

KAPREALIAN ENGINEERING  
INCORPORATED

93 OCT 27 PM 3: 25

October 26, 1993

Alameda County Health Care Services  
80 Swan Way, Room 200  
Oakland, CA 94621

Attention: Mr. Scott Seery

RE: Unocal Service Station #3292  
15008 E. 14th Street  
San Leandro, California

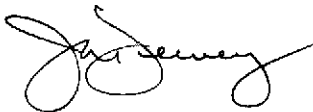
Gentlemen:

Per the request of Mr. Edward C. Ralston of Unocal Corporation, enclosed please find our report dated September 22, 1993, for the above referenced site.

If you should have any questions, please feel free to call our office at (510) 602-5100.

Sincerely,

Kaprealian Engineering, Inc.

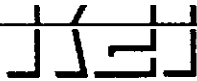


Judy A. Dewey

jad\82

Enclosure

cc: Edward C. Ralston, Unocal Corporation



KAPREALIAN ENGINEERING  
INCORPORATED

KEI-P91-0102.QR7  
September 22, 1993

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

Attention: Mr. Edward C. Ralston

510/277-2311

RE: Quarterly Report  
Unocal Service Station #3292  
15008 E. 14th Street  
San Leandro, California

Dear Mr. Ralston:

This report presents the results of the most recent quarter of monitoring and sampling of the monitoring wells at the referenced site by Kaprealian Engineering, Inc. (KEI). The wells are currently monitored monthly and sampled on a quarterly basis. This report covers the work performed by KEI from June through August of 1993.

BACKGROUND

The subject site contains a Unocal service station facility. Two underground gasoline storage tanks, one waste oil tank, and the product piping were removed from the site in January and February of 1991 during tank replacement activities. Contaminated soil detected beneath the fuel tanks was overexcavated to a depth of approximately 17.5 feet below grade (i.e., one foot below the depth to ground water at that time). Eleven monitoring wells have been installed at and in the vicinity of the site.

A site description, detailed background information including a summary of all of the soil and ground water subsurface investigation/remediation work conducted to date, site hydrogeologic conditions, and tables that summarize all of the soil and ground water sample analytical results are presented in KEI's report (KEI-P91-0102.R6) dated October 5, 1992.

RECENT FIELD ACTIVITIES

The 11 monitoring wells (MW1 through MW11) were monitored three times and were sampled once during the quarter. In addition, wells MW1 and MW5 were each purged of 55 gallons of water during the July 1993, monitoring event, and 50 gallons of water during the June 1993 monitoring event. During monitoring, the wells were checked for depth to water and the presence of free product. Prior to

sampling, the wells were also checked for the presence of a sheen. No free product or sheen was noted in any of the wells during the quarter. The monitoring data collected this quarter are summarized in Table 1.

Ground water samples were collected from all of the wells on August 23, 1993. Prior to sampling, the wells were each purged of between 6 and 8 gallons of water by the use of a surface pump. The samples were collected by the use of a clean Teflon bailer. The samples were decanted into clean VOA vials that were then sealed with Teflon-lined screw caps, labeled, and stored in a cooler, on ice, until delivery to a state-certified laboratory.

*How many casing volumes?*

#### HYDROLOGY

The measured depth to ground water at the site on August 23, 1993, ranged between 10.35 and 11.86 feet below grade. The water levels in all of the wells have shown net decreases ranging from 1.33 to 1.54 feet since the May 21, 1993, monitoring event. Based on the water level data gathered during the quarter, the ground water flow direction appeared to be predominantly to the south, as shown on the attached Potentiometric Surface Maps, Figures 1, 2, and 3. The flow direction has been predominantly to the south since the inception of the monitoring program in May of 1991 (nine consecutive quarters). The average hydraulic gradient at the site on August 23, 1993, was approximately 0.002.

#### ANALYTICAL RESULTS

The ground water samples collected this quarter were analyzed at Sequoia Analytical Laboratory and were accompanied by properly executed Chain of Custody documentation. The samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline by EPA method 5030/modified 8015, and benzene, toluene, ethylbenzene, and xylenes by EPA method 8020.

The analytical results of all of the ground water samples collected from the monitoring wells to date are summarized in Table 2. The concentrations of TPH as gasoline and benzene detected in the ground water samples collected this quarter are shown on the attached Figure 4. Copies of the laboratory analytical results and the Chain of Custody documentation are attached to this report.

#### DISCUSSION AND RECOMMENDATIONS

Based on the monitoring data (ground water level and free product measurements) collected and evaluated to date, KEI recommends a modification to the current monthly ground water monitoring program. The ground water flow direction has been consistently to

the south (varying from the southwest to the southeast) during the past four consecutive quarters of monitoring (one hydrologic cycle). In addition, no free product or sheen has been detected in any well to date. Therefore, KEI recommends that the monitoring frequency for all of the wells be reduced from monthly to quarterly. The wells will continue to be sampled on a quarterly basis. The results of the ground water monitoring and sampling program will be documented and evaluated after each monitoring and sampling event. Recommendations for altering or terminating the program will be made as warranted.

As previously reported in KEI's quarterly report (KEI-P91-0102.QR5) dated April 6, 1993, KEI has obtained file review information for several nearby sites. This information indicates that two sites (the former Mobil and former Phillips service station sites) may be contributing to the contaminant levels observed in the Unocal wells. Therefore, KEI recommended that Unocal request that Mr. Scott Seery of the Alameda County Health Care Services (ACHCS) agency contact the responsible parties for these sites. Unocal subsequently sent a letter dated April 14 1993, to the ACHCS agency that formally requested that the ACHCS require investigations by the responsible parties for the former Mobil and former Phillips service stations. The former Mobil and former Phillips sites are located approximately 80 feet northwest and 150 feet west of the Unocal site, respectively.

KEI has received a copy of a letter dated June 3, 1993, that was sent by the ACHCS agency to the owner of the former Mobil service station (Mr. Bertram Kubo). The ACHCS is requesting that a soil and ground water investigation be performed and that a work plan for this investigation be submitted by July 28, 1993.

No information has been received by KEI from the ACHCS agency regarding the former Phillips service station site. KEI will conduct periodic file reviews to obtain any new information regarding the status of the investigations at the former Mobil and former Phillips service station sites.

#### DISTRIBUTION

A copy of this report should be sent to Mr. Scott Seery of the ACHCS, and to the Regional Water Quality Control Board, San Francisco Bay Region.

LIMITATIONS

Environmental changes, either naturally-occurring or artificially-induced, may cause changes in ground water levels and flow paths, thereby changing the extent and concentration of any contaminants.

Our studies assume that the field and laboratory data are reasonably representative of the site as a whole, and assume that subsurface conditions are reasonably conducive to interpolation and extrapolation.

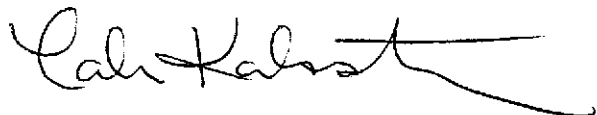
The results of this study are based on the data obtained from the field and laboratory analyses obtained from a state-certified laboratory. We have analyzed these data using what we believe to be currently applicable engineering techniques and principles in the Northern California region. We make no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

KEI-P91-0102.QR7  
September 22, 1993  
Page 5

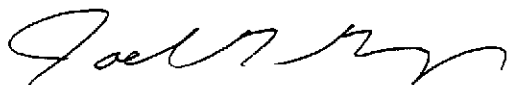
If you have any questions regarding this report, please do not hesitate to call at (510) 602-5100.

Sincerely,

Kaprealian Engineering, Inc.



Talin Kaloustian  
Staff Engineer



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

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



Timothy R. Ross  
Project Manager

/bp

Attachments: Tables 1 & 2  
Location Map  
Potentiometric Surface Maps - Figures 1, 2 & 3  
Concentrations of Petroleum Hydrocarbons - Figure 4  
Laboratory Analyses  
Chain of Custody documentation

KEI-P91-0102.QR7  
 September 22, 1993

TABLE 1

SUMMARY OF MONITORING DATA

<u>Well No.</u>	<u>Ground Water Elevation (feet)</u>	<u>Depth to Water (feet)</u>	<u>Product Thickness (feet)</u>	<u>Sheen</u>	<u>Water Purged (gallons)</u>
-----------------	--	--------------------------------------	---	--------------	-----------------------------------

(Monitored and Sampled on August 23, 1993)

MW1	25.45	11.27	0	No	6
MW2	25.59	11.30	0	No	6
MW3	25.60	11.24	0	No	8
MW4	25.54	11.86	0	No	6
MW5	25.42	10.98	0	No	8
MW6	25.68	10.35	0	No	7
MW7	25.75	10.65	0	No	8
MW8	25.38	11.76	0	No	6
MW9	25.38	11.54	0	No	6
MW10	25.27	10.99	0	No	7
MW11	25.10	10.73	0	No	6

(Monitored on July 23, 1993)

MW1	25.93	10.79	0	--	55
MW2	26.06	10.83	0	--	0
MW3	26.10	10.74	0	--	0
MW4	26.02	11.38	0	--	0
MW5	25.87	10.53	0	--	55
MW6	26.16	9.87	0	--	0
MW7	26.25	10.15	0	--	0
MW8	25.85	11.29	0	--	0
MW9	25.85	11.07	0	--	0
MW10	25.72	10.54	0	--	0
MW11	25.54	10.29	0	--	0

(Monitored on June 22, 1993)

MW1	26.39	10.33	0	--	50
MW2	26.52	10.37	0	--	0
MW3	26.56	10.28	0	--	0
MW4	26.49	10.91	0	--	0
MW5	26.35	10.05	0	--	50
MW6	26.65	9.38	0	--	0
MW7	26.74	9.66	0	--	0
MW8	26.28	10.86	0	--	0
MW9	26.30	10.62	0	--	0
MW10	26.14	10.12	0	--	0
MW11	25.96	9.87	0	--	0

KEI-P91-0102.QR7  
September 22, 1993

TABLE 1 (Continued)  
SUMMARY OF MONITORING DATA

<u>Well #</u>	<u>Well Cover Elevation* (feet)</u>
MW1	36.72
MW2	36.89
MW3	36.84
MW4	37.40
MW5	36.40
MW6	36.03
MW7	36.40
MW8	37.14
MW9	36.92
MW10	36.26
MW11	35.83

-- Sheen determination was not performed.

\* The elevations of the tops of the well covers have been surveyed relative to Mean Sea Level (MSL), per a Benchmark (elevation = 36.88 MSL) located at the northwest corner of East 14th Street and 150th Avenue.



KEI-P91-0102.QR7  
 September 22, 1993

TABLE 2  
 SUMMARY OF LABORATORY ANALYSES  
 WATER

<u>Date</u>	<u>Sample Well #</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethylbenzene</u>	<u>Xylenes</u>
8/23/93	MW1	24,000	160	110	840	810
	MW2	15,000	110	ND	590	64
	MW3	2,900	25	ND	50	18
	MW4	1,200	5.0	ND	16	ND
	MW5	61,000	340	380	3,600	14,000
	MW6	1,000	9.4	2.3	5.0	2.3
	MW7	33,000	360	ND	2,500	4,300
	MW8	280*	49	4.5	ND	ND
	MW9	3,000	29	ND	ND	ND
	MW10	20,000	230	13	3,200	140
	MW11	5,400	68	ND	230	43
5/21/93	MW1	27,000	150	200	1,200	950
	MW2	9,500	37	ND	470	62
	MW3	2,600	42	ND	43	15
	MW4	1,900	31	ND	20	4.5
	MW5	55,000	ND	160	3,500	12,000
	MW6	940	18	1.0	7.1	2.7
	MW7	22,000	330	37	2,100	2,900
	MW8	2,500	44	ND	ND	ND
	MW9	3,200	32	ND	8.1	ND
	MW10	23,000	250	ND	3,000	240
	MW11	7,100	64	ND	340	120
2/20/93	MW1	19,000	190	ND	880	620
	MW2	1,500	2.9	3.8	9.1	ND
	MW3	1,600	12	18	8.9	12
	MW4	2,400	40	2.1	33	ND
	MW5	17,000	75	ND	1,000	620
	MW6	2,400	43	ND	33	2.0
	MW7	1,800	37	4.6	11	7.7
	MW8	2,200	32	ND	42	5.0
	MW9	2,300	47	ND	32	ND
	MW10	17,000	74	ND	1,000	620
	MW11	18,000	76	ND	1,000	630

KEI-P91-0102.QR7  
 September 22, 1993

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES  
 WATER

<u>Date</u>	<u>Sample Well #</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethylbenzene</u>	<u>Xylenes</u>
11/10/92	MW1	18,000	220	ND	690	830
	MW2	11,000	36	7.2	570	45
	MW3	3,400	37	ND	85	34
	MW4	690	9.1	ND	16	2.8
	MW5	57,000	800	1,800	4,400	18,000
	MW6	490	7.0	1.2	1.7	ND
	MW7	1,800	74	ND	230	350
	MW8	1,800	20	ND	ND	ND
	MW9	4,200	ND	ND	21	23
	MW10	15,000	300	42	3,500	330
	MW11	5,800	130	ND	260	42
8/20/92	MW1	18,000	230	22	640	950
	MW2	13,000	52	ND	660	70
	MW3	4,500	58	ND	65	35
	MW4	1,000	15	ND	11	3.0
	MW5	58,000	660	1,700	4,200	19,000
	MW6	280	8.4	ND	0.51	0.84
	MW7	13,000	460	54	ND	3,100
	MW8	3,500*	67	11	ND	ND
	MW9	3,800*	37	ND	ND	ND
	MW10	15,000	230	ND	1,000	350
	MW11	4,600*	62	ND	ND	54
5/19/92	MW1	29,000	650	370	1,100	1,200
	MW2	17,000	140	87	680	170
	MW3	3,400	25	3.6	66	41
	MW4	2,000	20	3.5	42	8.3
	MW5	84,000	760	1,500	4,000	17,000
	MW6	1,300	2.0	2.1	ND	2.7
	MW7	17,000	540	90	1,200	1,900
	MW8	5,300	28	3.3	2.6	2.1
	MW9	8,100	11	ND	25	5.8
3/17/92	MW1	23,000	320	19	1,000	940
	MW2	16,000	110	ND	730	220
	MW3	5,800	66	7.5	100	58
	MW4	1,800	3.7	1.4	90	21
	MW5	81,000	850	1,600	4,800	18,000

KEI-P91-0102.QR7  
September 22, 1993

TABLE 2 (Continued)

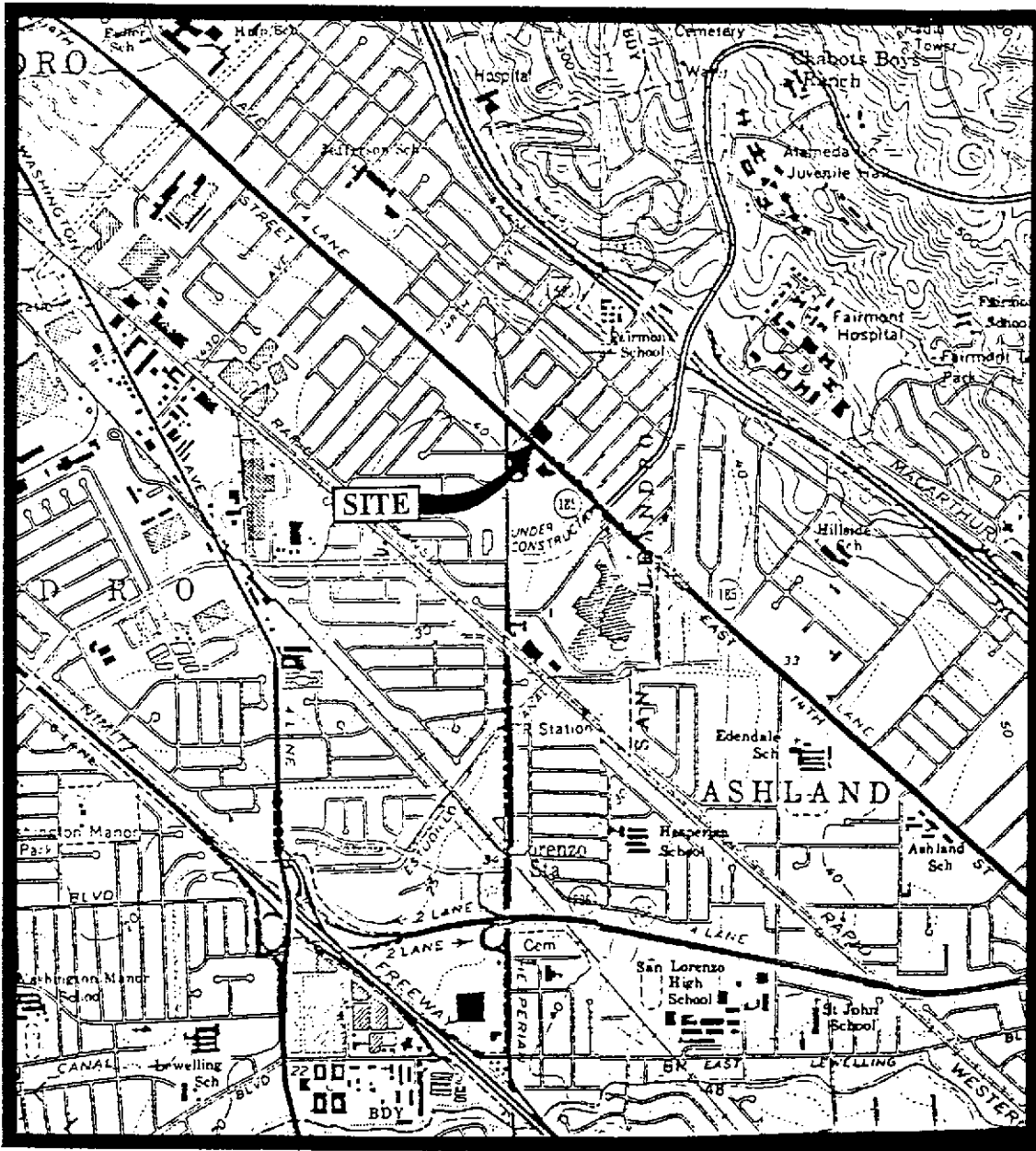
SUMMARY OF LABORATORY ANALYSES  
WATER

<u>Date</u>	<u>Sample Well #</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethylbenzene</u>	<u>Xylenes</u>
12/18/91	MW1	17,000	160	20	1,400	1,600
	MW2	10,000	110	5.1	420	96
	MW3	5,900	54	6.4	110	64
	MW4	2,500	28	2.5	54	22
	MW5	31,000	1,600	3,100	4,800	19,000
9/19/91	MW1	26,000	130	16	1,300	1,800
	MW2	19,000	100	6.8	790	310
	MW3	7,600	ND	13	190	170
	MW4	1,800	0.83	ND	54	46
	MW5	57,000	1,600	2,700	5,200	20,000
5/04/91	MW1	31,000	74	20	920	1,500
	MW2	19,000	6.6	1.4	460	630
	MW3	9,100	2.0	ND	55	180
	MW4	6,300	ND	ND	2.8	61
	MW5	69,000	1,400	2,500	3,500	15,000

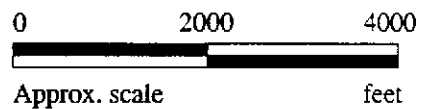
ND = Non-detectable.

\* Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.

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



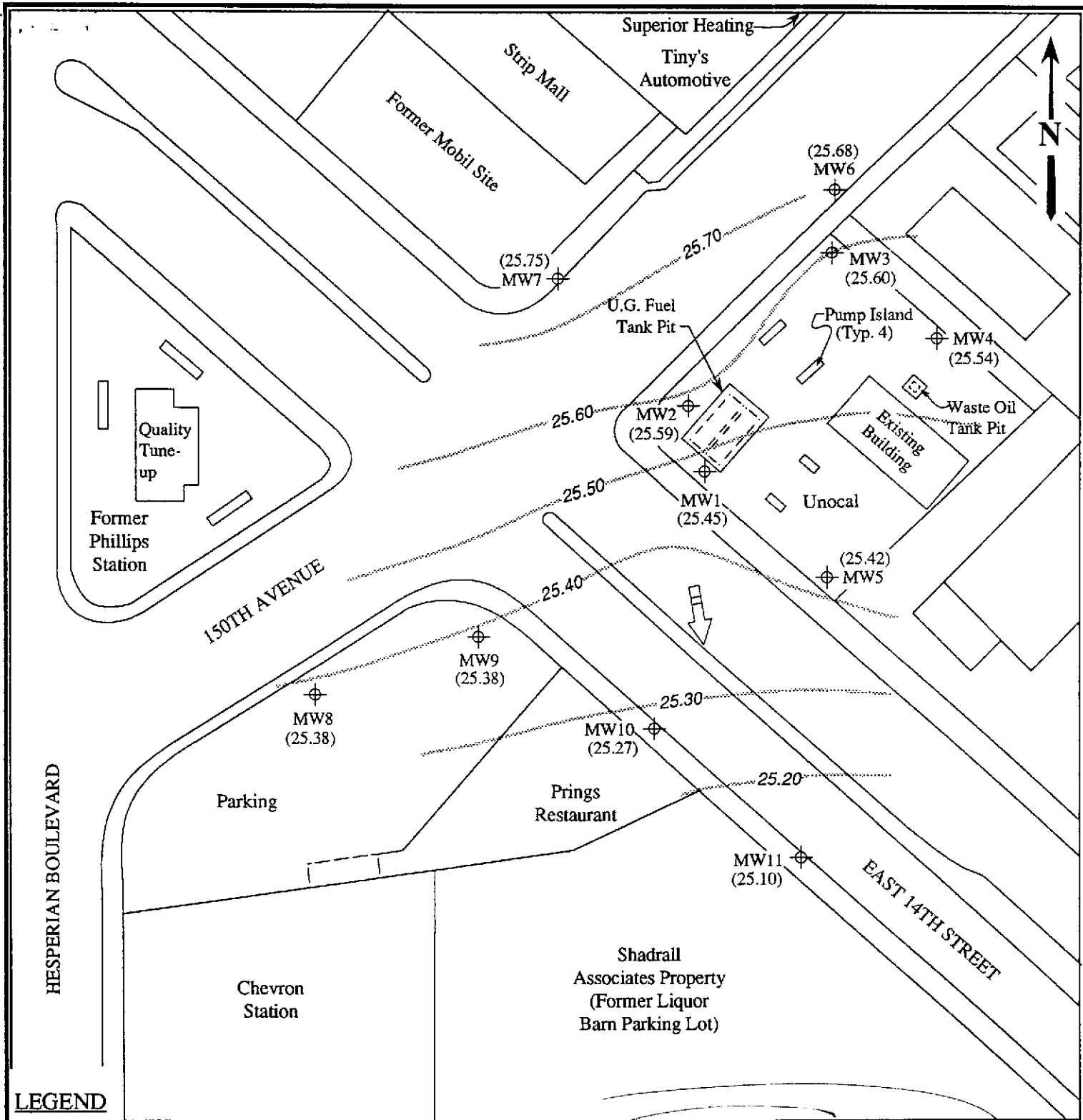
Base modified from 7.5 minute U.S.G.S. Hayward and San Leandro Quadrangle  
(both photorevised 1980)



**KEE**  
**KAPREALIAN ENGINEERING**  
**INCORPORATED**

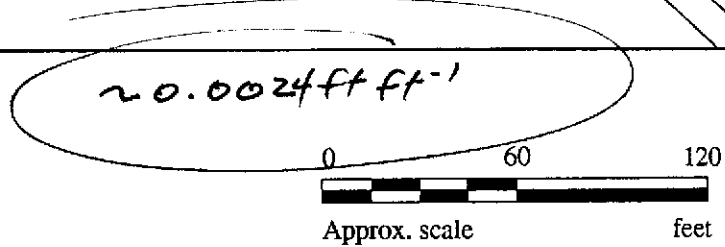
**UNOCAL SERVICE STATION #3292**  
**15008 E. 14TH STREET**  
**SAN LEANDRO, CALIFORNIA**

**LOCATION**  
**MAP**



**LEGEND**

- Monitoring well
- Ground water elevation in feet above Mean Sea Level
- Direction of ground water flow
- Contours of ground water elevation

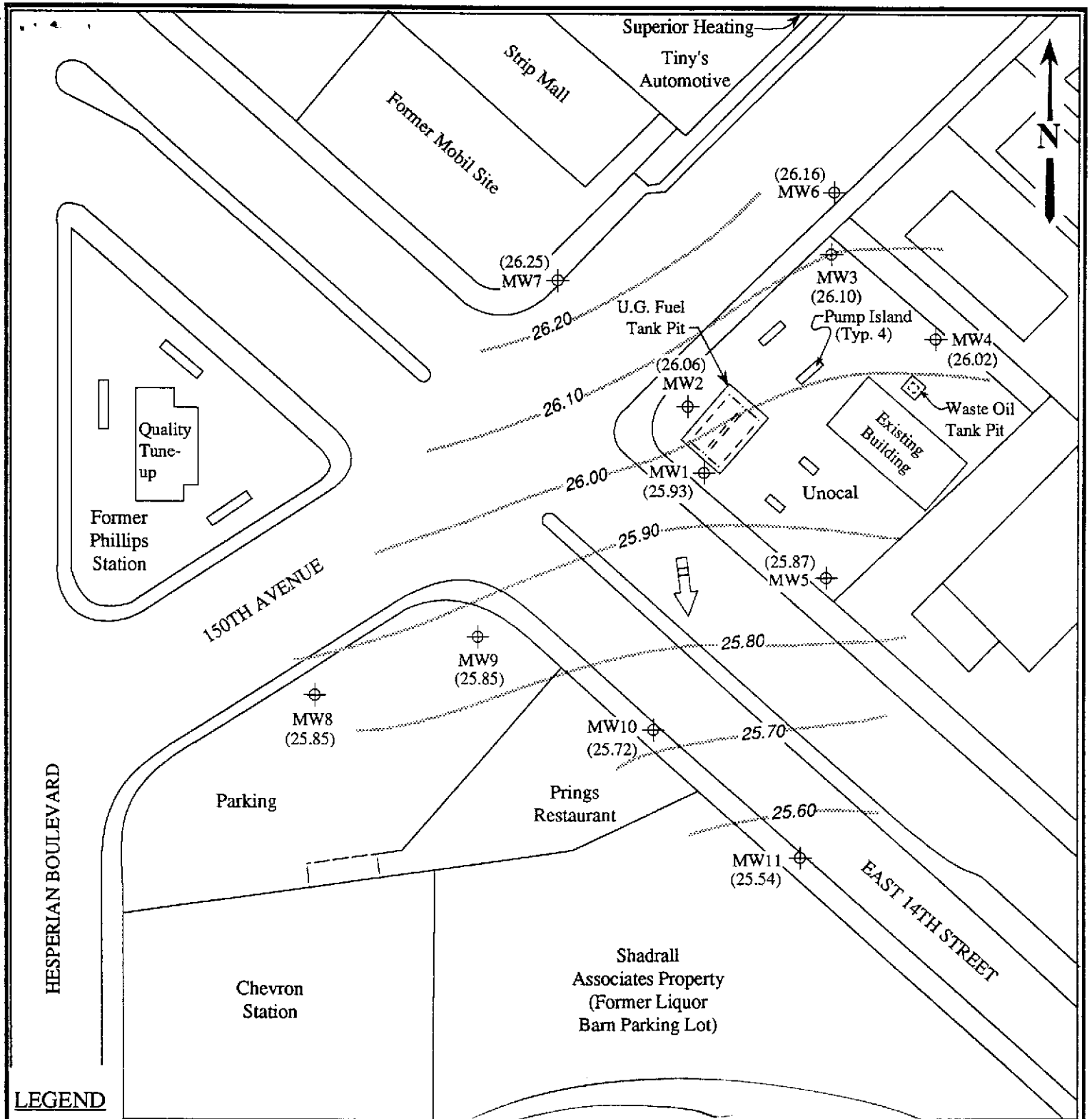


**POTENTIOMETRIC SURFACE MAP FOR THE AUGUST 23, 1993 MONITORING EVENT**



**UNOCAL SERVICE STATION #3292  
15008 E. 14TH STREET  
SAN LEANDRO, CA**

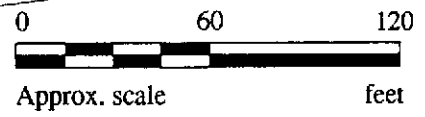
**FIGURE  
1**



**LEGEND**

- ⊕ Monitoring well
- ( ) Ground water elevation in feet above Mean Sea Level
- ➔ Direction of ground water flow
- - - - - Contours of ground water elevation

*~ 0.0019 ft ft<sup>-1</sup>*

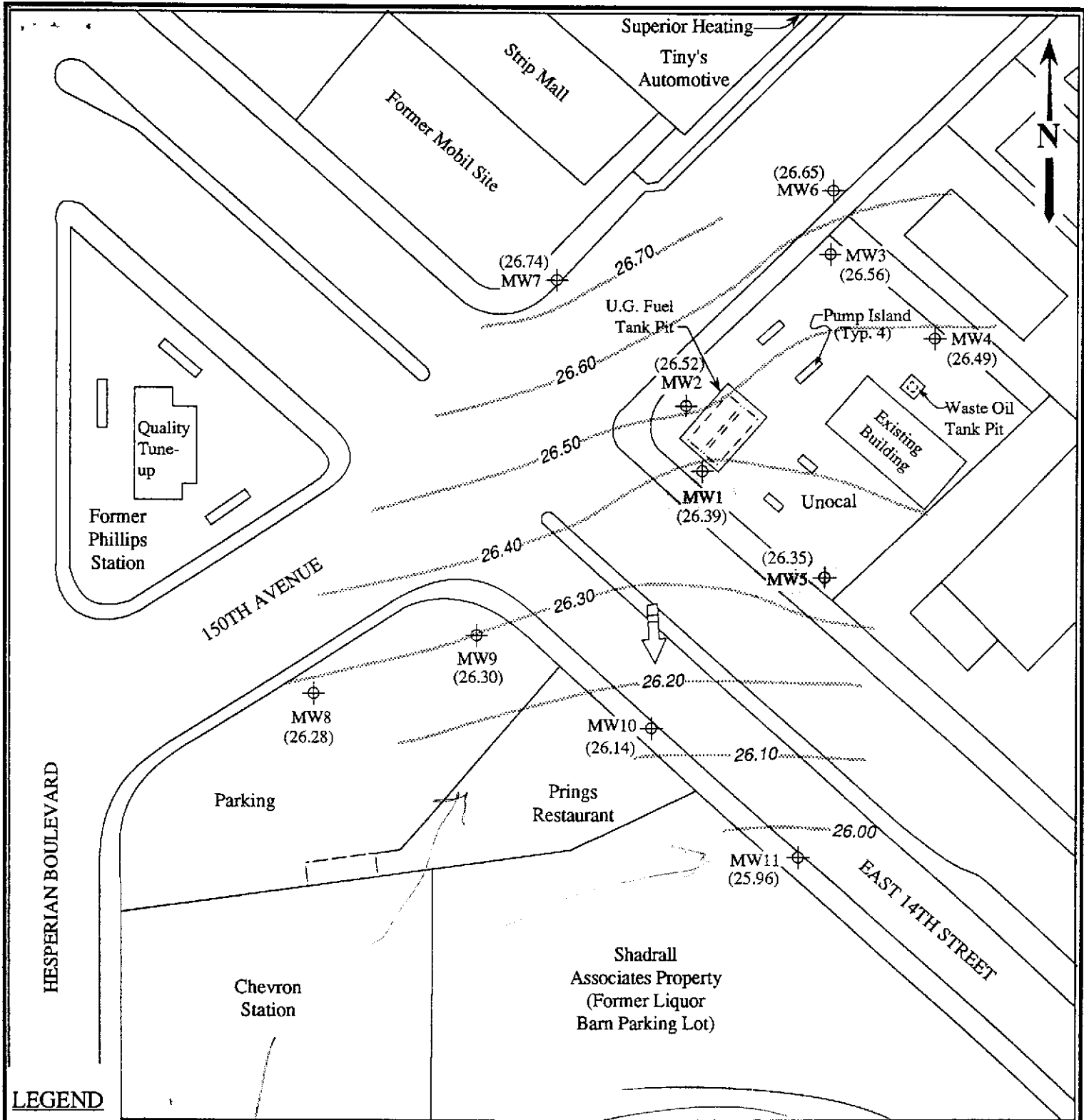


**POTENTIOMETRIC SURFACE MAP FOR THE JULY 23, 1993 MONITORING EVENT**



**UNOCAL SERVICE STATION #3292  
15008 E. 14TH STREET  
SAN LEANDRO, CA**

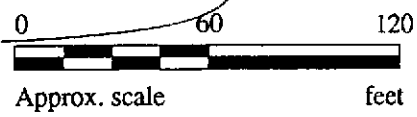
**FIGURE  
2**



**LEGEND**

- ⊕ Monitoring well
- ( ) Ground water elevation in feet above Mean Sea Level
- ➔ Direction of ground water flow
- ..... Contours of ground water elevation

20.0027 ft ft<sup>-1</sup>

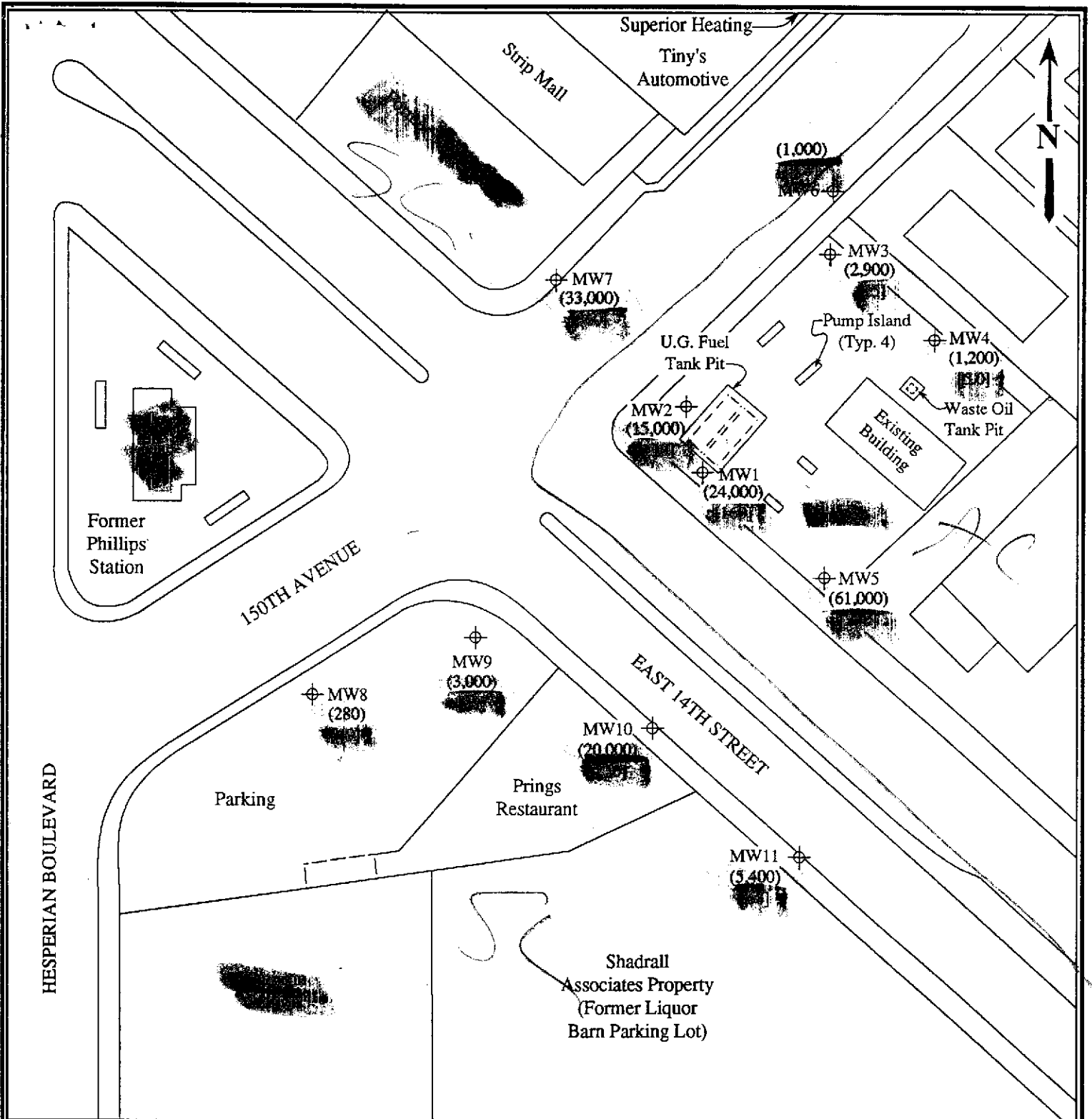


**POTENTIOMETRIC SURFACE MAP FOR THE JUNE 22, 1993 MONITORING EVENT**



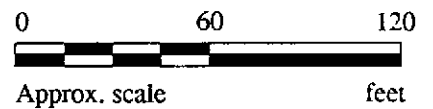
**UNOCAL SERVICE STATION #3292  
15008 E. 14TH STREET  
SAN LEANDRO, CA**

**FIGURE  
3**



**LEGEND**

- ⊕ Monitoring well
- ( ) Concentration of TPH as gasoline in ppb
- [ ] Concentration of benzene in ppb



**PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON AUGUST 23, 1993**



**UNOCAL SERVICE STATION #3292  
15008 E. 14TH STREET  
SAN LEANDRO, CA**

**FIGURE  
4**





# SEQUOIA ANALYTICAL

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

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

Client Project ID: Unocal #3292, 15008 East 14th St.,  
Sample Matrix: Water San Leandro  
Analysis Method: EPA 5030/8015/8020  
First Sample #: 308-1151

Sampled: Aug 23, 1993  
Received: Aug 23, 1993  
Reported: Sep 7, 1993

## TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 308-1151 MW1	Sample I.D. 308-1152 MW2	Sample I.D. 308-1153 MW3	Sample I.D. 308-1154 MW4	Sample I.D. 308-1155 MW5	Sample I.D. 308-1156 MW6
Purgeable Hydrocarbons	50	24,000	15,000	2,900	1,200	61,000	1,000
Benzene	0.5	160	110	25	5.0	340	9.4
Toluene	0.5	110	N.D.	N.D.	N.D.	380	2.3
Ethyl Benzene	0.5	840	590	50	16	3,600	5.0
Total Xylenes	0.5	810	64	18	N.D.	14,000	2.3
Chromatogram Pattern:		Gasoline	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline

### Quality Control Data

Report Limit Multiplication Factor:	100	100	10	5.0	100	1.0
Date Analyzed:	8/31/93	8/31/93	9/1/93	9/1/93	8/31/93	8/30/93
Instrument Identification:	HP-4	HP-4	HP-2	HP-2	HP-4	HP-4
Surrogate Recovery, %: (QC Limits = 70-130%)	94	93	116	114	91	95

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

SEQUOIA ANALYTICAL

  
Alan B. Kemp  
Project Manager



# SEQUOIA ANALYTICAL

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

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

Client Project ID: Unocal #3292, 15008 East 14th St.,  
Sample Matrix: Water San Leandro  
Analysis Method: EPA 5030/8015/8020  
First Sample #: 308-1157

Sampled: Aug 23, 1993  
Received: Aug 24, 1993  
Reported: Sep 7, 1993

## TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 308-1157 MW7	Sample I.D. 308-1158 MW8*	Sample I.D. 308-1159 MW9	Sample I.D. 308-1160 MW10	Sample I.D. 308-1161 MW11	Sample I.D. Matrix Blank
Purgeable Hydrocarbons	50	33,000	280	3,000	20,000	5,400	
Benzene	0.5	360	49	29	230	68	
Toluene	0.5	N.D.	4.5	N.D.	13	N.D.	
Ethyl Benzene	0.5	2,500	N.D.	N.D.	3,200	230	
Total Xylenes	0.5	4,300	N.D.	N.D.	140	43	
Chromatogram Pattern:		Gasoline	Gasoline & Non-Gasoline Mixture (<C7; >C10)	Gasoline	Gasoline	Gasoline	

### Quality Control Data

Report Limit Multiplication Factor:	100	4.0	20	20	20	1.0
Date Analyzed:	8/30/93	8/31/93	8/31/93	8/30/93	8/31/93	8/30/93
Instrument Identification:	HP-4	HP-4	HP-4	HP-2	HP-4	HP-4
Surrogate Recovery, %: (QC Limits = 70-130%)	93	112	98	115	90	101

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

### SEQUOIA ANALYTICAL

  
Alan B. Kemp  
Project Manager

#### Please Note:

\*Non-Gasoline Mixture, <C7; >C10), refers to unidentified peaks in EPA 8010 & Total Extractable Petroleum Hydrocarbon Ranges.



# SEQUOIA ANALYTICAL

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

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

Client Project ID: Unocal #3292, 15008 East 14th St., San Leandro  
Matrix: Water

QC Sample Group: 3081151-1161

Reported: Sep 7, 1993

## QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl- Benzene	Xylenes
	<b>Method:</b>	EPA 8020	EPA 8020	EPA 8020
<b>Analyst:</b>	J.F.	J.F.	J.F.	J.F.
<b>Conc. Spiked:</b>	20	20	20	60
<b>Units:</b>	µg/L	µg/L	µg/L	µg/L
<b>LCS Batch#:</b>	2LCS083093	2LCS083093	2LCS083093	2LCS083093
<b>Date Prepared:</b>	8/30/93	8/30/93	8/30/93	8/30/93
<b>Date Analyzed:</b>	8/30/93	8/30/93	8/30/93	8/30/93
<b>Instrument I.D.#:</b>	HP-4	HP-4	HP-4	HP-4
<b>LCS % Recovery:</b>	89	89	89	91
<b>Control Limits:</b>	70-130	70-130	70-130	70-130

MS/MSD Batch #:	3080992	3080992	3080992	3080992
<b>Date Prepared:</b>	8/30/93	8/30/93	8/30/93	8/30/93
<b>Date Analyzed:</b>	8/30/93	8/30/93	8/30/93	8/30/93
<b>Instrument I.D.#:</b>	HP-4	HP-4	HP-4	HP-4
<b>Matrix Spike % Recovery:</b>	95	95	95	97
<b>Matrix Spike Duplicate % Recovery:</b>	90	90	90	90
<b>Relative % Difference:</b>	5.4	5.4	5.4	7.5

SEQUOIA ANALYTICAL

**Please Note:**

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

  
Alan B. Kemp  
Project Manager



# KAPREALIAN ENGINEERING, INC.

## CHAIN OF CUSTODY

Page 1.

SAMPLER <i>Vartkes</i>	SITE NAME & ADDRESS <i>Unocal / San Leandro 15008 East 14th St.</i>	ANALYSES REQUESTED <i>TPHG; BTXE</i>	TURN AROUND TIME: <i>Regular</i>
WITNESSING AGENCY			

SAMPLE ID NO.	DATE	TIME	SOIL	NO. OF			SAMPLING LOCATION	TPHG; BTXE	REMARKS
				WATER	GRAB	COMP CONT.			
MW1	8/23/93	11:25 am.	X	X	2	Monitoring well	X	3081151AB	
MW2	"		X	X	2	"	X	1152AB	
MW3	"		X	X	2	"	X	1153AB	
MW4	"		X	X	2	"	X	1154AB	
MW5	"		X	X	2	"	X	1155AB	
MW6	"		X	X	2	"	X	1156AB	
MW7	"		X	X	2	"	X	1157AB	
MW8	"		X	X	2	"	X	1158AB	
MW9	"		X	X	2	"	X	1159AB	

Relinquished by: (Signature) <i>W. Pardo</i>	Date/Time 8/23/93 6:10	Received by: (Signature) <i>J. Mandell</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>
Relinquished by: (Signature)	Date/Time 8/24/93 2:15p	Received by: (Signature) <i>Melissa Cramer</i>	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	

<i>J. Mandell</i> Signature	<i>Analyst</i> Title	<i>8-23-93</i> Date
--------------------------------	-------------------------	------------------------



# KAPREALIAN ENGINEERING, INC.

## CHAIN OF CUSTODY

Page 2.

SAMPLER <i>Vortex</i>		S/S# 3292		SITE NAME & ADDRESS <i>Unocal / San Leandro</i>		ANALYSES REQUESTED				TURN AROUND TIME: <i>Regular</i>
WITNESSING AGENCY				<i>15008 East 14th str.</i>		TPHG:BTXE				REMARKS  <i>3081160AB 1161AB</i>
SAMPLE ID NO.	DATE	TIME	SOIL	<input checked="" type="checkbox"/> WATER	<input checked="" type="checkbox"/> GRAB					
<i>MW 10</i>	<i>8/23/93</i>	<i>1</i>	<i>X</i>	<i>X</i>				<i>2</i>	<i>Monitoring well</i>	<i>X</i>
<i>MW 11</i>	<i>"</i>	<i>4:55 PM</i>	<i>X</i>	<i>X</i>				<i>2</i>	<i>" "</i>	<i>X</i>

Relinquished by: (Signature) <i>W. P. ...</i>	Date/Time <i>8/23/93</i> <i>6:10</i>	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? <i>Yes</i> 2. Will samples remain refrigerated until analyzed? <i>Yes</i> 3. Did any samples received for analysis have head space? <i>No</i> 4. Were samples in appropriate containers and properly packaged? <i>Yes</i>
Relinquished by: (Signature)	Date/Time <i>8/24/93</i> <i>2:15p</i>	Received by: (Signature) <i>Melissa Crews</i>	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	

*Analyst*      *[Signature]*      *8-23-93*  
 Signature      Title      Date