99†	ND	ND	ND	ND	ND	7.6
	1/29/97	54	ND	ND	ND	ND	ND	5.4
	4/15/97	94†	ND	ND	ND	ND	ND	5.4
MW10	2/21/95	270††	1,500	250	26	9.1	160	
	5/18/95	75†	810	520	ND	18	23	
	8/17/95	ND	67	25	ND	2.4	ND	
	7/26/96	ND	ND	3.7	ND	ND	ND	ND
	10/28/96	ND	ND	1.1	ND	ND	ND	ND
	1/29/97	ND	210	41	0.67	7.2	4.8	11
	4/15/97	ND	110	12	ND	0.77	ND	9.7

[†] Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be diesel.

MTBE = Methyl tert butyl ether.

ND = Non-detectable.

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

^{††} 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 appeared to be a gasoline and non-gasoline mixture.

^{**} Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be gasoline.

[‡] Total Oil & Grease was non-detectable.

[§] The well was obstructed with debris at 0.55 feet. A water sample was collected but was not analyzed as it was considered not representative of ground water in this well.

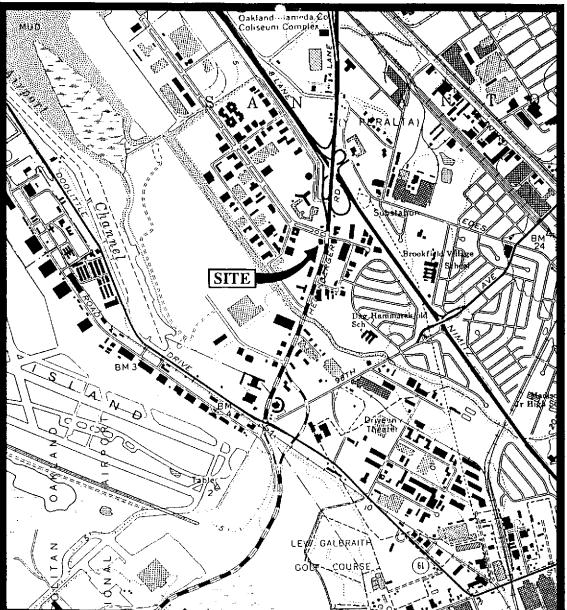
Table 2Summary of Laboratory Analyses Water

Note:

The detection limit for results reported as ND by Sequoia Analytical Laboratory is equal to the stated detection limit times the dilution factor indicated on the laboratory analytical sheets.

Prior to August 1, 1995, the total purgeable petroleum hydrocarbon (TPH as gasoline) quantification range used by Sequoia Analytical Laboratory was C4 - C12. Since August 1, 1995, the quantification range used by Sequoia Analytical Laboratory is C6 - C12.

Laboratory analyses data prior to February 7, 1994, were provided by Kaprealian Engineering, Inc.

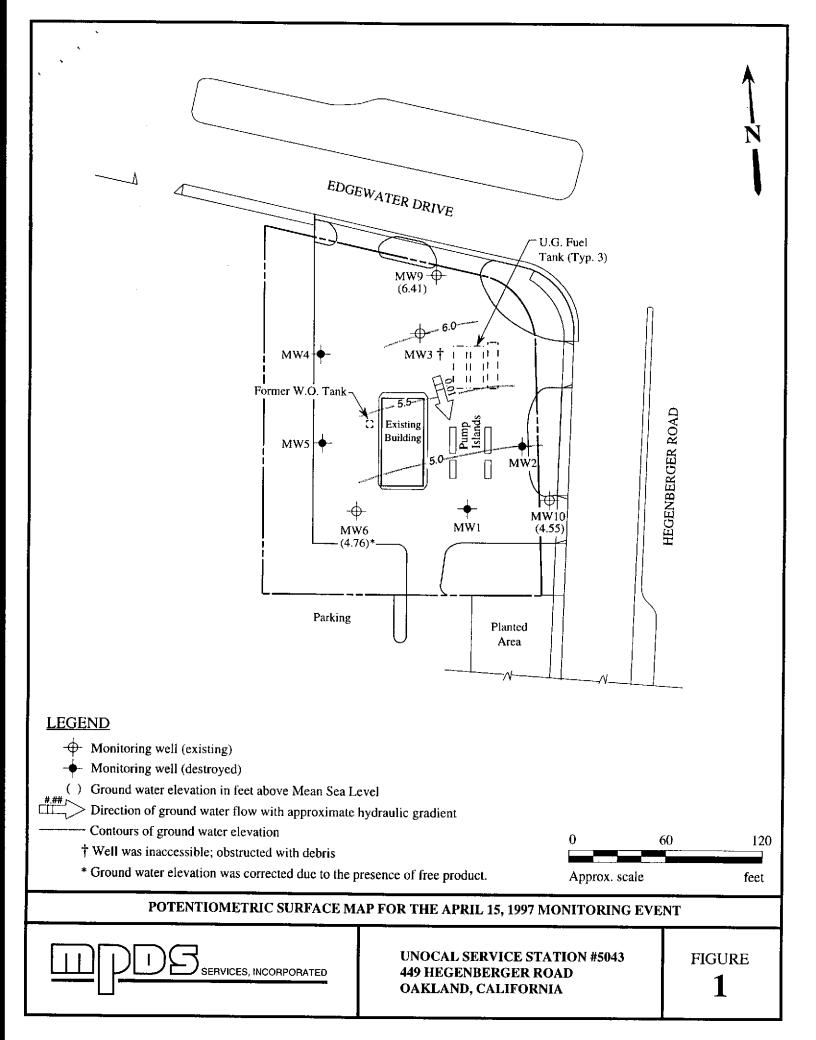


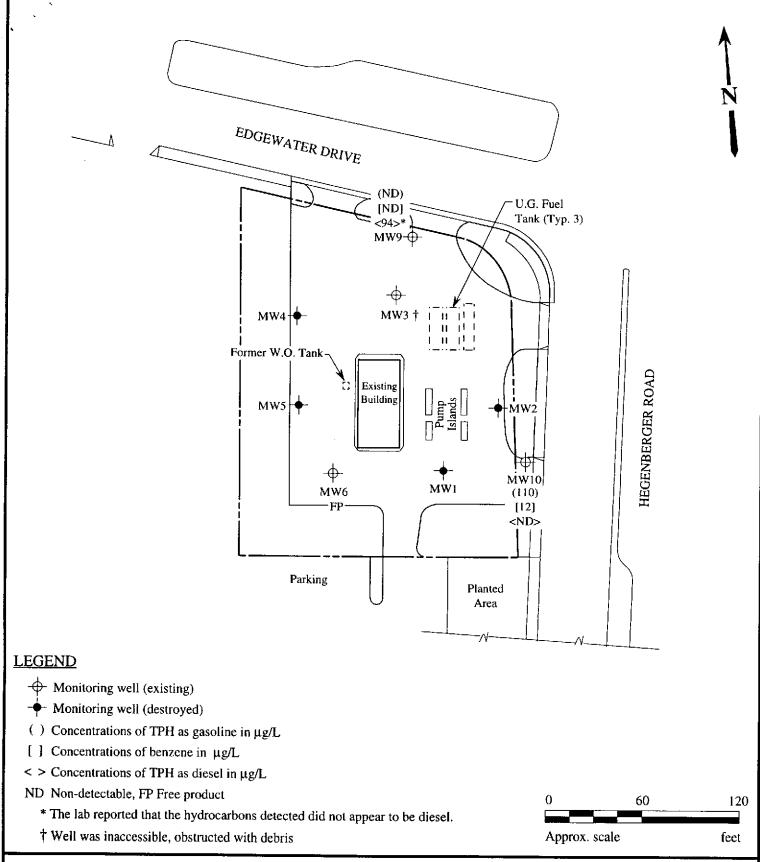
Base modified from 7.5 minute U.S.G.S. San Leandor Quadrangle (photorevised 1980)

0 2000 4000 Approx. scale feet



UNOCAL SERVICE STATION #5043 449 HEGENBERGER ROAD OAKLAND, CALIFORNIA LOCATION MAP









UNOCAL SERVICE STATION #5043 449 HEGENBERGER ROAD OAKLAND, CALIFORNIA **FIGURE**

2



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: Matrix Descript:

): Unocal #5043, 449 Hegenberger Rd., Sampled:

Water

Oakland

Received:

Apr 15, 1997 Apr 15, 1997

Analysis Method: EPA 5030/8015 Mod./8020 First Sample #: 704-0979

Reported:

May 1, 1997

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	ΜΤΒΕ μg/L
704-0979	MW-9	ND	ND	ND	ND	ND	5.4
704-0980	MW-10	110	12	ND	0.77	ND	9.7

Detection Limits:	50	0.50	0.50	0.50	0.50	5.0

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





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: Matrix Descript:

D: Unocal #5043, 449 Hegenberger Rd., Sampled: Apr 15, 1997 Water

Oakland

Received:

Apr 15, 1997

Analysis Method: First Sample #:

EPA 5030/8015 Mod./8020 704-0979

Reported:

May 1, 1997

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
704-0979	MW-9		1.0	4/18/97	HP-2	87
704-0980	MW-10	Gasoline	1.0	4/18/97	HP-2	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: Sample Matrix:

Jnocal #5043, 449 Hegenberger Rd., Sampled: Unocal #5043, 449 Hegenberger Rd.,

Water

Oakland

Apr 15, 1997

Analysis Method: First Sample #:

EPA 3510/8015 Mod.

Received: Reported: Apr 15, 1997 May 1, 1997

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

704-0979

Analyte	Reporting Limit μg/L	Sample I.D. 704-0979 MW-9*	Sample I.D. 704-0980 MW-10	
Extractable Hydrocarbons	50-	94	N.D.	
Chromatogram Pa	ttern:	Unidentified Hydrocarbons >C18		

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Extracted:	4/21/97	4/21/97
Date Analyzed:	4/23/97	4/23/97
Instrument Identification:	HP-3B	HP-3B

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. "Unidentiifed Hydrocarbons > C18" refers to unidentified peaks in the total oil and grease range.





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 #5043, 449 Hegenberger Rd., Oakland Liquid

Matrix: Liquid

QC Sample Group: 7040979-980

Reported:

May 1, 1997

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl	Xylenes	Diesel
			Benzene	74,01,00	2.000.
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015
Analyst:	D. N ewcomb	D. Newcomb	D. Newcomb	D. Newcomb	D. Sharma
MS/MSD					
Batch#:	7040860	7040860	7040860	7040860	BLK042197
Datona	7040000	7040600	7040860	7040800	DENU42191
Date Prepared:	4/18/97	4/18/97	4/18/97	4/18/97	4/21/97
Date Analyzed:	4/18/97	4/18/97	4/18/97	4/18/97	4/23/97
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2	HP-3A
Conc. Spiked:	20 μg/L	20 μg/L	20 μg/L	60 μg/L	$300\mu\mathrm{g/L}$
Matrix Spike					
% Recovery:	90	105	00	05	77
∕o Necovery.	30	105	90	95	77
Matrix Spike					
Duplicate %					
Recovery:	90	105	100	98	77
•					
Relative %					
Difference:	0.0	0.0	11	3.5	0.0
LCS Batch#:	2LCS041897	2LCS041897	2LCS041897	2LCS041897	LCS042197
Date Prepared:	4/18/97	4/18/97	4/18/97	4/18/97	4/21/97
Date Analyzed:	4/18/97	4/18/97	4/18/97	4/18/97	4/23/97
Instrument l.D.#:	HP-2	HP-2	HP-2	HP-2	HP-3A
1.00 %					
LCS %					
Recovery:	80	90	85	87	73
% Recovery					
Control Limits:	60-140	60-140	60-140	60-140	60-140

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.



P D S Services, Inc.

CHAIN OF CUSTODY

4-15-90

2401 Stanwell Drive, Suite 400, Concord, CA 94520 9, 04279 Tel: (510) 602-5120 Fax: (510) 689-1918 SAMPLER UNOCAL ANALYSES REQUESTED S/S # 5043 CITY: Dakland

ADDRESS: 449 Hegenberger Rd. VARTKES TASHJIAN TURN AROUND TIME: Regular. WITNESSING AGENCY TP46 RTEX W 9 7PH. REMARKS DATE TIME SAMPLE ID NO. WATER GRAB COMP NO. OF CONT. LOCATION 10;15 2 VOAS MW9 4/15/97 WU X MTBE- Sppb 7040979 A-1 Aucher 10:55 HW 10 X DU 7040980ル THE FOLLOWING MUST BE COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES: **RELINQUISHED BY:** DATE/TIME RECEIVED BY: 1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? 4/15/97 (SIGNATURE) 4-15-97 2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? doCardenco 1250 3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? 4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? SIGNATURE: (SIGNATURE) SIGNÀTURE: TITLE: LD Carcleros analyst DATE: