



KAPREALIAN ENGINEERING, INC.

Consulting Engineers

P.O. BOX 996 • BENICIA, CA 94510

(707) 746-6915 • (707) 746-6916 • FAX (707) 746-5581

KEI-J89-1106.R4
February 9, 1990

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

Attention: Mr. Tim Ross

RE: Stockpiled Soil Sampling for
Unocal Service Station #3072
2445 Castro Valley Blvd.
Castro Valley, California

Dear Mr. Ross:

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 January 19, 1990, soil samples from approximately 200 cubic yards of stockpiled soil at the referenced site were collected to determine proper disposal of the soil. Four composite soil samples (designated as Comp UU, Comp VV, Comp WW and Comp XX) were taken. Each composite sample consisted of four individual grab samples taken at various locations and depths ranging from one to two 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 in Redwood, California, and were accompanied by properly executed Chain of Custody documentation. Sample locations are as shown on the attached Site Plan, Figure 1.

On January 25, 1990, KEI returned to the site to collect soil samples from approximately 400 cubic yards of additional stockpiled soil excavated from the referenced site. Eight soil samples, labeled Comp 1, Comp 2, Comp 3, Comp 4, Comp 5, Comp 6, Comp 7 and Comp 8, were collected and stored using the methodology described above.

All composite 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 (BTX&E) using EPA method 8020. The results of the soil analyses showed concentrations of TPH as gasoline ranging from 20 to 71 ppm for all samples except for

samples Comp WW and Comp 4, which showed TPH levels of 170 ppm and 160 ppm, respectively. Analytical results are summarized in Table 1. Copies of the laboratory analyses, and the Chain of Custody documentation are attached to this report.

Based on TPH levels in the stockpiled soil represented by all composite samples (excluding Comp WW and Comp 4) of less than 100 ppm, the soil can be disposed of at an approved Class III disposal site (based on Regional Water Quality Control Board guidelines). However, KEI recommends that during disposal, when obvious isolated high contamination is detected within the stockpiled soil, that portion of the soil be separately stockpiled for further sampling.

Based on the TPH levels in Comp WW and Comp 4 exceeding 100 ppm, the soil was retained on-site and permission was obtained for aeration.

On February 1, 1990, KEI returned to the site to collect composite soil samples following the aeration of Comp WW and Comp 4. Two composite samples, labeled Comp 9 and Comp 10, were collected, stored and analyzed as described above. Sample locations are as shown on the attached Site Plan, Figure 2. Results of the composites showed TPH as gasoline of 2.9 ppm for Comp 9, and 9.2 ppm for Comp 10. Based on these laboratory analyses, the soil can be disposed of to an approved Class III disposal site.

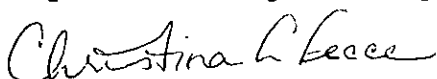
DISTRIBUTION

A copy of this report should be sent to the Alameda County Health Agency, and to the Regional Water Quality Control Board (RWQCB), 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.



Christina L. Lecce

Attachments: Table 1
Site Plans - Figure 1 and 2
Laboratory Results
Chain of Custody documentation

KEI-J89-1106.R4
February 9, 1990

TABLE 1

SUMMARY OF LABORATORY ANALYSES

(Results in ppm)

<u>Date</u>	<u>Sample</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Xylenes</u>	<u>Ethyl-benzene</u>
1/19/90	Comp UU	24	ND	ND	ND	ND
	Comp VV	71	ND	ND	ND	ND
	Comp WW	170	ND	ND	0.28	0.10
	Comp XX	36	ND	ND	ND	ND
1/24/90	Comp 1	20	ND	ND	0.49	0.13
	Comp 2	27	0.071	ND	0.18	0.11
	Comp 3	22	ND	ND	0.28	ND
	Comp 4	160	0.60	0.28	5.1	0.45
	Comp 5	33	0.07	ND	0.67	0.15
	Comp 6	37	ND	0.10	0.42	0.14
	Comp 7	54	0.22	0.51	3.8	0.68
	Comp 8	39	0.080	ND	1.0	0.20
2/1/90	Comp 9	2.9	ND	ND	ND	ND
	Comp 10	9.2	ND	ND	ND	ND
Detection Limits		1.0	0.05	0.1	0.1	0.1

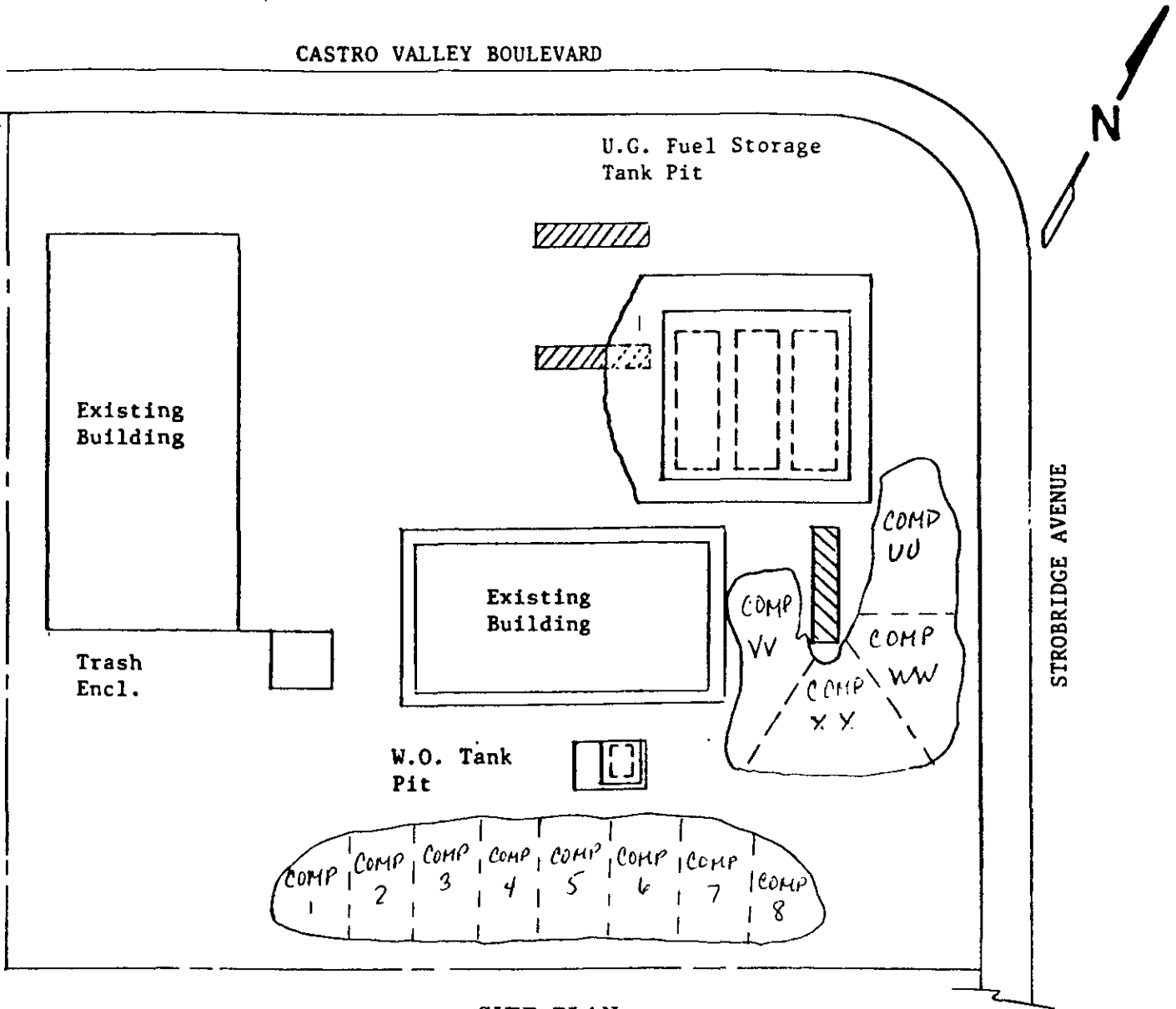
ND = Non-detectable.



KAPREALIAN ENGINEERING, INC.

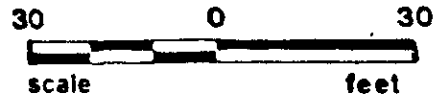
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SITE PLAN

Figure 1

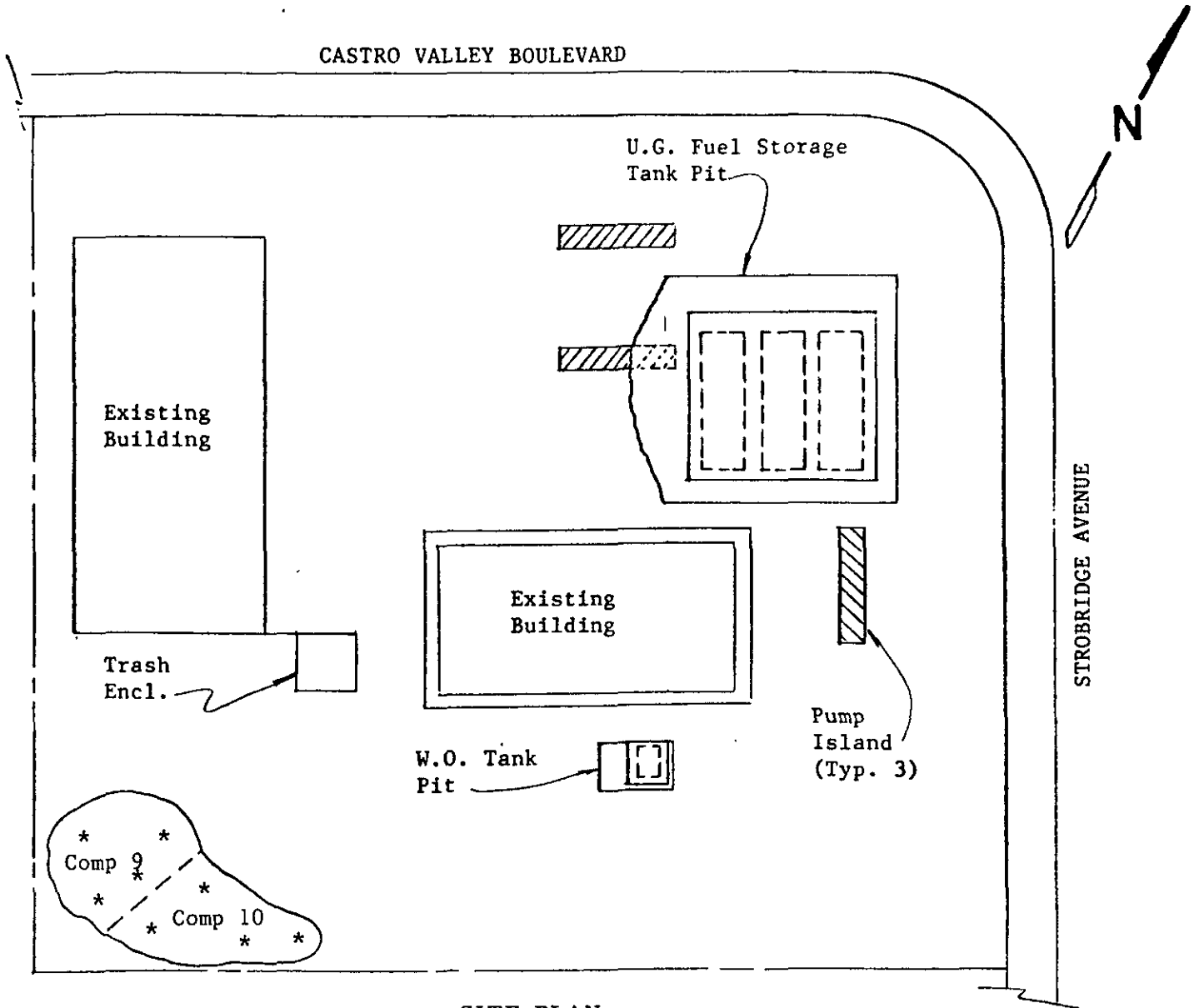


Unocal S/S #3072
2445 Castro Valley Blvd.
Castro Valley, CA

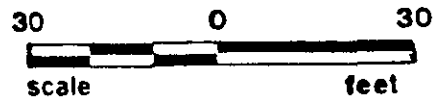


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SITE PLAN
Figure 2



LEGEND

* Sample Point Location

Unocal S/S #3072
2445 Castro Valley Blvd.
Castro Valley, CA



SEQUOIA ANALYTICAL

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

Kapreallan Engineering, Inc.	Client Project ID: Unocal, Castro Valley, CV/Stoneridge	Sampled: Jan 19, 1990
P.O. Box 996	Matrix Descript: Soil	Received: Jan 22, 1990
Benicia, CA 94510	Analysis Method: EPA 5030/8015/8020	Analyzed: Jan 23, 1990
Attention: Mardo Kapreallan, P.E.	First Sample #: 001-2434 A-D	Reported: Jan 23, 1990

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)
0012434 A-D	Composite UU	24	N.D.	N.D.	N.D.	N.D.
0012435 A-D	Composite VV	71	N.D.	N.D.	N.D.	N.D.
0012436 A-D	Composite WW	170	N.D.	N.D.	0.10	0.28
0012437 A-D	Composite XX	36	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

Belinda C. Vega
Belinda C. Vega
Project Manager

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



KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

SAMPLER <i>[Signature]</i>		SITE NAME & ADDRESS UNION / CASTRO VALLEY CASTRO VALLEY BLVD. AND STROBRIDGE						ANALYSES REQUESTED				TURN AROUND TIME: 24HR		
WITNESSING AGENCY												REMARKS		
SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	<i>TOX-50</i>	<i>OTHER</i>				
COMP. UU	1-19-90		X			X	4		X	X	0012434 A-D			
COMP. UV	1-19-90		X			X	4		X	X	0012435			
COMP. UW	1-19-90		X			X	4		X	X	0012436			
COMP. UX	1-19-90		X			X	4		X	X	0012437 ↓			
Relinquished by: (Signature) <i>[Signature]</i>		Date/Time 1/22/90 8:35		Received by: (Signature) <i>[Signature]</i>								The following MUST BE completed by the laboratory accepting samples for analysis: 1. Have all samples received for analysis been stored in ice? <u>yes</u> 2. Will samples remain refrigerated until analyzed? <u>yes</u> 3. Did any samples received for analysis have head space? <u>no</u> 4. Were samples in appropriate containers and properly packaged? <u>yes</u> <i>[Signature]</i> <u>Sample Review</u> <u>1/22/90</u> Signature Title Date		
Relinquished by: (Signature) <i>[Signature]</i>		Date/Time 1/22/90 10:30am		Received by: (Signature) <i>[Signature]</i>										
Relinquished by: (Signature)		Date/Time		Received by: (Signature)										
Relinquished by: (Signature)		Date/Time		Received by: (Signature)										



SEQUOIA ANALYTICAL

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

Kapreallan Engineering, Inc.	Client Project ID: Unocal, Castro Valley, C.V. Blvd/Strobridge	Sampled: Jan 24, 1990
P.O. Box 996	Matrix Descript: Soil	Received: Jan 25, 1990
Benicia, CA 94510	Analysis Method: EPA 5030/8015/8020	Analyzed: Jan 25, 1990
Attention: Mardo Kapreallan, P.E.	First Sample #: 001-3153 A-B	Reported: Jan 29, 1990

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)
0013153 A-B	Composite 1	20	N.D.	N.D.	0.13	0.49
0013154 A-B	Composite 2	27	0.071	N.D.	0.11	0.18
0013155 A-B	Composite 3	22	N.D.	N.D.	N.D.	0.28
0013156 A-B	Composite 4	160	0.60	0.28	0.45	5.1
0013157 A-B	Composite 5	33	0.07	N.D.	0.15	0.67
0013158 A-B	Composite 6	37	N.D.	0.10	0.14	0.42
0013159 A-B	Composite 7	54	0.22	0.51	0.68	3.8
0013160 A-B	Composite 8	39	0.080	N.D.	0.20	1.0

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

Belinda C. Vega
Belinda C. Vega
Project Manager



KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

SAMPLER JOE/KEI	SITE NAME & ADDRESS Unocal / Castro Valley Strobridge / C. Valley Blvd.	ANALYSES REQUESTED	TURN AROUND TIME: 24 hrs.
WITNESSING AGENCY			

SAMPLE ID NO.	DATE	TIME	NO. OF			SAMPLING LOCATION	TPHG, BTKE	REMARKS
			SOIL	WATER	GRAB			
Comp 1	1/25/90	AFTERNOON	"		2	Stockpile	✓	2013153 HR
" 2	"		"		2	"	✓	4
" 3	"		"		"	"	✓	5
" 4	"		"		"	"	✓	6
" 5	"		"		"	"	✓	7
" 6	"		"		"	"	✓	8
" 7	"		"		"	"	✓	9
" 8	"		"		"	"	✓	10 ✓

Relinquished by: (Signature) <i>Joe Semien</i>	Date/Time 1/25/90 3:25	Received by: (Signature) <i>Brenda C. Chi</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:

- Have all samples received for analysis been stored in ice?
WPC
- Will samples remain refrigerated until analyzed?
WPC
- Did any samples received for analysis have head space?
Yes
- Were samples in appropriate containers and properly packaged?
Yes

Signature: _____ Title: _____ Date: _____



SEQUOIA ANALYTICAL

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

Kapreallan Engineering, Inc.	Client Project ID: Unocal, Castro Valley, 2445 C V Blvd.	Sampled: Feb 1, 1990
P.O. Box 996	Matrix Descript: Soil	Received: Feb 1, 1990
Benicia, CA 94510	Analysis Method: EPA 5030/8015/8020	Analyzed: Feb 2, 1990
Attention: Mardo Kapreallan, P.E.	First Sample #: 002-0069 A-B	Reported: Feb 2, 1990

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

Sample Number	Sample Description	Low/Medium B.P.	Benzene	Toluene	Ethyl Benzene	Xylenes
		Hydrocarbons				
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
0020069 A-B	Composite 9	2.9	N.D.	N.D.	N.D.	N.D.
0020070 A-B	Composite 10	9.2	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

Belinda C. Vega
 Belinda C. Vega
 Project Manager



KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

SAMPLER		SITE NAME & ADDRESS						ANALYSES REQUESTED				TURN AROUND TIME:	
HAGOP		Unocal - Castro Valley 2445 Castro Valley Blvd										24 Hrs	
WITNESSING AGENCY													
SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	NO. OF COMP. CONT.	SAMPLING LOCATION	TPH-G	BTXE	REMARKS			
Comp 9	2/1/90	2:10 pm	✓			2	Aerated stockpile	✓	✓	0020069 A→B			
Comp 10	2/1/90		✓			2	Aerated stockpile	✓	✓	0020070 ↓			
Relinquished by: (Signature)		Date/Time		Received by: (Signature)						<p>The following MUST BE completed by the laboratory accepting samples for analysis:</p> <ol style="list-style-type: none">Have all samples received for analysis been stored in ice? <u>yes</u>Will samples remain refrigerated until analyzed? <u>yes</u>Did any samples received for analysis have head space? <u>no</u>Were samples in appropriate containers and properly packaged? <u>yes</u> <p><u>RL0</u> <u>yes</u> <u>ogm</u> <u>2/1/90</u> Signature Title Date</p>			
Hagop Revell		2/1/90 3:35		Ben Poncaw									
Relinquished by: (Signature)		Date/Time		Received by: (Signature)									
Relinquished by: (Signature)		Date/Time		Received by: (Signature)									
Relinquished by: (Signature)		Date/Time		Received by: (Signature)									
Ben Poncaw		2/1/90 17:05		Brenda Oliver									