



KAPREALIAN ENGINEERING
INCORPORATED

KEI-P93-0401.R1
October 15, 1993

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

Attention: Mr. Edward C. Ralston

RE: Soil Sampling Report
Unocal Service Station #6419
6401 Dublin Boulevard
Dublin, California

ALCO
HAZMAT
93 NOV 15 PM 3:31

Dear Mr. Ralston:

This report summarizes the soil sampling performed by Kaprealian Engineering, Inc. (KEI) during the removal and replacement of the underground tanks and piping at the referenced site. All work was performed in compliance with the guidelines established by the Regional Water Quality Control Board (RWQCB) and the Alameda County Health Care Services (ACHCS) Agency.

The scope of the work performed by KEI consisted of the following:

Coordination with regulatory agencies

Collection of soil samples from the fuel and waste oil storage tank pit excavations, from the former septic tank pit, from beneath the former product dispensers, and from the product piping trenches

Collection of ground water samples from the fuel storage tank pit

Delivery of soil and water samples, including proper Chain of Custody documentation, to a certified analytical laboratory

Technical review and preparation of this report

SITE DESCRIPTION AND BACKGROUND

The subject site contains a Unocal service station facility. A Location Map and a Site Plan are attached to this report. No previous subsurface work at the site is known to KEI.

FIELD ACTIVITIES

KEI's field work was initiated on September 7, 1993, when three underground storage tanks were removed from the site. The tanks consisted of one 10,000 gallon regular unleaded gasoline storage tank, one 10,000 gallon super unleaded gasoline storage tank, and one 550 gallon waste oil storage tank. The tanks were made of steel, and no apparent holes or cracks were observed in any of the tanks. Tank removal and soil sampling were performed in the presence of Mr. Jeff Shapiro of the ACHCS. Mr. Ron Johansen of the Dougherty Fire Authority was also present during tank removal operations.

Eight soils samples, labeled D1 through D8, were collected from beneath the product dispensers at depths ranging from 2.5 feet to 5.5 feet below grade. Seven soil samples, labeled P1 through P7, were collected from the product piping trenches at depths ranging from 3 feet to 7 feet below grade. These samples were collected by the use of a driven tube-type soil sampler. In addition, two soil samples, labeled ST1 and ST2, were collected from the former septic tank pit located on the west side of the existing building. The former septic tank contained approximately 400 gallons of liquid that was previously sampled and analyzed for proper disposal prior to tank removal. The former underground septic tank had a 6,000 gallon capacity and was physically removed from the site on September 11, 1993. The tank was made of steel, and no holes or cracks were observed in the tank. The soil samples ST1 and ST2 were collected from bulk material excavated by backhoe at depths of approximately 10 feet below grade. All soil samples were placed in clean, two-inch diameter brass tubes, then sealed with aluminum foil, plastic caps and tape, labeled, and stored in a cooled ice chest for subsequent delivery to a state-certified laboratory. Sample point locations are shown on the attached Figure 1.

KEI returned to the site on September 8, 1993, in order to collect the required soil samples from the fuel and waste oil storage tank pit excavations. ~~Ground water (with an apparent sheen) was observed in the fuel tank pit at a depth of about 14 feet below grade. Per the direction of Mr. Jeff Shapiro of the ACHCS, five soil samples, labeled SW1 through SW5, were collected from the sidewalls of the fuel tank pit at depths of about 13.5 feet below grade. Two soil samples, labeled B1 and B2, were collected from the bottom of the fuel tank pit excavation at depths of about 17 feet and 15.5 feet below grade, respectively. These samples were also collected from bulk material excavated by backhoe and handled as described above. In addition, one soil sample, labeled W01, was collected from the waste oil tank pit at a depth of about 8 feet below grade. Sample point locations are again shown on the attached Figure 1.~~

On ~~September 10, 1993~~, the fuel tank pit was ~~excavated to a depth of about 16.5 feet below grade~~, and approximately ~~7,000 gallons of water were pumped from the this pit~~ by H&H Environmental Services. Ground water then stabilized in the fuel tank pit at a depth of about 15 feet below grade. Some sheen was observed on top of the water at the southwest corner of the fuel tank pit. KEI then collected one water sample, labeled W1, from the fuel tank pit. The water sample was collected by the use of a clean Teflon bailer, and then was decanted into six clean glass VOA vials and three one-liter amber bottles. The water sample was stored as described above. Mr. Shapiro of the ACHCS was present during water sampling activities.

7000
gal
water

On ~~September 14, 1993~~, one additional water sample, labeled W2, was collected from the fuel tank pit. Prior to the collection of this sample, approximately ~~12,000 gallons of ground water were again pumped from the fuel tank pit~~ by H&H Environmental Services on September 13 and 14, 1993. Ground water ~~(with some sheen still present at the southwest corner of the fuel tank pit)~~ then stabilized in the fuel tank pit at a depth of about 12 feet below grade. This sample was also collected by the use of a clean Teflon bailer, and then decanted into four clean glass VOA vials. The water sample was stored as previously described. Mr. Shapiro was again present during water sampling activities.

12,000
gal
H₂O

All excavated soil that was generated during this tank and piping replacement project was stockpiled on-site and sampled prior to disposal. The septic tank pit excavation was backfilled and compacted with clean imported soil. Two 12,000 gallon unleaded gasoline storage tanks and one 520 gallon waste oil storage tank were installed in the existing tank pit locations. The new fuel and waste oil tanks were all made of fiberglass-coated, double-wall steel. All backfilling and new tank and piping installation activities were performed by Paradiso Construction Company of San Leandro, California.

SUBSURFACE CONDITIONS

The subsurface soils observed in the excavations consisted primarily of silty clay. Ground water stabilized in the fuel tank pit at a depth of about 15 feet below grade on September 10, 1993, and was present at a depth of approximately 12 feet below grade on September 14, 1993.

ANALYTICAL RESULTS

All of the soil and ground water samples collected were analyzed by Sequoia Analytical Laboratory in Concord, California, and were accompanied by properly executed Chain of Custody documentation.

All soil samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline by EPA method 5030/modified 8015, benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA method 8020, and for total lead. In addition, samples ST1 and ST2 were also analyzed for total oil and grease (TOG) by Standard Methods 5520E&F. The sample collected from the waste oil tank pit (W01) was analyzed for TPH as gasoline, TPH as diesel by EPA method 3550/modified 8015, BTEX, TOG, halogenated organic compounds (EPA method 8010), and the metals cadmium, chromium, lead, nickel, and zinc.

Both water samples were analyzed for TPH as gasoline and BTEX. In addition, water sample W1 was analyzed for TPH as diesel, TOG, EPA method 8010 constituents, and the metals cadmium, chromium, lead, nickel, and zinc. The results of the soil analyses are summarized in Tables 1 and 2, and the results of the water analyses are summarized in Table 3. Copies of the laboratory analyses and the Chain of Custody documentation are attached to this report.

DISCUSSION AND RECOMMENDATIONS

Based on the analytical results of the soil samples collected during the removal and replacement of the underground tanks and piping, it appears that no significant concentrations of hydrocarbon contamination were present in the soil in the vicinity of the former gasoline storage tanks, the former waste oil storage tank, the product piping trenches, or the former septic tank. The initial water sample collected from the fuel tank pit (after an initial purging of about 7,000 gallons of water) showed concentrations of TPH as gasoline and benzene at 2,600 ppb and 33 ppb, respectively, with non-detectable levels of TOG and EPA method 8010 constituents. However, after a total of approximately 19,000 gallons of water were purged from the fuel tank pit, the second water sample showed significantly decreased concentrations of TPH as gasoline and benzene (740 ppb and 14 ppb, respectively).

In accordance with the guidelines established by the RWQCB, further work is warranted at the site because of the levels of contamination found in the water samples collected from the fuel tank pit. ~~Therefore, in order to comply with the requirements of the RWQCB and the ACHCS, KEI recommends the installation of three ground water monitoring wells at the site.~~ The purpose of these wells will be to further determine the vertical and lateral extent of any remaining soil contamination at the site, to determine the ground water flow direction at the site, and to determine the lateral extent of any existing ground water contamination at the site.

It is KEI's understanding that a nearby BP service station site has had several monitoring wells installed. Therefore, KEI will review the file for this site at the RWQCB in order to determine the ground water flow direction. This information will then be used (along with a site reconnaissance of the Unocal site) in order to determine the most appropriate locations for monitoring wells at the Unocal site. Once the locations of the monitoring wells are chosen, a work plan will be submitted for your review and consideration.

DISTRIBUTION

A copy of this report should be sent to Mr. Jeff Shapiro of the ACHCS, and to the RWQCB, San Francisco Bay Region.

LIMITATIONS

Soil deposits and rock formations may vary in thickness, lithology, saturation, strength and other properties across any site. In addition, environmental changes, either naturally-occurring or artificially-induced, may cause changes in the extent and concentration of any contaminants. Our studies assume that the field and laboratory data are reasonably representative of the site as a whole, and assume that subsurface conditions are reasonably conducive to interpolation and extrapolation.

The results of this study are based on the data obtained from the field and laboratory analyses obtained from a state-certified laboratory. We have analyzed this data using what we believe to be currently applicable engineering techniques and principles in the Northern California region. We make no warranty, either expressed or implied, regarding the above, including laboratory analyses, except that our services have been performed in accordance with generally accepted professional principles and practices existing for such work.

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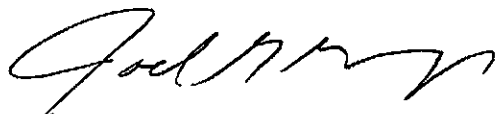
Should you have any questions on this report, please call us at
(510) 602-5100.

Sincerely,

Kaprealian Engineering, Inc.



Hagop Kevork
Staff Engineer



Joel G. Greger, C.E.G.
Senior Engineering Geologist

License No. EG 1633
Exp. Date 6/30/94



Timothy R. Ross
Project Manager

/bp

Attachments: Tables 1, 2 & 3
Location Map
Figure 1
Laboratory Analyses
Chain of Custody documentation
Work Plan/Proposal

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TABLE 1

SUMMARY OF LABORATORY ANALYSES
 SOIL

Date	Sample	Depth (feet)	TPH as Gasoline	Benzene	Toluene	Ethyl- benzene	Xylenes	Total Lead	
9/07/93	D1	2.5	ND	ND	ND	ND	ND	14	
	D2	2.5	ND	ND	ND	ND	ND	6.4	
	D3	2.5	ND	ND	ND	ND	ND	6.2	
	Dispenser	D4	2.5	ND	ND	ND	ND	ND	6.2
		D5	5.5	ND	ND	ND	ND	ND	6.3
		D6	5.5	ND	ND	ND	ND	ND	9.8
		D7	5.5	ND	ND	ND	ND	ND	6.1
	D8	5.5	ND	ND	ND	ND	0.030	4.8	
Piping	P1	3.0	ND	ND	0.0068	ND	0.012	6.4	
	P2	3.0	ND	0.0073	0.012	ND	0.015	5.0	
	P3	3.0	9.7	0.15	1.2	0.36	2.4	4.9	
	P4	4.75	1.8	0.0061	0.012	0.066	0.053	6.8	
	P5	7.0	ND	ND	ND	ND	ND	6.3	
	P6	6.0	ND	ND	0.011	0.048	0.032	17	
	P7	6.0	2.4	ND	0.011	0.048	0.032	6.1	
Septic Tank	ST1*	10.0	ND	ND	ND	ND	ND	6.8	
	ST2*	10.0	ND	ND	ND	ND	ND	6.6	
9/08/93	B1	17.0	ND	0.0071	0.014	0.0072	0.026	5.9	
	B2	15.5	1.2	0.017	0.010	0.13	0.017	7.3	
bottom (below water table)									

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TABLE 1 (Continued)

SUMMARY OF LABORATORY ANALYSES
SOIL

<u>Date</u>	<u>Sample</u>	<u>Depth (feet)</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl- benzene</u>	<u>Xylenes</u>	<u>Total Lead</u>
9/08/93	SW1	13.5	ND	ND	0.013	ND	0.019	6.2
(Con't)	SW2	13.5	ND	0.0054	0.011	ND	0.012	6.0
	SW3	13.5	ND	0.0050	0.011	0.0065	0.013	6.2
<i>Side wall</i>	SW4	13.5	2.6	0.11	0.28	0.067	0.34	6.5
<i>from us pit</i>	SW5	13.5	ND	0.0084	0.011	ND	0.021	6.8
	WO1	8.0	6.8	0.050	ND	0.28	0.020	6.3

* TOG was non-detectable.

ND = Non-detectable.

Results in parts per million (ppm), unless otherwise indicated.

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TABLE 2
SUMMARY OF LABORATORY ANALYSES
SOIL

<u>Date</u>	<u>Sample</u>	<u>Depth</u> <u>(feet)</u>	<u>TOG</u>	<u>TPH as</u> <u>Diesel</u>	<u>EPA</u> <u>Method 8010</u> <u>Constituents</u> <u>(ppb)</u>	<u>Cadmium</u>	<u>Chromium</u>	<u>Nickel</u>	<u>Zinc</u>
9/08/93	WO1	8.0	ND	ND	ND	1.0	30	42	42

ND = Non-detectable.

Results in parts per million (ppm), unless otherwise indicated.

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TABLE 3
 SUMMARY OF LABORATORY ANALYSES
WATER

<u>Date</u>	<u>Sample</u>	<u>Depth to Water (feet)</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl-benzene</u>	<u>Xylenes</u>	<u>TPH as Diesel</u>	<u>TOG (ppm)</u>	<u>EPA Method 8010 Constituents</u>
9/10/93	W1	15	2,600	33	19	150	190	530*	ND	ND
9/14/93	W2	12	740	14	32	13	75	--	--	--

<u>Sample</u>	<u>Cadmium (ppm)</u>	<u>Chromium (ppm)</u>	<u>Lead (ppm)</u>	<u>Nickel (ppm)</u>	<u>Zinc (ppm)</u>
W1	0.014	0.28 = 280 ppb	0.018	0.46	0.46

DHS - MCL
 primary drinking (ppb)

1.0

50

50

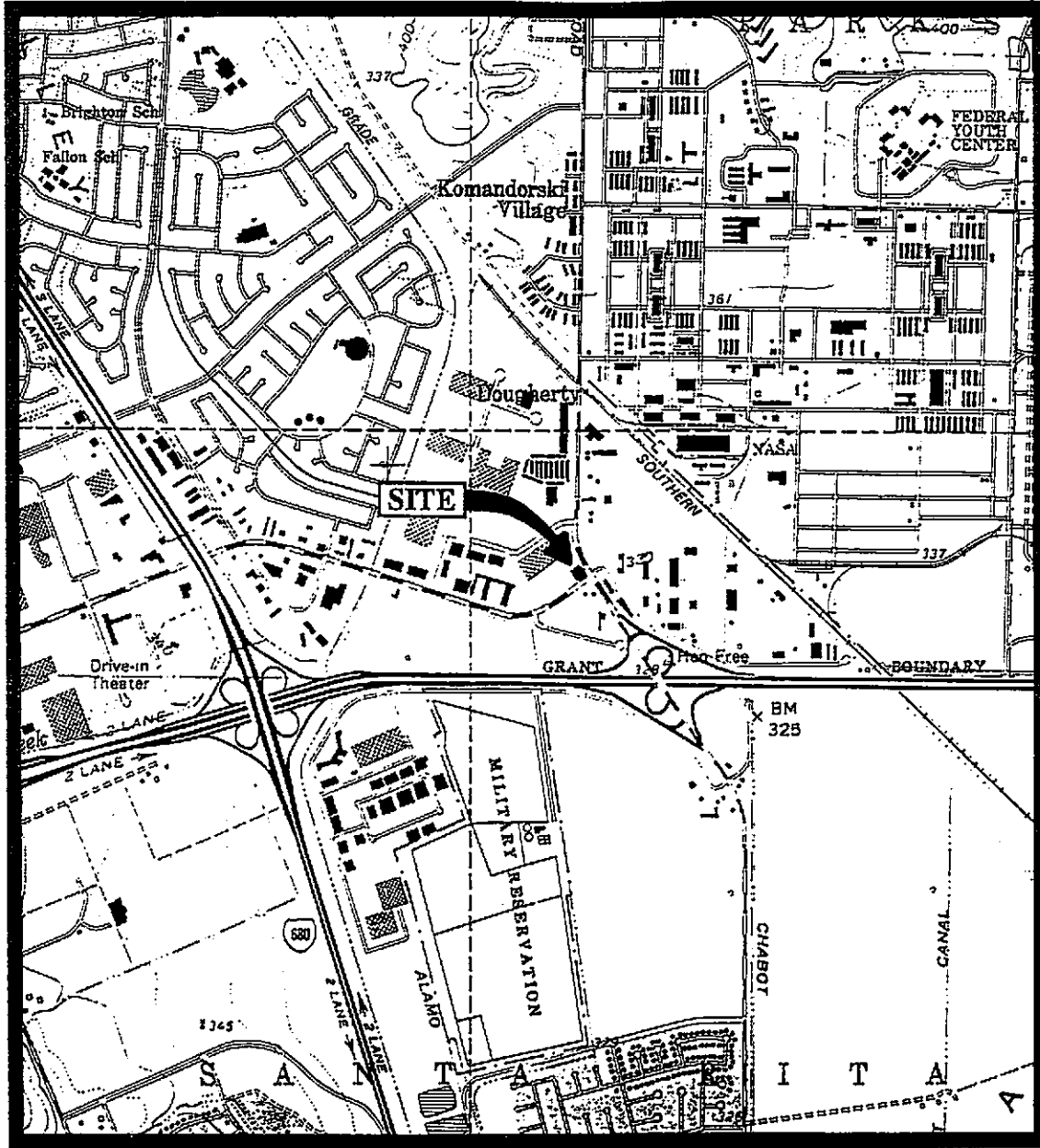
100
 (EPA)

5,000
 (2nd MCL)

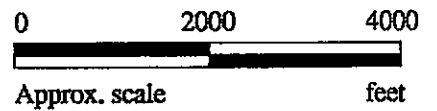
ND = Non-detectable.

* Sequoia Analytical Laboratory reported that the total extractable hydrocarbons detected appeared to consist of a diesel and non-diesel mixture.

Results are in parts per billion (ppb) unless otherwise indicated.



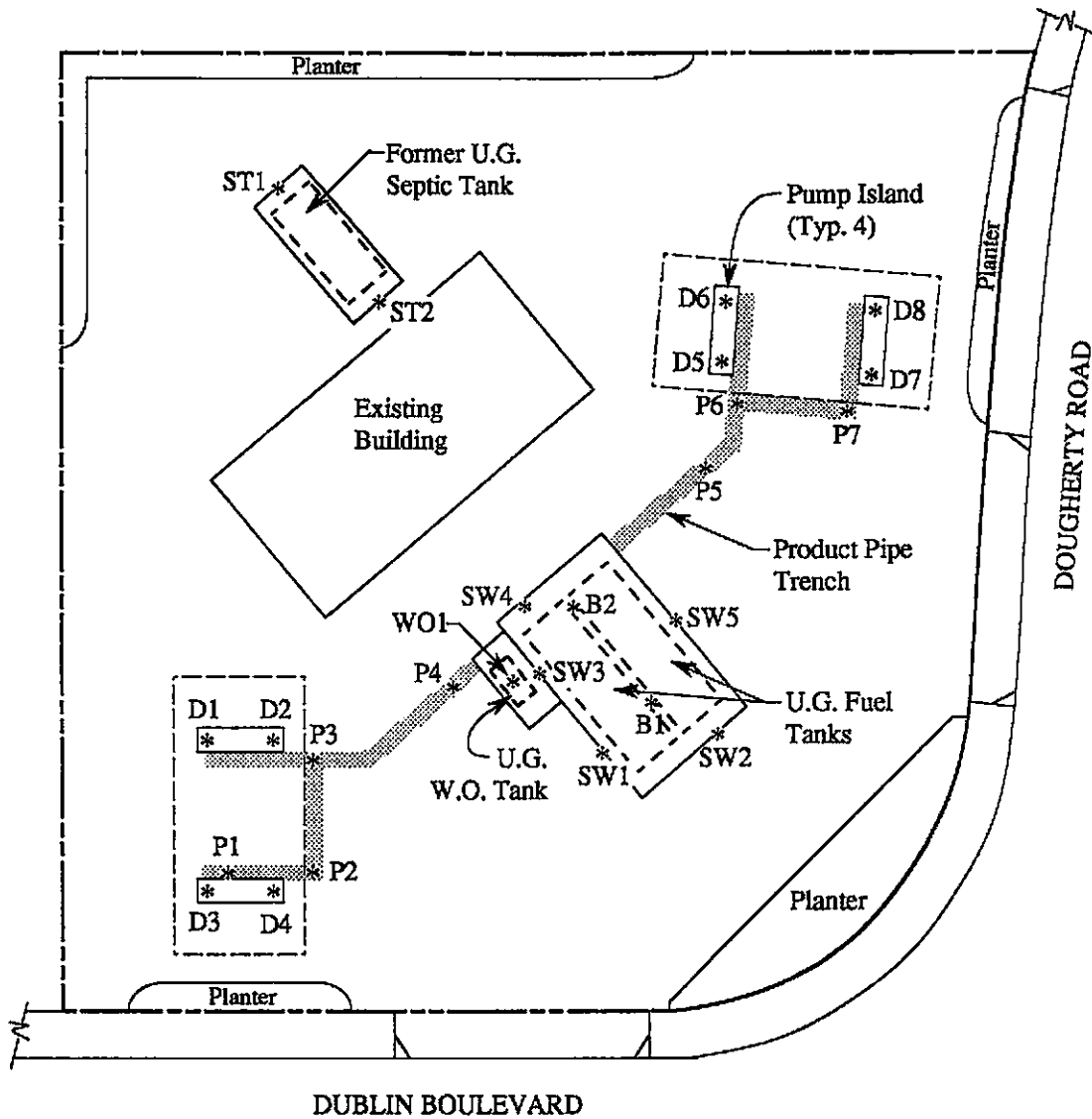
Base modified from 7.5 minute U.S.G.S. Dublin Quadrangle
(photorevised 1980)



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INCORPORATED**

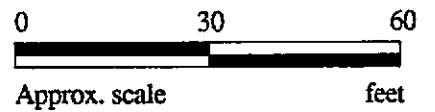
**UNOCAL SERVICE STATION #6419
6401 DUBLIN BOULEVARD
DUBLIN, CALIFORNIA**

**LOCATION
MAP**



LEGEND

* Sample point location



SOIL SAMPLE POINT LOCATION MAP



**UNOCAL SERVICE STATION #6419
6401 DUBLIN BOULEVARD
DUBLIN, CALIFORNIA**

**FIGURE
1**



SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kaprealian Engineering, Inc.
2401 Stanwell Dr., Ste. 400
Concord, CA 94520
Attention: Avo Avedessian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Sample Matrix: Soil
Analysis Method: EPA 5030/8015/8020
First Sample #: 309-0247

Sampled: Sep 7, 1993
Received: Sep 7, 1993
Reported: Sep 9, 1993

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION


Analyte	Reporting Limit mg/kg	Sample I.D. 309-0247 D1	Sample I.D. 309-0248 D2	Sample I.D. 309-0249 D3	Sample I.D. 309-0250 D4	Sample I.D. 309-0251 D5	Sample I.D. 309-0252 D6
Purgeable Hydrocarbons	1.0	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Benzene	0.005	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Toluene	0.005	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Ethyl Benzene	0.005	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Total Xylenes	0.005	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Chromatogram Pattern:		--	--	--	--	--	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0	1.0
Date Analyzed:	9/8/93	9/7/93	9/8/93	9/8/93	9/8/93	9/8/93
Instrument Identification:	ML #2	HP-4	ML #2	ML #2	ML #2	ML #2
Surrogate Recovery, %: (QC Limits = 70-130%)	95	90	94	97	102	87

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

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Alan B. Kemp
Project Manager



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1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kaprealian Engineering, Inc. 2401 Stanwell Dr., Ste. 400 Concord, CA 94520 Attention: Avo Avedessian	Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin Sample Matrix: Soil Analysis Method: EPA 5030/8015/8020 First Sample #: 309-0253	Sampled: Sep 7, 1993 Received: Sep 7, 1993 Reported: Sep 9, 1993
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TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION


Analyte	Reporting Limit mg/kg	Sample I.D. 309-0253 D7	Sample I.D. 309-0254 D8	Sample I.D. Matrix Blank
Purgeable Hydrocarbons	1.0	N.D.	N.D.	
Benzene	0.005	N.D.	N.D.	
Toluene	0.005	N.D.	N.D.	
Ethyl Benzene	0.005	N.D.	N.D.	
Total Xylenes	0.005	N.D.	0.030	
Chromatogram Pattern:		--	--	

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0
Date Analyzed:	9/8/93	9/8/93	9/8/93
Instrument Identification:	ML #2	ML #2	ML #2
Surrogate Recovery, %: (QC Limits = 70-130%)	87	84	116

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

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Alan B. Kemp
Project Manager



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Kaprealian Engineering, Inc.
2401 Stanwell Dr., Ste. 400
Concord, CA 94520
Attention: Avo Avedessian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Sample Descript: Soil
Analysis for: Lead
First Sample #: 309-0247


Sampled: Sep 7, 1993
Received: Sep 7, 1993
Extracted: Sep 8, 1993
Analyzed: Sep 9, 1993
Reported: Sep 9, 1993

LABORATORY ANALYSIS FOR: Lead

Sample Number	Sample Description	Detection Limit mg/kg	Sample Result mg/kg
309-0247	D1	0.25	14
309-0248	D2	0.25	6.4
309-0249	D3	0.25	6.2
309-0250	D4	0.25	6.2
309-0251	D5	0.25	6.3
309-0252	D6	0.25	9.8
309-0253	D7	0.25	6.1
309-0254	D8	0.25	4.8

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

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Alan B. Kemp
Project Manager



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Kaprealan Engineering, Inc.
2401 Stanwell Dr., Ste. 400
Concord, CA 94520
Attention: Avo Avedessian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Matrix: Soil

QC Sample Group: 3090247-254

Reported: Sep 9, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes	Lead
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 7421
Analyst:	J.Dinsay	J.Dinsay	J.Dinsay	J.Dinsay	K.V.S.
Conc. Spiked:	0.20	0.20	0.20	0.60	50
Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
LCS Batch#:	GBLK090893	GBLK090893	GBLK090893	GBLK090893	BLK090893
Date Prepared:	9/8/93	9/8/93	9/8/93	9/8/93	9/8/93
Date Analyzed:	9/8/93	9/8/93	9/8/93	9/8/93	9/9/93
Instrument I.D.#:	ML #2	ML #2	ML #2	ML #2	SpectrAA-400
LCS % Recovery:	78	87	86	87	92
Control Limits:	80-120	80-120	80-120	80-120	75-125

MS/MSD Batch #:	GBLK090893	GBLK090893	GBLK090893	GBLK090893	3090261
Date Prepared:	9/8/93	9/8/93	9/8/93	9/8/93	9/8/93
Date Analyzed:	9/8/93	9/8/93	9/8/93	9/8/93	9/9/93
Instrument I.D.#:	ML #2	ML #2	ML #2	ML #2	SpectrAA-400
Matrix Spike % Recovery:	75	83	85	85	92
Matrix Spike Duplicate % Recovery:	76	68	83	83	94
Relative % Difference:	1.3	27	2.4	2.4	2.2

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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 LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

Alan B. Kemp
Project Manager

CHAIN OF CUSTODY

SAMPLER		SITE NAME & ADDRESS							ANALYSES REQUESTED					TURN AROUND TIME:	
Haig		Unocal # 6419 - Dublin 6401 Dublin Blvd							TPH-G	BTXE	Total Lead				24 Hrs
WITNESSING AGENCY		SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP							
D1	9/7/93		✓		✓			1	Beneath Dispenser	✓	✓	✓			3090247
D2			✓		✓			1		✓	✓	✓			0248
D3			✓		✓			1		✓	✓	✓			0249
D4			✓		✓			1		✓	✓	✓			0250
D5			✓		✓			1		✓	✓	✓			0251
D6			✓		✓			1		✓	✓	✓			0252
D7			✓		✓			1		✓	✓	✓			0253
D8			✓		✓			1		✓	✓	✓			0254

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
<i>[Signature]</i>	9/7/93 1850	<i>[Signature]</i>
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)

The following MUST BE completed by the laboratory accepting samples for analysis:		
1.	Have all samples received for analysis been stored in ice?	
2.	Will samples remain refrigerated until analyzed?	yes
3.	Did any samples received for analysis have head space?	yes
4.	Were samples in appropriate containers and properly packaged?	NA
	<i>[Signature]</i>	<i>[Signature]</i>
	Signature	Title
		9/7/93
		Date



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1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Kaprealian Engineering, Inc. 2401 Stanwell Dr., Ste. 400 Concord, CA 94520 Attention: Avo Avedessian	Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin Sample Matrix: Soil Analysis Method: EPA 5030/8015/8020 First Sample #: 309-0255	Sampled: Sep 7, 1993 Received: Sep 7, 1993 Reported: Sep 9, 1993
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TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 309-0255 P1	Sample I.D. 309-0256 P2	Sample I.D. 309-0257 P3	Sample I.D. 309-0258 P4	Sample I.D. 309-0259 P5	Sample I.D. 309-0260 P6
Purgeable Hydrocarbons	1.0	N.D.	N.D.	9.7	1.8	N.D.	N.D.
Benzene	0.005	N.D.	0.0073	0.15	0.0061	N.D.	N.D.
Toluene	0.005	0.0068	0.012	1.2	0.012	N.D.	0.011
Ethyl Benzene	0.005	N.D.	N.D.	0.36	0.066	N.D.	0.048
Total Xylenes	0.005	0.012	0.015	2.4	0.053	N.D.	0.032
Chromatogram Pattern:		--	--	Gasoline	Gasoline	--	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0	1.0
Date Analyzed:	9/7/93	9/7/93	9/7/93	9/7/93	9/8/93	9/7/93
Instrument Identification:	HP-2	HP-5	HP-5	HP-5	HP-4	HP-5
Surrogate Recovery, %: (QC Limits = 70-130%)	102	101	109	99	98	98

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Alan B. Kemp
Alan B. Kemp
Project Manager



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Kaprealian Engineering, Inc. 2401 Stanwell Dr., Ste. 400 Concord, CA 94520 Attention: Avo Avedessian	Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin Sample Matrix: Soil Analysis Method: EPA 5030/8015/8020 First Sample #: 309-0261	Sampled: Sep 7, 1993 Received: Sep 7, 1993 Reported: Sep 9, 1993
---	--	--

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION


Analyte	Reporting Limit mg/kg	Sample I.D. 309-0261 P7	Sample I.D. Matrix Blank
Purgeable Hydrocarbons	1.0	2.4	
Benzene	0.005	N.D.	
Toluene	0.005	0.011	
Ethyl Benzene	0.005	0.048	
Total Xylenes	0.005	0.032	
Chromatogram Pattern:		Gasoline	

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Analyzed:	9/7/93	9/7/93
Instrument Identification:	HP-5	HP-5
Surrogate Recovery, %: (QC Limits = 70-130%)	106	104

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

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

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Sample Descript: Soil
Analysis for: Lead
First Sample #: 309-0255


Sampled: Sep 7, 1993
Received: Sep 7, 1993
Extracted: Sep 8, 1993
Analyzed: Sep 9, 1993
Reported: Sep 9, 1993

LABORATORY ANALYSIS FOR: Lead

Sample Number	Sample Description	Detection Limit mg/kg	Sample Result mg/kg
309-0255	P1	0.25	6.4
309-0256	P2	0.25	5.0
309-0257	P3	0.25	4.9
309-0258	P4	0.25	6.8
309-0259	P5	0.25	6.3
309-0260	P6	0.25	17
309-0261	P7	0.25	6.1

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

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Concord, CA 94520
Attention: Avo Avedessian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Matrix: Soil

QC Sample Group: 3090255-261

Reported: Sep 9, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes	Lead
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 7421
Analyst:	J.F.	J.F.	J.F.	J.F.	K.V.S.
Conc. Spiked:	0.40	0.40	0.40	1.2	50
Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
LCS Batch#:	1LCS090793	1LCS090793	1LCS090793	1LCS090793	BLK090893
Date Prepared:	9/7/93	9/7/93	9/7/93	9/7/93	9/8/93
Date Analyzed:	9/7/93	9/7/93	9/7/93	9/7/93	9/9/93
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2	SpectrAA-400
LCS % Recovery:	99	99	97	100	92
Control Limits:	70-130	70-130	70-130	70-130	75-125

MS/MSD Batch #:	3090248	3090248	3090248	3090248	3090261
Date Prepared:	9/7/93	9/7/93	9/7/93	9/7/93	9/8/93
Date Analyzed:	9/7/93	9/7/93	9/7/93	9/7/93	9/9/93
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2	SpectrAA-400
Matrix Spike % Recovery:	100	100	100	102	92
Matrix Spike Duplicate % Recovery:	97	97	97	99	94
Relative % Difference:	3.0	3.0	3.0	2.9	2.2

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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 LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

Alan B. Kemp
Project Manager

CHAIN OF CUSTODY

SAMPLER		SITE NAME & ADDRESS							ANALYSES REQUESTED					TURN AROUND TIME:			
Haig		Unocal # 6419 - Dublin 6401 Dublin Blvd							TPH-G	BTXE	Total Lead				24 Hrs		
WITNESSING AGENCY		SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	REMARKS						
		P1	9/7/93		✓		✓		1	Product Pipe Trench	✓	✓	✓				3090255
		P2			✓		✓		1		✓	✓	✓				0256
		P3			✓		✓		1		✓	✓	✓				0257
		P4			✓		✓		1		✓	✓	✓				0258
		P5			✓		✓		1		✓	✓	✓				0259
		P6			✓		✓		1		✓	✓	✓				0260
		P7			✓		✓		1		✓	✓	✓				0261

Relinquished by: (Signature) <i>Haig</i>	Date/Time: 9/7/93 1850	Received by: (Signature) <i>Jim Fortube</i>
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)

The following MUST BE completed by the laboratory accepting samples for analysis:		
1. Have all samples received for analysis been stored in ice?	<i>yes</i>	
2. Will samples remain refrigerated until analyzed?	<i>yes</i>	
3. Did any samples received for analysis have head space?	<i>no</i>	
4. Were samples in appropriate containers and properly packaged?	<i>yes</i>	
<i>Fortube</i> Signature	<i>analyst</i> Title	<i>9/7/93</i> Date



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Kaprealian Engineering, Inc.
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Concord, CA 94520
Attention: Avo Avedessian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Sample Matrix: Soil
Analysis Method: EPA 5030/8015/8020
First Sample #: 309-0282

Sampled: Sep 7, 1993
Received: Sep 7, 1993
Reported: Sep 14, 1993

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 309-0282 ST1	Sample I.D. 309-0283 ST2
Purgeable Hydrocarbons	1.0	N.D.	N.D.
Benzene	0.005	N.D.	N.D.
Toluene	0.005	N.D.	N.D.
Ethyl Benzene	0.005	N.D.	N.D.
Total Xylenes	0.005	N.D.	N.D.
Chromatogram Pattern:		--	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Analyzed:	9/10/93	9/10/93
Instrument Identification:	HP-4	HP-4
Surrogate Recovery, %: (QC Limits = 70-130%)	89	88

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL


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Project Manager



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Attention: Avo Avedessian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Sample Descript: Soil
Analysis for: Lead
First Sample #: 309-0282

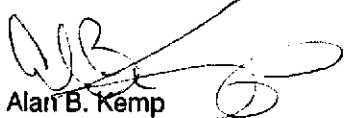
Sampled: Sep 7, 1993
Received: Sep 7, 1993
Extracted: Sep 9, 1993
Analyzed: Sep 9, 1993
Reported: Sep 14, 1993

LABORATORY ANALYSIS FOR: Lead

Sample Number	Sample Description	Detection Limit mg/kg	Sample Result mg/kg
309-0282	ST1	0.25	6.8
309-0283	ST2	0.25	6.6

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

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Attention: Avo Avedessian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Matrix: Soil

QC Sample Group: 3090282-283

Reported: Sep 14, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes	Lead
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 7421
Analyst:	J.F.	J.F.	J.F.	J.F.	K.Anderson
Conc. Spiked:	0.40	0.40	0.40	1.2	50
Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
LCS Batch#:	2LCS091093	2LCS091093	2LCS091093	2LCS091093	BLK090993
Date Prepared:	9/10/93	9/10/93	9/10/93	9/10/93	9/9/93
Date Analyzed:	9/10/93	9/10/93	9/10/93	9/10/93	9/9/93
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4	SpectrAA-400
LCS % Recovery:	79	102	106	118	90
Control Limits:	70-130	70-130	70-130	70-130	75-125

MS/MSD	Batch #:	3090187	3090187	3090187	3090187	3090283
Date Prepared:	9/10/93	9/10/93	9/10/93	9/10/93	9/10/93	9/9/93
Date Analyzed:	9/10/93	9/10/93	9/10/93	9/10/93	9/10/93	9/9/93
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4	HP-4	SpectrAA-400
Matrix Spike % Recovery:	77	80	82	85	85	90
Matrix Spike Duplicate % Recovery:	80	85	85	87	87	91
Relative % Difference:	3.8	6.1	3.6	2.3	2.3	1.1

SEQUOIA ANALYTICAL


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 LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.



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Attention: Avo Avedessian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Matrix Descript: Soil
Analysis Method: SM 5520 E&F (Gravimetric)
First Sample #: #3090282

Sampled: Sep 7, 1993
Relogged: Sep 15, 1993
Extracted: Sep 15, 1993
Analyzed: Sep 15, 1993
Reported: Sep 16, 1993

TOTAL RECOVERABLE PETROLEUM OIL

Sample Number	Sample Description	Oil & Grease mg/kg (ppm)
309-0282	ST1	N.D.
309-0283	ST2	N.D.

Detection Limits:

50

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

SEQUOIA ANALYTICAL


Alan B. Kemp
Project Manager

#3090282.KEI <1>



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Attention: Avo Avedessian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Matrix: Soil

QC Sample Group: 3090282-283

Reported: Sep 16, 1993

QUALITY CONTROL DATA REPORT

ANALYTE

Oil & Grease

Method: SM5520
Analyst: K.W.
Conc. Spiked: 5000
Units: mg/Kg

LCS Batch#: BLK091593

Date Prepared: 9/15/93
Date Analyzed: 9/15/93
Instrument I.D.#: N/A

LCS % Recovery: 105

Control Limits: 80-120

MS/MSD

Batch #: 3090554

Date Prepared: 9/15/93
Date Analyzed: 9/15/93
Instrument I.D.#: N/A

Matrix Spike % Recovery: 103

Matrix Spike Duplicate % Recovery: 99

Relative % Difference: 4.7

SEQUOIA ANALYTICAL


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 LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

#3090282.KEI <2>



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Attention: Avo Avedessian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Matrix Descript: Soil
Analysis Method: SM 5520 E&F (Gravimetric)
First Sample #: #3090282

Sampled: Sep 7, 1993
Relogged: Sep 15, 1993
Extracted: Sep 15, 1993
Analyzed: Sep 15, 1993
Reported: Sep 16, 1993

TOTAL RECOVERABLE PETROLEUM OIL


Sample Number	Sample Description	Oil & Grease mg/kg (ppm)
309-0282	ST1	N.D.
309-0283	ST2	N.D.

Detection Limits:

50

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

SEQUOIA ANALYTICAL


Alan B. Kemp
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#3090282.KEI <1>



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Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Matrix: Soil

QC Sample Group: 3090282-283

Reported: Sep 16, 1993

QUALITY CONTROL DATA REPORT

ANALYTE

Oil & Grease

Method: SM5520
Analyst: K.W.
Conc. Spiked: 5000
Units: mg/Kg

LCS Batch#: BLK091593

Date Prepared: 9/15/93
Date Analyzed: 9/15/93
Instrument I.D.#: N/A

LCS %
Recovery: 105

Control Limits: 80-120

MS/MSD

Batch #: 3090554

Date Prepared: 9/15/93
Date Analyzed: 9/15/93
Instrument I.D.#: N/A

Matrix Spike
% Recovery: 103

Matrix Spike
Duplicate %
Recovery: 99

Relative %
Difference: 4.7

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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 LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.



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Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Sample Matrix: Soil
Analysis Method: EPA 5030/8015/8020
First Sample #: 309-0309

Sampled: Sep 8, 1993
Received: Sep 8, 1993
Reported: Sep 15, 1993

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 309-0309 WO1	Sample I.D. Matrix Blank
Purgeable Hydrocarbons	1.0	6.8	
Benzene	0.005	0.050	
Toluene	0.005	N.D.	
Ethyl Benzene	0.005	0.28	
Total Xylenes	0.005	0.020	

Chromatogram Pattern: Gasoline

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Analyzed:	9/14/93	9/14/93
Instrument Identification:	HP-2	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	113	107

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

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Kaprealian Engineering, Inc. 2401 Stanwell Dr., Ste. 400 Concord, CA 94520 Attention: Avo Avedessian	Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin Sample Matrix: Soil Analysis Method: EPA 3550/8015 First Sample #: 309-0309	Sampled: Sep 8, 1993 Received: Sep 8, 1993 Reported: Sep 15, 1993
---	---	---

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit mg/kg	Sample I.D. 309-0309 WO1	Sample I.D. Matrix Blank
Extractable Hydrocarbons	1.0	N.D.	

Chromatogram Pattern: --

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Extracted:	9/14/93	9/14/93
Date Analyzed:	9/15/93	9/15/93
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.

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Attention: Avo Avedessian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Matrix Descript: Soil
Analysis Method: SM 5520 E&F (Gravimetric)
First Sample #: 309-0309

Sampled: Sep 8, 1993
Received: Sep 8, 1993
Extracted: Sep 10, 1993
Analyzed: Sep 14, 1993
Reported: Sep 15, 1993

TOTAL RECOVERABLE PETROLEUM OIL

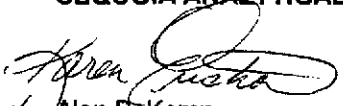
Sample Number	Sample Description	Oil & Grease mg/kg (ppm)
309-0309	WO1	N.D.

Detection Limits:

50

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

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Attention: Avo Avedessian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Sample Descript: Soil, WO1
Analysis Method: EPA 5030/8010
Lab Number: 309-0309

Sampled: Sep 8, 1993
Received: Sep 8, 1993
Analyzed: Sep 14, 1993
Reported: Sep 15, 1993

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	5.0	N.D.
Bromoform.....	5.0	N.D.
Bromomethane.....	10	N.D.
Carbon tetrachloride.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
Chloroethane.....	10	N.D.
2-Chloroethylvinyl ether.....	10	N.D.
Chloroform.....	5.0	N.D.
Chloromethane.....	10	N.D.
Dibromochloromethane.....	5.0	N.D.
1,2-Dichlorobenzene.....	5.0	N.D.
1,3-Dichlorobenzene.....	5.0	N.D.
1,4-Dichlorobenzene.....	5.0	N.D.
1,1-Dichloroethane.....	5.0	N.D.
1,2-Dichloroethane.....	5.0	N.D.
1,1-Dichloroethene.....	5.0	N.D.
cis-1,2-Dichloroethene.....	5.0	N.D.
trans-1,2-Dichloroethene.....	5.0	N.D.
1,2-Dichloropropane.....	5.0	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	50	N.D.
1,1,2,2-Tetrachloroethane.....	5.0	N.D.
Tetrachloroethene.....	5.0	N.D.
1,1,1-Trichloroethane.....	5.0	N.D.
1,1,2-Trichloroethane.....	5.0	N.D.
Trichloroethene.....	5.0	N.D.
Trichlorofluoromethane.....	5.0	N.D.
Vinyl chloride.....	10	N.D.

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

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Concord, CA 94520
Attention: Avo Avedessian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Sample Descript: Soil, WO1
Lab Number: 309-0309

Sampled: Sep 8, 1993
Received: Sep 8, 1993
Extracted: 9/9 & 9/13/93
Analyzed: 9/9-9/13/93
Reported: Sep 15, 1993

LABORATORY ANALYSIS

Analyte	Detection Limit mg/kg	Sample Results mg/kg
---------	--------------------------	-------------------------

Cadmium.....	0.50	1.0
Chromium.....	0.25	30
Lead.....	0.25	6.3
Nickel.....	2.5	42
Zinc.....	0.50	42

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

SEQUOIA ANALYTICAL


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Concord, CA 94520
Attention: Avo Avedesslan

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Matrix: Soil

QC Sample Group: 309-0309

Reported: Sep 15, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes	Diesel	Oil & Grease
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015	SM 5520
Analyst:	J.F.	J.F.	J.F.	J.F.	K.Wimer	K.Wimer
Conc. Spiked:	0.40	0.40	0.40	1.2	10	5000
Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
LCS Batch#:	1LCS091493	1LCS091493	1LCS091493	1LCS091493	BLK091493	BLK091093
Date Prepared:	9/14/93	9/14/93	9/14/93	9/14/93	9/14/93	9/10/93
Date Analyzed:	9/14/93	9/14/93	9/14/93	9/14/93	9/15/93	9/15/93
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2	HP-3B	N/A
LCS % Recovery:	111	107	108	109	104	91
Control Limits:	70-130	70-130	70-130	70-130	80-120	75-125

MS/MSD	Batch #:	3090325	3090325	3090325	3090325	3090168	BLK091093
Date Prepared:	9/14/93	9/14/93	9/14/93	9/14/93	9/14/93	9/14/93	9/10/93
Date Analyzed:	9/14/93	9/14/93	9/14/93	9/14/93	9/14/93	9/15/93	9/15/93
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2	HP-2	HP-3B	N/A
Matrix Spike % Recovery:	50	100	110	119	99	101	
Matrix Spike Duplicate % Recovery:	50	92	105	107	97	101	
Relative % Difference:	0.0	8.3	4.6	11	2.0	0.0	

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Please Note:

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Concord, CA 94520
Attention: Avo Avedessian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Matrix: Soil

QC Sample Goup: 309-0309

Reported: Sep 15, 1993

QUALITY CONTROL DATA REPORT

ANALYTE:	1,1-Dichloro-ethene	Trichloroethene	Chloro-benzene
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Method:	EPA 8010	EPA 8010	EPA 8010
Analyst:	K.Nill	K.Nill	K.Nill
Conc. Spiked:	10	10	10
Units:	mg/Kg	mg/Kg	mg/Kg
LCS Batch#:	LCS091493	LCS091493	LCS091493
Date Prepared:	9/14/93	9/14/93	9/14/93
Date Analyzed:	9/14/93	9/14/93	9/14/93
Instrument I.D.#:	HP-5890/1	HP-5890/1	HP-5890/1
LCS % Recovery:	93	88	77
Control Limits:	70-130	70-130	70-130

MS/MSD Batch #:	3090309	3090309	3090309
Date Prepared:	9/14/93	9/14/93	9/14/93
Date Analyzed:	9/14/93	9/14/93	9/14/93
Instrument I.D.#:	HP-5890/1	HP-5890/1	HP-5890/1
Matrix Spike % Recovery:	62	97	78
Matrix Spike Duplicate % Recovery:	59	87	81
Relative % Difference:	5.0	16	3.8

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Matrix: Soil

QC Sample Group: 309-0309

Reported: Sep 15, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Cadmium	Nickel	Zinc	Chromium	Lead
Method:	EPA 7130	EPA 7520	EPA 7950	EPA 7191	EPA 7421
Analyst:	K.V.S.	K.V.S.	K.V.S.	D.B.	K.M.A.
Conc. Spiked:	50	50	50	50	50
Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
LCS Batch#:	BLK091393	BLK091393	BLK091393	BLK090993	BLK090993
Date Prepared:	9/13/93	9/13/93	9/13/93	9/9/93	9/9/93
Date Analyzed:	9/13/93	9/13/93	9/13/93	9/10/93	9/9/93
Instrument I.D.#:	SpectrAA-20	SpectrAA-20	SpectrAA-20	SpectrAA-400	SpectrAA-400
LCS % Recovery:	83	91	88	103	90
Control Limits:	75-125	75-125	75-125	75-125	75-125

MS/MSD					
Batch #:	3090309	3090309	3090309	3090283	3090283
Date Prepared:	9/13/93	9/13/93	9/13/93	9/9/93	9/9/93
Date Analyzed:	9/13/93	9/13/93	9/13/93	9/10/93	9/9/93
Instrument I.D.#:	SpectrAA-20	SpectrAA-20	SpectrAA-20	SpectrAA-400	SpectrAA-400
Matrix Spike % Recovery:	89	97	96	79	90
Matrix Spike Duplicate % Recovery:	88	100	95	78	91
Relative % Difference:	1.1	3.0	1.0	1.3	1.1

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Alan B. Kemp
Project Manager

Please Note:

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Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin

QC Sample Group: 309-0309

Reported: Sep 15, 1993

QUALITY CONTROL DATA REPORT

SURROGATE

Method:	EPA 8015	EPA 8015
Analyst:	K.W.	K.W.
Reporting Units:	mg/Kg	mg/Kg
Date Analyzed:	Sep 15, 1993	Sep 15, 1993
Sample #:	309-0309	Matrix Blank

Surrogate		
% Recovery:	102	99

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Alan B. Kemp
Alan B. Kemp
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin

QC Sample Group: 309-0309

Reported: Sep 15, 1993

QUALITY CONTROL DATA REPORT

SURROGATE

Method:	EPA 8010	EPA 8010
Analyst:	K.N.	K.N.
Reporting Units:	mg/Kg	mg/Kg
Date Analyzed:	Sep 14, 1993	Sep 14, 1993
Sample #:	309-0309	Matrix Blank

Surrogate #1

% Recovery:	106	81
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Surrogate #2

% Recovery:	91	96
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Alan B. Kemp
Alan B. Kemp
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Sample Matrix: Water
Analysis Method: EPA 5030/8015/8020
First Sample #: 309-0440

Sampled: Sep 10, 1993
Received: Sep 10, 1993
Reported: Sep 17, 1993

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 309-0440 W1	Sample I.D. Matrix Blank
Purgeable Hydrocarbons	50	2,600	
Benzene	0.5	33	
Toluene	0.5	19	
Ethyl Benzene	0.5	150	
Total Xylenes	0.5	190	

Chromatogram Pattern: Gasoline

Quality Control Data

Report Limit Multiplication Factor:	10	1.0
Date Analyzed:	9/16/93	9/16/93
Instrument Identification:	HP-5	HP-5
Surrogate Recovery, %: (QC Limits = 70-130%)	102	110

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

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Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Sample Matrix: Water
Analysis Method: EPA 3510/3520/8015
First Sample #: 309-0440

Sampled: Sep 10, 1993
Received: Sep 10, 1993
Reported: Sep 17, 1993

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit µg/L	Sample I.D. 309-0440 W1*	Sample I.D. Matrix Blank
Extractable Hydrocarbons	50	530	
Chromatogram Pattern:		Diesel & Non-Diesel Mixture (<C16)	

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Extracted:	9/14/93	9/14/93
Date Analyzed:	9/16/93	9/17/93
Instrument Identification:	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.

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Please Note:

*Non-Diesel Mixture, <C16, refers to unidentified peaks in the Kerosene/Stoddard Solvent Range.



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Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Matrix Descript: Water
Analysis Method: SM 5520 B&F (Gravimetric)
First Sample #: 309-0440

Sampled: Sep 10, 1993
Received: Sep 10, 1993
Extracted: Sep 14, 1993
Analyzed: Sep 15, 1993
Reported: Sep 17, 1993

TOTAL RECOVERABLE PETROLEUM OIL

Sample Number	Sample Description	Oil & Grease mg/L (ppm)
309-0440	W1	N.D.

Detection Limits:

5.0

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

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Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Sample Descript: Water, W1
Analysis Method: EPA 5030/8010
Lab Number: 309-0440


Sampled: Sep 10, 1993
Received: Sep 10, 1993
Analyzed: Sep 16, 1993
Reported: Sep 17, 1993

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane.....	0.50	N.D.
Bromoform.....	0.50	N.D.
Bromomethane.....	1.0	N.D.
Carbon tetrachloride.....	0.50	N.D.
Chlorobenzene.....	0.50	N.D.
Chloroethane.....	1.0	N.D.
2-Chloroethylvinyl ether.....	1.0	N.D.
Chloroform.....	0.50	N.D.
Chloromethane.....	1.0	N.D.
Dibromochloromethane.....	0.50	N.D.
1,3-Dichlorobenzene.....	0.50	N.D.
1,4-Dichlorobenzene.....	0.50	N.D.
1,2-Dichlorobenzene.....	0.50	N.D.
1,1-Dichloroethane.....	0.50	N.D.
1,2-Dichloroethane.....	0.50	N.D.
1,1-Dichloroethene.....	0.50	N.D.
cis-1,2-Dichloroethene.....	0.50	N.D.
trans-1,2-Dichloroethene.....	0.50	N.D.
1,2-Dichloropropane.....	0.50	N.D.
cis-1,3-Dichloropropene.....	0.50	N.D.
trans-1,3-Dichloropropene.....	0.50	N.D.
Methylene chloride.....	5.0	N.D.
1,1,2,2-Tetrachloroethane.....	0.50	N.D.
Tetrachloroethene.....	0.50	N.D.
1,1,1-Trichloroethane.....	0.50	N.D.
1,1,2-Trichloroethane.....	0.50	N.D.
Trichloroethene.....	0.50	N.D.
Trichlorofluoromethane.....	0.50	N.D.
Vinyl chloride.....	1.0	N.D.

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

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Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Sample Descript: Water, W1
Lab Number: 309-0440

Sampled: Sep 10, 1993
Received: Sep 10, 1993
Analyzed: 9/16-9/20/93
Reported: Sep 20, 1993

LABORATORY ANALYSIS

Analyte	Detection Limit mg/L	Sample Results mg/L
Cadmium	0.010	0.014
Chromium	0.0050	0.28
Lead	0.0050	0.018
Nickel	0.050	0.46
Zinc	0.010	0.46

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

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Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Matrix: Water

QC Sample Group: 309-0440

Reported: Sep 17, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl- Benzene	Xylenes	Diesel	Oil & Grease
	Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015
Analyst:	J.F.	J.F.	J.F.	J.F.	K.Wimer	K.Wimer
Conc. Spiked:	20	20	20	60	300	5000
Units:	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L
LCS Batch#:	3LCS091693	3LCS091693	3LCS091693	3LCS091693	BLK091493	BLK091493
Date Prepared:	9/16/93	9/16/93	9/16/93	9/16/93	9/14/93	9/14/93
Date Analyzed:	9/16/93	9/16/93	9/16/93	9/16/93	9/17/93	9/15/93
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5	HP-3A	N/A
LCS % Recovery:	129	122	116	112	97	87
Control Limits:	70-130	70-130	70-130	70-130	80-120	80-120

MS/MSD Batch #:	3090486	3090486	3090486	3090486	BLK091493	BLK091493
Date Prepared:	9/16/93	9/16/93	9/16/93	9/16/93	9/14/93	9/14/93
Date Analyzed:	9/16/93	9/16/93	9/16/93	9/16/93	9/17/93	9/15/93
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5	HP-3A	N/A
Matrix Spike % Recovery:	120	115	110	107	97	87
Matrix Spike Duplicate % Recovery:	125	115	110	107	91	93
Relative % Difference:	4.1	0.0	0.0	0.0	6.7	7.1

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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 LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

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Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Matrix: Water

QC Sample Goup: 309-0440

Reported: Sep 17, 1993

QUALITY CONTROL DATA REPORT

ANALYTE:	1,1-Dichloro-ethene	Trichloroethene	Chloro-benzene
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Method:	EPA 8010	EPA 8010	EPA 8010
Analyst:	K.Niil	K.Niil	K.Niil
Conc. Spiked:	10	10	10
Units:	µg/L	µg/L	µg/L
LCS Batch#:	LCS091693	LCS091693	LCS091693
Date Prepared:	9/16/93	9/16/93	9/16/93
Date Analyzed:	9/16/93	9/16/93	9/16/93
Instrument I.D.#:	HP-5890/7	HP-5890/7	HP-5890/7
LCS % Recovery:	100	100	93
Control Limits:	70-130	70-130	70-130

MS/MSD Batch #:	3090533	3090533	3090533
Date Prepared:	9/16/93	9/16/93	9/16/93
Date Analyzed:	9/16/93	9/16/93	9/16/93
Instrument I.D.#:	HP-5890/7	HP-5890/7	HP-5890/7
Matrix Spike % Recovery:	100	110	95
Matrix Spike Duplicate % Recovery:	110	110	95
Relative % Difference:	9.5	0.0	0.0

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Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Matrix: Water

QC Sample Group: 309-0440

Reported: Sep 17, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Cadmium	Nickel	Zinc	Chromium	Lead
Method:	EPA 7130	EPA 7520	EPA 7950	EPA 7191	EPA 7421
Analyst:	K.V.S.	K.V.S.	K.V.S.	K.A.	K.A.
Conc. Spiked:	0.10	0.10	0.10	0.10	0.10
Units:	mg/L	mg/L	mg/L	mg/L	mg/L
LCS Batch#:	BLK091493	BLK091493	BLK091493	BLK091493	BLK091493
Date Prepared:	9/14/93	9/14/93	9/14/93	9/14/93	9/14/93
Date Analyzed:	9/16/93	9/17/93	9/16/93	9/20/93	9/17/93
Instrument I.D.#:	SpectrAA-20	SpectrAA-20	SpectrAA-20	SpectrAA-400	SpectrAA-400
LCS % Recovery:	89	113	115	86	90
Control Limits:	75-125	75-125	75-125	75-125	75-125

MS/MSD					
Batch #:	3090440	3090440	3090440	3090440	3090440
Date Prepared:	9/14/93	9/14/93	9/14/93	9/14/93	9/14/93
Date Analyzed:	9/16/93	9/17/93	9/16/93	9/20/93	9/17/93
Instrument I.D.#:	SpectrAA-20	SpectrAA-20	SpectrAA-20	SpectrAA-400	SpectrAA-400
Matrix Spike % Recovery:	88	99	79	68	99
Matrix Spike Duplicate % Recovery:	86	86	72	69	100
Relative % Difference:	2.3	14	9.3	1.5	1.0

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Please Note:

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Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin

QC Sample Group: 309-0440

Reported: Sep 17, 1993

QUALITY CONTROL DATA REPORT

SURROGATE

Method:	EPA 8015	EPA 8015
Analyst:	K.W.	K.W.
Reporting Units:	µg/L	µg/L
Date Analyzed:	Sep 16, 1993	Sep 17, 1993
Sample #:	309-0440	Matrix Blank

Surrogate		
% Recovery:	108	105

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Alan B. Kemp
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Kaprealian Engineering, Inc. 2401 Stanwell Dr., Ste. 400 Concord, CA 94520 Attention: Avo Avedessian	Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin	QC Sample Group: 309-0440	Reported: Sep 17, 1993
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QUALITY CONTROL DATA REPORT

SURROGATE

Method:	EPA 8010	EPA 8010
Analyst:	K.N.	K.N.
Reporting Units:	µg/L	µg/L
Date Analyzed:	Sep 16, 1993	Sep 16, 1993
Sample #:	309-0440	Matrix Blank

Surrogate #1		
% Recovery:	95	103
Surrogate #2		
% Recovery:	87	84

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Alan B. Kemp
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Kapreallan Engineering, Inc. 2401 Stanwell Dr., Ste. 400 Concord, CA 94520 Attention: Avo Avedessian	Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin Sample Matrix: Water Analysis Method: EPA 5030/8015/8020 First Sample #: 309-0561	Sampled: Sep 14, 1993 Received: Sep 14, 1993 Reported: Sep 21, 1993
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TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 309-0561 W2	Sample I.D. Matrix Blank
Purgeable Hydrocarbons	50	740	
Benzene	0.5	14	
Toluene	0.5	32	
Ethyl Benzene	0.5	13	
Total Xylenes	0.5	75	

Chromatogram Pattern: Gasoline

Quality Control Data

Report Limit Multiplication Factor:	10	1.0
Date Analyzed:	9/17/93	9/17/93
Instrument Identification:	HP-5	HP-5
Surrogate Recovery, %: (QC Limits = 70-130%)	101	114

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL


Alan B. Kemp
Project Manager



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Kaprealian Engineering, Inc.
2401 Stanwell Dr., Ste. 400
Concord, CA 94520
Attention: Avo Avedessian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Matrix: Water

QC Sample Group: 309-0561

Reported: Sep 21, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	J.F.	J.F.	J.F.	J.F.
Conc. Spiked:	20	20	20	60
Units:	µg/L	µg/L	µg/L	µg/L
LCS Batch#:	3LCS091793	3LCS091793	3LCS091793	3LCS091793
Date Prepared:	9/17/93	9/17/93	9/17/93	9/17/93
Date Analyzed:	9/17/93	9/17/93	9/17/93	9/17/93
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
LCS % Recovery:	130	121	112	110
Control Limits:	70-130	70-130	70-130	70-130

MS/MSD				
Batch #:	3090517	3090517	3090517	3090517
Date Prepared:	9/17/93	9/17/93	9/17/93	9/17/93
Date Analyzed:	9/17/93	9/17/93	9/17/93	9/17/93
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
Matrix Spike % Recovery:	115	110	105	103
Matrix Spike Duplicate % Recovery:	125	115	115	112
Relative % Difference:	8.3	4.4	8.3	8.4

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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 LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.


Alan B. Kemp
Project Manager

CHAIN OF CUSTODY

SAMPLER <i>Healy</i>			SITE NAME & ADDRESS <i>Unocal # 6419 - Dublin 6401 Dublin Blvd</i>					ANALYSES REQUESTED					TURN AROUND TIME: <i>5 days</i>	
WITNESSING AGENCY								<i>TPH-G</i>	<i>BTXE</i>					
SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION					REMARKS	
<i>W2</i>	<i>9/14/93</i>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<i>4</i>	<i>Fuel Tank Pit</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<i>3090561 A-D</i>	<i>Water Sample was collected in four VOA's.</i>	
Relinquished by: (Signature) <i>Healy</i>			Date/Time <i>9/14/93 4:35p</i>		Received by: (Signature) <i>Melissa Brewer</i>									
Relinquished by: (Signature)			Date/Time		Received by: (Signature)									
Relinquished by: (Signature)			Date/Time		Received by: (Signature)									
Relinquished by: (Signature)			Date/Time		Received by: (Signature)									
The following MUST BE completed by the laboratory accepting samples for analysis:														
1. Have all samples received for analysis been stored in ice?										<i>yes</i>				
2. Will samples remain refrigerated until analyzed?										<i>yes</i>				
3. Did any samples received for analysis have head space?										<i>no</i>				
4. Were samples in appropriate containers and properly packaged?										<i>yes</i>				
Signature <i>Melissa Brewer</i>								Title <i>Sample Control</i>		Date <i>9/14/93</i>				



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Kapreallan Engineering, Inc. 2401 Starwell Dr., Ste. 400 Concord, CA 94520 Attention: Avo Avedessian	Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin Sample Matrix: Soil Analysis Method: EPA 5030/8015/8020 First Sample #: 309-0308	Sampled: Sep 8, 1993 Received: Sep 8, 1993 Reported: Sep 9, 1993
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TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 309-0308 SW5	Sample I.D. Matrix Blank
Purgeable Hydrocarbons	1.0	N.D.	N.D.
Benzene	0.005	0.0084	N.D.
Toluene	0.005	0.011	N.D.
Ethyl Benzene	0.005	N.D.	N.D.
Total Xylenes	0.005	0.021	N.D.
Chromatogram Pattern:		--	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0
Date Analyzed:	9/8/93	9/8/93
Instrument Identification:	HP-5	HP-5
Surrogate Recovery, %: (QC Limits = 70-130%)	106	109

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

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Alan B. Kemp
Project Manager



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Kaprealian Engineering, Inc. 2401 Stanwell Dr., Ste. 400 Concord, CA 94520 Attention: Avo Avedessian	Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin Sample Matrix: Soil Analysis Method: EPA 5030/8015/8020 First Sample #: 309-0302	Sampled: Sep 8, 1993 Received: Sep 8, 1993 Reported: Sep 9, 1993
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TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit mg/kg	Sample I.D. 309-0302 B1	Sample I.D. 309-0303 B2	Sample I.D. 309-0304 SW1	Sample I.D. 309-0305 SW2	Sample I.D. 309-0306 SW3	Sample I.D. 309-0307 SW4
Purgeable Hydrocarbons	1.0	N.D.	1.2	N.D.	N.D.	N.D.	2.6
Benzene	0.005	0.0071	0.017	N.D.	0.0054	0.0050	0.11
Toluene	0.005	0.014	0.010	0.013	0.011	0.011	0.28
Ethyl Benzene	0.005	0.0072	0.13	N.D.	N.D.	0.0065	0.067
Total Xylenes	0.005	0.026	0.017	0.019	0.012	0.013	0.34
Chromatogram Pattern:		--	Gasoline	--	--	--	Gasoline

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0	1.0
Date Analyzed:	9/8/93	9/8/93	9/8/93	9/8/93	9/8/93	9/8/93
Instrument Identification:	HP-5	HP-5	HP-5	HP-5	HP-5	HP-5
Surrogate Recovery, %: (QC Limits = 70-130%)	99	96	107	99	96	97

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

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Alan B. Kemp
Alan B. Kemp
Project Manager



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Kaprealian Engineering, Inc.
2401 Stanwell Dr., Ste. 400
Concord, CA 94520
Attention: Avo Avedessian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Sample Descript: Soil
Analysis for: Lead
First Sample #: 309-0302

Sampled: Sep 8, 1993
Received: Sep 8, 1993
Extracted: Sep 9, 1993
Analyzed: Sep 9, 1993
Reported: Sep 10, 1993

LABORATORY ANALYSIS FOR: Lead

Sample Number	Sample Description	Detection Limit mg/kg	Sample Result mg/kg
309-0302	B1	0.25	5.9
309-0303	B2	0.25	7.3
309-0304	SW1	0.25	6.2
309-0305	SW2	0.25	6.0
309-0306	SW3	0.25	6.2
309-0307	SW4	0.25	6.5
309-0308	SW5	0.25	6.8

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

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Project Manager



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Kaprealian Engineering, Inc.
2401 Stanwell Dr., Ste. 400
Concord, CA 94520
Attention: Avo Avedessian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
Matrix: Soil

QC Sample Group: 3090302-308

Reported: Sep 9, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes	Lead
	Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	J.F.	J.F.	J.F.	J.F.	K.A.
Conc. Spiked:	0.40	0.40	0.40	1.2	50
Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
LCS Batch#:	3LCS090893	3LCS090893	3LCS090893	3LCS090893	BLK090993MS
Date Prepared:	9/8/93	9/8/93	9/8/93	9/8/93	9/9/93
Date Analyzed:	9/8/93	9/8/93	9/8/93	9/8/93	9/9/93
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5	SpectrAA-400
LCS % Recovery:	110	108	103	102	90
Control Limits:	70-130	70-130	70-130	70-130	75-125

MS/MSD Batch #:	3090302	3090302	3090302	3090302	3090283
Date Prepared:	9/8/93	9/8/93	9/8/93	9/8/93	9/9/93
Date Analyzed:	9/8/93	9/8/93	9/8/93	9/8/93	9/9/93
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5	SpectrAA-400
Matrix Spike % Recovery:	87	87	82	82	90
Matrix Spike Duplicate % Recovery:	97	97	95	94	91
Relative % Difference:	11	11	15	14	1.1

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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 LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

Alan B. Kemp
Project Manager

CHAIN OF CUSTODY

SAMPLER Haig		SITE NAME & ADDRESS Unocal # 6419 - Dublin 6401 Dublin Blvd							ANALYSES REQUESTED TPH-G BTXE Total Pb					TURN AROUND TIME: 24 Hrs	
WITNESSING AGENCY														REMARKS	
SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	TPH-G	BTXE	Total Pb				
B1	9/8/93		✓		✓		1	Fuel Tank Pit	✓	✓	✓				
B2			✓		✓		1		✓	✓	✓				
SW1			✓		✓		1		✓	✓	✓				
SW2			✓		✓		1		✓	✓	✓				
SW3			✓		✓		1		✓	✓	✓				
SW4			✓		✓		1		✓	✓	✓				
SW5			✓		✓		1		✓	✓	✓				
Relinquished by: (Signature) <i>Haig</i>		Date/Time 9/8/93 4:55p		Received by: (Signature) <i>Melissa Creware</i>		The following MUST BE completed by the laboratory accepting samples for analysis: 1. Have all samples received for analysis been stored in ice? 2. Will samples ^{yes} remain refrigerated until analyzed? 3. Did any samples ^{yes} received for analysis have head space? 4. Were samples in appropriate containers and properly packaged? ✓ <i>Melissa Creware</i> ^{yes} Sample Control Signature Title Date 9/8/93									
Relinquished by: (Signature)		Date/Time		Received by: (Signature)											
Relinquished by: (Signature)		Date/Time		Received by: (Signature)											
Relinquished by: (Signature)		Date/Time		Received by: (Signature)											