KAPREALIAN ENGINEERING, INC.
Consulting Engineers
P.O. BOX 996 • BENICIA, CA 94510
(707) 746-6915 • (707) 746-6916 • FAX: (707) 746-5581

KEI-J88-1203.R12
June 10, 1991

Unocal Corporation
2000 Crow Canyon Place, Suite 400
San Ramon, CA 94583

Attention: Rick Sisk

RE: Stockpiled Soil Sampling for
Unocal Service Station #3135
845 - 66th Avenue
Oakland, California

Dear Mr. Sisk:

This letter report summarizes the results of the stockpiled soil sampling and laboratory analyses for the referenced site. The soil analyses were conducted to comply with the County Health Department requirements for proper disposal of contaminated soil.

On May 21, 1991, soil samples were collected from approximately 250 cubic yards of stockpiled soil excavated from the fuel tank pit and the pump island area to determine proper disposal of the soil. Five composite soil samples (designated as Comp T, Comp U, Comp V, Comp W and Comp X) were taken. Each composite sample consisted of four individual grab samples taken at various locations and at depths of approximately 2 feet. The samples were collected in two-inch diameter, clean brass tubes, which were then sealed with aluminum foil, plastic caps and tape, and placed in a cooled ice chest for subsequent delivery to a certified laboratory for analysis. All samples were analyzed at Sequoia Analytical Laboratory in Concord, California, and were accompanied by properly executed Chain of Custody documentation. Sample point locations are as shown on the attached Site Plan, Figure 1.

On May 23, 1991, Kaprealian Engineering, Inc. (KEI) returned to collect soil samples from approximately 200 cubic yards of additional stockpiled soil excavated from the fuel tank pit and the pump island area. Four composite samples (designated as Comp Y, Comp Z, Comp AA and Comp BB) were collected and stored as described above. Sample point locations are as shown on the attached Site Plan, Figure 2.

On May 28, 1991, KEI again returned to collect soil samples from approximately 700 cubic yards of stockpiled soil additionally excavated from the fuel tank pit and the pump island area. Fourteen composite soil samples (designated as Comp CC through

Comp PP) were collected and stored as described above. Sample point locations are as shown of the attached Site Plan, Figure 3.

On June 4, 1991, soil samples from approximately 50 cubic yards of aerated stockpiled soil (previously sampled as Comp X) were taken. One composite soil sample (designated as Comp 18) was collected and stored as described above. Sample point locations are as shown on the attached Site Plan, Figure 4.

Soil samples were analyzed to determine concentrations of total petroleum hydrocarbons (TPH) as gasoline using EPA method 5030 in conjunction with modified 8015; benzene, toluene, xylenes and ethylbenzene using EPA method 8020; TPH as diesel using EPA method 3550 in conjunction with modified 8015; and total oil and grease (TOG) using Standard Method 5520E&F.

Analytical results of the soil samples (Comp T through Comp W, Comp Y, Comp Z and Comp AA through Comp PP) indicate levels of TPH as gasoline ranging from 1.9 ppm to 88 ppm. However, the analytical result of the soil sample (Comp X) indicates a level of TPH as gasoline at 370 ppm. After aeration of soil previously sampled as Comp X, the analytical result of the soil sample (Comp 18) indicates a level of TPH as gasoline at 4.4 ppm.

Analytical results of the soil samples (Comp T through Comp Z and Comp AA through Comp PP) indicate levels of TPH as diesel ranging from 2.0 ppm to 120 ppm and levels of TOG ranging from non-detectable to 540 ppm, except for Comp U with a level of TOG at 1,200 ppm. Results of the soil analyses are summarized in Table 1. Copies of the laboratory analyses, and the Chain of Custody documentation are attached to this report.

Based on the analytical results of the soil samples, approximately 1,100 cubic yards of stockpiled soil, represented by samples Comp T, Comp V, Comp W, Comp Y, Comp Z, Comp AA through Comp PP and Comp 18, were disposed of at BFI Waste Systems in Livermore, California, an approved Class III disposal site, by Paradiso Construction. However, prior to loading and off-hauling of the stockpiled soil, KEI recommended than when obvious isolated high contamination is detected within the stockpiled soil, that portion of the soil be separately stockpiled for further treatment and sampling.

Based on the high levels of TOG, approximately 50 cubic yards of stockpiled soil, represented by Comp U, were disposed of at Laidlaw Environmental Services, and approved Class II disposal site, by Dillard Trucking.

DISTRIBUTION

A copy of this report should be sent to Ms. Cynthia Chapman of the Alameda County Health Agency, and to the Regional Water Quality Control Board, San Francisco Bay Region.

Should you have any questions on this report, please do not hesitate to contact me at (707) 746-6915.

Sincerely,

Kaprealian Engineering, Inc.

KBMascarenas

Kristin B. Mascarenas

\kbm

Attachments: Table 1
Site Plans - Figures 1 through 4
Laboratory Results
Chain of Custody documentation

KEI-J88-1203.R12
June 10, 1991

TABLE 1

SUMMARY OF LABORATORY ANALYSES

(Collected on May 21, 23, 28 and June 4, 1991)

Sample	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethyl-benzene	TOG
Comp T	9.1	4.4	ND	0.018	0.061	ND	450
Comp U	37	58	0.084	0.12	0.97	0.07	1,200
Comp V	8.4	72	0.15	0.86	5.8	0.91	450
Comp W	15	88	0.33	1.1	5.7	1.0	540
Comp X	17	370	2.1	16	38	8.2	300
Comp Y	40	1.9	ND	ND	0.10	0.013	ND
Comp Z	15	19	0.39	0.22	1.8	0.33	ND
Comp AA	120	27	0.073	0.23	1.9	0.40	ND
Comp BB	45	26	0.11	0.35	2.0	0.46	ND
Comp CC	2.2	4.2	ND	0.025	0.053	0.018	210
Comp DD	2.0	3.0	ND	ND	0.022	ND	100
Comp EE	8.9	4.0	ND	0.028	0.076	0.024	260
Comp FF	4.5	16	0.062	0.056	0.68	0.12	240
Comp GG	12	52	0.10	0.50	3.3	0.49	430
Comp HH	12	14	0.044	0.052	0.33	0.094	260
Comp II	81	19	ND	ND	0.064	0.053	230
Comp JJ	17	5.4	ND	0.23	0.13	0.047	370
Comp KK	13	2.4	ND	ND	0.023	ND	300
Comp LL	11	37	0.091	0.11	1.4	0.28	110
Comp MM	23	30	0.011	0.054	0.32	0.14	200
Comp NN	20	32	0.024	0.054	0.050	0.062	190
Comp OO	20	44	0.089	0.092	0.74	0.34	210
Comp PP	24	33	0.054	0.094	0.49	0.12	280
Comp 18	--	4.4	ND	ND	ND	ND	--
Detection Limits	1.0	1.0	0.0050	0.0050	0.0050	0.0050	30

ND = Non-detectable.

-- Indicates analysis not performed.

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

SEQUOIA ANALYTICAL
1900 Bates Avenue • Suite LM • Concord, California 94520
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Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 845 66th Ave., Oakland	Sampled:	May 21, 1991
P.O. Box 996	Matrix Descript:	Soil	Received:	May 21, 1991
Benicia, CA 94510	Analysis Method:	EPA 5030/8015/8020	Analyzed:	May 21, 1991
Attention: Mardo Kaprealian, P.E.	First Sample #:	105-0710 A-D	Reported:	May 24, 1991

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)
105-0710 A-D	Comp T	4.4	N.D.	0.018	N.D.	0.061
105-0711 A-D	Comp U	58	0.084	0.12	0.070	0.97
105-0712 A-D	Comp V	72	0.15	0.86	0.91	5.8
105-0713 A-D	Comp W	88	0.33	1.1	1.0	5.7
105-0714 A-D	Comp X	370	2.1	16	8.2	38
Detection Limits:		**1.0**	**0.0050**	**0.0050**	**0.0050**	**0.0050**

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

Belinda C. Vega
Laboratory Director

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Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 845 66th Ave., Oakland	
P.O. Box 996	Sample Descript.:	Matrix Blank	
Benicia, CA 94510	Analysis Method:	EPA 5030/8015/8020	Analyzed: May 21, 1991
Attention: Mardo Kaprealian, P.E.	Q.C. Sample Grou	1050710-14	Reported: May 24, 1991

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	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes	0.0050	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.

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Kaprealian Engineering, Inc.
P.O. Box 996
Benicia, CA 94510
Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal, 845 66th Ave., Oakland
QC Sample Group: 1050710-14
Reported: May 24, 1991

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA8015/8020	EPA8015/8020	EPA8015/8020	EPA8015/8020
Analyst:	K. L./J.F.	K. L./J.F.	K. L./J.F.	K. L./J.F.
Reporting Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date Analyzed:	May 21, 1991	May 21, 1991	May 21, 1991	May 21, 1991
QC Sample #:	105-0518	105-0518	105-0518	105-0518
Sample Conc.:	0.024	N.D.	N.D.	N.D.
Spike Conc. Added:	0.40	0.40	0.40	1.2
Conc. Matrix Spike:	0.38	0.34	0.36	1.1
Matrix Spike % Recovery:	89	85	90	92
Conc. Matrix Spike Dup.:	0.36	0.34	0.34	1.0
Matrix Spike Duplicate % Recovery:	84	85	85	83
Relative % Difference:	5.4	0	5.7	9.5

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Laboratory Director

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

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Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal, 845 66th Ave., Oakland
QC Sample Group: 1050710-14
Reported: May 24, 1991

QUALITY CONTROL DATA REPORT

SURROGATE

Method:	EPA8015/8020	EPA8015/8020	EPA8015/8020	EPA8015/8020	EPA8015/8020	EPA8015/8020
Analyst:	K. L./J.F.	K. L./J.F.	K. L./J.F.	K. L./J.F.	K. L./J.F.	K. L./J.F.
Reporting Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Date Analyzed:	May 21, 1991	May 21, 1991	May 21, 1991	May 21, 1991	May 21, 1991	May 21, 1991
Sample #:	105-0710	105-0711	105-0712	105-0713	105-0714	Blank
Surrogate % Recovery:	101	88	91	100	108	103

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Laboratory Director

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

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Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 845 66th Ave., Oakland	Sampled:	May 21, 1991
P.O. Box 996	Matrix Descript:	Soil	Received:	May 21, 1991
Benicia, CA 94510	Analysis Method:	EPA 3550/8015	Extracted:	May 22, 1991
Attention: Mardo Kaprealian, P.E.	First Sample #:	105-0710 A-D	Analyzed:	May 23, 1991
			Reported:	May 24, 1991

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons mg/kg (ppm)
105-0710 A-D	Comp T	9.1
105-0711 A-D	Comp U	37
105-0712 A-D	Comp V	8.4
105-0713 A-D	Comp W	15
105-0714 A-D	Comp X	17

Detection Limits:	**1.0**

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.

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Belinda C. Vega
Laboratory Director

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Kaprealian Engineering, Inc.
P.O. Box 996
Benicia, CA 94510
Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal, 845 66th Ave., Oakland
QC Sample Group: 1050710-14
Reported: May 24, 1991

QUALITY CONTROL DATA REPORT

ANALYTE	High Boiling Point Compounds (as Diesel)
Method:	EPA 8015
Analyst:	K.L./J.R.M.
Reporting Units:	mg/kg
Date Analyzed:	May 22, 1991
QC Sample #:	BLK052291
Sample Conc.:	N.D.
Spike Conc. Added:	10
Conc. Matrix Spike:	8.1
Matrix Spike % Recovery:	81
Conc. Matrix Spike Dup.:	7.0
Matrix Spike Duplicate % Recovery:	70
Relative % Difference:	15

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Laboratory Director

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

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Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 845 66th Ave., Oakland	Sampled: - - - - - -
P.O. Box 996	Matrix Descript:	Matrix Blank	Received: - - - - - -
Benicia, CA 94510	Analysis Method:	EPA 3550/8015	Extracted: May 22, 1991
Attention: Mardo Kaprealian, P.E.	First Sample #:	- - - - - -	Analyzed: May 23, 1991
			Reported: May 24, 1991

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons mg/kg (ppm)
- - - - - -	Matrix Blank	N.D.

Detection Limits:	**1.0**

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.

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Belinda C. Vega
Laboratory Director

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Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 845 66th Ave., Oakland	Sampled:	May 21, 1991
P.O. Box 996	Matrix Descript:	Soil	Received:	May 21, 1991
Benicia, CA 94510	Analysis Method:	SM 5520 E&F (Gravimetric)	Extracted:	May 22, 1991
Attention: Mardo Kaprealian, P.E.	First Sample #:	105-0710 A-D	Analyzed:	May 23, 1991
			Reported:	May 24, 1991

TOTAL RECOVERABLE PETROLEUM OIL

Sample Number	Sample Description	Oil & Grease mg/kg (ppm)
105-0710 A-D	Comp T	450
105-0711 A-D	Comp U	1,200
105-0712 A-D	Comp V	450
105-0713 A-D	Comp W	540
105-0714 A-D	Comp X	300

Detection Limits:	**30**

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

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Belinda C. Vega
Laboratory Director

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Kaprealian Engineering, Inc.
P.O. Box 996
Benicia, CA 94510
Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal, 845 66th Ave., Oakland
QC Sample Group: 1050710-14
Reported: May 24, 1991

QUALITY CONTROL DATA REPORT

ANALYTE
Oil & Grease

Method:	SM 5520 E&F
Analyst:	S.L.
Reporting Units:	ppm
Date Analyzed:	May 23, 1991
QC Sample #:	BLK052291

Sample Conc.:	N.D.
Spike Conc. Added:	5,000
***Conc. Matrix* Spike:**	4,500
Matrix Spike % Recovery:	90
Conc. Matrix Spike Dup.:	4,500
Matrix Spike Duplicate % Recovery:	90
Relative % Difference:	0

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Belinda C. Vega
Laboratory Director

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

SAMPLER: Hartzf

WITNESSING AGENCY:

SITE NAME & ADDRESS: Unocal - Oakland
845 66th Ave

ANALYSES REQUESTED: TPH-D; BTXE; TPH-A; TPH-D

TURN AROUND TIME: 24 Hrs

SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	REMARKS
Comp T	5/21/91		✓			✓	4	STOCKPILE	105D710 A-D
Comp U	5/21/91		✓			✓	4		711
Comp V	5/21/91		✓			✓	4		712
Comp W	5/21/91		✓			✓	4		713
Comp X	5/21/91		✓			✓	4		714

Relinquished by: (Signature) Hartzf Revell	Date/Time 5/21 5:00	Received by: (Signature) Jen Weiner
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? ✓
3. Did any samples received for analysis have head space? NO
4. Were samples in appropriate containers and properly packaged? ✓

KW (Signature) SL (Title) 5/21 (Date)

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Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 66th & San Leandro, Oakland	Sampled: May 23, 1991
P.O. Box 996	Matrix Descript:	Soil	Received: May 24, 1991
Benicia, CA 94510	Analysis Method:	EPA 5030/8015/8020	Analyzed: May 24, 1991
Attention: Mardo Kaprealian, P.E.	First Sample #:	105-0745 A-D	Reported: May 28, 1991

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)
1050745 A-D	Comp Y	1.9	N.D.	N.D.	0.013	0.10
1050746 A-D	Comp Z	19	0.039	0.22	0.33	1.8
1050747 A-D	Comp AA	27	0.073	0.23	0.40	1.9
1050748 A-D	Comp BB	26	0.11	0.35	0.46	2.0
Detection Limits:		**1.0**	**0.0050**	**0.0050**	**0.0050**	**0.0050**

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

Julia R. Malerstein
Project Manager

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Kaprealian Engineering, Inc.
P.O. Box 996
Benicia, CA 94510
Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal, 66th & San Leandro, Oakland
QC Sample Group: 1050745-748
Reported: May 28, 1991

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA8015/8020	EPA8015/8020	EPA8015/8020	EPA8015/8020
Analyst:	R. Eastman	R. Eastman	R. Eastman	R. Eastman
Reporting Units:	ng	ng	ng	ng
Date Analyzed:	May 24, 1991	May 24, 1991	May 24, 1991	May 24, 1991
QC Sample #:	GBLK052491	GBLK052491	GBLK052491	GBLK052491
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	100	100	100	300
Conc. Matrix Spike:	93	93	94	280
Matrix Spike % Recovery:	93	93	94	93
Conc. Matrix Spike Dup.:	93	93	94	280
Matrix Spike Duplicate % Recovery:	93	93	94	93
Relative % Difference:	0	0	0	0

Laboratory blank contained the following analytes: None Detected

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Julia R. Malerstein
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

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Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 66th & San Leandro, Oakland	
P.O. Box 996	Sample Descript.:	Matrix Blank	
Benicia, CA 94510	Analysis Method:	EPA 5030/8015/8020	Analyzed: May 24, 1991
Attention: Mardo Kaprealian, P.E.	Q.C. Sample Grou	1050745-748	Reported: May 28, 1991

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	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes	0.0050	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

Julia R. Malerstein
Project Manager

SEQUOIA ANALYTICAL

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Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 66th & San Leandro, Oakland	Sampled:	May 23, 1991
P.O. Box 996	Matrix Descript:	Soil	Received:	May 24, 1991
Benicia, CA 94510	Analysis Method:	EPA 3550/8015	Extracted:	May 24, 1991
Attention: Mardo Kaprealian, P.E.	First Sample #:	105-0745 A-D	Analyzed:	May 24, 1991
			Reported:	May 28, 1991

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons mg/kg (ppm)
1050745 A-D	Comp Y	40
1050746 A-D	Comp Z	15
1050747 A-D	Comp AA	120
1050748 A-D	Comp BB	45

Detection Limits:	**1.0**

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

Julia R. Malerstein
Project Manager

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Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 66th & San Leandro, Oakland	
P.O. Box 996	Matrix Descript:	Matrix Blank	
Benicia, CA 94510	Analysis Method:	EPA 3550/8015	Extracted: May 24, 1991
Attention: Mardo Kaprealian, P.E.	Q.C. Sample Grou	105745-748	Analyzed: May 24, 1991
			Reported: May 28, 1991

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons mg/kg (ppm)
----	Matrix Blank	N.D.

Detection Limits:	1.0

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

Julia R. Malerstein
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Kaprealian Engineering, Inc.
P.O. Box 996
Benicia, CA 94510
Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal, 66th & San Leandro, Oakland
QC Sample Group: 1050745-748
Reported: May 28, 1991

QUALITY CONTROL DATA REPORT

ANALYTE
Diesel

Method:	EPA 8015
Analyst:	R. Lee
Reporting Units:	ng
Date Analyzed:	May 24, 1991
QC Sample #:	DBLK052491

Sample Conc.:	N.D.
Spike Conc. Added:	900
Conc. Matrix Spike:	630
Matrix Spike % Recovery:	70
Conc. Matrix Spike Dup.:	660
Matrix Spike *Duplicate* % Recovery:	73
Relative % Difference:	4.6

SEQUOIA ANALYTICAL

Julia R. Malerstein
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

SEQUOIA ANALYTICAL

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Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 66th & San Leandro, Oakland	Sampled:	May 23, 1991
P.O. Box 996	Matrix Descript:	Soil	Received:	May 24, 1991
Benicia, CA 94510	Analysis Method:	SM 5520 E&F (Gravimetric)	Extracted:	May 24, 1991
Attention: Mardo Kaprealian, P.E.	First Sample #:	105-0745	Analyzed:	May 24, 1991
			Reported:	May 28, 1991

TOTAL RECOVERABLE PETROLEUM OIL

Sample Number	Sample Description	Oil & Grease mg/kg (ppm)
105-0745	Comp Y	N.D.
105-0746	Comp Z	N.D.
105-0747	Comp AA	N.D.
105-0748	Comp BB	N.D.

Detection Limits:	**30**

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

SEQUOIA ANALYTICAL

Julia R. Malerstein
Project Manager

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Kaprealian Engineering, Inc.
P.O. Box 996
Benicia, CA 94510
Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal, 66th & San Leandro, Oakland
QC Sample Group: 1050745-48
Reported: May 28, 1991

QUALITY CONTROL DATA REPORT

ANALYTE	Oil & Grease
Method:	SM 5520 E&F
Analyst:	L. Laikhtman
Reporting Units:	mg/kg
Date Analyzed:	May 24, 1991
QC Sample #:	BLK052491
Sample Conc.:	N.D.
Spike Conc. Added:	100
Conc. Matrix Spike:	92
Matrix Spike % Recovery:	92
Conc. Matrix Spike Dup.:	96
Matrix Spike Duplicate % Recovery:	96
Relative % Difference:	4.3

SEQUOIA ANALYTICAL

Julia R. Malerstein
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

KEI

KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

SAMPLER	SITE NAME & ADDRESS	ANALYSES REQUESTED	TURN AROUND TIME:
R.M. Bradish	Unocal #3135, 66th & San Leandro, Oakland	TPH-G & BTXE; TPH-D; TOG	24 Hr
WITNESSING AGENCY			

SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	TPH-G & BTXE	TPH-D	TOG					REMARKS
Comp Y	5-23-91		✓		✓	✓	4	Former Fuel Tk Pit Exc.	✓	✓	✓					1050745 AD
Comp Z	"		✓			✓	4	"	✓	✓	✓					746
Comp AA	"		✓			✓	4	"	✓	✓	✓					747
Comp BB	"		✓			✓	4	"	✓	✓	✓					748

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
R.M. Bradish	5-24 8:40	[signature]
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? ✓
3. Did any samples received for analysis have head space? no
4. Were samples in appropriate containers and properly packaged? ✓

Signature	Title	Date
[signature]	Analyst	5-24-91

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Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 66th & San Leandro, Oakland	Sampled:	May 28, 1991
P.O. Box 996	Matrix Descript:	Soil	Received:	May 29, 1991
Benicia, CA 94510	Analysis Method:	EPA 5030/8015/8020	Analyzed:	May 29, 1991
Attention: Mardo Kaprealian, P.E.	First Sample #:	105-0830 A-D	Reported:	May 31, 1991

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)
105-0830 A-D	Comp CC	4.2	N.D.	0.025	0.018	0.053
105-0831 A-D	Comp DD	3.0	N.D.	N.D.	N.D.	0.022
105-0832 A-D	Comp EE	4.0	N.D.	0.028	0.024	0.076
105-0833 A-D	Comp FF	16	0.062	0.056	0.12	0.68
105-0834 A-D	Comp GG	52	0.10	0.50	0.49	3.3
105-0835 A-D	Comp HH	14	0.044	0.052	0.094	0.33
105-0836 A-D	Comp II	19	N.D.	N.D.	0.053	0.064
105-0837 A-D	Comp JJ	5.4	N.D.	0.023	0.047	0.13
105-0838 A-D	Comp KK	2.4	N.D.	N.D.	N.D.	0.023
Detection Limits:		**1.0**	**0.0050**	**0.0050**	**0.0050**	**0.0050**

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

Julia R. Malerstein
Project Manager

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Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 66th & San Leandro, Oakland	Sampled:	May 28, 1991
P.O. Box 996	Matrix Descript:	Soil	Received:	May 29, 1991
Benicia, CA 94510	Analysis Method:	EPA 5030/8015/8020	Analyzed:	May 29, 1991
Attention: Mardo Kaprealian, P.E.	First Sample #:	105-0839 A-D	Reported:	May 31, 1991

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)
105-0839 A-D	Comp LL	37	0.091	0.11	0.28	1.4
105-0840 A-D	Comp MM	30	0.011	0.054	0.14	0.32
105-0841 A-D	Comp NN	32	0.024	0.054	0.062	0.050
105-0842 A-D	Comp OO	44	0.089	0.092	0.34	0.74
105-0843 A-D	Comp PP	33	0.054	0.094	0.12	0.49
Detection Limits:		**1.0**	**0.0050**	**0.0050**	**0.0050**	**0.0050**

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

Julia R. Malerstein
Project Manager

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Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 66th & San Leandro, Oakland		
P.O. Box 996	Sample Descript.:	Matrix Blank		
Benicia, CA 94510	Analysis Method:	EPA 5030/8015/8020	Analyzed:	May 29, 1991
Attention: Mardo Kaprealian, P.E.	Q.C. Sample Grou	1050830-43	Reported:	May 31, 1991

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	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes	0.0050	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

Julia R. Malerstein
Project Manager

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Kaprealian Engineering, Inc.
P.O. Box 996
Benicia, CA 94510
Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal, 66th & San Leandro, Oakland
QC Sample Group: 1050830-43
Reported: May 31, 1991

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA8015/8020	EPA8015/8020	EPA8015/8020	EPA8015/8020
Analyst:	K.L./J.F.	K.L./J.F.	K.L./J.F.	K.L./J.F.
Reporting Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date Analyzed:	May 29, 1991	May 29, 1991	May 29, 1991	May 29, 1991
QC Sample #:	Matrix Blank	Matrix Blank	Matrix Blank	Matrix Blank
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	0.40	0.40	0.40	1.2
Conc. Matrix Spike:	0.40	0.40	0.41	1.2
Matrix Spike % Recovery:	100	100	100	100
Conc. Matrix Spike Dup.:	0.40	0.41	0.42	1.3
Matrix Spike Duplicate % Recovery:	100	100	110	110
Relative % Difference:	0	2.4	2.4	8.0

SEQUOIA ANALYTICAL

Julia R. Malerstein
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

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Kaprealian Engineering, Inc.
P.O. Box 996
Benicia, CA 94510
Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal, 66th & San Leandro, Oakland
QC Sample Group: 1050830-43
Reported: May 31, 1991

QUALITY CONTROL DATA REPORT

SURROGATE

Method:	EPA8015/8020	EPA8015/8020	EPA8015/8020	EPA8015/8020	EPA8015/8020	EPA8015/8020	EPA8015/8020
Analyst:	K.L./J.F.	K.L./J.F.	K.L./J.F.	K.L./J.F.	K.L./J.F.	K.L./J.F.	K.L./J.F.
Reporting Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Date Analyzed:	May 29, 1991	May 29, 1991	May 29, 1991	May 29, 1991	May 29, 1991	May 29, 1991	May 29, 1991
Sample #:	105-0830	105-0831	105-0832	105-0833	105-0834	105-0835	105-0836
Surrogate % Recovery:	100	100	100	96	77	97	97

SEQUOIA ANALYTICAL

Julia R. Malerstein
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

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Kaprealian Engineering, Inc.
P.O. Box 996
Benicia, CA 94510
Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal, 66th & San Leandro, Oakland
QC Sample Group: 1050830-43
Reported: May 31, 1991

QUALITY CONTROL DATA REPORT

SURROGATE

Method:	EPA8015/8020	EPA8015/8020	EPA8015/8020	EPA8015/8020	EPA8015/8020	EPA8015/8020	EPA8015/8020
Analyst:	K.L./J.F.	K.L./J.F.	K.L./J.F.	K.L./J.F.	K.L./J.F.	K.L./J.F.	K.L./J.F.
Reporting Units:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Date Analyzed:	May 29, 1991	May 29, 1991	May 29, 1991	May 29, 1991	May 29, 1991	May 29, 1991	May 29, 1991
Sample #:	105-0837	105-0838	105-0839	105-0840	105-0841	105-0842	105-0843
Surrogate % Recovery:	100	100	84	84	91	83	86

SEQUOIA ANALYTICAL

Julia R. Malerstein
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

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

Client Project ID: Unocal, 66th & San Leandro, Oakland
QC Sample Group: 1050830-43
Reported: May 31, 1991

QUALITY CONTROL DATA REPORT

SURROGATE

Method:	EPA8015/8020
Analyst:	K.L./J.F.
Reporting Units:	mg/kg
Date Analyzed:	May 29, 1991
Sample #:	Blank

Surrogate % Recovery:	96

SEQUOIA ANALYTICAL

Julia R. Malerstein
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

SEQUOIA ANALYTICAL

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Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 66th & San Leandro, Oakland	Sampled:	May 28, 1991
P.O. Box 996	Matrix Descript:	Soil	Received:	May 29, 1991
Benicia, CA 94510	Analysis Method:	EPA 3550/8015	Extracted:	May 29, 1991
Attention: Mardo Kaprealian, P.E.	First Sample #:	105-0830 A-D	Analyzed:	May 29, 1991
			Reported:	May 31, 1991

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons mg/kg (ppm)
105-0830 A-D	Comp CC	2.2
105-0831 A-D	Comp DD	2.0
105-0832 A-D	Comp EE	8.9
105-0833 A-D	Comp FF	4.5
105-0834 A-D	Comp GG	12
105-0835 A-D	Comp HH	12
105-0836 A-D	Comp II	81
105-0837 A-D	Comp JJ	17
105-0838 A-D	Comp KK	13

Detection Limits:	**1.0**

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

Julia R. Malerstein
Project Manager

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Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 66th & San Leandro, Oakland	Sampled:	May 28, 1991
P.O. Box 996	Matrix Descript:	Soil	Received:	May 29, 1991
Benicia, CA 94510	Analysis Method:	EPA 3550/8015	Extracted:	May 29, 1991
Attention: Mardo Kaprealian, P.E.	First Sample #:	105-0839 A-D	Analyzed:	May 29, 1991
			Reported:	May 31, 1991

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons mg/kg (ppm)
105-0839 A-D	Comp LL	11
105-0840 A-D	Comp MM	23
105-0841 A-D	Comp NN	20
105-0842 A-D	Comp OO	20
105-0843 A-D	Comp PP	24

Detection Limits:	**1.0**

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

Julia R. Malerstein
Project Manager

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SEQUOIA ANALYTICAL

1900 Bates Avenue, Suite LM • Concord, California 94520
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Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 66th & San Leandro, Oakland	Sampled:	------
P.O. Box 996	Matrix Descript:	Matrix Blank	Received:	------
Benicia, CA 94510	Analysis Method:	EPA 3550/8015	Extracted:	May 29, 1991
Attention: Mardo Kaprealian, P.E.	First Sample #:	------	Analyzed:	May 29, 1991
			Reported:	May 31, 1991

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons mg/kg (ppm)
------	Matrix Blank	N.D.

Detection Limits:	1.0

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

Julia R. Malerstein
Project Manager

1050830.KEI <10>

SEQUOIA ANALYTICAL
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Kaprealian Engineering, Inc.
P.O. Box 996
Benicia, CA 94510
Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal, 66th & San Leandro, Oakland
QC Sample Group: 1050830-43
Reported:

QUALITY CONTROL DATA REPORT

ANALYTE	
Method:	EPA 8015
Analyst:	JRM
Reporting Units:	mg/kg
Date Analyzed:	May 28, 1991
QC Sample #:	BLK052391
Sample Conc.:	N.D.
Spike Conc. Added:	10
Conc. Matrix Spike:	7.6
Matrix Spike % Recovery:	76
Conc. Matrix Spike Dup.:	6.4
Matrix Spike Duplicate % Recovery:	64
Relative % Difference:	17

SEQUOIA ANALYTICAL

Julia R. Malerstein
Project Manager

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

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Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 66th & San Leandro, Oakland	Sampled:	May 28, 1991
P.O. Box 996	Matrix Descript:	Soil	Received:	May 29, 1991
Benicia, CA 94510	Analysis Method:	SM 5520 E&F (Gravimetric)	Extracted:	May 29, 1991
Attention: Mardo Kaprealian, P.E.	First Sample #:	105-0830 A-D	Analyzed:	May 29, 1991
			Reported:	May 31, 1991

TOTAL RECOVERABLE PETROLEUM OIL

Sample Number	Sample Description	Oil & Grease mg/kg (ppm)
105-0830 A-D	Comp CC	210
105-0831 A-D	Comp DD	100
105-0832 A-D	Comp EE	260
105-0833 A-D	Comp FF	240
105-0834 A-D	Comp GG	430
105-0835 A-D	Comp HH	260
105-0836 A-D	Comp II	230
105-0837 A-D	Comp JJ	370
105-0838 A-D	Comp KK	300

Detection Limits:	**30**

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

SEQUOIA ANALYTICAL

Julia R. Malerstein
Project Manager

SEQUOIA ANALYTICAL

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Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 66th & San Leandro, Oakland	Sampled:	May 28, 1991
P.O. Box 996	Matrix Descript:	Soil	Received:	May 29, 1991
Benicia, CA 94510	Analysis Method:	SM 5520 E&F (Gravimetric)	Extracted:	May 29, 1991
Attention: Mardo Kaprealian, P.E.	First Sample #:	105-0839 A-D	Analyzed:	May 29, 1991

TOTAL RECOVERABLE PETROLEUM OIL

Sample Number	Sample Description	Oil & Grease mg/kg (ppm)
105-0839 A-D	Comp LL	110
105-0840 A-D	Comp MM	200
105-0841 A-D	Comp NN	190
105-0842 A-D	Comp OO	210
105-0843 A-D	Comp PP	280

Detection Limits:	**30**

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

SEQUOIA ANALYTICAL

Julia R. Malerstein
Project Manager

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Kaprealian Engineering, Inc.
P.O. Box 996
Benicia, CA 94510
Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal, 66th & San Leandro, Oakland
QC Sample Group: 1050830-43
Reported: May 31, 1991

QUALITY CONTROL DATA REPORT

ANALYTE	Oil & Grease
Method:	SM 5520 E&F
Analyst:	R. Halsne
Reporting Units:	mg/kg
Date Analyzed:	May 29, 1991
QC Sample #:	Matrix Blank 052991M
Sample Conc.:	N.D.
Spike Conc. Added:	5,000
Conc. Matrix Spike:	4,600
Matrix Spike % Recovery:	92
Conc. Matrix Spike Dup.:	4,700
Matrix Spike Duplicate % Recovery:	94
Relative % Difference:	2.2

SEQUOIA ANALYTICAL

Julia R. Malerstein
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

SAMPLER: K.M. Bradish (HATG)

WITNESSING AGENCY:

SITE NAME & ADDRESS: Unocal #3135, 66th & San Leandro, Oakland

ANALYSES REQUESTED: TPH-G/BTXE; TPH-D; T1G4

TURN AROUND TIME: 24 HR

SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	REMARKS
CompCC	5-28-91		✓			✓	4	Former Fuel Tk Pit Exc.	(C-5083O-1)
" DD	"		✓			✓	4	"	831
" EE	"		✓			✓	4	"	832
" FF	"		✓			✓	4	"	833
" GG	"		✓			✓	4	"	834
" HH	"		✓			✓	4	"	835
" II	"		✓			✓	4	"	836
" JJ	"		✓			✓	4	"	837
" KK	"		✓			✓	4	"	838

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	5-29-91 0930	[signature]
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? ✓
3. Did any samples received for analysis have head space? NO
4. Were samples in appropriate containers and properly packaged? ✓

[signature] — Analyst — 5-29-91

Signature — Title — Date

KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

SAMPLER	SITE NAME & ADDRESS	ANALYSES REQUESTED	TURN AROUND TIME:
R. M. Bradock	Unocal # 3135 66th & San Leandro Oakland	TPH-G & BTXE / TPH-D / TOG	24 Hr
WITNESSING AGENCY			[redacted]

SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	TPH-G & BTXE	TPH-D	TOG					REMARKS
Comp LL	5-28-91		✓			✓	4	Former Fuel Tk Pit Etc.	✓	✓	✓					1050839 A-D
" MM	"		✓			✓	4	"	✓	✓	✓					840
" NN	"		✓			✓	4	"	✓	✓	✓					841
" OO	"		✓			✓	4	"	✓	✓	✓					842
" PP	"		✓			✓	4	"	✓	✓	✓					843

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	5-29-91 0930	[signature]
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)

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Signature	Title	Date
[signature]	analyst	5-29-91

SEQUOIA ANALYTICAL

1900 Bates Avenue, Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 845 - 66th Ave., Oakland	Sampled:	Jun 4, 1991
P.O. Box 996	Sample Descript.:	Soil, Comp 18	Received:	Jun 4, 1991
Benicia, CA 94510	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Jun 4, 1991
Attention: Mardo Kaprealian, P.E.	Lab Number:	106-0027 A-D	Reported:	Jun 5, 1991

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**	**4.4**
Benzene	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes	0.0050	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

Belinda C. Vega
Laboratory Director

Please Note:
The above samples do not appear to contain gasoline.

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Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 845 - 66th Ave., Oakland		
P.O. Box 996	Sample Descript.:	Matrix Blank		
Benicia, CA 94510	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Jun 4, 1991
Attention: Mardo Kaprealian, P.E.	Q.C. Sample Grou	106-0027	Reported:	Jun 5, 1991

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	0.0050	N.D.
Toluene	0.0050	N.D.
Ethyl Benzene	0.0050	N.D.
Xylenes	0.0050	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

Belinda C. Vega
Laboratory Director

SEQUOIA ANALYTICAL

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Kaprealian Engineering, Inc.
P.O. Box 996
Benicia, CA 94510
Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal, 845 - 66th Ave., Oakland
QC Sample Group: 106-0027
Reported: Jun 5, 1991

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA8015/8020	EPA8015/8020	EPA8015/8020	EPA8015/8020
Analyst:	J. Fontecha	J. Fontecha	J. Fontecha	J. Fontecha
Reporting Units:	ppm	ppm	ppm	ppm
Date Analyzed:	Jun 4, 1991	Jun 4, 1991	Jun 4, 1991	Jun 4, 1991
QC Sample #:	Matrix	Matrix	Matrix	Matrix
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	0.40	0.40	0.40	1.2
Conc. Matrix Spike:	0.41	0.42	0.47	1.4
Matrix Spike % Recovery:	100	100	120	120
Conc. Matrix Spike Dup.:	0.42	0.43	0.48	1.5
Matrix Spike Duplicate % Recovery:	100	110	120	120
Relative % Difference:	2.4	2.3	2.1	6.9

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

$$\text{\% Recovery:} \quad \frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$$

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

SEQUOIA ANALYTICAL

1900 Bates Avenue, Suite LM • Concord, California 94520
(415) 686-9600 • FAX (415) 686-9689

Kaprealian Engineering, Inc.
P.O. Box 996
Benicia, CA 94510
Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal, 845 - 66th Ave., Oakland
QC Sample Group: 106-0027

Reported: Jun 5, 1991

QUALITY CONTROL DATA REPORT

SURROGATE

Method:	EPA8015/8020	EPA8015/8020
Analyst:	J. Fontecha	J. Fontecha
Reporting Units:	ppm	ppm
Date Analyzed:	Jun 4, 1991	Jun 4, 1991
Sample #:	106-0027	Blank
Surrogate % Recovery:	100	100

SEQUOIA ANALYTICAL

Belinda C. Vega
Laboratory Director

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

KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

SAMPLER: Haig

WITNESSING AGENCY:

SITE NAME & ADDRESS: Unocal - Oakland
845 - 66th Ave

ANALYSES REQUESTED: TPH-D; BTEX

TURN AROUND TIME: 24 Hrs

SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	TPH-D	BTEX	REMARKS
Comp18	6/4/91		✓			✓	4	Aerated soil	✓	✓	1060027A-D

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	6/4/91 1430	[signature] DDM
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)

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[signature] (Signature) | Chemist (Title) | 6/4/91 (Date)