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MONITORING PURGING DISPOSING SAMPLING

MPDS SERVICES, INCORPORATED

February 26, 1996

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

RE: Unocal Service Station #1871
96 MacArthur Boulevard
Oakland, California

Per the request of the Unocal Corporation Project Manager, Mr. Robert A. Boust, 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) 277-2334.

Sincerely,

MPDS Services, Inc.

Jarrel F. Crider

/jfc

Enclosure

cc: Mr. Robert A. Boust

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

MONITORING
PURGING
DISPOSING
SAMPLING
MPDS SERVICES, INCORPORATED

MPDS-UN1871-10
February 12, 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 #1871
96 MacArthur Boulevard
Oakland, 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 direction during the most recent quarter is shown on the attached Figure 1.

Ground water samples were collected on January 18, 1996. Prior to sampling, the wells were each purged of between 17 and 38 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. A Trip blank sample (denoted as ES3) was 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 Table 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.

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

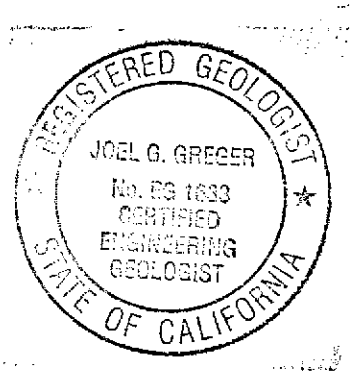
A copy of this report should be sent to the Alameda County Health Care Services Agency.

If you have any questions regarding this report, please do not hesitate to call Mr. Joel G. Greger 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
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 18, 1996)						
MW-1	66.97	14.21	24.13	0	No	17
MW-2	66.50	10.11	24.74	0	No	38
MW-3	65.69	11.79	23.71	0	No	31
(Monitored and Sampled on October 23, 1995)						
MW-1	66.33	14.85	24.10	0	No	20
MW-2	65.91	10.70	24.70	0	No	46
MW-3	64.98	12.50	23.65	0	No	30
(Monitored and Sampled on July 24, 1995)						
MW-1	67.21	13.97	24.17	0	Yes	27
MW-2	66.67	9.94	24.76	0	No	39
MW-3	65.72	11.76	23.73	0	No	32
(Monitored and Sampled on April 17, 1995)						
MW-1	68.50	12.68	24.14	0	No	30
MW-2	67.71	8.90	24.75	0	No	41.5
MW-3	67.06	10.42	23.72	0	No	35

Well #	Well Casing Elevation (feet)*
MW-1	81.18
MW-2	76.61
MW-3	77.48

◆ 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 have been surveyed relative to Mean Sea Level.

TABLE 2

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

(Measured on January 18, 1996)

Well #	Gallons per Casing Volume	Time	Gallons Purged	Casing Volumes Purged	Temperature (°F)	Conductivity ([μmhos/cm] x100)	pH
MW-1	6.45	11:12	0	0	72.0	2.93	7.69
			6.5	1.01	70.1	2.89	7.46
			13	2.02	69.6	2.77	7.37
		11:17	17	2.64	69.3	2.84	7.33
			WELL DEWATERED				
MW-2	9.51	09:20	0	0	63.8	2.23	7.91
			9.5	1.00	67.4	2.16	7.70
			19	2.00	67.8	2.17	7.61
			28.5	3.00	68.1	2.16	7.53
		09:42	38	4.00	68.3	2.11	7.47
MW-3	7.75	10:18	0	0	67.4	2.72	7.73
			8	1.03	68.9	2.86	7.55
			16	2.06	69.5	2.80	7.42
			24	3.10	69.8	2.87	7.36
		10:36	31	4.00	70.1	2.94	7.32

TABLE 3 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE
MW-3	4/17/95	7,800	ND	4.6	300	450	--
	7/24/95	3,200	170	ND	22	16	--
	10/23/95	3,900	55	ND	19	11	4,500
	1/18/96	**2,200** ↓	**270** ↑	33	26	18	**5,500** ↑

* Primarily due to the presence of discrete peaks not indicative of gasoline.

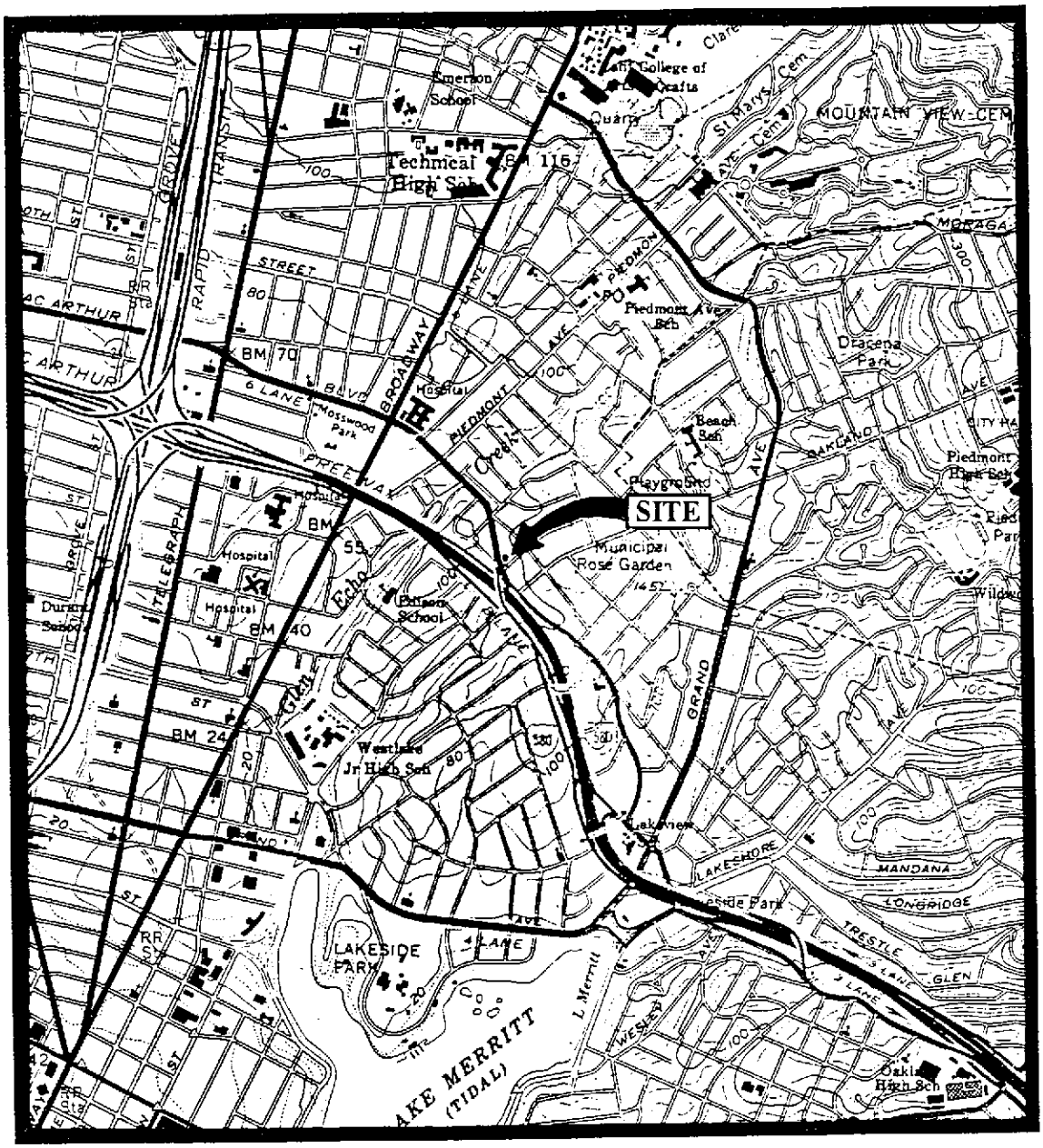
** Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.

ND = Non-detectable.

-- Indicates analysis was not performed.

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

Note: Laboratory analyses data prior to October 19, 1993, were provided by GeoStrategies, Inc.

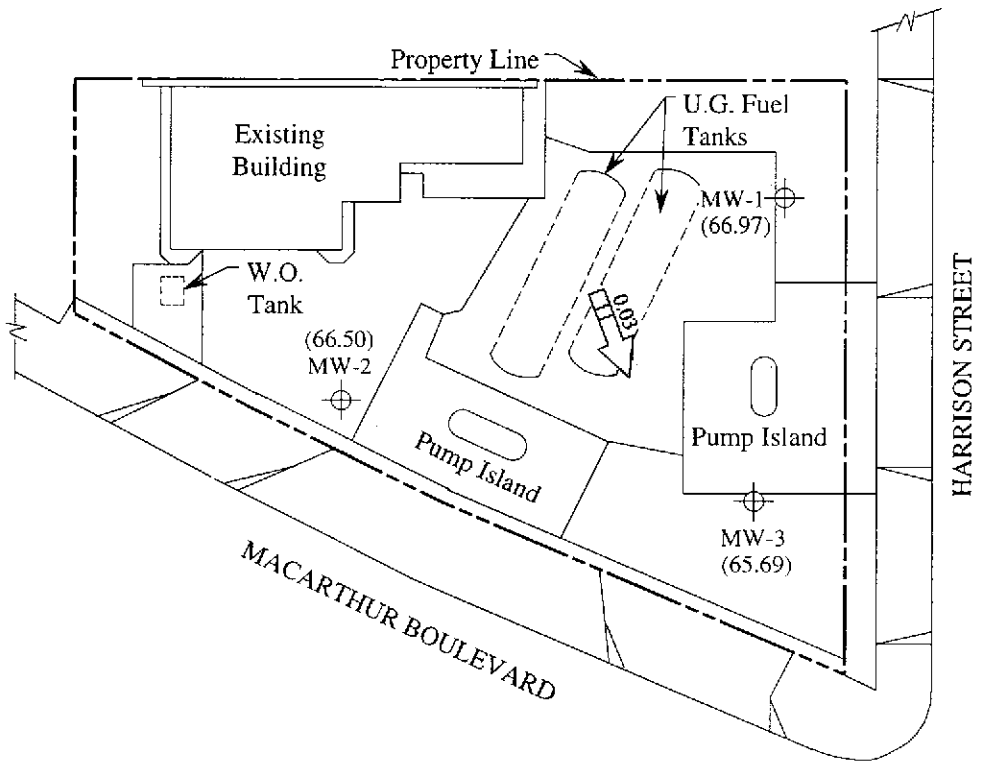


Base modified from 7.5 minute U.S.G.S.
Oakland East and West Quadrangles
(both photorevised 1980)

0 2000 4000

Approx. scale feet

mpds SERVICES, INCORPORATED	**UNOCAL SERVICE STATION # 1871** **96 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

0 30 60

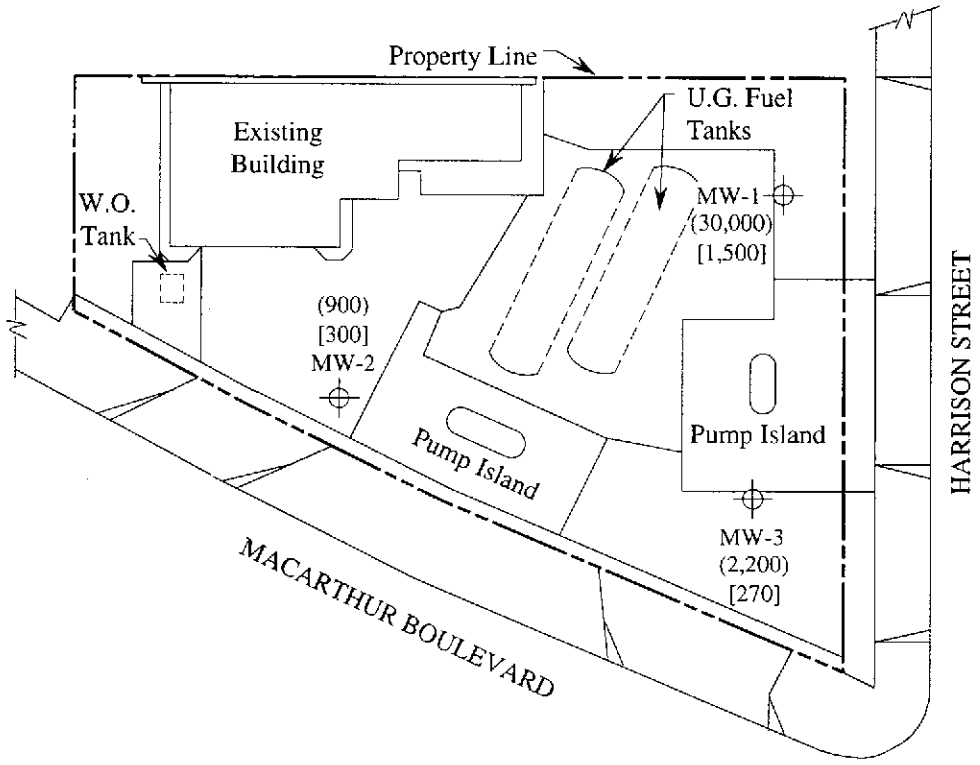
Approx. scale feet

GROUND WATER FLOW DIRECTION MAP FOR THE JANUARY 18, 1996 MONITORING EVENT

mpds SERVICES, INCORPORATED

UNOCAL SERVICE STATION # 1871
96 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

FIGURE
1



LEGEND

- ⊕ Monitoring well
- ( ) Concentration of TPH as gasoline in µg/L
- [ ] Concentration of benezene in µg/L
- ND Non-detectable

0 30 60

Approx. scale feet

PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON JANUARY 18, 1996

mpds SERVICES, INCORPORATED

UNOCAL SERVICE STATION # 1871
96 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

FIGURE
2

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

MPDS Services	Client Project ID:	Unocal #1871, 96 MacArthur Blvd.,Oakland	Sampled: Jan 18, 1996
2401 Stanwell Dr., Ste. 300	Matrix Descript:	Water	Received: Jan 18, 1996
Concord, CA 94520	Analysis Method:	EPA 5030/8015 Mod./8020	Reported: Feb 2, 1996
Attention: Jarrel Crider	First Sample #:	601-1160	

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
601-1160	MW-1	30,000	1,500	500	3,500	13,000
601-1161	MW-2	900	300	86	7.6	18
601-1162	MW-3	2,200	270	33	26	18
601-1163	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

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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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 #1871, 96 MacArthur Blvd.,Oakland	Sampled: Jan 18, 1996
2401 Stanwell Dr., Ste. 300	Matrix Descript:	Water	Received: Jan 18, 1996
Concord, CA 94520	Analysis Method:	EPA 5030/8015 Mod./8020	Reported: Feb 2, 1996
Attention: Jarrel Crider	First Sample #:	601-1160	

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
601-1160	MW-1	Gasoline	40	1/29/96	HP-2	125
601-1161	MW-2	Gasoline	5.0	1/29/96	HP-2	106
601-1162	MW-3	Gasoline	5.0	1/29/96	HP-2	132
601-1163	ES3	--	1.0	1/28/96	HP-2	107

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
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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 #1871, 96 MacArthur Blvd.,Oakland	Sampled: Jan 18, 1996
2401 Stanwell Dr., Ste. 300	Sample Descript:	Water	Received: Jan 18, 1996
Concord, CA 94520	Analysis for:	MTBE (Modified EPA 8020)	
Attention: Jarrel Crider	First Sample #:	601-1160	Analyzed: Jan 29-30,1996
			Reported: Feb 2, 1996

LABORATORY ANALYSIS FOR: MTBE (Modified EPA 8020)

Sample Number	Sample Description	Detection Limit µg/L	Sample Result µg/L
601-1160	MW-1	24	2,400
601-1161	MW-2	30	4,300
601-1162	MW-3	60	5,500

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager

6011160.MPD <3>

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

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

Client Project ID: Unocal #1871, 96 MacArthur Blvd.,Oakland
Matrix: Liquid
QC Sample Group: 6011160-163

Reported: Feb 2, 1996

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	S. Chullakorn	S. Chullakorn	S. Chullakorn	S. Chullakorn
MS/MSD Batch#:	6011163	6011163	6011163	6011163
Date Prepared:	1/28/96	1/28/96	1/28/96	1/28/96
Date Analyzed:	1/28/96	1/28/96	1/28/96	1/28/96
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike % Recovery:	135	130	135	132
Matrix Spike Duplicate % Recovery:	125	120	125	122
Relative % Difference:	7.7	8.0	7.7	7.9
LCS Batch#:	1LCS012896	1LCS012896	1LCS012896	1LCS012896
Date Prepared:	1/28/96	1/28/96	1/28/96	1/28/96
Date Analyzed:	1/28/96	1/28/96	1/28/96	1/28/96
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
LCS % Recovery:	120	115	120	115
% 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.

Sequoia Analytical

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

Client Project ID: Unocal #1871, 96 MacArthur Blvd.,Oakland
Matrix: Liquid
QC Sample Group: 6011160-163

Reported: Feb 2, 1996

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	L. Huang	L. Huang	L. Huang	L. Huang
MS/MSD Batch#:	6011565	6011565	6011565	6011565
Date Prepared:	1/29/96	1/29/96	1/29/96	1/29/96
Date Analyzed:	1/29/96	1/29/96	1/29/96	1/29/96
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike % Recovery:	110	105	105	107
Matrix Spike Duplicate % Recovery:	115	110	110	112
Relative % Difference:	4.4	4.7	4.7	4.6
LCS Batch#:	1LCS012996	1LCS012996	1LCS012996	1LCS012996
Date Prepared:	1/29/96	1/29/96	1/29/96	1/29/96
Date Analyzed:	1/29/96	1/29/96	1/29/96	1/29/96
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
LCS % Recovery:	110	105	110	108
% 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.

Sequoia Analytical

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

Client Project ID: Unocal #1871, 96 MacArthur Blvd.,Oakland
Matrix: Liquid
QC Sample Group: 6011160-163

Reported: Feb 2, 1996

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#:	6011435	6011435	6011435	6011435
Date Prepared:	1/30/96	1/30/96	1/30/96	1/30/96
Date Analyzed:	1/30/96	1/30/96	1/30/96	1/30/96
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike % Recovery:	120	115	115	118
Matrix Spike Duplicate % Recovery:	110	105	110	108
Relative % Difference:	8.7	9.1	4.4	8.8
LCS Batch#:	1LCS013096	1LCS013096	1LCS013096	1LCS013096
Date Prepared:	1/30/96	1/30/96	1/30/96	1/30/96
Date Analyzed:	1/30/96	1/30/96	1/30/96	1/30/96
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
LCS % Recovery:	100	95	100	98
% 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.

mpds SERVICES, INCORPORATED
2401 Stanwell Drive, Suite 400
Concord, California 94520
Tel: (510) 602-5100, Fax: (510) 689-1918

CHAIN OF CUSTODY

12293

SAMPLER: VARTKES TASHDJIAN

WITNESSING AGENCY:

UNOCAL S/S # 1871 CITY: Oakland

ADDRESS: 96 MacArthur Blvd.

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	MTBE				REMARKS
MW 1	1/18/96	11:50 AM	X	X		4 VOAs	well	X				X	6011160			A - D
MW 2	"	10:00 AM	X	X		"	"	X				X	6011161			↓
MW 3	"	10:53 AM	X	X		"	"	X				X	6011162			

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
Vartkes Tashdjian (SIGNATURE)	1/18/96 1:30 PM	Tony McMahon (SIGNATURE)	1/18/96 13:30
(SIGNATURE)		(SIGNATURE)	
(SIGNATURE)		(SIGNATURE)	
(SIGNATURE)		(SIGNATURE)	
(SIGNATURE)		Ken Mclaughlin (SIGNATURE)	1/18/96 16:30

THE FOLLOWING MUST BE COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:

1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? Y
2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? Y
3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? N
4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? Y

SIGNATURE: Tony McMahon TITLE: analyst DATE: 1/18/96

Note: 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.

MPDS SERVICES, INCORPORATED
2401 Stanwell Drive, Suite 400
Concord, California 94520
Tel: (510) 602-5100, Fax: (510) 689-1918

CHAIN OF CUSTODY

293

SAMPLER: VARTKES TASHDJIAN

WITNESSING AGENCY:

UNOCAL S/S # 1871 CITY: Oakland

ADDRESS: 96 MacArthur Blvd.

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
ES3	1/18/96	7:00 Am	X	X		1 VOA		X				6011163			

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
Vartkes Tashdjian	1/18/96 1:30 PM	Tony McMahon	13:30 1/18/96
(SIGNATURE)		(SIGNATURE)	
(SIGNATURE)		(SIGNATURE)	
(SIGNATURE)		(SIGNATURE)	
(SIGNATURE)		(SIGNATURE) Kevin Melander	16:30 1-18-96

THE FOLLOWING MUST BE COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:

1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? Y
2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? Y
3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? N
4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? Y

SIGNATURE: Tony McMahon TITLE: analyst DATE: 1/18/96.

Note: 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