

KAPREALIAN ENGINEERING
INCORPORATED

July 28, 1992

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

RE: Unocal Service Station #2512
1300 Davis Street
San Leandro, California

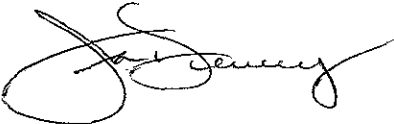
Gentlemen:

Per the request of Mr. Rick Sisk of Unocal Corporation, enclosed please find our report dated July 14, 1992, 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: Rick Sisk, Unocal Corporation



KAPREALIAN ENGINEERING
INCORPORATED

KEI-P88-1204.QR11
July 14, 1992

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

Attention: Mr. Rick Sisk

RE: Quarterly Report
Unocal Service Station #2512
1300 Davis Street
San Leandro, California

Dear Mr. Sisk:

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-P88-1204.P6 dated July 15, 1991. The wells are currently monitored monthly and sampled on a quarterly basis, except for wells MW1 and MW5, which are not currently sampled. This report covers the work performed by KEI from March through May of 1992.

SITE DESCRIPTION AND BACKGROUND

The subject site is presently used as a service station. The site is situated on gently sloping, westward trending topography, and is located approximately two miles east-northeast of the present shoreline of San Francisco Bay. Also, the site is located approximately 2,000 feet south of San Leandro Creek. A Location Map, Site Vicinity Maps, a Well Location Map, and a Site Plan are attached to this report.

Per Unocal Corporation's procedure for potential site divestment locations, KEI's work at the site began on December 30, 1988, when KEI was retained to log exploratory borings. On January 3, 1989, six exploratory borings, designated as EB1 through EB6 on the attached Site Plan, Figure 2, were drilled at the site. The six borings were drilled to depths ranging from 26.5 to 30 feet below grade, and ground water was encountered at depths ranging from 25 to 26.5 feet beneath the surface.

Soil and water samples were analyzed by Sequoia Analytical Laboratory in Redwood City, California. Soil and water samples collected from borings EB2 through EB6 were analyzed for total petroleum hydrocarbons (TPH) as gasoline, and benzene, toluene, xylenes, and ethylbenzene (BTX&E). Soil samples collected from boring EB6 were also analyzed for TPH as diesel and total oil and

grease (TOG). Soil and water samples collected from boring EB1 were analyzed for TPH as diesel, BTX&E, TOG, and EPA method 8010 constituents.

Analytical results of soil samples collected from borings EB1 through EB6 indicated levels of TPH as gasoline ranging from non-detectable to 73 ppm. Benzene was detected only in samples EB5(20) and EB6(15) at concentrations of 0.12 ppm and 0.065 ppm, respectively. Analytical results of soil samples collected from boring EB6 indicated levels of TPH as diesel ranging from 3 ppm to 160 ppm, and levels of TOG ranging from 130 ppm to 7,800 ppm. Analytical results of the water samples collected from borings EB2, EB3, and EB4 indicated non-detectable levels of TPH as gasoline. Analytical results of the water samples collected from borings EB5 and EB6 indicated levels of TPH as gasoline at concentrations of 340 ppb and 1,500 ppb, respectively. Benzene was detected in water samples collected from borings EB2 and EB6 at concentrations of 8.2 ppb and 1.5 ppb, respectively. The results of the soil analyses are summarized in Table 3, and the results of the water analyses are summarized in Table 4. Documentation of the exploratory boring installation procedures, sample collection techniques, and the analytical results are presented in KEI's report (KEI-P88-1204.R1) dated February 3, 1989. Based on the results of the exploratory boring investigation, KEI proposed the installation of three monitoring wells.

On April 17, 1989, three two-inch diameter monitoring wells (designated as MW1, MW2, and MW3 on the attached Site Vicinity Map, Figure 1) were installed at the site. The three wells were drilled and completed to total depths of 33 feet below grade. Ground water was encountered at depths ranging from 17.5 to 18.5 feet below grade. The wells were developed on April 24, 1989, and were initially sampled on April 25, 1989.

Water and selected soil samples were analyzed by Sequoia Analytical Laboratory in Redwood City, California, for TPH as gasoline, BTX&E, TPH as diesel, TOG, and EPA method 8010 constituents. Analytical results of the soil samples collected from MW1, MW2, and MW3 indicated levels of TPH as gasoline ranging from non-detectable to 6.2 ppm, levels of TOG ranging from non-detectable to 180 ppm, and non-detectable levels of benzene, TPH as diesel and EPA method 8010 constituents. Analytical results of the water samples collected from MW1, MW2, and MW3 indicated levels of TPH as gasoline ranging from non-detectable to 56 ppb, levels of TPH as diesel ranging from non-detectable to 5,700 ppb, and levels of benzene ranging from non-detectable to 0.35 ppb. The results of the soil analyses are summarized in Table 3, and the results of the water analyses are summarized in Tables 2 and 2a. Documentation of the well installation procedures, sample collection techniques, and the analytical

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results are presented in KEI's report (KEI-P88-1204.R2) dated May 16, 1990.

On May 11, 1989, at KEI's recommendation, the area surrounding exploratory boring EB6 (shown on the attached Site Plan, Figure 2) was excavated. Four soil samples, labeled SWA, SWB, SWC, and SWD, were collected from the sidewalls of the excavation at a depth of approximately 16.5 feet below grade (six inches above the water table). The samples were analyzed for TPH as diesel and TOG. Analytical results of the soil samples indicated levels of TPH as diesel ranging from 16 ppm to 26 ppm, and levels of TOG ranging from 170 ppm to 850 ppm. The results of the soil analyses are summarized in Table 3. Documentation of the excavation investigation procedures, sample collection techniques, and the analytical results are presented in KEI's report (KEI-J88-1204.R4) dated June 15, 1989.

Based on the results of the excavation soil samples, and based on the ground water contamination levels that had been previously detected in the monitoring wells, KEI recommended the installation of three additional monitoring wells.

On August 16, 1989, three additional two-inch diameter monitoring wells (designated as MW4, MW5, and MW6 on the attached Site Vicinity Map, Figure 1) were installed at the site. The new wells were drilled and completed to total depths of 33 feet below grade. Ground water was encountered at depths of approximately 19.8 to 22 feet below grade during drilling. The new wells (MW4, MW5, and MW6) were developed on August 27, 1989, and were initially sampled on August 29, 1989. The existing wells (MW1, MW2, and MW3) were sampled on August 10, 1989.

Water samples from all of the wells, and selected soil samples from the borings for MW4, MW5, and MW6, were analyzed by Sequoia Analytical Laboratory in Redwood City, California, for TPH as gasoline, BTX&E, and TOG. In addition, the water samples were analyzed for TPH as diesel. Analytical results of the soil samples collected from the borings for monitoring wells MW4, MW5, and MW6 indicated non-detectable levels of all constituents analyzed, except for soil sample MW4(5), which showed 3.3 ppm of TPH as gasoline and 0.11 ppm of xylenes, and soil sample MW5(20), which showed 20 ppm of TPH as gasoline. Analytical results of water samples collected from MW1, MW2, MW4, MW5, and MW6 indicated non-detectable levels of TPH as gasoline, benzene, TPH as diesel, and TOG, except for MW4 and MW5, which indicated TPH as diesel at concentrations of 120 ppb and 100 ppb, respectively. Analytical results of the water sample collected from MW3 indicated 3,200 ppb of TPH as gasoline, 73 ppb of benzene, 860 ppb of TPH as diesel, and a non-detectable level of TOG. The results of the soil

analyses are summarized in Table 3, and the results of the water analyses are summarized in Table 2. Documentation of the well installation procedures, sample collection techniques, and the analytical results are presented in KEI's report (KEI-P88-1204.QR1) dated September 27, 1989. Based on the analytical results, KEI recommended the implementation of a monthly monitoring and quarterly sampling program for all existing wells.

A field reconnaissance of the subject site was performed on August 24, 1990, and the reconnaissance revealed the presence of soil borings within the existing asphalt parking area at the adjacent property located southwest of the site (see the attached Site Vicinity Map). KEI reviewed a report prepared by Applied Geosystems (AGS) of San Jose, California, dated April 30, 1990, (AGS #60004-1), documenting this work. Soil and ground water samples were collected from five borings (B1 through B5) on the adjacent property. Analytical results of soil samples indicated non-detectable levels of petroleum hydrocarbons in all samples, except for 200 ppm of TOG and 0.058 ppm of toluene detected at 16 feet in boring B5 (which is located immediately southwest of Unocal's MW3). Also, tetrachloroethene was detected in borings B2, B3, and B4 at depths of 15 to 17.5 feet below grade at concentrations ranging from 0.0052 ppm to 0.0460 ppm. TPH as gasoline was detected in water samples collected from borings B2 and B3 at levels of 220 ppb and 50 ppb, respectively; these borings are located near a former dry cleaning operation (see the attached Site Vicinity Map). Also, tetrachloroethene (PCE) was detected in the water samples from all five borings at levels ranging from 2.2 ppb to 540 ppb, with the greatest concentrations obtained from borings B2, B3, and B4 (which are located near the former dry cleaning operation).

Based on a site inspection conducted on December 27, 1990, a well (MW-DC) is present near the former dry cleaner operation (see the attached Site Vicinity Map, Figure 1). Communication with Unocal Corporation on January 2, 1991, indicated that this well was not installed at the request of Unocal.

A follow-up site visit was conducted by KEI during March of 1991 in an attempt to determine the well owner. None of the adjacent property owners or tenants were aware of the presence of the well and/or the owner of the well. KEI subsequently reviewed a report, titled "Report of Subsurface Environmental Conditions" (dated October 9, 1990), which was prepared by Hageman-Schenk, Inc. (HSI) for the current property owner (1335 to 1370 Davis Street).

Investigations conducted by HSI indicate that the well was apparently a former water supply well for the dry cleaning business located at 1370 Davis Street. The well is six inches in diameter, extends to a depth of approximately 28 feet below grade, and has a

water level of 18 feet (as of August 1, 1990). At the time of HSI's investigation (June 7, 1990), the well was plugged with soil and other debris to a depth of about 8 feet below grade. Analytical results of a soil sample collected from the soil plug within the well showed 1.2 ppm of tetrachloroethene. After the well was unplugged, a water sample was collected on September 12, 1990, and the sample showed a level of 33 ppb of tetrachloroethene. The soil and water samples were not analyzed for petroleum hydrocarbons. In addition to collecting soil and water samples from the dry cleaners' well, HSI also collected soil samples from six soil borings (A1 through A5 and HS-B-1), located at the northwest perimeter of the dry cleaners building, as well as six soil samples from beneath the concrete floor inside the building. Tetrachloroethene was detected in all soil borings at concentrations ranging from 0.0069 ppm to 0.20 ppm. The October 9, 1990, HSI report concluded that the tetrachloroethene soil and ground water contamination detected throughout the site was probably the result of small-scale spillage of tetrachloroethene over a long period of time. The HSI report recommended the installation of at least three monitoring wells; however, it does not appear that any further subsurface investigations have been conducted at the site as of March of 1991.

In KEI's quarterly report (KEI-P88-1204.QR8) dated July 15, 1991, KEI recommended that no additional ground water samples be collected and analyzed from wells MW1 and MW5, since both wells had shown non-detectable levels of TPH as gasoline and benzene for the four previous quarters of sampling.

Free product was first detected in Unocal well MW3 on August 1, 1991, at a thickness of 0.02 feet. The thickness of product in MW3 showed a general increase during the quarter ending November 1991, and was detected at a thickness of 0.26 feet on November 19, 1991. Approximately 27 ounces of product had been purged from well MW3 through November 19, 1991. Therefore, KEI recommended weekly purging of product from MW3 until the source could be verified and eliminated. Previous field notes during purging activities indicated that the product is black to dark brown and has an odor similar to that of parts cleaning solvent. A sample of this product was recommended to be collected and submitted to a laboratory for analysis to aid in determining the ultimate source of this product.

Based on the past levels of contamination detected in well MW3 at the subject Unocal site, and the predominant west-southwest ground water flow direction, KEI recommended (work plan/proposal KEI-P88-1204.P6 dated July 15, 1991) the installation of one off-site monitoring well to further define the extent of ground water contamination. KEI did not recommend the use of the "dry cleaner

well" (MW-DC), since the integrity, construction, and previous use of the well was unknown or otherwise unclear.

On February 11, 1992, one additional two-inch diameter monitoring well (designated as MW7 on the attached Site Vicinity Map, Figure 1) was installed at the site. Well MW7 was drilled and completed to a total depth 30 feet below grade. Ground water was encountered at a depth of 17 feet beneath the surface during drilling. Well MW7 was developed on February 12, 1992, and wells MW2, MW4, MW6, and MW7 were sampled on February 27, 1992. The surface of the well cover over MW7, the well covers of all previously existing wells (MW1 through MW6), and the off-site well MW-DC were surveyed by Kier & Wright of Pleasanton, California, to Mean Sea Level (MSL) and to a vertical accuracy of 0.01 feet.

Water samples from wells MW2, MW4, MW6, and MW7, and selected soil samples from the boring of MW7, were analyzed at Sequoia Analytical Laboratory in Concord, California. The samples were analyzed for TPH as gasoline and BTX&E. All soil samples from MW7, and the water sample from MW4, were also analyzed for TPH as diesel. In addition, the water sample collected from well MW7 was analyzed for EPA method 8010 constituents.

The results of the soil analyses are summarized in Table 3, and the results of the water analyses are summarized in Tables 2 and 2a. Based on the analytical results, KEI recommended the continuation of the monitoring and sampling program. Documentation of the well installation procedures, sample collection techniques, and the analytical results are presented in KEI's report (KEI-P88-1204.R5) dated April 9, 1992.

RECENT FIELD ACTIVITIES

The seven wells (MW1 through MW7) were monitored three times and were sampled once during the quarter, except for wells MW1 and MW5, which are not currently sampled. In addition, well MW3 was monitored and purged of 55 gallons of water on a bi-weekly basis. During monitoring, the wells were checked for depth to water and the presence of free product. During sampling, the wells were also checked for the presence of sheen. No free product or sheen was noted in any of the wells during the quarter, except for well MW3, which showed free product during three of the six monitoring events. Monitoring data are summarized in Table 1.

Water samples were collected from the wells (except for MW1 and MW5) on May 26, 1992. Prior to sampling, the wells were each purged of 13 gallons by the use of a bailer. Water samples were then collected by the use of a clean Teflon bailer. The 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 March 27, 1992, and April 27, 1992, the ground water flow direction appeared to be predominantly toward the north-northeast (as shown on the attached Site Vicinity Maps, Figures 1a and 1b), with an average hydraulic gradient of approximately 0.0015 to 0.004. The ground water flow direction on May 26, 1992, appeared to be toward the west-northwest at an average hydraulic gradient of approximately 0.002 (see the attached Site Vicinity Map, Figure 1). Water levels have continuously decreased during the quarter, showing a net decrease in all of the wells ranging from 0.54 to 1.18 feet since February 27, 1992. The measured depth to ground water at the site on May 26, 1992, ranged between 15.30 and 16.34 feet below grade.

Based on review of regional geologic mapping (U.S. Geological Survey Professional Paper 943 "Flatland deposits of the San Francisco Bay Region, California - 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 coarse-grained alluvium (Qhac). This deposit is described as typically consisting of unconsolidated, moderately sorted, permeable sand and silt, at thicknesses ranging from less than 10 feet to as much as 50 feet. This unit is assumed to overlie late Pleistocene alluvial fan deposits at depth.

However, review of the boring logs previously completed by KEI (EB1 through EB6, and MW1 through MW6) indicate the site is underlain predominantly by silty clay materials to at least the maximum depth explored (33 feet below grade). An apparent intermittent clayey silt bed was encountered at approximately 10 feet below grade. In one boring (MW1), a clayey sand bed was encountered between depths of about 6 to 10 feet below grade; otherwise, only clay materials were noted to have been encountered.

The results of our recent subsurface study indicate that the vicinity of well MW7 is underlain predominantly by silty clay with clayey silt zones to the maximum depth explored (30 feet below grade), except for a clayey sand bed between depths of approximately 13 to 15 feet below grade. Ground water was apparently encountered at a depth of about 17 feet below grade during drilling on February 11, 1992, and later stabilized at a depth of 14.12 feet below grade on February 27, 1992.

WATER WELL SURVEY

As previously recommended, KEI conducted a water well survey for the subject site. The well survey focused on the area within a one-half mile radius of the site, and is based on data from the County of Alameda Public Works Agency (CAPWA).

Three sites with existing monitoring/testing wells were located within the study area, and are listed in Table 5. The Caterpillar site reportedly contains seven monitoring wells, and the other two sites contain one well each. Six other wells were located within the study area and are listed in Table 6. One of these wells has been abandoned. The five other wells are designated as irrigation wells (3), domestic wells (1), or industrial wells (1), and have depths ranging between 20 and 68 feet below grade.

The locations of two of the monitoring wells and the six other wells are shown on the attached Well Location Map. Additional review of CAPWA file data, and possibly a site reconnaissance, will be required to determine if other wells are present, and to precisely locate all wells.

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 by EPA method 5030 in conjunction with modified 8015, BTX&E by EPA method 8020, and for EPA method 8010 constituents. In addition, the ground water sample collected from monitoring well MW4 was analyzed for TPH as diesel by EPA method 3510 in conjunction with modified 8015, and the water sample collected from well MW3 was analyzed for TOG by Standard Method 5520B&F.

The concentrations of TPH as gasoline and benzene detected in the ground water samples collected on May 26, 1992 are shown on the attached Site Vicinity Map, Figure 1c. The results of the analyses are summarized in Tables 2 and 2a. Copies of the analytical results and Chain of Custody documentation are attached to this report.

DISCUSSION AND RECOMMENDATIONS

Based on the analytical results collected and evaluated to date, KEI recommends the continuation of the current monitoring and sampling program of the existing wells, per KEI's proposal (KEI-P88-1204.P6) dated July 15, 1991. All of the wells are monitored monthly and sampled quarterly, except for wells MW1 and MW5, which are not currently sampled. Well MW3 will continue to be purged

twice a month. The results of the monitoring 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 by KEI last quarter, there appeared to have been a significant change in the flow direction at the subject site sometime between January 20, 1992, and February 27, 1992. The ground water flow direction had been reported to be toward the west-southwest since at least September 18, 1991. However, based on the ground water level data collected on February 27, 1992, the ground water flow direction appeared to be toward the northeast. The reason for this observed change was unknown, but could have been related to pumping from an adjacent well or wells. KEI therefore recommended that a well survey be conducted for the area within a 1/2-mile radius of the site.

The ground water flow direction on March 27 and April 27, 1992, was toward the north-northeast (similar to the February 27, 1992 flow direction), as shown on the attached Site Vicinity Maps, Figures 1a and 1b. As discussed in the Hydrology and Geology section of this report, a water well survey was conducted by KEI in April of 1992 for wells located within a one-half mile radius of the site. KEI will review additional data from the CAPWA, and perform a site reconnaissance, if needed, during the next quarter. After all wells within a one-half mile radius are located, KEI will evaluate the influence of nearby wells on ground water flow at the subject site.

Free Product Analysis

As previously recommended by KEI, a sample of the free product in well MW3 was collected on May 26, 1992, and was analyzed to determine if the product is predominantly hydrocarbon-based (i.e., gasoline, diesel, or oil), or a halogenated volatile organic compound. The analytical results indicated levels of TPH as gasoline, benzene, and ~~TPH as diesel~~ at 1,300,000 ppb, 5,100, and 2,400,000, respectively. TOC was detected at 880 ppm. The analytical results also indicated non-detectable levels of all EPA method 8010 constituents. Based on these analytical results, the free product observed in well MW3 is predominantly hydrocarbon-based. *

* It is KEI's understanding that Unocal is currently in the process of obtaining the required permits to demolish all improvements at the subject site, including the removal of the existing underground tanks and piping. After reviewing the analytical results of the samples to be collected during the removal of the tanks and lines, KEI will provide recommendations pertaining to any additional contamination delineation/remediation work that is warranted at the site.

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DISTRIBUTION

A copy of this report should be sent to Mr. Larry Seto of the Alameda County Health Care Services Agency, to the City of San Leandro, 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 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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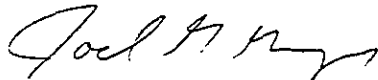
If you have any questions regarding this report, please do not hesitate to call me at (510) 602-5100.

Sincerely,

Kaprealian Engineering, Inc.



Thomas J. Berkins
Senior Environmental Engineer



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

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



Timothy R. Ross
Project Manager

\bp

Attachments: Tables 1, 2, 2a, 3 through 6
Location Map
Site Vicinity Maps - Figures 1, 1a, 1b & 1c
Site Plan - Figure 2
Well Location Map
Laboratory Analyses
Chain of Custody documentation

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TABLE 1

SUMMARY OF GROUND WATER MONITORING AND PURGING DATA

| <u>Well #</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> | <u>Product Purged (ounces)</u> |
|---|--|--------------------------------------|---|--------------|---------------------------------------|--|
| (Monitored and Sampled on May 26, 1992) | | | | | | |
| MW1* | 16.79 | 15.90 | 0 | -- | 0 | 0 |
| MW2 | 16.74 | 16.30 | 0 | No | 13 | 0 |
| MW3** | 16.76 | 16.06 | 0.12 | N/A | 0 | 0 |
| MW4 | 16.76 | 15.62 | 0 | No | 13 | 0 |
| MW5* | 16.80 | 16.22 | 0 | -- | 0 | 0 |
| MW6 | 16.85 | 16.34 | 0 | No | 13 | 0 |
| MW7 | 16.79 | 15.30 | 0 | No | 13 | 0 |
| (Monitored on May 11, 1992) | | | | | | |
| MW3** | 16.92 | 15.84 | 0.04 | N/A | 55 | <1 |
| (Monitored on April 27, 1992) | | | | | | |
| MW1 | 17.01 | 15.68 | 0 | -- | 0 | 0 |
| MW2 | 17.08 | 15.96 | 0 | -- | 0 | 0 |
| MW3** | 17.17 | 15.58 | 0.02 | N/A | 55 | 1 |
| MW4 | 17.01 | 15.37 | 0 | -- | 0 | 0 |
| MW5 | 17.06 | 15.96 | 0 | -- | 0 | 0 |
| MW6* | 17.12 | 16.07 | 0 | -- | 0 | 0 |
| MW7 | 17.23 | 14.86 | 0 | -- | 0 | 0 |
| (Monitored on April 13, 1992) | | | | | | |
| MW3 | 15.17 | 15.17 | 0 | -- | 55 | 0 |
| (Monitored on March 27, 1992) | | | | | | |
| MW1 | 17.16 | 15.53 | 0 | -- | 0 | 0 |
| MW2 | 17.43 | 15.61 | 0 | -- | 0 | 0 |
| MW3 | 17.61 | 15.12 | 0 | -- | 55 | 0 |
| MW4 | 17.37 | 15.01 | 0 | -- | 0 | 0 |
| MW5 | 17.34 | 15.68 | 0 | -- | 0 | 0 |
| MW6 | 17.63 | 15.56 | 0 | -- | 0 | 0 |
| MW7 | 17.83 | 14.26 | 0 | -- | 0 | 0 |

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TABLE 1 (Continued)

SUMMARY OF GROUND WATER MONITORING AND PURGING DATA

| <u>Well #</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> | <u>Product Purged (ounces)</u> |
|-------------------------------|--|--------------------------------------|---|--------------|---------------------------------------|--|
| (Monitored on March 12, 1992) | | | | | | |
| MW3 | 17.79 | 14.94 | 0 | -- | 55 | 0 |

| <u>Well #</u> | <u>Surface Elevation*** (feet)</u> |
|---------------|--|
| MW1 | 32.69 |
| MW2 | 33.04 |
| MW3 | 32.73 |
| MW4 | 32.38 |
| MW5 | 33.02 |
| MW6 | 33.19 |
| MW7 | 32.09 |

* Monitored only.

** Ground water elevations were corrected for presence of free product by the use of an assumed specific gravity 0.77.

*** The elevations of the tops of the well covers have been surveyed relative to MSL.

-- Sheen determination was not performed.

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TABLE 2
 SUMMARY OF LABORATORY ANALYSES
 WATER

| <u>Date</u> | <u>Sample Well #</u> | <u>TPH as Diesel</u> | <u>TPH as Gasoline</u> | <u>Benzene</u> | <u>Toluene</u> | <u>Xylenes</u> | <u>Ethyl-benzene</u> | <u>TOG (ppm)</u> |
|-------------|----------------------|---|------------------------|----------------|----------------|----------------|----------------------|------------------|
| 5/26/92 | MW1 | NOT SAMPLED | | | | | | |
| | MW2 | -- | 2,900 | 8.8 | 9.3 | 36 | 54 | -- |
| | MW3* | 2,400,000 | 1,300,000 | 5,100 | 66,000 | 160,000 | 20,000 | 880 |
| | MW4 | ND | 120 | 0.59 | 0.82 | 1.9 | ND | -- |
| | MW5 | NOT SAMPLED | | | | | | |
| | MW6 | -- | ND | ND | ND | 0.65 | ND | -- |
| | MW7 | -- | ND | ND | ND | 0.60 | ND | -- |
| 2/27/92 | MW1 | NOT SAMPLED | | | | | | |
| | MW2 | -- | 330 | 12 | 12 | 93 | 10 | -- |
| | MW3 | NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT | | | | | | |
| | MW4 | ND | 43 | ND | 1.0 | 2.5 | 0.37 | -- |
| | MW5 | NOT SAMPLED | | | | | | |
| | MW6 | -- | ND | 3.2 | ND | 3.8 | ND | -- |
| | MW7 | -- | 38 | ND | 0.97 | 4.0 | 0.69 | -- |
| 11/19/91 | MW1 | NOT SAMPLED | | | | | | |
| | MW2 | -- | 220 | 2.5 | 8.4 | 14 | 2.4 | -- |
| | MW3 | NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT | | | | | | |
| | MW4 | ND | ND | ND | ND | ND | ND | -- |
| | MW5 | NOT SAMPLED | | | | | | |
| | MW6 | -- | ND | ND | ND | ND | ND | -- |
| 8/15/91 | MW1 | NOT SAMPLED | | | | | | |
| | MW2 | -- | ND | ND | ND | ND | ND | ND |
| | MW3 | NOT SAMPLED DUE TO A TRACE OF FREE PRODUCT | | | | | | |
| | MW4 | ND | ND | ND | ND | ND | ND | ND |
| | MW5 | NOT SAMPLED | | | | | | |
| | MW6 | -- | ND | ND | ND | ND | ND | ND |
| 5/24/91 | MW1 | -- | ND | ND | ND | ND | ND | ND |
| | MW2 | -- | ND | 1.5 | ND | ND | ND | ND |
| | MW3 | 2,000 | 23,000 | 940 | 3,400 | 2,600 | 59 | ND |
| | MW4 | ND | ND | 0.64 | ND | ND | ND | ND |
| | MW5 | ND | ND | ND | ND | ND | ND | ND |
| | MW6 | -- | ND | ND | ND | ND | ND | ND |

KEI-P88-1204.QR11
 July 14, 1992

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
 WATER

| <u>Date</u> | <u>Sample Well #</u> | <u>TPH as Diesel</u> | <u>TPH as Gasoline</u> | <u>Benzene</u> | <u>Toluene</u> | <u>Xylenes</u> | <u>Ethyl-benzene</u> | <u>TOG (ppm)</u> | |
|-------------|----------------------|--|------------------------|----------------|----------------|----------------|----------------------|------------------|--|
| 2/04/91 | MW1 | ND | ND | ND | 0.31 | 0.62 | ND | ND | |
| | MW2 | ND | ND | ND | 0.38 | 0.87 | ND | ND | |
| | MW3 | NOT SAMPLED DUE TO A TRACE OF FREE PRODUCT | | | | | | | |
| | MW4 | ND | ND | ND | 0.72 | 1.1 | ND | ND | |
| | MW5 | ND | ND | ND | 0.35 | ND | ND | ND | |
| | MW6 | ND | ND | ND | ND | ND | ND | ND | |
| 11/06/90 | MW1 | ND | ND | ND | ND | ND | ND | ND | |
| | MW2 | ND | ND | ND | 0.42 | 1.4 | ND | ND | |
| | MW3 | 940 | 16,000 | 820 | 1,500 | 770 | 2,200 | ND | |
| | MW4 | ND | ND | ND | 0.36 | 0.98 | ND | ND | |
| | MW5 | ND | ND | ND | ND | ND | ND | ND | |
| | MW6 | ND | ND | 1.6 | 0.35 | ND | ND | ND | |
| 8/09/90 | MW1 | ND | ND | ND | ND | ND | ND | ND | |
| | MW2 | ND | ND | ND | ND | ND | ND | ND | |
| | MW3 | 500 | 1,900 | 56 | 140 | 140 | 3ND | | |
| | MW4 | ND | ND | ND | ND | ND | ND | ND | |
| | MW5 | ND | ND | ND | ND | ND | ND | ND | |
| | MW6 | ND | ND | ND | ND | ND | ND | ND | |
| 5/10/90 | MW1 | ND | ND | ND | ND | ND | ND | ND | |
| | MW2 | ND | 43 | ND | 1.0 | ND | ND | ND | |
| | MW3 | 850 | 6,200 | 94 | 460 | 540 | 160 | 2.8 | |
| | MW4 | 88 | 54 | ND | 2.0 | 0.37 | ND | ND | |
| | MW5 | 83 | ND | ND | ND | 0.31 | ND | ND | |
| | MW6 | ND | ND | ND | 1.2 | ND | ND | ND | |
| 2/23/90 | MW1 | ND | ND | ND | ND | ND | ND | ND | |
| | MW2 | ND | 44 | ND | ND | ND | ND | ND | |
| | MW3 | 350 | ND | 0.32 | ND | ND | ND | 1.3 | |
| | MW4 | ND | ND | ND | ND | ND | ND | ND | |
| | MW5 | ND | ND | ND | ND | ND | ND | ND | |
| | MW6 | ND | ND | ND | ND | ND | ND | ND | |

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 July 14, 1992

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
 WATER

| <u>Date</u> | <u>Sample Well #</u> | <u>TPH as Diesel</u> | <u>TPH as Gasoline</u> | <u>Benzene</u> | <u>Toluene</u> | <u>Xylenes</u> | <u>Ethyl-benzene</u> | <u>TOG (ppm)</u> |
|------------------|----------------------|----------------------|------------------------|----------------|----------------|----------------|----------------------|------------------|
| 11/21/89 | MW1 | ND | ND | ND | ND | ND | ND | 8.9 |
| | MW2 | ND | 48 | ND | 0.51 | ND | ND | 1.6 |
| | MW3 | 110 | 1,900 | ND | ND | ND | ND | 3.8 |
| | MW4 | ND | ND | ND | ND | ND | ND | ND |
| | MW5 | 70 | ND | ND | ND | ND | ND | ND |
| | MW6 | ND | ND | ND | ND | ND | ND | ND |
| 8/29/89 | MW4 | 120 | ND | ND | ND | ND | ND | ND |
| | MW5 | 100 | ND | ND | 0.94 | ND | 0.30 | ND |
| | MW6 | ND | ND | ND | ND | ND | ND | ND |
| 8/10/89 | MW1 | ND | ND | ND | ND | ND | ND | ND |
| | MW2 | ND | ND | ND | 0.39 | ND | ND | ND |
| | MW3 | 860 | 3,200 | 73 | 140 | 240 | 35 | ND |
| 4/25/89 | MW1 | 100 | ND | 0.31 | ND | ND | ND | -- |
| | MW2 | ND | 32 | 0.35 | ND | ND | ND | -- |
| | MW3 | 5,700 | 56 | ND | ND | 0.49 | 0.31 | -- |
| Detection Limits | | 50 | 30 | 0.30 | 0.30 | 0.30 | 0.30 | 5.0 |

-- Indicates analysis was not performed.

ND = Non-detectable.

* Free product was detected in well MW3; however, a water sample was collected and analyzed to determine if the product is predominantly hydrocarbon based.

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

KEI-P88-1204.QR11
 July 14, 1992

TABLE 2a

SUMMARY OF LABORATORY ANALYSES
 WATER

| <u>Date</u> | <u>Sample Well #</u> | <u>Tetrachloro-ethene</u> | <u>1,1-Dichloro-ethane</u> | <u>1,1,1-Trichloro-ethane</u> | <u>Chloro-methane</u> | <u>1,1-Dichloro-ethene</u> | <u>1,2-Dichloro-robenezene</u> | |
|-------------|----------------------|---|----------------------------|-------------------------------|-----------------------|----------------------------|--------------------------------|--|
| 5/26/92 | MW2 | ND | ND | ND | ND | ND | ND | |
| | MW3 | ND | ND | ND | ND | ND | ND | |
| | MW4 | 2.4 | 13 | 3.5 | ND | 0.83 | ND | |
| | MW6 | 1.1 | ND | ND | ND | ND | 1.7 | |
| | MW7 | 2.2 | ND | ND | ND | ND | ND | |
| 2/27/92 | MW2 | ND | ND | ND | ND | ND | ND | |
| | MW3 | NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT | | | | | | |
| | MW4 | 3.5 | 6.0 | ND | ND | ND | ND | |
| | MW6 | 1.5 | ND | ND | ND | ND | 1.6 | |
| | MW7 | 2.4 | ND | ND | ND | ND | ND | |
| 11/19/91 | MW2 | ND | ND | ND | ND | ND | ND | |
| | MW3 | NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT | | | | | | |
| | MW4 | 3.4 | ND | ND | ND | ND | ND | |
| | MW6 | 1.3 | ND | ND | ND | ND | ND | |
| 8/15/91 | MW2 | ND | ND | ND | ND | ND | ND | |
| | MW3 | NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT | | | | | | |
| | MW4 | 3.6 | ND | ND | ND | ND | ND | |
| | MW6 | 1.2 | ND | ND | ND | ND | ND | |
| 5/24/91 | MW1 | 4.6 | ND | ND | ND | ND | ND | |
| | MW2 | ND | ND | ND | ND | ND | ND | |
| | MW3 | ND | ND | ND | ND | ND | ND | |
| | MW4 | 4.1 | 2.5 | 3.9 | ND | ND | ND | |
| | MW5 | 0.89 | ND | ND | ND | ND | ND | |
| | MW6 | 0.88 | ND | ND | 5.6 | ND | ND | |

KEI-P88-1204.QR11
July 14, 1992

TABLE 2a (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

| <u>Date</u> | <u>Sample Well #</u> | <u>Tetrachloro-ethene</u> | <u>1,1-Dichloro-ethane</u> | <u>1,1,1-Trichloro-ethane</u> | <u>Chloro-methane</u> | <u>1,1-Dichloro-ethene</u> | <u>1,2-Dichloro-robenezene</u> |
|-------------|----------------------|---------------------------|----------------------------|-------------------------------|-----------------------|----------------------------|--------------------------------|
| 11/06/90 | MW1 | 4.8 | ND | ND | ND | ND | ND |
| | MW2 | ND | ND | ND | ND | ND | ND |
| | MW3 | ND | ND | ND | ND | ND | ND |
| | MW4 | 2.9 | ND | ND | ND | ND | ND |
| | MW5 | 0.7 | ND | ND | ND | ND | ND |
| | MW6 | 1.2 | ND | ND | ND | ND | ND |
| 4/25/89 | MW1* | 3.3 | ND | ND | ND | ND | ND |
| | MW2 | 0.68 | ND | ND | ND | ND | ND |
| | MW3 | 1.0 | ND | ND | ND | ND | ND |

NOTE: All EPA method 8010 constituents were non-detectable, except for those shown in the above table.

* Trichloroethene was detected at 0.55 ppb.

ND = Non-detectable.

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

KEI-P88-1204.QR11
 July 14, 1992

TABLE 3

SUMMARY OF LABORATORY ANALYSES
 SOIL

| <u>Sample Number</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>Ethylbenzene</u> | <u>TOG</u> |
|----------------------|---------------------|----------------------|------------------------|----------------|----------------|----------------|---------------------|------------|
|----------------------|---------------------|----------------------|------------------------|----------------|----------------|----------------|---------------------|------------|

(Collected on January 3, 1989)

| | | | | | | | | |
|----------|------|-----|-----|-------|------|------|------|-------|
| EB1(5)* | 5.0 | 5.0 | -- | ND | 0.05 | ND | ND | ND |
| EB1(10)* | 10.0 | 1.0 | -- | ND | ND | ND | ND | ND |
| EB1(15)* | 15.0 | 1.0 | -- | ND | ND | ND | ND | ND |
| EB1(25)* | 25.0 | 2.0 | -- | -- | -- | -- | -- | ND |
| EB2(10) | 10.0 | -- | ND | ND | ND | ND | ND | -- |
| EB2(15) | 15.0 | -- | ND | ND | ND | ND | ND | -- |
| EB2(20) | 20.0 | -- | ND | ND | ND | ND | ND | -- |
| EB2(25) | 25.0 | -- | 1.9 | ND | ND | ND | ND | -- |
| EB3(5) | 5.0 | -- | ND | ND | ND | ND | ND | -- |
| EB3(10) | 10.0 | -- | ND | ND | ND | ND | ND | -- |
| EB3(15) | 15.0 | -- | 2.7 | ND | ND | ND | ND | -- |
| EB3(20) | 20.0 | -- | 2.2 | ND | ND | ND | ND | -- |
| EB3(25) | 25.0 | -- | ND | ND | ND | ND | ND | -- |
| EB4(5) | 5.0 | -- | ND | ND | ND | ND | ND | -- |
| EB4(10) | 10.0 | -- | ND | ND | ND | ND | ND | -- |
| EB4(15) | 15.0 | -- | ND | ND | ND | ND | ND | -- |
| EB4(20) | 20.0 | -- | ND | ND | ND | ND | ND | -- |
| EB4(25) | 25.0 | -- | ND | ND | ND | ND | ND | -- |
| EB5(5) | 5.0 | -- | ND | ND | ND | ND | ND | -- |
| EB5(10) | 10.0 | -- | ND | ND | ND | ND | ND | -- |
| EB5(15) | 15.0 | -- | 2.0 | ND | ND | ND | ND | -- |
| EB5(20) | 20.0 | -- | 17 | 0.12 | 0.15 | 1.4 | 0.25 | -- |
| EB5(25) | 25.0 | -- | 3.9 | ND | ND | 0.17 | ND | -- |
| EB6(5) | 5.0 | 10 | 1.8 | ND | ND | ND | ND | 7,800 |
| EB6(10) | 10.0 | 160 | 73 | ND | ND | ND | ND | 1,200 |
| EB6(15) | 15.0 | 40 | 17 | 0.065 | ND | 0.21 | ND | 900 |
| EB6(25) | 25.0 | 3.0 | ND | ND | ND | ND | ND | 130 |

(Collected on May 11, 1989)

| | | | | | | | | |
|-----|------|----|----|----|----|----|----|-----|
| SWA | 16.5 | 21 | -- | -- | -- | -- | -- | 850 |
| SWB | 16.5 | 18 | -- | -- | -- | -- | -- | 580 |
| SWC | 16.5 | 26 | -- | -- | -- | -- | -- | 680 |
| SWD | 16.5 | 16 | -- | -- | -- | -- | -- | 170 |

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 July 14, 1992

TABLE 3 (Continued)

SUMMARY OF LABORATORY ANALYSES
 SOIL

| <u>Sample Number</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> | <u>TOG</u> |
|----------------------|---------------------|----------------------|------------------------|----------------|----------------|----------------|----------------------|------------|
|----------------------|---------------------|----------------------|------------------------|----------------|----------------|----------------|----------------------|------------|

(Collected on April 17, 1989)

| | | | | | | | | |
|------|------|----|-----|----|------|------|----|-----|
| MW1 | 5.0 | ND | 4.0 | ND | ND | ND | ND | ND |
| MW1 | 10.0 | ND | ND | ND | ND | ND | ND | ND |
| MW1 | 15.0 | ND | ND | ND | ND | ND | ND | ND |
| MW1 | 17.0 | ND | ND | ND | ND | ND | ND | 31 |
| MW2* | 5.0 | ND | ND | ND | ND | ND | ND | 31 |
| MW2* | 10.0 | ND | 1.1 | ND | ND | ND | ND | 60 |
| MW2* | 15.0 | ND | ND | ND | ND | ND | ND | 71 |
| MW3 | 5.0 | ND | ND | ND | ND | ND | ND | ND |
| MW3 | 10.0 | ND | 1.1 | ND | ND | ND | ND | ND |
| MW3 | 15.0 | ND | 1.2 | ND | ND | ND | ND | 32 |
| MW3 | 17.0 | ND | 6.2 | ND | 0.21 | 0.42 | ND | 180 |

(Collected on August 16, 1989)

| | | | | | | | | |
|-----|------|----|-----|----|----|------|----|----|
| MW4 | 5.0 | -- | 3.3 | ND | ND | 0.11 | ND | ND |
| MW4 | 10.0 | -- | ND | ND | ND | ND | ND | ND |
| MW4 | 15.0 | -- | ND | ND | ND | ND | ND | ND |
| MW4 | 19.0 | -- | ND | ND | ND | ND | ND | ND |
| MW5 | 5.0 | -- | ND | ND | ND | ND | ND | ND |
| MW5 | 10.0 | -- | ND | ND | ND | ND | ND | ND |
| MW5 | 15.0 | -- | ND | ND | ND | ND | ND | ND |
| MW5 | 20.0 | -- | 20 | ND | ND | ND | ND | ND |
| MW5 | 22.0 | -- | ND | ND | ND | ND | ND | ND |
| MW6 | 5.0 | -- | ND | ND | ND | ND | ND | ND |
| MW6 | 10.0 | -- | ND | ND | ND | ND | ND | ND |
| MW6 | 15.0 | -- | ND | ND | ND | ND | ND | ND |
| MW6 | 20.0 | -- | ND | ND | ND | ND | ND | ND |

KEI-P88-1204.QR11
July 14, 1992

TABLE 3 (Continued)

SUMMARY OF LABORATORY ANALYSES
SOIL

| <u>Sample Number</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> | <u>TOG</u> |
|----------------------------------|---------------------|----------------------|------------------------|----------------|----------------|----------------|----------------------|------------|
| (Collected on February 11, 1992) | | | | | | | | |
| MW7(5) | 5.0 | ND | ND | ND | ND | ND | ND | -- |
| MW7(9.5) | 9.5 | ND | ND | ND | ND | ND | ND | -- |
| MW7(15) | 15.0 | ND | ND | ND | ND | ND | ND | -- |
| MW7(16.5) | 16.5 | ND | ND | ND | ND | ND | ND | -- |
| Detection Limits | | 1.0 | 1.0 | 0.05 | 0.1 | 0.1 | 0.1 | 50 |

-- Indicates analysis was not performed.

ND = Non-detectable.

* EPA method 8010 constituents were non-detectable.

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

KEI-P88-1204.QR11
July 14, 1992

TABLE 4

SUMMARY OF LABORATORY ANALYSES
WATER

| <u>Date</u> | <u>Sample Number</u> | <u>TPH as Diesel</u> | <u>TPH as Gasoline</u> | <u>Benzene</u> | <u>Toluene</u> | <u>Xylenes</u> | <u>Ethyl-benzene</u> |
|------------------|----------------------|----------------------|------------------------|----------------|----------------|----------------|----------------------|
| 1/03/89 | EB1 | ND | -- | ND | 3.5 | ND | ND |
| | EB2 | -- | ND | 8.2 | 7.4 | 3.3 | 0.67 |
| | EB3 | -- | ND | ND | ND | ND | ND |
| | EB4 | -- | ND | ND | ND | ND | 0.73 |
| | EB5 | -- | 340 | ND | ND | ND | 0.63 |
| | EB6 | -- | 1,500 | 1.5 | 1.4 | 12 | 8.1 |
| Detection Limits | | 50 | 50 | 0.5 | 0.5 | 0.5 | 0.5 |

ND = Non-detectable.

-- Indicates analysis was not performed.

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

KEI-P88-1204.QR11
July 14, 1992

TABLE 5

MONITORING/TESTING WELLS WITHIN STUDY AREA

| Survey No. | State No. | Owner | Well Location | Depth to Ground Water at Site (feet) |
|---------------|---------------|--------------------------|-----------------------|--|
| 1a | 27,2S/3W,Q7 | Caterpillar | 701 Donovan Court | 52 |
| 1b | 26,2S/3W,N5 | Caterpillar | 1005 Minerva St. | 21 |
| 1c | 27,2S/3W,1-2 | Caterpillar | Preda St. & Brookside | 15 |
| 1d | 27,2S/3W,K1 | Caterpillar | Bergedo St. | 8 |
| 1e | 27,2S/3W,Q8-9 | Caterpillar | Donovan & Brookside | 15 |
| 1f | 27,2S/3W,R23 | Caterpillar | 1143 Douglas Dr. | 15 |
| 1g | 34,2S/3W,A43 | Caterpillar | 1180 Donovan Dr. | 15 |
| 1h | 35,2S/3W,C3-6 | Del Monte Corp. | 850 Thorton | 25 |
| 2 | 26,2S/3W,P22 | Walberg Realty & Invstmt | 777 Davis St. | 25 |
| 3 | 34,2S/3W,J8 | Diamond Manufacturing | 1763 Timothy Drive | 20 |

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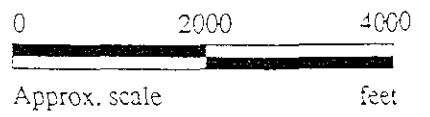
TABLE 6


OTHER WELLS LOCATED WITHIN STUDY AREA

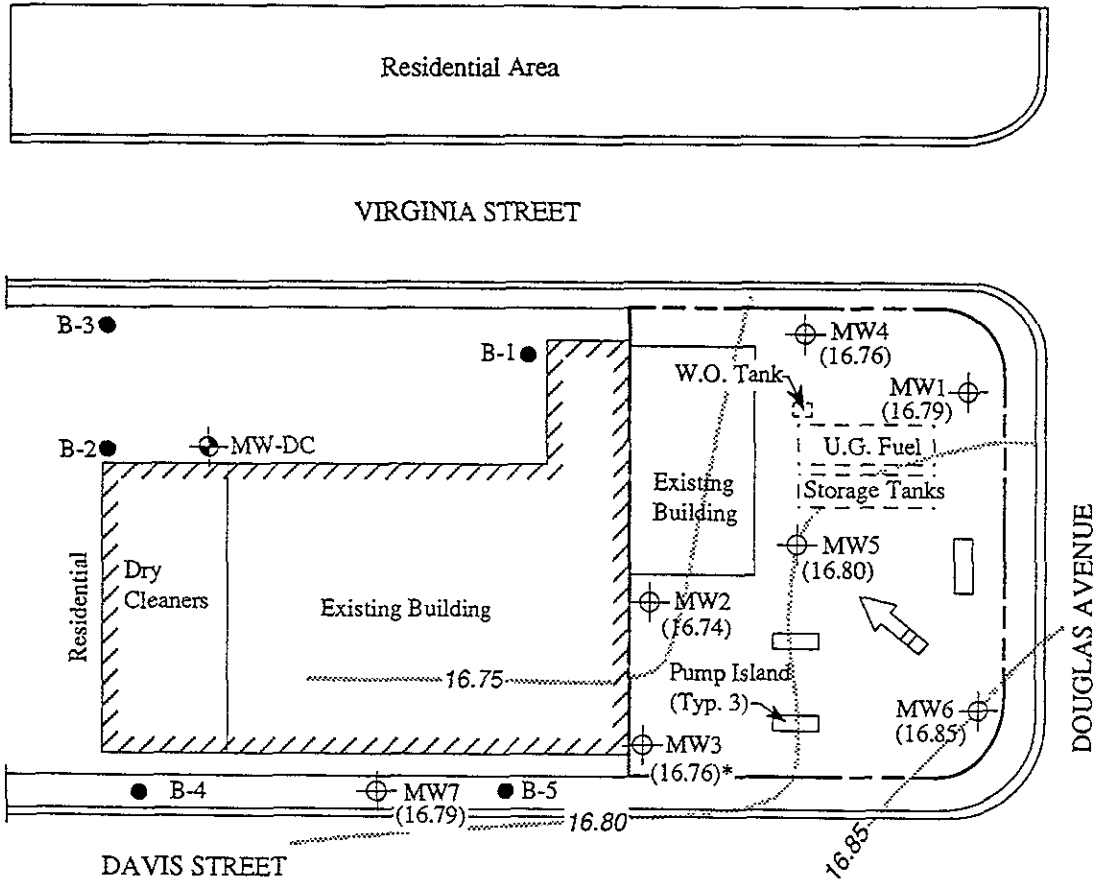
| <u>Survey No.</u> | <u>State No.</u> | <u>Date Drilled</u> | <u>Owner</u> | <u>Use</u> | <u>Depth (feet)</u> | <u>Location</u> |
|-----------------------|----------------------|-------------------------|-------------------|------------|-------------------------|---------------------|
| 4 | 26,2S/3W,N2 | 4/77 | John Costa | Industrial | 68 | 1051 Midway |
| 5 | 34,2S/3W,C9 | -- | Scribner Realty | Abandoned | -- | 668 Tudor Ct. |
| 6 | 34,2S/3W,G1 | 1948 | Logeman's Nursery | Domestic | 58 | 1253 Timothy Dr. |
| 7 | 34,2S/3W,G2 | 1948 | A. Gibbons | Irrigation | 35 | 1283 Timothy Dr. |
| 8 | 34,2S/3W,G3 | 1954 | Manuel Sotelo | Irrigation | 21 | 1381 Marybelle Ave. |
| 9 | 34,2S/3W,G4 | -- | Gordon Meyers | Irrigation | 26 | 1509 Marybelle Ave. |



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



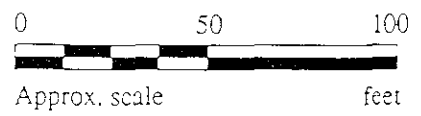
| | | |
|---|---|--------------------------------|
|  <p>KAPREALIAN ENGINEERING INCORPORATED</p> | <p>UNOCAL SERVICE STATION #2512 1300 DAVIS STREET SAN LEANDRO, CA</p> | <p>LOCATION MAP</p> |
|---|---|--------------------------------|



SITE VICINITY MAP

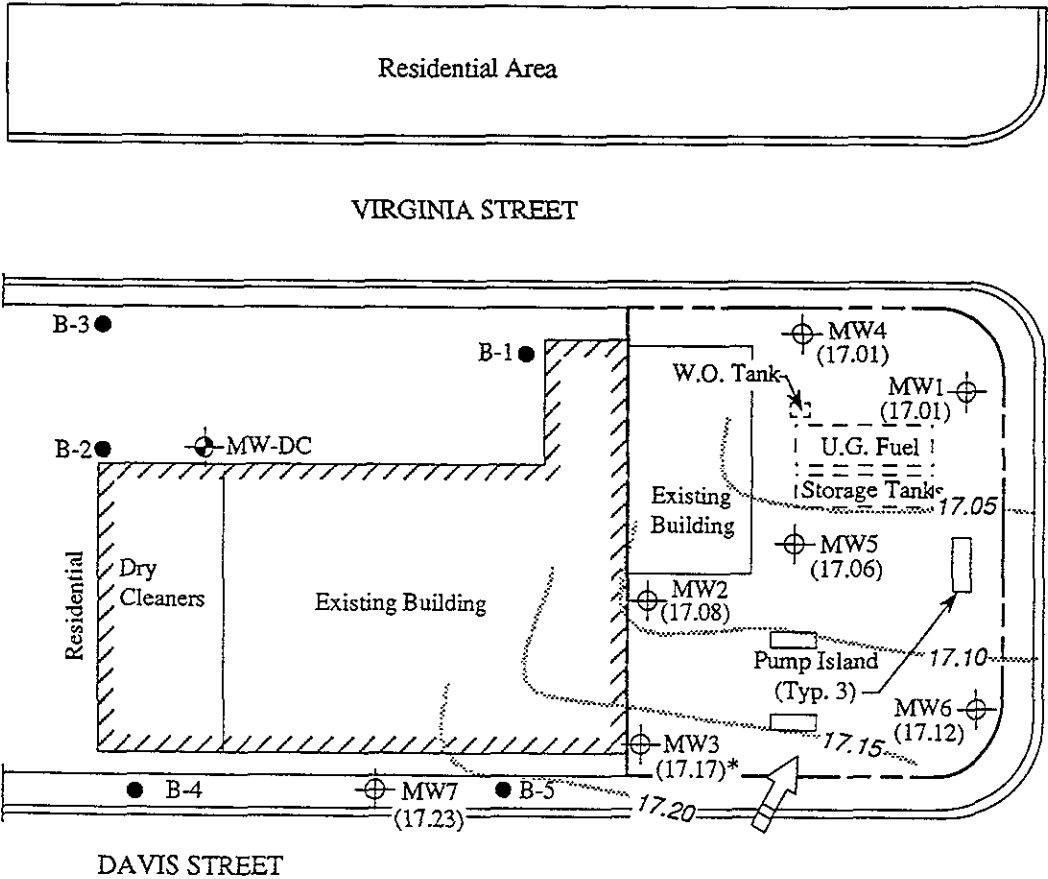
LEGEND

- ⊕ Existing Monitoring Well (by KEI)
- ⊕ Existing Monitoring Well (by others)
- Approximate location of existing off-site Soil Borings (by AGS)
- () Ground water elevation in feet above mean sea level on 5/26/92
- ➔ Direction of ground water flow
- Contours of ground water elevation
- * Ground water elevation corrected due to the presence of free product



UNOCAL SERVICE STATION #2512
1300 DAVIS STREET
SAN LEANDRO, CA

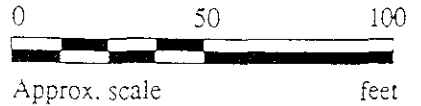
FIGURE
1



SITE VICINITY MAP

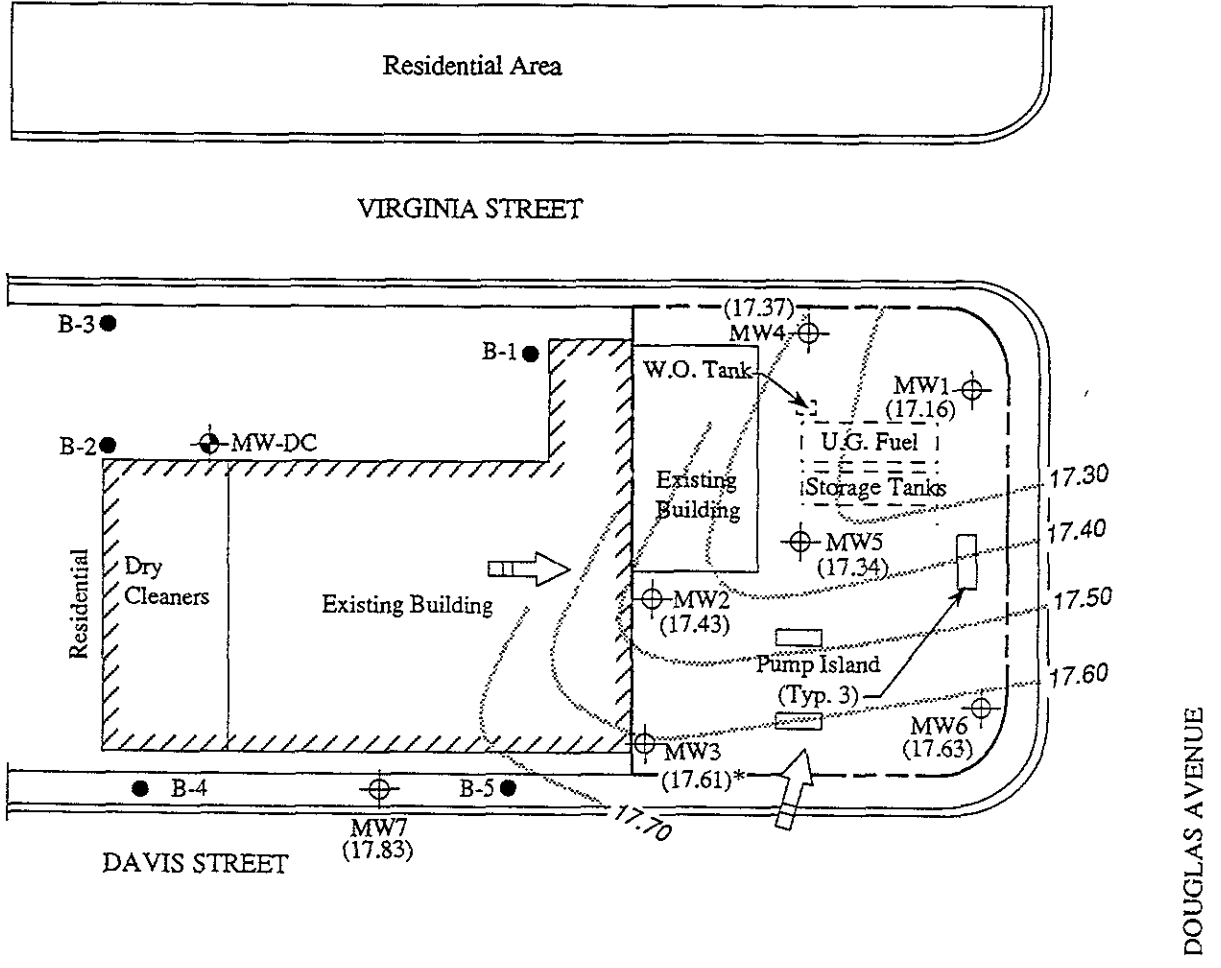
LEGEND

- ⊕ Existing Monitoring Well (by KEI)
- ⊙ Existing Monitoring Well (by others)
- Approximate location of existing off-site Soil Borings (by AGS)
- () Ground water elevation in feet above mean sea level on 4/27/92
- ➔ Direction of ground water flow
- Contours of ground water elevation
- * Ground water elevation corrected due to the presence of free product



UNOCAL SERVICE STATION #2512
1300 DAVIS STREET
SAN LEANDRO, CA

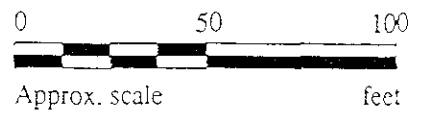
FIGURE
1a



SITE VICINITY MAP

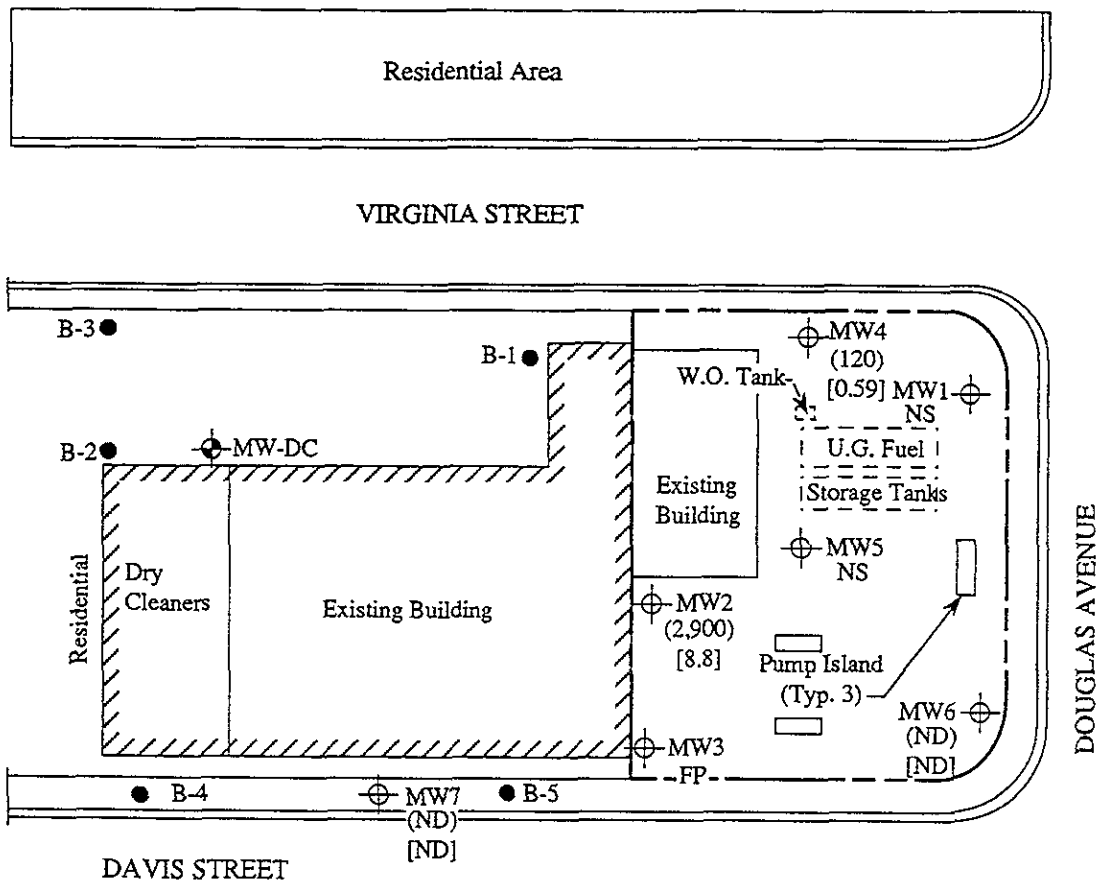
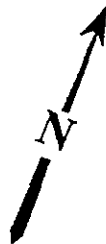
LEGEND

- ⊕ Existing Monitoring Well (by KEI)
- ⊕ Existing Monitoring Well (by others)
- Approximate location of existing off-site Soil Borings (by AGS)
- () Ground water elevation in feet above mean sea level on 3/27/92
- ➔ Direction of ground water flow
- - - Contours of ground water elevation
- * Ground water elevation corrected due to the presence of free product



UNOCAL SERVICE STATION #2512
1300 DAVIS STREET
SAN LEANDRO, CA

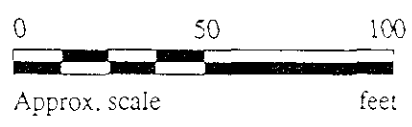
FIGURE
1b



SITE VICINITY MAP
 (Samples Collected on 5/26/92)

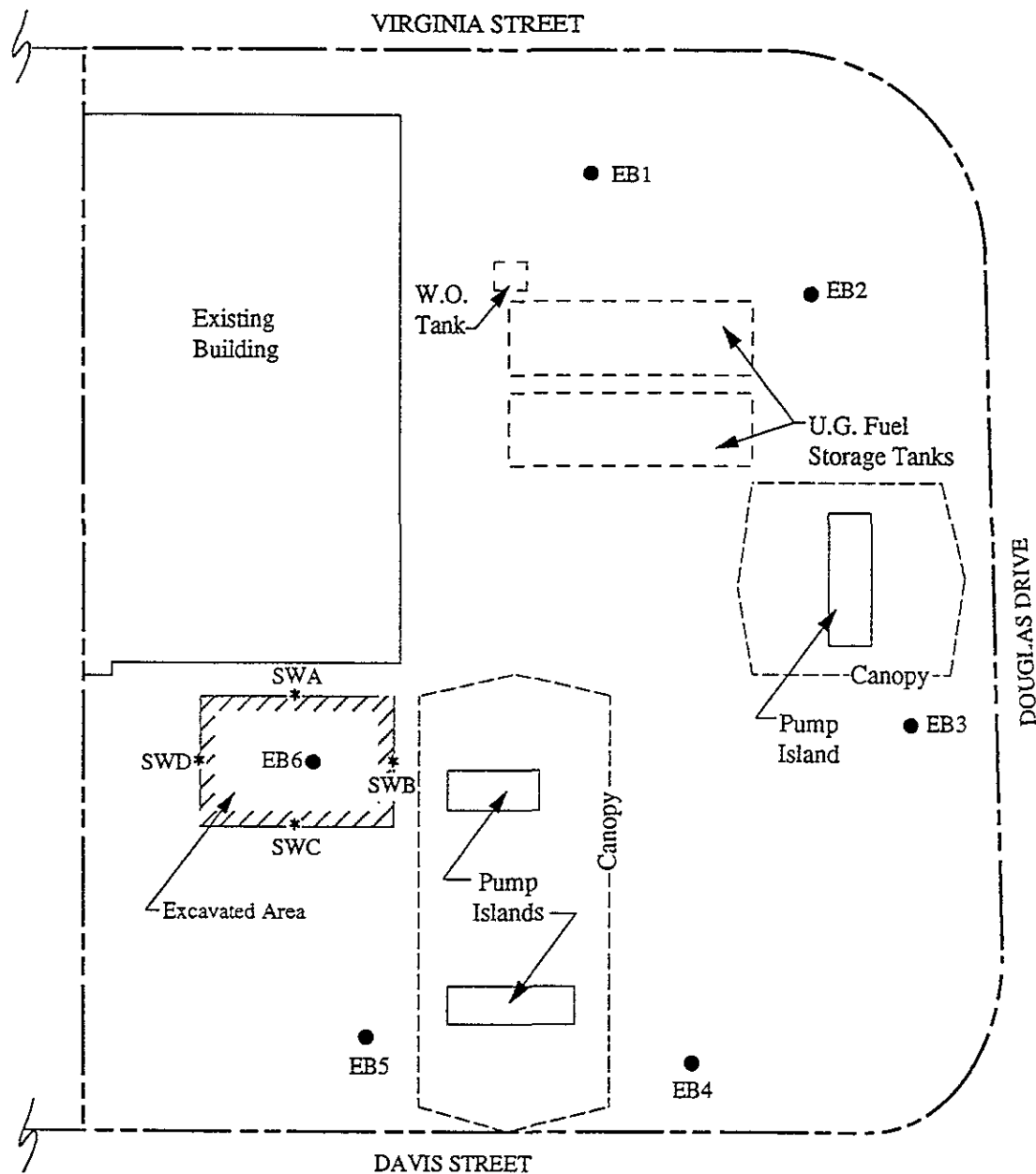
LEGEND

- ⊕ Existing Monitoring Well (by KEI)
- ⊙ Existing Monitoring Well (by others)
- Approximate location of existing off-site Soil Borings (by AGS)
- () Concentration of TPH as gasoline in ppb
- [] Concentration of benzene in ppb
- NS = Not sampled
- FP = Free product



UNOCAL SERVICE STATION #2512
 1300 DAVIS STREET
 SAN LEANDRO, CA

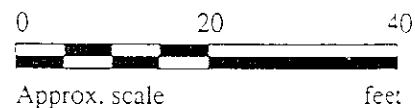
FIGURE
1c



SITE PLAN

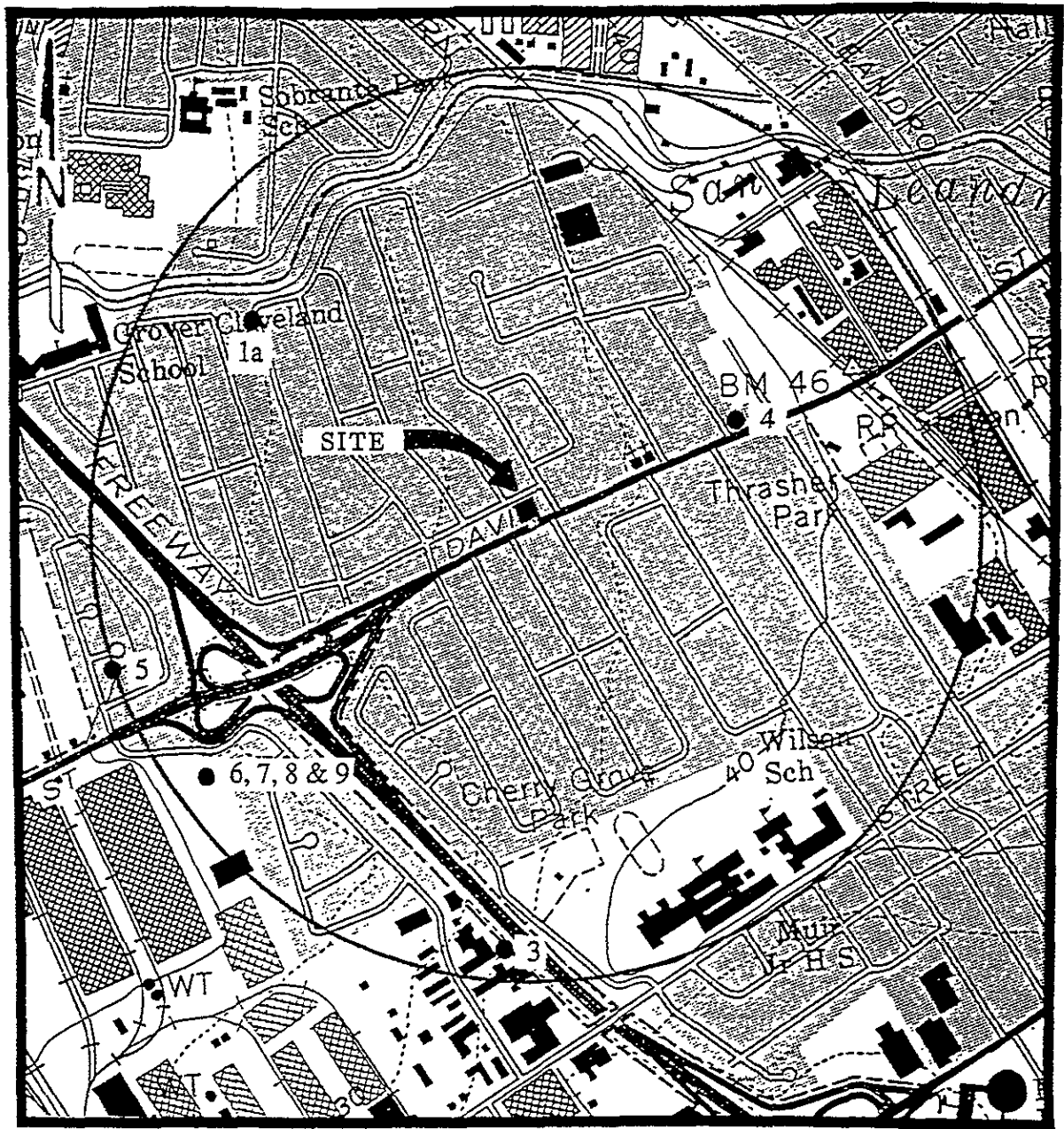
LEGEND

- Exploratory boring
- * Sample Point Location



UNOCAL SERVICE STATION #2512
 1300 DAVIS STREET
 SAN LEANDRO, CA

FIGURE
2



LEGEND

● Approximate well location

0 1000 2000

Approx. scale feet

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

**KAPREALIAN ENGINEERING
INCORPORATED**

UNOCAL SERVICE STATION #2512
1300 DAVIS STREET
SAN LEANDRO, CA

**WELL
LOCATION
MAP**



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

| | | |
|--|---|--|
| Kaprealian Engineering, Inc. 2401 Stanwell Drive, Suite 400 Concord, CA 94520 Attention: Mardo Kaprealian, P.E. | Client Project ID: Unocal, 1300 Davis St., San Leandro Matrix Descript: Water Analysis Method: EPA 5030/8015/8020 First Sample #: 205-1282 | Sampled: May 26, 1992 Received: May 26, 1992 Analyzed: 5/29 & 6/1/92 Reported: Jun 10, 1992 |
|--|---|--|

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

| Sample Number | Sample Description | Low/Medium B.P. | Benzene | Toluene | Ethyl | Xylenes |
|---------------|--------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | | Hydrocarbons | | | Benzene | |
| | | $\mu\text{g/L}$ (ppb) | $\mu\text{g/L}$ (ppb) | $\mu\text{g/L}$ (ppb) | $\mu\text{g/L}$ (ppb) | $\mu\text{g/L}$ (ppb) |
| 205-1282 | MW - 2 | 2,900 | 8.8 | 9.3 | 54 | 36 |
| 205-1283 | MW - 4 | 120 | 0.59 | 0.82 | N.D. | 1.9 |
| 205-1284 | MW - 6 | N.D. | N.D. | N.D. | N.D. | 0.65 |
| 205-1285 | MW - 7 | N.D. | N.D. | N.D. | N.D. | 0.60 |

| | | | | | |
|--------------------------|----|------|------|------|------|
| Method Detection Limits: | 30 | 0.30 | 0.30 | 0.30 | 0.30 |
|--------------------------|----|------|------|------|------|

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

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 Project Manager



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| | | |
|--|--|--|
| Kaprealian Engineering, Inc. 2401 Stanwell Drive, Suite 400 Concord, CA 94520 Attention: Mardo Kaprealian, P.E. | Client Project ID: Unocal, 1300 Davis St., San Leandro Matrix Descript: Water Analysis Method: EPA 3510/8015 First Sample #: 205-1283 | Sampled: May 26, 1992 Received: May 26, 1992 Extracted: Jun 2, 1992 Analyzed: Jun 8, 1992 Reported: Jun 10, 1992 |
|--|--|--|


TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

| Sample Number | Sample Description | High B.P. Hydrocarbons $\mu\text{g/L}$ (ppb) |
|---------------|--------------------|--|
| 205-1283 | MW - 4 | N.D. |

Method Detection Limits: 50

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard

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Project Manager



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| | | |
|--|--|--|
| Kaprealian Engineering, Inc. 2401 Stanwell Drive, Suite 400 Concord, CA 94520 Attention: Mardo Kaprealian, P.E. | Client Project ID: Unocal, 1300 Davis St., San Leandro Sample Descript: Water, MW - 2 Analysis Method: EPA 5030/8010 Lab Number: 205-1282 | Sampled: May 26, 1992 Received: May 26, 1992 Analyzed: Jun 8, 1992 Reported: Jun 10, 1992 |
|--|--|--|

HALOGENATED VOLATILE ORGANICS (EPA 8010)

| Analyte | Detection Limit µg/L | Sample Results µg/L |
|--------------------------------|-------------------------|------------------------|
| Bromodichloromethane..... | 0.50 | N.D. |
| Bromoform..... | 0.50 | N.D. |
| Bromomethane..... | 0.50 | N.D. |
| Carbon tetrachloride..... | 0.50 | N.D. |
| Chlorobenzene..... | 0.50 | N.D. |
| Chloroethane..... | 0.50 | N.D. |
| 2-Chloroethylvinyl ether..... | 0.50 | N.D. |
| Chloroform..... | 0.50 | N.D. |
| Chloromethane..... | 0.50 | N.D. |
| Dibromochloromethane..... | 0.50 | N.D. |
| 1,3-Dichlorobenzene..... | 0.50 | N.D. |
| 1,4-Dichlorobenzene..... | 0.50 | N.D. |
| 1,2-Dichlorobenzene..... | 0.50 | N.D. |
| 1,1-Dichloroethane..... | 0.50 | N.D. |
| 1,2-Dichloroethane..... | 0.50 | N.D. |
| 1,1-Dichloroethene..... | 0.50 | N.D. |
| cis-1,2-Dichloroethene..... | 0.50 | N.D. |
| trans-1,2-Dichloroethene..... | 0.50 | N.D. |
| 1,2-Dichloropropane..... | 0.50 | N.D. |
| cis-1,3-Dichloropropene..... | 0.50 | N.D. |
| trans-1,3-Dichloropropene..... | 0.50 | N.D. |
| Methylene chloride..... | 5.0 | N.D. |
| 1,1,2,2-Tetrachloroethane..... | 0.50 | N.D. |
| Tetrachloroethene..... | 0.50 | N.D. |
| 1,1,1-Trichloroethane..... | 0.50 | N.D. |
| 1,1,2-Trichloroethane..... | 0.50 | N.D. |
| Trichloroethene..... | 0.50 | N.D. |
| Trichlorofluoromethane..... | 0.50 | N.D. |
| Vinyl chloride..... | 0.50 | N.D. |

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

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| | | |
|--|--|--|
| Kaprealian Engineering, Inc. 2401 Starwell Drive, Suite 400 Concord, CA 94520 Attention: Mardo Kaprealian, P.E. | Client Project ID: Unocal, 1300 Davis St., San Leandro Sample Descript: Water, MW - 4 Analysis Method: EPA 5030/8010 Lab Number: 205-1283 | Sampled: May 26, 1992 Received: May 26, 1992 Analyzed: Jun 8, 1992 Reported: Jun 10, 1992 |
|--|--|--|

HALOGENATED VOLATILE ORGANICS (EPA 8010)

| Analyte | Detection Limit µg/L | Sample Results µg/L |
|-----------------------------------|-------------------------|------------------------|
| Bromodichloromethane..... | 0.50 | N.D. |
| Bromoform..... | 0.50 | N.D. |
| Bromomethane..... | 0.50 | N.D. |
| Carbon tetrachloride..... | 0.50 | N.D. |
| Chlorobenzene..... | 0.50 | N.D. |
| Chloroethane..... | 0.50 | N.D. |
| 2-Chloroethylvinyl ether..... | 0.50 | N.D. |
| Chloroform..... | 0.50 | N.D. |
| Chloromethane..... | 0.50 | N.D. |
| Dibromochloromethane..... | 0.50 | N.D. |
| 1,3-Dichlorobenzene..... | 0.50 | N.D. |
| 1,4-Dichlorobenzene..... | 0.50 | N.D. |
| 1,2-Dichlorobenzene..... | 0.50 | N.D. |
| 1,1-Dichloroethane..... | 0.50 | 13 |
| 1,2-Dichloroethane..... | 0.50 | N.D. |
| 1,1-Dichloroethene..... | 0.50 | 0.83 |
| cis-1,2-Dichloroethene..... | 0.50 | N.D. |
| trans-1,2-Dichloroethene..... | 0.50 | N.D. |
| 1,2-Dichloropropane..... | 0.50 | N.D. |
| cis-1,3-Dichloropropene..... | 0.50 | N.D. |
| trans-1,3-Dichloropropene..... | 0.50 | N.D. |
| Methylene chloride..... | 5.0 | N.D. |
| 1,1,2,2-Tetrachloroethane..... | 0.50 | N.D. |
| Tetrachloroethene..... | 0.50 | 2.4 |
| 1,1,1-Trichloroethane..... | 0.50 | 3.5 |
| 1,1,2-Trichloroethane..... | 0.50 | N.D. |
| Trichloroethene..... | 0.50 | N.D. |
| Trichlorofluoromethane..... | 0.50 | N.D. |
| Vinyl chloride..... | 0.50 | N.D. |

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

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 Project Manager



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| | | |
|--|--|--|
| Kaprealian Engineering, Inc. 2401 Stanwell Drive, Suite 400 Concord, CA 94520 Attention: Mardo Kaprealian, P.E. | Client Project ID: Unocal, 1300 Davis St., San Leandro Sample Descript: Water, MW - 6 Analysis Method: EPA 5030/8010 Lab Number: 205-1284 | Sampled: May 26, 1992 Received: May 26, 1992 Analyzed: Jun 8, 1992 Reported: Jun 10, 1992 |
|--|--|--|

HALOGENATED VOLATILE ORGANICS (EPA 8010)

| Analyte | Detection Limit µg/L | Sample Results µg/L |
|---------------------------------|-------------------------|------------------------|
| Bromodichloromethane..... | 0.50 | N.D. |
| Bromoform..... | 0.50 | N.D. |
| Bromomethane..... | 0.50 | N.D. |
| Carbon tetrachloride..... | 0.50 | N.D. |
| Chlorobenzene..... | 0.50 | N.D. |
| Chloroethane..... | 0.50 | N.D. |
| 2-Chloroethylvinyl ether..... | 0.50 | N.D. |
| Chloroform..... | 0.50 | N.D. |
| Chloromethane..... | 0.50 | N.D. |
| Dibromochloromethane..... | 0.50 | N.D. |
| 1,3-Dichlorobenzene..... | 0.50 | N.D. |
| 1,4-Dichlorobenzene..... | 0.50 | N.D. |
| 1,2-Dichlorobenzene..... | 0.50 | 1.7 |
| 1,1-Dichloroethane..... | 0.50 | N.D. |
| 1,2-Dichloroethane..... | 0.50 | N.D. |
| 1,1-Dichloroethene..... | 0.50 | N.D. |
| cis-1,2-Dichloroethene..... | 0.50 | N.D. |
| trans-1,2-Dichloroethene..... | 0.50 | N.D. |
| 1,2-Dichloropropane..... | 0.50 | N.D. |
| cis-1,3-Dichloropropene..... | 0.50 | N.D. |
| trans-1,3-Dichloropropene..... | 0.50 | N.D. |
| Methylene chloride..... | 5.0 | N.D. |
| 1,1,2,2-Tetrachloroethane..... | 0.50 | N.D. |
| Tetrachloroethene..... | 0.50 | 1.1 |
| 1,1,1-Trichloroethane..... | 0.50 | N.D. |
| 1,1,2-Trichloroethane..... | 0.50 | N.D. |
| Trichloroethene..... | 0.50 | N.D. |
| Trichlorofluoromethane..... | 0.50 | N.D. |
| Vinyl chloride..... | 0.50 | N.D. |

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

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| | | |
|--|--|--|
| Kaprealian Engineering, Inc. 2401 Stanwell Drive, Suite 400 Concord, CA 94520 Attention: Mardo Kaprealian, P.E. | Client Project ID: Unocal, 1300 Davis St., San Leandro Sample Descript: Water, MW - 7 Analysis Method: EPA 5030/8010 Lab Number: 205-1285 | Sampled: May 26, 1992 Received: May 26, 1992 Analyzed: Jun 8, 1992 Reported: Jun 10, 1992 |
|--|--|--|

HALOGENATED VOLATILE ORGANICS (EPA 8010)

| Analyte | Detection Limit µg/L | Sample Results µg/L |
|--------------------------------|-------------------------|------------------------|
| Bromodichloromethane..... | 0.50 | N.D. |
| Bromoform..... | 0.50 | N.D. |
| Bromomethane..... | 0.50 | N.D. |
| Carbon tetrachloride..... | 0.50 | N.D. |
| Chlorobenzene..... | 0.50 | N.D. |
| Chloroethane..... | 0.50 | N.D. |
| 2-Chloroethylvinyl ether..... | 0.50 | N.D. |
| Chloroform..... | 0.50 | N.D. |
| Chloromethane..... | 0.50 | N.D. |
| Dibromochloromethane..... | 0.50 | N.D. |
| 1,3-Dichlorobenzene..... | 0.50 | N.D. |
| 1,4-Dichlorobenzene..... | 0.50 | N.D. |
| 1,2-Dichlorobenzene..... | 0.50 | N.D. |
| 1,1-Dichloroethane..... | 0.50 | N.D. |
| 1,2-Dichloroethane..... | 0.50 | N.D. |
| 1,1-Dichloroethene..... | 0.50 | N.D. |
| cis-1,2-Dichloroethene..... | 0.50 | N.D. |
| trans-1,2-Dichloroethene..... | 0.50 | N.D. |
| 1,2-Dichloropropane..... | 0.50 | N.D. |
| cis-1,3-Dichloropropene..... | 0.50 | N.D. |
| trans-1,3-Dichloropropene..... | 0.50 | N.D. |
| Methylene chloride..... | 5.0 | N.D. |
| 1,1,2,2-Tetrachloroethane..... | 0.50 | N.D. |
| Tetrachloroethene..... | 0.50 | 2.2 |
| 1,1,1-Trichloroethane..... | 0.50 | N.D. |
| 1,1,2-Trichloroethane..... | 0.50 | N.D. |
| Trichloroethene..... | 0.50 | N.D. |
| Trichlorofluoromethane..... | 0.50 | N.D. |
| Vinyl chloride..... | 0.50 | N.D. |

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

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Project Manager



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Kaprealian Engineering, Inc.
2401 Stanwell Drive, Suite 400
Concord, CA 94520

Client Project ID: Unocal, 1300 Davis St., San Leandro

Attention: Mardo Kaprealian, P.E. QC Sample Group: 2051282-285

Reported: Jun 10, 1992

QUALITY CONTROL DATA REPORT

| ANALYTE | Benzene | Toluene | Ethyl-Benzene | Xylenes | Diesel |
|---|---------------|---------------|---------------|---------------|--------------|
| Method: | EPA 8015/8020 | EPA 8015/8020 | EPA 8015/8020 | EPA 8015/8020 | EPA8015 |
| Analyst: | A.T. | A.T. | A.T. | A.T. | K.Wimer |
| Reporting Units: | µg/L | µg/L | µg/L | µg/L | µg/L |
| Date Analyzed: | May 29, 1992 | May 29, 1992 | May 29, 1992 | May 29, 1992 | Jun 5, 1992 |
| QC Sample #: | Matrix Blank | Matrix Blank | Matrix Blank | Matrix Blank | Matrix Blank |
| Sample Conc.: | N.D. | N.D. | N.D. | N.D. | N.D. |
| Spike Conc. Added: | 20 | 20 | 20 | 60 | 300 |
| Conc. Matrix Spike: | 23 | 23 | 24 | 73 | 260 |
| Matrix Spike % Recovery: | 115 | 115 | 120 | 122 | 87 |
| Conc. Matrix Spike Dup.: | 23 | 23 | 24 | 72 | 270 |
| Matrix Spike Duplicate % Recovery: | 115 | 115 | 120 | 120 | 90 |
| Relative % Difference: | 0.0 | 0.0 | 0.0 | 1.4 | 3.9 |

Laboratory blank contained the following analytes: None Detected

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Project Manager

| | |
|------------------------|--|
| % Recovery: | $\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$ |
| Relative % Difference: | $\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$ |

2051282.KF1 <7>



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Kaprealian Engineering, Inc.
2401 Stanwell Drive, Suite 400
Concord, CA 94520

Client Project ID: Unocal, 1300 Davis St., San Leandro

Attention: Mardo Kaprealian, P.E. QC Sample Group: 2051282-285

Reported: Jun 10, 1992

QUALITY CONTROL DATA REPORT

| ANALYTE | 1,1-Dichloroethene | Trichloro-ethene | Chloro-benzene |
|---|--------------------|------------------|----------------|
| Method: | EPA 8010 | EPA 8010 | EPA 8010 |
| Analyst: | M. Nguyen | M. Nguyen | M. Nguyen |
| Reporting Units: | µg/L | µg/L | µg/L |
| Date Analyzed: | Jun 8, 1992 | Jun 8, 1992 | Jun 8, 1992 |
| QC Sample #: | Matrix Blank | Matrix Blank | Matrix Blank |
| Sample Conc.: | N.D. | N.D. | N.D. |
| Spike Conc. Added: | 10 | 10 | 10 |
| Conc. Matrix Spike: | 10 | 11 | 9.7 |
| Matrix Spike % Recovery: | 100 | 110 | 97 |
| Conc. Matrix Spike Dup.: | 9.6 | 11 | 9.6 |
| Matrix Spike Duplicate % Recovery: | 96 | 110 | 96 |
| Relative % Difference: | 4.1 | 9.5 | 1.1 |

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met

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Scott A. Chieffo
Project Manager

| | |
|-----------------------|---|
| % Recovery | $\frac{\text{Conc. of M S} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$ |
| Relative % Difference | $\frac{\text{Conc. of M S} - \text{Conc. of M.S.D.}}{(\text{Conc. of M S.} + \text{Conc. of M.S.D.}) / 2} \times 100$ |



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| | | |
|--|--|------------------------|
| Kaprealian Engineering, Inc. P.O. Box 996 Benicia, CA 94510 Attention: Mardo Kaprealian, P.E. | Client Project ID: Unocal, 1300 Davis St., San Leandro QC Sample Group: 2051282-285 | Reported: Jun 10, 1992 |
|--|--|------------------------|

QUALITY CONTROL DATA REPORT

SURROGATE

| | EPA | EPA | EPA | EPA | EPA | EPA8015 | EPA8015 |
|------------------|--------------|--------------|--------------|--------------|--------------|-------------|--------------|
| Method: | 8015/8020 | 8015/8020 | 8015/8020 | 8015/8020 | 8015/8020 | EPA8015 | EPA8015 |
| Analyst: | A.T. | A.T. | A.T. | A.T. | A.T. | K.Wimer | K.Wimer |
| Reporting Units: | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L |
| Date Analyzed: | May 29, 1992 | May 29, 1992 | May 29, 1992 | May 29, 1992 | May 29, 1992 | Jun 5, 1992 | Jun 5, 1992 |
| Sample #: | 205-1282 | 205-1283 | 205-1284 | 205-1285 | Matrix Blank | 205-1283 | Matrix Blank |

| Surrogate | | | | | | | |
|-------------|-----|-----|-----|-----|-----|----|----|
| % Recovery: | 108 | 109 | 106 | 102 | 100 | 84 | 90 |

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Scott A. Chieffo
 Scott A. Chieffo
 Project Manager

| | |
|-----------------------|--|
| % Recovery | $\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$ |
| Relative % Difference | $\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$ |

2051282.KEL <9>



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Kaprealian Engineering, Inc.

Client Project ID: Unocal, 1300 Davis St., San Leandro

P.O. Box 996

Benicia, CA 94510

Attention: Mardo Kaprealian, P.E. QC Sample Group: 2051282-285

Reported: Jun 10, 1992

QUALITY CONTROL DATA REPORT

SURROGATE

| | EPA 8010 | EPA 8010 | EPA 8010 | EPA 8010 | EPA 8010 |
|------------------|-------------|-------------|-------------|-------------|--------------|
| Method: | EPA 8010 | EPA 8010 | EPA 8010 | EPA 8010 | EPA 8010 |
| Analyst: | M. Nguyen | M. Nguyen | M. Nguyen | M. Nguyen | M. Nguyen |
| Reporting Units: | µg/L | µg/L | µg/L | µg/L | µg/L |
| Date Analyzed: | Jun 8, 1992 | Jun 8, 1992 | Jun 8, 1992 | Jun 8, 1992 | Jun 8, 1992 |
| Sample #: | 205-1282 | 205-1283 | 205-1284 | 205-1285 | Matrix Blank |

Surrogate #1

| | | | | | |
|-------------|-----|-----|-----|----|-----|
| % Recovery: | 105 | 122 | 100 | 90 | 100 |
|-------------|-----|-----|-----|----|-----|

Surrogate #2

| | | | | | |
|-------------|-----|-----|-----|----|----|
| % Recovery: | 108 | 115 | 108 | 93 | 93 |
|-------------|-----|-----|-----|----|----|

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 Scott A. Chieffo
 Project Manager

| | |
|------------------------|--|
| % Recovery: | $\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$ |
| Relative % Difference: | $\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$ |

2051282 KEI <10>



KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

| SAMPLER <i>Rae/Kel</i> | | SITE NAME & ADDRESS <i>UNOCAL SAN LEANARO 1300 DAVIS ST.</i> | | | | | | | ANALYSES REQUESTED <i>TPHG PSTE TPH * 8210</i> | | | | TURN AROUND TIME: <i>REGULAR</i> |
|---------------------------|-------------|---|------|----------|----------|------|--------------|-----------------------|---|----------|----------|-----------|--|
| WITNESSING AGENCY | | | | | | | | | | | | | REMARKS <i>AS PER NYBAR 5-28 2051282AD 1283AE 1284AD 1285AD</i> |
| SAMPLE NO. | DATE | TIME | SOIL | WATER | GRAB | COMP | NO. OF CONT. | SAMPLING LOCATION | TPHG | PSTE | TPH | * 8210 | |
| <i>MW2</i> | <i>5-26</i> | | | <i>x</i> | <i>x</i> | | <i>4</i> | <i>107A</i> | <i>x</i> | <i>x</i> | | <i>x</i> | |
| <i>MW4</i> | <i>"</i> | | | <i>x</i> | <i>x</i> | | <i>4</i> | <i>107B 17113</i> | <i>x</i> | <i>x</i> | <i>x</i> | <i>x</i> | |
| <i>MW6</i> | <i>"</i> | | | <i>x</i> | <i>x</i> | | <i>4</i> | <i>107A</i> | <i>x</i> | <i>x</i> | | <i>x</i> | |
| <i>MW7</i> | <i>"</i> | | | <i>x</i> | <i>x</i> | | <i>4</i> | <i>107A</i> | <i>x</i> | <i>x</i> | | <i>x</i> | |

| | | | |
|---|------------------------------|--|---|
| Relinquished by: (Signature) <i>Kel/Kel</i> | Date/Time <i>5-26-92</i> | Received by: (Signature) <i>A. Naga</i> | <p>The following MUST BE completed by the laboratory accepting samples for analysis:</p> <ol style="list-style-type: none"> Have all samples received for analysis been stored in ice? <i>yes</i> Will samples remain refrigerated until analyzed? <i>yes</i> Did any samples received for analysis have head space? <i>No</i> Were samples in appropriate containers and properly packaged? <i>yes</i> |
| Relinquished by: (Signature) <i>Jim C...</i> | Date/Time <i>5/27/92</i> | Received by: (Signature) <i>Troy Copeland</i> | |
| Relinquished by: (Signature) <i>...</i> | Date/Time <i>5-27-92</i> | Received by: (Signature) <i>...</i> | |
| Relinquished by: (Signature) | Date/Time <i>12-30-94</i> | Received by: (Signature) | |
| | | | <p>Signature: <i>A. Naga</i> Title: <i>Analyst</i> Date: <i>5/28</i></p> |



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| | | |
|--|--|--|
| Kaprealian Engineering, Inc. 2401 Stanwell Drive, Suite 400 Concord, CA 94520 Attention: Mardo Kaprealian, P.E. | Client Project ID: Unocal, 1300 Davis St., San Leandro Sample Descript.: Water, MW3 Analysis Method: EPA 5030/ 8015/8020 Lab Number: 205-1265 | Sampled: May 26, 1992 Received: May 26, 1992 Analyzed: Jun 2, 1992 Reported: Jun 11, 1992 |
|--|--|--|

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

| Analyte | Method Detection Limit $\mu\text{g/L}$ (ppb) | Sample Results $\mu\text{g/L}$ (ppb) |
|--|---|---|
| Low to Medium Boiling Point Hydrocarbons | 30 | 1,300,000 |
| Benzene | 0.30 | 5,100 |
| Toluene | 0.30 | 66,000 |
| Ethyl Benzene | 0.30 | 20,000 |
| Xylenes | 0.30 | 160,000 |

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

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Scott A. Chieffo
Project Manager



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| | | |
|-----------------------------------|--|------------------------|
| Kaprealian Engineering, Inc. | Client Project ID: Unocal, 1300 Davis St., San Leandro | Sampled: May 26, 1992 |
| 2401 Stanwell Drive, Suite 400 | Matrix Descript: Water | Received: May 26, 1992 |
| Concord, CA 94520 | Analysis Method: EPA 3510/8015 | Extracted: Jun 2, 1992 |
| Attention: Mardo Kaprealian, P.E. | First Sample #: 205-1265 | Analyzed: Jun 9, 1992 |
| | | Reported: Jun 11, 1992 |

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

| Sample Number | Sample Description | High B.P. Hydrocarbons $\mu\text{g/L}$ (ppb) |
|---------------|--------------------|--|
| 205-1265 | MW3 | 2,400,000 |

Method Detection Limits: 50

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard

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Project Manager

2051265 KEI <2>



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| | | |
|--|--|--|
| Kaprealian Engineering, Inc. 2401 Stanwell Drive, Suite 400 Concord, CA 94520 Attention: Mardo Kaprealian, P.E. | Client Project ID: Unocal, 1300 Davis St., San Leandro Matrix Descript: Water Analysis Method: SM 5520 B&F (Gravimetric) First Sample #: 205-1265 | Sampled: May 26, 1992 Received: May 26, 1992 Extracted: Jun 4, 1992 Analyzed: Jun 4, 1992 Reported: Jun 11, 1992 |
|--|--|--|

TOTAL RECOVERABLE PETROLEUM OIL

| Sample Number | Sample Description | Oil & Grease mg/L (ppm) |
|---------------|--------------------|-------------------------------|
| 205-1265 | MW3 | 880 |

Detection Limits:

10

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Project Manager



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| | | |
|--|---|--|
| Kaprealian Engineering, Inc. 2401 Stanwell Drive, Suite 400 Concord, CA 94520 Attention: Mardo Kaprealian, P.E. | Client Project ID: Unocal, 1300 Davis St., San Leandro Sample Descript: Water, MW3 Analysis Method: EPA 5030/8010 Lab Number: 205-1265 | Sampled: Jun 26, 1992 Received: May 26, 1992 Analyzed: Jun 9, 1992 Reported: Jun 11, 1992 |
|--|---|--|

HALOGENATED VOLATILE ORGANICS (EPA 8010)

| Analyte | Detection Limit µg/L | Sample Results µg/L |
|--------------------------------|-------------------------|------------------------|
| Bromodichloromethane..... | 500 | N.D. |
| Bromoform..... | 500 | N.D. |
| Bromomethane..... | 500 | N.D. |
| Carbon tetrachloride..... | 500 | N.D. |
| Chlorobenzene..... | 500 | N.D. |
| Chloroethane..... | 500 | N.D. |
| 2-Chloroethyvinyl ether..... | 500 | N.D. |
| Chloroform..... | 500 | N.D. |
| Chloromethane..... | 500 | N.D. |
| Dibromochloromethane..... | 500 | N.D. |
| 1,3-Dichlorobenzene..... | 500 | N.D. |
| 1,4-Dichlorobenzene..... | 500 | N.D. |
| 1,2-Dichlorobenzene..... | 500 | N.D. |
| 1,1-Dichloroethane..... | 500 | N.D. |
| 1,2-Dichloroethane..... | 500 | N.D. |
| 1,1-Dichloroethene..... | 500 | N.D. |
| cis-1,2-Dichloroethene..... | 500 | N.D. |
| trans-1,2-Dichloroethene..... | 500 | N.D. |
| 1,2-Dichloropropane..... | 500 | N.D. |
| cis-1,3-Dichloropropene..... | 500 | N.D. |
| trans-1,3-Dichloropropene..... | 500 | N.D. |
| Methylene chloride..... | 5,000 | N.D. |
| 1,1,2,2-Tetrachloroethane..... | 500 | N.D. |
| Tetrachloroethene..... | 500 | N.D. |
| 1,1,1-Trichloroethane..... | 500 | N.D. |
| 1,1,2-Trichloroethane..... | 500 | N.D. |
| Trichloroethene..... | 500 | N.D. |
| Trichlorofluoromethane..... | 500 | N.D. |
| Vinyl chloride..... | 500 | N.D. |

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Kaprealian Engineering, Inc.
2401 Stanwell Drive, Suite 400
Concord, CA 94520

Client Project ID: Unocall, 1300 Davis St., San Leandro

Attention: Mardo Kaprealian, P.E. QC Sample Group: 205-1265

Reported: Jun 11, 1992

QUALITY CONTROL DATA REPORT

| ANALYTE | Benzene | Toluene | Ethyl-Benzene | Xylenes | Diesel | Oil and Grease |
|------------------------------------|---------------|---------------|---------------|---------------|--------------|----------------|
| Method: | EPA 8015/8020 | EPA 8015/8020 | EPA 8015/8020 | EPA 8015/8020 | EPA8015 | SM5520 |
| Analyst: | A.T. | A.T. | A.T. | A.T. | K.Wimer | D. Newcomb |
| Reporting Units: | ug/L | ug/L | ug/L | ug/L | ug/L | mg/L |
| Date Analyzed: | Jun 2, 1992 | Jun 2, 1992 | Jun 2, 1992 | Jun 2, 1992 | Jun 5, 1992 | Jun 4, 1992 |
| QC Sample #: | Matrix Blank | Matrix Blank | Matrix Blank | Matrix Blank | Matrix Blank | Matrix Blank |
| Sample Conc.: | N.D. | N.D. | N.D. | N.D. | N.D. | N.D. |
| Spike Conc. Added: | 20 | 20 | 20 | 60 | 300 | 100 |
| Conc. Matrix Spike: | 23 | 23 | 23 | 72 | 260 | 96 |
| Matrix Spike % Recovery: | 115 | 115 | 115 | 120 | 87 | 96 |
| Conc. Matrix Spike Dup.: | 22 | 22 | 20 | 71 | 270 | 97 |
| Matrix Spike Duplicate % Recovery: | 110 | 110 | 100 | 118 | 90 | 97 |
| Relative % Difference: | 4.4 | 4.4 | 14 | 1.4 | 3.9 | 1.0 |

Laboratory blank contained the following analytes: None Detected

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Project Manager

| | |
|------------------------|--|
| % Recovery: | $\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$ |
| Relative % Difference: | $\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$ |



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Kaprealian Engineering, Inc.
2401 Starwell Drive, Suite 400
Concord, CA 94520

Client Project ID: Unocal, 1300 Davis St., San Leandro

Attention: Mardo Kaprealian, P.E. QC Sample Group: 205-1265

Reported: Jun 11, 1992

QUALITY CONTROL DATA REPORT

| ANALYTE | 1,1-Dichloroethene | Trichloroethene | Chlorobenzene |
|---------|--------------------|-----------------|---------------|
|---------|--------------------|-----------------|---------------|

| | | | |
|------------------|--------------|--------------|--------------|
| Method: | EPA 8010 | EPA 8010 | EPA 8010 |
| Analyst: | M. Nguyen | M. Nguyen | M. Nguyen |
| Reporting Units: | ug/L | ug/L | ug/L |
| Date Analyzed: | Jun 9, 1992 | Jun 9, 1992 | Jun 9, 1992 |
| QC Sample #: | Matrix Blank | Matrix Blank | Matrix Blank |

Sample Conc.: N.D. N.D. N.D.

Spike Conc. Added: 10 10 10

Conc. Matrix Spike: 9.7 11 9.6

Matrix Spike % Recovery: 97 110 96

Conc. Matrix Spike Dup.: 8.4 11 9.8

Matrix Spike Duplicate % Recovery: 84 110 98

Relative % Difference: 14 0.0 2.1

Laboratory blank contained the following analytes. None Detected

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

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Scott A. Chieffo
Project Manager

| | |
|------------------------|--|
| % Recovery. | $\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$ |
| Relative % Difference. | $\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$ |



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| | | |
|--|---|------------------------|
| Kaprealian Engineering, Inc. P.O. Box 996 Benicia, CA 94510 Attention: Mardo Kaprealian, P.E. | Client Project ID: Unocal, 1300 Davis St., San Leandro QC Sample Group: 205-1265 | Reported: Jun 11, 1992 |
|--|---|------------------------|

QUALITY CONTROL DATA REPORT

SURROGATE

| | | | | |
|------------------|-------------|-------------|-------------|-------------|
| | EPA | EPA | EPA8015 | EPA8015 |
| Method: | 8015/8020 | 8015/8020 | | |
| Analyst: | A.T. | A.T. | K.Wimer | K.Wimer |
| Reporting Units: | ug/L | ug/L | ug/L | ug/L |
| Date Analyzed: | Jun 2, 1992 | Jun 2, 1992 | Jun 9, 1992 | Jun 5, 1992 |
| Sample #: | 205-1265 | Blank | 205-1265 | Blank |

| | | | | |
|--------------------|----|-----|-----|----|
| Surrogate | | | | |
| % Recovery: | 97 | 103 | 400 | 90 |

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Scott A. Chieffo
 Scott A. Chieffo
 Project Manager

| | |
|------------------------|--|
| % Recovery: | $\frac{\text{Conc. of M S} - \text{Conc. of Sample}}{\text{Spike Conc Added}} \times 100$ |
| Relative % Difference: | $\frac{\text{Conc. of M S} - \text{Conc of M S D.}}{(\text{Conc. of M S} + \text{Conc of M S D.}) / 2} \times 100$ |



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Kaprealian Engineering, Inc.

Client Project ID: Unocal, 1300 Davis St., San Leandro

P.O. Box 996

Benicia, CA 94510

Attention: Mardo Kaprealian, P.E. QC Sample Group: 205-1265

Reported: Jun 11, 1992

QUALITY CONTROL DATA REPORT

SURROGATE

| | | |
|------------------|-------------|-------------|
| Method: | EPA 8010 | EPA 8010 |
| Analyst: | M. Nguyen | M. Nguyen |
| Reporting Units: | ug/L | ug/L |
| Date Analyzed: | Jun 9, 1992 | Jun 9, 1992 |
| Sample #: | 205-1265 | Blank |

| | | |
|---------------------|-----|-----|
| Surrogate #1 | | |
| % Recovery: | 100 | 105 |

| | | |
|---------------------|----|----|
| Surrogate #2 | | |
| % Recovery: | 80 | 80 |

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 Scott A. Chieffo
 Project Manager

| | |
|------------------------|--|
| % Recovery: | $\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$ |
| Relative % Difference: | $\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$ |



KAPREALIAN ENGINEERING, INC.

CHAIN OF CUSTODY

4)

| SAMPLER Ray KEI | | SITE NAME & ADDRESS UNOCAC SAN LEANDRO 1300 DAVIS ST. | | | | | ANALYSES REQUESTED | | | | TURN AROUND TIME: | | |
|---------------------------|-------------|---|------|----------|----------|------|--|-------------------|----------|----------|-------------------|----------|------------------|
| WITNESSING AGENCY | | | | | | | TPHG 8010 TPHD TCG (SIZE C) | | | | REGULAR | | |
| SAMPLE ID NO. | DATE | TIME | SOIL | WATER | GRAB | COMP | NO. OF CONT. | SAMPLING LOCATION | | | REMARKS | | |
| MW3 | 5-26 | | | X | X | | 1 A711B 2 VOA | | X | X | X | X | 2051265AD |

| | | | |
|--|-------------------------------------|--|---|
| Relinquished by: (Signature) Ray KEI | Date/Time 5-26-92 | Received by: (Signature) A. Wayne | 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) Jim Little | Date/Time 5/27/92 10:35 | Received by: (Signature) Troy Copeland | |
| Relinquished by: (Signature) [Signature] | Date/Time 5/27/92 12:30pm | Received by: (Signature) [Signature] | |
| Relinquished by: (Signature) | Date/Time | Received by: (Signature) | |
| | | | Signature: A. Wayne Title: Analyst Date: 5/26 |