



KAPREALIAN ENGINEERING, INC.
Consulting Engineers

P.O. BOX 996 • BENICIA, CA 94510
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APPROVED
APR 27 1990
RONALD E. BOCK

KEI-J89-1106.R6
April 13, 1990

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

Attention: Mr. Ron Bock

RE: Follow-up Soil Sampling Report
Unocal Service Station #3072
2445 Castro Valley Blvd.
Castro Valley, California

RECEIVED

10:32 am, Apr 23, 2009

Alameda County
Environmental Health

Dear Mr. Bock:

This follow-up report summarizes the additional soil sampling performed by Kaprealian Engineering, Inc. (KEI) at the referenced site. All work was performed in compliance with the guidelines established by the Regional Water Quality Control Board (RWQCB), and the Alameda County Health Care Services (ACHCS).

The scope of the work performed by KEI consisted of the following:

Coordination with regulatory agencies.

Collection of soil samples from the sidewalls of the waste oil tank pit.

Delivery of samples, including proper Chain of Custody documentation, to a certified analytical laboratory.

Technical review of field data and laboratory analyses, and preparation of this report.

SITE DESCRIPTION AND BACKGROUND

The subject site is presently used as a gasoline station. The service station site occupies the southwest corner at the intersection of Castro Valley Boulevard and Strobridge Avenue in Castro Valley, California. A Site Location Map and five Site Plans are attached.

On November 14, 1989, KEI collected soil samples following the removal of three fuel storage tanks and one waste oil tank at the referenced site. The soil samples under the fuel storage tanks were collected at a depth of 13.5 feet. The soil sample under the waste oil tank was collected at a depth of 10.5 feet. All soil samples were analyzed by Sequoia Analytical Laboratory in Redwood City, California. The samples under the fuel storage tanks were analyzed for total petroleum hydrocarbons (TPH) as gasoline, and benzene, toluene, xylenes and ethylbenzene (BTX&E). In addition, the two samples from under the diesel tank were analyzed for TPH as diesel. Analytical results showed TPH as gasoline ranging from non-detectable to 11 ppm, with non-detectable BTX&E concentrations in each case. TPH as diesel concentrations were non-detectable for the two diesel tank bottom samples. The soil sample from under the waste oil tank was analyzed for TPH as gasoline, BTX&E, TPH as diesel, TOG, EPA method 8010, 8270 compounds, and the metals cadmium, chromium, lead and zinc. Laboratory analyses showed TPH as gasoline at 5.9 ppm, metals ranging from non-detectable to 45 ppm, 55 ppb of 1,1-dichloroethene, and non-detectable levels of all other constituents analyzed.

On November 16, 1989, KEI collected six sidewall soil samples, designated as SW1 through SW6, and a water sample, designated as W1, from the fuel tank pit. The tank pit water level was measured to be 11.5 feet below the ground surface. The sidewall soil samples were collected approximately 6 to 12-inches above the tank pit water level. All samples were analyzed for TPH as gasoline and BTX&E. Three of the six sidewall soil samples (labeled SW2, SW3 and SW4) and the water sample were also analyzed for TPH as diesel. Laboratory analyses of the soil samples showed TPH as gasoline ranging from non-detectable to 29 ppm for four of the six samples, with samples SW1 and SW4 showing 140 and 160 ppm, respectively. TPH as diesel levels were non-detectable for two of the sidewall samples with sample SW4 showing 24 ppm. Analyses of the water sample showed 11,000 ppb TPH as diesel, 26,000 ppb TPH as gasoline, and 670 ppb benzene. Soil sample point locations are shown on the attached Site Plan, Figure 1. Laboratory results are summarized in Tables 1 and 2.

On November 28, 1989, KEI returned to the site to meet with the representative of the Alameda County Health Care Services (ACHCS) to clarify ACHCS guidelines as applied to the subject site for fuel tank pit excavation and sampling. In response to the meeting, KEI submitted a Phase I work plan (KEI-P89-1106.P1) dated November 30, 1989, to define the extent of contamination in the vicinity of the tank pit. The work plan was approved by the ACHCS in a letter dated December 8, 1989.

On December 22, 1989, KEI returned to the site after further excavation to collect additional sidewall soil samples from the fuel tank pit. Soil was excavated from the north, east and south sides of the pit. Sidewall soil samples were collected at depths of approximately 9 or 11 feet, and analyzed on-site by Mobile Chem Labs, Inc., of Lafayette, California, a state-certified mobile laboratory. After excavation, TPH as gasoline was detected at concentrations of 1,500 and 1,900 ppm on the northerly wall of the pit, at concentrations ranging from 3.0 to 1,700 ppm on the easterly wall, and at 410 ppm on the southerly wall. Results of the laboratory analyses are summarized in Table 3. The additional areas excavated and sample point locations are as shown on the attached Site Plan, Figure 2.

On January 18 and 19, 1990, three monitoring wells were drilled at the site in order to establish ground water flow direction. Water level data acquired indicate ground water flows generally in the south-southeasterly direction. Well locations, ground water elevations, and the ground water flow direction on January 24, 1990, are shown on the attached Site Plan, Figure 3.

On February 14, 1990, three soil samples, labeled P1, P2 and P3, were collected from the product pipe trenches at depths ranging from 2.5 to 4.0 feet. Samples were collected using a driven tube-type sampler. Sample locations are as shown on the attached Site Plan, Figure 4. Soil sampling was witnessed by Mr. Scott Seery of the ACHCS. Analyses of the pipe trench samples were performed by Sequoia Analytical Laboratory in Redwood City, California. Analytical results indicate levels of TPH as gasoline ranging from 6.0 to 87 ppm. The analytical results are summarized in Table 4.

FIELD ACTIVITIES

KEI's recent field work was conducted on March 9, 1990, when three sidewall soil samples, labeled SWB, SWC and SWD, were collected from the sidewalls of the waste oil tank at depths of 8 to 9 feet. The waste oil tank pit had been excavated to a depth of 11 to 12 feet. The undisturbed samples were collected from bulk material excavated by backhoe. Samples were placed in clean, two-inch diameter brass tubes, sealed with aluminum foil, plastic caps and tape, and stored in a cooled ice chest for delivery to a certified laboratory. Sample locations are as shown on the attached Site Plan, Figure 5.

SUBSURFACE CONDITIONS

The subsurface soils exposed in the excavation of the waste oil tank consisted of silty clay to a depth of about 5 to 6 feet, and in turn underlain by interbedded shale and sandstone bedrock, highly to moderately weathered and locally clayey.

ANALYTICAL RESULTS

All samples were analyzed by Sequoia Analytical Laboratory in Redwood City, California and were accompanied by properly executed Chain of Custody documentation. The soil samples were analyzed for 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, TPH as diesel using EPA method 3550 in conjunction with modified 8015, total oil and grease (TOG) using EPA method 418.1, and halogenated volatile organics using EPA methods 5030 and 8010.

Analytical results of the soil samples (SWB, SWC and SWD), collected from sidewalls of the waste oil tank pit, indicate non-detectable levels of TOG and all EPA 8010 constituents for each of the three samples. Laboratory analyses indicate non-detectable levels of TPH as gasoline and BTX&E for samples SWC and SWD, while SWB showed 37 ppm TPH as gasoline with 0.10 ppm benzene. TPH as diesel levels were non-detectable for sample SWC, with both SWB and SWD less than 10 ppm. The analytical results are summarized in Table 5.

DISCUSSION AND RECOMMENDATIONS

The recommended additional work outlined in KEI's work plan (KEI-P89-1106.P2) dated January 8, 1990, remains unchanged. KEI has recently obtained an encroachment permit from Caltrans for the installation of exploratory borings within Castro Valley Blvd. and Strobridge Avenue, and this work is presently scheduled for the week of April 23, 1990.

DISTRIBUTION

A copy of this report should be sent to Mr. Scott Seery of the ACHCS, and to the RWQCB, San Francisco Bay Region.

LIMITATIONS

Soil deposits and rock formations may vary in thickness, lithology, saturation, strength and other properties across any site. In addition, environmental changes, either naturally-occurring or artificially-induced, may cause changes in 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.

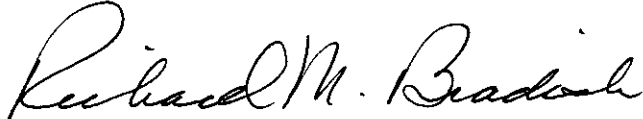
The results of this study are based on the data obtained from the field and laboratory analyses obtained from a state certified laboratory. We have analyzed this data using what we believe to be currently applicable engineering techniques and principles in the Northern California region. We make no warranty, 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.

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April 13, 1990
Page 6

Should you have any questions regarding this report, please feel free to call me at (707) 746-6915.

Sincerely,

Kaprealian Engineering, Inc.



Richard M. Bradish
Staff Engineer



Don R. Braun
Certified Engineering Geologist

License No. 1310
Exp. Date 6/30/90



Mardo Kaprealian
President

jad

Attachments: Tables 1, 2, 3, 4 & 5
Location Map
Site Plans - Figures 1, 2, 3, 4 & 5
Laboratory Analyses
Chain of Custody documentation

KEI-J89-1106.R6
 April 13, 1990

TABLE 1

SUMMARY OF LABORATORY ANALYSES
 SOIL

(Samples collected on November 14 & 16, 1989)

<u>Sample</u>	<u>Depth (feet)</u>	<u>TPH as Diesel</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Xylenes</u>	<u>Ethyl- benzene</u>
A1	13.5	ND	2.4	ND	ND	ND	ND
A2	13.5	ND	ND	ND	ND	ND	ND
B1	13.5	--	1.9	ND	ND	ND	ND
B2	13.5	--	11	ND	ND	ND	ND
C1	13.5	--	1.5	ND	ND	ND	ND
C2	13.5	--	7.5	ND	ND	ND	ND
SW1	10.5	--	140	0.31	0.12	3.0	0.88
SW2	10.5	ND	ND	ND	ND	ND	ND
SW3	10.5	ND	ND	ND	ND	ND	ND
SW4	9.5	24	160	0.33	6.4	30	9.4
SW5	9.5	--	3.5	0.06	0.27	0.76	0.19
SW6	10	--	29	0.12	0.21	2.0	0.58
WO1(11)*	11	ND	5.9	ND	ND	ND	ND
Detection Limits		1.0	1.0	0.05	0.1	0.1	0.1

* TOG and all 8270 constituents were non-detectable. All 8010 constituents were non-detectable except 1,1-dichloroethene at 55 ppb. Metals concentrations were as follows: cadmium 2.5 ppm, chromium 39 ppm, lead 1.1 ppm, and zinc 45 ppm.

ND = Non-detectable.

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

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April 13, 1990

TABLE 2

SUMMARY OF LABORATORY ANALYSES
WATER

(Sample collected on November 16, 1989)

<u>Sample #</u>	<u>TPH as Diesel</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Xylenes</u>	<u>Ethyl-benzene</u>
W1	11,000	26,000	670	1,100	9,100	120
Detection Limits	50.0	30.0	0.3	0.3	0.3	0.3

ND = Non-detectable.

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

KEI-J89-1106.R6
April 13, 1990

TABLE 3

SUMMARY OF LABORATORY ANALYSES
SOIL

(Samples collected on December 22, 1989)

<u>Sample</u>	<u>Depth (feet)</u>	<u>TPH as Diesel</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Xylenes</u>	<u>Ethyl- benzene</u>
SW1(17)	11	ND	1,900	14	24	120	28
SW2(17)	11	ND	1,500	17	29	92	23
SW7	9	ND	1,700	16	33	110	26
SW8	9	ND	200	2.6	0.9	7.7	5.0
SW3(13)	9	ND	690	11	11	28	11
SW9	9	ND	3.0	0.2	0.1	0.1	ND
SW10	9	ND	500	4.0	5.9	22	6.9
SW4(11)	9	ND	410	2.7	3.9	19	3.8
Detection Limits		1.0	1.0	0.05	0.1	0.1	0.1

ND = Non-detectable.

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

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TABLE 4

SUMMARY OF LABORATORY ANALYSES

(Samples collected on February 14, 1990)

<u>Sample</u>	<u>Depth (feet)</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Xylenes</u>	<u>Ethylbenzene</u>
P1	4.0	87	0.33	0.17	10	2.3
P2	2.5	6.0	0.23	ND	0.33	0.11
P3	3.0	10	0.47	0.11	1.1	0.32
Detection Limits		1.0	0.05	0.1	0.1	0.1

ND = Non-detectable.

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

KEI-J89-1106.R6
April 13, 1990

TABLE 5

SUMMARY OF LABORATORY ANALYSES
SOIL

(Samples collected on March 9, 1990)

<u>Sample</u>	<u>Depth (feet)</u>	<u>TPH as Diesel</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Xylenes</u>	<u>Ethyl- benzene</u>
SWB*	8.0	<10	37	0.10	0.10	0.74	0.25
SWC*	9.0	ND	ND	ND	ND	ND	ND
SWD*	9.0	<10	ND	ND	ND	ND	ND
Detection Limits		1.0	1.0	0.05	0.1	0.1	0.1

* TOG levels and concentrations of all EPA 8010 constituents were non-detectable.

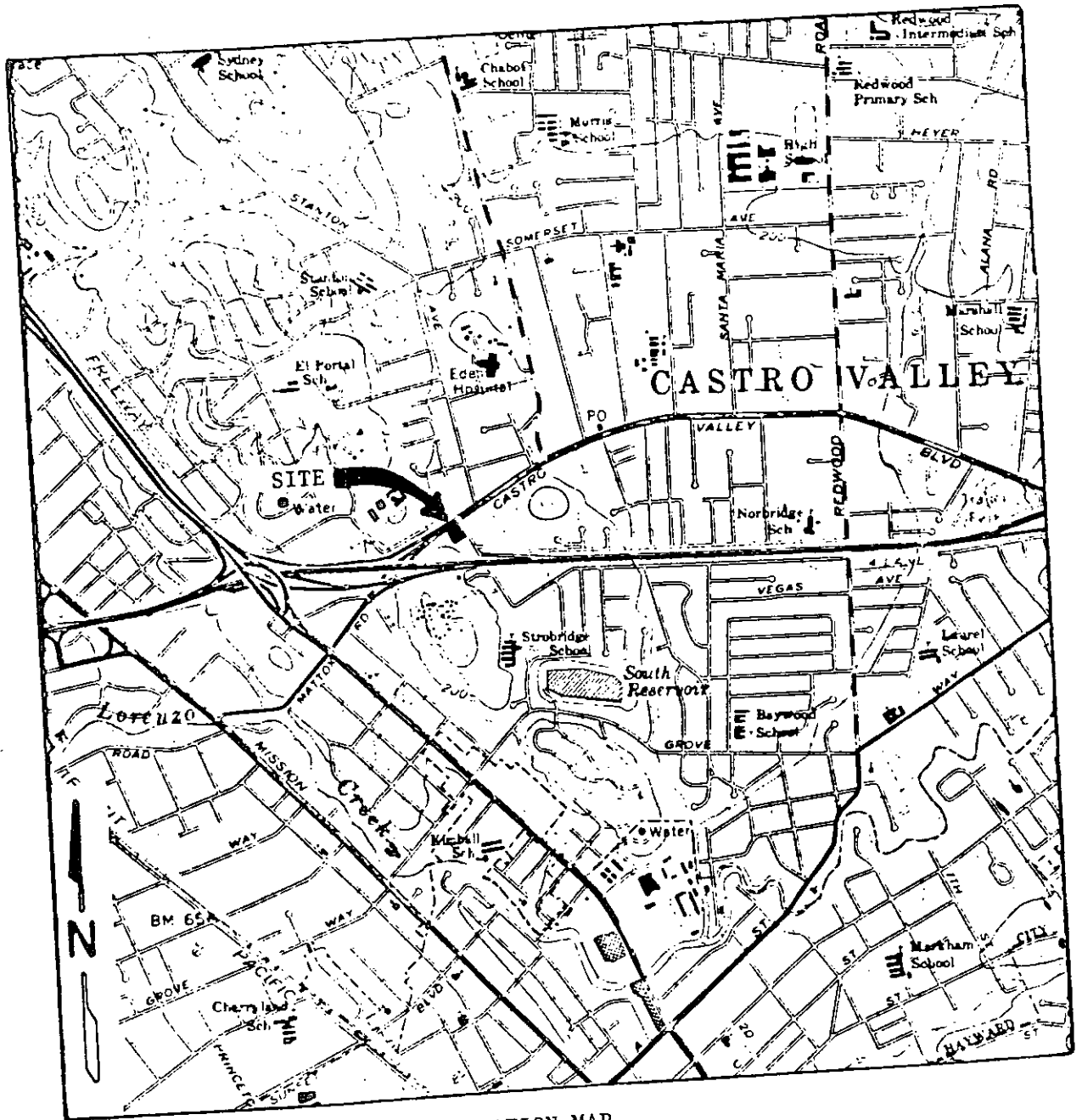
ND = Non-detectable.

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



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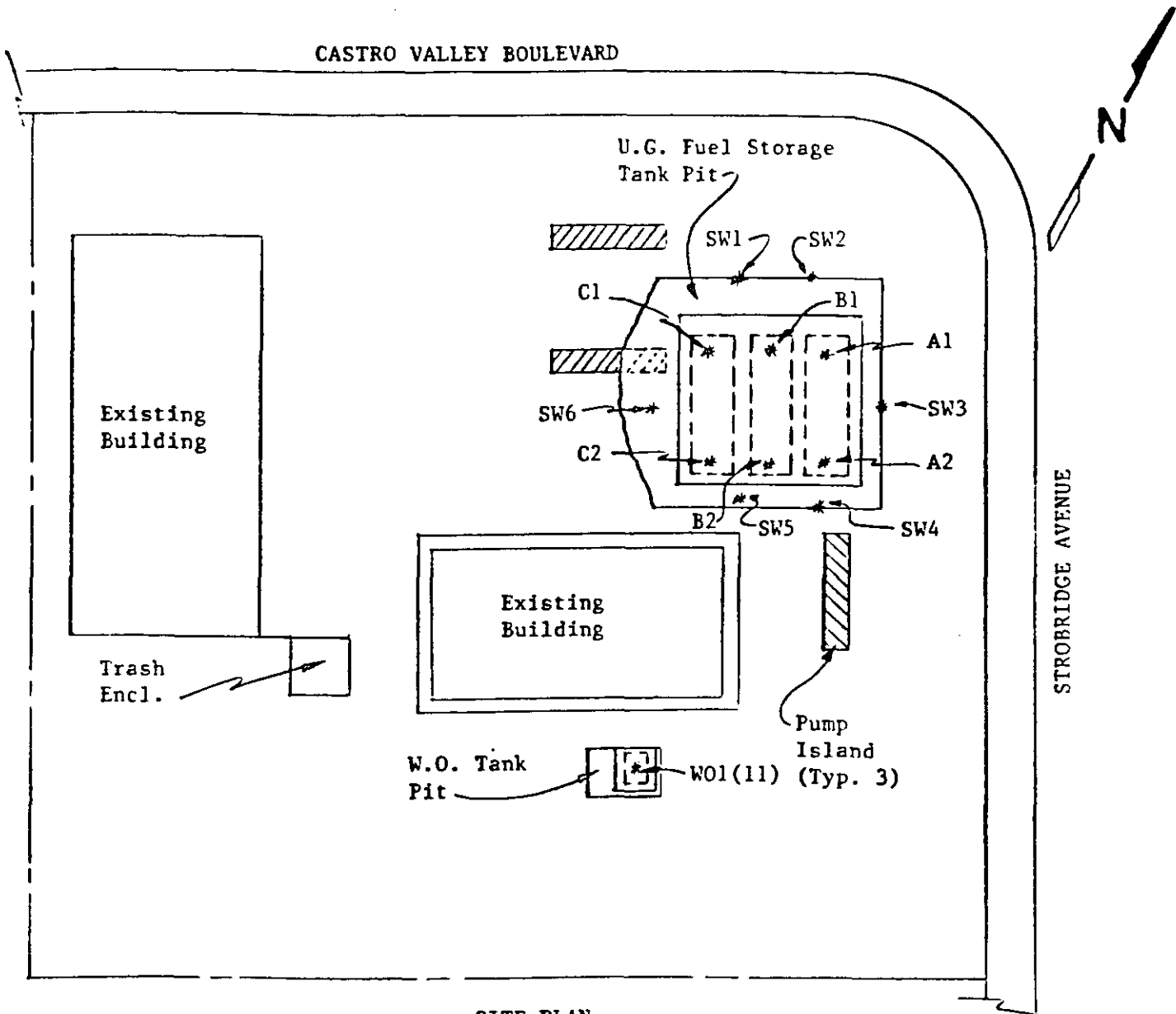
LOCATION MAP

Unocal Service Station #3072
2445 Castro Valley Blvd.
Castro Valley, California

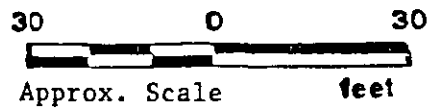


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SITE PLAN
Figure 1.



LEGEND

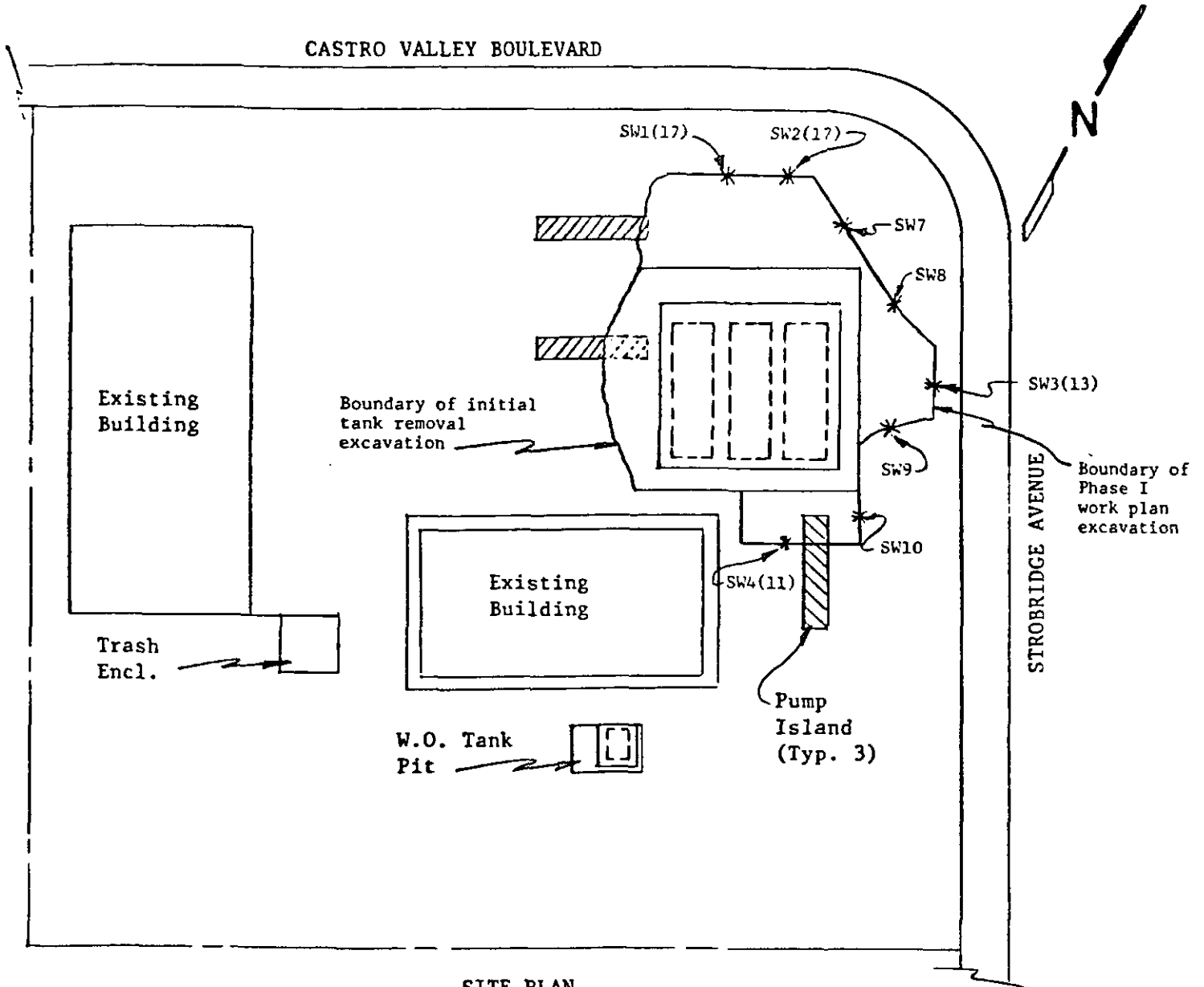
* Sample Point Location

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

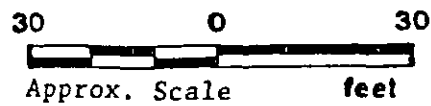


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SITE PLAN
Figure 2



LEGEND

* Sample Point Location

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

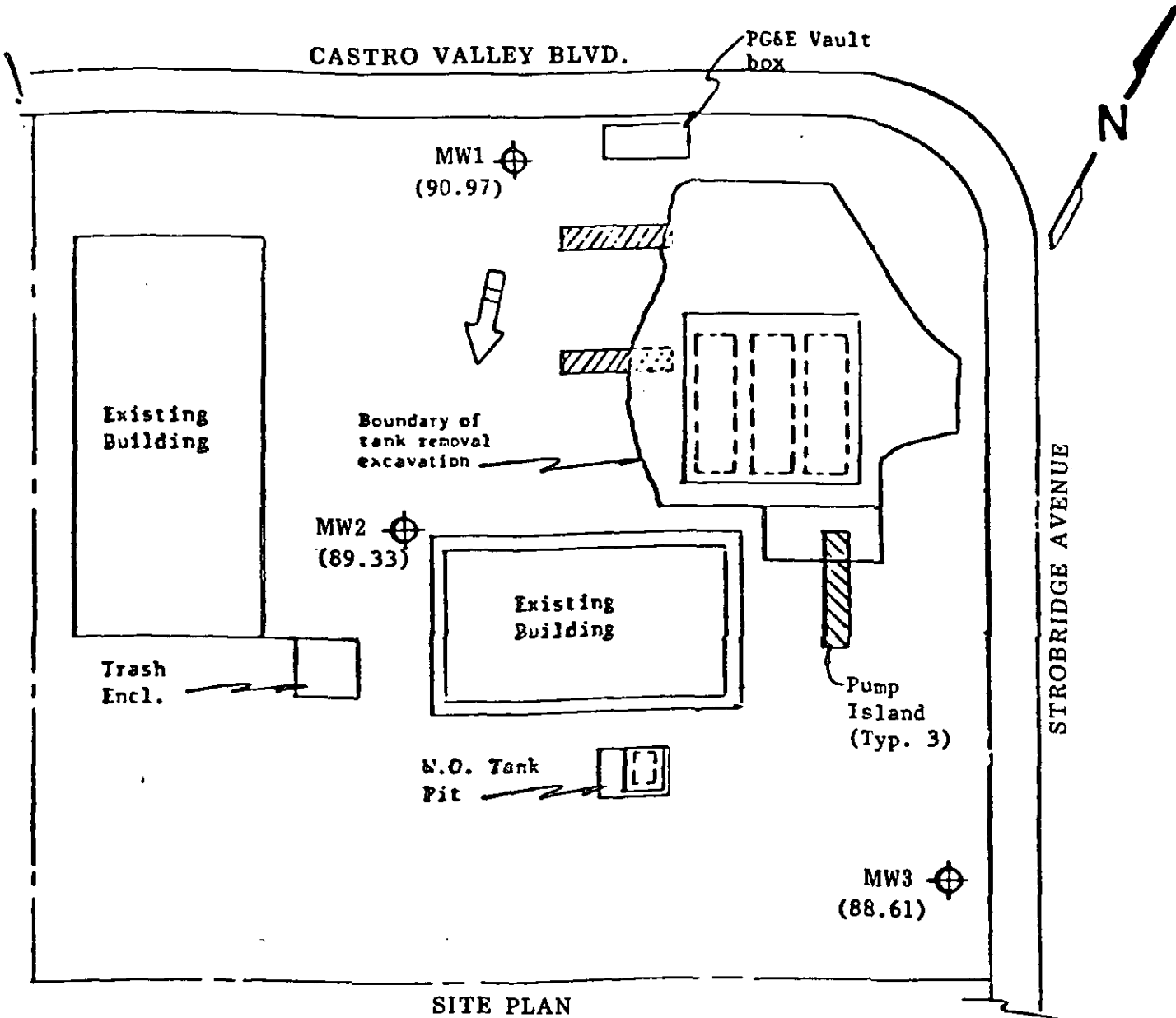


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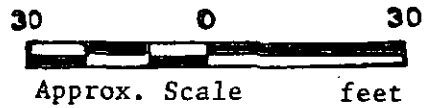
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SITE PLAN
Figure 3

LEGEND

-  Monitoring Well
- () Ground water elevation on 1/24/90.
Elevation at top of MW1 well cover
assumed 100.00' as datum.



 Direction of ground water flow

Unocal Service Station #3072
2445 Castro Valley Blvd.
Castro Valley, California

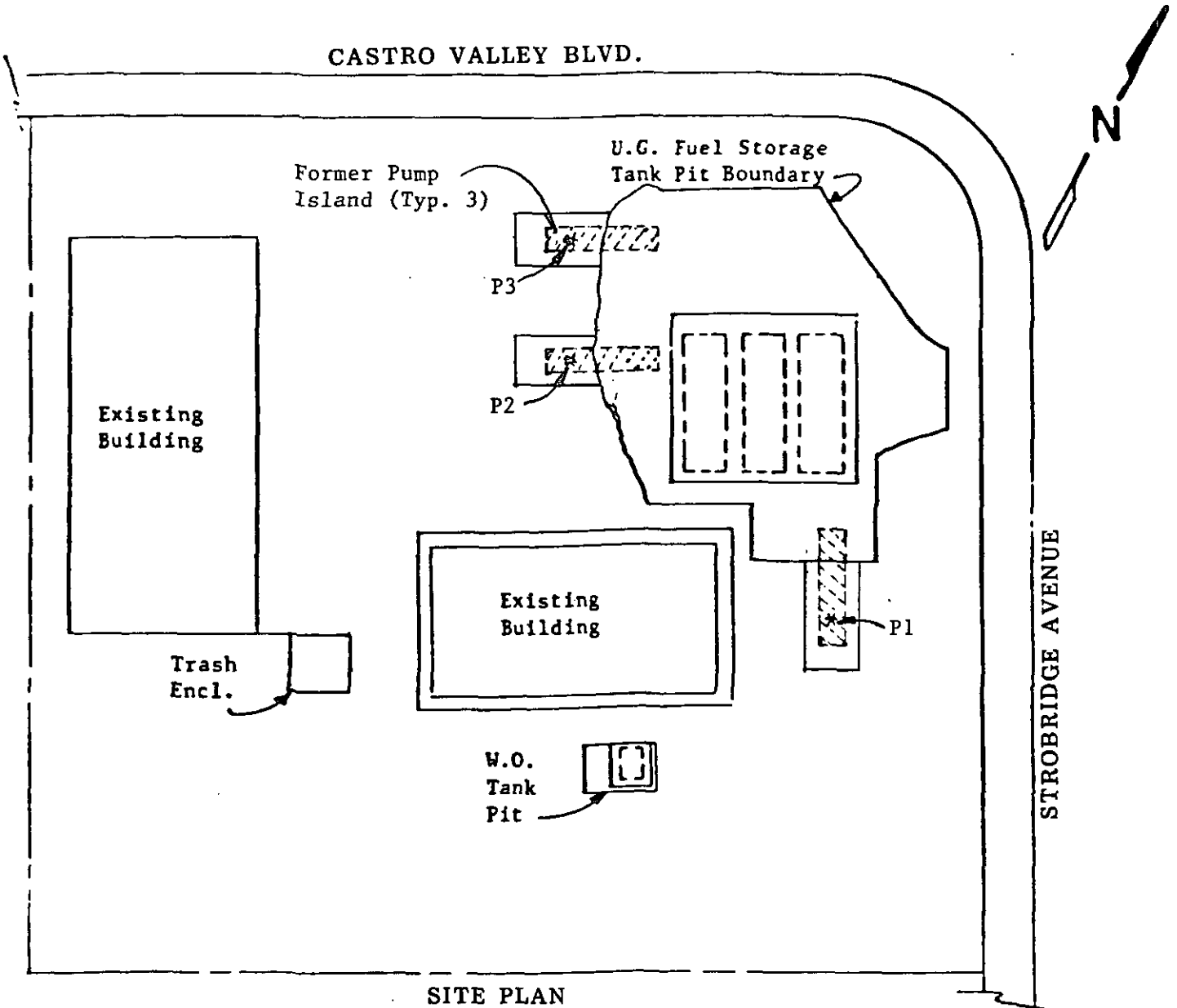


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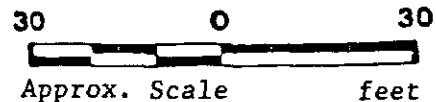


SITE PLAN

Figure 4

LEGEND

* Sample Point Location

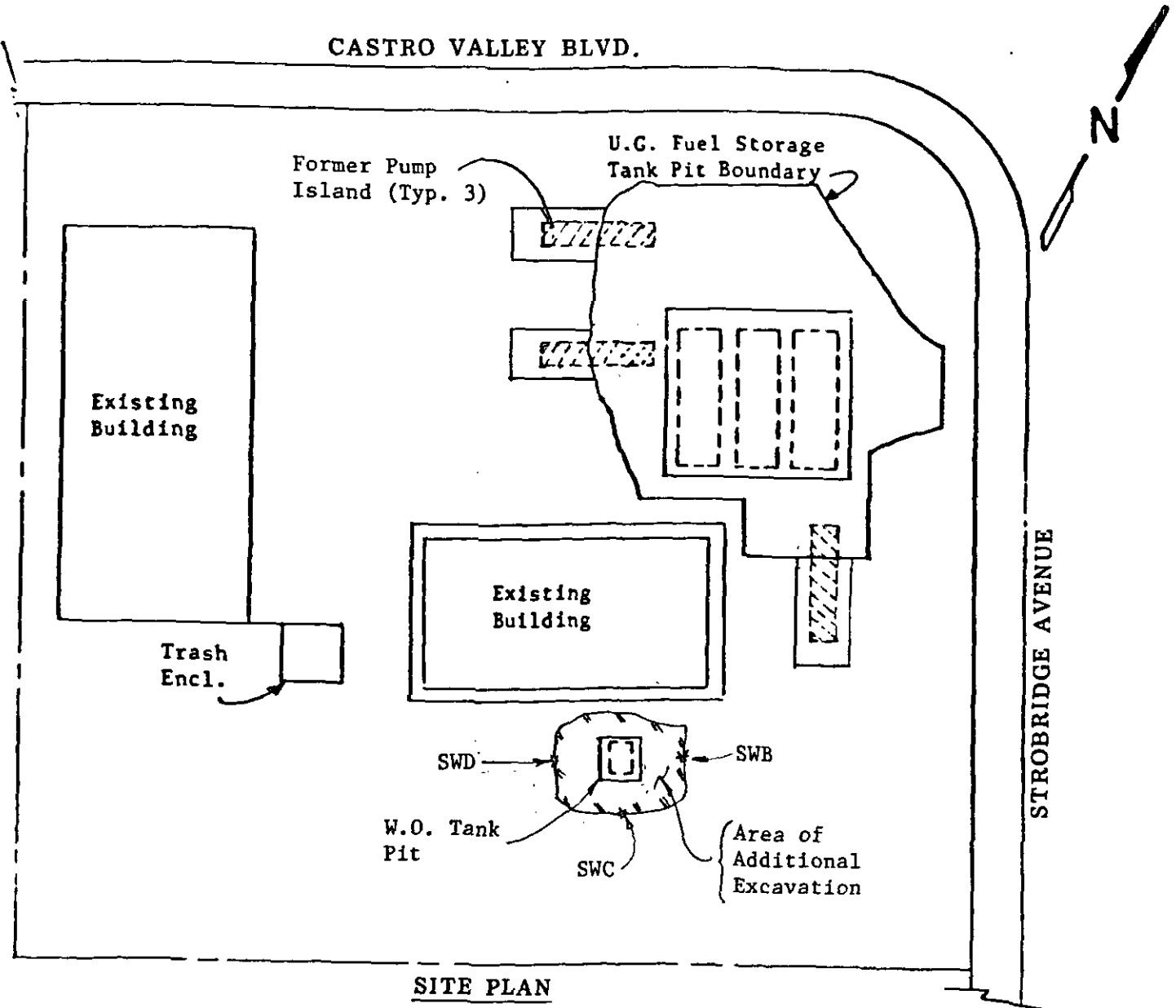


Unocal Service Station # 3072
2445 Castro Valley Blvd.
Castro Valley, California



KAPREALIAN ENGINEERING, INC.
Consulting Engineers

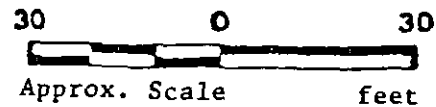
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SITE PLAN
Figure 5

LEGEND

* Sample Point Location



Unocal Service Station # 3072
2445 Castro Valley Blvd.
Castro Valley, California



SEQUOIA ANALYTICAL

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

Kaprealian Engineering, Inc. P.O. Box 996 Benicia, CA 94510 Attention: Mardo Kaprealian, P.E.	Client Project ID: Unocal #3072, Castro Valley, Matrix Descript: Soil 2445 Castro Valley Blvd Analysis Method: EPA 5030/8015/8020 First Sample #: 003-1478	Sampled: Mar 9, 1990 Received: relogged 3/15 Analyzed: Mar 16, 1990 Reported: Mar 16, 1990
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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)
003-1478	SWB	37	0.10	0.10	0.25	0.74
003-1479	SWC	N.D.	N.D.	N.D.	N.D.	N.D.
003-1480	SWD	N.D.	N.D.	N.D.	N.D.	N.D.

Detection Limits:

1.0

0.050

0.10

0.10

0.10

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
Project Manager

31478.KEI <1>



SEQUOIA ANALYTICAL

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Kaprealian Engineering, Inc. P.O. Box 996 Benicia, CA 94510 Attention: Mardo Kaprealian, P.E.	Client Project ID: Unocal #3072, Castro Valley, Sample Descript: Soil, SWB Castro Valley Blvd Analysis Method: EPA 5030/8010 Lab Number: 003-1478	Sampled: Mar 9, 1990 Received: relogged 3/15 Analyzed: Mar 15, 1990 Reported: Mar 16, 1990
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HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit $\mu\text{g}/\text{kg}$	Sample Results $\mu\text{g}/\text{kg}$
Bromodichloromethane.....	5.0	N.D.
Bromoform.....	5.0	N.D.
Bromomethane.....	5.0	N.D.
Carbon tetrachloride.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
Chloroethane.....	25	N.D.
2-Chloroethylvinyl ether.....	5.0	N.D.
Chloroform.....	5.0	N.D.
Chloromethane.....	5.0	N.D.
Dibromochloromethane.....	5.0	N.D.
1,2-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,1-Dichloroethane.....	5.0	N.D.
1,2-Dichloroethane.....	5.0	N.D.
1,1-Dichloroethene.....	5.0	N.D.
Total 1,2-Dichloroethene.....	5.0	N.D.
1,2-Dichloropropane.....	5.0	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	10	N.D.
1,1,2,2-Tetrachloroethane.....	5.0	N.D.
Tetrachloroethene.....	5.0	N.D.
1,1,1-Trichloroethane.....	5.0	N.D.
1,1,2-Trichloroethane.....	5.0	N.D.
Trichloroethene.....	5.0	N.D.
Trichlorofluoromethane.....	5.0	N.D.
Vinyl chloride.....	10	N.D.

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

SEQUOIA ANALYTICAL

Belinda C. Vega
Project Manager



SEQUOIA ANALYTICAL

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

Client Project ID: Unocal #3072, Castro Valley,
Sample Descript: Soil, SWC 2445 Castro Valley Blvd
Analysis Method: EPA 5030/8010
Lab Number: 003-1479

Sampled: Mar 9, 1990
Received: relogged 3/15
Analyzed: Mar 15, 1990
Reported: Mar 16, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	5.0	N.D.
Bromoform.....	5.0	N.D.
Bromomethane.....	5.0	N.D.
Carbon tetrachloride.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
Chloroethane.....	25	N.D.
2-Chloroethylvinyl ether.....	5.0	N.D.
Chloroform.....	5.0	N.D.
Chloromethane.....	5.0	N.D.
Dibromochloromethane.....	5.0	N.D.
1,2-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,1-Dichloroethane.....	5.0	N.D.
1,2-Dichloroethane.....	5.0	N.D.
1,1-Dichloroethene.....	5.0	N.D.
Total 1,2-Dichloroethene.....	5.0	N.D.
1,2-Dichloropropane.....	5.0	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	10	N.D.
1,1,2,2-Tetrachloroethane.....	5.0	N.D.
Tetrachloroethene.....	5.0	N.D.
1,1,1-Trichloroethane.....	5.0	N.D.
1,1,2-Trichloroethane.....	5.0	N.D.
Trichloroethene.....	5.0	N.D.
Trichlorofluoromethane.....	5.0	N.D.
Vinyl chloride.....	10	N.D.

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

SEQUOIA ANALYTICAL

Belinda C. Vega
Project Manager



SEQUOIA ANALYTICAL

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Kaprealian Engineering, Inc.	Client Project ID: Unocal #3072, Castro Valley,	Sampled: Mar 9, 1990
P.O. Box 996	Sample Descript: Soil, SWD 2445 Castro Valley Blvd	Received: relogged 3/15
Benicia, CA 94510	Analysis Method: EPA 5030/8010	Analyzed: Mar 15, 1990
Attention: Mardo Kapreallan, P.E.	Lab Number: 003-1480	Reported: Mar 16, 1990

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	5.0	N.D.
Bromoform.....	5.0	N.D.
Bromomethane.....	5.0	N.D.
Carbon tetrachloride.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
Chloroethane.....	25	N.D.
2-Chloroethylvinyl ether.....	5.0	N.D.
Chloroform.....	5.0	N.D.
Chloromethane.....	5.0	N.D.
Dibromochloromethane.....	5.0	N.D.
1,2-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,1-Dichloroethane.....	5.0	N.D.
1,2-Dichloroethane.....	5.0	N.D.
1,1-Dichloroethene.....	5.0	N.D.
Total 1,2-Dichloroethene.....	5.0	N.D.
1,2-Dichloropropane.....	5.0	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	10	N.D.
1,1,2,2-Tetrachloroethane.....	5.0	N.D.
Tetrachloroethene.....	5.0	N.D.
1,1,1-Trichloroethane.....	5.0	N.D.
1,1,2-Trichloroethane.....	5.0	N.D.
Trichloroethene.....	5.0	N.D.
Trichlorofluoromethane.....	5.0	N.D.
Vinyl chloride.....	10	N.D.

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

SEQUOIA ANALYTICAL

Belinda C. Vega
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 #3072, Castro Valley,	Sampled: Mar 9, 1990
P.O. Box 996	Matrix Descript: Soil 2445 Castro Valley Blvd	Received: Mar 12, 1990
Benicia, CA 94510	Analysis Method: EPA 3550/8015	Extracted: Mar 12, 1990
Attention: Mardo Kaprealian, P.E.	First Sample #: 003-1478	Analyzed: Mar 13, 1990
		Reported: Mar 13, 1990

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

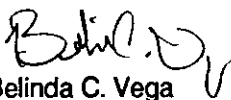
Sample Number	Sample Description	High B.P. Hydrocarbons mg/kg (ppm)
003-1478	SWB	< 10
003-1479	SWC	N.D.
003-1480	SWD	< 10

Detection Limits:

1.0

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL


Belinda C. Vega
Project Manager

31478.KEI <1>



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(415) 364-9600 • FAX (415) 364-9233

Kaprelian Engineering, Inc. P.O. Box 996 Benicia, CA 94510 Attention: Mardo Kaprelian, P.E.	Client Project ID: Unocal #3072, Castro Valley, Matrix Descript: Soil 2445 Castro Valley Blvd Analysis Method: EPA 418.1 (I.R. with clean-up) First Sample #: 003-1478	Sampled: Mar 9, 1990 Received: Mar 12, 1990 Extracted: Mar 13, 1990 Analyzed: Mar 13, 1990 Reported: Mar 13, 1990
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TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Sample Number	Sample Description	Petroleum Oil mg/kg (ppm)
003-1478	SWB	N.D.
003-1479	SWC	N.D.
003-1480	SWD	N.D.

Detection Limits:

50

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

SEQUOIA ANALYTICAL


Belinda C. Vega
Project Manager

31478.KEI <2>



KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

SAMPLER <i>R.M. Bradish</i>		SITE NAME & ADDRESS <i>Unocal # 3072 2445 Castro Valley Blvd Castro Valley, CA</i>				ANALYSES REQUESTED		TURN AROUND TIME: <i>24 Hr</i>
WITNESSING AGENCY						<div style="border: 1px solid black; width: 100px; height: 20px; margin: 0 auto;"></div>		
SAMPLE ID NO.	DATE	TIME	SOIL	WATER	GRAB	NO. OF CONT.	SAMPLING LOCATION	REMARKS
<i>SWB</i>	<i>3-9-90</i>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<i>1</i>	<i>W/O. PIT - SIDEWALKS</i>	<i>0031478</i>
<i>SWC</i>	<i>"</i>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<i>1</i>	<i>" " "</i>	<i>79</i>
<i>SWD</i>	<i>"</i>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<i>1</i>	<i>" " "</i>	<i>80</i>

Relinquished by: (Signature) <i>R.M. Bradish</i>	Date/Time <i>3/12/90 9:00 AM</i>	Received by: (Signature) <i>T. Bolan</i>	The following MUST BE completed by the laboratory accepting samples for analysis: 1. Have all samples received for analysis been stored in ice? <input checked="" type="checkbox"/> 2. Will samples remain refrigerated until analyzed? <input checked="" type="checkbox"/> 3. Did any samples received for analysis have head space? <i>NO</i> 4. Were samples in appropriate containers and properly packaged? <input checked="" type="checkbox"/>
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	
Relinquished by: (Signature) <i>T. Bolan</i>	Date/Time <i>3-12-90 11:15 AM</i>	Received by: (Signature) <i>Will Norman</i>	

Signature: *[Signature]* Title: *SR* Date: *3-17-90*