KAPREALIAN ENGINEERING, INC.
Consulting Engineers
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KEI-P89-0111.QR10
January 3, 1992

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

Attention: Mr. Ron Bock

RE: Quarterly Report
Unocal Service Station #5487
28250 Hesperian Boulevard
Hayward, California

Dear Mr. Bock:

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), per KEI's proposal KEI-P89-0111.P3 dated June 4, 1990, and as modified in KEI's quarterly report KEI-P89-0111.QR6 dated January 4, 1991. The wells are currently monitored and sampled on a quarterly basis. This report covers the work performed by KEI from September through November, 1991.

SITE DESCRIPTION AND BACKGROUND

The subject site is presently used as a gasoline station. The vicinity of the site is characterized by gently sloping, south-southwest trending topography, and is located approximately 0.8 miles northwest of Alameda Creek and approximately four miles northeast of the present shoreline of San Francisco Bay. A Location Map and Site Plans are attached to this report.

KEI's initial work at the site began on January 30, 1989, when KEI was asked to collect soil samples following the removal of two 10,000 gallon underground fuel storage tanks and one 280 gallon waste oil tank at the site. The tanks were made of steel and no apparent holes or cracks were observed in the fuel tanks; however, the waste oil tank was corroded. Water was encountered in the excavation at a depth of 10.5 feet below grade, thus prohibiting the collection of any soil samples from beneath the tanks.

Ten soil samples, labeled SW1 through SW6 and SW2A, SW3A, SW5A, and SW6A, were collected from the sidewalls of the fuel tank pit at depths of approximately six inches above the water table. Three of these soil samples (samples SW2, SW3, and SW6) were never analyzed.

Samples SW2A, SW3A, SW5A, and SW6A were collected from the sidewalls after additional excavation (see the attached Site Plan, Figure 2). One soil sample, labeled WO1, was collected from beneath the waste oil tank at a depth of 9 feet below grade (see the attached Site Plan, Figure 2). After the soil sampling was completed, approximately 2,000 gallons of ground water was pumped from the fuel tank pit.

On February 1, 1989, the waste oil tank pit was excavated laterally on all sides. The side nearest the existing building was excavated approximately 1 foot laterally, while the other three sides were each excavated approximately 10 feet laterally. The pit was excavated to an area of approximately 21 feet x 29 feet. Four sidewall samples (labeled SWA, SWB, SWC, and SWD) were collected (see the attached Site Plan, Figure 3). In addition, three soil samples were collected from the pipe trenches (labeled P1, P2, and P3), also shown on the attached Site Plan, Figure 3.

On February 14, 1989, in preparation for installation of the new fuel tanks, approximately 17,500 gallons of water were pumped from the fuel tank pit. On this date, after pumping, water samples W1A and W1B were collected.

On February 17, 1989, KEI returned to the site to observe additional excavation of the northeast sidewall of the waste oil tank pit (where sample SWC had previously been collected) for a distance of approximately 3 feet. Sample SWC2 was then collected. Also on this date, water sample WO-W1 was collected from the waste oil tank pit. The water sample was taken after having pumped 4,500 gallons from the waste oil excavation. Based on the analytical results from SWC2 (680 ppm of total oil and grease [TOG]), KEI returned to the site on February 24, 1989 to observe excavation of an additional 5 feet of soil. Soil sample SWC3 was then collected. Soil sample point locations are shown on the attached Site Plan, Figure 4.

On March 9, 1989, KEI collected four duplicate waste oil excavation sidewall soil samples. The samples, labeled SW-AX, SW-BX, SW-C3X, and SW-DX, were collected at sample point locations SWA, SWB, SWC3, and SWD, respectively. Soil sample point locations are as indicated on the attached Site Plan, Figure 5.

Soil and water samples were analyzed by Sequoia Analytical Laboratory in Redwood City, California, for total petroleum hydrocarbons (TPH) as gasoline, and benzene, toluene, xylenes and ethylbenzene (BTX&E). The waste oil tank pit samples were analyzed for TPH as gasoline, BTX&E, TPH as diesel, and TOG, except samples SW-AX, SW-BX, SW-C3X, and SW-DX, which were analyzed for EPA method 8010 and

8270 constituents, and the metals cadmium, chromium, lead and zinc. All pipe trench samples were analyzed for TPH as gasoline and BTX&E. After additional excavation, analytical results of soil samples from the fuel tank pit showed less than 1.4 ppm of TPH as gasoline for all samples representing the final pit excavation. After additional excavation in the waste oil pit, the final soil sample analytical results showed low residual levels of contamination. These final results indicated that the majority of contaminated soil had been removed from the site. Laboratory analyses for soil and water samples collected during the tank replacement are summarized in Tables 3, 4, and 5.

Based on the results of the laboratory analyses, and in order to comply with the requirements of the regulatory agencies, KEI proposed the installation of five monitoring wells. Documentation of the tank and piping removal procedures, sample collection techniques, and sample results of the soil and ground water samples collected in January and February, 1989, are summarized in KEI's reports (KEI-J89-0111.R2) dated March 1, 1989, and (KEI-J89-0111.R3) dated March 29, 1989. Results of soil sample analyses are summarized in Tables 4 and 5, and water sample analyses in Table 3 of this report.

Five two-inch diameter monitoring wells (designated as MW1 through MW5 on the attached Site Plan, Figure 1) were installed on April 20 and 21, 1989. The five wells were drilled and completed to total depths ranging from 24 to 28 feet below grade. Ground water was encountered at depths ranging from 7 to 10 feet beneath the surface during drilling. The wells were developed on April 25, 1989, and were initially sampled on April 26, 1989.

Water and selected soil samples were analyzed at Sequoia Analytical Laboratory in Redwood City, California, for TPH as gasoline and BTX&E. In addition, the soil samples collected from MW1 and MW2, and all the water samples, were analyzed for TPH as diesel, TOG, and EPA method 8010 compounds. Analytical results of soil samples collected from the borings for monitoring wells MW1 through MW4 showed non-detectable levels of TPH as gasoline and BTX&E in all samples, except for sample MW4(9), collected at a depth of 9 feet below grade, which showed 1.4 ppm of TPH as gasoline. The soil sample collected from MW5 at a depth of 5 feet below grade showed 900 ppm of TPH as gasoline, and 3.1 ppm of benzene. Analytical results of the water samples collected from MW1 and MW4 showed benzene levels of 2.1 ppb and 0.33 ppb, respectively. Analytical results for all other water samples indicated non-detectable levels for all constituents analyzed. Documentation of the well installation protocol, development, and sampling techniques are presented in KEI's report (KEI-P89-0111.R5) dated May 18, 1989. Results of

the soil analyses are summarized in Table 6, and results of the water analyses are summarized in Table 2.

Subsequently, KEI proposed a monthly monitoring and quarterly sampling program of existing wells, which was initiated in June 1989. This program has been modified to quarterly monitoring and sampling as of January 1991, as recommended in KEI's quarterly report (KEI-P89-0111.QR6) dated January 4, 1991.

A review of Regional Water Quality Control Board (RWQCB) files was conducted in June 1991, in order to locate and gain information on nearby underground tank sites. A review of ground water elevation data from three monitoring wells at the Rotten Robbie Service Station at 27814 Hesperian Boulevard, located approximately 1,800 feet northwest of Unocal, indicated a ground water flow direction to the southwest. Results of ground water analysis from the three wells showed elevated levels of TPH as gasoline and BTX&E, as well as free product being observed in one of the wells. No other underground fuel tank sites within a one-half mile radius of the subject site are known to KEI.

RECENT FIELD ACTIVITIES

The five wells were monitored and sampled once during the quarter. During monitoring, the wells were checked for depth to water and presence of free product and sheen. No free product or sheen was noted in any of the wells during the quarter. Monitoring data are summarized in Table 1.

Water samples were collected from the wells on November 7, 1991. Prior to sampling, the wells were each purged of 15 gallons by the use of a surface pump. Samples were then collected using a clean Teflon bailer. Samples were decanted into clean VOA vials and/or one-liter amber bottles, as appropriate, which were then sealed with Teflon-lined screw caps and stored in a cooler, on ice, until delivery to the State certified laboratory.

HYDROLOGY AND GEOLOGY

Based on the water level data gathered on November 7, 1991, the ground water flow direction appeared to be toward the southwest, with a hydraulic gradient varying from approximately 0.0024 to 0.0056. The ground water flow direction has remained relatively unchanged from the previous quarters. Water levels have shown a net decrease of between 0.08 and 0.22 feet in all of the wells since the previous quarter. The measured depth to ground water at the site on November 7, 1991, ranged between 7.43 and 8.70 feet below grade.

Based on review of regional geologic maps (U.S. Geological Survey Professional Paper 943 "Flatland Deposits - Their Geology and Engineering Properties and Their Importance to Comprehensive Planning" by E.J. Helley and K.R. Lajoie, 1979), the subject site is underlain by Holocene-age coarse-grained alluvium (Qhac). The coarse-grained alluvium typically consists of unconsolidated, moderated sorted sand and silt materials with local gravel lenses. In addition, the site is situated closely adjacent to a mapped geologic contact with Holocene-age medium-grained alluvium (Qham), which is described as typically consisting of unconsolidated fine sand, silt, and clayey silt, with a trace of coarse sand.

The results of our previous subsurface investigation (the borings for MW1 through MW5) indicate that the site is predominantly underlain by sandy to silty clay materials. However, in the vicinity of MW1 and MW4, the relatively thick sequence of clay materials are underlain by a clayey sand bed at a depth of about 24 feet below grade in MW1 and about 23 feet below grade in MW4, and extend to the maximum depth explored (28 feet below grade). Clayey sand materials were not encountered in MW2, MW3, or MW5.

ANALYTICAL RESULTS

Ground water samples were analyzed at Sequoia Analytical Laboratory in Concord, California, and were accompanied by properly executed Chain of Custody documentation. The samples were analyzed for TPH as gasoline using EPA method 5030 in conjunction with modified 8015, and BTX&E using EPA method 8020.

Analytical results of the ground water samples collected from monitoring wells MW1 through MW4 indicated non-detectable levels of TPH as gasoline and BTX&E. The analytical results of the water sample collected from well MW5 indicated a level of TPH as gasoline at 700 ppb, and benzene at 43 ppb. Results of the analyses are summarized in Table 2. Copies of the analytical results and Chain of Custody documentation are attached to this report.

DISCUSSION AND RECOMMENDATIONS

Monitoring well MW5 continues to show a variable level of hydrocarbon contamination, while wells MW1 through MW4 have indicated generally non-detectable levels of hydrocarbons since April of 1989. Well MW5 is the most downgradient of all wells and is located approximately 25 feet downgradient (southwest) of the pump islands. An off-site monitoring well, downgradient from well MW5, is probably warranted to determine the lateral extent of contamination in the vicinity of the site. KEI will evaluate areas suitable for an off-site monitoring well(s) during the next quarter.

Depending on the results of the next ground water sampling, KEI may recommend the installation of an additional monitoring well(s).

Based on the analytical results collected and evaluated to date, and no evidence of free product or sheen in any of the wells, KEI recommends the continuation of the current quarterly monitoring program of the existing wells, per KEI's proposal (KEI-P89-0111.P3) dated June 4, 1990, and as modified by KEI's quarterly report (KEI-P89-0111.QR6) dated January 4, 1991. However, the ground water samples collected from monitoring wells MW1 through MW4 during the first ten quarters of sampling (August 16, 1989, through November 7, 1991) have shown non-detectable levels of TPH as gasoline and BTX&E in all samples, except for samples collected on August 29, 1990, from well MW1 (0.74 ppb of xylenes) and well MW3 (0.52 ppb of toluene). Therefore, based on the above results, and a consistent southwesterly ground water flow direction, KEI recommends reducing the sampling frequency for wells MW1 through MW4 from quarterly to annually. Well MW5 will continue to be sampled on a quarterly basis.

DISTRIBUTION

A copy of this report should be sent to the Alameda County Health Care Services Agency, to the City of Hayward, and to the RWQCB, 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 this data using what we believe to be currently applicable engineering techniques and principles in the Northern California region. We make no warranty, either expressed or implied, 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.

If you have any questions regarding this report, please do not hesitate to call me at (707) 746-6915.

Sincerely,

Kaprealian Engineering, Inc.

Thomas J. Berkins
Senior Environmental Engineer

Don R. Braun
Certified Engineering Geologist

License No. 1310
Exp. Date 6/30/92

Timothy R. Ross
Project Manager

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Attachments: Tables 1 through 6
Location Map
Site Plans - Figures 1 through 5
Laboratory Analyses
Chain of Custody documentation

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TABLE 1

SUMMARY OF MONITORING DATA

Well No.	Ground Water Elevation (feet)	Depth to Water (feet)	Product Thickness (feet)	Sheen	Water Purged (gallons)
(Monitored and Sampled on November 7, 1991)					
MW1	4.32	8.25	0	No	15
MW2	4.19	8.70	0	No	15
MW3	4.26	8.20	0	No	15
MW4	4.18	7.91	0	No	15
MW5	3.75	7.43	0	No	15

Well #	Surface Elevation* (feet)
MW1	12.57
MW2	12.89
MW3	12.46
MW4	12.09
MW5	11.18

* Elevation of tops of well covers surveyed to MSL by Kier & Wright of Pleasanton, California,

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TABLE 2

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Sample Well #	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethyl-benzene
11/07/91	MW1	--	ND	ND	ND	ND	ND
	MW2	--	ND	ND	ND	ND	ND
	MW3	--	ND	ND	ND	ND	ND
	MW4	--	ND	ND	ND	ND	ND
	MW5	--	700	43	1.7	24	29
8/02/91	MW1	--	ND	ND	ND	ND	ND
	MW2	--	ND	ND	ND	ND	ND
	MW3	--	ND	ND	ND	ND	ND
	MW4	--	ND	ND	ND	ND	ND
	MW5	--	100	43	0.33	5.2	12
5/10/91	MW1	--	ND	ND	ND	ND	ND
	MW2	--	ND	ND	ND	ND	ND
	MW3	--	ND	ND	ND	ND	ND
	MW4	--	ND	ND	ND	ND	ND
	MW5	--	ND	ND	ND	ND	ND
	MWD+	--	ND	ND	ND	ND	ND
2/11/91	MW1*	ND	ND	ND	ND	ND	ND
	MW2	--	ND	ND	ND	ND	ND
	MW3	--	ND	ND	ND	ND	ND
	MW4	--	ND	ND	ND	ND	ND
	MW5	--	58	23	ND	1.3	2.9
11/15/90	MW1*	ND	ND	ND	ND	ND	ND
	MW2	--	ND	ND	ND	ND	ND
	MW3	--	ND	ND	ND	ND	ND
	MW4	--	ND	ND	ND	ND	ND
	MW5	--	ND	ND	ND	0.47	ND
8/29/90	MW1*	ND	ND	ND	ND	0.74	ND
	MW2	--	ND	ND	ND	ND	ND
	MW3	--	ND	ND	0.52	ND	ND
	MW4	--	ND	ND	ND	ND	ND
	MW5	--	ND	0.70	ND	1.1	0.57
5/16/90	MW1*	ND	ND	ND	ND	ND	ND
	MW2*	ND	ND	ND	ND	ND	ND
	MW3	--	ND	ND	ND	ND	ND
	MW4	--	ND	ND	ND	ND	ND
	MW5	--	1,100	310	2.8	110	70

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Sample Well #	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethyl-benzene
2/16/90	MW1*	ND	ND	ND	ND	ND	ND
	MW2	--	ND	ND	ND	ND	ND
	MW3	--	ND	ND	ND	ND	ND
	MW4	--	ND	ND	ND	ND	ND
	MW5	--	ND	ND	ND	ND	ND
11/14/89	MW1*	ND	ND	ND	ND	ND	ND
	MW2*	ND	ND	ND	ND	ND	ND
	MW3	--	ND	ND	ND	ND	ND
	MW4	--	ND	ND	ND	ND	ND
	MW5	--	73	4.7	0.97	16	2.9
8/31/89	MW5	--	910	120	7.1	53	50
8/16/89	MW1**	ND	ND	ND	ND	ND	ND
	MW2**	ND	ND	ND	ND	ND	ND
	MW3	--	ND	ND	ND	ND	ND
	MW4	--	ND	ND	ND	ND	ND
	MW5	--	4,400	1,400	84	950	200
4/26/89	MW1***	ND	ND	2.1	ND	ND	ND
	MW2***	ND	ND	ND	ND	ND	ND
	MW3***	ND	ND	ND	ND	ND	ND
	MW4***	ND	ND	0.33	ND	ND	ND
	MW5***	ND	ND	ND	ND	ND	ND
Detection Limits		50	30	0.3	0.3	0.3	0.3

\+ MWD is a quality assurance duplicate water sample collected from well MW5.

* TOG and all EPA method 8010 constituents were non-detectable.

** TOG for these samples were 23 ppm and 7.4 ppm, respectively. All EPA method 8010 constituents were non-detectable for both samples.

*** TPH as diesel, TOG, and all EPA method 8010 constituents were non-detectable.

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

-- Indicates analysis not performed.

ND = Non-detectable.

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

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TABLE 3

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Sample Well #	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethyl-benzene
2/14/89	W1A	110	--	2.2	0.55	12	<0.5
	W1B*	--	--	--	--	--	--
2/17/89	WO-W1+	1,300	500	52	8.6	100	9.2

-- Indicates analysis not performed.

* All EPA method 601 constituents were non-detectable.

+ TOG and all EPA method 601 constituents were non-detectable.

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

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TABLE 4

SUMMARY OF LABORATORY ANALYSES
SOIL

(Collected on January 30, and February 2, 14 & 17, 1989)

Sample #	Depth (feet)	TPH as Gasoline	TPH as Diesel	Benzene	Toluene	Xylenes	Ethyl-benzene
SW1	10.0	1.4	--	0.14	<0.1	<0.1	<0.1
SW2A	10.0	1.1	--	<0.05	<0.1	<0.1	<0.1
SW3A	10.0	<1.0	--	<0.05	<0.1	<0.1	<0.1
SW4	10.0	<1.0	--	<0.05	<0.1	<0.1	<0.1
SW5	10.0	130	--	1.1	4.6	18	3.7
SW5A	10.0	<1.0	--	<0.05	<0.1	<0.1	<0.1
SW6A	10.0	<1.0	--	<0.05	<0.1	<0.1	<0.1
P1	3.5	7.8	--	2.0	<0.1	2.4	0.53
P2	3.5	12	--	1.9	0.91	0.70	3.0
P3	3.5	11	--	0.37	0.36	0.29	1.7
SWA*	10.0	<1.0	1.0	<0.05	<0.1	<0.1	<0.1
SWB*	10.0	1.1	2.4	<0.05	<0.1	<0.1	<0.1
SWC*	10.0	110	180	0.68	<0.1	5.6	1.9
SWC2*	10.0	89	57	<0.05	<0.1	0.42	0.76
SWC3*	10.0	<1.0	<1.0	<0.05	<0.1	<0.1	<0.1
SWD*	10.0	<1.0	<1.0	<0.05	<0.1	<0.1	<0.1
WO1**	9.0	60	800	3.6	9.2	9.5	2.5

* TOG for SWA was 35 ppm, SWB was 44 ppm, SWC was 500 ppm, SWC2 was 680 ppm, SWC3 was <30 ppm, and SWD was 77 ppm.

** TOG for WO1 was 1,900 ppm; cadmium was 0.3 ppm; chromium was 39 ppm; lead was 10 ppm, and zinc was 42 ppm. Seventeen EPA method compounds and two EPA method compounds were detected at concentrations ranging from 100 ppb to 10,000 ppb.

-- Indicates analysis not performed.

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

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TABLE 5

SUMMARY OF LABORATORY ANALYSES
SOIL

Date	Sample Number	Cadmium	Chromium	Lead	Zinc
3/09/89	SW-AX*	0.2	96	4.7	35
	SW-BX*	0.16	91	5.1	29
	SW-C3X*	0.33	140	6.8	41
	SW-DX*	0.19	92	4.8	32
Detection Limits		0.1	0.05	0.05	0.1

* All EPA method 8010 and 8270 constituents were non-detectable.

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

KEI-P89-0111.QR10
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TABLE 6

SUMMARY OF LABORATORY ANALYSES
SOIL

Date	Sample Number	Depth (feet)	TPH as Gasoline	Benzene	Toluene	Xylenes	Ethyl-benzene
4/20/89	MW1*	5	ND	ND	ND	ND	ND
	MW2*	5	ND	ND	ND	ND	ND
	MW3	5	ND	ND	ND	ND	ND
	MW3	9	ND	ND	ND	ND	ND
	MW4	5	ND	ND	ND	ND	ND
	MW4	9	1.4	ND	ND	ND	ND
	MW5	5	900	3.1	3.1	110	30
	MW5	9	ND	ND	ND	ND	ND
Detection Limits			1.0	0.05	0.1	0.1	0.1

* TPH as diesel, TOG, and all EPA method 8010 constituents were non-detectable.

ND = Non-detectable.

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

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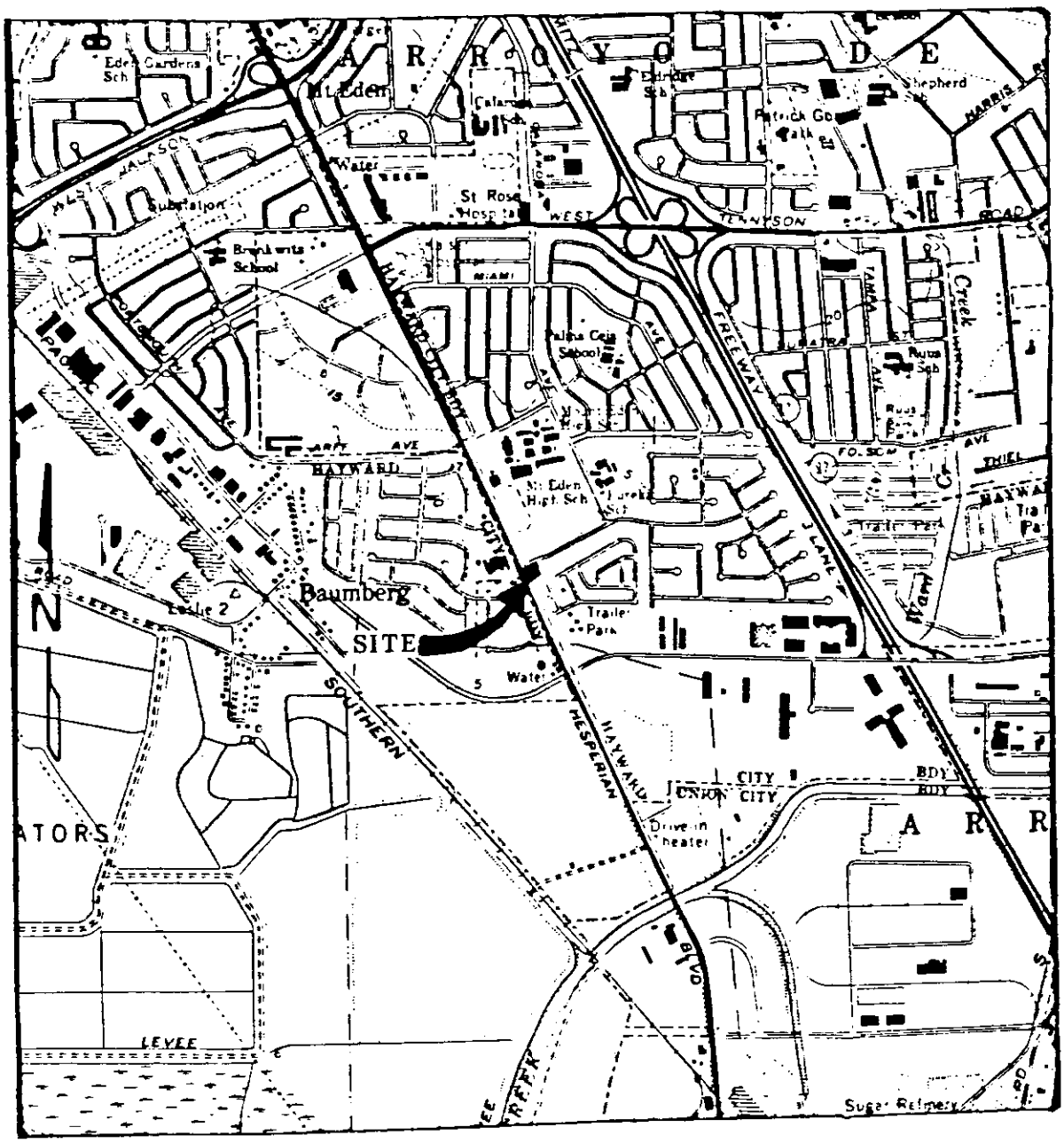

LOCATION MAP

Unocal S/S #5487
28250 Hesperian Boulevard
Hayward, CA

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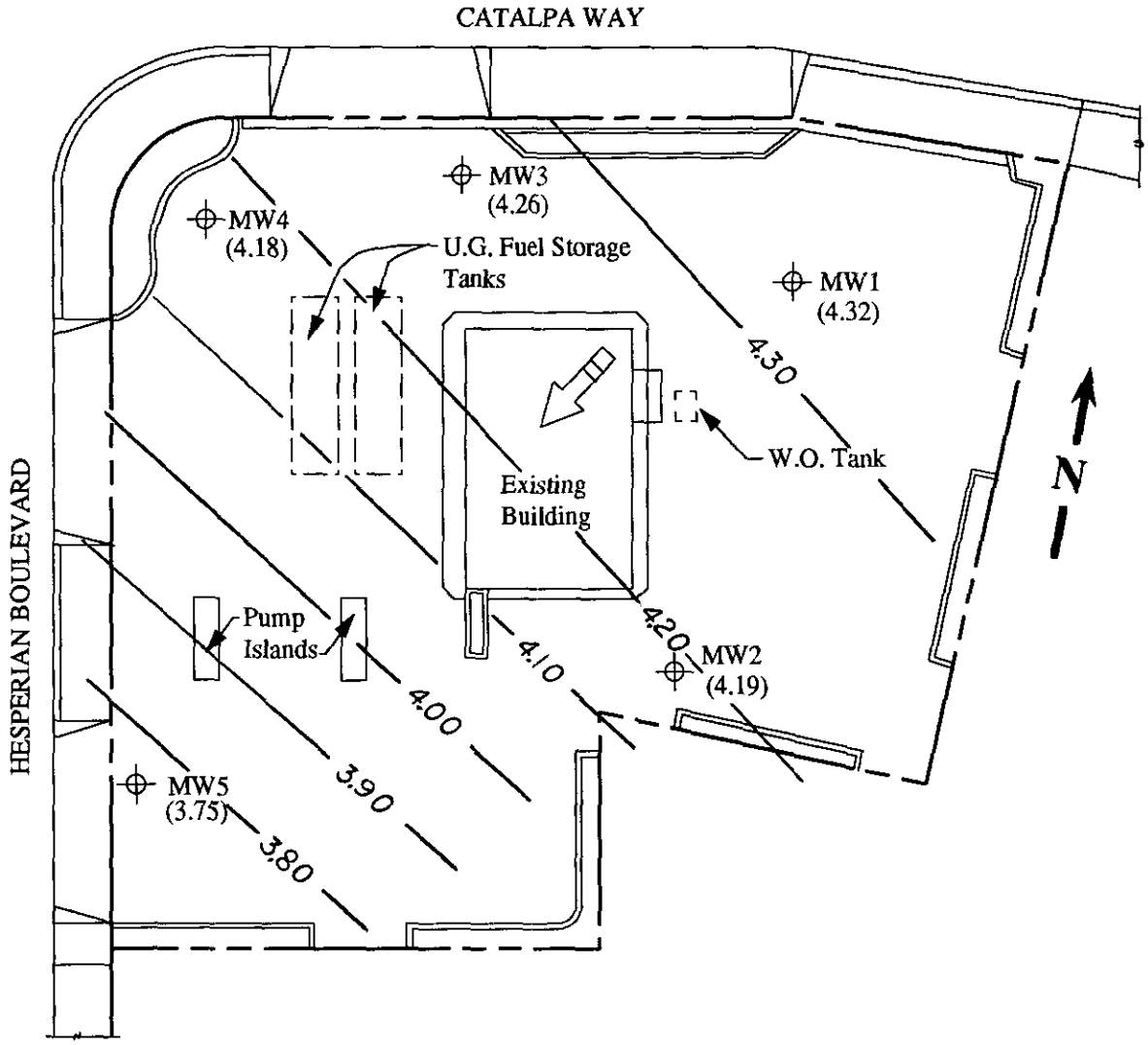

SITE PLAN
Figure 1

LEGEND

- Monitoring well
- Direction of ground water flow
- ( ) Water table elevation in feet above Mean Sea Level on 11/7/91
- —— Contours of equal elevation of ground water surface in feet

0 30 60
Approx. scale feet

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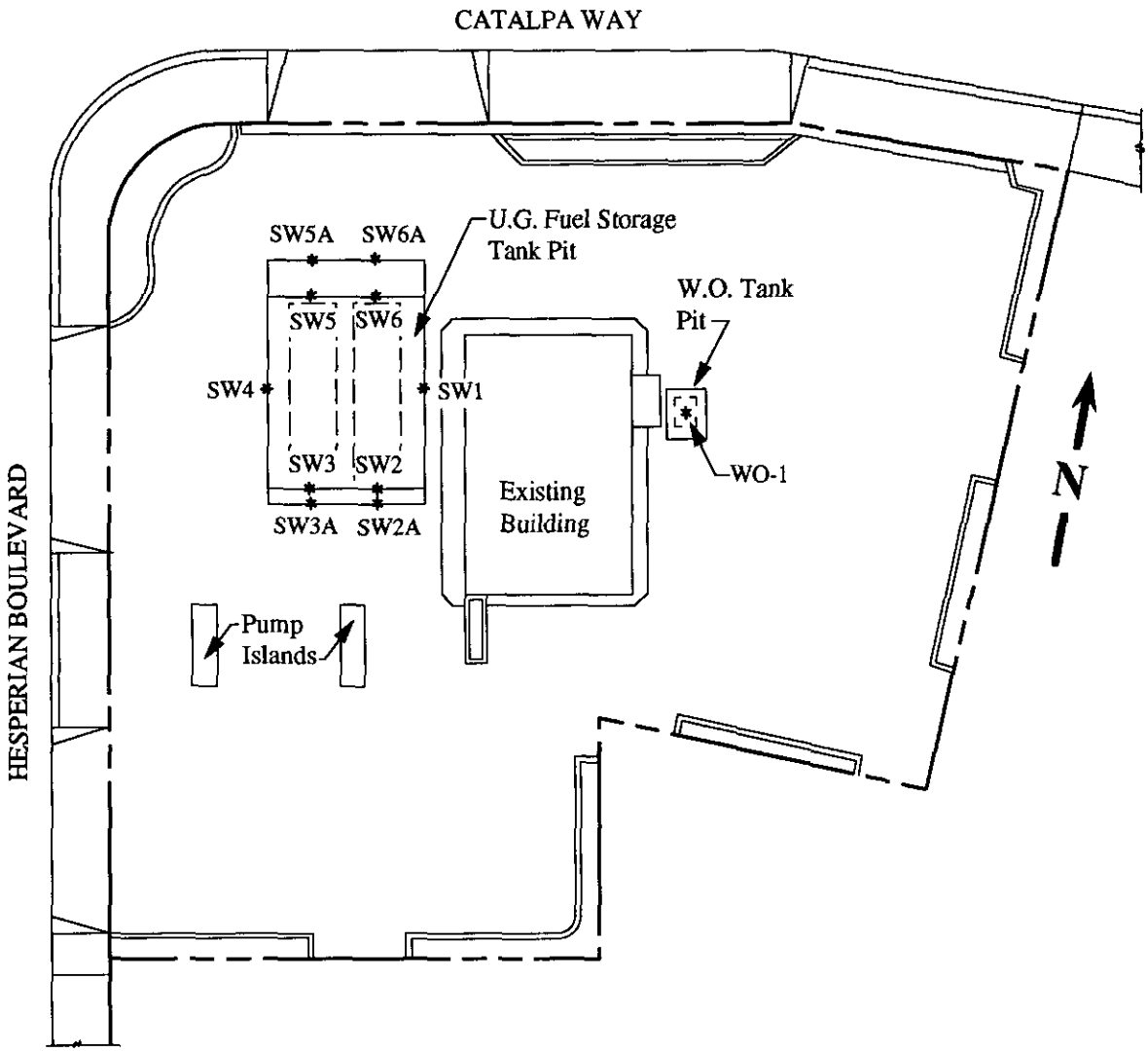

SITE PLAN

Figure 2

LEGEND

* Sample Point Location

0 30 60

Approx. scale feet

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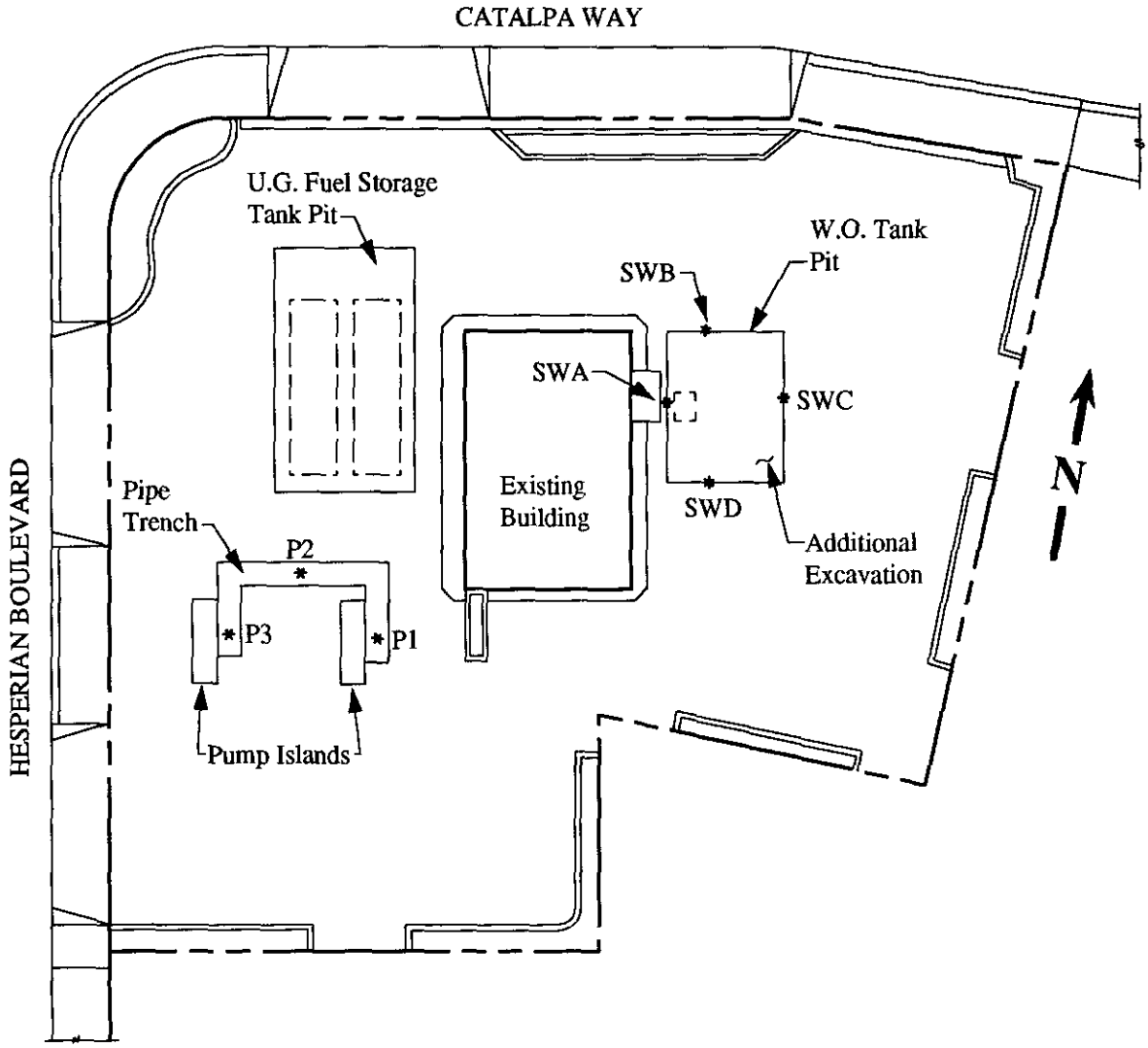

SITE PLAN

Figure 3

LEGEND

* *Sample Point Location*

0 30 60

Approx. scale feet

Unocal Service Station #5487
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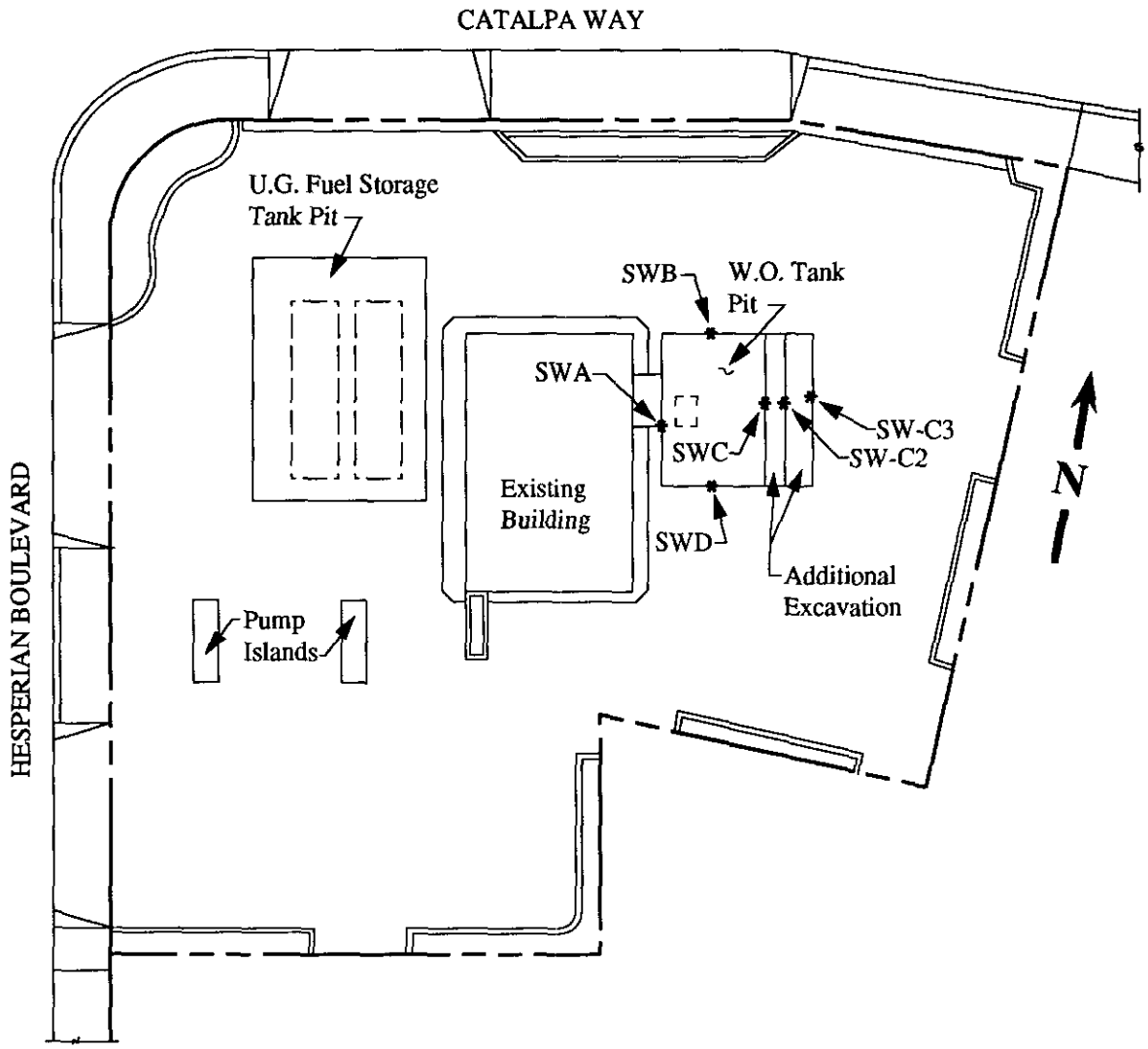

SITE PLAN

Figure 4

LEGEND

* Sample Point Location

0 30 60

Approx. scale feet

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P.O. BOX 996 • BENICIA, CA 94510
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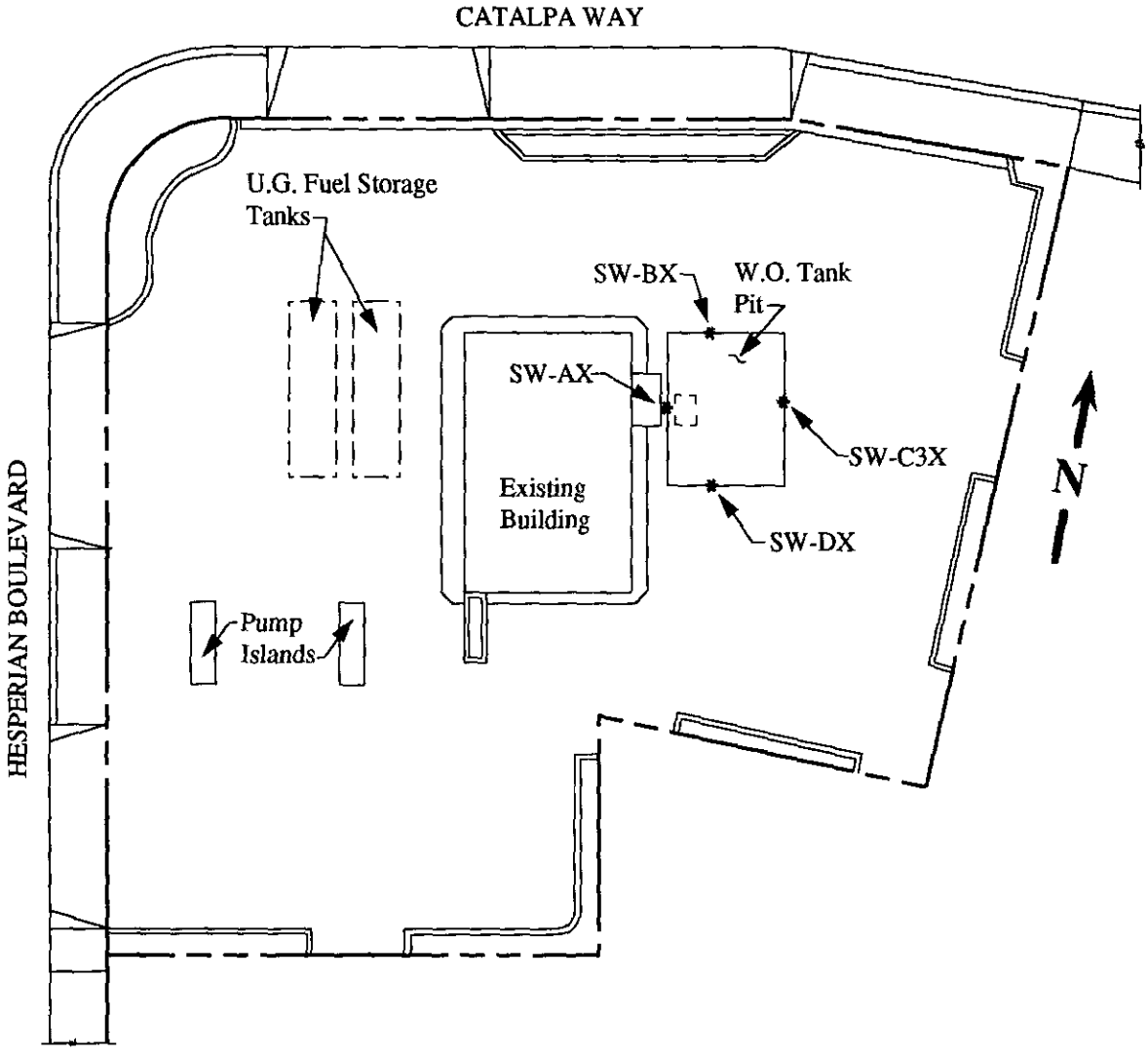

SITE PLAN

Figure 5

LEGEND

* Sample Point Location

0 30 60

Approx. scale feet

Unocal Service Station #5487
28250 Hesperian Boulevard
Hayward, CA

SEQUOIA ANALYTICAL

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

Kaprealian Engineering, Inc.	Client Project ID:	Unocal, Hayward, 28250 Hesperian	Sampled:	Nov 7, 1991
P.O. Box 996	Matrix Descript:	Water	Received:	Nov 7, 1991
Benicia, CA 94510	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Nov 15, 1991
Attention: Mardo Kaprealian, P.E.	First Sample #:	111-0469	Reported:	Nov 19, 1991

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

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons µg/L (ppb)	Benzene µg/L (ppb)	Toluene µg/L (ppb)	Ethyl Benzene µg/L (ppb)	Xylenes µg/L (ppb)
111-0469	MW1	N.D.	N.D.	N.D.	N.D.	N.D.
111-0470	MW2	N.D.	N.D.	N.D.	N.D.	N.D.
111-0471	MW3	N.D.	N.D.	N.D.	N.D.	N.D.
111-0472	MW4	N.D.	N.D.	N.D.	N.D.	N.D.
111-0473	MW5	700	43	1.7	29	24
Method Detection Limits:		**30**	**0.30**	**0.30**	**0.30**	**0.30**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.

SEQUOIA ANALYTICAL

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, Hayward, 28250 Hesperian
QC Sample Group: 1110469-73
Reported: Nov 25, 1991

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
Method:	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020
Analyst:	J.Dinsay	J.Dinsay	J.Dinsay	J.Dinsay
Reporting Units:	ug/L	ug/L	ug/L	ug/L
Date Analyzed:	Nov 15, 1991	Nov 15, 1991	Nov 15, 1991	Nov 15, 1991
QC Sample #:	Matrix Blank	Matrix Blank	Matrix Blank	Matrix Blank
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10	30
Conc. Matrix Spike:	11	11	11	32.8
Matrix Spike % Recovery:	110	110	110	109
Conc. Matrix Spike Dup.:	11	11	11	32.2
Matrix Spike Duplicate % Recovery:	110	110	110	107
Relative % Difference:	*0*	*0*	*0*	1.8

Laboratory blank contained the following analytes: None Detected

SEQUOIA ANALYTICAL

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

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Attention: Mardo Kaprealian, P.E.

Client Project ID: Unocal, Hayward, 28250 Hesperian
QC Sample Group: 1110469-73
Reported: Nov 25, 1991

QUALITY CONTROL DATA REPORT

SURROGATE

Method:	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020
Analyst:	J.Dinsay	J.Dinsay	J.Dinsay	J.Dinsay	J.Dinsay	J.Dinsay
Reporting Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Date Analyzed:	Nov 15, 1991	Nov 15, 1991	Nov 15, 1991	Nov 15, 1991	Nov 15, 1991	Nov 15, 1991
Sample #:	111-0469	111-0470	111-0471	111-0472	111-0473	Blank
Surrogate % Recovery:	99	99	98	99	96	98

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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: Ray (KEI)
WITNESSING AGENCY:
SITE NAME & ADDRESS: UNOCAL HAYWARD 28250 HESPERIAN

ANALYSES REQUESTED: TPHG; BTXE
TURN AROUND TIME: REGULAR

SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	TPHG	BTXE	REMARKS
MW1	11.7			X	X		2	JOB	X	X	1110469 AB
MW2	"			X	X		4		X	X	0470
MW3	"			X	X		4		X	X	0471
MW4	"			X	X		4		X	X	0472
MW5	"			X	X		4		X	X	0473

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Ray (KEI)	11-7-91	[illegible] 11/7 4 05pm
[signature]	11-8-91/230pm	[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? [signature]
2. Will samples remain refrigerated until analyzed? [signature]
3. Did any samples received for analysis have head space? NO
4. Were samples in appropriate containers and properly packaged? [signature]

[signature] Signature — [signature] Title — 11/7/91 Date