



## KAPREALIAN ENGINEERING, INC.

Consulting Engineers

P.O. BOX 996 • BENICIA, CA 94510

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

KEI-J90-1003 (R2)  
November 26, 1990

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

Attention: Mr. Rick Sisk

RE: Stockpiled Soil Sampling for  
Unocal Service Station #7004  
15599 Hesperian Boulevard  
San Leandro, 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 October 16, 1990, soil samples from approximately 235 cubic yards of stockpiled soil excavated from the fuel tank pit were collected to determine proper disposal of the soil. Five composite soil samples (designated as Comp A, Comp B, Comp C, Comp D and Comp E) were taken. Each composite sample consisted of four individual grab samples taken at various locations and depths ranging from 1 to 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 October 18, 1990, KEI returned to the site to collect soil samples from approximately 400 cubic yards of additional stockpiled soil excavated from the fuel tank pit. Fourteen composite samples (designated Comp F through Comp S) were collected and stored as described above. Sample point locations are as shown on the attached Site Plan, Figure 2.

On October 25, 1990, KEI returned to the site to collect soil samples from approximately 400 cubic yards of additional stockpiled soil excavated from the fuel tank pit. Nine composite samples, (designated as Comp T through Comp Z, and Comp AA and Comp BB),

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

On November 2, 1990, soil samples from approximately 150 cubic yards of aerated stockpiled soil (previously sampled as Comp C, Comp G and Comp M) at the referenced site were collected. Three composite soil samples (designated as Comp 1, Comp 2 and Comp 3) were taken. On this same date, soil samples were collected from approximately 300 cubic yards of additional stockpiled soil excavated from the fuel tank pit. Six composite samples (designated as Comp CC through Comp HH) were collected and stored as described above. Sample point locations are as shown on the attached Site Plan, Figure 4.

On November 5, 1990, soil samples from approximately 110 cubic yards of aerated stockpiled soil (previously sampled as Comp A and Comp B) at the referenced site were collected. Two composite soil samples (designated as Comp 4 and Comp 5) were taken. Samples were collected and stored as described above. Sample point locations are as shown on the attached Site Plan, Figure 5.

On November 9, 1990, soil samples from 150 cubic yards of stockpiled soil (previously sampled as Comp 4, Comp 5 and Comp T) at the referenced site were collected to determine proper disposal of the soil. Three composite soil samples (designated as Comp 44, Comp 55 and Comp 6) were taken. Samples were collected and stored as described above. Sample point locations are as shown on the attached Site Plan, Figure 6.

On November 14, 1990, soil samples from 100 cubic yards of stockpiled soil (previously sampled as Comp CC and Comp DD) at the referenced site were collected to determine proper disposal of the soil. Two composite samples (designated as Comp 7 and Comp 8) were taken. Samples were collected and stored as described above. Sample point locations are as shown on the attached Site Plan, Figure 7.

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 (BTX&E) using EPA method 8020. In addition, sample Comp A was analyzed for organic lead using the DHS LUFT Manual method. Analytical results of the soil samples (Comp D through Comp F, Comp I, Comp L, Comp R, Comp S, Comp U through Comp Z, Comp 1 through Comp 3, Comp 44, Comp 55 and Comp 6) indicate levels of TPH as gasoline ranging from 2.1 ppm to 67 ppm. However, analytical results of the soil samples (Comp H, Comp J, Comp K, Comp N through Comp Q, Comp AA, Comp BB, Comp EE through Comp HH, Comp 7

and Comp 8) indicate levels of TPH as gasoline ranging from 130 ppm to 930 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, stockpiled soil (approximately 750 cubic yards) represented by samples Comp D through Comp F, Comp I, Comp L, Comp R, Comp S, Comp U, Comp W through Comp Z, and Comp 1 through Comp 3 was disposed of at Redwood Landfill in Novato, California, an approved Class III disposal site, by Paradiso Construction. Approximately 150 cubic yards of stockpiled soil represented by samples Comp 44, Comp 55 and Comp 6 were disposed of at BFI Landfill in Livermore, California, an approved Class III disposal site, by Paradiso Construction. 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 and treatment. ~750 cu. ~150

Stockpiled soil (approximately 735 cubic yards) represented by Comp H, Comp J, Comp K, Comp N through Comp Q, Comp V, Comp AA, Comp BB, Comp EE through Comp HH, Comp 7 and Comp 8 should remain on-site for treatment and further sampling. ~735

#### DISTRIBUTION

A copy of this report should be sent to Alameda County Health Care Services, to the City of San Leandro, 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.

*K. Mascarenas*

Kristin B. Mascarenas

\jad

Attachments: Table 1  
Site Plans - Figures 1 through 7  
Laboratory Results  
Chain of Custody documentation

KEI-J90-1003.R2  
November 26, 1990

TABLE 1

SUMMARY OF LABORATORY ANALYSES

(Collected on October 16, 18 & 25, and  
November 2, 5, 9 & 14, 1990)

<u>Sample</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Xylenes</u>	<u>Ethylbenzene</u>
Comp A*	1,200	0.43	0.92	92	0.98
Comp B	1,200	0.30	0.58	88	0.54
Comp C	150	ND	0.016	1.4	0.042
Comp D	67	ND	0.0094	0.058	0.041
Comp E	12	ND	ND	0.0088	ND
Comp F	28	0.015	0.074	3.9	0.19
Comp G	140	0.36	0.90	11	1.4
Comp H	660	0.90	12	140	17
Comp I	82	0.034	0.23	46	0.74
Comp J	250	0.15	0.76	9.9	2.2
Comp K	130	0.056	0.33	5.4	0.47
Comp L	35	0.021	0.38	4.2	0.53
Comp M	130	0.15	0.51	13	1.0
Comp N	240	0.46	0.52	9.7	1.6
Comp O	930	0.24	1.6	64	2.7
Comp P	630	0.42	0.70	47	8.2
Comp Q	220	0.36	1.3	13	1.7
Comp R	55	0.23	0.15	2.4	1.0
Comp S	59	0.40	0.56	4.3	0.70
Comp T	200	0.74	2.1	18	3.8
Comp U	54	0.066	0.098	3.2	0.20
Comp V	210	0.24	1.8	22	2.7
Comp W	41	0.049	0.31	3.5	0.37
Comp X	10	0.021	0.0064	0.34	0.044
Comp Y	36	0.035	0.088	1.3	ND
Comp Z	39	0.11	0.020	0.86	0.029
Comp AA	190	0.14	0.22	11	0.36
Comp BB	150	0.14	0.16	11	0.74
Comp 1	26	0.020	0.024	0.48	0.011
Comp 2	8.4	ND	ND	ND	ND
Comp 3	12	ND	ND	0.019	ND
Comp CC	690	0.12	1.4	41	5.7
Comp DD	190	0.066	0.97	14	2.4
Comp EE	530	0.094	2.4	41	7.7
Comp FF	150	0.054	0.36	9.0	1.5
Comp GG	350	ND	2.4	21	3.1
Comp HH	550	ND	4.2	42	7.6
Comp 4	550	0.23	5.5	40	4.1
Comp 5	13	0.013	0.044	0.072	ND
Comp 6	2.1	ND	ND	0.012	ND

KEI-J90-1003.R2  
November 26, 1990

TABLE 1 (Continued)

SUMMARY OF LABORATORY ANALYSES

(Collected on October 16, 18 & 25, and  
November 2, 5, 9 & 14, 1990)

<u>Sample</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Xylenes</u>	<u>Ethylbenzene</u>
Comp 44	53	0.0056	0.036	0.64	0.040
Comp 55	7.8	ND	0.0050	0.052	0.0084
Comp 7	290	ND	0.11	6.0	ND
Comp 8	250	ND	0.21	8.9	0.20
Detection Limits	1.0	0.0050	0.0050	0.0050	0.0050

\* Reactivity, Corrosivity and Ignitability Test - See attached laboratory analyses. Organic lead was non-detectable.

ND = Non-detectable.

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

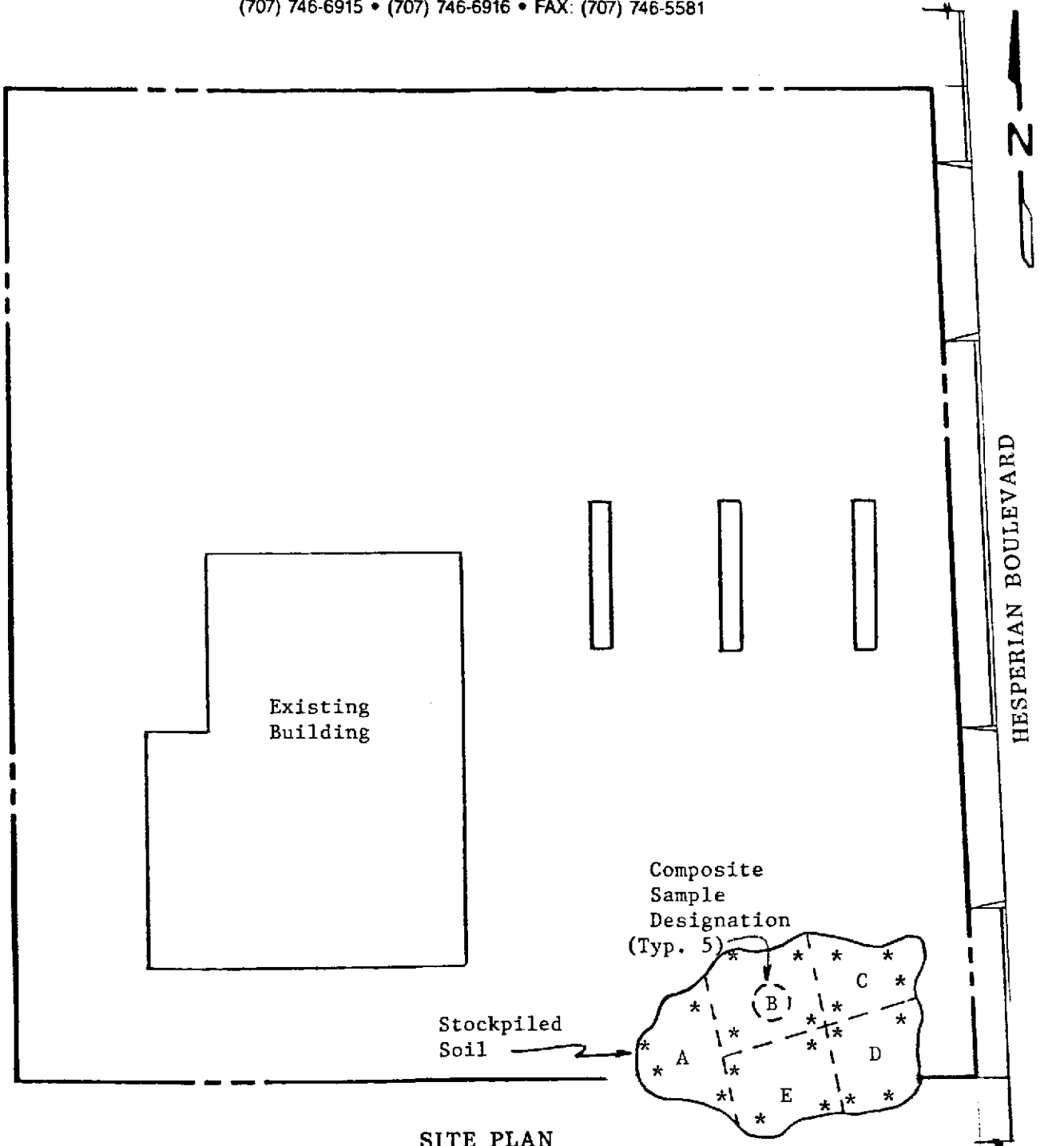


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SITE PLAN

Figure 1

LEGEND

\* Sample Point Location

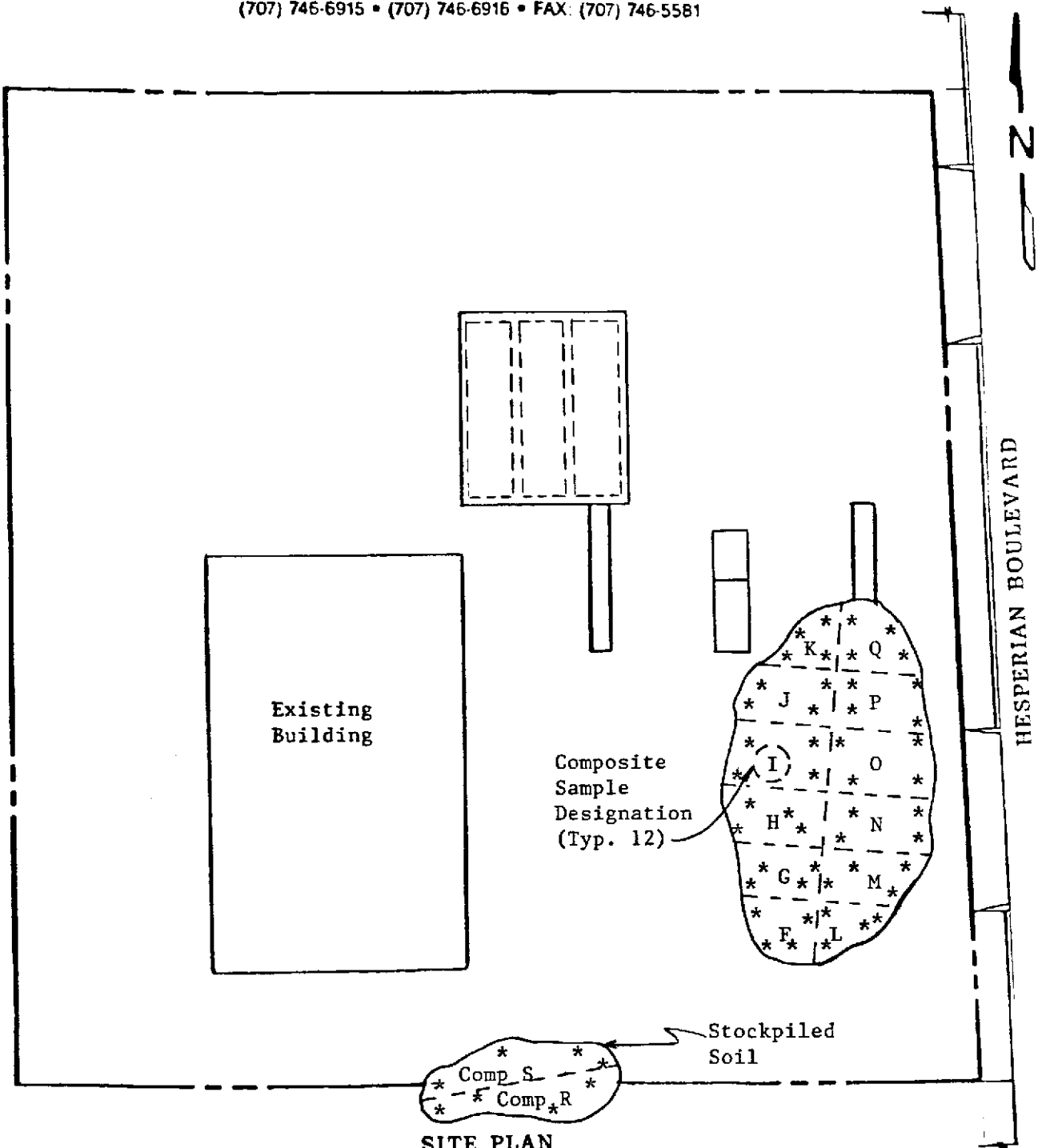
0 30 60  
Approx. scale feet

Unocal S/S #7004  
15599 Hesperian Blvd.  
San Leandro, CA



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**SITE PLAN**  
Figure 2

**LEGEND**

\* Sample Point Location

0 30 60  
Approx. scale feet

Unocal S/S #7004  
15599 Hesperian Blvd.  
San Leandro, CA

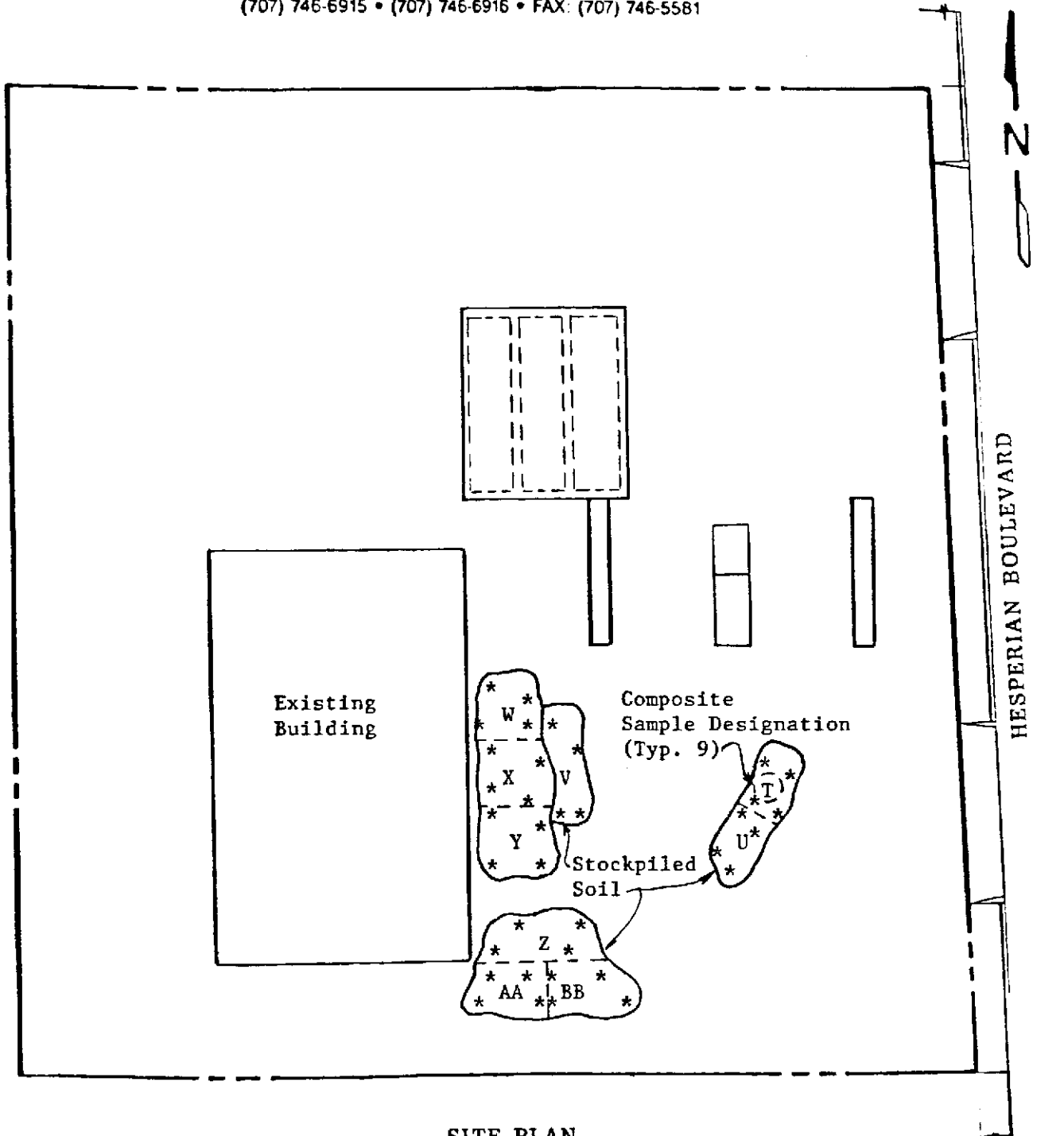


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**SITE PLAN**  
Figure 3

**LEGEND**

\* Sample Point Location

0 30 60  
Approx. scale feet

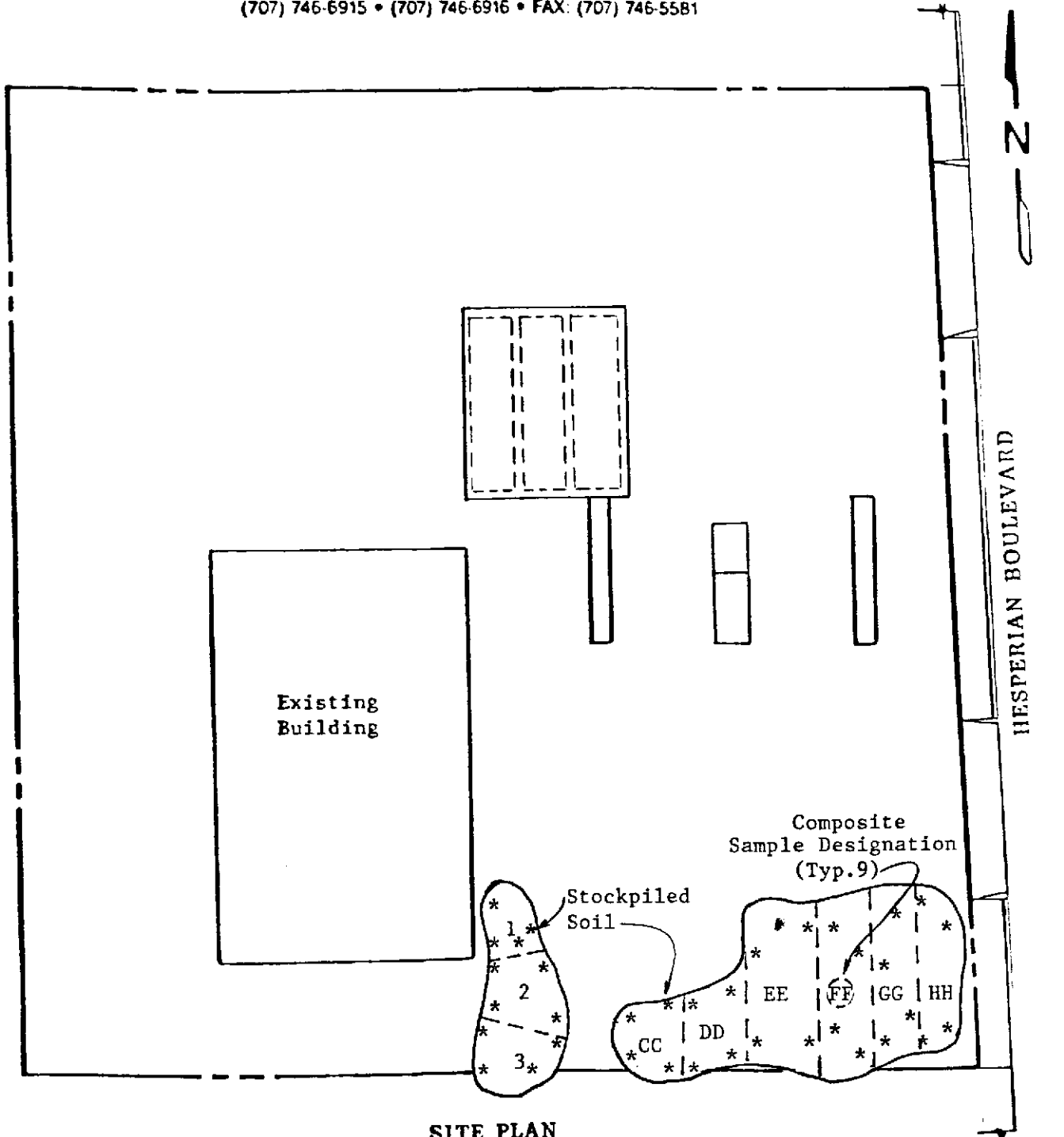
Unocal S/S #7004  
15599 Hesperian Blvd.  
San Leandro, CA





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**SITE PLAN**  
Figure 4

**LEGEND**

\* Sample Point Location

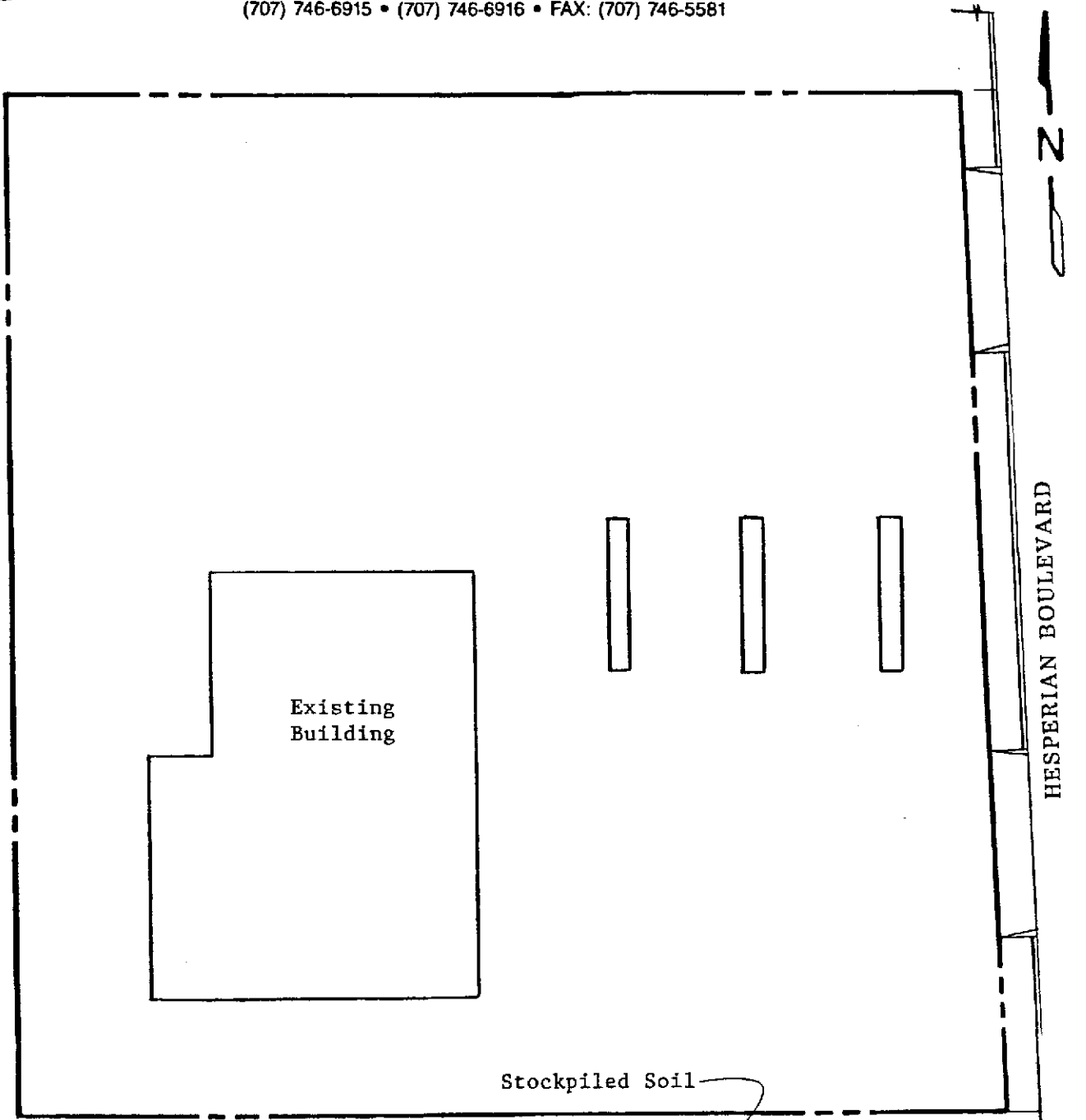
0 30 60  
Approx. scale feet

Unocal S/S #7004  
15599 Hesperian Blvd.  
San Leandro, CA



**KAPREALIAN ENGINEERING, INC.**  
*Consulting Engineers*

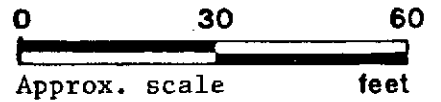
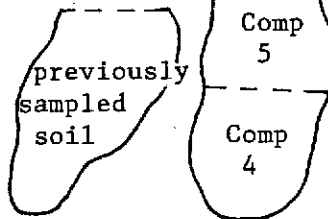
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SITE PLAN  
Figure 5

LEGEND

\* Sample Point Location



Unocal S/S #7004  
15599 Hesperian Blvd.  
San Leandro, CA

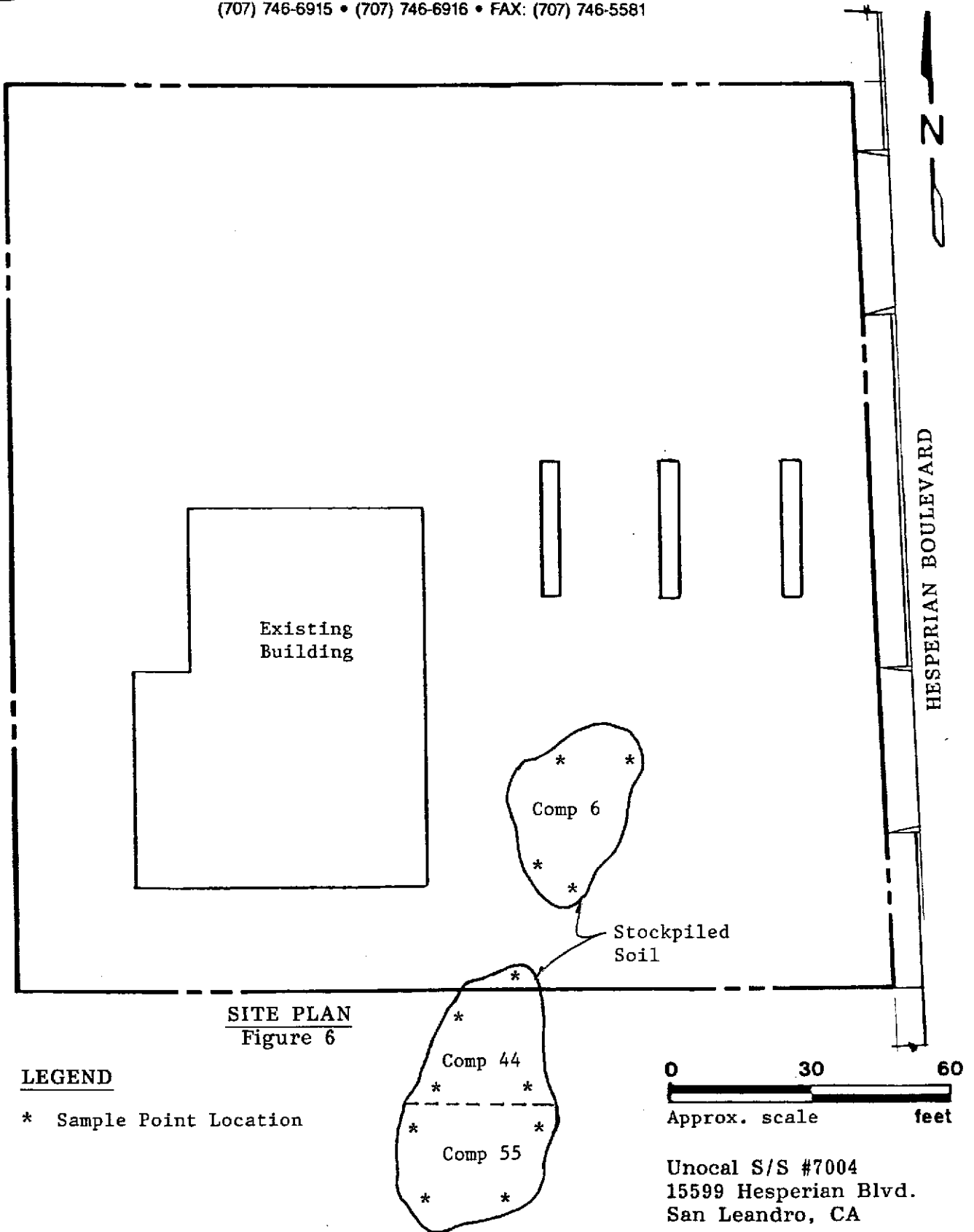


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SITE PLAN  
Figure 6

LEGEND

\* Sample Point Location

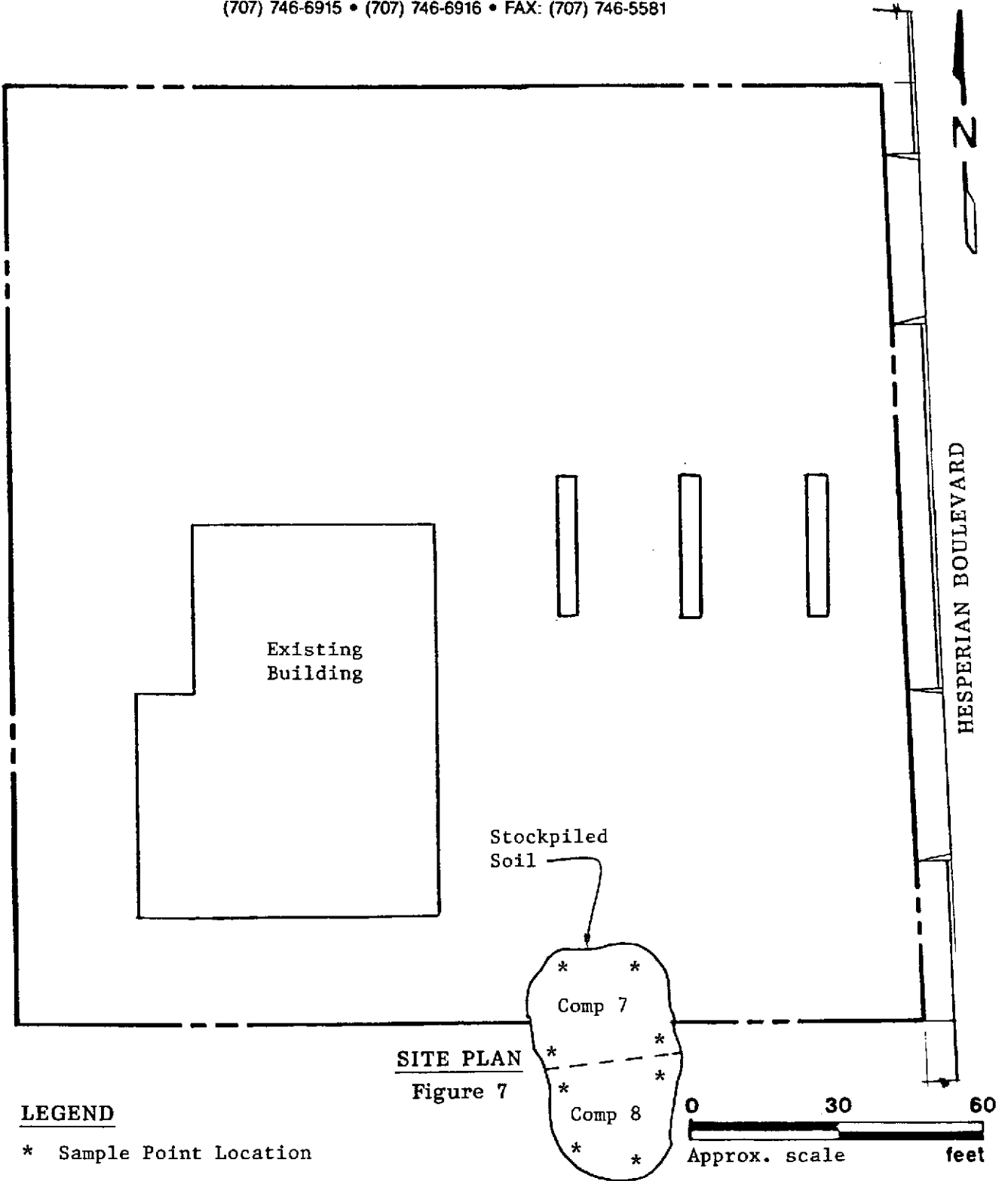
0 30 60  
Approx. scale feet

Unocal S/S #7004  
15599 Hesperian Blvd.  
San Leandro, CA



**KAPREALIAN ENGINEERING, INC.**  
*Consulting Engineers*

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SITE PLAN  
Figure 7

LEGEND

\* Sample Point Location

Unocal S/S #7004  
15599 Hesperian Blvd.  
San Leandro, CA



# 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, 15599 Hesperian Blvd., San Leandro Matrix Descript: Soil Analysis Method: EPA 5030/8015/8020 First Sample #: 010-0474 A-B	Sampled: Oct 16, 1990 Received: Oct 17, 1990 Analyzed: Oct 17, 1990 Reported: Oct 18, 1990
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## TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons			Ethyl Benzene		Xylenes mg/kg (ppm)
		mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	mg/kg (ppm)	mg/kg (ppm)	
010-0474 A-B	Comp A	1,200	0.43	0.92	0.98	92	
010-0475 A-B	Comp B	1,200	0.30	0.58	0.54	88	
010-0476 A-B	Comp C	150	N.D.	0.016	0.042	1.4	
010-0477 A-B	Comp D	67	N.D.	0.0094	0.041	0.058	
010-0478 A-B	Comp E	12	N.D.	N.D.	N.D.	0.0088	

Detection Limits:	1.0	0.0050	0.0050	0.0050	0.0050
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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  
Laboratory Director

100474.KEI <1>



# 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, 15599 Hesperian Blvd., San Leandro  
Sample Descript: Soil, Comp A  
Lab Number: 010-0474 A-B


Sampled: Oct 16, 1990  
Received: Oct 17, 1990  
Extracted: Oct 17, 1990  
Analyzed: Oct 17, 1990  
Reported: Oct 18, 1990

## LABORATORY ANALYSIS

Analyte	Detection Limit mg/kg	Sample Results mg/kg
REACTIVITY		
Cyanide.....	0.5	N.D.
Sulfide.....	10	N.D.
Reaction with water.....	NA	None
CORROSIVITY		
pH.....	NA	6.0
IGNITABILITY		
	NA	> 100°C

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

SEQUOIA ANALYTICAL

  
Belinda C. Vega  
Laboratory Director



# 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, 15599 Hesperian Blvd., San Leandro Sample Descript: Soil Analysis Method: California LUFT Manual, 12/87 First Sample #: 010-0474 A-B	Sampled: Oct 16, 1990 Received: Oct 17, 1990 Extracted: Oct 17, 1990 Analyzed: Oct 18, 1990 Reported: Oct 18, 1990
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## ORGANIC LEAD

Sample Number	Sample Description	Sample Results mg/kg (ppm)
010-0474 A-B	Comp A	N.D.

Detection Limits: 0.050

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

SEQUOIA ANALYTICAL

*Belinda C. Vega*  
Belinda C. Vega  
Laboratory Director

100474.KEI <3>

XEROX Telecopier 7017, 10-17-80 4:21 PM



# KAPREALIAN ENGINEERING, INC. CHAIN OF CUSTODY

SAMPLER <b>Haig</b>		SITE NAME & ADDRESS <b>Unocal - San Leandro 15599 Hesperian Blvd</b>					ANALYSES REQUESTED <b>TPH-G BTXE Reactivity Corrosivity Ignitability Organic Lead</b>					TURN AROUND TIME: <b>24 Hrs</b>		
WITNESSING AGENCY												REMARKS		
SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	NO. OF CONT.	SAMPLING LOCATION	TPH-G	BTXE	Reactivity	Corrosivity	Ignitability	Organic Lead	REMARKS
Comp A	10/16		✓		✓	2	STOCKPILE	✓	✓	✓	✓	✓	✓	Please Forgo the results 475 476 477 478
Comp B	10/16		✓		✓	2	↓	✓	✓	✓	✓	✓		
Comp C	10/16		✓		✓	2		✓	✓	✓	✓	✓		
Comp D	10/16		✓		✓	2		✓	✓	✓	✓	✓		
Comp E	10/16		✓		✓	2		✓	✓	✓	✓	✓		

Relinquished by: (Signature) <b>Naggar Kevork</b>	Date/Time <b>10-16-80 18:27</b>	Received by: (Signature) <b>T. Bolan</b>
Relinquished by: (Signature) <b>T. Bolan</b>	Date/Time <b>10-16-80 18:45</b>	Received by: (Signature) <b>S. Hanish</b>
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?  
**YES**
- Will samples remain refrigerated until analyzed?  
**YES**
- Did any samples received for analysis have head space?  
**N/A**
- Were samples in appropriate containers and properly packaged?  
**YES**

Signature: **Ed** Title: \_\_\_\_\_ Date: **10-16**





# SEQUOIA ANALYTICAL

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

Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 15599 Hesperian, San Leandro	Sampled:	Oct 18, 1990
P.O. Box 996	Matrix Descript:	Soil	Received:	Oct 18, 1990
Benicia, CA 94510	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Oct 18, 1990
Attention: Mardo Kaprealian, P.E.	First Sample #:	010-2683 A-B	Reported:	Oct 22, 1990

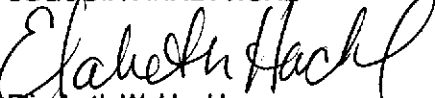
## TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

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)
0102683 A-B	Composite F	28	0.015	0.074	0.19	3.9
0102684 A-B	Composite G	140	0.36	0.90	1.4	11
0102685 A-B	Composite H	660	0.90	12	17	140
0102686 A-B	Composite I	82	0.034	0.23	0.74	46
0102687 A-B	Composite J	250	0.15	0.76	2.2	9.9
0102688 A-B	Composite K	130	0.056	0.33	0.47	5.4
0102689 A-B	Composite L	35	0.021	0.38	0.53	4.2
0102690 A-B	Composite M	130	0.15	0.51	1.0	13
0102691 A-B	Composite N	240	0.46	0.52	1.6	9.7
0102692 A-B	Composite O	930	0.24	1.6	2.7	64

Detection Limits:	1.0	0.0050	0.0050	0.0050	0.0050
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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

  
Elizabeth W. Hackl  
Project Manager



# SEQUOIA ANALYTICAL

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

Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 15599 Hesperian, San Leandro	Sampled:	Oct 18, 1990
P.O. Box 996	Matrix Descript:	Soil	Received:	Oct 18, 1990
Benicia, CA 94510	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Oct 18, 1990
Attention: Mardo Kaprealian, P.E.	First Sample #:	010-2693 A-B	Reported:	Oct 22, 1990

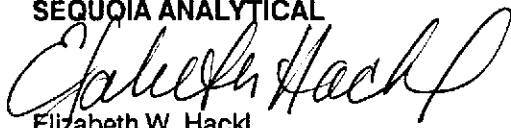
## TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

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)
0102693 A-B	Composite P	630	0.42	0.70	8.2	47
0102694 A-B	Composite Q	220	0.36	1.3	1.7	13
0102695 A-B	Composite R	55	0.23	0.15	1.0	2.4
0102696 A-B	Composite S	59	0.40	0.56	0.70	4.3

<b>Detection Limits:</b>	<b>1.0</b>	<b>0.0050</b>	<b>0.0050</b>	<b>0.0050</b>	<b>0.0050</b>
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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

  
Elizabeth W. Hackl  
Project Manager

102683.KEI <2>



# KAPREALIAN ENGINEERING, INC.

## CHAIN OF CUSTODY

SAMPLER		SITE NAME & ADDRESS					ANALYSES REQUESTED				TURN AROUND TIME:
JOE		Unocal / San Leandro 15599 Hesperian Blvd.					TPHG, BTXE				24 hrs.
WITNESSING AGENCY											
SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	NO. OF CONT.	SAMPLING LOCATION	REMARKS			
Comp. F	10/18/90		✓			2	Stockpile	0102683			
" G	"		✓			"	"	2684			
" H	"	3:30	✓			"	"	2685			
" I	"	4:10	✓			"	"	2686			
" J	"		✓			"	"	2687			
" K	"		✓			"	"	2688			
" L	"	12:30	✓			"	"	2689			
" M	"	12:30	✓			"	"	2690			
" N	"		✓			"	"	2691			

Relinquished by: (Signature) <i>Joe Lewis</i>	Date/Time 10/18/90	Received by: (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:
- Have all samples received for analysis been stored in ice?  
yes
  - Will samples remain refrigerated until analyzed?  
yes
  - Did any samples received for analysis have head space?  
N/A
  - Were samples in appropriate containers and properly packaged?  
yes
- Signature: *[Signature]* Title: *Log* Date: *10/18/90*



# KAPREALIAN ENGINEERING, INC.

## CHAIN OF CUSTODY

SAMPLER <b>JOE</b>		SITE NAME & ADDRESS <b>Unocal/San Leandro 15599 Hesperian Blvd.</b>		ANALYSES REQUESTED <b>TPHG, BTXG</b>		TURN AROUND TIME: <b>24 hrs</b>
WITNESSING AGENCY						

SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	REMARKS
Comp. 0	10/18/90	3:00	✓			✓	2	Stock pile	0102692
" P	"	4:20	✓			✓	"	"	2693
" Q	"	4:30	✓			✓	"	"	2694
" R	"	12:30	✓			✓	"	"	2695
" S	"	12:30	✓			✓	7	"	2696

Relinquished by: (Signature) <i>Joe Garcia</i>	Date/Time <b>10/18/90</b>	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? <u>yes</u> 2. Will samples remain refrigerated until analyzed? <u>yes</u> 3. Did any samples received for analysis have head space? <u>N/A</u> 4. Were samples in appropriate containers and properly packaged? <u>yes</u>
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	
Relinquished by: (Signature)	Date/Time <b>10/18/90 1805</b>	Received by: (Signature) <i>[Signature]</i>	
		Signature <i>[Signature]</i>	Title <b>Log in</b>
			Date <b>10/18/90</b>



# SEQUOIA ANALYTICAL

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

Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 15599 Hesperian Blvd., San Leandro	Sampled:	Oct 25, 1990
P.O. Box 996	Matrix Descript:	Soil	Received:	Oct 26, 1990
Benicia, CA 94510	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Oct 26, 1990
Attention: Mardo Kaprealian, P.E.	First Sample #:	010-0656 A-B	Reported:	Oct 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)
010-0656 A-B	Comp T	200	0.74	2.1	3.8	18
010-0657 A-B	Comp U	54	0.066	0.098	0.20	3.2
010-0658 A-B	Comp V	210	0.24	1.8	2.7	22
010-0659 A-B	Comp W	41	0.049	0.31	0.37	3.5
010-0660 A-B	Comp X	10	0.021	0.0064	0.044	0.34
010-0661 A-B	Comp Y	36	0.035	0.088	N.D.	1.3
010-0662 A-B	Comp Z	39	0.11	0.020	0.029	0.86
010-0663 A-B	Comp AA	190	0.14	0.22	0.36	11
010-0664 A-B	Comp BB	150	0.14	0.16	0.74	11

<b>Detection Limits:</b>	<b>1.0</b>	<b>0.0050</b>	<b>0.0050</b>	<b>0.0050</b>	<b>0.0050</b>
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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

*Julia R. Malerstein*  
Julia R. Malerstein  
Project Manager



# KAPREALIAN ENGINEERING, INC.

## CHAIN OF CUSTODY

SAMPLER <i>Wade Weston</i>		SITE NAME & ADDRESS <i>Unocal - San Leandro 15599 Hesperian Blvd.</i>						ANALYSES REQUESTED				TURN AROUND TIME: <i>24 HR.</i>
WITNESSING AGENCY												
SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	NO. OF COMP CONT.	SAMPLING LOCATION	TPH-G	BIXE	REMARKS		
<i>Comp T</i>	<i>10/25/92</i>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/> 2	<i>STOCK Pile</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>0100656 AB</i>		
<i>Comp U</i>	<i>"</i>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/> 2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>657</i>		
<i>Comp V</i>	<i>"</i>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/> 2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>658</i>		
<i>Comp W</i>	<i>"</i>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/> 2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>659</i>		
<i>Comp X</i>	<i>"</i>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/> 2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>660</i>		
<i>Comp Y</i>	<i>"</i>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/> 2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>661</i>		
<i>Comp Z</i>	<i>"</i>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/> 2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>662</i>		
<i>Comp AA</i>	<i>"</i>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/> 2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>663</i>		
<i>Comp BB</i>	<i>"</i>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/> 2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>664</i>		
Relinquished by: (Signature) <i>Wade Weston</i>		Date/Time <i>10/26 8:45</i>		Received by: (Signature) <i>[Signature]</i>		The following MUST BE completed by the laboratory accepting samples for analysis:						
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		1. Have all samples received for analysis been stored in ice? <input checked="" type="checkbox"/>						
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		2. Will samples remain refrigerated until analyzed? <input checked="" type="checkbox"/>						
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		3. Did any samples received for analysis have head space? <i>NO</i>						
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		4. Were samples in appropriate containers and properly packaged? <input checked="" type="checkbox"/>						
						<i>[Signature]</i>		<i>SIC</i>		<i>10/26</i>		
						Signature		Title		Date		



# SEQUOIA ANALYTICAL

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

Kaprealian Engineering, Inc.	Client Project ID: Unocal, 15599 Hesperian Blvd., San Leandro	Sampled: Nov 2, 1990
P.O. Box 996	Matrix Descript: Soil, Composites	Received: Nov 2, 1990
Benicia, CA 94510	Analysis Method: EPA 5030/8015/8020	Analyzed: Nov 3, 1990
Attention: Mardo Kaprealian, P.E.	First Sample #: 011-0227 A-B	Reported: Nov 6, 1990

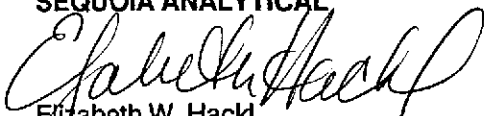
## TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

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)
0110227 A-B	Composite 1	26	0.020	0.024	0.011	0.48
0110228 A-B	Composite 2	8.4	N.D.	N.D.	N.D.	N.D.
0110229 A-B	Composite 3	12	N.D.	N.D.	N.D.	0.019
0110230 A-B	Composite CC	690	0.12	1.4	5.7	41
0110231 A-B	Composite DD	190	0.066	0.97	2.4	14
011-0232	Composite EE	530	0.094	2.4	7.7	41
011-0233	Composite FF	150	0.054	0.36	1.5	9.0
011-0234	Composite GG	350	N.D.	2.4	3.1	21
011-0235	Composite HH	550	N.D.	4.2	7.6	42

Detection Limits:	1.0	0.0050	0.0050	0.0050	0.0050
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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

  
Elizabeth W. Hackl  
Project Manager

110227.KEI <1>



# KAPREALIAN ENGINEERING, INC.

## CHAIN OF CUSTODY

SAMPLER <b>JOE</b>		SITE NAME & ADDRESS <b>Unocal / San Leandro 15599 Hesperian Blvd</b>					ANALYSES REQUESTED <b>TPH, BTEX</b>				TURN AROUND TIME: <b>24 hrs.</b>
WITNESSING AGENCY											REMARKS
SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	NO. OF COMP. CONT.	SAMPLING LOCATION				
Comp. 1	11/2/90		<input checked="" type="checkbox"/>			2	Stock pile	<input checked="" type="checkbox"/>			
" 2	"		<input checked="" type="checkbox"/>			1	"	<input checked="" type="checkbox"/>			
" 3	"		<input checked="" type="checkbox"/>			1	"	<input checked="" type="checkbox"/>			
Comp. CC	"	P.M.	<input checked="" type="checkbox"/>			1	"	<input checked="" type="checkbox"/>			
" DD	"	1:30	<input checked="" type="checkbox"/>			1	"	<input checked="" type="checkbox"/>			
" EE	"		<input checked="" type="checkbox"/>			1	"	<input checked="" type="checkbox"/>			
" FF	"		<input checked="" type="checkbox"/>			1	"	<input checked="" type="checkbox"/>			
" GG	"		<input checked="" type="checkbox"/>			1	"	<input checked="" type="checkbox"/>			
" HH	"		<input checked="" type="checkbox"/>			1	"	<input checked="" type="checkbox"/>			

Relinquished by: (Signature) <i>Joe Lewis</i>	Date/Time <b>11/2/90</b>	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? <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>
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	

Relinquished by: (Signature) <i>Joe Lewis</i>	Date/Time <b>11/2/90 1725</b>	Received by: (Signature) <i>Beth Stinson</i>	Signature <i>DS</i>	Title <i>ICM</i>	Date <b>11/2/90</b>
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# 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, 15599 Hesperian Blvd., San Leandro Matrix Descript: Soil Analysis Method: EPA 5030/8015/8020 First Sample #: 011-0141 A-B	Sampled: Nov 5, 1990 Received: Nov 6, 1990 Analyzed: Nov 6, 1990 Reported: Nov 7, 1990
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## TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P.	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl	Xylenes mg/kg (ppm)
		Hydrocarbons mg/kg (ppm)			Benzene mg/kg (ppm)	
011-0141 A-B	Comp 4	550	0.23	5.5	4.1	40
011-0142 A-B	Comp 5	13	0.013	0.044	N.D.	0.072

<b>Detection Limits:</b>	<b>1.0</b>	<b>0.0050</b>	<b>0.0050</b>	<b>0.0050</b>	<b>0.0050</b>
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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  
Laboratory Director

110141.KEI <1>



# KAPREALIAN ENGINEERING, INC.

## CHAIN OF CUSTODY

SAMPLER <b>Haig</b>		SITE NAME & ADDRESS <b>Unocal - San Leandro 15599 Hesperian Blvd</b>						ANALYSES REQUESTED <b>TPH BTX</b>				TURN AROUND TIME: <b>24 Hrs</b>
WITNESSING AGENCY												REMARKS  <b>Please Fax the results</b>
SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION				
<b>Comp 4</b>	<b>11/5</b>		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/> 2	<b>STOCKPILE</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<b>0110141 AB</b>	
<b>Comp 5</b>	<b>11/5</b>		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/> 2	<b>STOCKPILE</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<b>142 AB</b>	

Relinquished by: (Signature) <b>Maigop Kewell</b>	Date/Time <b>11/5/90 5:45</b>	Received by: (Signature) <b>Ch S. Li</b>	The following MUST BE completed by the laboratory accepting samples for analysis: 1. Have all samples received for analysis been stored in ice? <b>yes</b> 2. Will samples remain refrigerated until analyzed? <b>yes</b> 3. Did any samples received for analysis have head space? _____ 4. Were samples in appropriate containers and properly packaged? <b>yes</b>
Relinquished by: (Signature) <b>Ch. S. Li</b>	Date/Time <b>11-5-90 10:25</b>	Received by: (Signature) <b>Ed Hanish</b>	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	

Signature <b>Maigop Kewell</b>	Title _____	Date <b>11/5/90</b>
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# SEQUOIA ANALYTICAL

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(415) 686-9600 • FAX (415) 686-9689

Kaprealian Engineering, Inc.	Client Project ID:	Unocal, 15599 Hesperian Blvd., San Leandro	Sampled:	Nov 9, 1990
P.O. Box 996	Matrix Descript:	Soil	Received:	Nov 12, 1990
Benicia, CA 94510	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Nov 12, 1990
Attention: Mardo Kaprealian, P.E.	First Sample #:	011-0380 A-B	Reported:	Nov 12, 1990

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

Sample Number	Sample Description	Low/Medium B.P.	Benzene	Toluene	Ethyl	Xylenes
		Hydrocarbons			Benzene	
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
011-0380	Comp 44	53	0.0056	0.036	0.040	0.64
011-0381	Comp 55	7.8	N.D.	0.0050	0.0084	0.052
011-0382	Comp 6	2.1	N.D.	N.D.	N.D.	0.012

Detection Limits:	1.0	0.0050	0.0050	0.0050	0.0050
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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  
Laboratory Director

110380.KEI <1>



# KAPREALIAN ENGINEERING, INC.

## CHAIN OF CUSTODY

SAMPLER <i>Haig</i>		SITE NAME & ADDRESS <i>Unocal - San Leandro 15599 Hesperian Blvd</i>						ANALYSES REQUESTED <i>PH-W TX B</i>			TURN AROUND TIME: <i>24 Hrs</i>	
WITNESSING AGENCY											REMARKS <i>Please Fax the results</i>	
SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION				
<i>Comp 44</i>	<i>11/9</i>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<i>2</i>	<i>STOCKPILE</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<i>0110380 AB</i>
<i>Comp 55</i>	<i>11/9</i>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<i>2</i>	<i>↓</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<i>380 Y</i>
<i>Comp 61</i>	<i>11/9</i>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<i>2</i>	<i>↓</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<i>380 V</i>	

Relinquished by: (Signature) <i>Haig</i>	Date/Time <i>11-9-90</i>	Received by: (Signature) <i>Ed Hamrick</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?  
*Y/N*
- Will samples remain refrigerated until analyzed?  
*Y/N*
- Did any samples received for analysis have head space?  
*N/A*
- Were samples in appropriate containers and properly packaged?  
*Y/N*

Signature: *EH* Title: \_\_\_\_\_ Date: *11-8-90*



# SEQUOIA ANALYTICAL

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Kaprealian Engineering, Inc.	Client Project ID: Unocal, 15599 Hesperian Blvd., San Leandro	Sampled: Nov 14, 1990
P.O. Box 996	Matrix Descript: Soil	Received: Nov 15, 1990
Benicia, CA 94510	Analysis Method: EPA 5030/8015/8020	Analyzed: Nov 15, 1990
Attention: Mardo Kaprealian, P.E.	First Sample #: 011-0515 A-B	Reported: Nov 16, 1990

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

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons		Toluene mg/kg (ppm)	Ethyl Benzene Xylenes	
		mg/kg (ppm)	Benzene mg/kg (ppm)		mg/kg (ppm)	mg/kg (ppm)
011-0515 A-B	Comp 7	290	N.D.	0.11	N.D.	6.0
011-0516 A-B	Comp 8	250	N.D.	0.21	0.20	8.9

<b>Detection Limits:</b>	<b>1.0</b>	<b>0.0050</b>	<b>0.0050</b>	<b>0.0050</b>	<b>0.0050</b>
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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  
Laboratory Director

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



# KAPREALIAN ENGINEERING, INC.

## CHAIN OF CUSTODY

SAMPLER <b>Hou'g</b>		SITE NAME & ADDRESS <b>Unocal - San Leandro 15599 Hesperian Blvd</b>						ANALYSES REQUESTED <b>TPH-G BTXE</b>		TURN AROUND TIME: <b>24 Hrs</b>
WITNESSING AGENCY										REMARKS
SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION		
Comp 7	11/14		✓			✓	2	STOCKPILE	✓	✓
Comp 8	11/14		✓			✓	2	STOCKPILE	✓	✓

**0110515AB** Please Fax  
**576** the results

Relinquished by: (Signature) <i>[Signature]</i>	Date/Time <b>11/15/90</b>	Received by: (Signature) <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:

- Have all samples received for analysis been stored in ice?  
**yes**
- Will samples remain refrigerated until analyzed?  
**yes**
- Did any samples received for analysis have head space?  
**no**
- Were samples in appropriate containers and properly packaged?  
**yes**

Signature: *[Signature]* Title: *[Signature]* Date: **11/15/90**