



# GETTLER-RYAN INC.

## TRANSMITTAL

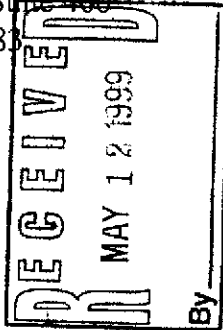
May 11, 1999

G-R #:180021

TO: Mr. David B. De Witt  
Tosco Marketing Company  
2000 Crow Canyon Place, Suite 400  
San Ramon, California 94583

CC: Mr Doug Lee  
Gettler-Ryan Inc.  
Dublin, California

FROM: Deanna L. Harding  
Project Coordinator  
Gettler-Ryan Inc.  
6747 Sierra Court, Suite J  
Dublin, California 94568



RE: Tosco (Unocal) SS #6419  
6401 Dublin Boulevard  
Dublin, California

WE HAVE ENCLOSED THE FOLLOWING:

| COPIES | DATED           | DESCRIPTION   |
|--------|-----------------|---|
| 1      | Revised 5/11/99 | Figure 2 - Concentration Map<br>Groundwater Monitoring and Sampling Report<br>Semi-Annual 1999 - Events of February 10,<br>and April 12, 1999 |

COMMENTS:

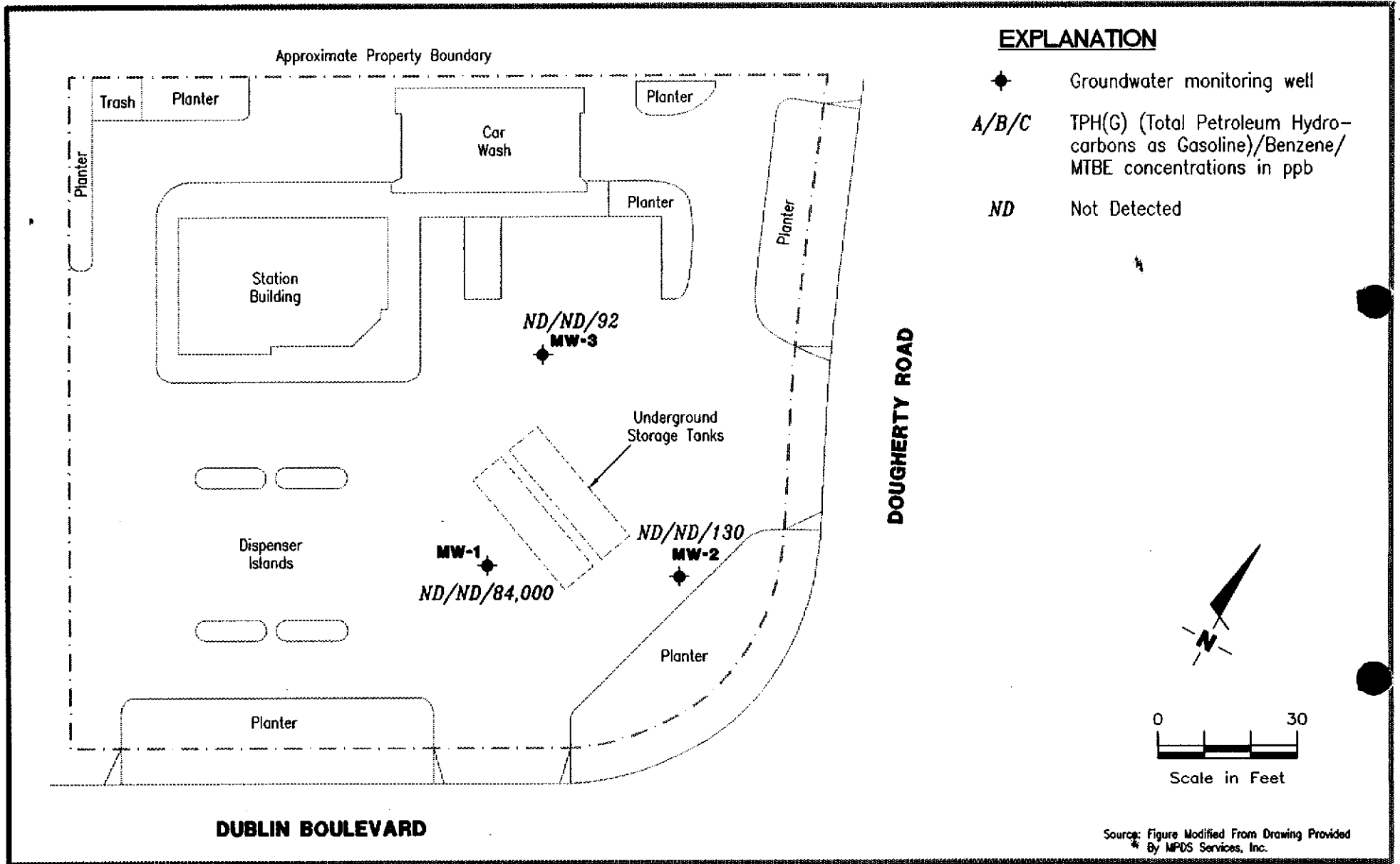
Please replace Figure 2 - Concentration Map in the above described report. Thank you.

Enclosure

cc: Ms. Eva Chu  
Alameda County Health Care Services  
1131 Harbor Bay Parkway  
Alameda, CA 94502

*GW MWS already done -  
installed May 10 samples in week of 17th.*

agency/6419cor.qmt



**Gettler - Ryan Inc.**

6747 Sierra Ct., Suite J (925) 551-7555  
Dublin, CA 94568

**CONCENTRATION MAP**

Unocal Service Station No. 6419  
6401 Dublin Boulevard  
Dublin, California

FIGURE

**2**

JOB NUMBER  
180021

REVIEWED BY

DATE  
February 10, 1999

REVISED DATE  
May 11, 1999



# GETTLER-RYAN INC.

## TRANSMITTAL

April 26, 1999

G-R #:180021

TO: Mr. David B. De Witt  
Tosco Marketing Company  
2000 Crow Canyon Place, Suite 400  
San Ramon, California 94583

CC: Mr Doug Lee  
Gettler-Ryan Inc.  
Dublin, California

FROM: Deanna L. Harding  
Project Coordinator  
Gettler-Ryan Inc.  
6747 Sierra Court, Suite J  
Dublin, California 94568

RE: Tosco (Unocal) SS #6419  
6401 Dublin Boulevard  
Dublin, California

WE HAVE ENCLOSED THE FOLLOWING:

| COPIES | DATED                                   | DESCRIPTION  |
|--------|---|--|
| 1      | April 2, 1999<br>Revised April 20, 1999 | Groundwater Monitoring and Sampling Report<br>Semi-Annual 1999 - Events of February 10, 1999<br>and April 12, 1999 |

### COMMENTS:

This report is being sent to you for your review/comment, prior to being distributed on your behalf. If no comments are received by **May 7, 1999**, this report will be distributed to the following:

#### Enclosure

cc: Ms. Eva Chu  
Alameda County Health Care Services  
1131 Harbor Bay Parkway  
Alameda, California 94502

*- WP coming for add'l. SB/HR  
(3 is good. Also to verify  
discrepancies not a problem  
- cont QMR for MW-1 for now  
and semi-ann. for MW-2 & MW-3*

agency/6419dbd.qmt

11:31 AM 01/14/99  
ENVIRONMENTAL  
PROTECTION  
3-11



# GETTLER-RYAN INC.

April 2, 1999

Revised: April 20, 1999

G-R Job #180021

Mr. David B. De Witt  
Tosco Marketing Company  
2000 Crow Canyon Place, Suite 400  
San Ramon, California 94583

RE: Semi-Annual 1999 Groundwater Monitoring & Sampling Report  
Tosco (Unocal) Service Station #6419  
6401 Dublin Boulevard  
Dublin, California

Dear Mr. De Witt:

This report documents the semi-annual groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R). On February 10, 1999, field personnel monitored and sampled three wells (MW-1 through MW-3) at the above referenced site. In addition, field personnel returned to the site on April 12, 1999 to monitor and re-sample one well (MW-1).

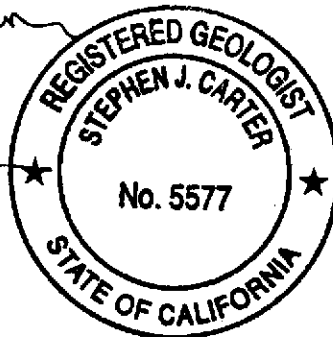
Static groundwater levels were measured and all wells were checked for the presence of separate-phase hydrocarbons. Separate-phase hydrocarbons were not present in the wells. Static water level data and groundwater elevations are summarized in Table 1. Dissolved Oxygen Concentrations are summarized in Table 3. A Potentiometric Map is included as Figure 1.

Groundwater samples were collected from the monitoring wells as specified by G-R Standard Operating Procedure - Groundwater Sampling (attached). The field data sheets are also attached. The samples were analyzed by Sequoia Analytical. Analytical results are summarized in Tables 1 and 2. A Concentration Map is included as Figure 2. The chain of custody document and laboratory analytical reports are also attached.

Sincerely,

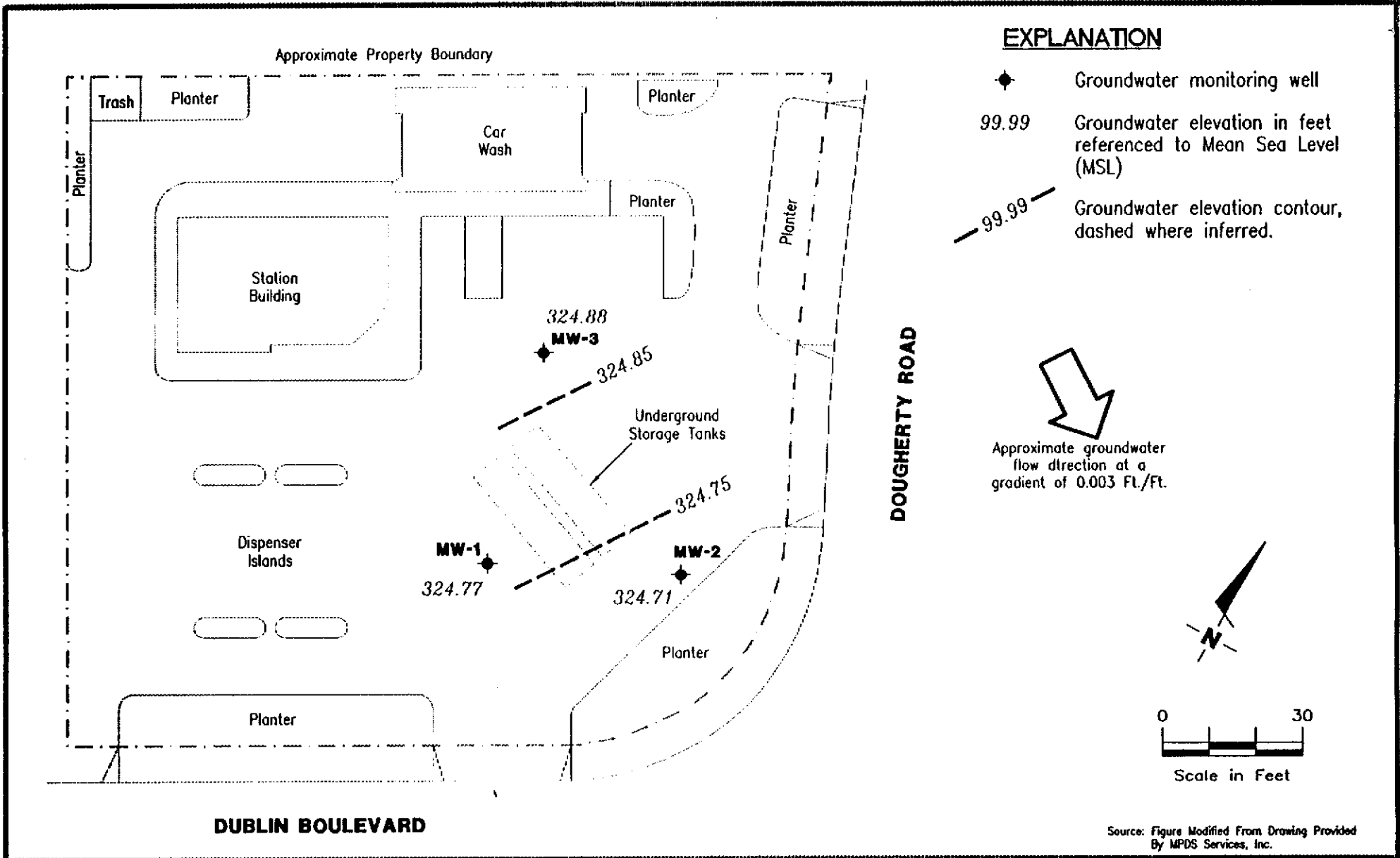
Deanna L. Harding  
Project Coordinator

Stephen J. Carter  
Senior Geologist, R.G. No. 5577



- Figure 1: Potentiometric Map
- Figure 2: Concentration Map
- Table 1: Groundwater Monitoring Data and Analytical Results
- Table 2: Groundwater Analytical Results - Metals
- Table 3: Dissolved Oxygen Concentrations
- Attachments: Standard Operating Procedure - Groundwater Sampling  
Field Data Sheets  
Chain of Custody Document and Laboratory Analytical Reports

6419.qml



**Gettler - Ryan Inc.**

6747 Sierra Ct., Suite J (925) 551-7555  
Dublin, CA 94568

**POTENTIOMETRIC MAP**  
Unocal Service Station No. 6419  
6401 Dublin Boulevard  
Dublin, California

FIGURE  
**1**

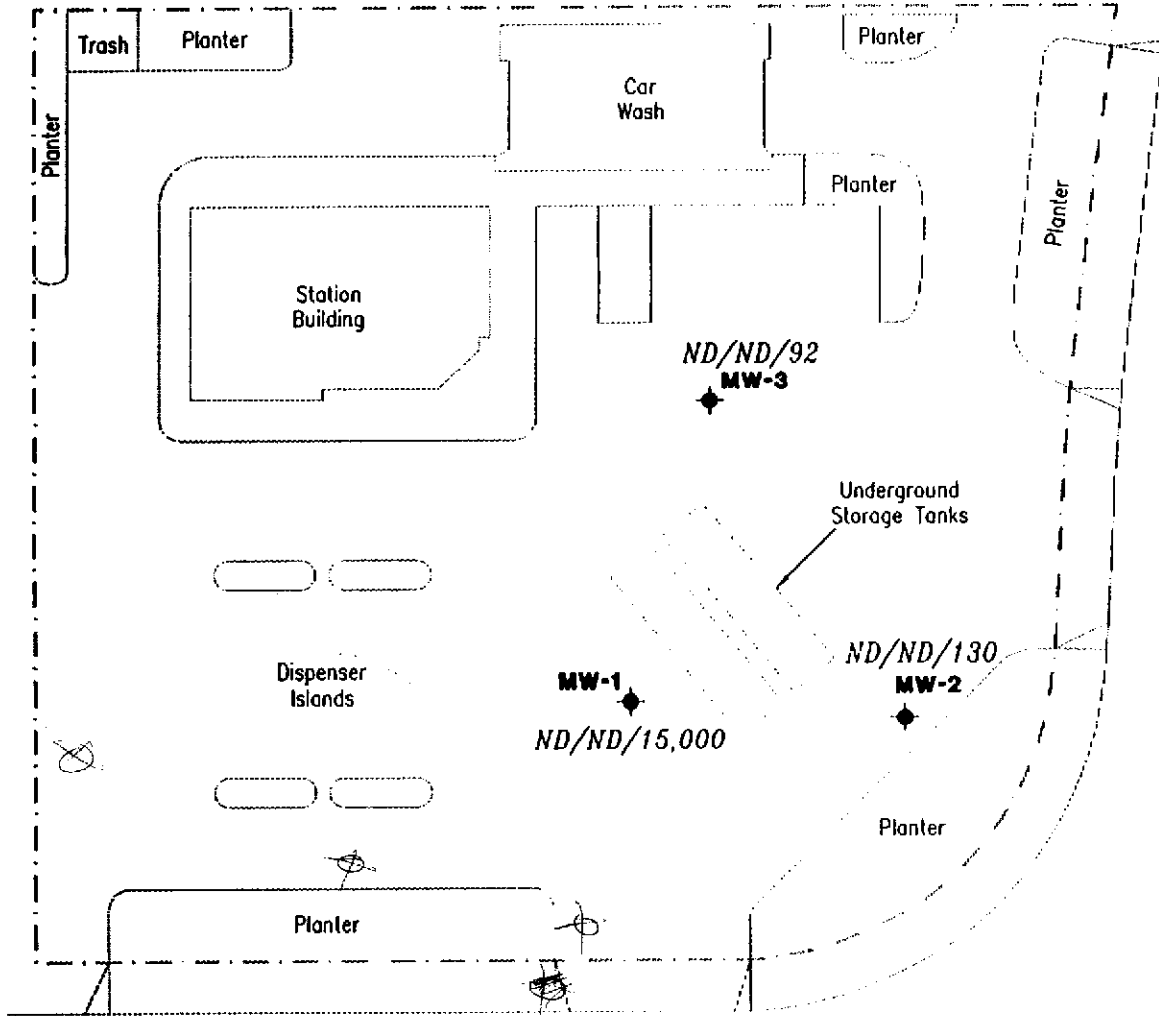
JOB NUMBER  
180021

REVIEWED BY

DATE  
February 10, 1999

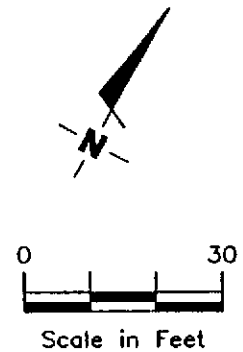
REVISED DATE

Approximate Property Boundary



### EXPLANATION

- ◆ Groundwater monitoring well
- A/B/C TPH(G) (Total Petroleum Hydrocarbons as Gasoline)/Benzene/MTBE concentrations in ppb
- ND Not Detected



Source: Figure Modified From Drawing Provided By MPDS Services, Inc.



**Gettler - Ryan Inc.**

6747 Sierra Ct., Suite J (925) 551-7555  
Dublin, CA 94568

CONCENTRATION MAP  
Unocal Service Station No. 6419  
6401 Dublin Boulevard  
Dublin, California

JOB NUMBER  
180021

REVIEWED BY

DATE  
February 10, 1999

REVISED DATE

FIGURE

2

**Table 1**  
**Groundwater Monitoring Data and Analytical Results**  
 Tosco (Unocal) Service Station #6419  
 6401 Dublin Boulevard  
 Dublin, California

| Well ID/<br>TOC* | Date                  | DTW<br>(ft.) | GWE<br>(msl) | TPH(D)<br>(ppb)  | TPH(G)<br>(ppb)    | B<br>(ppb)      | T<br>(ppb)      | E<br>(ppb)      | X<br>(ppb)      | MTBE<br>(ppb)                |
|------------------|-----------------------|--------------|--------------|------------------|--------------------|-----------------|-----------------|-----------------|-----------------|------------------------------|
| <b>MW-1</b>      |                       |              |              |                  |                    |                 |                 |                 |                 |                              |
| 330.45           | 03/14/94              | 7.27         | 323.18       | 810 <sup>1</sup> | 1,800 <sup>2</sup> | 17              | ND              | ND              | ND              | --                           |
|                  | 08/25/94              | 8.57         | 321.88       | 910 <sup>3</sup> | 9,200 <sup>2</sup> | 48              | ND              | 540             | ND              | --                           |
|                  | 09/30/94              | 8.78         | 321.67       | --               | --                 | --              | --              | --              | --              | --                           |
|                  | 10/20/94              | 8.98         | 321.47       | --               | --                 | --              | --              | --              | --              | --                           |
|                  | 11/18/94              | 7.69         | 322.76       | 910 <sup>3</sup> | 5,100              | 33              | ND              | 560             | 38              | --                           |
|                  | 12/20/94              | 7.58         | 322.87       | --               | --                 | --              | --              | --              | --              | --                           |
|                  | 01/17/95              | 6.03         | 324.42       | --               | --                 | --              | --              | --              | --              | --                           |
|                  | 02/15/95              | 6.29         | 324.16       | 660 <sup>1</sup> | 3,300              | 13              | ND              | 180             | 5.2             | --                           |
|                  | 03/13/95              | 5.64         | 324.81       | --               | --                 | --              | --              | --              | --              | --                           |
|                  | 04/06/95              | 5.62         | 324.83       | --               | --                 | --              | --              | --              | --              | --                           |
|                  | 05/17/95              | 6.26         | 324.19       | 200 <sup>3</sup> | 130                | 0.75            | ND              | 1.5             | ND              | --                           |
|                  | 06/15/95              | 6.75         | 323.70       | --               | --                 | --              | --              | --              | --              | --                           |
|                  | 08/25/95              | 7.91         | 322.54       | --               | 490                | 9.1             | ND              | 21              | 2.0             | -- <sup>5</sup>              |
|                  | 11/28/95              | 9.03         | 321.42       | --               | 1,400              | 18              | 3.0             | 98              | 3.6             | -- <sup>5</sup>              |
|                  | 02/26/96              | 5.77         | 324.68       | --               | 560                | 9.3             | ND              | 22              | ND              | 1,300                        |
|                  | 08/23/96              | 7.78         | 322.67       | --               | ND                 | ND              | ND              | ND              | ND              | 640                          |
| 330.23           | 02/17/97              | 5.73         | 324.50       | --               | 120 <sup>4</sup>   | 1.0             | 0.95            | ND              | ND              | 280                          |
|                  | 08/18/97              | 7.38         | 322.85       | --               | ND                 | ND              | ND              | ND              | ND              | 100                          |
|                  | 02/02/98 <sup>6</sup> | 5.10         | 325.13       | --               | ND <sup>7</sup>    | 130             | ND <sup>7</sup> | ND <sup>7</sup> | ND <sup>7</sup> | 32,000                       |
|                  | 08/24/98              | 6.73         | 323.50       | --               | ND <sup>7</sup>    | ND <sup>7</sup> | ND <sup>7</sup> | ND <sup>7</sup> | ND <sup>7</sup> | 26,000/24,000 <sup>8</sup>   |
|                  | 02/10/99              | 5.46         | 324.77       | --               | ND <sup>7</sup>    | ND <sup>7</sup> | ND <sup>7</sup> | ND <sup>7</sup> | ND <sup>7</sup> | 84,000/100,000 <sup>8</sup>  |
|                  | 04/12/99              | 6.38         | 323.85       | --               | ND <sup>7</sup>    | ND <sup>7</sup> | ND <sup>7</sup> | ND <sup>7</sup> | ND <sup>7</sup> | 140,000/120,000 <sup>8</sup> |
| <b>MW-2</b>      |                       |              |              |                  |                    |                 |                 |                 |                 |                              |
| 330.40           | 03/14/94              | 7.23         | 323.17       | --               | ND                 | ND              | 2.8             | 1.1             | 8.0             | --                           |
|                  | 08/25/94              | 8.41         | 321.99       | --               | ND                 | ND              | ND              | ND              | ND              | --                           |
|                  | 09/30/94              | 8.73         | 321.67       | --               | --                 | --              | --              | --              | --              | --                           |
|                  | 10/20/94              | 8.92         | 321.48       | --               | --                 | --              | --              | --              | --              | --                           |
|                  | 11/18/94              | 7.67         | 322.73       | --               | ND                 | ND              | ND              | ND              | ND              | --                           |
|                  | 12/20/94              | 7.48         | 322.92       | --               | --                 | --              | --              | --              | --              | --                           |
|                  | 01/17/95              | 6.00         | 324.40       | --               | --                 | --              | --              | --              | --              | --                           |
|                  | 02/15/95              | 6.16         | 324.24       | --               | ND                 | ND              | ND              | ND              | ND              | --                           |
|                  | 03/13/95              | 5.59         | 324.81       | --               | --                 | --              | --              | --              | --              | --                           |
|                  | 04/06/95              | 5.51         | 324.89       | --               | --                 | --              | --              | --              | --              | --                           |

**Table 1**  
**Groundwater Monitoring Data and Analytical Results**  
Tosco (Unocal) Service Station #6419  
6401 Dublin Boulevard  
Dublin, California

| Well ID/<br>TOC* | Date     | DTW<br>(ft.) | GWE<br>(msl) | TPH(D)<br>(ppb)  | TPH(G)<br>(ppb)  | B<br>(ppb) | T<br>(ppb) | E<br>(ppb) | X<br>(ppb) | MTBE<br>(ppb)   |
|------------------|----------|--------------|--------------|------------------|------------------|------------|------------|------------|------------|-----------------|
| MW-2             | 05/17/95 | 6.15         | 324.25       | --               | ND               | ND         | ND         | ND         | ND         | --              |
| (cont)           | 06/15/95 | 6.61         | 323.79       | --               | --               | --         | --         | --         | --         | --              |
|                  | 08/25/95 | 7.45         | 322.95       | --               | ND               | ND         | ND         | ND         | ND         | --              |
|                  | 11/28/95 | 8.85         | 321.55       | --               | ND               | ND         | ND         | ND         | ND         | --              |
|                  | 02/26/96 | 5.49         | 324.91       | --               | ND               | ND         | ND         | ND         | ND         | --              |
|                  | 08/23/96 | 7.44         | 322.96       | SAMPLED ANNUALLY |                  | --         | --         | --         | --         | --              |
| 330.27           | 02/17/97 | 5.64         | 324.63       | --               | ND               | ND         | ND         | ND         | ND         | ND              |
|                  | 08/18/97 | 7.40         | 322.87       | --               | --               | --         | --         | --         | --         | --              |
|                  | 02/02/98 | 5.09         | 325.18       | --               | ND               | ND         | ND         | ND         | ND         | 62              |
|                  | 08/24/98 | 6.70         | 323.57       | --               | --               | --         | --         | --         | --         | --              |
|                  | 02/10/99 | 5.56         | 324.71       | --               | ND               | ND         | ND         | ND         | ND         | 130             |
| <b>MW-3</b>      |          |              |              |                  |                  |            |            |            |            |                 |
| 331.11           | 03/14/94 | 7.93         | 323.18       | --               | 150 <sup>4</sup> | ND         | ND         | ND         | ND         | --              |
|                  | 08/25/94 | 9.20         | 321.91       | --               | 130 <sup>4</sup> | ND         | ND         | ND         | ND         | --              |
|                  | 09/30/94 | 9.43         | 321.68       | --               | --               | --         | --         | --         | --         | --              |
|                  | 10/20/94 | 9.64         | 321.47       | --               | --               | --         | --         | --         | --         | --              |
|                  | 11/18/94 | 8.39         | 322.72       | --               | 130 <sup>4</sup> | ND         | ND         | ND         | ND         | --              |
|                  | 12/20/94 | 8.20         | 322.91       | --               | --               | --         | --         | --         | --         | --              |
|                  | 01/17/95 | 6.72         | 324.39       | --               | --               | --         | --         | --         | --         | --              |
|                  | 02/15/95 | 6.93         | 324.18       | --               | 130 <sup>4</sup> | ND         | ND         | ND         | ND         | --              |
|                  | 03/13/95 | 6.30         | 324.81       | --               | --               | --         | --         | --         | --         | --              |
|                  | 04/06/95 | 8.20         | 322.91       | --               | --               | --         | --         | --         | --         | --              |
|                  | 05/17/95 | 6.88         | 324.23       | --               | 99 <sup>4</sup>  | ND         | ND         | ND         | ND         | --              |
|                  | 06/15/95 | 7.35         | 323.76       | --               | --               | --         | --         | --         | --         | --              |
|                  | 08/25/95 | 8.20         | 322.91       | --               | ND               | ND         | ND         | ND         | ND         | -- <sup>5</sup> |
|                  | 11/28/95 | 9.52         | 321.59       | --               | ND               | ND         | ND         | ND         | ND         | --              |
|                  | 02/26/96 | 6.25         | 324.86       | --               | ND               | ND         | ND         | ND         | ND         | -- <sup>5</sup> |
|                  | 08/23/96 | 7.98         | 323.13       | SAMPLED ANNUALLY |                  | --         | --         | --         | --         | --              |
| 330.68           | 02/17/97 | 6.07         | 324.61       | --               | ND               | ND         | ND         | ND         | ND         | 68              |
|                  | 08/18/97 | 7.82         | 322.86       | --               | --               | --         | --         | --         | --         | --              |
|                  | 02/02/98 | 5.50         | 325.18       | --               | ND               | ND         | ND         | ND         | ND         | 100             |
|                  | 08/24/98 | 7.12         | 323.56       | --               | --               | --         | --         | --         | --         | --              |
|                  | 02/10/99 | 5.80         | 324.88       | --               | ND               | ND         | ND         | ND         | ND         | 92              |



**Table 1**  
**Groundwater Monitoring Data and Analytical Results**  
 Tosco (Unocal) Service Station #6419  
 6401 Dublin Boulevard  
 Dublin, California

| Well ID/<br>TOC*  | Date     | DTW<br>(ft.) | GWE<br>(msl) | TPH(D)<br>(ppb) | TPH(G)<br>(ppb) | B<br>(ppb) | T<br>(ppb) | E<br>(ppb) | X<br>(ppb) | MTBE<br>(ppb) |
|-------------------|----------|--------------|--------------|-----------------|-----------------|------------|------------|------------|------------|---------------|
| <b>Trip Blank</b> |          |              |              |                 |                 |            |            |            |            |               |
| TB-LB             | 02/02/98 | --           | --           | --              | ND              | ND         | ND         | ND         | ND         | ND            |
|                   | 08/24/98 | --           | --           | --              | ND              | ND         | ND         | ND         | ND         | ND            |
|                   | 02/10/99 | --           | --           | --              | ND              | ND         | ND         | ND         | ND         | ND            |
|                   | 04/12/99 | --           | --           | --              | ND              | ND         | ND         | ND         | ND         | ND            |

**Table 1**  
**Groundwater Monitoring Data and Analytical Results**  
Tosco (Unocal) Service Station # 6419  
6401 Dublin Boulevard  
Dublin, California

---

**EXPLANATIONS:**

Groundwater monitoring data and laboratory results prior to February 2, 1998, were compiled from reports prepared by MPDS Services, Inc.

TOC = Top of Casing elevation

DTW = Depth to Water

(ft.) = Feet

GWE = Groundwater Elevation

msl = Relative to mean sea level

TPH(D) = Total Petroleum Hydrocarbons as Diesel

TPH(G) = Total Petroleum Hydrocarbons as Gasoline

B = Benzene

T = Toluene

E = Ethylbenzene

X = Xylenes

MTBE = Methyl tertiary butyl ether

ppb = Parts per billion

ND = Not Detected

-- = Not Measured/Not Analyzed

\* TOC elevations have been surveyed relative to msl, per the benchmark on the northwest corner of Dougherty Road and Sierra Way (Elevation = 331.728 feet msl). These TOC elevations have been used prior to the February 17, 1997 monitoring event. TOC elevations have been resurveyed (after station rebuilding) relative to Mean Sea Level (msl), per the Benchmark on the northwest corner of Dougherty Road and Sierra Way (Elevation = 331.728 feet msl).

<sup>1</sup> Laboratory report indicates the hydrocarbons detected appeared to be a diesel and non-diesel mixture.

<sup>2</sup> Laboratory report indicates the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.

<sup>3</sup> Laboratory report indicates the hydrocarbons detected did not appear to be diesel.

<sup>4</sup> Laboratory report indicates the hydrocarbons detected did not appear to be gasoline.

<sup>5</sup> Laboratory has identified the presence of MTBE at a level above or equal to the taste and odor threshold of 40 ppb in the sample collected from this well.

<sup>6</sup> Well appears to be obstructed at approximately 9 feet.

<sup>7</sup> Detection limit raised. Refer to analytical

<sup>8</sup> MTBE by EPA Method 8260.

**Table 2**  
**Groundwater Analytical Data - Metals**  
 Tosco (Unocal) Service Station #6419  
 6401 Dublin Boulevard  
 Dublin, California

| Well ID | Date     | Cadmium<br>(ppm) | Chromium<br>(ppm) | Lead<br>(ppm) | Nickel<br>(ppm) | Zinc<br>(ppm) |
|---------|----------|------------------|-------------------|---------------|-----------------|---------------|
| MW-1    | 03/14/94 | ND               | 0.012             | ND            | 0.030           | 0.039         |
|         | 08/25/94 | ND               | ND                | 0.024         | ND              | ND            |
|         | 11/18/94 | ND               | 0.076             | ND            | 0.067           | ND            |
|         | 02/15/95 | ND               | ND                | ND            | ND              | ND            |
|         | 05/17/95 | ND               | ND                | ND            | 0.021           | ND            |

---

**EXPLANATIONS:**

Groundwater laboratory results were compiled from reports prepared by MPDS Services, Inc.

ppm = Parts per million

ND = Not Detected

**Table 3**  
**Dissolved Oxygen Concentrations**  
 Tosco (Unocal) Service Station #6419  
 6401 Dublin Boulevard  
 Dublin, California

| Well ID | Date     | Before Purging<br>(mg/L) | After Purging<br>(mg/L) |
|---------|----------|--------------------------|-------------------------|
| MW-1    | 02/15/95 | --                       | 4.30                    |
|         | 05/17/95 | --                       | 1.20                    |
|         | 08/25/95 | --                       | 2.71                    |
|         | 11/28/95 | --                       | 3.25                    |
|         | 02/26/96 | 5.23                     | 1.41                    |
|         | 08/23/96 | 3.83                     | N/A                     |
|         | 02/17/97 | 0.82                     | 0.78                    |
|         | 08/18/97 | 1.28                     | 2.35                    |
| MW-2    | 02/15/95 | --                       | 1.90                    |
|         | 02/26/96 | 0.62                     | 0.43                    |
|         | 08/23/96 | 2.04                     | N/A                     |
|         | 02/17/97 | 0.90                     | 0.82                    |
|         | 08/18/97 | 1.16                     | --                      |
| MW-3    | 02/15/95 | --                       | 2.60                    |
|         | 05/17/95 | --                       | 1.13                    |
|         | 08/25/95 | --                       | 1.86                    |
|         | 11/28/95 | --                       | 6.81                    |
|         | 02/26/96 | 16.83                    | 1.11                    |
|         | 08/23/96 | 3.29                     | N/A                     |
|         | 02/17/97 | 0.80                     | 0.80                    |
|         | 08/18/97 | 1.43                     | --                      |

**EXPLANATIONS:**

Dissolved oxygen concentrations were compiled from reports prepared by MPDS Services, Inc.

mg/L = milligrams per liter

-- = Not Measured

N/A = Not Applicable

Note: Measurements were taken using a LaMotte DO4000 dissolved oxygen meter.

## STANDARD OPERATING PROCEDURE - GROUNDWATER SAMPLING

Gettler-Ryan Inc. field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. Prior to sample collection, the type of analysis to be performed is determined. Loss prevention of volatile compounds is controlled and sample preservation for subsequent analysis is maintained.

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using a MMC flexi-dip interface probe. Product thickness, if present, is measured to the nearest 0.01 foot and is noted in the field notes. In addition, static water level measurements are collected with the interface probe and are also recorded in the field notes.

After water levels are collected and prior to sampling, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, suction, Grundfos), or polyvinyl chloride bailers. Temperature, pH and electrical conductivity are measured a minimum of three times during the purging. Purging continues until these parameters stabilize.

Groundwater samples are collected using disposable bailers. The water samples are transferred from the bailer into appropriate containers. Pre-preserved containers, supplied by analytical laboratories, are used when possible. When pre-preserved containers are not available, the laboratory is instructed to preserve the sample as appropriate. Duplicate samples are collected for the laboratory to use in maintaining quality assurance/quality control standards. The samples are labeled to include the job number, sample identification, collection date and time, analysis, preservation (if any), and the sample collector's initials. The water samples are placed in a cooler, maintained at 4°C for transport to the laboratory. Once collected in the field, all samples are maintained under chain of custody until delivered to the laboratory.

The chain of custody document includes the job number, type of preservation, if any, analysis requested, sample identification, date and time collected, and the sample collector's name. The chain of custody is signed and dated (including time of transfer) by each person who receives or surrenders the samples, beginning with the field personnel and ending with the laboratory personnel.

A laboratory supplied trip blank accompanies each sampling set. For sampling sets greater than 20 samples, 5% trip blanks are included. The trip blank is analyzed for some or all of the same compounds as the groundwater samples.

As requested by Tosco Marketing Company, the purge water and decontamination water generated during sampling activities is transported to Tosco - San Francisco Area Refinery, located in Rodeo, California.

**WELL MONITORING/SAMPLING  
FIELD DATA SHEET**

Client/ Facility UNSCAL SS# 6419 (TOLCO) Job#: 180021  
 Address: 6401 DUBLIN BLVD. Date: 2-10-99  
 City: DUBLIN, CA Sampler: STEVE BAUMAN

Well ID MW-1 Well Condition: O.K.  
 Well Diameter 2" in. Hydrocarbon Amount Bailed  
 Thickness: Ø (feet) (product/water): Ø (Gallons)  
 Total Depth 9.22 ft.  
 Depth to Water 5.46 ft.

|                    |           |            |           |
|--------------------|-----------|------------|-----------|
| Volume Factor (VF) | 2" = 0.17 | 3" = 0.38  | 4" = 0.66 |
|                    | 6" = 1.50 | 12" = 5.80 |           |

3.76 x VF 0.17 = 0.64 x 3 (case volume) = Estimated Purge Volume: 1.92 (gal.)

Purge Equipment: Disposable Bailer  
 Bailer  
 Stack  
 Suction  
 Grundfos  
 Other: \_\_\_\_\_  
 Sampling Equipment: Disposable Bailer  
 Bailer  
 Pressure Bailer  
 Grab Sample  
 Other: \_\_\_\_\_

Starting Time: 12:22 Weather Conditions: SUNNY  
 Sampling Time: 12:45 Water Color: NOT CLEAR Odor: —  
 Purging Flow Rate: \_\_\_\_\_ gpm. Sediment Description: \_\_\_\_\_  
 Did well de-water? No If yes; Time: \_\_\_\_\_ Volume: \_\_\_\_\_ (gal.)

| Time         | Volume (gal.) | pH          | Conductivity $\mu$ mhos/cm | Temperature $^{\circ}$ F | D.O. (mg/L) | ORP (mV) | Alkalinity (ppm) |
|--------------|---------------|-------------|----------------------------|--------------------------|-------------|----------|------------------|
| <u>12:24</u> | <u>1</u>      | <u>6.88</u> | <u>617</u>                 | <u>62.7</u>              |             |          |                  |
| <u>12:26</u> | <u>1.5</u>    | <u>6.84</u> | <u>579</u>                 | <u>63.1</u>              |             |          |                  |
| <u>12:29</u> | <u>2</u>      | <u>6.94</u> | <u>568</u>                 | <u>63.7</u>              |             |          |                  |
|              |               |             |                            |                          |             |          |                  |

**LABORATORY INFORMATION**

| SAMPLE ID   | (#) - CONTAINER | REFRIG.  | PRESERV. TYPE | LABORATORY     | ANALYSES                       |
|-------------|-----------------|----------|---------------|----------------|--------------------------------|
| <u>MW-1</u> | <u>5-VOA's</u>  | <u>Y</u> | <u>HCl</u>    | <u>SEQUOIA</u> | <u>TPH(GI)/btex/mtbe / 826</u> |
|             |                 |          |               |                |                                |
|             |                 |          |               |                |                                |

COMMENTS: \_\_\_\_\_

**WELL MONITORING/SAMPLING  
FIELD DATA SHEET**

Client/  
Facility UNOCAL SS# 6419 (Tosco)  
Address: 6401 DUBLIN BLVD  
City: DUBLIN, CA

Job#: 180021  
Date: 2-10-99  
Sampler: STEVE BAUHAU

Well ID MW-2  
Well Diameter 2" in.  
Total Depth 17.60 ft.  
Depth to Water 5.56 ft.

Well Condition: O.K.  
Hydrocarbon Thickness: ∅ (feet) Amount Bailed (product/water): ∅ (Gallons)  
Volume Factor (VF) 2" = 0.17 3" = 0.38 4" = 0.66  
6" = 1.50 12" = 5.80

12.04 x VF 0.17 = 2.05 x 3 (case volume) = Estimated Purge Volume: 6.14 (gal.)

Purge Equipment: Disposable Bailer  
Bailer  
Stack  
Suction  
Grundfos  
Other: \_\_\_\_\_

Sampling Equipment: Disposable Bailer  
Bailer  
Pressure Bailer  
Grab Sample  
Other: \_\_\_\_\_

Starting Time: 12:56  
Sampling Time: 13:15  
Purging Flow Rate: 1 gpm.  
Did well de-water? No

Weather Conditions: SUNNY  
Water Color: CLEAR -Odor: -  
Sediment Description: \_\_\_\_\_  
If yes; Time: \_\_\_\_\_ -Volume: \_\_\_\_\_ (gal.)

| Time         | Volume (gal.) | pH          | Conductivity $\mu$ mhos/cm | Temperature $^{\circ}$ F | D.O. (mg/L) | ORP (mV) | Alkalinity (ppm) |
|--------------|---------------|-------------|----------------------------|--------------------------|-------------|----------|------------------|
| <u>12:58</u> | <u>2.5</u>    | <u>7.03</u> | <u>976</u>                 | <u>68.0</u>              |             |          |                  |
| <u>13:00</u> | <u>4.5</u>    | <u>7.02</u> | <u>1027</u>                | <u>69.0</u>              |             |          |                  |
| <u>13:02</u> | <u>6.5</u>    | <u>7.00</u> | <u>1040</u>                | <u>69.4</u>              |             |          |                  |
|              |               |             |                            |                          |             |          |                  |
|              |               |             |                            |                          |             |          |                  |

**LABORATORY INFORMATION**

| SAMPLE ID   | (#) - CONTAINER | REFRIG.  | PRESERV. TYPE | LABORATORY     | ANALYSES                 |
|-------------|-----------------|----------|---------------|----------------|--------------------------|
| <u>MW-2</u> | <u>3- VOA's</u> | <u>Y</u> | <u>HQ</u>     | <u>SEQUOIA</u> | <u>TPH(GI)/btex/mtbe</u> |
|             |                 |          |               |                |                          |
|             |                 |          |               |                |                          |

COMMENTS: \_\_\_\_\_

**WELL MONITORING/SAMPLING  
FIELD DATA SHEET**

Client/-

Facility UNOCAL SS # 6419 (TOSCO)

Job#: 180021

Address: 6401 DUBLIN BLVD

Date: 2-10-99

City: DUBLIN, CA

Sampler: STEVE BACIAN

Well ID MW-3

Well Condition: \* TWO BOLTS ARE BROKEN

Well Diameter 2' in.

Hydrocarbon Thickness: ∅ (feet) Amount Bailed (product/water): ∅ (Gallons)

Total Depth 18.57 ft.

|                    |           |            |           |
|--------------------|-----------|------------|-----------|
| Volume Factor (VF) | 2" = 0.17 | 3" = 0.38  | 4" = 0.66 |
|                    | 6" = 1.50 | 12" = 5.80 |           |

Depth to Water 5.80 ft.

12.77 x VF 0.17 = 2.17 x 3 (case volume) = Estimated Purge Volume: 6.51 (gal.)

Purge Equipment: Disposable Bailer  
Bailer  
Stack  
Suction  
Grundfos  
Other: \_\_\_\_\_

Sampling Equipment: Disposable Bailer  
Bailer  
Pressure Bailer  
Grab Sample  
Other: \_\_\_\_\_

Starting Time: 13:34

Weather Conditions: SUNNY

Sampling Time: 14:00

Water Color: CLEAR Odor: -

Purging Flow Rate: 1 gpm.

Sediment Description: \_\_\_\_\_

Did well de-water? No

If yes; Time: \_\_\_\_\_ Volume: \_\_\_\_\_ (gal.)

| Time         | Volume (gal.) | pH          | Conductivity $\mu$ mhos/cm | Temperature $^{\circ}$ F | D.O. (mg/L) | ORP (mV) | Alkalinity (ppm) |
|--------------|---------------|-------------|----------------------------|--------------------------|-------------|----------|------------------|
| <u>13:36</u> | <u>2.5</u>    | <u>7.07</u> | <u>1095</u>                | <u>72.0</u>              | _____       | _____    | _____            |
| <u>13:39</u> | <u>4.5</u>    | <u>7.01</u> | <u>1095</u>                | <u>71.6</u>              | _____       | _____    | _____            |
| <u>13:42</u> | <u>7</u>      | <u>6.98</u> | <u>1095</u>                | <u>72.0</u>              | _____       | _____    | _____            |
| _____        | _____         | _____       | _____                      | _____                    | _____       | _____    | _____            |

**LABORATORY INFORMATION**

| SAMPLE ID   | (#) - CONTAINER | REFRIG.  | PRESERV. TYPE | LABORATORY     | ANALYSES                 |
|-------------|-----------------|----------|---------------|----------------|--------------------------|
| <u>MW-3</u> | <u>3 - VOA</u>  | <u>Y</u> | <u>Hel</u>    | <u>SEQUOIA</u> | <u>TPH(GI)/btex/mtbe</u> |
| _____       | _____           | _____    | _____         | _____          | _____                    |
| _____       | _____           | _____    | _____         | _____          | _____                    |

COMMENTS: \_\_\_\_\_







# Sequoia Analytical

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FAX (707) 792-0342

Gettler-Ryan - Dublin  
6747 Sierra Court, Suite J  
Dublin, CA 94568  
Attention: Deanna Harding

Client Project ID: Unocal SS#6419, Dublin  
Sample Matrix: Water  
Analysis Method: EPA 5030/8015 Mod./8020  
First Sample #: 902-1059

Sampled: Feb 10, 1999  
Received: Feb 11, 1999  
Reported: Feb 26, 1999  
Revised: Apr 9, 1999

## TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX / MTBE

| Analyte                | Reporting Limit<br>µg/L | Sample I.D.<br>902-1059<br>TB-LB | Sample I.D.<br>902-1060<br>MW-1 | Sample I.D.<br>902-1061<br>MW-2 | Sample I.D.<br>902-1062<br>MW-3 |
|------------------------|-------------------------|----------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Purgeable Hydrocarbons | 50                      | N.D.                             | N.D.                            | N.D.                            | N.D.                            |
| Benzene                | 0.50                    | N.D.                             | N.D.                            | N.D.                            | N.D.                            |
| Toluene                | 0.50                    | N.D.                             | N.D.                            | N.D.                            | N.D.                            |
| Ethyl Benzene          | 0.50                    | N.D.                             | N.D.                            | N.D.                            | N.D.                            |
| Total Xylenes          | 0.50                    | N.D.                             | N.D.                            | N.D.                            | N.D.                            |
| MTBE                   | 2.5                     | N.D.                             | 84,000                          | 130                             | 92                              |
| Chromatogram Pattern:  |                         | --                               | --                              | --                              | --                              |

### Quality Control Data

|   |         |         |         |         |
|---|---------|---------|---------|---------|
| Report Limit Multiplication Factor:             | 1.0     | 1,000   | 1.0     | 1.0     |
| Date Analyzed:                                  | 2/18/99 | 2/18/99 | 2/18/99 | 2/18/99 |
| Instrument Identification:                      | HP-5    | HP-5    | HP-5    | HP-5    |
| Surrogate Recovery, %:<br>(QC Limits = 70-130%) | 104     | 94      | 95      | 100     |

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

SEQUOIA ANALYTICAL, #1271

Julianne Fegley  
Project Manager



# Sequoia Analytical

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|  |  |   |
|--|--|---|
| Gettler-Ryan - Dublin<br>6747 Sierra Court, Suite J<br>Dublin, CA 94568<br>Attention: Deanna Harding | Client Project ID: Unocal SS#6419, Dublin<br>Sample Descript: Water, MW-1<br>Analysis Method: EPA 8260<br>Lab Number: 902-1060 | Sampled: Feb 10, 1999<br>Received: Feb 11, 1999<br>Analyzed: Feb 17, 1999<br>Reported: Feb 26, 1999 |
|--|--|---|

## VOLATILE ORGANIC COMPOUNDS (EPA 8260)

| Analyte   | Detection Limit<br>µg/L | Sample Results<br>µg/L |
|-----------|-------------------------|------------------------|
| MTBE..... | 2.0                     | 100,000                |

| Surrogates                | Control Limit % | % Recovery |
|---------------------------|-----------------|------------|
| Dibromofluoromethane..... | 50              | 150        |
|                           |                 | 101        |

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

SEQUOIA ANALYTICAL, #1271

Julianne Fegley  
Project Manager



# Sequoia Analytical

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Gettler-Ryan - Dublin  
6747 Sierra Court, Suite J  
Dublin, CA 94568  
Attention: Deanna Harding

Client Project ID: Unocal SS#6419, Dublin  
Matrix: Liquid

QC Sample Group: 9021059-062

Reported: Feb 26, 1999

## QUALITY CONTROL DATA REPORT

| ANALYTE  | Benzene      | Toluene      | Ethyl Benzene | Xylenes      | MTBE      | MTBE      |
|----------|--------------|--------------|---------------|--------------|-----------|-----------|
| Method:  | EPA 8020     | EPA 8020     | EPA 8020      | EPA 8020     | EPA 8260  | EPA 8260  |
| Analyst: | C. Westwater | C. Westwater | C. Westwater  | C. Westwater | N. Nelson | N. Nelson |

|                                    |         |         |         |         |         |  |
|------------------------------------|---------|---------|---------|---------|---------|--|
| MS/MSD                             |         |         |         |         |         |  |
| Batch#:                            | 9020943 | 9020943 | 9020943 | 9020943 | 9020439 |  |
| Date Prepared:                     | 2/18/99 | 2/18/99 | 2/18/99 | 2/18/99 | 2/16/99 |  |
| Date Analyzed:                     | 2/18/99 | 2/18/99 | 2/18/99 | 2/18/99 | 2/16/99 |  |
| Instrument I.D.#:                  | HP-5    | HP-5    | HP-5    | HP-5    | GC/MS-2 |  |
| Conc. Spiked:                      | 20 µg/L | 20 µg/L | 20 µg/L | 60 µg/L | 50 µg/L |  |
| Matrix Spike % Recovery:           | 100     | 105     | 105     | 107     | 92      |  |
| Matrix Spike Duplicate % Recovery: | 95      | 100     | 100     | 100     | 98      |  |
| Relative % Difference:             | 5.1     | 4.9     | 4.9     | 6.5     | 6.3     |  |

|                   |            |            |            |            |           |           |
|-------------------|------------|------------|------------|------------|-----------|-----------|
| LCS Batch#:       | 5LCS021899 | 5LCS021899 | 5LCS021899 | 5LCS021899 | LCS021699 | LCS021799 |
| Date Prepared:    | 2/18/99    | 2/18/99    | 2/18/99    | 2/18/99    | 2/16/99   | 2/17/99   |
| Date Analyzed:    | 2/18/99    | 2/18/99    | 2/18/99    | 2/18/99    | 2/16/99   | 2/17/99   |
| Instrument I.D.#: | HP-5       | HP-5       | HP-5       | HP-5       | GC/MS-2   | GC/MS-2   |
| LCS % Recovery:   | 95         | 100        | 100        | 103        | 92        | 90        |

|                            |        |        |        |        |        |        |
|----------------------------|--------|--------|--------|--------|--------|--------|
| % Recovery Control Limits: | 70-130 | 70-130 | 70-130 | 70-130 | 70-130 | 70-130 |
|----------------------------|--------|--------|--------|--------|--------|--------|

Please Note:  
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL, #1271

*Julianne Fegley*  
Julianne Fegley  
Project Manager

## WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/  
Facility # 6419

Job#: 180021

Address: 6401 Dublin Blvd.

Date: 4-12-94

City: Dublin

Sampler: Joe

Well ID MW-1

Well Condition: O.K.

Well Diameter 2 in.

Hydrocarbon Thickness: 0 in. Amount Bailed (product/water): 0 (gal.)

Total Depth 9.22 ft.

Depth to Water 6.38 ft.

|                    |           |            |           |
|--------------------|-----------|------------|-----------|
| Volume Factor (VF) | 2" = 0.17 | 3" = 0.38  | 4" = 0.66 |
|                    | 6" = 1.50 | 12" = 5.90 |           |

2.84 x VF 0.17 = 0.48 x 3 (case volume) = Estimated Purge Volume: 1.5 (gal.)

Purge Equipment: Disposable Bailer  
 Bailer  
 Stack  
 Suction  
 Grundfos  
 Other: \_\_\_\_\_

Sampling Equipment: Disposable Bailer  
 Bailer  
 Pressure Bailer  
 Grab Sample  
 Other: \_\_\_\_\_

Starting Time: 10:55

Weather Conditions: clear

Sampling Time: 11:05

Water Color: clear Odor: yes

Purging Flow Rate: 0.5 gpm

Sediment Description: none

Did well de-water? \_\_\_\_\_

If yes; Time: \_\_\_\_\_ Volume: \_\_\_\_\_ (gal.)

| Time         | Volume (gal.) | pH          | Conductivity $\mu\text{mhos/cm} \times 1000$ | Temperature $^{\circ}\text{F}$ | D.O. (mg/L) | ORP (mV) | Alkalinity (ppm) |
|--------------|---------------|-------------|--|--------------------------------|-------------|----------|------------------|
| <u>11:00</u> | <u>0.5</u>    | <u>7.05</u> | <u>2.90</u>                                  | <u>64.8</u>                    | _____       | _____    | _____            |
| <u>11:01</u> | <u>1</u>      | <u>7.02</u> | <u>2.27</u>                                  | <u>64.9</u>                    | _____       | _____    | _____            |
| <u>11:02</u> | <u>1.5</u>    | <u>7.06</u> | <u>2.31</u>                                  | <u>64.9</u>                    | _____       | _____    | _____            |
| _____        | _____         | _____       | _____  | _____                          | _____       | _____    | _____            |
| _____        | _____         | _____       | _____  | _____                          | _____       | _____    | _____            |

### LABORATORY INFORMATION

| SAMPLE ID   | (#) - CONTAINER | REFRIG.  | PRESERV. TYPE | LABORATORY     | ANALYSES                       |
|-------------|-----------------|----------|---------------|----------------|--------------------------------|
| <u>MW-1</u> | <u>3VOA</u>     | <u>Y</u> | <u>HCL</u>    | <u>Sequoia</u> | <u>TPHG, BTEX, METALS</u> 8260 |
| _____       | _____           | _____    | _____         | _____          | _____                          |
| _____       | _____           | _____    | _____         | _____          | _____                          |
| _____       | _____           | _____    | _____         | _____          | _____                          |

COMMENTS: \_\_\_\_\_





# Sequoia Analytical

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Gettler-Ryan - Dublin  
6747 Sierra Court, Suite J  
Dublin, CA 94568  
Attention: Deanna Harding

Client Project ID: Unocal SS#6419, Dublin  
Sample Matrix: Water  
Analysis Method: EPA 5030/8015 Mod./8020  
First Sample #: 904-0923

Sampled: Apr 12, 1999  
Received: Apr 12, 1999  
Reported: Apr 19, 1999

## TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX / MTBE

| Analyte                | Reporting Limit<br>µg/L | Sample I.D.<br>904-0923<br>TB-LB | Sample I.D.<br>904-0924<br>MW-1 |
|------------------------|-------------------------|----------------------------------|---------------------------------|
| Purgeable Hydrocarbons | 50                      | N.D.                             | N.D.                            |
| Benzene                | 0.50                    | N.D.                             | N.D.                            |
| Toluene                | 0.50                    | N.D.                             | N.D.                            |
| Ethyl Benzene          | 0.50                    | N.D.                             | N.D.                            |
| Total Xylenes          | 0.50                    | N.D.                             | N.D.                            |
| MTBE                   | 2.5                     | N.D.                             | 140,000                         |
| Chromatogram Pattern:  |                         | --                               | --                              |

### Quality Control Data

|   |         |         |
|---|---------|---------|
| Report Limit Multiplication Factor:             | 1.0     | 1,000   |
| Date Analyzed:                                  | 4/14/99 | 4/14/99 |
| Instrument Identification:                      | HP-5    | HP-5    |
| Surrogate Recovery, %:<br>(QC Limits = 70-130%) | 95      | 87      |

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

SEQUOIA ANALYTICAL, #1271

*Julianne Fegley*  
Julianne Fegley  
Project Manager



**Sequoia  
Analytical**

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FAX (707) 792-0342

Gettler-Ryan - Dublin  
6747 Sierra Court, Suite J  
Dublin, CA 94568  
Attention: Deanna Harding

Client Project ID: Unocal SS#6419, Dublin  
Sample Descript: Water, MW-1  
Analysis Method: EPA 8260  
Lab Number: 904-0924

Sampled: Apr 12, 1999  
Received: Apr 12, 1999  
Analyzed: Apr 18, 1999  
Reported: Apr 19, 1999

**MTBE by EPA 8260**

| Analyte                     | Detection Limit<br>µg/L | Sample Results<br>µg/L |
|-----------------------------|-------------------------|------------------------|
| Methyl t-Butyl Ether (MTBE) | 2.0                     | 120,000                |

| Surrogates           | Control Limit % | % Recovery |
|----------------------|-----------------|------------|
| Dibromofluoromethane | 50              | 150        |
|                      |                 | 86         |

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

SEQUOIA ANALYTICAL, #1271  
*Julianne Fegley*  
Julianne Fegley  
Project Manager