



KAPREALIAN ENGINEERING, INC.

Consulting Engineers
P. O. BOX 913
BENICIA, CA 94510
(707) 746-6915

KEI-J89-0805.R1
August 30, 1989

Unocal Corporation
2175 N. California Blvd., Suite #650
Walnut Creek, CA 94596

Attention: Mr. Tim Ross

RE: Soil Sampling Report
Unocal Service Station #0746
3943 Broadway Street
Oakland, California

Dear Mr. Ross:

This report summarizes the soil sampling performed by Kaprealian Engineering, Inc. (KEI) 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 Agency.

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

Coordination with regulatory agencies.

Collection of soil samples from the sidewalls of the fuel storage tank pit, and from beneath the waste oil tank and piping trenches.

Collection of ground water samples from the fuel 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 is presently used as a gasoline station. Site vicinity and site descriptions are shown on the attached sketch. No leaks or previous subsurface work performed at the site are known to KEI.

FIELD ACTIVITIES

KEI's field work was conducted on August 16, 1989 when two underground fuel storage tanks and one 280 gallon waste oil tank were removed from the site. The fuel tanks consisted of one 10,000 gallon super unleaded tank, and one 10,000 gallon regular unleaded gasoline tank. The tanks were made of steel and no apparent holes or cracks were observed in the tanks. Tank removal and soil sampling were performed in the presence of Mr. Gil Wistar of the Alameda County Health Agency.

Water was encountered in the fuel tank pit at a depth of 10 feet, thus prohibiting the collection of any soil samples from immediately beneath the tanks. Six soil samples, labeled SW1, SW2, SW3, SW4, SW5 and SW6, were collected from the sidewalls of the fuel tank pit at a depth approximately six inches above the water table. One sample, labeled W01, was collected of native soil from beneath the waste oil tank at a depth of 8 feet. The undisturbed soil samples were collected from bulk material excavated by backhoe. Soil samples were placed in clean, 2" diameter brass tubes, sealed with aluminum foil, plastic caps and tape, and stored in a cooled ice chest for delivery to a state certified laboratory.

On August 17, 1989, approximately 1,500 gallons of contaminated ground water was pumped from the fuel tank pit. One sample of water from the fuel tank pit, labeled W1, was collected in three clean glass VOA vials with Teflon screw caps. The water sample was also stored as described above.

Due to the replacement of 10,000 gallon old tanks by 12,000 gallon new tanks, additional soil was excavated from the north sidewall of the fuel tank pit (approximately 14 feet wide). On August 18, 1989, KEI returned to the site to collect additional soil samples. One soil sample, labeled SW2(R), was collected from the north sidewall of the fuel tank pit at a depth of 9.5 feet. Also, on August 18, 1989, four samples of native soil were collected from the product pipe trenches at depths ranging from 5.0 to 6.5 feet. The undisturbed soil samples were collected as described above from bulk material excavated by backhoe. After soil sampling, the pipe trenches were excavated to the sample depths. Sample point locations and the additional excavated areas are shown on the attached Site Plan.

KEI again returned to the site on August 24, 1989 to collect an additional ground water sample. After approximately 5,000 gallons of contaminated ground water was pumped from the fuel tank pit, one ground water sample, labeled W2, was collected in two clean glass VOA vials with Teflon screw caps. This sample was stored as described above.

1,500 gal.

SUBSURFACE CONDITIONS

5,000

6,500 gal. contaminated GW

Subsurface soils exposed in the excavation consisted primarily of silty clay. Excavated soil was stockpiled on site.

ANALYTICAL RESULTS

All samples were analyzed by Sequoia Analytical Laboratory in Redwood City, California, and were accompanied by properly executed Chain of Custody documentation. Samples from the fuel tank pit were analyzed for total petroleum hydrocarbon (TPH) as gasoline using EPA method 5030 in conjunction with modified 8015, benzene, toluene, xylenes and ethylbenzene (BTX&E) using EPA methods 5030 and 8020. The soil sample from the waste oil tank pit was analyzed for TPH as gasoline, BTX&E, TPH as diesel using EPA method 3550 in conjunction with modified 8015, total oil and grease (TOG) by 503 D&E and EPA 8010 constituents.

Soil sample analyses from the fuel tank pit indicate non-detectable levels of TPH as gasoline and BTX&E for all samples except samples SW1 and SW2, which showed levels of TPH as gasoline at 13 ppm and 290 ppm, respectively. However, the entire area of sample point SW2 has been excavated as indicated on the attached Site Plan, and the new sample SW2(R) showed non-detectable levels of TPH as gasoline and BTX&E. The soil sample from the waste oil tank pit showed non-detectable levels of all constituents analyzed, except TPH as gasoline at 1.6 ppm and toluene at 1.3 ppm. The soil samples, collected from pipe trenches, showed levels of TPH as gasoline ranging from 3.8 to 36 ppm, and benzene ranging from non-detectable to 0.52 ppm. However, the ground water sample analyses from the fuel tank pit (W1) showed 4,700 ppb TPH as gasoline, and 180 ppb benzene, while W2 showed 1,200 ppb TPH as gasoline and 12 ppb benzene. The analytical results of the soil samples are summarized in Table 1, and water samples in Table 2. 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 and ground water samples, and in accordance with the guidelines established by the RWQCB, additional investigation is necessary at the site. To comply with the requirements of the RWQCB, KEI recommends installation of three monitoring wells to determine the ground water flow direction, and begin to determine the extent of the contamination. KEI's proposal for this work is attached for your consideration.

A copy of this report should be sent to Mr. Gil Wistar of the Alameda County Health Agency, and to the RWQCB, San Francisco Bay Region.

LIMITATIONS

The results of this study are based on the data obtained from the field work and laboratory analyses. 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, except that our services have been performed in accordance with generally accepted professional principles and practices existing for such work.

KEI-J89-0805.R1
August 30, 1989
Page 5

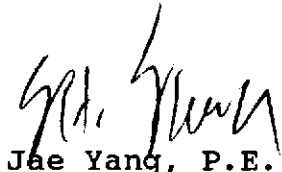
Should you have any questions regarding this report, please feel free to call me at (707) 746-6915.

Sincerely,

Kaprealian Engineering, Inc.



Hagop Kevork
Civil Engineer



Jae Yang, P.E.

License No. 25337
Exp. Date 12/31/89



Mardo Kaprealian
President

Attachments: Tables 1 & 2
Location Map
Site Plan
Laboratory Analyses
Chain of Custody documentation
Proposal

KEI-J89-0805.R1
August 30, 1989

TABLE 1

SUMMARY OF LABORATORY ANALYSES
SOIL
(Results in ppm)
(Samples collected on August 16, 17, 18 & 24, 1989)

<u>Sample #</u>	<u>Depth (feet)</u>	<u>TPH as Gasoline</u>	<u>TPH as Diesel</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Xylenes</u>	<u>Ethyl- benzene</u>
SW1	9.5	13	---	ND	0.13	0.39	0.15
SW2	9.5	290	---	0.82	8.7	44	7.6
SW2 (R)	9.5	ND	---	ND	ND	ND	ND
SW3	9.5	ND	---	ND	ND	ND	ND
SW4	9.5	ND	---	ND	ND	ND	ND
SW5	9.5	ND	---	ND	ND	ND	ND
SW6	9.5	ND	---	ND	ND	ND	ND
P1	6.5	6.1	---	ND	ND	ND	ND
P2	6.5	36	---	0.52	4.4	8.0	1.4
P3	5	20	---	0.30	2.5	5.6	1.1
P4	5	3.8	---	0.11	0.19	0.23	0.1
WO1*	8	1.6	ND	ND	1.3	ND	ND
Detection Limits		1.0	1.0	0.05	0.1	0.1	0.1

* TOG and EPA 8010 constituents for this sample were non-detectable.

ND = Non-detectable.

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TABLE 2

SUMMARY OF LABORATORY ANALYSES
WATER
(Results in ppb)

<u>Sample #</u>	<u>Depth (feet)</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Xylenes</u>	<u>Ethyl- benzene</u>
W1	10.5	4,700	180	420	860	150
W2*	10.5	1,200	12	10	88	5.9
Detection Limits		30	0.3	0.3	0.3	0.3

* Sample (W2) was collected after pumping 5,000 gallons of ground water from the fuel tank pit.

ND = Non-detectable.



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LOCATION MAP

Unocal Service Station #0746
3943 Broadway Street
Oakland, California



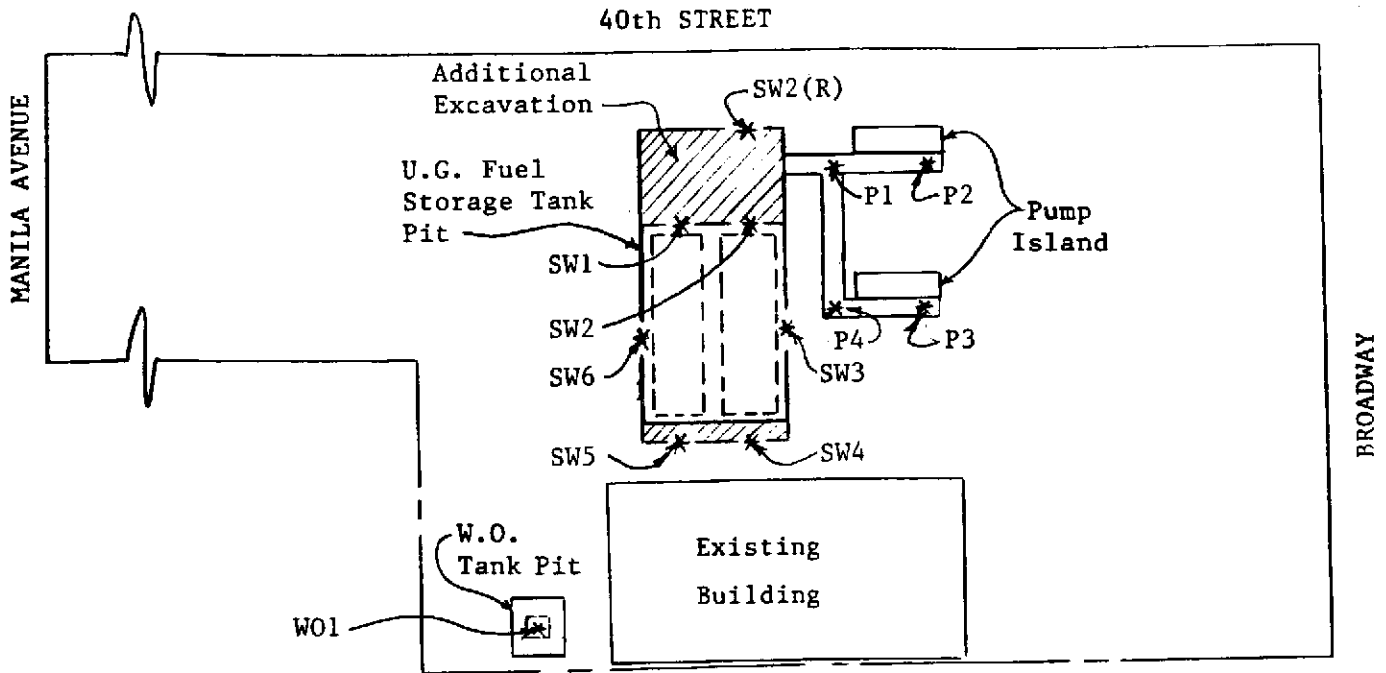
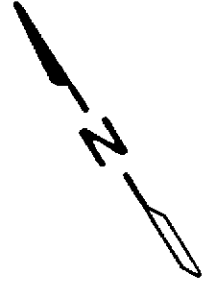
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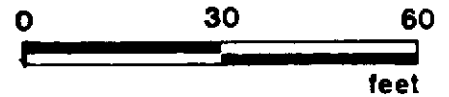
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SITE PLAN



* Sample Point Location

Unocal Service Station #0746
3943 Broadway Street
Oakland, California



SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Kaprealian Engineering, Inc.	Client Project ID:	Unocal, Oakland, 3943 Broadway/40th St.	Sampled:	Aug 16, 1989
P.O. Box 913	Matrix Descript:	Soil	Received:	Aug 16, 1989
Benicia, CA 94510	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Aug 17, 1989
Attention: Mardo Kaprealian, P.E.	First Sample #:	908-1728	Reported:	Aug 18, 1989

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
908-1728	SW1	13	N.D.	0.13	0.15	0.39
908-1729	SW2	290	0.82	8.7	7.6	44
908-1730	SW3	N.D.	N.D.	N.D.	N.D.	N.D.
908-1731	SW4	N.D.	N.D.	N.D.	N.D.	N.D.
908-1732	SW5	N.D.	N.D.	N.D.	N.D.	N.D.
908-1733	SW6	N.D.	N.D.	N.D.	N.D.	N.D.

Detection Limits:	1.0	0.05	0.1	0.1	0.1
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Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Arthur G. Burton
Laboratory Director



KAPREALIAN ENGINEERING, INC.

Consulting Engineers

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BENICIA CA 94510

(415) 676-9100 (707) 746-6915

CHAIN OF CUSTODY

SAMPLER: HAGOP DATE/TIME OF COLLECTION: 8-16-89 TURN AROUND TIME: 24 HRS
 (Signature)

SAMPLE DESCRIPTION AND PROJECT NUMBER: UNOCAL - OAKLAND - 3943 Broadway / 40th st

<u>SAMPLE #</u>	<u>ANALYSES</u>	<u>GRAB OR COMP.</u>	<u>NUMBER OF CONTAINERS</u>	<u>SOIL/WATER</u>	
<u>SW 1</u>	<u>TPH-G/BTXE</u>	<u>G</u>	<u>1</u>	<u>S</u>	<u>9081728</u>
<u>SW 2</u>	<u>TPH-G/BTXE</u>	<u>G</u>	<u>1</u>	<u>S</u>	<u>29</u>
<u>SW 3</u>	<u>TPH-G/BTXE</u>	<u>G</u>	<u>1</u>	<u>S</u>	<u>30</u>
<u>SW 4</u>	<u>TPH-G/BTXE</u>	<u>G</u>	<u>1</u>	<u>S</u>	<u>31</u>
<u>SW 5</u>	<u>TPH-G/BTXE</u>	<u>G</u>	<u>1</u>	<u>S</u>	<u>32</u>
<u>SW 6</u>	<u>TPH-G/BTXE</u>	<u>G</u>	<u>1</u>	<u>S</u>	<u>33</u>
		<u>&</u>			

<u>RELINQUISHED BY*</u>	<u>TIME/DATE</u>	<u>RECEIVED BY*</u>	<u>TIME/DATE</u>
<u>1. Hagop Newcom</u>	<u>1700</u> <u>8-16-89</u>	<u>Eric #23</u>	<u>8/16/89 / 1700</u>
<u>2. Eric #23</u>	<u>8-16-89</u>	<u>Jessie Newcom</u>	<u>18:32</u> <u>8-16-89</u>
<u>3.</u>			

* STATE AFFILIATION NEXT TO SIGNATURE

REMARKS: _____

NOTE: IF REGULAR TURNAROUND, SOIL ANALYSES MUST BE COMPLETED WITHIN 14 CALENDAR DAYS OF SAMPLE COLLECTION. WATER ANALYSES MUST BE COMPLETED WITHIN 7 CALENDAR DAYS FOR BTX&E (UNLESS SAMPLE HAS BEEN PRESERVED), AND 14 CALENDAR DAYS FOR TPH AS GASOLINE; EXTRACT TPH AS DIESEL WITHIN 14 CALENDAR DAYS.



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680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Kaprealian Engineering, Inc.	Client Project ID: Unocal, Oakland, 3943 Broadway/40th St.	Sampled: Aug 18, 1989
P.O. Box 913	Sample Descript.: Soil, SW2 (R)	Received: Aug 18, 1989
Benicia, CA 94510	Analysis Method: EPA 5030/8015/8020	Analyzed: Aug 21, 1989
Attention: Mardo Kaprealian, P.E.	Lab Number: 908-2221	Reported: Aug 22, 1989

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTEX DISTINCTION (EPA 8015/8020)

Analyte	Detection Limit mg/kg (ppm)	Sample Results mg/kg (ppm)
Low to Medium Boiling Point Hydrocarbons.....	1.0	N.D.
Benzene.....	0.05	N.D.
Toluene.....	0.1	N.D.
Ethyl Benzene.....	0.1	N.D.
Xylenes.....	0.1	N.D.

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Arthur G. Burton
Laboratory Director



KAPREALIAN ENGINEERING, INC.

Consulting Engineers
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BENICIA, CA 94510
(415) 676-9100 (707) 746-6915

CHAIN OF CUSTODY

SAMPLER: HAGOP DATE/TIME OF COLLECTION: 8-18-89 TURN AROUND TIME: 24 HRS
(Signature)

SAMPLE DESCRIPTION AND PROJECT NUMBER: UNOCAL - OAKLAND - 3943 Broadway / 40th St

SAMPLE #	ANALYSES	GRAB OR COMP.	NUMBER OF CONTAINERS	SOIL/WATER
<u>Sw2(R)</u>	<u>TPH-G/BTXE</u>	<u>G</u>	<u>1</u>	<u>S</u>

RELINQUISHED BY*	TIME/DATE	RECEIVED BY*	TIME/DATE
<u>Hagop Kevork</u>	<u>4:43</u> <u>8-18-89</u>	<u>Jan Kevork</u>	<u>4:43</u> <u>8/18/89</u>
<u>Jan Kevork</u>	<u>1900</u> <u>8/18/89</u>	<u>Ed Smith</u>	<u>11:00</u> <u>8/18</u>
3.			

* STATE AFFILIATION NEXT TO SIGNATURE

REMARKS: _____

NOTE: IF REGULAR TURNAROUND, SOIL ANALYSES MUST BE COMPLETED WITHIN 14 CALENDAR DAYS OF SAMPLE COLLECTION. WATER ANALYSES MUST BE COMPLETED WITHIN 7 CALENDAR DAYS FOR BTX&E (UNLESS SAMPLE HAS BEEN PRESERVED), AND 14 CALENDAR DAYS FOR TPH AS GASOLINE; EXTRACT TPH AS DIESEL WITHIN 14 CALENDAR DAYS.



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Kaprealian Engineering, Inc. P.O. Box 913 Benicia, CA 94510 Attention: Mardo Kaprealian, P.E.	Client Project ID: Unocal, Oakland, 3943 Broadway/40th St. Matrix Descript: Soil Analysis Method: EPA 5030/8015/8020 First Sample #: 908-2222	Sampled: Aug 18, 1989 Received: Aug 18, 1989 Analyzed: Aug 21, 1989 Reported: Aug 22, 1989
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TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
908-2222	P1	6.1	N.D.	N.D.	N.D.	N.D.
908-2223	P2	36	0.52	4.4	1.4	8.0
908-2224	P3	20	0.30	2.5	1.1	5.6
908-2225	P4	3.8	0.11	0.19	0.10	0.23

Detection Limits:	1.0	0.05	0.1	0.1	0.1
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Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Arthur G. Burton
Laboratory Director

9082222.KEI <1>



KAPREALIAN ENGINEERING, INC.

Consulting Engineers

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BENICIA, CA 94510

(415) 676-9100 (707) 746-6915

CHAIN OF CUSTODY

SAMPLER: HAGOP DATE/TIME OF COLLECTION: 8-18-89 TURN AROUND TIME: 24 HRS
(Signature)

SAMPLE DESCRIPTION AND PROJECT NUMBER: UNOCAL - OAKLAND - 3943 Broadway / 40th St.

<u>SAMPLE #</u>	<u>ANALYSES</u>	<u>GRAB OR COMP.</u>	<u>NUMBER OF CONTAINERS</u>	<u>SOIL/ WATER</u>
<u>P1</u>	<u>TPH-G/BTXE</u>	<u>G</u>	<u>1</u>	<u>S</u>
<u>P2</u>	<u>TPH-G/BTXE</u>	<u>G</u>	<u>1</u>	<u>S</u>
<u>P3</u>	<u>TPH-G/BTXE</u>	<u>G</u>	<u>1</u>	<u>S</u>
<u>P4</u>	<u>TPH-G/BTXE</u>	<u>G</u>	<u>1</u>	<u>S</u>

<u>RELINQUISHED BY*</u>	<u>TIME/DATE</u>	<u>RECEIVED BY*</u>	<u>TIME/DATE</u>
<u>Hagop Revork</u>	<u>4:43 8/18/89</u>	<u>Sam Kaban</u>	<u>4:43 8/18/89</u>
<u>Sam Kaban</u>	<u>19:00 8/18/89</u>	<u>Ed [unclear]</u>	<u>19:00 8/18/89</u>

* STATE AFFILIATION NEXT TO SIGNATURE

REMARKS: _____

NOTE: IF REGULAR TURNAROUND, SOIL ANALYSES MUST BE COMPLETED WITHIN 14 CALENDAR DAYS OF SAMPLE COLLECTION. WATER ANALYSES MUST BE COMPLETED WITHIN 7 CALENDAR DAYS FOR BTX&E (UNLESS SAMPLE HAS BEEN PRESERVED), AND 14 CALENDAR DAYS FOR TPH AS GASOLINE; EXTRACT TPH AS DIESEL WITHIN 14 CALENDAR DAYS.



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Kaprealian Engineering, Inc.	Client Project ID: Unocal, Oakland, 3943 Broadway/40th St.	Sampled: Aug 16, 1989
P.O. Box 913	Sample Descript.: Soil, WO1	Received: Aug 16, 1989
Benicia, CA 94510	Analysis Method: EPA 5030/8015/8020	Analyzed: Aug 23, 1989
Attention: Mardo Kaprealian, P.E.	Lab Number: 908-1752	Reported: Aug 25, 1989

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTEX DISTINCTION (EPA 8015/8020)

Analyte	Detection Limit mg/kg (ppm)	Sample Results mg/kg (ppm)
Low to Medium Boiling Point Hydrocarbons	1.0	1.6
Benzene	0.05	N.D.
Toluene	0.1	1.3
Ethyl Benzene	0.1	N.D.
Xylenes	0.1	N.D.

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Arthur G. Burton
Laboratory Director



SEQUOIA ANALYTICAL

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Kapreallan Engineering, Inc. P.O. Box 913 Benicia, CA 94510 Attention: Mardo Kapreallan, P.E.	Client Project ID: Unocal, Oakland, 3943 Broadway/40th St. Matrix Descript: Soil Analysis Method: EPA 3550/8015 First Sample #: 908-1752	Sampled: Aug 16, 1989 Received: Aug 16, 1989 Extracted: Aug 22, 1989 Analyzed: Aug 23, 1989 Reported: Aug 25, 1989
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TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons mg/kg (ppm)
908-1752	WO1	N.D.

Detection Limits:

2.0

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL


Arthur G. Burton
Laboratory Director

9081752.KEI <2>



SEQUOIA ANALYTICAL

580 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Kapreallan Engineering, Inc. P.O. Box 913 Benicia, CA 94510 Attention: Mardo Kapreallan, P.E.	Client Project ID: Unocal, Oakland, 3943 Broadway/40th St. Matrix Descript: Soil Analysis Method: SM 503 D&E (Gravimetric) First Sample #: 908-1752	Sampled: Aug 16, 1989 Received: Aug 18, 1989 Extracted: Aug 22, 1989 Analyzed: Aug 24, 1989 Reported: Aug 25, 1989
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TOTAL RECOVERABLE OIL & GREASE

Sample Number	Sample Description	Oil & Grease mg/kg (ppm)
908-1752	WO1	N.D.

Detection Limits:

30.0

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

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Arthur G. Burton
Laboratory Director

9081752.KEI <3>



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Kaprealian Engineering, Inc.
P.O. Box 913
Benicia, CA 94510
Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal, Oakland, 3943 Broadway/40th St.
Sample Descript: Soil, WO1
Analysis Method: EPA 5030/8010
Lab Number: 908-1752

Sampled: Aug 16, 1989
Received: Aug 16, 1989
Analyzed: Aug 24, 1989
Reported: Aug 25, 1989

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.....	5.0	N.D.
Carbon tetrachloride.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
Chloroethane.....	25.0	N.D.
2-Chloroethylvinyl ether.....	5.0	N.D.
Chloroform.....	5.0	N.D.
Chloromethane.....	5.0	N.D.
Dibromochloromethane.....	5.0	N.D.
1,2-Dichlorobenzene.....	10.0	N.D.
1,3-Dichlorobenzene.....	10.0	N.D.
1,4-Dichlorobenzene.....	10.0	N.D.
1,1-Dichloroethane.....	5.0	N.D.
1,2-Dichloroethane.....	5.0	N.D.
1,1-Dichloroethene.....	5.0	N.D.
Total 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.....	10.0	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.....	10.0	N.D.

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

SEQUOIA ANALYTICAL

Arthur G. Burton
Laboratory Director



KAPREALIAN ENGINEERING, INC.

Consulting Engineers

P. O. BOX 913

BENICIA CA 94510

(415) 676-9100 (707) 746-6815

CHAIN OF CUSTODY

SAMPLER: HAGOP DATE/TIME OF COLLECTION: 8-16-89 TURN AROUND TIME: Five Days
 (Signature)

SAMPLE DESCRIPTION AND PROJECT NUMBER: UNOCAL - OAKLAND - 3943 Broadway / 40th St.

<u>SAMPLE #</u>	<u>ANALYSES</u>	<u>GRAB OR COMP.</u>	<u>NUMBER OF CONTAINERS</u>	<u>SOIL/ WATER</u>
<u>W01</u>	<u>TPH-G/BTXE/TPH-D/ TOG/8010</u>	<u>G</u>	<u>1</u>	<u>S</u>

<u>RELINQUISHED BY*</u>	<u>TIME/DATE</u>	<u>RECEIVED BY*</u>	<u>TIME/DATE</u>
<u>Hagop Kework</u>	<u>17:00 8-16-89</u>	<u>Eric #23</u>	<u>8/16/89 / 1700</u>
<u>Eric #23</u>	<u>8/16/89</u>	<u>Paul Pearson</u>	<u>18:52 8-16-89</u>
<u>3.</u>			

* STATE AFFILIATION NEXT TO SIGNATURE

REMARKS: _____

NOTE: IF REGULAR TURNAROUND, SOIL ANALYSES MUST BE COMPLETED WITHIN 14 CALENDAR DAYS OF SAMPLE COLLECTION. WATER ANALYSES MUST BE COMPLETED WITHIN 7 CALENDAR DAYS FOR BTX&E (UNLESS SAMPLE HAS BEEN PRESERVED), AND 14 CALENDAR DAYS FOR TPH AS GASOLINE; EXTRACT TPH AS DIESEL WITHIN 14 CALENDAR DAYS.



SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Kaprealian Engineering, Inc.
P.O. Box 913
Benicia, CA 94510
Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal, Oakland, 3943 Broadway/40th St.
Sample Descript.: Water, W1
Analysis Method: EPA 5030/ 8015/8020
Lab Number: 908-1994 A-C

Sampled: Aug 17, 1989
Received: Aug 17, 1989
Analyzed: Aug 18, 1989
Reported: Aug 18, 1989

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTEX DISTINCTION (EPA 8015/8020)

Analyte	Detection Limit µg/L (ppb)	Sample Results µg/L (ppb)
Low to Medium Boiling Point Hydrocarbons.....	30.0	4,700
Benzene.....	0.3	180
Toluene.....	0.3	420
Ethyl Benzene.....	0.3	150
Xylenes.....	0.3	860

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

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Laboratory Director



KAPREALIAN ENGINEERING, INC.

Consulting Engineers

P. O. BOX 913

BENICIA CA 94510

(415) 676-9100 (707) 746-6915

CHAIN OF CUSTODY

SAMPLER: HAGOP DATE/TIME OF COLLECTION: 8-17-89 TURN AROUND TIME: 24 HRS
(Signature)

SAMPLE DESCRIPTION AND PROJECT NUMBER: UNOCAL - OAKLAND - 3943 Broadway / 40th St.

<u>SAMPLE #</u>	<u>ANALYSES</u>	<u>GRAB OR COMP.</u>	<u>NUMBER OF CONTAINERS</u>	<u>SOIL/WATER</u>
<u>W1</u>	<u>TPH-G/BTXE</u>	<u>C</u>	<u>3</u>	<u>W 9081994</u> <u>A-C</u>

<u>RELINQUISHED BY*</u>	<u>TIME/DATE</u>	<u>RECEIVED BY*</u>	<u>TIME/DATE</u>
<u>Hagop Revork</u>	<u>5:10</u> <u>8-17-89</u>	<u>[Signature]</u>	<u>8/17/89</u> <u>5:10 PM</u>
2.			
3.			

* STATE AFFILIATION NEXT TO SIGNATURE

REMARKS: _____

NOTE: IF REGULAR TURNAROUND, SOIL ANALYSES MUST BE COMPLETED WITHIN 14 CALENDAR DAYS OF SAMPLE COLLECTION. WATER ANALYSES MUST BE COMPLETED WITHIN 7 CALENDAR DAYS FOR BTX&E (UNLESS SAMPLE HAS BEEN PRESERVED), AND 14 CALENDAR DAYS FOR TPH AS GASOLINE; EXTRACT TPH AS DIESEL WITHIN 14 CALENDAR DAYS.



SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Kapreallan Engineering, Inc.
P.O. Box 913
Benicia, CA 94510
Attention: Mardo Kapreallan, P.E.

Client Project ID: Unocal, Oakland, 3943 Broadway/40th St.
Sample Descript.: Water, W-2
Analysis Method: EPA 5030/ 8015/8020
Lab Number: 908-3248 A-B

Sampled: Aug 24, 1989
Received: Aug 25, 1989
Analyzed: Aug 25, 1989
Reported: Aug 28, 1989

TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTEX DISTINCTION (EPA 8015/8020)

Analyte	Detection Limit µg/L (ppb)	Sample Results µg/L (ppb)
Low to Medium Boiling Point Hydrocarbons	30.0	1,200
Benzene	0.3	12
Toluene	0.3	10
Ethyl Benzene	0.3	6.9
Xylenes	0.3	88

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Arthur G. Burton
Laboratory Director



KAPREALIAN ENGINEERING, INC.

Consulting Engineers

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BENICIA, CA 94510

(415) 876-9100 (707) 746-6915

CHAIN OF CUSTODY

SAMPLER: HAGOP (Signature) DATE/TIME OF COLLECTION: 8-24-89 TURN AROUND TIME: 24 HRS

SAMPLE DESCRIPTION AND PROJECT NUMBER: UNOCAL - OAKLAND - 3943 Broadway / 40th St

<u>SAMPLE #</u>	<u>ANALYSES</u>	<u>GRAB OR COMP.</u>	<u>NUMBER OF CONTAINERS</u>	<u>SOIL/ WATER</u>
<u>W2</u>	<u>TPH-G/BTXE</u>	<u>C</u>	<u>2</u>	<u>W</u>

<u>RELINQUISHED BY*</u>	<u>TIME/DATE</u>	<u>RECEIVED BY*</u>	<u>TIME/DATE</u>
<u>Hagop Revork</u>	<u>7:59 8/25/89</u>	<u>Tom Kador, 60800</u>	<u>8/25/89</u>
<u>Tom Kador</u>	<u>9:55 8/25/89</u>	<u>David Revork</u>	<u>8/25/89</u>
3.			<u>9:55 AM</u>

* STATE AFFILIATION NEXT TO SIGNATURE

REMARKS: _____

NOTE: IF REGULAR TURNAROUND, SOIL ANALYSES MUST BE COMPLETED WITHIN 14 CALENDAR DAYS OF SAMPLE COLLECTION. WATER ANALYSES MUST BE COMPLETED WITHIN 7 CALENDAR DAYS FOR BTXE (UNLESS SAMPLE HAS BEEN PRESERVED), AND 14 CALENDAR DAYS FOR TPH AS GASOLINE; EXTRACT TPH AS DIESEL WITHIN 14 CALENDAR DAYS.