

QUARTERLY GROUND WATER ANALYSIS  
FEBRUARY 1990  
OKADA PROPERTY FUEL LEAKS  
16109 ASHLAND AVENUE  
SAN LEANDRO, CALIFORNIA

PROJECT 4486/1

MARCH 1990

for

Citation Builders  
404 Saratoga Avenue, Suite 100  
Santa Clara, California 95050

by

TERRATECH, INC.  
1365 Vander Way  
San Jose, California 95112

March 16, 1989<sup>90</sup>





March 16, 1990  
Project 4486/1

Mr. Bryan Walsh  
Citation Builders  
404 Saratoga Avenue, Suite 100  
Santa Clara, CA 95050

Subject: Quarterly Ground Water Analysis - February 1990  
Okada Property Fuel Leaks  
16109 Ashland Avenue  
San Leandro, California

Dear Mr. Walsh:

This letter presents the results of our second quarterly sampling and analysis of the ground water monitoring wells (MW-1, MW-2 and MW-3) located at 16109 Ashland Avenue, in San Leandro. Attached are a Site Plan showing the latest ground water gradient, a summary table of ground water sample analysis results, the latest chain-of-custody record and the latest laboratory report.

WORK PERFORMED

On February 22, 1990 a member of our environmental staff measured the ground water levels, and purged and sampled the three monitoring wells at the subject site on Ashland Avenue. An individual Teflon bailer was used for each well to eliminate the risk of cross-contamination. The bailers were steam-cleaned at our office prior to travel to the site.

Wells MW-2 and MW-3 were purged by removing approximately five well volumes of water. Due to poor recharging, only three well volumes were purged from MW-1. The ground water removed from the wells was placed in a 55-gallon drum and left on-site pending laboratory results.

The ground water samples were collected with the bailers and transferred to 40-ml VOA vials via a regulated spout. The vials were filled until a positive meniscus was formed, then were capped with Teflon-lined screw caps. After inverting the vials and tapping them to verify that no air bubbles were present, the vials were labeled and placed in an iced cooler.

Further details on Terratech's standard sampling procedures are described in our Project #4486/1 report dated August 31, 1989.

FINDINGS

A summary of the ground water level measurements made to date is presented in the following table:

| LOCATION | CASING<br>ELEVATION * | DATE     | DEPTH TO<br>WATER | WATER<br>ELEVATION |
|----------|-----------------------|----------|-------------------|--------------------|
| MW-1     | 100.03'               | 8/21/89  | 8.00'             | 92.03'             |
|          |                       | 11/20/89 | 7.80'             | 92.23'             |
|          |                       | 2/22/90  | 6.81'             | 93.22'             |
| MW-2     | 100.00'               | 8/21/89  | 7.65'             | 92.35'             |
|          |                       | 11/20/89 | 7.43'             | 92.57'             |
|          |                       | 2/22/90  | 6.56'             | 93.44'             |
| MW-3     | 101.38'               | 8/21/89  | 8.63'             | 92.75'             |
|          |                       | 11/20/89 | 8.39'             | 92.99'             |
|          |                       | 2/22/90  | 7.58'             | 93.80'             |

\* Note: Top of MW-2 casing used as relative datum.

The water table has risen about one foot since November. The latest ground water contours are shown on Figure 1. The gradient direction is still westerly, at 0.0018 ft/ft. Accordingly, MW-1 and MW-3 are downgradient from their respective former tanks.

No fuel odors or sheens were observed during our purging and sampling of wells MW-1 and MW-2. However, a slight fuel sheen was again noticed on the bailed water from MW-3.

Table 1 presents a cumulative summary of the laboratory results. The sample from MW-3 contained low levels (1100 ppb) of total petroleum hydrocarbons (TPH) as diesel and TPH as gasoline (280 ppb) but no benzene, toluene, ethylbenzene, and xylenes (BTEX) above detection limits. Analysis of the samples collected from MW-1 and MW-2 revealed no detectable amounts of TPH as diesel, gasoline, or BTEX compounds.



CONCLUSIONS AND RECOMMENDATIONS

Laboratory results continue to indicate that the surrounding ground water being drawn into MW-3 contains low levels of petroleum contamination. It is quite common in subsurface petroleum leaks for a water table rise to result in an increased concentration of fuel. Pending further evaluation, the petroleum reported as gasoline may actually be "light end" compounds from fuel oil and not truly gasoline.

~~We recommend that contaminated soils in both the MW-3 area and the boiler room area (near MW-1) be removed.~~ A minimum cleanup goal of 10 ppm would appear reasonable for TPH as diesel and 1 ppm for TPH as gasoline.

As verbally discussed, we are temporarily suspending quarterly monitoring until the soil cleanup is completed.

LIMITATIONS

This report and the work associated with it have been provided in accordance with the general principles and practices currently employed in the environmental consulting profession. This is in lieu of all other warranties, express or implied.

Report Prepared by,  
TERRATECH, INC.

Eric R. Lautenbach  
CE 42437

cc: Mr. Larry Sito, Alameda County Health Agency  
Mr. Lester Feldman, California Regional Water Quality Control Board



TABLE 1

## SUMMARY OF GROUND WATER SAMPLE ANALYSIS RESULTS

Okada Property  
San Leandro, California

| SAMPLE LOCATION         | DATE COLLECTED | TOTAL PETROLEUM HYDROCARBONS AS GASOLINE (ppb) | BENZENE (ppb) | TOLUENE (ppb) | ETHYL-BENZENE (ppb) | XYLENES (ppb) | TOTAL PETROLEUM HYDROCARBONS AS DIESEL (ppb) |
|-------------------------|----------------|--|---------------|---------------|---------------------|---------------|--|
| MW-1                    | 3/31/89        | < 1000   | 0.4           | 1.8           | < 0.3               | < 0.3         | < 1000                                       |
|                         | 11/20/89       | < 50   | < 0.5         | < 0.5         | < 0.5               | < 1.0         | < 50   |
|                         | 2/22/90        | < 50   | < 0.5         | < 0.5         | < 0.5               | < 1.0         | < 50   |
| MW-2                    | 3/31/89        | < 1000   | 0.4           | 1.8           | 0.4                 | 1.8           | < 1000                                       |
|                         | 11/20/89       | < 50   | < 0.5         | < 0.5         | < 0.5               | < 1.0         | < 50   |
|                         | 2/22/90        | < 50   | < 0.5         | < 0.5         | < 0.5               | < 1.0         | < 50   |
| MW-3                    | 8/21/89        | < 50   | < 0.5         | < 0.5         | < 0.5               | < 1.0         | < 50   |
|                         | 11/20/89       | < 50   | < 0.5         | < 0.5         | < 0.5               | < 1.0         | 80   |
|                         | 2/22/90        | 280  | < 0.5         | < 0.5         | < 0.5               | < 1.0         | 1100   |
| .....                   |                |  |               |               |                     |               |  |
| DRINKING WATER LIMITS * |                |  |               |               |                     |               |  |
|                         | MCL's          | N/A  | 1.0           | N/A           | 680                 | 1750          | N/A  |
|                         | AL's           | N/A  | N/A           | 100           | N/A                 | N/A           | N/A  |
| -----                   |                |  |               |               |                     |               |  |

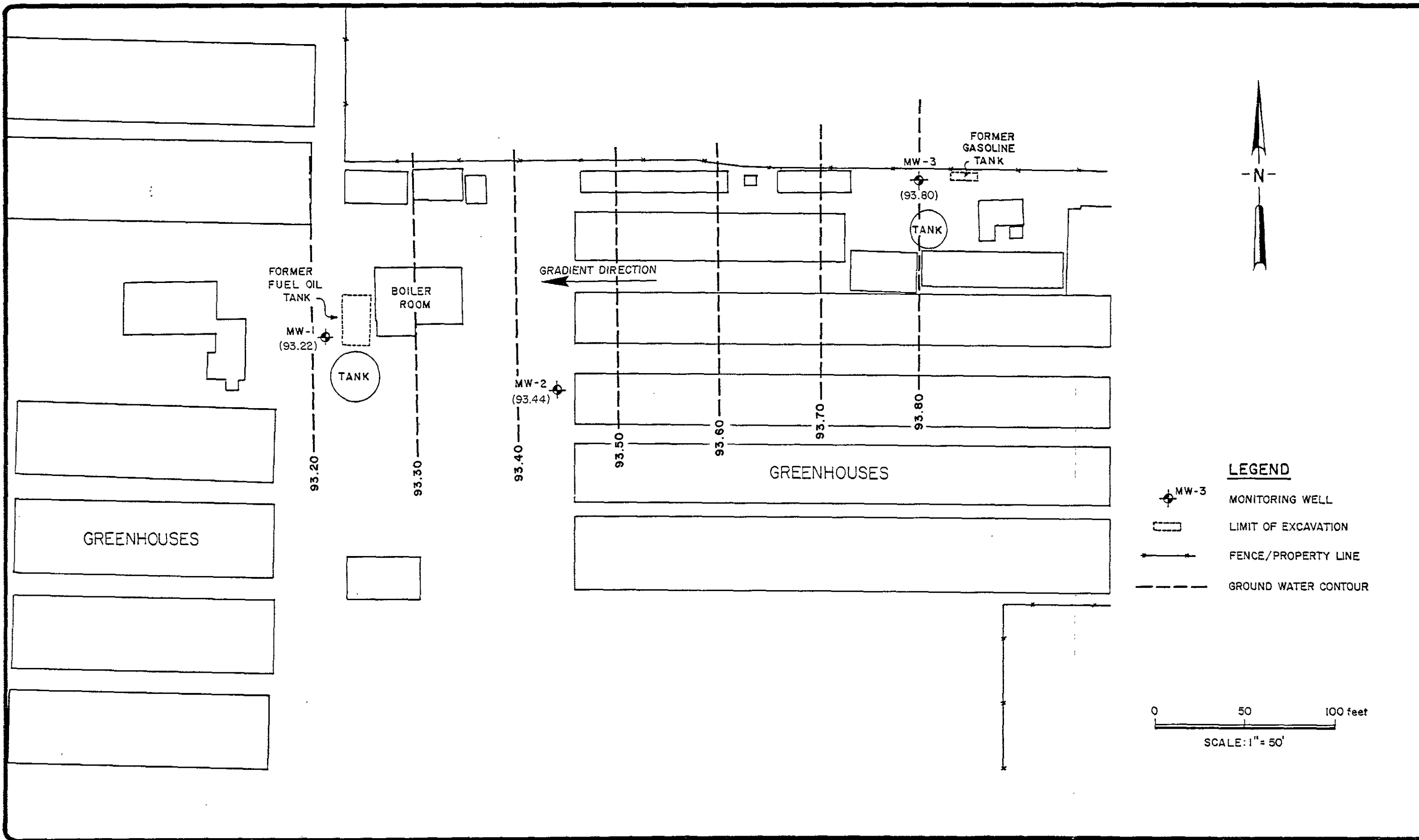
## NOTES:

\* - State Maximum Contaminant Levels (MCL's) and Action Levels (AL's), April 1989.

N/A - Not available

ppb - parts per billion





**GROUND WATER GRADIENT (2-22-90)**  
REF. DATUM - TOP OF MW-2 CASING = 100'

OKADA PROPERTY  
SAN LEANDRO, CALIFORNIA  
**SITE PLAN**

**FIGURE**  
1  
**PROJECT**  
4486/1



TERRATECH

CHAIN OF CUSTODY RECORD

P.O. NO. 3698

TURNAROUND: 2-week

| PROJECT NUMBER: 4186/1  |         |      |       |      | Number of Containers       | Analysis Required   |                             |   |                          |                    |  | REMARKS | SAMPLE DEPTH |     |
|---|---------|------|-------|------|----------------------------|---|-----------------------------|---|--------------------------|--------------------|--|---------|--------------|-----|
| Station Number  | Date    | Time | Comp. | Grab |                            | Station Location  | TPH or Gasoline             | BTEX  | TPH or Diesel            |                    |  |         |              |     |
| SAMPLERS (signature): <i>[Signature]</i><br><i>(Shed Christley)</i>                         |         |      |       |      |                            |   |                             |   |                          |                    |  |         |              |     |
| MW-1  | 2-22-90 | AM   |       | X    |                            | 2-liter Ambers  | X                           | X   |                          |                    |  |         |              | ~8' |
|   |         |      |       | X    |                            | 2-40ml VOA'S  | X                           | X   |                          |                    |  |         |              |     |
| MW-2  | "       | AM   |       | X    |                            | 2-liter Ambers  | X                           | X   |                          |                    |  |         |              | ~7' |
|   |         |      |       | X    |                            | 2-40ml VOA'S  | X                           | X   |                          |                    |  |         |              |     |
| MW-3  | "       | AM   |       | X    |                            | 2-liter Ambers  | X                           | X   |                          |                    |  |         |              | ~8' |
|   |         |      |       | X    |                            | 2-40ml VOA'S  | X                           | X   |                          |                    |  |         |              |     |
| Relinquished by(signature): <i>[Signature]</i><br>Company or Agency: <i>Terratech, Inc.</i> |         |      |       |      | Date / Time: 2-22-90 12:45 | Received by (signature): <i>[Signature]</i><br>Company or Agency: TERRATECH, INC. | Relinquished by(signature): | Date / Time:  | Received by (signature): | Company or Agency: |  |         |              |     |
| Relinquished by(signature):   |         |      |       |      | Date / Time:               | Received by (signature):  | Relinquished by:            | Date / Time:  | Received by (signature): | Company or Agency: |  |         |              |     |
| Relinquished by(signature): <i>[Signature]</i><br>Company or Agency: TERRATECH, INC.        |         |      |       |      | Date / Time: 2/22/90 15:47 | Received for Laboratory by: <i>[Signature]</i><br>(signature)                     | Date / Time: 2/22/90 15:47  | Remarks/Shipping Information<br>Send reports to: Eric Lautenbach<br>1365 VANDER WAY, SAN JOSE 95112 |                          |                    |  |         |              |     |

TERRATECH

MAR 09 1990

RECEIVED

**ANAMETRIX INC**

Environmental & Analytical Chemistry  
1961 Concourse Drive Suite E San Jose CA 95131  
(408) 432-8192 • Fax (408) 432-8198



**REPORT**

Eric Lautenbach  
Terratech, Inc. - San Jose  
1365 Vander Way  
San Jose, CA 95112

March 08, 1990  
Anamatrix W.O.#: 9002232  
Date Received : 02/22/90  
Purchase Order#: 3698  
Project Number : 4486/1

Dear Mr. Lautenbach:

Your samples have been received for analysis. The REPORT SUMMARY lists your sample identifications and the analytical methods you requested. The following sections are included in this report: RESULTS.

NOTE: Amounts reported are net values, i.e. corrected for method blank contamination.

If there is any more that we can do, please give us a call. Thank you for using ANAMETRIX, INC.

Sincerely,

ANAMETRIX, INC.

A handwritten signature in cursive script that reads "Terry Cooke".

Terry Cooke  
TPH Supervisor

TC/dag



REPORT SUMMARY  
ANAMETRIX, INC. (408) 432-8192

Client : Terratech, Inc. - San Jose  
Address : 1365 Vander Way  
City : San Jose, CA 95112  
Attn. : Eric Lautenbach

Anamatrix W.O.#: 9002232  
Date Received : 02/22/90  
Purchase Order#: 3698  
Project No. : 4486/1  
Date Released : 03/08/90

| Anamatrix I.D. | Sample I.D. | Matrix | Date Sampled | Method | Date Extract | Date Analyzed | Inst I.D. |
|----------------|-------------|--------|--------------|--------|--------------|---------------|-----------|
|----------------|-------------|--------|--------------|--------|--------------|---------------|-----------|

RESULTS

|            |      |       |          |     |          |          |     |
|------------|------|-------|----------|-----|----------|----------|-----|
| 9002232-01 | MW-1 | WATER | 02/22/90 | TPH | 02/27/90 | 02/28/90 | N/A |
| 9002232-02 | MW-2 | WATER | 02/22/90 | TPH | 02/27/90 | 02/28/90 | N/A |
| 9002232-03 | MW-3 | WATER | 02/22/90 | TPH | 02/27/90 | 02/28/90 | N/A |

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS  
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 4486/1 MW-1  
 Matrix : WATER  
 Date sampled : 02/22/90  
 Date anl.TPHg: 02/26/90  
 Date ext.TPHd: 02/27/90  
 Date anl.TPHd: 02/28/90

Anamatrix I.D. : 9002232-01  
 Analyst : CB  
 Supervisor : TC  
 Date released : 03/08/90  
 Date ext. TOG : N/A  
 Date anl. TOG : N/A

| CAS #     | Compound Name   | Reporting Limit (ug/l) | Amount Found (ug/l) |
|-----------|-----------------|------------------------|---------------------|
| 71-43-2   | Benzene         | 0.5                    | ND                  |
| 108-88-3  | Toluene         | 0.5                    | ND                  |
| 100-41-4  | Ethylbenzene    | 0.5                    | ND                  |
| 1330-20-7 | Total Xylenes   | 1                      | ND                  |
|           | TPH as Gasoline | 50                     | ND                  |
|           | TPH as Diesel   | 50                     | ND                  |

ND - Below reporting limit.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.

TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following either EPA Method 3510 or 3550.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS  
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 4486/1 MW-2  
 Matrix : WATER  
 Date sampled : 02/22/90  
 Date anl.TPHg: 02/26/90  
 Date ext.TPHd: 02/27/90  
 Date anl.TPHd: 02/28/90

Anamatrix I.D. : 9002232-02  
 Analyst : *CP*  
 Supervisor : *TC*  
 Date released : 03/08/90  
 Date ext. TOG : N/A  
 Date anl. TOG : N/A

| CAS #     | Compound Name   | Reporting Limit (ug/l) | Amount Found (ug/l) |
|-----------|-----------------|------------------------|---------------------|
| 71-43-2   | Benzene         | 0.5                    | ND                  |
| 108-88-3  | Toluene         | 0.5                    | ND                  |
| 100-41-4  | Ethylbenzene    | 0.5                    | ND                  |
| 1330-20-7 | Total Xylenes   | 1                      | ND                  |
|           | TPH as Gasoline | 50                     | ND                  |
|           | TPH as Diesel   | 50                     | ND                  |

- ND - Below reporting limit.
- TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
- TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following either EPA Method 3510 or 3550.
- BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS  
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 4486/1 MW-3  
Matrix : WATER  
Date sampled : 02/22/90  
Date anl.TPHg: 02/26/90  
Date ext.TPHd: 02/27/90  
Date anl.TPHd: 02/28/90

Anamatrix I.D. : 9002232-03  
Analyst : CB  
Supervisor : TK  
Date released : 03/08/90  
Date ext. TOG : N/A  
Date anl. TOG : N/A

| CAS #     | Compound Name   | Reporting Limit (ug/l) | Amount Found (ug/l) |
|-----------|-----------------|------------------------|---------------------|
| 71-43-2   | Benzene         | 0.5                    | ND                  |
| 108-88-3  | Toluene         | 0.5                    | ND                  |
| 100-41-4  | Ethylbenzene    | 0.5                    | ND                  |
| 1330-20-7 | Total Xylenes   | 1                      | ND                  |
|           | TPH as Gasoline | 50                     | 280                 |
|           | TPH as Diesel   | 50                     | 1100                |

- ND - Below reporting limit.  
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.  
TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following either EPA Method 3510 or 3550.  
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.