# GETTLER-RYAN INC.



## TRANSMITTAL

April 14, 2000
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 12, 2000 | Groundwater Monitoring and Sampling Report<br>Semi-Annual 2000 - Event of February 11, 2000 |

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 ***April 26, 2000***, 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

agency/6419dbd.qmt

# GETTLER-RYAN INC.

April 12, 2000
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 2000 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 11, 2000, field personnel monitored and sampled seven wells (MW-1 through MW-7) at the above referenced site.

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.

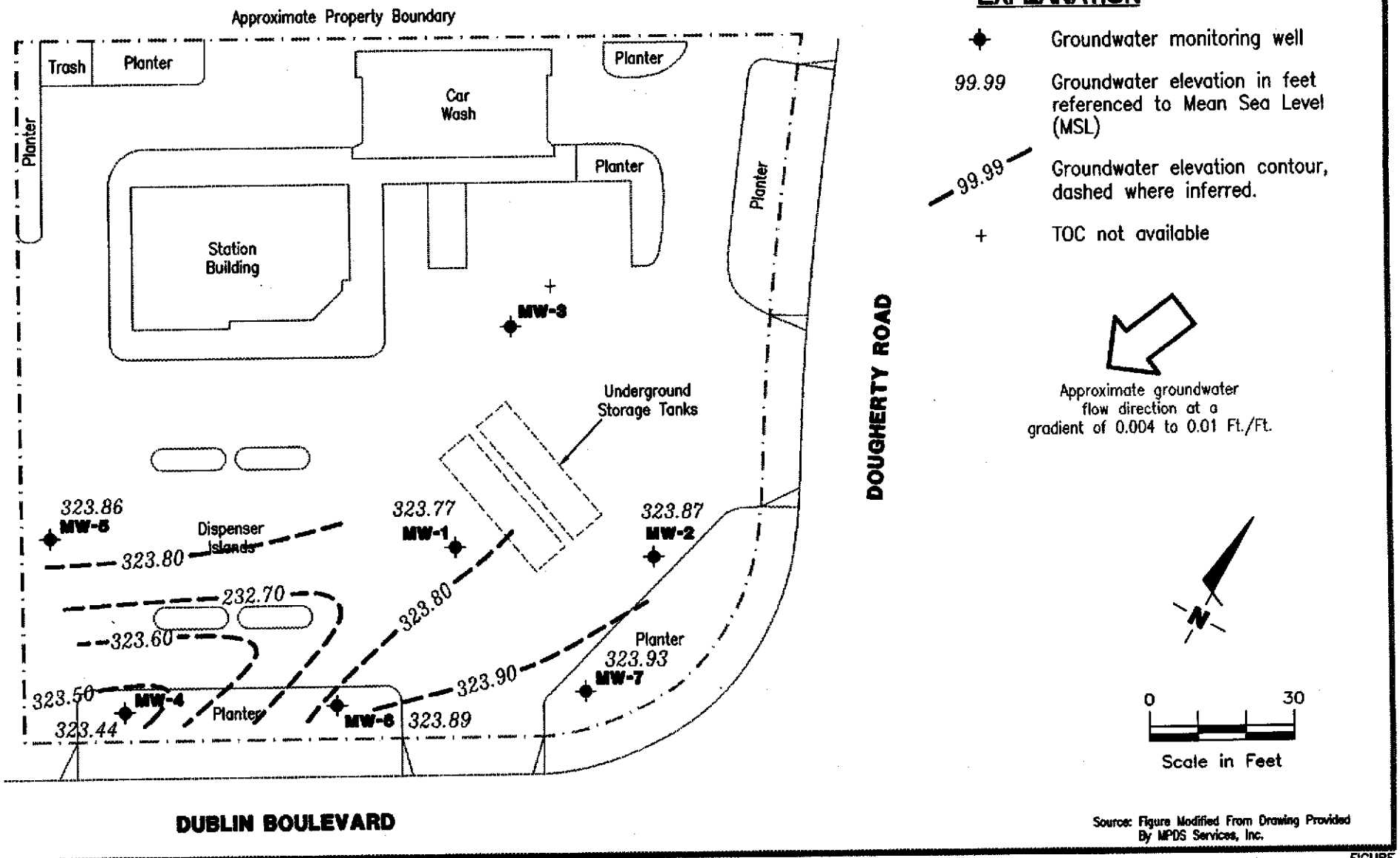
Sincerely,

Deanna L. Harding
Project Coordinator

Douglas J. Lee
Senior Geologist, R.G. No. 6882

REGISTERED GEOLOGIST
DOUGLAS J. LEE
No. 6882
STATE OF CALIFORNIA

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
6419.qml Chain of Custody Document and Laboratory Analytical Reports

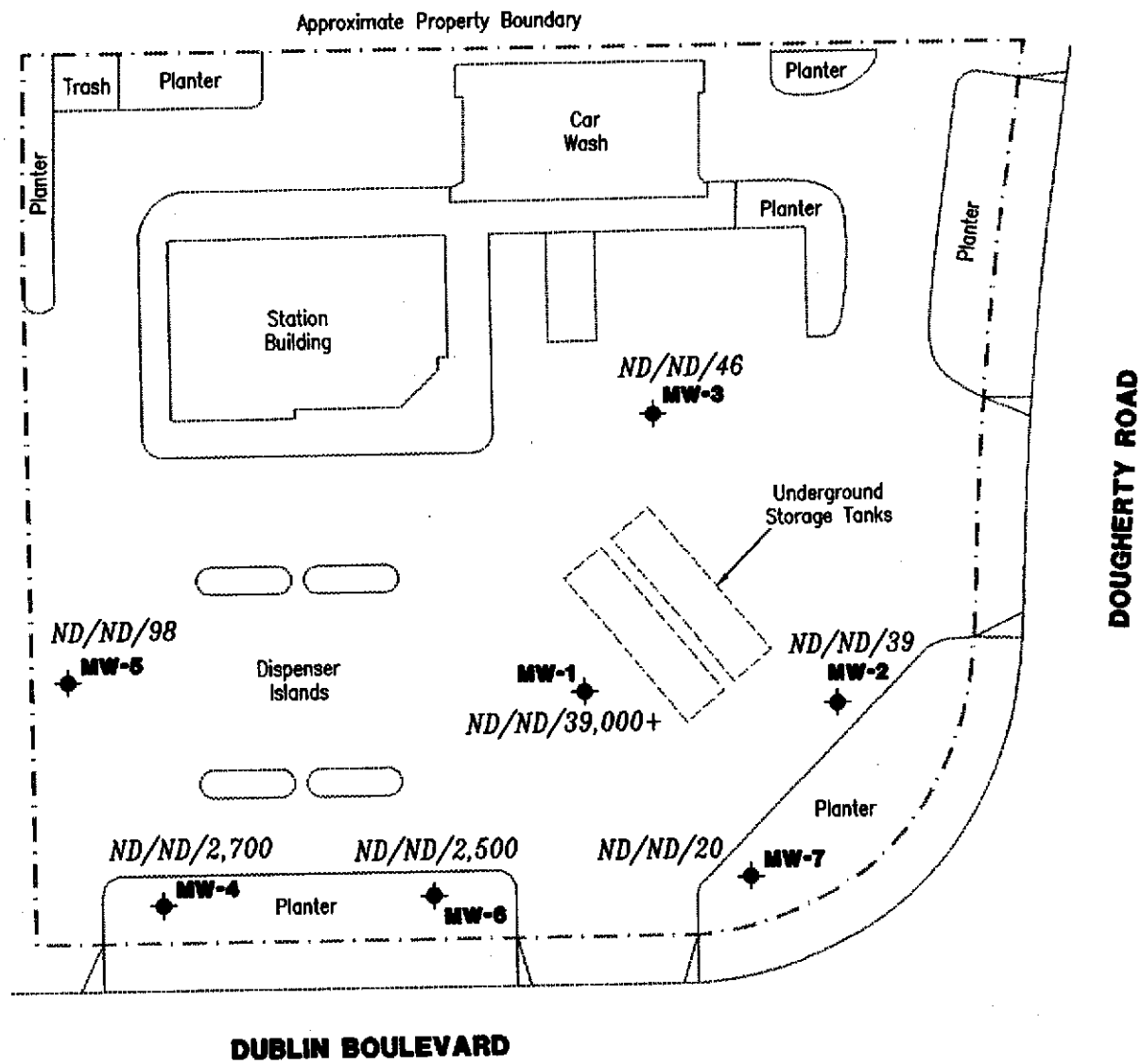



**Gettler - Ryan Inc.**
6747 Sierra Ct., Suite J (925) 551-7555
Dublin, CA 94568

POTENTIOMETRIC MAP
Tosco (Unocal) Service Station #6419
6401 Dublin Boulevard
Dublin, California

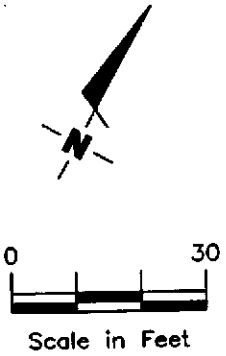
FIGURE
1

| JOB NUMBER | REVIEWED BY | DATE | REVISED DATE |
|---|---|---|---|
| 180021 | | February 11, 2000 | |




## EXPLANATION

| | |
|---|---|
| ✦ | Groundwater monitoring well |
| *A/B/C* | TPH(G) (Total Petroleum Hydrocarbons as Gasoline)/Benzene/MTBE concentrations in ppb |
| *ND* | Not Detected |
| + | MTBE by EPA Method 8260 |




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

FIGURE

**2**

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

CONCENTRATION MAP
Tosco (Unocal) Service Station #6419
6401 Dublin Boulevard
Dublin, California

JOB NUMBER
180021

REVIEWED BY

DATE
February 11, 2000

REVISED DATE

# Table 1

## Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #6419

6401 Dublin Boulevard

Dublin, California

| Well ID/ TOC* | Date | DTW (ft.) | GWE (msl) | TPH(D) (ppb) | TPH(G) (ppb) | B (ppb) | T (ppb) | E (ppb) | X (ppb) | MTBE (ppb) |
|---|---|---|---|---|---|---|---|---|---|---|
| **MW-1** | | | | | | | | | | |
| 330.45 | 03/14/94 | 7.27 | 323.18 | 810[1] | 1,800[2] | 17 | ND | ND | ND | -- |
| | 08/25/94 | 8.57 | 321.88 | 910[3] | 9,200[2] | 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[3] | 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[1] | 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[3] | 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 | --[5] |
| | 11/28/95 | 9.03 | 321.42 | -- | 1,400 | 18 | 3.0 | 98 | 3.6 | --[5] |
| | 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[4] | 1.0 | 0.95 | ND | ND | 280 |
| | 08/18/97 | 7.38 | 322.85 | -- | ND | ND | ND | ND | ND | 100 |
| | 02/02/98[6] | 5.10 | 325.13 | -- | ND[7] | 130 | ND[7] | ND[7] | ND[7] | 32,000 |
| | 08/24/98 | 6.73 | 323.50 | -- | ND[7] | ND[7] | ND[7] | ND[7] | ND[7] | 26,000/24,000[8] |
| | 02/10/99 | 5.46 | 324.77 | -- | ND[7] | ND[7] | ND[7] | ND[7] | ND[7] | 84,000/100,000[8] |
| | 04/12/99 | 6.38 | 323.85 | -- | ND[7] | ND[7] | ND[7] | ND[7] | ND[7] | 140,000/120,000[8] |
| 330.21 | 05/21/99 | 5.95 | 324.26 | -- | -- | -- | -- | -- | -- | -- |
| | 08/02/99 | 6.75 | 323.46 | -- | ND[7] | ND[7] | ND[7] | ND[7] | ND[7] | 91,000/140,000[10] |
| | **02/11/00** | **6.44** | **323.77** | **--** | **ND[7]** | **ND[7]** | **ND[7]** | **ND[7]** | **ND[7]** | **38,000/39,000[8]** |
| **MW-2** | | | | | | | | | | |
| 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 | -- | -- | -- | -- | -- | -- | -- |

# Table 1

## Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #6419

6401 Dublin Boulevard

Dublin, California

| Well ID/ TOC* | Date | DTW (ft.) | GWE (msl) | TPH(D) (ppb) | TPH(G) (ppb) | B (ppb) | T (ppb) | E (ppb) | X (ppb) | MTBE (ppb) |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-2 | 02/15/95 | 6.16 | 324.24 | -- | ND | ND | ND | ND | ND | -- |
| (cont) | 03/13/95 | 5.59 | 324.81 | -- | -- | -- | -- | -- | -- | -- |
| | 04/06/95 | 5.51 | 324.89 | -- | -- | -- | -- | -- | -- | -- |
| | 05/17/95 | 6.15 | 324.25 | -- | ND | ND | ND | ND | ND | -- |
| | 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 |
| 330.30 | 05/21/99 | 5.98 | 324.32 | -- | -- | -- | -- | -- | -- | -- |
| | 08/02/99 | 6.72 | 323.58 | -- | ND | ND | ND | ND | ND | 120 |
| | **02/11/00** | **6.43** | **323.87** | **--** | **ND** | **ND** | **ND** | **ND** | **ND** | **39** |
| **MW-3** | | | | | | | | | | |
| 331.11 | 03/14/94 | 7.93 | 323.18 | -- | 150[4] | ND | ND | ND | ND | -- |
| | 08/25/94 | 9.20 | 321.91 | -- | 130[4] | 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[4] | 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[4] | 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[4] | ND | ND | ND | ND | -- |
| | 06/15/95 | 7.35 | 323.76 | -- | -- | -- | -- | -- | -- | -- |
| | 08/25/95 | 8.20 | 322.91 | -- | ND | ND | ND | ND | ND | --[5] |
| | 11/28/95 | 9.52 | 321.59 | -- | ND | ND | ND | ND | ND | -- |

# Table 1

## Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #6419

6401 Dublin Boulevard

Dublin, California

| Well ID/ TOC* | Date | DTW (ft.) | GWE (msl) | TPH(D) (ppb) | TPH(G) (ppb) | B (ppb) | T (ppb) | E (ppb) | X (ppb) | MTBE (ppb) |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-3 | 02/26/96 | 6.25 | 324.86 | -- | ND | ND | ND | ND | ND | --[5] |
| (cont) | 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 |
| 330.49 | 05/21/99 | 6.16 | 324.33 | -- | -- | -- | -- | -- | -- | -- |
| | 08/02/99 | 6.95 | 323.54 | -- | ND | ND | ND | ND | ND | 140 |
| | **02/11/00** | **6.71** | --[11] | -- | **ND** | **ND** | **ND** | **ND** | **ND** | **46** |
| **MW-4** | | | | | | | | | | |
| 330.36 | 05/21/99[9] | 6.43 | 323.93 | -- | ND | ND | ND | ND | ND | 960/910[8] |
| | 08/02/99 | 7.34 | 323.02 | -- | ND | 10 | ND | 13 | 11 | ND |
| | **02/11/00** | **6.92** | **323.44** | -- | **ND** | **ND** | **ND** | **ND** | **ND** | **2,700** |
| **MW-5** | | | | | | | | | | |
| 330.20 | 05/21/99[9] | 5.99 | 324.21 | -- | ND | ND | ND | ND | ND | 32/33[8] |
| | 08/02/99 | 6.83 | 323.37 | -- | ND | ND | ND | ND | ND | 230 |
| | **02/11/00** | **6.34** | **323.86** | -- | **ND** | **ND** | **ND** | **ND** | **ND** | **98** |
| **MW-6** | | | | | | | | | | |
| 330.49 | 05/21/99[9] | 6.24 | 324.25 | -- | ND | ND | ND | ND | ND | 2,200/2,300[8] |
| | 08/02/99 | 7.10 | 323.39 | -- | ND | ND | ND | ND | ND | ND |
| | **02/11/00** | **6.60** | **323.89** | -- | **ND** | **ND** | **ND** | **ND** | **ND** | **2,500** |
| **MW-7** | | | | | | | | | | |
| 330.43 | 05/21/99[9] | 6.13 | 324.30 | -- | ND | ND | ND | ND | ND | 22/22[8] |
| | 08/02/99 | 6.92 | 323.51 | -- | ND | ND | ND | ND | ND | 31 |
| | **02/11/00** | **6.50** | **323.93** | -- | **ND** | **ND** | **ND** | **ND** | **ND** | **20** |

# Table 1

## Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #6419

6401 Dublin Boulevard

Dublin, California

| Well ID/ TOC* | Date | DTW (ft.) | GWE (msl) | TPH(D) (ppb) | TPH(G) (ppb) | B (ppb) | T (ppb) | E (ppb) | X (ppb) | MTBE (ppb) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Trip Blank** | | | | | | | | | | |
| 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 |
| | 05/21/99 | -- | -- | -- | ND | ND | ND | ND | ND | ND |
| | 08/02/99 | -- | -- | -- | ND | ND | ND | ND | ND | ND |
| | **02/11/00** | -- | -- | -- | **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).

1 Laboratory report indicates the hydrocarbons detected appeared to be a diesel and non-diesel mixture.
2 Laboratory report indicates the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.
3 Laboratory report indicates the hydrocarbons detected did not appear to be diesel.
4 Laboratory report indicates the hydrocarbons detected did not appear to be gasoline.
5 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.
6 Well appears to be obstructed at approximately 9 feet.
7 Detection limit raised. Refer to analytical reports.
8 MTBE by EPA Method 8260.
9 Ethanol, t-butanol, di-isopropyl ether (DIPE), ethyl t-butyl ether (ETBE), and t-amyl methyl ether (TAME) by EPA Method 8260 were all ND.
10 MTBE by EPA Method 8260 analyzed past EPA recommended hold time.
11 TOC has been damaged. Cannot accurately calculate GWE.

# Table 2

## Groundwater Analytical Data - Metals

Tosco (Unocal) Service Station #6419
6401 Dublin Boulevard
Dublin, California

| Well ID | Date | Cadmium (ppm) | Chromium (ppm) | Lead (ppm) | Nickel (ppm) | Zinc (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 (mg/L) | After Purging (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, temperature, pH and electrical conductivity are measured. If purging is to occur, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, suction, Grundfos), or polyvinyl chloride bailers. The measurements are taken 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: TOSCO #6419 Job#: 180021

Address: 6401 DUBLIN BLVD. Date: 2/11/00

City: DUBLIN Sampler: HAIG KEVORK

---

Well ID: MW-1 Well Condition: OK

Well Diameter: 2 in. Hydrocarbon Thickness: Ø (feet) Amount Bailed (product/water): Ø (Gallons)

Total Depth: 9.20 ft.

Depth to Water: 6.44 ft.

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

2.76 x VF 0.17 = 0.47 X 3 (case volume) = Estimated Purge Volume: 1.4 (gal.)

**Purge Equipment:** Disposable Bailer; Bailer; Stack; Suction; Grundfos; Other: _____

**Sampling Equipment:** Disposable Bailer; Bailer; Pressure Bailer; Grab Sample; Other: _____

---

Starting Time: 13:10 Weather Conditions: RAINY

Sampling Time: 13:35 Water Color: _____ Odor: _____

Purging Flow Rate: N/A gpm. Sediment Description: _____

Did well de-water? NO If yes; Time: _____ Volume: _____ (gal.)

| Time | Volume (gal.) | pH | Conductivity µmhos/cm | Temperature °F C° | D.O. (mg/L) | ORP (mV) | Alkalinity (ppm) |
|---|---|---|---|---|---|---|---|
| 13:12 | 0.5 | 7.61 | 1380 | 16.8 | | | |
| | 1 | 7.55 | 1390 | 16.3 | | | |
| 13:17 | 1.5 | 7.53 | 1420 | 16.5 | | | |
| | | | | | | | |

---

## LABORATORY INFORMATION

| SAMPLE ID | (#) - CONTAINER | REFRIG. | PRESERV. TYPE | LABORATORY | ANALYSES |
|---|---|---|---|---|---|
| MW-1 | 2 VOA | Y | HCl | SEQUOIA | TPH(G)/btex/mtbe |
| | | | | | |
| | | | | | |
| | | | | | |

COMMENTS: _____

9/97-fieldat.frm

# WELL MONITORING/SAMPLING
# FIELD DATA SHEET

Client/ Facility: TOSCO #6419 | Job#: 180021

Address: 6401 DUBLIN BLVD. | Date: 2/11/00

City: DUBLIN | Sampler: HAIG KEVORK

---

Well ID: MW-2 | Well Condition: OK

Well Diameter: 2 in. | Hydrocarbon Thickness: Ø (feet) | Amount Bailed (product/water): _____ (Gallons)

Total Depth: 17.60 ft.

Depth to Water: 6.43 ft.

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

11.17 x VF 0.17 = 1.9 X 3 (case volume) = Estimated Purge Volume: 5.7 (gal.)

**Purge Equipment:** Disposable Bailer; Bailer; Stack; [Suction]; Grundfos; Other: _____

**Sampling Equipment:** [Disposable Bailer]; Bailer; Pressure Bailer; Grab Sample; Other: _____

---

Starting Time: 13:40 | Weather Conditions: RAINY

Sampling Time: 14:00 | Water Color: _____ | Odor: _____

Purging Flow Rate: 3/4 gpm. | Sediment Description: _____

Did well de-water? NO | If yes; Time: _____ | Volume: _____ (gal.)

| Time | Volume (gal.) | pH | Conductivity µmhos/cm | Temperature °F C° | D.O. (mg/L) | ORP (mV) | Alkalinity (ppm) |
|---|---|---|---|---|---|---|---|
| 13:43 | 2 | 7.59 | 1580 | 16.8 | | | |
| | 4 | 7.54 | 1610 | 16.5 | | | |
| 13:50 | 6 | 7.58 | 1650 | 16.1 | | | |
| | | | | | | | |

---

## LABORATORY INFORMATION

| SAMPLE ID | (#) - CONTAINER | REFRIG. | PRESERV. TYPE | LABORATORY | ANALYSES |
|---|---|---|---|---|---|
| MW-2 | 2 VOA | Y | HCl | SEQUOIA | TPH(G)/btex/mtbe |
| | | | | | |
| | | | | | |
| | | | | | |

COMMENTS: _____

## WELL MONITORING/SAMPLING
## FIELD DATA SHEET

Client/ Facility: TOSCO #6419 Job#: 180021

Address: 6401 DUBLIN BLVD. Date: 2/11/00

City: DUBLIN Sampler: HAIG KEVORK

---

Well ID: MW-3 Well Condition: *

Well Diameter: 2 in. Hydrocarbon Thickness: Ø (feet) Amount Bailed (product/water): Ø (Gallons)

Total Depth: 18.40 ft.

Depth to Water: 6.71 ft.

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

11.69 x VF 0.17 = 2 X 3 (case volume) = Estimated Purge Volume: 6 (gal.)

**Purge Equipment:**
- Disposable Bailer
- Bailer
- Stack
- [x] Suction
- Grundfos
- Other:

**Sampling Equipment:**
- Disposable Bailer DID NOT FIT (CASING BENT)
- Bailer
- Pressure Bailer
- Grab Sample
- Other: SUCTION

---

Starting Time: 14:15 Weather Conditions: RAINY

Sampling Time: 14:35 Water Color: Odor:

Purging Flow Rate: 3/4 gpm. Sediment Description:

Did well de-water? NO If yes; Time: Volume: (gal.)

| Time | Volume (gal.) | pH | Conductivity µmhos/cm | Temperature °F C° | D.O. (mg/L) | ORP (mV) | Alkalinity (ppm) |
|---|---|---|---|---|---|---|---|
| 14:18 | 2 | 7.53 | 1460 | 17.0 | | | |
| | 4 | 7.44 | 1530 | 16.8 | | | |
| 14:25 | 6 | 7.41 | 1510 | 16.4 | | | |
| | | | | | | | |

### LABORATORY INFORMATION

| SAMPLE ID | (#) - CONTAINER | REFRIG. | PRESERV. TYPE | LABORATORY | ANALYSES |
|---|---|---|---|---|---|
| MW-3 | 2 VOA | Y | HCl | SEQUOIA | TPH(G)/btex/mtbe |
| | | | | | |
| | | | | | |
| | | | | | |

COMMENTS: * TOP PORTION OF WELL CASING IS BENT. UNABLE TO USE BAILER; SAMPLING WAS PERFORMED THROUGH POLY TUBING AND SUCTION PUMP.

# WELL MONITORING/SAMPLING
# FIELD DATA SHEET

Client/ Facility: TOSCO #6419 Job#: 180021

Address: 6401 DUBLIN BLVD. Date: 2/11/00

City: DUBLIN Sampler: HAIG KEVORK

---

Well ID: MW-4 Well Condition: OK

Well Diameter: 2 in. Hydrocarbon Thickness: Ø (feet) Amount Bailed (product/water): Ø (Gallons)

Total Depth: 19.10 ft.

Depth to Water: 6.92 ft.

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

12.18 x VF 0.17 = 2 X 3 (case volume) = Estimated Purge Volume: 6 (gal.)

**Purge Equipment:** Disposable Bailer; Bailer; Stack; [Suction]; Grundfos; Other: _____

**Sampling Equipment:** [Disposable Bailer]; Bailer; Pressure Bailer; Grab Sample; Other: _____

---

Starting Time: 15:55 Weather Conditions: RAINY

Sampling Time: 16:15 Water Color: _____ Odor: _____

Purging Flow Rate: 3/4 gpm. Sediment Description: _____

Did well de-water? NO If yes; Time: _____ Volume: _____ (gal.)

| Time | Volume (gal.) | pH | Conductivity µmhos/cm | Temperature °F (C°) | D.O. (mg/L) | ORP (mV) | Alkalinity (ppm) |
|---|---|---|---|---|---|---|---|
| 15:58 | 2 | 7.75 | 920 | 16.3 | | | |
| | 4 | 7.73 | 960 | 16.2 | | | |
| 16:04 | 6 | 7.69 | 980 | 15.8 | | | |
| | | | | | | | |

---

## LABORATORY INFORMATION

| SAMPLE ID | (#) - CONTAINER | REFRIG. | PRESERV. TYPE | LABORATORY | ANALYSES |
|---|---|---|---|---|---|
| MW-4 | 2 VOA | Y | HCl | SEQUOIA | TPH(G)/btex/mtbe |
| | | | | | |
| | | | | | |
| | | | | | |

COMMENTS: _____

# WELL MONITORING/SAMPLING
# FIELD DATA SHEET

Client/ Facility: TOSCO #6419 Job#: 180021

Address: 6401 DUBLIN BLVD. Date: 2/11/00

City: DUBLIN Sampler: HAIG KEVORK

---

Well ID: MW-5 Well Condition: OK

Well Diameter: 2 in. Hydrocarbon Thickness: Ø (feet) Amount Bailed (product/water): Ø (Gallons)

Total Depth: 19.40 ft.

Depth to Water: 6.34 ft.

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

13.06 x VF 0.17 = 2.2 x 3 (case volume) = Estimated Purge Volume: 6.6 (gal.)

**Purge Equipment:** Disposable Bailer; Bailer; Stack; [Suction]; Grundfos; Other: _____

**Sampling Equipment:** [Disposable Bailer]; ~~Bailer~~; Pressure Bailer; Grab Sample; Other: _____

---

Starting Time: 16:35 Weather Conditions: RAINY

Sampling Time: 16:55 Water Color: _____ Odor: _____

Purging Flow Rate: 3/4 gpm. Sediment Description: _____

Did well de-water? NO If yes; Time: _____ Volume: _____ (gal.)

| Time | Volume (gal.) | pH | Conductivity µmhos/cm | Temperature ~~°F~~ °C | D.O. (mg/L) | ORP (mV) | Alkalinity (ppm) |
|---|---|---|---|---|---|---|---|
| 15:38 | 2 | 7.41 | 1520 | 16.8 | | | |
| | 4 | 7.38 | 1570 | 16.4 | | | |
| 16:46 | 6 | 7.33 | 1540 | 16.2 | | | |
| | | | | | | | |

---

## LABORATORY INFORMATION

| SAMPLE ID | (#) - CONTAINER | REFRIG. | PRESERV. TYPE | LABORATORY | ANALYSES |
|---|---|---|---|---|---|
| MW-5 | 2 VOA | Y | HCl | SEQUOIA | TPH(G)/btex/mtbe |
| | | | | | |
| | | | | | |
| | | | | | |

COMMENTS: _____

9/97-fieldst.frm

# WELL MONITORING/SAMPLING
# FIELD DATA SHEET

Client/ Facility: TOSCO #6419 Job#: 180021

Address: 6401 DUBLIN BLVD Date: 2/11/00

City: DUBLIN Sampler: HAIG KEVORK

---

Well ID: MW-6 Well Condition: OK

Well Diameter: 2 in. Hydrocarbon Thickness: Ø (feet) Amount Bailed (product/water): Ø (Gallons)

Total Depth: 19.35 ft.

Depth to Water: 6.60 ft.

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

12.75 x VF 0.17 = 2.16 x 3 (case volume) = Estimated Purge Volume: 6.48 (gal.)

**Purge Equipment:** Disposable Bailer; Bailer; Stack; [Suction]; Grundfos; Other: _____

**Sampling Equipment:** [Disposable Bailer]; Bailer; Pressure Bailer; Grab Sample; Other: _____

---

Starting Time: 15:20 Weather Conditions: RAINY

Sampling Time: 15:40 Water Color: _____ Odor: _____

Purging Flow Rate: 3/4 gpm. Sediment Description: _____

Did well de-water? NO If yes; Time: _____ Volume: _____ (gal.)

| Time | Volume (gal.) | pH | Conductivity µmhos/cm | Temperature °F °C | D.O. (mg/L) | ORP (mV) | Alkalinity (ppm) |
|---|---|---|---|---|---|---|---|
| 15:23 | 2 | 7.60 | 1610 | 16.5 | | | |
| | 4 | 7.56 | 1630 | 15.8 | | | |
| 15:30 | 6 | 7.49 | 1600 | 16.0 | | | |
| | | | | | | | |

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## LABORATORY INFORMATION

| SAMPLE ID | (#) - CONTAINER | REFRIG. | PRESERV. TYPE | LABORATORY | ANALYSES |
|---|---|---|---|---|---|
| MW-6 | 2 VOA | Y | HCl | SEQUOIA | TPH(G)/btex/mtbe |
| | | | | | |
| | | | | | |
| | | | | | |

COMMENTS: _____

9/97-fieldst.frm

# WELL MONITORING/SAMPLING
# FIELD DATA SHEET

Client/ Facility: TOSCO #6419 Job#: 180021

Address: 6401 DUBLIN BLVD, Date: 2/11/00

City: DUBLIN Sampler: HAIG KEVORK

---

Well ID: MW-7 Well Condition: OK

Well Diameter: 2 in. Hydrocarbon Thickness: Ø (feet) Amount Bailed (product/water): Ø (Gallons)

Total Depth: 19.35 ft.

Depth to Water: 6.50 ft.

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

12.85 x VF 0.17 = 2.18 x 3 (case volume) = Estimated Purge Volume: 6.5 (gal.)

**Purge Equipment:** Disposable Bailer; Bailer; Stack; [Suction]; Grundfos; Other: _____

**Sampling Equipment:** [Disposable Bailer]; Bailer; Pressure Bailer; Grab Sample; Other: _____

---

Starting Time: 14:45 Weather Conditions: RAINY

Sampling Time: 15:05 Water Color: _____ Odor: _____

Purging Flow Rate: 3/4 gpm. Sediment Description: _____

Did well de-water? NO If yes; Time: _____ Volume: _____ (gal.)

| Time | Volume (gal.) | pH | Conductivity µmhos/cm | Temperature °F C U | D.O. (mg/L) | ORP (mV) | Alkalinity (ppm) |
|---|---|---|---|---|---|---|---|
| 14:48 | 2 | 7.46 | 1050 | 16.0 | | | |
| | 4 | 7.41 | 1100 | 15.3 | | | |
| 14:56 | 6 | 7.38 | 1080 | 15.6 | | | |
| | | | | | | | |

## LABORATORY INFORMATION

| SAMPLE ID | (#) - CONTAINER | REFRIG. | PRESERV. TYPE | LABORATORY | ANALYSES |
|---|---|---|---|---|---|
| MW-7 | 2 VOA | Y | HCl | SEQUOIA | TPH(G)/btex/mtbe |
| | | | | | |
| | | | | | |
| | | | | | |

COMMENTS: _____

9/97-fieldat.frm

TOSCO

Tosco Marketing Company
2000 Crow Canyon Pl., Ste. 400
San Ramon, California 94583

Facility Number: UNOCAL SS# 6419
Facility Address: 6401 Dublin Blvd., Dublin, CA
Consultant Project Number: 180021.85
Consultant Name: Gettler-Ryan Inc. (G-R Inc.)
Address: 6747 Sierra Court, Suite J, Dublin, CA 94568
Project Contact (Name): Deanna L. Harding
(Phone): 510-551-7555 (Fax Number): 510-551-7888

Contact (Name): Mr. DAVID DEWITT
(Phone): (925) 277-2384
Laboratory Name: Sequoia Analytical
Laboratory Release Number: W007346
Samples Collected by (Name): HAIG KEVORK
Collection Date: 2/11/2000
Signature:

| Sample Number | Lab Sample Number | Number of Containers | Matrix S = Soil W = Water A = Air C = Charcoal | Type G = Grab C = Composite D = Discrete | Time | Sample Preservation | Iced (Yes or No) | Analyses To Be Performed: TPH Gas + BTEX w/MTBE (8015) | TPH Diesel (8015) | Oil and Grease (5520) | Purgeable Halocarbons (8010) | Purgeable Aromatics (8020) | Purgeable Organics (8240) | Extractable Organics (8270) | Metals Cd,Cr,Pb,Zn,Ni (TCLP or AA) | | | | | | DO NOT BILL TB-LB ANALYSIS<br>Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TB-LB | 01A | 1 | W | G | | HCl | YES | ✓ | | | | | | | | | | | | | PLEASE |
| MW-1 | 02A,B | 2 | W | G | 13:35 | HCl | | ✓ | | | | | | | | | | | | | CONFIRM |
| MW-2 | 03 | 2 | W | G | 14:00 | HCl | | ✓ | | | | | | | | | | | | | MTBE HIT |
| MW-3 | 04 | 2 | W | G | 14:35 | HCl | | ✓ | | | | | | | | | | | | | ON MW-1 ONLY |
| MW-4 | 05 | 2 | W | G | 16:15 | HCl | | ✓ | | | | | | | | | | | | | BY MTBE 8260 |
| MW-5 | 06 | 2 | W | G | 16:55 | HCl | | ✓ | | | | | | | | | | | | | |
| MW-6 | 07 | 2 | W | G | 15:40 | HCl | | ✓ | | | | | | | | | | | | | |
| MW-7 | 08 ✓ | 2 | W | G | 15:05 | HCl | ✓ | ✓ | | | | | | | | | | | | | |

| Relinquished By (Signature) | Organization | Date/Time | Received By (Signature) | Organization | Date/Time |
|---|---|---|---|---|---|
| | G-R Inc. | 2-11-00 | Deanna Harding | GR | 2-11-0 |
| Relinquished By (Signature) | Organization | Date/Time | Received By (Signature) | Organization | Date/Time |
| D Harding | GR | 2/14/00 | | | 2-14-00 15:30 |
| Relinquished By (Signature) | Organization | Date/Time | Received For Laboratory By (Signature) | | Date/Time |
| | | 1605 | | | 2/14 16:05 |

Turn Around Time (Circle Choice)
24 Hrs.
48 Hrs.
5 Days
10 Days
As Contracted

Sequoia
Analytical

404 N. Wiget Lane
Walnut Creek, CA 94598
(925) 988-9600
FAX (925) 988-9673

29 February, 2000

Deanna L. Harding
Gettler Ryan, Inc. - Dublin
6747 Sierra Court Suite J
Dublin, CA 94568

RE: Unocal

Enclosed are the results of analyses for samples received by the laboratory on 14-Feb-00 16:05. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Alan B. Kemp
Laboratory Director

Sequoia Analytical

404 N. Wiget Lane
Walnut Creek, CA 94598
(925) 988-9600
FAX (925) 988-9673

| | | |
|---|---|---|
| Gettler Ryan, Inc. - Dublin | Project: Unocal | |
| 6747 Sierra Court Suite J | Project Number: Unocal # 6419 | **Reported:** |
| Dublin CA, 94568 | Project Manager: Deanna L. Harding | 29-Feb-00 08:00 |

## ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| TB-LB | W002346-01 | Water | 11-Feb-00 00:00 | 14-Feb-00 16:05 |
| MW-1 | W002346-02 | Water | 11-Feb-00 13:35 | 14-Feb-00 16:05 |
| MW-2 | W002346-03 | Water | 11-Feb-00 14:00 | 14-Feb-00 16:05 |
| MW-3 | W002346-04 | Water | 11-Feb-00 14:35 | 14-Feb-00 16:05 |
| MW-4 | W002346-05 | Water | 11-Feb-00 16:15 | 14-Feb-00 16:05 |
| MW-5 | W002346-06 | Water | 11-Feb-00 16:55 | 14-Feb-00 16:05 |
| MW-6 | W002346-07 | Water | 11-Feb-00 15:40 | 14-Feb-00 16:05 |
| MW-7 | W002346-08 | Water | 11-Feb-00 15:05 | 14-Feb-00 16:05 |





Alan B. Kemp, Laboratory Director

Sequoia Analytical

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Walnut Creek, CA 94598
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FAX (925) 988-9673

| | | |
|---|---|---|
| Gettler Ryan, Inc. - Dublin | Project: Unocal | |
| 6747 Sierra Court Suite J | Project Number: Unocal # 6419 | **Reported:** |
| Dublin CA, 94568 | Project Manager: Deanna L. Harding | 29-Feb-00 08:00 |

## Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

## Sequoia Analytical - Walnut Creek

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **TB-LB (W002346-01) Water Sampled: 11-Feb-00 00:00 Received: 14-Feb-00 16:05** | | | | | | | | | |
| Purgeable Hydrocarbons | ND | 50 | ug/l | 1 | 0B17003 | 17-Feb-00 | 17-Feb-00 | EPA 8015M/8020 | |
| Benzene | ND | 0.50 | " | " | " | " | " | " | |
| Toluene | ND | 0.50 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.50 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.50 | " | " | " | " | " | " | |
| Methyl tert-butyl ether | ND | 2.5 | " | " | " | " | " | " | |
| *Surrogate: a,a,a-Trifluorotoluene* | | *96.3 %* | | *70-130* | " | " | " | " | |
| **MW-1 (W002346-02) Water Sampled: 11-Feb-00 13:35 Received: 14-Feb-00 16:05** | | | | | | | | | |
| Purgeable Hydrocarbons | ND | 1000 | ug/l | 20 | 0B17003 | 17-Feb-00 | 17-Feb-00 | EPA 8015M/8020 | |
| Benzene | ND | 10 | " | " | " | " | " | " | |
| Toluene | ND | 10 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 10 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 10 | " | " | " | " | " | " | |
| *Surrogate: a,a,a-Trifluorotoluene* | | *92.7 %* | | *70-130* | " | " | " | " | |
| **MW-1 (W002346-02RE1) Water Sampled: 11-Feb-00 13:35 Received: 14-Feb-00 16:05** | | | | | | | | | |
| **Methyl tert-butyl ether** | **38000** | 2500 | ug/l | 1000 | 0B17003 | 17-Feb-00 | 18-Feb-00 | EPA 8015M/8020 | |
| *Surrogate: a,a,a-Trifluorotoluene* | | *112 %* | | *70-130* | " | " | " | " | |
| **MW-2 (W002346-03) Water Sampled: 11-Feb-00 14:00 Received: 14-Feb-00 16:05** | | | | | | | | | |
| Purgeable Hydrocarbons | ND | 50 | ug/l | 1 | 0B17003 | 17-Feb-00 | 17-Feb-00 | EPA 8015M/8020 | |
| Benzene | ND | 0.50 | " | " | " | " | " | " | |
| Toluene | ND | 0.50 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.50 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.50 | " | " | " | " | " | " | |
| **Methyl tert-butyl ether** | **39** | 2.5 | " | " | " | " | " | " | |
| *Surrogate: a,a,a-Trifluorotoluene* | | *95.0 %* | | *70-130* | " | " | " | " | |





Alan B. Kemp, Laboratory Director

Sequoia Analytical

404 N. Wiget Lane
Walnut Creek, CA 94598
(925) 988-9600
FAX (925) 988-9673

| | | |
|---|---|---|
| Gettler Ryan, Inc. - Dublin | Project: Unocal | |
| 6747 Sierra Court Suite J | Project Number: Unocal # 6419 | **Reported:** |
| Dublin CA, 94568 | Project Manager: Deanna L. Harding | 29-Feb-00 08:00 |

## Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

## Sequoia Analytical - Walnut Creek

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **MW-3 (W002346-04) Water Sampled: 11-Feb-00 14:35 Received: 14-Feb-00 16:05** | | | | | | | | | |
| Purgeable Hydrocarbons | ND | 50 | ug/l | 1 | 0B17003 | 17-Feb-00 | 17-Feb-00 | EPA 8015M/8020 | |
| Benzene | ND | 0.50 | " | " | " | " | " | | |
| Toluene | ND | 0.50 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.50 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.50 | " | " | " | " | " | " | |
| **Methyl tert-butyl ether** | **46** | 2.5 | " | " | " | " | " | " | |
| *Surrogate: a,a,a-Trifluorotoluene* | | *95.0 %* | *70-130* | | " | " | " | " | |
| **MW-4 (W002346-05) Water Sampled: 11-Feb-00 16:15 Received: 14-Feb-00 16:05** | | | | | | | | | |
| Purgeable Hydrocarbons | ND | 50 | ug/l | 1 | 0B17003 | 17-Feb-00 | 17-Feb-00 | EPA 8015M/8020 | |
| Benzene | ND | 0.50 | " | " | " | " | " | | |
| Toluene | ND | 0.50 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.50 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.50 | " | " | " | " | " | " | |
| *Surrogate: a,a,a-Trifluorotoluene* | | *93.7 %* | *70-130* | | " | " | " | " | |
| **MW-4 (W002346-05RE1) Water Sampled: 11-Feb-00 16:15 Received: 14-Feb-00 16:05** | | | | | | | | | |
| **Methyl tert-butyl ether** | **2700** | 500 | ug/l | 200 | 0B17003 | 17-Feb-00 | 18-Feb-00 | EPA 8015M/8020 | |
| *Surrogate: a,a,a-Trifluorotoluene* | | *111 %* | *70-130* | | " | " | " | | |
| **MW-5 (W002346-06) Water Sampled: 11-Feb-00 16:55 Received: 14-Feb-00 16:05** | | | | | | | | | |
| Purgeable Hydrocarbons | ND | 50 | ug/l | 1 | 0B17003 | 17-Feb-00 | 17-Feb-00 | EPA 8015M/8020 | |
| Benzene | ND | 0.50 | " | " | " | " | " | | |
| Toluene | ND | 0.50 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.50 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.50 | " | " | " | " | " | " | |
| **Methyl tert-butyl ether** | **98** | 2.5 | " | " | " | " | " | " | |
| *Surrogate: a,a,a-Trifluorotoluene* | | *113 %* | *70-130* | | " | " | " | " | |





Alan B. Kemp, Laboratory Director

Sequoia Analytical

404 N. Wiget Lane
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(925) 988-9600
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| | | |
|---|---|---|
| Gettler Ryan, Inc. - Dublin<br>6747 Sierra Court Suite J<br>Dublin CA, 94568 | Project: Unocal<br>Project Number: Unocal # 6419<br>Project Manager: Deanna L. Harding | **Reported:**<br>29-Feb-00 08:00 |

## Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

## Sequoia Analytical - Walnut Creek

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **MW-6 (W002346-07) Water Sampled: 11-Feb-00 15:40 Received: 14-Feb-00 16:05** | | | | | | | | | |
| Purgeable Hydrocarbons | ND | 50 | ug/l | 1 | 0B17003 | 17-Feb-00 | 17-Feb-00 | EPA 8015M/8020 | |
| Benzene | ND | 0.50 | " | " | " | " | " | " | |
| Toluene | ND | 0.50 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.50 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.50 | " | " | " | " | " | " | |
| *Surrogate: a,a,a-Trifluorotoluene* | | *113 %* | *70-130* | | " | " | " | " | |
| **MW-6 (W002346-07RE1) Water Sampled: 11-Feb-00 15:40 Received: 14-Feb-00 16:05** | | | | | | | | | |
| **Methyl tert-butyl ether** | **2500** | 500 | ug/l | 200 | 0B17003 | 17-Feb-00 | 18-Feb-00 | EPA 8015M/8020 | |
| *Surrogate: a,a,a-Trifluorotoluene* | | *113 %* | *70-130* | | " | " | " | " | |
| **MW-7 (W002346-08) Water Sampled: 11-Feb-00 15:05 Received: 14-Feb-00 16:05** | | | | | | | | | |
| Purgeable Hydrocarbons | ND | 50 | ug/l | 1 | 0B17002 | 17-Feb-00 | 17-Feb-00 | EPA 8015M/8020 | |
| Benzene | ND | 0.50 | " | " | " | " | " | " | |
| Toluene | ND | 0.50 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.50 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.50 | " | " | " | " | " | " | |
| **Methyl tert-butyl ether** | **20** | 2.5 | " | " | " | " | " | " | |
| *Surrogate: a,a,a-Trifluorotoluene* | | *112 %* | *70-130* | | " | " | " | " | |





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Sequoia Analytical

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FAX (925) 988-9673

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|---|---|---|
| Gettler Ryan, Inc. - Dublin | Project: Unocal | |
| 6747 Sierra Court Suite J | Project Number: Unocal # 6419 | **Reported:** |
| Dublin CA, 94568 | Project Manager: Deanna L. Harding | 29-Feb-00 08:00 |

## MTBE Confirmation by EPA Method 8260A

## Sequoia Analytical - Walnut Creek

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **MW-1 (W002346-02) Water Sampled: 11-Feb-00 13:35 Received: 14-Feb-00 16:05** | | | | | | | | | |
| **Methyl tert-butyl ether** | **39000** | 400 | ug/l | 200 | 0B23015 | 23-Feb-00 | 23-Feb-00 | EPA 8260A | |
| *Surrogate: Dibromofluoromethane* | | *106 %* | | *50-150* | " | " | " | " | |
| *Surrogate: 1,2-Dichloroethane-d4* | | *108 %* | | *50-150* | " | " | " | " | |





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| Gettler Ryan, Inc. - Dublin | Project: Unocal | |
| 6747 Sierra Court Suite J | Project Number: Unocal # 6419 | **Reported:** |
| Dublin CA, 94568 | Project Manager: Deanna L. Harding | 29-Feb-00 08:00 |

## Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT - Quality Control
## Sequoia Analytical - Walnut Creek

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 0B17002: Prepared 17-Feb-00 Using EPA 5030B [P/T]** | | | | | | | | | | |
| **Blank (0B17002-BLK1)** | | | | | | | | | | |
| Purgeable Hydrocarbons | ND | 50 | ug/l | | | | | | | |
| Benzene | ND | 0.50 | " | | | | | | | |
| Toluene | ND | 0.50 | " | | | | | | | |
| Ethylbenzene | ND | 0.50 | " | | | | | | | |
| Xylenes (total) | ND | 0.50 | " | | | | | | | |
| Methyl tert-butyl ether | ND | 2.5 | " | | | | | | | |
| *Surrogate: a,a,a-Trifluorotoluene* | *33.9* | | " | *30.0* | | *113* | *70-130* | | | |
| **LCS (0B17002-BS1)** | | | | | | | | | | |
| Benzene | 21.7 | 0.50 | ug/l | 20.0 | | 109 | 70-130 | | | |
| Toluene | 21.4 | 0.50 | " | 20.0 | | 107 | 70-130 | | | |
| Ethylbenzene | 22.0 | 0.50 | " | 20.0 | | 110 | 70-130 | | | |
| Xylenes (total) | 65.6 | 0.50 | " | 60.0 | | 109 | 70-130 | | | |
| *Surrogate: a,a,a-Trifluorotoluene* | *30.7* | | " | *30.0* | | *102* | *70-130* | | | |
| **Matrix Spike (0B17002-MS1)** | | | | | **Source: W002330-03** | | | | | |
| Benzene | 23.2 | 0.50 | ug/l | 20.0 | ND | 116 | 70-130 | | | |
| Toluene | 22.6 | 0.50 | " | 20.0 | ND | 113 | 70-130 | | | |
| Ethylbenzene | 22.3 | 0.50 | " | 20.0 | ND | 111 | 70-130 | | | |
| Xylenes (total) | 66.9 | 0.50 | " | 60.0 | ND | 112 | 70-130 | | | |
| *Surrogate: a,a,a-Trifluorotoluene* | *32.8* | | " | *30.0* | | *109* | *70-130* | | | |
| **Matrix Spike Dup (0B17002-MSD1)** | | | | | **Source: W002330-03** | | | | | |
| Benzene | 22.0 | 0.50 | ug/l | 20.0 | ND | 110 | 70-130 | 5.31 | 20 | |
| Toluene | 22.3 | 0.50 | " | 20.0 | ND | 111 | 70-130 | 1.34 | 20 | |
| Ethylbenzene | 22.2 | 0.50 | " | 20.0 | ND | 111 | 70-130 | 0.449 | 20 | |
| Xylenes (total) | 66.5 | 0.50 | " | 60.0 | ND | 111 | 70-130 | 0.600 | 20 | |
| *Surrogate: a,a,a-Trifluorotoluene* | *33.2* | | " | *30.0* | | *111* | *70-130* | | | |





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|---|---|---|
| Gettler Ryan, Inc. - Dublin | Project: Unocal | |
| 6747 Sierra Court Suite J | Project Number: Unocal # 6419 | **Reported:** |
| Dublin CA, 94568 | Project Manager: Deanna L. Harding | 29-Feb-00 08:00 |

## Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT - Quality Control

## Sequoia Analytical - Walnut Creek

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 0B17003: Prepared 17-Feb-00 Using EPA 5030B [P/T]** | | | | | | | | | | |
| **Blank (0B17003-BLK1)** | | | | | | | | | | |
| Purgeable Hydrocarbons | ND | 50 | ug/l | | | | | | | |
| Benzene | ND | 0.50 | " | | | | | | | |
| Toluene | ND | 0.50 | " | | | | | | | |
| Ethylbenzene | ND | 0.50 | " | | | | | | | |
| Xylenes (total) | ND | 0.50 | " | | | | | | | |
| Methyl tert-butyl ether | ND | 2.5 | " | | | | | | | |
| *Surrogate: a,a,a-Trifluorotoluene* | *30.5* | | " | *30.0* | | *102* | *70-130* | | | |
| **LCS (0B17003-BS1)** | | | | | | | | | | |
| Benzene | 20.8 | 0.50 | ug/l | 20.0 | | 104 | 70-130 | | | |
| Toluene | 21.0 | 0.50 | " | 20.0 | | 105 | 70-130 | | | |
| Ethylbenzene | 21.1 | 0.50 | " | 20.0 | | 106 | 70-130 | | | |
| Xylenes (total) | 57.8 | 0.50 | " | 60.0 | | 96.3 | 70-130 | | | |
| *Surrogate: a,a,a-Trifluorotoluene* | *28.6* | | " | *30.0* | | *95.3* | *70-130* | | | |
| **Matrix Spike (0B17003-MS1)** | | | | | **Source: W002310-05** | | | | | |
| Benzene | 21.7 | 0.50 | ug/l | 20.0 | ND | 109 | 70-130 | | | |
| Toluene | 22.2 | 0.50 | " | 20.0 | ND | 111 | 70-130 | | | |
| Ethylbenzene | 22.2 | 0.50 | " | 20.0 | ND | 111 | 70-130 | | | |
| Xylenes (total) | 64.3 | 0.50 | " | 60.0 | ND | 107 | 70-130 | | | |
| *Surrogate: a,a,a-Trifluorotoluene* | *28.3* | | " | *30.0* | | *94.3* | *70-130* | | | |
| **Matrix Spike Dup (0B17003-MSD1)** | | | | | **Source: W002310-05** | | | | | |
| Benzene | 22.9 | 0.50 | ug/l | 20.0 | ND | 114 | 70-130 | 5.38 | 20 | |
| Toluene | 23.3 | 0.50 | " | 20.0 | ND | 116 | 70-130 | 4.84 | 20 | |
| Ethylbenzene | 22.9 | 0.50 | " | 20.0 | ND | 114 | 70-130 | 3.10 | 20 | |
| Xylenes (total) | 65.9 | 0.50 | " | 60.0 | ND | 110 | 70-130 | 2.46 | 20 | |
| *Surrogate: a,a,a-Trifluorotoluene* | *30.3* | | " | *30.0* | | *101* | *70-130* | | | |





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|---|---|---|
| Gettler Ryan, Inc. - Dublin<br>6747 Sierra Court Suite J<br>Dublin CA, 94568 | Project: Unocal<br>Project Number: Unocal # 6419<br>Project Manager: Deanna L. Harding | **Reported:**<br>29-Feb-00 08:00 |

## MTBE Confirmation by EPA Method 8260A - Quality Control

## Sequoia Analytical - Walnut Creek

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 0B23015: Prepared 23-Feb-00 Using EPA 5030B [P/T]** | | | | | | | | | | |
| **Blank (0B23015-BLK1)** | | | | | | | | | | |
| Methyl tert-butyl ether | ND | 2.0 | ug/l | | | | | | | |
| *Surrogate: Dibromofluoromethane* | *58.0* | | " | *50.0* | | *116* | *50-150* | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *55.0* | | " | *50.0* | | *110* | *50-150* | | | |
| **LCS (0B23015-BS1)** | | | | | | | | | | |
| Methyl tert-butyl ether | 64.4 | 2.0 | ug/l | 50.0 | | 129 | 70-130 | | | |
| *Surrogate: Dibromofluoromethane* | *56.0* | | " | *50.0* | | *112* | *50-150* | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *55.0* | | " | *50.0* | | *110* | *50-150* | | | |
| **LCS Dup (0B23015-BSD1)** | | | | | | | | | | |
| Methyl tert-butyl ether | 61.8 | 2.0 | ug/l | 50.0 | | 124 | 70-130 | 4.12 | 25 | |
| *Surrogate: Dibromofluoromethane* | *55.0* | | " | *50.0* | | *110* | *50-150* | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *56.0* | | " | *50.0* | | *112* | *50-150* | | | |





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## Notes and Definitions

| | |
|---|---|
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |





Alan B. Kemp, Laboratory Director